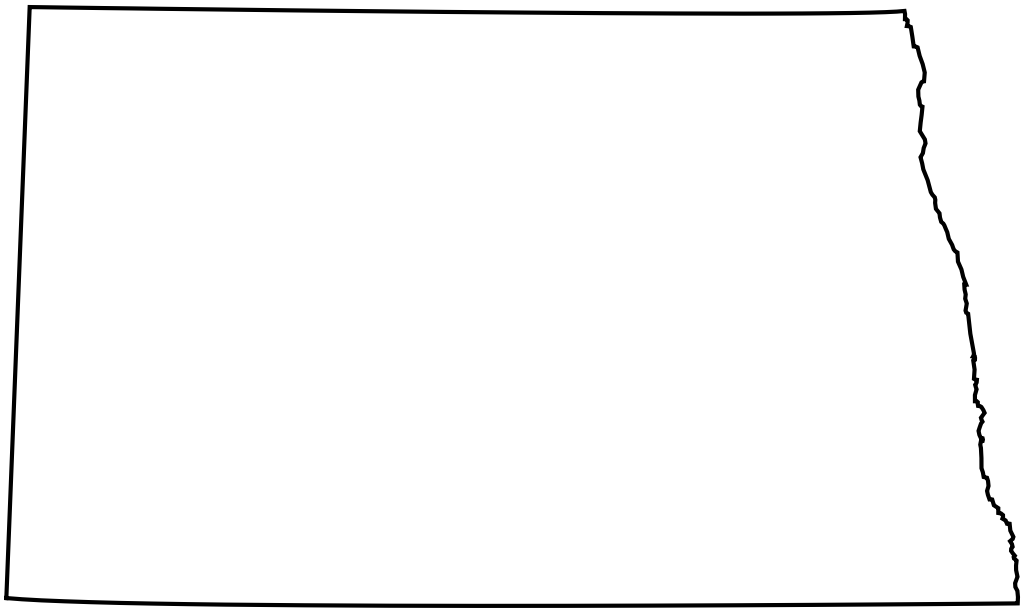
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data North Dakota Water Year 2002

Volume 1. Surface Water

By R.E. Harkness, R.F. Lundgren, S.W. Norbeck, S.M. Robinson, and B.A. Sether

Water-Data Report ND-02-1



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

UNITED STATES DEPARTMENT OF THE INTERIOR

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2003

PREFACE

This edition of the annual hydrologic data report of North Dakota is one of a series of annual reports that document hydrologic data collected from the U.S. Geological Survey's collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by Federal, State, local agencies, and the private sector for developing and managing land and water resources in North Dakota. The records are contained in 2 volumes:

Volume 1. Surface-Water Data

Volume 2. Ground-Water Data

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had the primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines, the following North Dakota District personnel contributed significantly to the collection, processing, and tabulation of the data:

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This report was prepared in cooperation with the State of North Dakota and with other agencies under the supervision of G.J. Wiche, District Chief, North Dakota.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	Published March 2003	Annual--October 1, 2001 to September 30, 2002

4. TITLE AND SUBTITLE
Water Resources Data--North Dakota, Water Year 2002, Volume 1
Surface Water

5. FUNDING NUMBERS

6. AUTHOR(S)
R.E. Harkness, R.F. Lundgren, S.W. Norbeck, S.M. Robinson, and B.A. Sether

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Geological Survey, Water Resources Division
North Dakota District
821 East Interstate Avenue
Bismarck, ND 58501-1199

8. PERFORMING ORGANIZATION REPORT NUMBER
USGS-WDR-ND-2002-1

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Geological Survey, Water Resources Division
North Dakota District
821 East Interstate Avenue
Bismarck, ND 58501-1199

10. SPONSORING / MONITORING AGENCY REPORT NUMBER
USGS-WDR-ND-2002-1

11. SUPPLEMENTARY NOTES
Prepared in cooperation with Federal, State, and local agencies.

12a. DISTRIBUTION / AVAILABILITY STATEMENT
No restriction on distribution. This report may be purchased from:

National Technical Information Service
Springfield, VA 22161

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

Water-resources data for the 2002 water year for North Dakota consists of records of discharge, stage, and water quality for streams; contents, stage, and water quality for lakes and reservoirs; and water levels and water quality for ground-water wells. Volume 1 contains records of water discharge for 106 streamflow-gaging stations; stage only for 22 river-stage stations; contents and/or stage for 14 lake or reservoir stations; annual maximum discharge for 35 crest-stage stations; and water-quality for 96 streamflow-gaging stations, 3 river-stage stations, 11 lake or reservoir stations, 8 miscellaneous sample sites on rivers, and 63 miscellaneous sample sites on lakes and wetlands. Data are included for 7 water-quality monitor sites on streams and 2 precipitation-chemistry stations. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal, State, and local agencies in North Dakota.

14. SUBJECT TERMS
*North Dakota, *Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperature, Sampling sites, Water analyses, Floods, Drought

15. NUMBER OF PAGES
440

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
			Unclassified

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RECORDS ARE PUBLISHED IN THIS VOLUME

[Letters after station names designate type of data: (d) discharge, (e) elevation, gage heights, or contents, (c) chemical, (b) biological, (m) microbiological, (t) water temperature, (s) sediment, (r) radiochemical, (p) pesticides]

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PRECIPITATION SITES, FOR WHICH CHEMICAL-QUALITY DATA ARE PUBLISHED IN THIS VOLUME

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

fsThe following continuous-record surface-water discharge or stage-only stations (gaging stations) in North Dakota have been discontinued. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number are currently operated as crest-stage partial-record stations. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

[(d), discharge; (e), elevation (stage only); 1, not published (records only available from computer and/or manual files); --, no data].

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER OF THE NORTH BASIN			
Bois de Sioux River near Fairmount, ND (d)	05050500	1,540	1919-44
Wild Rice River near Cayuga, ND (d)	05051700	955	1956-79
Wild Rice River near Mantador, ND (d)	05052000	1,540	1944-50
Richland County Drain No. 65 near Great Bend, ND (d)	05052100	38	1981-85
Sheyenne River near Harvey, ND (d)	05055000	534	1946-56
North Fork Sheyenne River near Wellsburg, ND (d)	05055100	693	1957-67
Big Coulee near Maddock, ND (d)	05055200	146	1957-67
Sheyenne River at Sheyenne, ND (d)	05055500	1,790	1929-33, 1940-51
Big Coulee near Fort Totten, ND (d)	05055520	23.2	1966-75
Mauvais Coulee Tributary No. 4 near Cando, ND (d)	05056085	109	1994
Webster Coulee at Webster, ND (d)	05056225	670	1980-87 (1), 1993-94
St. Joe Coulee near Webster, ND (d)	05056244	--	1986-87 (1)
Calio Coulee near Starkweather, ND (d)	05056247	130	1986-88, 1994
Big Coulee below Churchs Ferry, ND (d)	05056270	1,260	1998-99
Little Coulee at Leeds, ND (d)	05056300	280	1956-67
Little Coulee near Brinsmade, ND (d)	05056390	350	1975-97
Big Coulee near Churchs Ferry, ND (d)	05056400	1,620	1951-97
Comstock Coulee near Minnewaukan, ND (d)	05056403	58	1986-88 (1), 1994
Channel A near Penn, ND (d)	05056410	930	1984-99
Sheyenne River near Kathryn, ND (d)	05058600	--	1995-96
Cass County Drain 52 near Amenia, ND (d)	05060510	13.5	1981-85
Rush River near Prosper, ND (d)	05060550	170	1981-85
Lower Branch Rush River near Prosper, ND (d)	05060570	35.8	1981-85
Elm River near Kelso, ND (d)	05062200	199	1956-63, 1981-86
Beaver Creek near Hatton, ND (d)	05065000	162	1954-57

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER OF THE NORTH BASIN--Continued			
Goose River near Portland, ND (d)	05065500	517	1940-75, 1981-86
South Branch Goose River near Portland, ND (d)	05066000	362	1940-42
Turtle River at Manvel, ND (d)	05083000	613	1946-70 (d), 1980-82 (e)
Middle Branch Forest River near Whitman, ND (d)	05083600	47.7	1961-90
Forest River near Minto, ND (d)	05084500	578	1935-44
South Branch Park River near Park River, ND (d)	05088000	214	1940-50
Homme Reservoir near Park River, ND (e)	05088500	226	1949-94
South Branch Park River below Homme Dam, ND (d)	05089000	226	1950-94
Middle Branch Park River near Union, ND (d)	05089100	15.3	1966-86
Cart Creek at Mountain, ND (d)	05089500	16.9	1954-84
Pembina County Drain No. 20 near Glasston, ND (d)	05092200	80	1972-86
Hidden Island Coulee near Hansboro, ND (d)	05098700	38	1961-95
Cypress Creek near Sarles, ND (d)	05098800	71	1961-88
Cypress Creek above International Boundary near Sarles, ND (d)	05098820	83	1988-95
Herzog Creek near Concrete, ND (d)	05100500	18.9	1954-77
Tongue River at Cavalier, ND (d)	05101500	167	1939-51
Tongue River near Pembina, ND (d)	05102000	460	1940-42
Long Creek near Crosby, ND (d)	05113500	2,080	1943-65
West Branch Short Creek near Columbus, ND (d)	05113700	167	1978-81
Des Lacs River near Kenmare, ND (d)	05116150	687	1988-93
Wintering River near Bergen, ND (d)	05120200	176	1957-78
Souris River near Towner, ND (d)	05121500	13,100	1933-41
Willow Creek at Dunseith, ND (d)	05122500	142	1953-70
Lake Metigoshe near Bottineau, ND (e)	05123000	59	1931-32, 1953-87, 1992-96
Oak Creek at Lake Metigoshe Outlet near Bottineau, ND (d)	05123100	59	1954-81
Stone Creek near Kramer, ND (d)	05123500	168	1986-93, 1999-2000
Egg Creek near Granville, ND (d)	05123600	289	1957-81
Cut Bank Creek at North Lake Outlet near Granville, ND (d)	05123700	534	1957-80
Cut Bank Creek near Upham, ND (d)	05123750	722	1974-80, 1999-2000

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER OF THE NORTH BASIN--Continued			
Boundary Creek near Landa, ND (d)	05123900	230	1957-81 1985-94 1999-2000
MISSOURI RIVER BASIN			
Charbonneau Creek near Charbonneau, ND (d)	06329597	149	1967-81
Missouri River Stage Gage No. 8 near Trenton, ND (e)	06329680	164,000	1959-79 (e)
Blacktail Creek near Bonetrail, ND (d)	06330500	30	1956-60
Little Muddy Creek near Williston, ND (d)	06331500	1,010	1904-09, 1932-33, 1946-54
Stony Creek near Williston, ND (d)	06331570	146	1978-81
Missouri River Stage Gage No. 10 near Williston, ND (e)	06331600	165,000	1959-75 (e)
Missouri River Stage Gage No. 11 near Williston, ND (e)	06331650	165,000	1959-80 (e)
Tobacco Garden Creek near Watford City, ND (d)	06331680	135	1977-82
Beaver Creek near Ray, ND (d)	06331850	102	1977-82
White Earth River at White Earth, ND (d)	06332000	780	1954-82
Missouri River at Sanish, ND (d)	06332500	166,000	1928-32
Shell Creek near Parshall, ND (d)	06332520	465	1965-82
Little Beaver Creek near Marmarth, ND (d)	06335000	587	1938-79
Deep Creek near Amidon, ND (d)	06335750	250	1978-83
Missouri River near Elbowwoods, ND (d)	06337500	179,800	1940-54
Missouri River below Garrison Dam, ND (d)	06339000	181,400	1948-69, 1970-76 (e)
Stray Creek near Manning, ND (d)	06339180	30.3	1979-81
Knife River at Marshall, ND (d)	06339300	722	1971-81
Elm Creek near Golden Valley, ND (d)	06339490	82	1967-81
Coyote Creek near Zap, ND (d)	06339550	65.2	1978-83
Brush Creek near Beulah, ND (d)	06339560	23.9	1975-91
Spring Creek below Lake Ilo at Dunn Center, ND (d)	06339800	116	1978-81
Spring Creek near Halliday, ND (d)	06339900	260	1978-81
West Branch Otter Creek near Beulah, ND (d)	06340200	26.5	1965-82
Antelope Creek above Hazen, ND (d)	06340520	47.2	1977-86
West Branch Antelope Creek No. 5 near Zap, ND (d)	06340524	4.37	1978-82
West Branch Antelope Creek No. 4 near Zap, ND (d)	06340528	8.46	1977-86
West Branch Antelope Creek No. 2 near Beulah, ND (d)	06340536	28.3	1977-80

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
MISSOURI RIVER BASIN--Continued			
West Branch Antelope Creek near Hazen, ND (d)	06340540	37.7	1978-83
Coal Creek near Stanton, ND (d)	06340580	15.8	1978-81
Alderin Creek near Fort Clark, ND (d)	06340780	21.9	1978-84
Missouri River Tributary No. 2 near Hensler, ND (d)	06340890	9.80	1979-81
Coal Lake Coulee near Hensler, ND (d)	06340905	70.5	1978-89
Buffalo Creek near Washburn, ND (d)	06340930	57.3	1979-83
Turtle Creek near Turtle Lake, ND (d)	06341400	310	1957-76
Square Butte Creek near Hannover, ND (d)	06342040	16.9	1977-81
Square Butte Creek Tributary No. 2 near Center, ND (d)	06342100	13	1965-76
Square Butte Creek above Nelson Lake near Center, ND (d)	06342200	75.8	1977-82
Hagel Creek near Center, ND (d)	06342230	45.6	1977-82
Norwegian Creek near Belfield, ND (d)	06342850	39.8	1979-81
South Branch Heart River near South Heart, ND (d)	06342900	132	1979-83
North Creek near South Heart, ND (d)	06342970	40.8	1979-81
Heart River near South Heart, ND (d)	06343000*	311	1946-70, 1978-84
Heart River below Dickinson Dam near Dickinson, ND (d)	06344000	404	1952-72
Heart River at Dickinson, ND (d)	06344300	440	1983-96
Heart River at Lehigh, ND (d)	06344500	443	1943-52
Green River Tributary near New Hradec, ND (d)	06344610	22.4	1979-81
Green River near Gladstone, ND (d)	06345000	356	1946-75
Heart River below Heart Butte Dam near Glen Ullin, ND (d)	06346500	1,710	1943-72
Wilson Creek near Glen Ullin, ND (d)	06347100	41.4	1965-70
Heart River near Lark, ND	06348000	2,750	1946-95
Missouri River below Mandan, ND (d)	06349070	189,800	1966-94
Long Lake Creek below Long Lake near Moffit, ND (d)	06349275	700	1989-93
Cannonball River at New England, ND (d)	06349900	285	1979-81
Coal Bank Creek near Havelock, ND (d)	06349930	70	1975-83
Cannonball River below Bentley, ND (d)	06351000	1,140	1943-81
Cannonball River near Heil, ND (d)	06351500	1,340	1951-53
White Butte Fork Cedar Creek near Scranton, ND (d)	06351680	42.9	1965-95
Cedar Creek near North Lemmon, ND (d)	06352300	901	1959-63
Cannonball River near New Leipzig, ND (d)	---	1,180	1943-50

WATER RESOURCES DATA - NORTH DAKOTA, 2002

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
MISSOURI RIVER BASIN--Continued			
Timber Creek near Bentley, ND (d)	06352400	100	1978-81
Cedar Creek near Pretty Rock, ND (d)	06352500	1,340	1943-76
Hay Creek near Morristown, SD (d)	06352525	86	1991-92
Cannonball River near Timmer, ND (d)	06353500	3,670	1903-09, 1911-18, 1922, 1924, 1928-35
Beaver Creek at Linton, ND (d)	06354500	717	1949-89
Porcupine Ceek near Fort Yates, ND (d)	06354815	220	1991-99
One-Mile Creek near Fort Yates, ND (d)	06354825	19.8	1978-79
North Fork Grand River at Haley, ND	06355000	509	1908-17, 1945-95
Buffalo Creek Tributary near Gascoyne, ND (d)	06355310	15.7	1975-87
James River near Manfred, ND (d)	06467600	253	1958-94
Big Slough at Hamberg, ND (d)	06467900	60	1957-68, 1970-75
James River at New Rockford, ND (d)	06468000	714	1950-69
Juanita Lake Tributary near Grace City, ND (d)	06468190	94	1986-89
Kelly Creek below Niccum Reservoir near Bordulac, ND (d)	06468300	188	1986-89
James River near Pingree, ND (d)	06468500	1,670	1953-68
Pipestem Creek near Buchanan, ND (d)	06469500	758	1950-74
Pipestem Creek below Pipestem Dam, ND (d)	06469825	--	1985 (1)
Pilot Drain at Oakes, ND (d)	06470833	5.10	1972-82

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS

The following stations were discontinued as continuous-record surface-water quality stations prior to the current water year. Daily records of temperature, specific conductance or sediment were collected and published for the periods shown for each station.

[--, no data]

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Wild Rice River near Cayuga, ND	05051700	955	temperature	1958
Wild Rice River near Abercrombie, ND	05053000	2,080	temperature specific conductance	1967-81 1968-81
Red River of the North below Fargo, ND	05054020	6,820	temperature specific conductance	1973-82 1973-82
Sheyenne River above Harvey, ND	05054500	424	temperature	1954
Sheyenne River near Warwick, ND	05056000	2,070	temperature specific conductance	1951-53, 1955-62, 1964-80 1952-60, 1964-80
Big Coulee near Churchs Ferry, ND	05056400	2,510	temperature specific conductance	1983-89 1983-89
Channel A near Penn, ND	05056410	---	temperature specific conductance	1983-89, 1991 1983-89
Sheyenne River at Lisbon, ND	05058700	8,190	temperature specific conductance sediment	1956-81 1964-80 1976-79
Sheyenne River near Kindred, ND	05059000	8,800	temperature specific conductance sediment	1971-81 1976-81 1976-80
Red River of the North at Grand Forks, ND	05082500	30,100	temperature	1957-73
Red River of the North at Oslo, MN	05083500	31,200	temperature specific conductance	1974-78 1974-78
Red River of the North at Drayton, ND	05092000	34,800	temperature	1957-61, 1965-75
Pembina River at Walhalla, ND	05099600	3,350	temperature specific conductance sediment	1962-81 1965-81 1962-76
Red River of the North at Emerson, Manitoba	05102500	40,200	temperature specific conductance	1978-96 1978-96
Souris River near Sherwood, ND	05114000	8,940	sediment	1975-81
Souris River near Foxholm, ND	05116000	9,470	temperature specific conductance	1973-81 1973-81
Souris River near Verendrye, ND	05120000	11,300	temperature specific conductance	1973-83 1973-83
Deep River below Cut Bank Creek near Upham, ND	05123760	1,722	temperature specific conductance sediment	1974-81, 1989 1974-81 1989
Turtle River at Turtle River State Park near Arvilla, ND	05082625	311	temperature specific conductance	1993-97 1993-97
Souris River near Westhope, ND	05124000	16,900	temperature specific conductance sediment	1974-81 1974-81 1956-59, 1989
Missouri River near Williston, ND	06330000	164,500	temperature specific conductance	1952-65 1952-60, 1965

DISCONTINUED CONTINUOUS-RECORD SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Bear Den Creek near Mandaree, ND	06332515	74	temperature specific conductance	1969-71, 1989-91 1969-71
Little Missouri River at Marmarth, ND	06335500	4,640	temperature sediment	1952-54 1952-54
Little Missouri River at Medora, ND	06336000	6,190	temperature sediment	1947-49 1946-51
Little Missouri River near Watford City, ND	06337000	8,310	temperature specific conductance sediment	1972-81 1972-81 1947-48, 1972-76
Missouri River Below Garrison Dam, ND	06339000	181,400	temperature	1952-71
Knife River near Golden Valley, ND	06339500	1,230	temperature sediment	1964-65 1946-49, 1964-65
Knife River at Hazen, ND	06340500	2,240	temperature specific conductance	1975-82 1975-82
Missouri River near Hensler, ND	06340900	183,000	temperature	1967-77
Missouri River at Bismarck, ND	06342500	186,400	temperature specific conductance sediment	1967-75 1972-75 1972-81
Heart River near Richardton, ND	06345500	1,240	sediment	1946-52
Heart River near Mandan, ND	06349000	3,310	temperature specific conductance sediment	1972-76, 1978-82 1972-76, 1978-82 1972-76
Missouri River near Schmidt, ND	06349700	191,700	temperature	1967-75
Cannonball River at Regent, ND	06350000	580	temperature specific conductance sediment	1965-66 1965-66 1965-66
Cedar Creek near Pretty Rock, ND	06352500	1,340	sediment	1946-49
Cannonball River at Breien, ND	06354000	4,100	temperature specific conductance sediment	1972-82, 1991 1972-82 1972-76
North Fork Grand River at Haley, ND	06355000	509	temperature	1951-52
James River at LaMoure, ND	06470500	4,390	temperature specific conductance	1953-75, 1977-96 1976-96
James River at Oakes, ND	06470800	5,320	temperature specific conductance	1983-99 1983-99
James River at Dakota Lake Dam near Ludden, ND	06470875	5,480	temperature specific conductance	1983-99 1983-99
Pilot Drain at Oakes, ND	06470833	5.10	temperature specific conductance	1972-80, 1982 1972-80, 1982
James River at North Dakota-South Dakota State line	06470878	6,650	temperature specific conductance	1974-88 1974-88

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INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with many other agencies, obtains a large amount of data pertaining to the water resources of North Dakota each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the U.S. Geological Survey, the data are published annually in this report series entitled "Water Resources Data - North Dakota."

This report includes records of discharge, stage, and water quality for streams and contents, stage, and water quality for lakes and reservoirs. Specifically, it contains records of water discharge for 106 streamflow-gaging stations; stage only for 22 river-stage stations; contents and/or stage for 14 lake or reservoir stations; annual maximum discharge for 35 crest-stage stations; and water quality for 96 streamflow-gaging stations, 3 river-stage stations, 11 lake or reservoir stations, 8 miscellaneous sample sites on rivers, and 63 miscellaneous sample sites on lakes and wetlands. Locations of these stations are shown in figures 1 and 2 except for the miscellaneous water-quality sites. Data are included for 7 water-quality monitor sites on streams and for 2 precipitation-chemistry stations. 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 North Dakota.

This series of annual reports for North Dakota began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. For the l975-95 water years, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels. Beginning with the 1996 water year, ground-water levels and ground-water quality data have been published in a separate volume for North Dakota.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for North Dakota were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 5 and 6." For the 1961-70 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941-70 water years were published annually under the title "Quality of Surface Waters of the United States," and ground-water levels for the 1935-74 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Information Services, Box 25286, Denver, CO 80225-0286.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example this volume is identified as "U.S. Geological Survey Water-Data Report ND-2002-1." For archiving and general distribution, the reports for l971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephoning (701) 250-7406.

COOPERATION

The U.S. Geological Survey and agencies of the State of North Dakota have had cooperative agreements for the collection of streamflow records since 1903, ground-water levels since 1937, and water-quality records since 1946. Organizations that assisted in collecting the data in this report through cooperative agreement with the Survey are: North Dakota State Water Commission, Dale Frink, State Engineer; North Dakota Department of Health, Terry L. Dwelle, M.D., State Health Officer; Devils Lake Basin Joint Water Resource Board, Mike Connor, Director; Lower Heart River Water Resources District, W. S. Russell, Chairman; Morton County Water Resources District, A. C. Mork, Chairman; Oliver County Water Resources District, Duane Bueligen, Chairman; Red River Joint Water Resource Board, Donald Elston, Chairman; Red River Watershed Management Board, Ronald Osowski, Chairman; Southeast Cass Water Resources District, Thomas L. Fischer, Chairman; City of Minot, Curt Zimbleman, Mayor; North Dakota Department of Transportation, D. A. Sprynczynatyk, P.E., Director; Cass County Joint Water Resource District, Thomas L. Fischer, Chairman; Nelson County Water Resource District, Ben Varnson, Chairman; Three Affiliated Tribes, Tex G. Hall, Tribal Chairman; Spirit Lake Sioux Nation, Phillip G. Longie, Tribal Chairman.

Assistance with funds or services was given by the U.S. Army Corps of Engineers for 20 streamflow-gaging stations, 17 river-stage stations, 2 reservoir stations, 1 crest-stage gage, and water quality for 2 streamflow-gaging stations; the U.S. Bureau of Reclamation for 4 streamflow-gaging stations, 1 river-stage station, 1 lake station, and water quality for 2 streamflow-gaging stations and for 2 lake or reservoir stations; International Joint Commission of the U.S. State Department for 3 streamflow-gaging stations and 1 reservoir

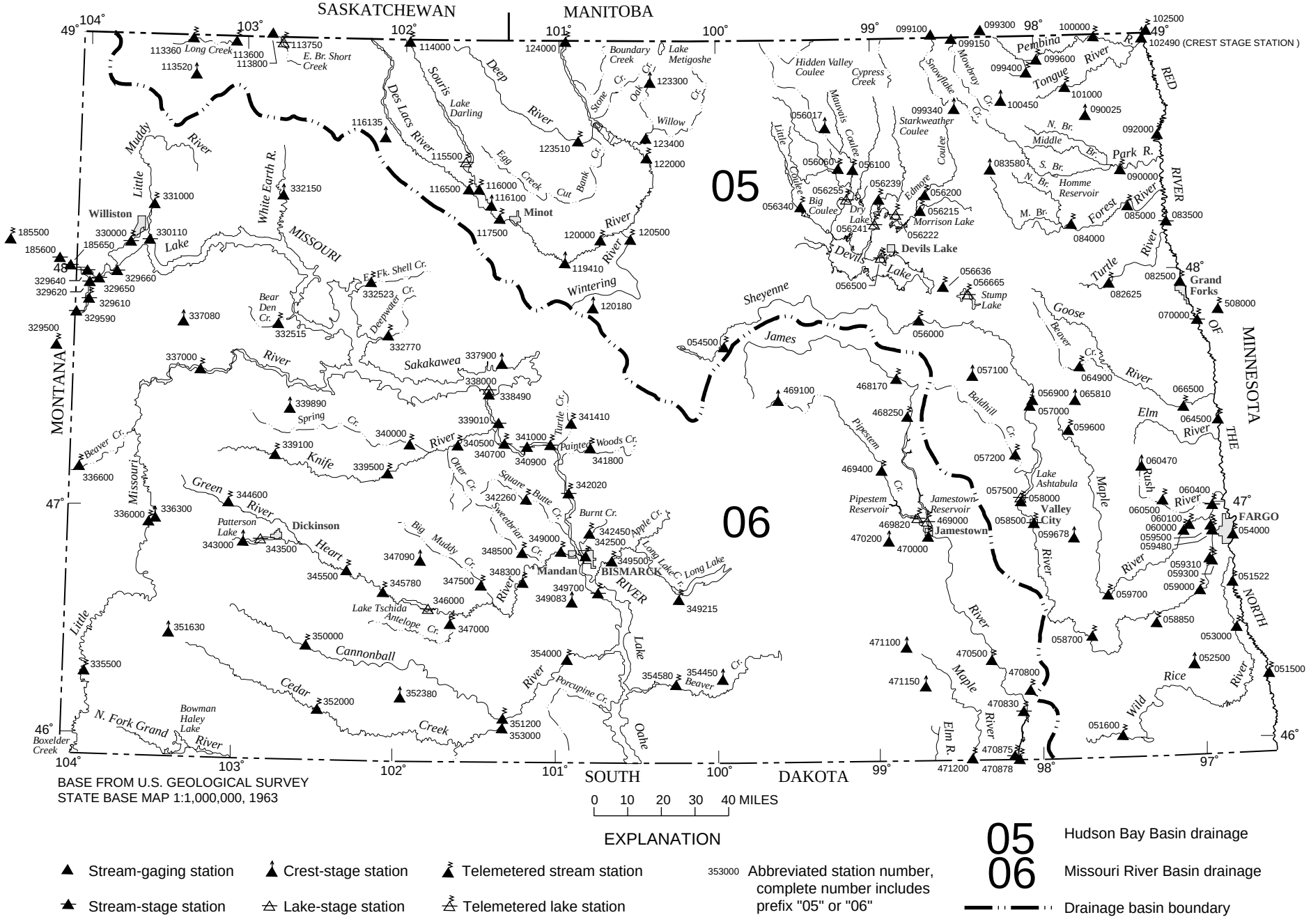

Figure 1. Location of active surface-water gaging stations.

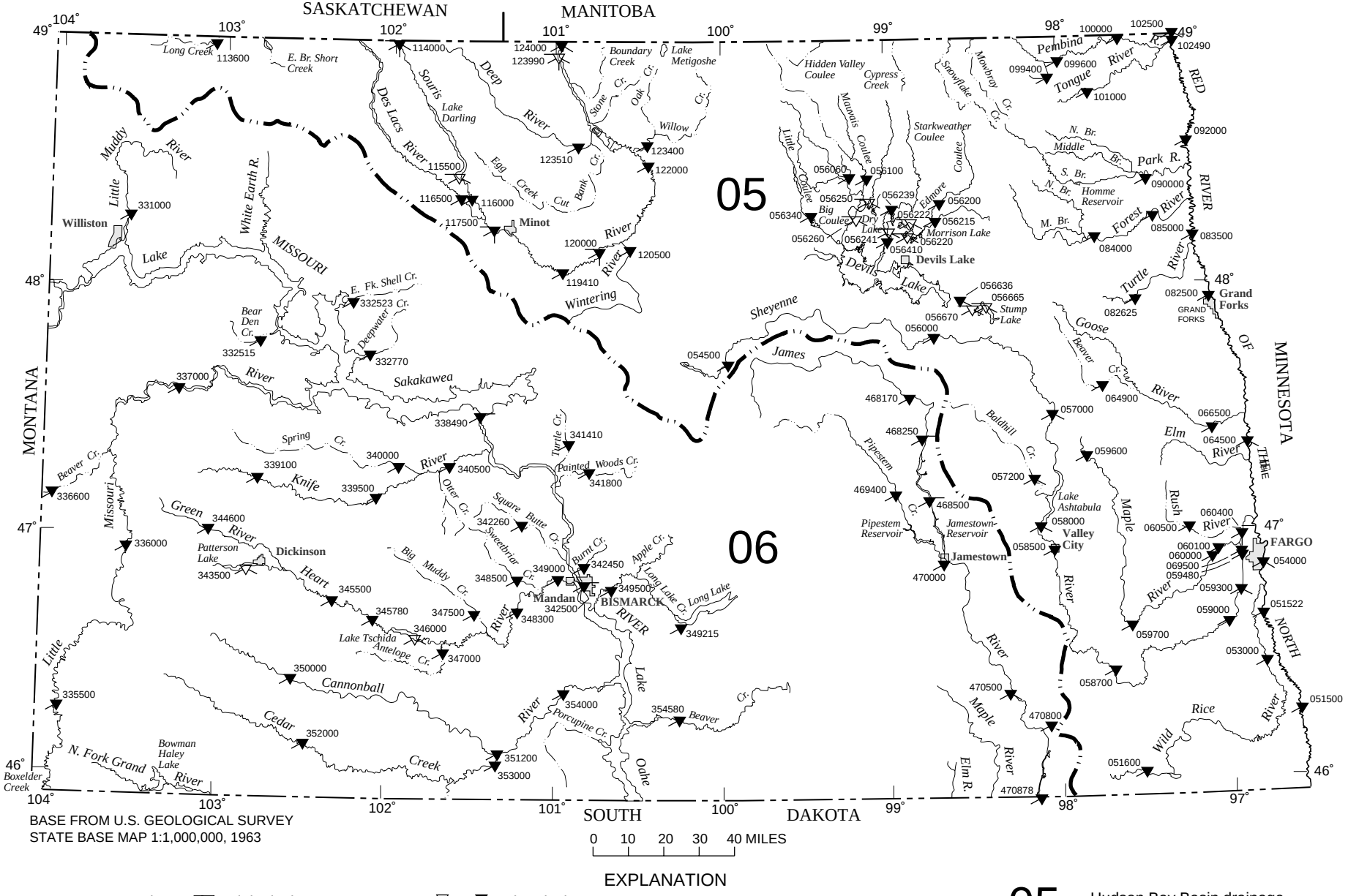

Figure 2. Location of active surface-water-quality stations.

station; the U.S. Fish and Wildlife Service for 7 streamflow-gaging stations and water quality for 2 reservoir stations; and the U.S. Forest Service for 1 streamflow-gaging station.

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

Organizations that provided data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Climate

In North Dakota, normal annual precipitation ranges from about 14 inches in the northwestern part of the State to about 22 inches in the southeastern part of the State (Owenby, J.R., and Ezell, D.S., 1992, Monthly station normals of temperature, precipitation, and heating and cooling degree days, 1961-90, North Dakota: U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Environmental Satellite, Data, and Information Service, National Climatic Data Center, Asheville, North Carolina, Climatography of the United States, No. 81). Three-fourths of this precipitation occurs during April through September. The greatest normal monthly precipitation for the entire State occurs during June. Normal, as used in reference to meteorological data in this report, is a mean value for the reference period 1961 through 1990. Meteorological data were obtained from publications of the National Climatic Data Center (U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic Data Center, 2001, 2002, Climatological data, North Dakota: Asheville, North Carolina, v. 110, no. 10-12, and v. 111, no. 1-9).

North Dakota is divided into nine climatological divisions (fig. 3). Precipitation during water year 2002 ranged from about 4.9 inches (30 percent) less than normal in the south-central division to about 4.2 inches (21 percent) greater than normal in the east-central division. A comparison of monthly precipitation for water year 2002 to normal monthly precipitation for 1961-90 for the nine climatological divisions in North Dakota is shown in figure 3. Data shown in figure 3 are means of monthly precipitation for reporting stations within each climatological division.

Statewide monthly precipitation was less than normal from October through May and ranged from 16 percent less than normal in October to 68 percent less than normal in February. The largest deficit was in May when statewide precipitation was 1.0 inch less than the normal 2.3 inches. Precipitation was less than normal in all nine climatological divisions in November, February, April, and May.

During June, when statewide precipitation usually is greatest, five of the nine climatological divisions reported greater-than-normal precipitation. The central, southwest, south-central, and southeast divisions had less-than-normal precipitation. Statewide monthly mean precipitation was about 0.6 inch (20 percent) greater than normal, and total precipitation ranged from about 1.4 inches (46 percent) less than normal in the south-central division to about 3.2 inches (105 percent) greater than normal in the northeast division.

Statewide monthly mean precipitation during July was about 0.7 inch (27 percent) greater than normal. Total precipitation ranged from about 1.6 inches less than normal in the north-central division to about 3.4 inches (118 percent) greater than normal in the east-central division.

Statewide monthly mean precipitation during August was about 1.0 inch (46 percent) greater than normal, and total precipitation ranged from about 0.4 inch (23 percent) less than normal in the southwest division to about 3.3 inches (137 percent) greater than normal in the northeast division.

During September, all nine climatological divisions reported less-than-normal precipitation. Statewide monthly mean precipitation was about 0.7 inch (41 percent) less than normal.

Temperatures during October were slightly below normal statewide. November through February was particularly mild and had statewide monthly mean temperatures that averaged about 5°F to 10°F above normal. Statewide monthly mean temperature during March was about 16°F (10°F below normal) and April temperatures averaged about 38°F (4°F below normal). The influence of temperatures on streamflow in North Dakota is diminished substantially after the snowpack has melted, and temperatures have little effect on streamflow from May through September.

Streamflow

The largest mean monthly discharge of North Dakota rivers generally is coincident with snowmelt runoff. Because above-freezing temperatures normally occur earlier in the southwestern part of the State than in the northeastern part of the State, snowmelt runoff usually begins first on the Missouri River tributaries in southwestern North Dakota and progresses from southwest to northeast across the State. Hydrographs of mean monthly discharge (fig. 4) for the period of record for selected streams within each of the climatological divisions verify this pattern. For example, the largest mean monthly discharges for the period of record for Bear Den Creek near Mandaree, which is in the west-central division, and for Cedar Creek near Haynes, which is in the southwest division, occur in March, whereas the largest mean monthly discharges for the remaining streamflow-gaging stations occur in April.

Although many inferences about hydrologic conditions in the State can be made from precipitation (fig. 3) and streamflow (fig. 4) data, sound hydrologic judgment should be used. Variability of rainfall intensity and distribution should be considered when making conclusions about hydrologic response to rainfall, especially for small basins. Problems also may occur because different reporting periods are used in figures 3 and 4. Normal monthly precipitation is computed

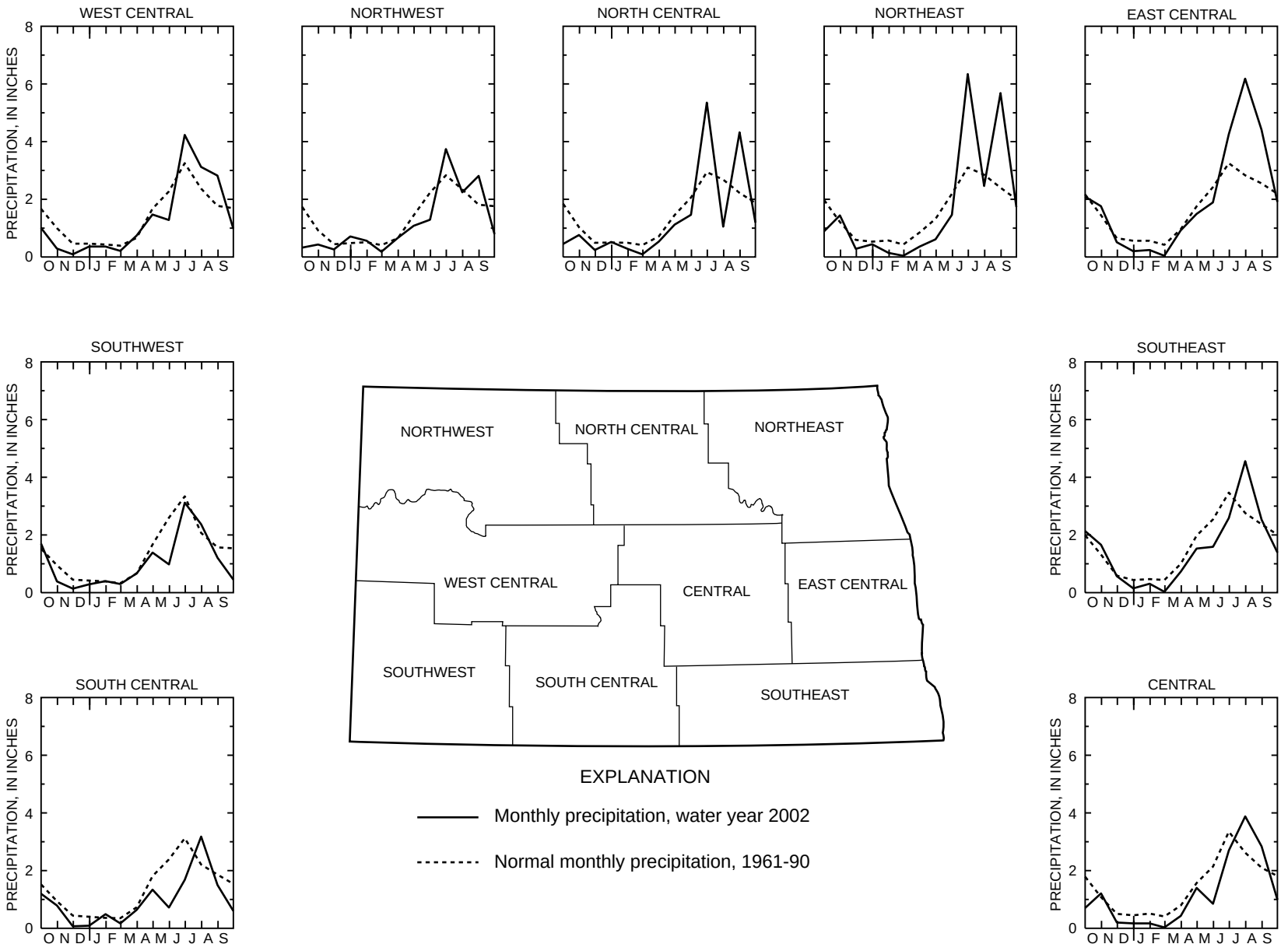

Figure 3. Comparison, by climatological division, of monthly precipitation, water year 2002, to normal monthly precipitation, 1961-90.

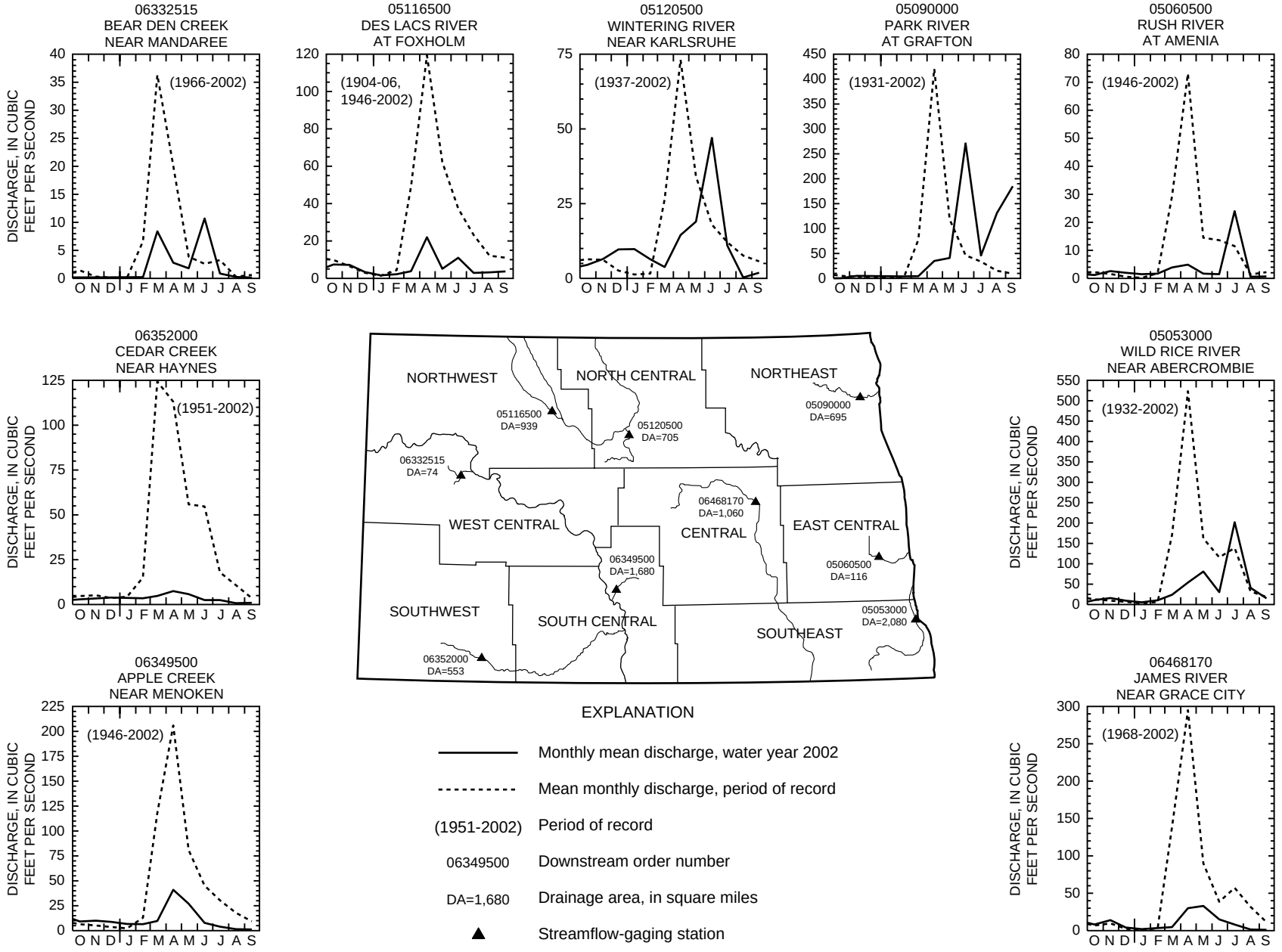

Figure 4. Comparison of monthly mean discharge during water year 2002 to mean monthly discharge for the period of record.

using data for a 30-year period (1961-90), but mean monthly discharge is computed using data for the period of record at each streamflow-gaging station--57 years (1946-2002) in the case of Apple Creek near Menoken.

According to the National Weather Service "Weekly Palmer Drought Index Report" (written commun., 2002), western North Dakota experienced drought conditions at the beginning of the water year while central and eastern North Dakota were moist. Conditions were classified as mild drought in the southwest and northwest climatological divisions; as extremely moist in the central division; and as very moist in the southeast, east-central and northeast divisions.

Because of less-than-normal precipitation from October through February and greater-than-normal temperatures from November through February, there was very little accumulation of snow and little potential for spring snowmelt flooding anywhere in the State. By early March the drought had intensified significantly. Conditions were classified as moderate drought in three western climatological divisions, as incipient drought in the central and south-central divisions, and as mild drought in the remaining divisions.

Normal or above normal March temperatures generally are coincident with spring breakup. However, the March temperatures averaged 10°F below normal statewide and no significant runoff occurred.

Spring peak discharges were much less than normal throughout North Dakota (fig. 4). Lack of precipitation in the southwest climatological division resulted in the annual peak discharge for Cedar Creek near Haynes to be the lowest recorded in the 52-year period of record (fig. 4), and the annual mean discharge to be the fourth lowest recorded for the period of record.

By July the drought was classified as extreme in the southwest climatological division (Weekly Palmer Drought Index Report, written commun., 2002). According to the "Monthly Report of River and Flood Conditions" (National Weather Service, written commun., 2002), "Governor Hoeven issued a state fire emergency declaration on May 30, 2002, and a state drought emergency declaration on July 1, 2002. . . . Approximately 12,300 acres have burned. The entire town of Shields was destroyed and the town of Porcupine had to be evacuated."

Although many summer peaks, particularly in the eastern part of the State, exceeded the snowmelt peaks, no peaks approached the peaks of record. Summer peaks that exceeded snow-melt peaks are shown in figure 4 in the hydrographs for Bear Den Creek near Mandaree, Wintering River near Karlsruhe, Park River at Grafton, Rush River at Amenia, and Wild Rice River near Abercrombie.

The Devils Lake Basin is a 3,810-square-mile closed basin adjacent to the headwaters of the Sheyenne River. Geologic evidence indicates that, in the past, water flowed from the Devils Lake Basin into the Sheyenne River. However, since 1867 when water levels of Devils Lake first were recorded, Devils Lake has not flowed into the Sheyenne River Basin and the level of the lake has varied greatly in response to wet and dry periods (fig. 5). From 1867 to 1940, the water level generally declined from a maximum of 1,438.4 feet above sea level in 1867 to a minimum of 1,400.9 feet above sea level in 1940. After 1940, the water level generally increased except during 1956-68 and 1987-93. The decline from 1987 to 1993 occurred as a result of a drought in the basin. From 1993 to 1999, the water level increased each year as a result of greater-than-normal precipitation and runoff in the basin. During 2000, for the first time since 1993, the maximum water level did not exceed the maximum from the previous year. In water year 2001, Devils Lake reached a new period-of-record maximum of 1,448 feet on July 22. However, during 2002 the lake did not set a new maximum level.

As Devils Lake rises, the surface area increases and requires greater volumes of inflow for each incremental increase in elevation. For example, at an elevation of 1,422.4 feet (the lake level at the end of the 1987-92 drought), the surface area of the lake is about 44,000 acres, whereas at an elevation of 1,447 feet, the surface area of the lake is about 124,000 acres.

During the 2001 water year, Devils Lake flowed over the divide into Stump Lake for the first time since records have been kept. The elevation of the divide is 1,446.5 feet (James Landenberger, North Dakota State Water Commission, oral commun., 2002). Although Stump Lake increased more than a foot during the water year, it remained almost 35 feet lower than Devils Lake.

Chemical Quality of Streamflow

Chemical quality of streamflow at any particular site is dependent upon many factors, including source of streamflow, composition of soil over which water flows, location, and time of year; therefore, the quality of streamflow varies considerably across the State. Chemical quality of streamflow also is dependent upon the volume of streamflow. During periods of low flow, most of the flow is derived from ground-water inflow, which is mineralized, and the resulting streamflow has large dissolved-solids concentrations. During periods of high flow, most of the flow is derived from snowmelt or precipitation runoff, which is less mineralized, and the resulting streamflow has small dissolved-solids concentrations.

Five stations were selected to show the water-quality variability in rivers throughout the State. Specific conductance, an indicator of dissolved solids in water, is used to show the variability among these stations and among months at a given station. The mean, maximum, and minimum specific conductance for the period of record and the specific conductances measured during the 2002 water year for each station are shown in table 1.

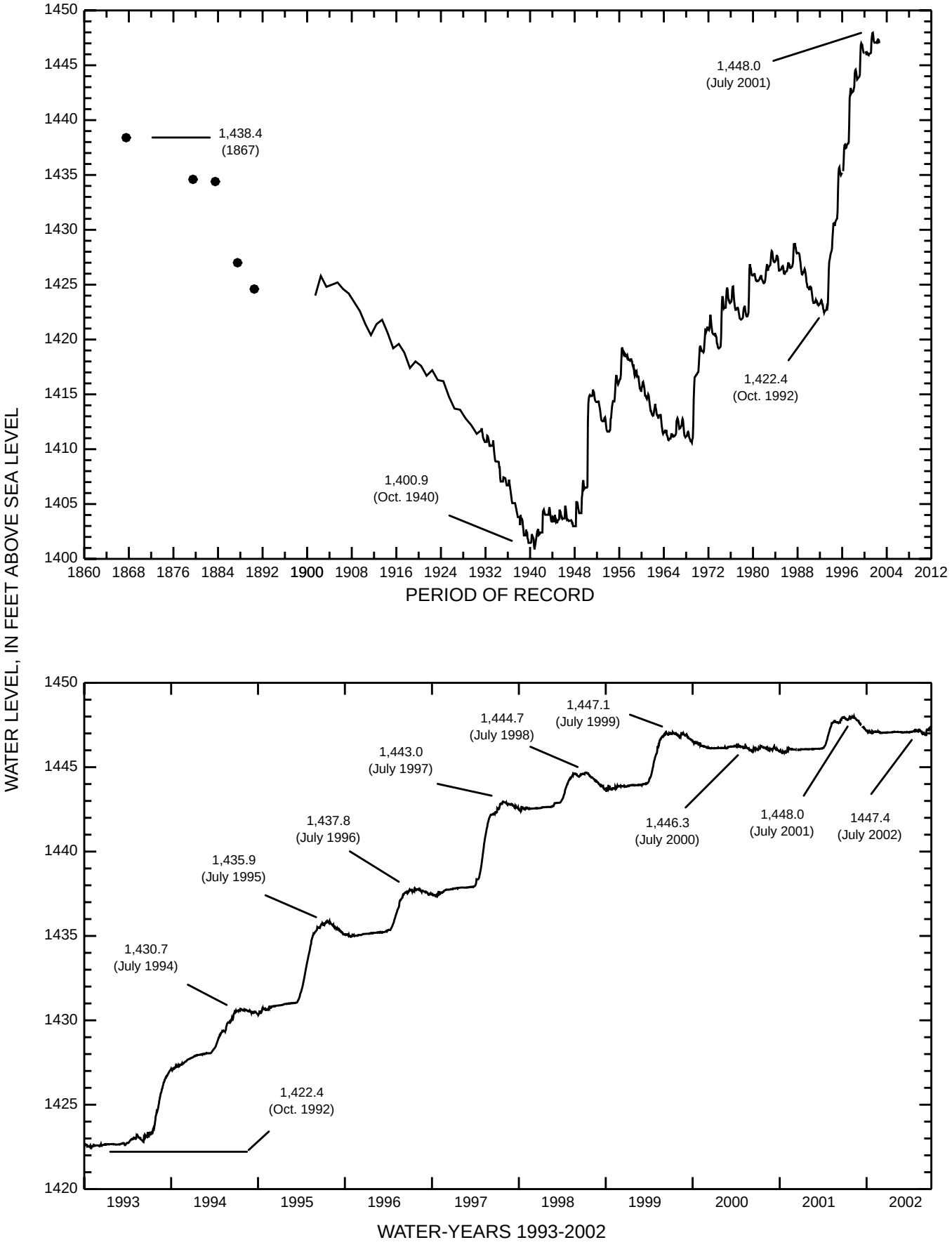

Figure 5. Devils Lake water levels for the period of record and for water years 1993-2002.

Table 1. Statistical summary of specific-conductance values for the period of record and listing of measured specific-conductance values for water year 2002

[Specific-conductance values are in microsiemens per centimeter at 25 degrees Celsius; --, no data]

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Water year 2002	Period of record
05082500 Red River of the North at Grand Forks (period of record, water years 1949, 1956-2002)														
Mean	524	624	638	600	588	512	462	577	555	501	519	510	548	535
Maximum	700	925	985	1,040	900	910	757	856	829	675	753	674	830	1,040
Minimum	399	440	468	275	400	305	200	325	348	280	266	340	360	200
Number of values	72	45	50	55	52	78	181	98	81	86	67	56	8	921
Measured values for water year 2002	534	830	--	572	585	--	453 496	--	360	--	554	--	--	--
05114000 Souris River near Sherwood (period of record, water years 1970, 1972-2002)														
Mean	1,238	1,382	1,631	1,761	1,790	1,132	788	925	1,049	1,088	1,098	1,100	1,156	1,172
Maximum	2,240	2,460	2,230	2,770	2,920	3,500	2,510	2,460	1,530	1,650	2,060	1,960	1,510	3,500
Minimum	710	925	1,250	1,280	540	200	277	345	310	540	128	720	860	128
Number of values	38	37	14	27	31	52	73	35	42	37	42	24	14	452
Measured values for water year 2002	860	1,200	--	1,480	1,440	1,070	1,270 1,030	1,060	920 1,010 1,050	1,510	1,260	1,020	--	--
06337000 Little Missouri River near Watford City (period of record, water years 1972-2002)														
Mean	2,027	2,492	2,603	2,541	1,397	987	1,542	1,590	1,537	1,735	1,470	1,944	2,052	1,663
Maximum	3,100	4,000	5,000	3,600	3,020	2,000	2,700	3,100	2,780	3,000	2,550	2,570	3,110	5,000
Minimum	720	814	1,720	1,290	640	400	515	780	750	695	680	900	1,330	400
Number of values	85	52	22	15	8	100	69	67	69	40	121	16	8	664
Measured values for water year 2002	2,050	2,390	--	3,110	--	--	1,490	2,280	1,560	1,330	2,210	--	--	--
06354000 Cannonball River at Breien (period of record, water years 1950, 1971-2002)														
Mean	1,610	1,972	2,531	2,412	1,793	858	1,262	1,961	1,965	1,476	1,423	1,573	1,502	1,666
Maximum	2,400	3,070	3,290	3,800	4,860	3,100	2,260	2,930	3,020	3,000	2,800	2,300	2,210	4,860
Minimum	650	1,240	284	680	190	190	300	481	288	440	500	730	672	190
Number of values	29	39	22	36	33	60	61	49	69	29	52	47	8	526
Measured values for water year 2002	1,710	--	2,210	--	--	--	970 1,360	1,900	--	672	1,420	1,770	--	--
06470500 James River at LaMoure (period of record, water years 1957-2002)														
Mean	853	962	1,171	1,482	1,318	632	559	802	799	782	752	870	1,093	849
Maximum	1,210	1,300	1,550	2,580	1,780	1,350	940	1,210	1,250	1,280	1,180	1,210	1,250	2,580
Minimum	480	540	890	340	700	185	160	500	170	170	485	480	840	160
Number of values	38	25	11	32	20	41	61	36	31	26	52	27	3	400
Measured values for water year 2002	--	--	--	--	--	--	--	1,190	1,250	840	--	--	--	--

Specific conductance is used as an indicator of the suitability of water for irrigation and other uses. The U.S. Salinity Laboratory (U.S. Salinity Laboratory Staff, 1954, Diagnosis and improvement of saline and alkali soils: U.S. Department of Agriculture Handbook 60, 160 p.) has developed an index using specific conductance as an indicator of salinity hazard for irrigation water. The salinity hazard and corresponding specific conductance are as follow:

Salinity hazard	Specific conductance (microsiemens per centimeter at 25 degrees Celsius)
Low	Less than 250
Medium	250 to 750
High	750 to 2,250
Very high	2,250 to 5,000

In the United States, the Red River of the North drains all of eastern North Dakota, much of northwestern Minnesota, and a small part of northeastern South Dakota. Of the five stations listed in table 1, the Red River of the North at Grand Forks (05082500) has the smallest mean monthly specific-conductance values for each month. The smaller mean values are caused partly by more precipitation occurring in the Red River of the North Basin, especially in Minnesota, than in other parts of North Dakota. The salinity hazard of stream water for irrigation use during the irrigation season (April through October) was medium in the months when measurements were made.

The Souris River upstream of Sherwood drains about 9,000 square miles of southeastern Saskatchewan, Canada, and a small part of northwestern North Dakota. Generally, the Souris River near Sherwood (05114000) has larger specific-conductance values than the Red River of the North and the James River but smaller specific-conductance values than the Little Missouri River and the Cannonball River. The salinity hazard of stream water for irrigation use during the irrigation season (April through October) was high.

The Little Missouri River drains parts of southwestern North Dakota, northwestern South Dakota, northeastern Wyoming, and southeastern Montana. The Cannonball River drains parts of southwestern North Dakota and northwestern South Dakota. Of the five stations listed in table 1, the Little Missouri near Watford City (06337000) and the Cannonball River at Breien (06354000) have the largest mean specific-conductance values for the period of record. The salinity hazard of stream water for irrigation use during the irrigation season (April through October) generally was high in the months when measurements were made for each of these stations. However, in August the salinity hazard on the Cannonball River at Breien was medium.

The James River drains east-central North Dakota. Flow in the James River Basin is regulated by the Jamestown and Pipestem Reservoirs, which are used primarily for flood control. High flows from snowmelt and rainfall are stored in the reservoirs and released throughout the summer. Specific-conductance values generally are smallest from March through October during high flow or when the stored runoff water is released. The salinity hazard of stream water for irrigation use during the irrigation season (April through October) was high in the months when measurements were made.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the streamflow representative of undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities. At 10 of these sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program can be found at http://water.usgs.gov/hbn/.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program can be found at http://water.usgs.gov/nasqan/.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of

atmospheric deposition generated from a network of 225 precipitation chemistry monitoring sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as all data from the individual sites, can be found at http://bqs.usgs.gov/acidrain/.

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 59 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program can be found at http://water.usgs.gov/nawqa/.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for water year 2002 that began October 1, 2001, and ended September 30, 2002. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data and stage, content, and water-quality data for lakes and reservoirs. The locations of the stations where the data were collected are shown in figures 1 and 2. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations is based on geographic location. Generally, the "downstream-order" system is used for regular surface-water stations and the "latitude-longitude" system is used for surface-water stations where only miscellaneous measurements are made.

Downstream-Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention shows which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. 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 eight-digit number for each station, such as 06342500, which appears just to the left of the station name, includes the two-digit Part number "06" plus the six-digit downstream-order number "342500." The Part number designates the major river basin; for example, Part "06" is the Missouri River Basin. All records for a drainage basin encompassing more than one State can be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially)

identify the sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description (fig. 6).

Miscellaneous Site Numbers

In this report, miscellaneous sites also are numbered according to a system based on the location in the public-land classification of the U.S. Bureau of Land Management. This system is used to identify and locate miscellaneous measurement sites on maps that use the public-land classification of the U.S. Bureau of Land Management. The system is illustrated in figure 7. The first number denotes the township north of a base line, the second number denotes the range west of the fifth principal meridian, and the third numeral denotes the section in which the site is located. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre tract). For example, site 139-049-15ADC is in the $SW^1/_4SE^1/_4NE^1/_4$ sec.15, T.139 N., R.049 W. Consecutive terminal numbers are added if more than one site is recorded within a 10-acre tract.

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records. Locations of all complete-record and crest-stage partial-record stations for which data are given in this report are shown in figure 1.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with electronic data loggers that store data on an electronic chip, or with satellite data platforms that store data electronically and transmit the data periodically via satellite to a computer based data processing facility. Measurements of discharge are made with current meters using methods adopted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, Water-Supply Paper 2175, and the U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI's), Book 3, Chapter A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other

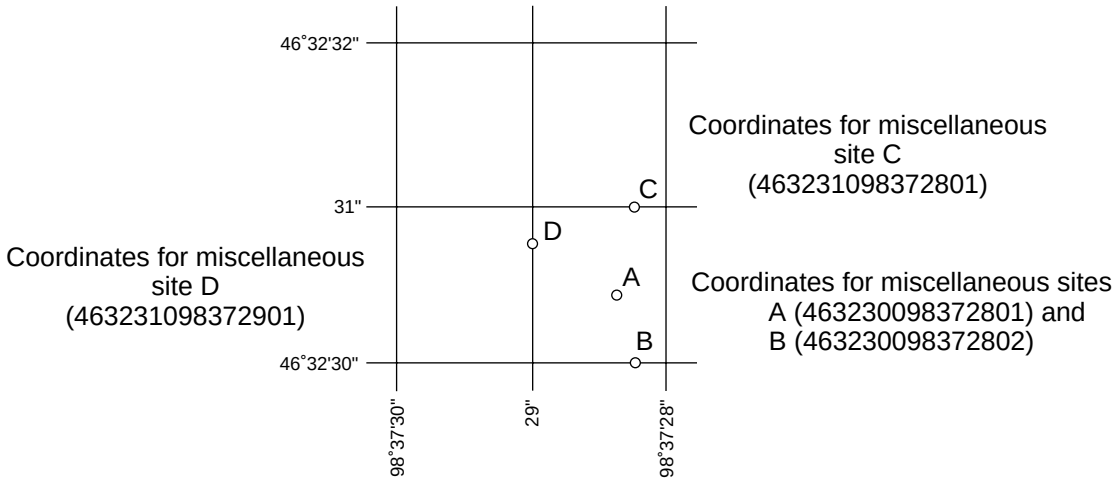

Figure 6. System for numbering miscellaneous sites (latitude and longitude).

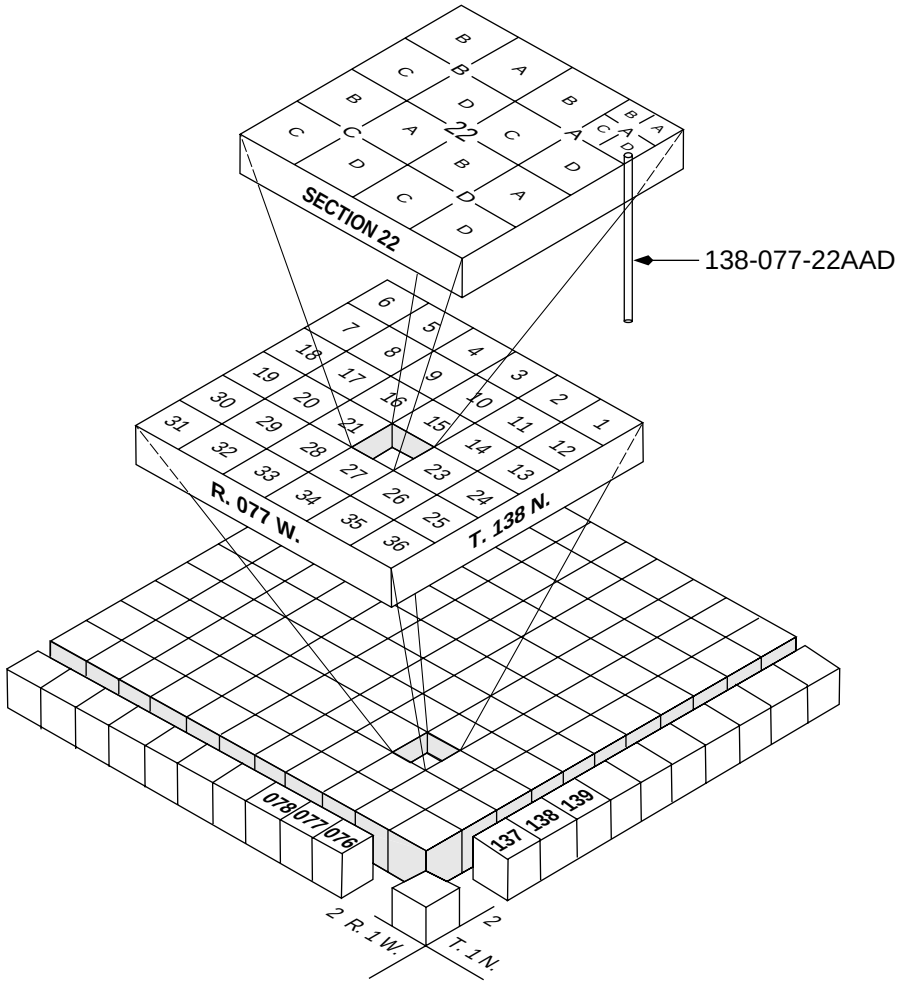

Figure 7. System for numbering miscellaneous sites (township and range).

information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

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 from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts: the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration.

Station manuscript

The manuscript provides, under various headings, descriptive information such as station location, period of record, historical extremes outside the period of record, record accuracy, and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that flow at it can reasonably be considered equivalent to flow at the present station.

REVISED RECORDS.--Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to sea level (see Definition of Terms), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily discharge will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and

the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made in the U.S. Geological Survey's distributed data system, NWIS, and subsequently to its web-based National data system, NWISWeb [http://water.usgs.gov/nwis/nwis]. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure the most recent updates. Updates to NWISWeb are currently made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District office (address given on the back of the title page of this report) to determine if the published records were ever revised after the station was discontinued. Of course, if the data for a discontinued station were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs is now presented in the tabular summaries following the discharge table or in the REMARKS paragraph. No changes have been made to the data presentations of lake contents.

Data table of daily mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second for the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"); or in inches (line headed "IN."); or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS _____-_____, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS _____-_____," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (See line headings below.), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may

not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations, the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

MAXIMUM PEAK FLOW.--The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.--The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports use the following unit of measurement in presenting annual runoff data:

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

10 PERCENT EXCEEDS.--The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record 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. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote (e-Estimated) or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) The stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of their true values; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables is on file in the North Dakota District office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the office whose address is given on the back of the title page of this report.

Records of Surface-Water Quality

Records of surface-water quality in this report represent a variety of data types and measurement frequencies. Whenever possible, records of surface-water quality are obtained at or near stream-gaging stations because interpretation of surface-water quality and seasonal variation is enhanced by knowledge of corresponding discharge data. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 2.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where water-quality data are collected systematically over a period of years, but frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location where samples are collected one time or intermittently to provide better areal coverage for defining water-quality conditions over a broad area in a river basin.

A careful distinction needs to be made between "continuing records," as used in this report, and "continuous recordings," which refers to a continuous graph, a series of discrete values punched at short intervals on a paper tape, or electronically stored data from a data logger or satellite data platform. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 2.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence.

Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, specific conductance, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chapter D2; Book 3, Chapter A1, A3, and A4; and Book 9, Chapters A1-A9. These references are listed in the "Publications on Techniques of Water-Resources Investigations" section of this report. These methods are consistent with ASTM standards and generally follow ISO standards.

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. All samples obtained for the National Stream Quality Accounting Network

(see Definition of Terms) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

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 U.S. Geological Survey North Dakota District office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. Large streams have a small diurnal 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, minimum, and mean temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are published with the water-quality records for each surface-water station in this report.

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. 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 and in predicting long-term sediment-discharge characteristics of the stream. Records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Analyses

Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (µg/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Present data above the µg/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis.

Samples for biochemical-oxygen demand (BOD) and samples for indicator bacteria are analyzed locally. Sediment samples are analyzed in the U.S. Geological Survey laboratory in Iowa City, Iowa. Al1 other samples are analyzed in the U.S. Geological Survey laboratory in Arvada, Colo., the North Dakota State Water Commission laboratory in Bismarck, N. Dak., or the North Dakota Department of Health laboratory in Bismarck, N. Dak. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the U.S. Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperating agencies, and extremes for parameters measured on a daily basis. Tables of chemical, physical, biological, and radiochemical data obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the stream-gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge"; same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge"; same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters

measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor, temperature monitor, pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the U.S. Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's data system, National Water Information System (NWIS), and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

ACCESS TO USGS WATER DATA

The U.S. Geological Survey provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed at:

http://water.usgs.gov

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District offices (See address on the back of the title page.)

DEFINITION OF TERMS

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

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

Annual runoff is the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters.

Cubic foot per second per square mile [CFSM, $(ft^3/s)/mi^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

Inch (IN., in.) as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were uniformly distributed on it.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while 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.

Fecal coliform bacteria are bacteria that are present in the intestine 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 that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 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 in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Non-ideal colony count (K) is a remark code used in reporting bacteria densities when plate counts fall outside of an ideal range. The lower limit of 20 colonies is set as the number below which statistically valid results become increasingly questionable. The upper limit, which differs according to type of bacteria, represents numbers above which interference from colony crowding, deposition of extraneous material, and other factors appear to result in increasingly questionable results.

Base flow is flow in a channel sustained by ground-water discharge in the absence of direct runoff.

Bed material is the sediment mixture 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.

Bottom material: See "Bed material."

Cells/volume refers to the number of plankton cells or natural units counted using a microscope and grid or counting cell. Results are generally reported as cells or units per milliliter.

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 BOD 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 green pigments in plants.

Color unit is produced by 1 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.

Continuous-record station is a site that meets either of the following conditions:

1. Stage or streamflow are recorded at some interval on a continuous basis. The recording interval is usually 15 minutes, but may be less or more frequent.

2. Water-quality, sediment, or other hydrologic measurements are recorded at least daily.

Control designates a feature in the channel downstream from a gaging station that physically influences the water-surface elevation and thereby determines the stage-discharge relation at the station. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, 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 saltwater.

Crest-stage gage is a device for obtaining the elevation of the flood crest of a stream.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second, 448.8 gallons per minute, or 0.02832 cubic meters per second.

Cubic foot per second-day (CFS-DAY, Cfs-day, $[(ft^3/s)/d]$) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.9835 acre-feet, 646,317 gallons, or 2,447 cubic meters.

Daily record is a summary of streamflow, sediment, or water-quality values computed from data collected with sufficient frequency to obtain reliable estimates of daily mean values.

Daily record station is a site for which daily records of streamflow, sediment, or water-quality values are computed.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (See also "Gage datum," "Land-surface datum," and "National Geodetic Vertical Datum of 1929)

Discharge, or flow, is the volume of water (or more broadly, volume of fluid including solid- and dissolved-phase material), that passes a given point in a given period of time.

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days in a year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

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

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

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

Dissolved oxygen (DO) content of water in equilibrium with air is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved solids, with small temperature changes having the more significant offset. Photosynthesis and respiration may cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During that analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to reflect the change. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Drainage area of a site on a stream is that area, measured in a horizontal plane, that has a common outlet at the site for its surface runoff. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that is occupied by a drainage system with a common outlet for its surface runoff . (see "Drainage area")

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum itself is not an actual physical object, the datum usually is defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation referenced to the 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 site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

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 the equivalent concentration of calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the U.S. Geological Survey. Each hydrologic unit is identified by an 8-digit number.

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

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

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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

Miscellaneous site, or miscellaneous station, is a site where streamflow, sediment, and/or water-quality data are collected once, or more often on a random or discontinuous basis.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations**,** it does not necessarily represent local mean sea level at any

particular place. *See NOAA web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88*

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of Formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

Normal as related to meteorological data published by the National Weather Service are computed as the average value of a meteorological element over a time period. Effective January 1, 1993, the average period is 1961 to 1990.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediments. May be reported as dissolved organic carbon (DOC), suspended organic carbon (SOC), or total organic carbon (TOC).

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method utilizes the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, Sedigraph) 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 the recommendation 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	0.004 - 0.062	Sedimentation
Sand	0.062 - 2.0	Sedimentation/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 matter 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 or **percent of total** 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, weight, or volume.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 are termed "acidic," and solutions with a pH greater than 7 are termed "basic." Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

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).

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or non-exceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the non-exceedances of the $7Q_{10}$ occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

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

Sea level or "mean sea level" was formerly used in this series of reports to refer to the National Geodetic Vertical Datum of 1929 (NGVD of 1929).

Sediment is solid material that is transported by, suspended in, or deposited from water. It originates mostly from disintegrated rocks; it also 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.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along or very close to the bed. In this report, bed load is considered to consist of particles in transit from the bed to an elevation equal to the top of the bed-load sampler nozzle (usually within 0.25 ft of the streambed).

Bed-load discharge (tons per day) is the quantity of sediment moving as bed load, reported as dry weight, that passes a cross section in a given time.

Suspended sediment is the sediment that 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). The entire sample is used for the analysis.

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

Suspended-sediment discharge (tons/day) is the quantity of sediment moving in suspension, reported as dry weight, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027.

Suspended-sediment load is a term that refers to material in suspension. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with either suspended-sediment discharge or concentration.

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, reported as dry weight, that passes a cross section in a given time.

Total sediment load or total load is a term that refers to the total sediment (bed load plus suspended-sediment load) that is in transport. The term needs to be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It is not synonymous with total sediment discharge.

Seven-day 10-year low flow (7Q10, $7Q_{10}$) is the minimum flow averaged over 7 consecutive days that is expected to occur on average, once in any 10-year period. The 7Q10 has a 10-percent chance of occurring in any given year.

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

Solute is any substance 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 microsiemens 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 from 55 to 75 percent of the specific conductance (in microsiemens). 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: See “Gage height.”

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

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.

Surface area of a lake or impoundment is that area encompassed by the boundary of the lake or impoundment as shown on U.S. Geological Survey topographic maps, or on other available maps or photographs. The computed surface areas reflect the water levels of the lakes or impoundments at the times when the information for the maps or photographs was obtained.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the 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 suspended-sediment sample that is retained on a 0.45-micrometer 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 are 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 suspended-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. 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.

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table headings and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

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

Tons per day (T/DAY, tons/d) is the rate representing a mass of 1 ton of a constituent in streamflow passing a cross section in 1 day. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

Total is the total amount of a given constituent in a representative 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 suspended-sediment mixture and that the analytical method determined all of the constituent in the sample.)

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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 refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

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

Turbidity is a measurement of the collective optical properties of a water sample that cause light to be scattered and absorbed rather than transmitted in straight lines; the higher the intensity of scattered light, the higher the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU) or Formazin turbidity units (FTU) depending on the method and equipment used.

Water level is the water-surface elevation or stage of the free surface of a body of water above or below any datum (see "Gage height"), or the surface of water standing in a well, usually indicative of the position of the water table or other potentiometric surface.

Water table is the surface of a ground-water body at which the water is at atmospheric pressure.

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the

calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2001, is called the "2001 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976.)

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.

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

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

The USGS publishes a series of manuals titled the "Techniques of Water-Resources Investigations" that describe procedures for planning and conducting specialized work in water-resources investigations. The material in these manuals is grouped under major subject headings called books and is further divided into sections and chapters. For example, section A of book 3 (Applications of Hydraulics) pertains to surface water. Each chapter then is limited to a narrow field of the section subject matter. This publication format permits flexibility when revision or printing is required.

Manuals in the Techniques of Water-Resources Investigations series, which are listed below, are available online at http://water.usgs.gov/pubs/twri/. Printed copies are available for sale from the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (an authorized agent of the Superintendent of Documents, Government Printing Office). Please telephone "1-888-ASK-USGS" for current prices, and refer to the title, book number, section number, chapter number, and mention the "U.S. Geological Survey Techniques of Water-Resources Investigations." Other products can be viewed online at http://www.usgs.gov/sales.html, or ordered by telephone or by FAX to (303)236-4693. Order forms for FAX requests are available online at http://mac.usgs.gov/isb/pubs/forms/. Prepayment by major credit card or by a check or money order payable to the "U.S. Geological Survey" is required.

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Section D. Water Quality

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, chap. D1. 1975. 65 p.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI book 1, chap. D2. 1976. 24 p.

Book 2. Collection of Environmental Data

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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, chap. D1. 1974. 116 p.

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3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A7. 1968. 28 p.

3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A8. 1969. 65 p.

3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI book 3, chap. A9. 1989. 27 p.

3-Al0. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A10. 1984. 59 p.

3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 3, chap. A11. 1969. 22 p.

3-A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI book 3, chap. A12. 1986. 34 p.

3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI book 3, chap. A13. 1983. 53 p.

3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI book 3, chap. A14. 1983. 46 p.

3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS–TWRI book 3, chap. A15. 1984. 48 p.

3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI book 3, chap. A16. 1985. 52 p.

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Section B. Ground-Water Techniques

3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS–TWRI book 3, chap. B1. 1971. 26 p.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS–TWRI book 3, chap. B2. 1976. 172 p.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS–TWRI book 3, chap. B3. 1980. 106 p.

3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS–TWRI book 3, chap. B4. 1990. 232 p.

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3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI book 3, chap. B5. 1987. 15 p.

3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI book 3, chap. B6. 1987. 28 p.

3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS–TWRI book 3, chap. B7. 1992. 190 p.

3-B8. *System and boundary conceptualization in ground-water flow simulation*, by T.E. Reilly: USGS–TWRI book 3, chap. B8. 2001. 29 p.

Section C. Sedimentation and Erosion Techniques

3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS–TWRI book 3, chap. C1. 1970. 55 p.

3-C2. *Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, chap. C2. 1999. 89 p.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS–TWRI book 3, chap. C3. 1972. 66 p.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

4-A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 p.

4-A2. *Frequency curves*, by H.C. Riggs: USGS–TWRI book 4, chap. A2. 1968. 15 p.

4–A3. *Statistical methods in water resources*, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at http://water.usgs.gov/pubs/twri/twri4a3/. (Accessed August 30, 2002.)

Section B. Surface Water

4-B1. *Low-flow investigations*, by H.C. Riggs: USGS–TWRI book 4, chap. B1. 1972. 18 p.

4-B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI book 4, chap. B2. 1973. 20 p.

4-B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS–TWRI book 4, chap. B3. 1973. 15 p.

Section D. Interrelated Phases of the Hydrologic Cycle

4-D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, chap. D1. 1970. 17 p.

Book 5. Laboratory Analysis

Section A. Water Analysis

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI book 5, chap. A1. 1989. 545 p.

5-A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.

5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI book 5, chap. A3. 1987. 80 p.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.

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, chap. A5. 1977. 95 p.

5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L.C. Friedman and D.E. Erdmann: USGS–TWRI book 5, chap. A6. 1982. 181 p.

Section C. Sediment Analysis

5-C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 p.

Book 6. Modeling Techniques

Section A. Ground Water

6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI book 6, chap. A1. 1988. 586 p.

6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS–TWRI book 6, chap. A2. 1991. 68 p.

6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L.J. Torak: USGS–TWRI book 6, chap. A3. 1993. 136 p.

6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R.L. Cooley: USGS–TWRI book 6, chap. A4. 1992. 108 p.

6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L.J. Torak: USGS–TWRI book 6, chap. A5. 1993. 243 p.

6-A6. A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction, by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI book 6, chap. A6. 1996. 125 p.

6–A7. *User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS–TWRI book 6, chap. A7. 2002. 77 p.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

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, chap. C1. 1976. 116 p.

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, chap. C2. 1978. 90 p.

7-C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI book 7, chap. C3. 1981. 110 p.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8-A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS–TWRI book 8, chap. A1. 1968. 23 p.

8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

Section B. Instruments for Measurement of Discharge

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9-A1. *National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.

9-A2. *National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.

9-A3. *National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.

9-A4. *National Field Manual for the Collection of Water-Quality Data: Collection of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.

9-A5. *National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.

9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.

9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.

9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.

9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.

SURFACE-WATER-DISCHARGE AND SURFACE-WATER-QUALITY RECORDS

Remark Codes

The following remark codes may appear with the water-quality data in this section:

PRINT OUTPUT	REMARK
E	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks.
S	Most probable value.

Water-Quality-Control Data

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District are described in the following section. Procedures have been established for the storage of water-quality-control data within the U.S. Geological Survey. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

The dates and times of QC samples are noted in the water quality tables, but the QA data are not displayed. The various types of QA data are available upon request from the U.S. Geological Survey North Dakota District office (see address on back of the title page of this report).

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this District are:

Field blank - a blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank - a blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank - a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank - a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank - a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank - a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank - a blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this District are:

Sequential samples - a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample - a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

Dissolved Trace-Element Concentrations

*NOTE.--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (µg/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the µg/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

Change in National Trends Network Procedures

*NOTE.--Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study is available from the NADP Program Office, Illinois State Water Survey, 2204 Griffith Drive, Champaign, IL 61820-7495 (217-333-7873).

05051500 RED RIVER OF THE NORTH AT WAHPETON, ND

LOCATION.--Lat 46°15'55", long 96°35'40", in NE$^1/_4$ sec.8, T.132 N., R.47 W., Richland County, Hydrologic Unit 09020104, on left bank in Wahpeton, 800 ft downstream from confluence of Bois de Sioux and Otter Tail Rivers, and at mile 548.6.

DRAINAGE AREA.--4,010 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to October 1942, March 1943 to current year. Gage-height records collected in this vicinity since 1917 are contained in reports of the National Weather Service.

GAGE.--Water-stage recorder and concrete and wooden dam. Datum of gage is 942.97 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1943, National Weather Service nonrecording gage 800 ft upstream, converted to present datum. Aug. 6, 1943, to Oct. 27, 1950, nonrecording gage at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by; Orwell Reservoir, flood storage capacity, 13,300 acre-ft at elevation 1,070 ft above mean sea level, adjustment of 1912; Mud Lake, flood storage capacity, 78,600 acre-ft at elevation 981 ft above mean sea level, adjustment of 1912; Lake Traverse, flood storage capacity, 75,100 acre-ft at elevation 981 ft above mean sea level, adjustment of 1912; and numerous other controlled lakes and ponds and several powerplants.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 17.0 ft, discharge, 10,500 ft^3/s, occurred in the spring of 1897.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	385	469	e550	e540	572	e470	901	999	809	477	903	571
2	404	497	e480	e600	529	e510	774	931	737	444	871	585
3	429	496	e470	e640	499	e540	647	946	700	411	863	553
4	397	483	e470	e650	435	e565	606	978	670	410	806	572
5	366	469	e500	e640	509	e590	624	909	623	406	730	594
6	366	461	e560	e620	574	e630	613	904	595	402	666	588
7	368	455	e600	587	610	e680	657	838	582	430	626	585
8	367	439	e670	627	608	e730	744	909	568	491	630	585
9	375	407	e740	640	607	e780	724	1260	532	688	608	598
10	444	406	e800	625	545	e840	721	1440	529	1500	601	612
11	448	408	e900	607	594	e940	752	1390	574	2720	573	588
12	467	404	e960	600	620	e1050	874	1400	550	3300	554	562
13	519	406	e950	595	650	e1150	923	1460	540	2980	546	516
14	519	406	e880	592	676	e1100	807	1450	538	2370	605	479
15	513	403	e730	e610	665	e1100	753	1440	529	2000	695	477
16	507	403	e600	e620	650	e1140	789	1340	522	1780	721	476
17	498	402	e530	e610	668	e1170	859	1230	521	1560	740	463
18	474	397	e480	594	700	e1160	874	1310	516	1500	727	449
19	446	401	e410	571	707	e1030	823	1340	523	1430	688	448
20	433	402	e420	585	667	e930	787	1320	506	1360	657	436
21	434	415	e500	e575	563	e850	787	1290	474	1290	703	416
22	433	442	e540	e550	537	e810	817	1260	484	1230	727	416
23	433	443	e440	e510	528	e760	823	1210	546	1160	689	421
24	433	444	e350	e470	528	e690	796	1120	538	1080	611	423
25	448	459	e380	e490	e440	571	751	1090	508	982	544	409
26	455	455	e440	e495	e400	524	763	1070	507	865	464	399
27	445	441	e540	e500	e410	525	822	1030	516	848	278	373
28	441	e280	e560	513	e440	836	805	977	497	894	299	348
29	448	e240	e530	528	---	1080	855	1080	476	883	387	366
30	450	e420	e500	549	---	1150	1000	1220	472	864	379	366
31	452	---	e500	568	---	1060	---	969	---	881	493	---
TOTAL	13597	12653	17980	17901	15931	25961	23471	36110	16682	37636	19384	14674
MEAN	438.6	421.8	580.0	577.5	569.0	837.5	782.4	1165	556.1	1214	625.3	489.1
MAX	519	497	960	650	707	1170	1000	1460	809	3300	903	612
MIN	366	240	350	470	400	470	606	838	472	402	278	348
AC-FT	26970	25100	35660	35510	31600	51490	46550	71620	33090	74650	38450	29110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2002, BY WATER YEAR (WY)

MEAN	347.5	327.8	306.8	291.4	313.5	714.9	1471	1153	1095	838.5	454.1	355.5
MAX	1599	952	967	678	868	2629	8717	3344	2981	2787	2496	2148
(WY)	1994	1987	1999	1986	1998	1995	1997	1997	2001	1993	1993	1993
MIN	5.72	7.40	6.60	8.81	18.0	84.3	138	22.5	90.0	65.6	53.5	2.18
(WY)	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1976

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1942 - 2002	
ANNUAL TOTAL	578631		251980			
ANNUAL MEAN	1585		690.4		636.5	
HIGHEST ANNUAL MEAN					1600	1997
LOWEST ANNUAL MEAN					54.0	1977
HIGHEST DAILY MEAN	9260	Apr 9	3300	Jul 12	12700	Apr 15 1997
LOWEST DAILY MEAN	188	Aug 16	240	Nov 29	1.7	Aug 28 1976
ANNUAL SEVEN-DAY MINIMUM	381	Oct 3	381	Oct 3	1.7	Aug 28 1976
MAXIMUM PEAK FLOW			3350	Jul 12	12800	Apr 15 1997
MAXIMUM PEAK STAGE			10.09	Jul 12	a19.42	Apr 6 1997
INSTANTANEOUS LOW FLOW					1.7	Aug 28 1976
ANNUAL RUNOFF (AC-FT)	1148000		499800		461100	
10 PERCENT EXCEEDS	3260		1110		1460	
50 PERCENT EXCEEDS	650		585		398	
90 PERCENT EXCEEDS	420		409		110	

a Backwater from ice, from floodmark
e Estimated

05051500 RED RIVER OF THE NORTH AT WAHPETON, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
01...	1000	472	--	--	--	698	8.0	7.0	--	--	--	--	--
JAN													
07...	1615	583	--	--	--	640	.5	.0	--	--	--	--	--
APR													
02...	1100	797	8.8	--	561	543	3.0	3.5	250	46.0	33.0	3.80	.4
JUN													
07...	0805	583	--	--	--	940	15.5	14.5	--	--	--	--	--
AUG													
21...	0955	682	--	--	--	--	15.5	--	--	--	--	--	--
SEP													
19...	0815	460	8.4	8.3	414	412	14.0	19.0	210	36.0	28.0	3.30	.3

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
02...	15.0	11	203	10.0	.10	95.0	699	325	325	2.0	20	<1	20
JUN													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
19...	11.0	10	192	12.0	.10	26.0	349	281	231	4.0	40	1	10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
01...	--	--	--	--	--
JAN					
07...	--	--	--	--	--
APR					
02...	20	<.10	1	<1	100
JUN					
07...	--	--	--	--	--
AUG					
21...	--	--	--	--	--
SEP					
19...	30	<.10	1	1	160

< Less than

05051522 RED RIVER OF THE NORTH AT HICKSON, ND

LOCATION.--Lat 46°39'35", long 96°47'44", in SW$^{1}/_{4}$ sec.19, T.137 N., R.48 W., Clay County, MN, Hydrologic Unit 09020104, on right bank 60 ft downstream from bridge on township road and 1 mi southeast of Hickson.

DRAINAGE AREA.--4,300 mi^{2}, approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 877.06 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by Orwell Reservoir, flood storage capacity, 13,300 acre-ft at elevation 1,070 ft above mean sea level, adjustment of 1912; Mud Lake, flood storage capacity, 78,600 acre-ft at elevation 981 ft above mean sea level, adjustment of 1912; Lake Traverse, flood storage capacity, 75,100 acre-ft at elevation 981 ft above mean sea level, adjustment of 1912; and numerous other controlled lakes and ponds and several powerplants.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	371	466	566	e510	548	e450	1980	1000	1110	488	872	562
2	376	485	611	e530	578	e480	1800	1060	930	485	894	588
3	376	510	559	605	547	e510	1450	1030	815	477	877	605
4	396	523	520	640	519	e540	1150	1010	758	435	873	585
5	407	513	562	661	471	e570	957	1030	722	415	831	573
6	372	497	582	654	446	e600	923	1020	676	412	763	597
7	352	482	599	640	520	e640	919	984	630	414	693	602
8	350	470	672	610	584	e700	787	989	610	511	638	591
9	353	454	717	597	608	e760	878	1030	611	646	620	589
10	388	429	787	632	614	e820	911	1310	592	881	615	587
11	426	405	833	640	604	e870	904	1530	571	2160	593	601
12	454	403	982	633	577	e930	924	1560	590	3110	570	596
13	451	405	1020	624	612	e1050	961	1520	592	3600	536	577
14	490	403	1030	624	641	e1140	1050	1520	572	3760	517	548
15	533	402	976	624	663	e1200	986	1530	567	3470	545	506
16	531	402	924	630	678	e1170	909	1500	549	2800	642	482
17	522	402	859	e630	674	e1170	882	1430	541	2190	702	482
18	513	410	732	e630	677	e1200	937	1300	549	1810	722	491
19	498	402	649	e610	e690	e1250	975	1310	559	1600	720	478
20	468	397	573	e590	e700	e1250	947	1350	607	1470	698	461
21	442	408	419	e590	e700	e1180	906	1350	585	1380	667	454
22	432	419	503	e585	e670	e1000	887	1330	522	1300	673	429
23	431	435	585	e580	e620	e820	894	1300	516	1240	725	418
24	437	446	560	e560	e620	e770	905	1260	594	1180	704	419
25	441	448	445	e510	e610	e720	886	1200	610	1120	646	427
26	442	450	360	e510	e550	e720	852	1160	586	1040	574	425
27	448	430	435	e510	e440	e760	841	1130	553	952	535	409
28	442	198	532	e510	e410	826	878	1100	553	873	394	398
29	437	272	e560	e515	---	993	901	1060	544	899	321	359
30	434	372	e560	520	---	1530	895	1060	509	898	650	349
31	449	---	e520	530	---	1930	---	1180	---	873	666	---
TOTAL	13462	12738	20232	18234	16571	28549	30075	38143	18723	42889	20476	15188
MEAN	434.3	424.6	652.6	588.2	591.8	920.9	1002	1230	624.1	1384	660.5	506.3
MAX	533	523	1030	661	700	1930	1980	1560	1110	3760	894	605
MIN	350	198	360	510	410	450	787	984	509	412	321	349
AC-FT	26700	25270	40130	36170	32870	56630	59650	75660	37140	85070	40610	30130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2002, BY WATER YEAR (WY)

MEAN	427.5	373.6	356.1	335.2	399.2	1014	2220	1377	1148	986.7	573.3	465.3
MAX	1558	900	932	747	1058	2687	9864	3925	3264	2674	2674	2135
(WY)	1994	1987	1999	1986	1998	1995	1997	1997	2001	1993	1993	1993
MIN	2.02	0.000	0.000	4.95	14.0	75.9	165	22.0	86.4	73.4	35.6	12.6
(WY)	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1977	1976

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1975 - 2002	
ANNUAL TOTAL	642904		275280			
ANNUAL MEAN	1761		754.2		806.7	
HIGHEST ANNUAL MEAN					1772	2001
LOWEST ANNUAL MEAN					53.1	1977
HIGHEST DAILY MEAN	11400	Apr 12	3760	Jul 14	13100	Apr 15 1997
LOWEST DAILY MEAN	188	Aug 18	198	Nov 28	0.00	Oct 26 1976
ANNUAL SEVEN-DAY MINIMUM	365	Sep 28	372	Oct 3	0.00	Oct 26 1976
MAXIMUM PEAK FLOW			3780	Jul 14	13300	Apr 14 1997
MAXIMUM PEAK STAGE			18.75	Jul 14	37.60	Apr 16 1997
ANNUAL RUNOFF (AC-FT)	1275000		546000		584400	
10 PERCENT EXCEEDS	3770		1200		1840	
50 PERCENT EXCEEDS	690		610		467	
90 PERCENT EXCEEDS	420		419		100	

e Estimated

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

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
04...	1345	369	--e	8.1	559	509	11.0	14.0	230	42.0	31.0	5.30	.6
NOV													
02...	1200	485	--	--	--	--	10.5	8.0	--	--	--	--	--
FEB													
25...	1300	622	--	--	--	350	--	.5	--	--	--	--	--
APR													
08...	1315	771	8.0	8.0	540	528	4.0	3.0	240	45.0	32.0	4.10	.4
11...	0840	877	--	--	--	996	4.5	3.0	--	--	--	--	--
25...	1235	865	--	--	--	932	3.5	5.5	--	--	--	--	--
JUN													
07...	1105	626	--	--	--	1100	15.0	15.0	--	--	--	--	--
AUG													
20...	1450	702	--	--	--	--	17.5	18.0	--	--	--	--	--
SEP													
19...	1730	469	8.3	8.2	448	450	18.0	20.5	210	37.0	28.0	4.20	.4

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
04...	22.0	17	216	27.0	.20	41.0	455	457	300	3.0	50	2	100
NOV													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
08...	16.0	12	198	15.0	.10	74.0	446	332	305	2.0	40	<1	20
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
19...	14.0	13	191	16.0	.10	31.0	371	293	245	5.0	30	1	20

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
04...	20	<.10	3	3	180
NOV					
02...	--	--	--	--	--
FEB					
25...	--	--	--	--	--
APR					
08...	20	<.10	0	2	190
11...	--	--	--	--	--
25...	--	--	--	--	--
JUN					
07...	--	--	--	--	--
AUG					
20...	--	--	--	--	--
SEP					
19...	20	<.10	1	<1	190

< Less than
e Required equipment not functional/available

05051600 WILD RICE RIVER NEAR RUTLAND, ND

LOCATION.--Lat 46°01'20", long 97°30'40", in $SE^1/_4SE^1/_4$ sec.36, T.130 N., R.55 W., Sargent County, Hydrologic Unit 09020105, on right bank 1,000 ft upstream from bridge on county highway, 2 mi south of Rutland, and 10 mi upstream from Lake Tewaukon.

DRAINAGE AREA.--546 mi^2, of which about 250 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1959 to current year (seasonal records only since 1982).

REVISED RECORDS.--WSP 1728: Drainage area.

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

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.-- Maximum discharge, 87 ft^3/s, June 24, gage height, 3.41 ft; minimum daily discharge, no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e0.00	64	11	7.2	21	11	13
2	---	---	---	---	---	e0.00	62	9.9	6.1	19	8.1	13
3	---	---	---	---	---	e0.00	43	11	4.4	17	8.7	12
4	---	---	---	---	---	e0.00	38	7.3	2.5	15	8.6	12
5	---	---	---	---	---	e0.00	39	8.0	2.7	12	7.5	12
6	---	---	---	---	---	e0.00	27	7.4	3.5	7.7	8.4	11
7	---	---	---	---	---	e0.00	9.3	7.2	2.8	11	8.3	11
8	---	---	---	---	---	e0.00	7.9	13	2.6	16	9.0	9.0
9	---	---	---	---	---	e0.00	7.1	18	4.1	14	8.6	3.4
10	---	---	---	---	---	e0.00	8.9	23	3.6	47	12	1.9
11	---	---	---	---	---	e0.00	8.4	25	1.5	21	11	2.1
12	---	---	---	---	---	e0.10	6.8	30	0.64	14	9.8	1.8
13	---	---	---	---	---	e0.15	5.6	29	0.72	12	9.4	2.3
14	---	---	---	---	---	e0.25	4.7	29	0.41	12	10	2.1
15	---	---	---	---	---	e0.50	4.5	26	0.19	11	9.5	1.3
16	---	---	---	---	---	e0.75	5.7	23	0.13	9.5	8.1	0.80
17	---	---	---	---	---	e1.0	4.7	21	0.54	8.1	7.1	0.50
18	---	---	---	---	---	e0.75	8.3	20	0.58	15	4.0	0.41
19	---	---	---	---	---	e0.50	11	17	2.6	14	3.5	0.36
20	---	---	---	---	---	e0.75	11	14	4.5	10	6.1	0.24
21	---	---	---	---	---	e1.0	9.0	15	4.2	8.6	7.6	0.08
22	---	---	---	---	---	e1.0	8.5	11	3.7	5.6	8.9	0.01
23	---	---	---	---	---	e0.75	7.4	7.4	28	4.7	12	0.00
24	---	---	---	---	---	e1.1	6.0	8.2	73	6.4	9.2	0.00
25	---	---	---	---	---	e1.3	5.6	7.6	56	7.1	7.3	0.00
26	---	---	---	---	---	e1.8	6.6	6.6	42	6.2	5.9	0.00
27	---	---	---	---	---	e5.0	7.5	5.6	35	7.0	4.4	0.00
28	---	---	---	---	---	e10	8.9	5.1	31	6.2	4.1	0.00
29	---	---	---	---	---	e25	11	11	27	7.0	3.0	0.00
30	---	---	---	---	---	e45	12	11	22	5.6	3.0	0.00
31	---	---	---	---	---	66	---	8.5	---	9.2	5.7	---
TOTAL	---	---	---	---	---	162.70	459.4	446.8	373.21	379.9	239.8	110.30
MEAN	---	---	---	---	---	5.248	15.31	14.41	12.44	12.25	7.735	3.677
MAX	---	---	---	---	---	66	64	30	73	47	12	13
MIN	---	---	---	---	---	0.00	4.5	5.1	0.13	4.7	3.0	0.00
AC-FT	---	---	---	---	---	323	911	886	740	754	476	219

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	0.538	0.358	0.141	0.004	0.068	25.58	72.55	38.83	22.02	26.50	7.980	7.094
MAX	4.81	5.87	2.90	0.10	1.00	138	756	419	263	379	105	146
(WY)	1963	1963	1963	1963	1976	1966	1997	1998	1998	1998	1998	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1960	1960	1960	1960	1960	1965	1977	1977	1973	1961	1960	1960

SUMMARY STATISTICS WATER YEARS 1960 - 2002

ANNUAL MEAN	a8.356		
HIGHEST ANNUAL MEAN	a44.8		1969
LOWEST ANNUAL MEAN	a0.000		1977
HIGHEST DAILY MEAN	2540	Apr 4	1997
LOWEST DAILY MEAN	0.00	Oct 1	1959
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 1	1959
MAXIMUM PEAK FLOW	2700	Apr 3	1997
MAXIMUM PEAK STAGE	10.11	Apr 3	1997
ANNUAL RUNOFF (AC-FT)	a6050		
10 PERCENT EXCEEDS	18		
50 PERCENT EXCEEDS	0.00		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1960-82)
e Estimated

05051600 WILD RICE RIVER NEAR RUTLAND, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1997 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAR													
26...	1135	1.7	--	--	--	1710	1.5	.0	--	--	--	--	--
APR													
09...	0900	9.5	8.1	7.9	2340	--e	.5	1.5	1000	140	160	24.0	3
24...	0955	5.7	--	--	--	1500	2.0	5.0	--	--	--	--	--
JUN													
06...	1315	2.9	--	--	--	1490	15.5	13.5	--	--	--	--	--
AUG													
21...	1255	9.4	--	--	--	--	16.0	15.0	--	--	--	--	--
SEP													
18...	1150	.60	8.2	7.8	2530	2490	28.0	19.5	1100	150	180	28.0	3

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	220	32	313	99.0	.20	1100	52.1	2030	1930	2.0	30	<1	230
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
18...	200	27	222	79.0	.20	1300	3.56	2200	2070	5.0	40	<1	190

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAR					
26...	--	--	--	--	--
APR					
09...	180	<.10	2	<1	900
24...	--	--	--	--	--
JUN					
06...	--	--	--	--	--
AUG					
21...	--	--	--	--	--
SEP					
18...	270	<.10	5	1	980

< Less than
e Required equipment not functional/available

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND

LOCATION.--Lat 46°28'05", long 96°47'00", in $NE^1/_4NE^1/_4$ sec.36, T.135 N., R.49 W., Richland County, Hydrologic Unit 09020105, on right bank 420 ft upstream from bridge on county highway, 0.75 mi upstream from rubble masonry dam which serves as control, 3.2 mi northwest of Abercrombie, and 7 mi downstream from Antelope Creek.

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

WATER-DISCHARGE RECORDS

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

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

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

REMARKS.--Records fair except for estimated daily discharges, which are poor. Some regulation by Fish and Wildlife Service reservoirs, of which Lake Tewaukon is the largest. Some small diversioins for irrigation.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	24	12	e5.4	e4.1	e13	e88	33	41	69	35	83
2	3.3	24	15	e5.4	e4.0	e12	e70	37	33	51	32	72
3	3.4	24	13	e5.5	e3.9	e11	e60	36	28	41	33	57
4	3.6	20	11	e5.5	e3.9	e11	e45	33	27	35	37	42
5	3.6	18	10	e5.5	e3.8	e9.9	e39	31	25	31	32	37
6	3.9	20	9.6	e5.5	e3.9	e9.2	e36	28	23	30	25	31
7	3.7	23	8.5	e5.6	e3.9	e8.6	42	26	20	34	20	24
8	3.2	23	8.1	e5.8	e4.0	e8.3	69	34	18	98	16	18
9	3.0	e22	8.9	e5.8	e4.1	e8.0	86	74	16	174	15	14
10	5.6	e22	11	e5.8	e4.2	e8.0	123	87	15	356	14	12
11	9.6	21	11	e5.9	e4.9	e8.2	133	129	16	819	12	9.7
12	5.4	17	11	e5.9	e6.1	e9.4	116	164	16	989	14	8.1
13	5.4	16	11	e5.9	e7.1	e13	82	151	15	777	24	7.8
14	11	15	10	e6.1	e8.9	e15	58	138	16	442	31	7.1
15	31	13	9.8	e6.3	e10	e16	48	139	14	372	39	6.0
16	22	12	11	e6.4	e13	e22	40	126	13	341	39	5.0
17	18	12	12	e6.3	e14	e28	35	106	12	300	40	3.8
18	16	12	12	e6.2	e15	e28	37	96	12	251	36	2.7
19	13	12	12	e6.0	e17	e29	35	91	14	188	33	2.1
20	10	11	e11	e5.8	e18	e28	33	85	32	139	32	1.9
21	7.9	10	e10	e5.6	e18	e27	32	95	26	107	35	2.1
22	6.3	11	e9.3	e5.5	e19	e26	33	97	17	89	37	1.8
23	13	12	e8.3	e5.3	e19	e26	37	92	17	80	36	1.7
24	14	13	e7.7	e5.2	e18	e25	39	89	39	74	33	1.6
25	13	14	e7.2	e5.0	e18	e25	36	85	43	69	28	1.4
26	17	13	e6.7	e4.9	e17	e24	34	83	45	64	23	1.2
27	18	e12	e6.2	e4.7	e16	e26	33	79	60	56	18	1.1
28	15	e12	e5.8	e4.6	e15	e44	34	73	88	50	15	0.96
29	16	12	e5.5	e4.5	---	e65	34	70	87	46	82	0.96
30	20	12	e5.4	e4.4	---	e80	32	65	84	40	276	0.80
31	19	---	e5.3	e4.3	---	e84	---	52	---	37	123	---
TOTAL	337.2	482	295.3	170.6	293.8	747.6	1619	2524	912	6249	1265	457.82
MEAN	10.88	16.07	9.526	5.503	10.49	24.12	53.97	81.42	30.40	201.6	40.81	15.26
MAX	31	24	15	6.4	19	84	133	164	88	989	276	83
MIN	3.0	10	5.3	4.3	3.8	8.0	32	26	12	30	12	0.80
AC-FT	669	956	586	338	583	1480	3210	5010	1810	12390	2510	908

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2002, BY WATER YEAR (WY)

MEAN	12.86	9.589	6.780	2.744	6.450	168.5	516.7	161.1	114.7	139.8	32.21	18.58
MAX	146	111	188	72.8	210	1195	5510	1246	929	1787	462	438
(WY)	1999	1999	1999	1999	1998	1995	1997	1998	1962	1962	1993	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	2.81	0.11	0.085	0.000	0.000	0.000
(WY)	1933	1933	1933	1933	1934	1937	1991	1934	1988	1933	1932	1932

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1932 - 2002	
ANNUAL TOTAL	116546.01		15353.32			
ANNUAL MEAN	319.3		42.06		99.69	
HIGHEST ANNUAL MEAN					560	1997
LOWEST ANNUAL MEAN					0.48	1934
HIGHEST DAILY MEAN	9160	Apr 9	989	Jul 12	9450	Apr 16 1997
LOWEST DAILY MEAN	0.94	Sep 19	0.80	Sep 30	0.00	Jul 26 1932
ANNUAL SEVEN-DAY MINIMUM	1.0	Feb 27	1.1	Sep 24	0.00	Jul 26 1932
MAXIMUM PEAK FLOW			1010	Jul 12	9540	Apr 11 1969
MAXIMUM PEAK STAGE			6.11	Jul 12	a26.59	Apr 6 1997
ANNUAL RUNOFF (AC-FT)	231200		30450		72220	
10 PERCENT EXCEEDS	608		87		189	
50 PERCENT EXCEEDS	12		17		3.0	
90 PERCENT EXCEEDS	1.1		4.6		0.00	

a Backwater from ice
e Estimated

05053000 WILD RICE RIVER NEAR ABERCROMBIE, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
02...	0940	3.3	--e	8.2	1380	--e	9.0	11.5	540	100	70.0	15.0	2
NOV													
01...	1340	25	--	--	--	--	10.0	--	--	--	--	--	--
JAN													
08...	1135	5.8	--	--	--	1110	3.0	1.5	--	--	--	--	--
MAR													
14...	1500	16	--	--	--	1110	--	.5	--	--	--	--	--
APR													
16...	1225	1.2	8.1	7.8	757	719	16.0	7.0	280	59.0	33.0	5.80	1
24...	1410	40	--	--	--	847	2.0	4.0	--	--	--	--	--
JUN													
06...	1545	22	--	--	--	1040	22.0	17.0	--	--	--	--	--
AUG													
16...	1035	--	8.2	--	--	1540	14.5	16.0	--	--	--	--	--
SEP													
18...	1620	2.2	8.3	8.0	1200	1180	23.5	21.0	500	87.0	68.0	15.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
02...	100	28	361	31.0	.30	320	7.61	854	865	10.0	70	2	100
NOV													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	42.0	24	160	17.0	.20	200	1.62	500	453	4.0	70	<1	50
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
18...	78.0	25	245	33.0	.20	400	5.29	891	829	6.0	80	<1	90

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
02...	20	<.10	14	4	530
NOV					
01...	--	--	--	--	--
JAN					
08...	--	--	--	--	--
MAR					
14...	--	--	--	--	--
APR					
16...	40	<.10	1	<1	260
24...	--	--	--	--	--
JUN					
06...	--	--	--	--	--
AUG					
16...	--	--	--	--	--
SEP					
18...	330	<.10	3	1	560

< Less than
e Required equipment not functional/available

05054000 RED RIVER OF THE NORTH AT FARGO, ND

LOCATION.--Lat 46°51'40", long 96°47'00", in NW$^{1}/_{4}$NE$^{1}/_{4}$ sec.18, T.139 N., R.48 W., Cass County, Hydrologic Unit 09020104, at waterplant on 4th Street South in Fargo, 25 mi upstream from mouth of Sheyenne River, and at mile 453.

DRAINAGE AREA.--6,800 mi^{2}, approximately.

WATER-DISCHARGE RECORDS

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

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

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

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by; Orwell Reservoir, flood storage capacity, 13,300 acre-ft at elevation 1,070 ft above mean sea level, adjustment of 1912; Mud Lake, flood storage capacity, 78,600 acre-ft at elevation 981 ft above mean sea level, adjustment of 1912; Lake Traverse, flood storage capacity, 75,100 acre-ft at elevation 981 ft above mean sea level, adjustment of 1912; and numerous other controlled lakes and ponds and several powerplants. Figures of daily discharge do not include diversions to cities of Fargo and Moorhead, MN, from the Sheyenne River.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 7, 1897, reached a stage of 39.1 ft present datum, discharge, 25,000 ft^{3}/s at site 1.5 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	430	655	561	e590	614	e520	1940	1220	1550	829	1230	1100
2	451	709	736	e570	640	e550	1910	1350	1380	796	1200	1010
3	452	736	783	e550	643	e580	1680	1380	1200	781	1200	935
4	459	758	723	e550	e590	e600	1410	1330	1090	755	1180	903
5	484	743	696	e650	e560	e640	1180	1340	1020	697	1150	846
6	488	719	715	e690	e530	e700	1050	1360	975	661	1090	830
7	452	689	731	e680	e510	e730	1050	1310	922	792	1010	848
8	430	660	777	e660	e530	e770	1100	1480	878	808	926	830
9	432	633	839	e650	e570	e830	1190	1400	2020	894	868	812
10	588	611	870	e650	e610	e880	1350	1580	1520	1920	874	805
11	527	579	904	e670	e620	e930	1320	1940	966	3200	851	799
12	545	545	e1050	684	e610	e990	1300	2100	846	3720	817	802
13	566	540	1150	672	624	e1080	1330	2100	850	4210	763	766
14	581	538	1170	665	660	e1160	1430	2070	829	e4200	728	723
15	639	533	1160	665	688	e1260	1440	2050	809	e3700	727	652
16	655	530	1080	663	e700	e1280	1290	2010	791	e3000	820	577
17	656	524	1040	676	e700	e1280	1180	1950	768	e2300	977	554
18	671	524	926	e670	e710	e1300	1190	1810	791	e2050	1000	590
19	666	535	792	e660	e720	e1350	1240	1700	810	e1900	1020	615
20	647	522	711	e650	e730	e1350	1250	1720	822	e1780	1010	551
21	609	554	588	e650	e720	e1300	1210	1760	990	e1660	973	515
22	576	577	501	e650	e690	e1200	1170	1740	905	e1600	944	492
23	565	597	592	e640	e650	979	1150	1700	967	e1510	995	482
24	598	605	646	e620	e645	762	1170	1650	898	e1470	1020	464
25	590	623	591	e580	e640	830	1180	1600	1150	e1400	978	457
26	578	616	469	e550	e600	903	1150	1520	1060	e1350	866	469
27	598	650	438	e560	e540	840	1130	1470	957	e1300	756	457
28	601	487	520	e560	e510	874	1130	1480	890	1260	670	445
29	599	325	e585	e570	---	986	1170	1470	882	1220	506	426
30	594	398	e610	e580	---	1300	1170	1450	870	1240	583	383
31	608	---	e600	600	---	1670	---	1470	---	1210	1040	---
TOTAL	17335	17715	23554	19475	17554	30424	38460	50510	30406	54213	28772	20138
MEAN	559.2	590.5	759.8	628.2	626.9	981.4	1282	1629	1014	1749	928.1	671.3
MAX	671	758	1170	690	730	1670	1940	2100	2020	4210	1230	1100
MIN	430	325	438	550	510	520	1050	1220	768	661	506	383
AC-FT	34380	35140	46720	38630	34820	60350	76290	100200	60310	107500	57070	39940

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
+	1290	1180	1180	1210	1120	1160	1150	1320	1420	1580	1570	1440
*	35670	36320	47900	39840	35940	61510	77440	101500	61740	109100	58640	41380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 2002, BY WATER YEAR (WY)

MEAN	334.6	296.0	253.4	229.3	240.7	790.0	2013	1168	1095	930.0	448.7	344.4
MAX	1741	942	1261	740	1353	4722	17920	5365	5122	5692	3293	2280
(WY)	1994	1907	1999	1986	1998	1995	1997	1997	1962	1962	1993	1993
MIN	0.000	0.000	0.000	0.000	0.18	26.8	102	8.12	2.87	0.000	0.000	0.000
(WY)	1935	1937	1938	1933	1933	1937	1934	1934	1936	1934	1932	1934

05054000 RED RIVER OF THE NORTH AT FARGO, ND--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1901 - 2002	
ANNUAL TOTAL	807908		348556			
ANNUAL MEAN	2213	*(2217)	954.9	*(975.9)	679.9	
HIGHEST ANNUAL MEAN					2619	1997
LOWEST ANNUAL MEAN					17.5	1934
HIGHEST DAILY MEAN	20200	Apr 14	4210	Jul 13	27800	Apr 17 1997
LOWEST DAILY MEAN	293	Aug 19	325	Nov 29	0.00	Jul 25 1932
ANNUAL SEVEN-DAY MINIMUM	449	Sep 29	443	Sep 24	0.00	Jul 25 1932
MAXIMUM PEAK FLOW			4250	Jul 13	28000	Apr 17 1997
MAXIMUM PEAK STAGE			19.17	Jul 14	39.72	Apr 18 1997
ANNUAL RUNOFF (AC-FT)	1602000	*(1606000)	691400	*(707,000)	492600	
10 PERCENT EXCEEDS	4370		1520		1520	
50 PERCENT EXCEEDS	777		792		332	
90 PERCENT EXCEEDS	545		530		42	

\+ Diversions in acre-ft to cities of Fargo and Moorhead
* Adjusted for diversions to cities of Fargo and Moorhead
e Estimated

05054000 RED RIVER OF THE NORTH AT FARGO, ND--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: September 1998 to current year.

SPECIFIC CONDUCTANCE: September 1998 to current year.

INSTRUMENTATION.--Water-quality sensors since September 1998.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 30.1°C, Aug. 6-7, 2001; minimum recorded, -0.4°C on many days.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,330 microsiemens, July 19, 2001; minimum recorded, 315 microsiemens, June 20 and 22, 2000.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maxmimum recorded, 29.1°C, June 30 and July 1; minimum recorded, -0.4°C on many days.

SPECIFIC CONDUCTANCE: Maximum recorded, 861 microsiemens, Jan. 3; minimum recorded, 325 microsiemens, July 14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
09...	1100	437	--	--	--	682	8.0	10.5	--	--	--	--	--
NOV													
06...	1000	719	--	--	--	670	8.0	6.0	--	--	--	--	--
JAN													
04...	1115	548	--	--	--	805	-2.0	.5	--	--	--	--	--
MAR													
27...	1250	799	--	--	--	727	6.5	1.0	--	--	--	--	--
APR													
18...	0855	1170	--e	7.9	575	556	5.5	--	240	47.0	30.0	4.40	.6
MAY													
01...	1250	1220	--	--	--	613	9.5	9.0	--	--	--	--	--
21...	1040	1760	--	--	--	799	17.0	14.5	--	--	--	--	--
JUL													
03...	1030	781	--	--	--	787	26.0	28.0	--	--	--	--	--
17...	1435	2230	--	--	--	485	--	--	--	--	--	--	--
31...	1240	1210	--	--	--	668	--	26.5	--	--	--	--	--
AUG													
30...	1455	583	--	--	--	615	21.5	24.5	--	--	--	--	--
SEP													
11...	1230	799	--	--	--	584	--	23.5	--	--	--	--	--
20...	0740	551	8.0	8.0	555	568	10.5	16.5	220	41.0	29.0	13.0	.8

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
18...	21.0	16	181	15.0	.20	93.0	1120	355	319	2.0	60	<1	30
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	26.0	19	183	28.0	.20	63.0	556	374	310	6.0	40	1	20

05054000 RED RIVER OF THE NORTH AT FARGO, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
09...	--	--	--	--	--
NOV					
06...	--	--	--	--	--
JAN					
04...	--	--	--	--	--
MAR					
27...	--	--	--	--	--
APR					
18...	10	<.10	1	<1	210
MAY					
01...	--	--	--	--	--
21...	--	--	--	--	--
JUL					
03...	--	--	--	--	--
17...	--	--	--	--	--
31...	--	--	--	--	--
AUG					
30...	--	--	--	--	--
SEP					
11...	--	--	--	--	--
20...	20	<.10	1	<1	180

Date	Time	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY FIELD WATER UNFLTRD (NTU) (61028)
APR						
18...	0920	10.0	7.9	537	13.7	45
18...	0921	9.9	7.5	536	13.7	51
18...	0922	9.9	8.3	537	13.7	53
18...	0930	9.8	7.7	508	13.7	57
18...	0931	9.8	7.6	528	13.7	53
18...	0932	9.8	7.5	530	13.7	56
18...	0933	9.8	7.4	533	13.7	54
18...	0934	9.8	7.2	532	13.7	58
18...	0940	9.9	7.8	514	13.7	53
18...	0941	9.8	7.6	528	13.7	54
18...	0942	9.8	7.5	534	13.7	56
18...	0943	9.8	7.4	534	13.7	60
18...	0944	9.7	7.6	527	13.7	64
18...	0950	9.9	7.8	536	13.7	--
18...	0951	9.8	7.6	536	13.7	56
18...	0952	9.8	7.5	538	13.7	54
18...	0953	9.7	7.3	538	13.7	62
18...	0954	9.7	7.6	537	13.7	61
18...	1000	9.9	8.2	535	13.6	53
18...	1001	9.8	8.0	533	13.6	52

< Less than
e Required equipment not functional/available

05054000 RED RIVER OF THE NORTH AT FARGO, ND--Continued

WATER TEMPERATURE from datalogger, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.3	14.7	15.1	4.7	4.1	4.4	0.0	-0.1	0.0	-0.3	-0.3	-0.3
2	15.5	15.0	15.2	4.9	4.3	4.6	0.0	-0.1	0	-0.3	-0.3	-0.3
3	15.4	14.8	15.1	5.4	4.6	5.0	0.0	-0.1	0	-0.2	-0.3	-0.3
4	15.1	14.4	14.6	5.8	5.3	5.5	0.0	-0.1	0	-0.3	-0.3	-0.3
5	14.5	13.2	13.8	6.2	5.6	5.9	-0.1	-0.1	-0.1	-0.3	-0.3	-0.3
6	13.2	12.4	12.7	6.4	6.1	6.2	0.0	-0.1	0	-0.3	-0.3	-0.3
7	12.4	11.5	11.8	6.3	6.1	6.2	0.0	-0.1	0	-0.3	-0.3	-0.3
8	11.5	11.0	11.1	6.2	5.7	6.0	0.0	-0.1	0	-0.3	-0.3	-0.3
9	11.2	10.6	10.9	5.9	5.5	5.7	0.0	-0.1	0	-0.2	-0.3	-0.2
10	11.0	10.4	10.8	5.6	5.2	5.4	-0.1	-0.2	-0.1	-0.2	-0.3	-0.3
11	10.6	10.0	10.3	5.4	4.8	5.2	-0.1	-0.2	-0.1	-0.2	-0.3	-0.3
12	10.4	10.1	10.2	5.4	4.9	5.2	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3
13	10.4	9.9	10.2	5.3	4.8	5.0	-0.1	-0.2	-0.2	-0.2	-0.3	-0.3
14	10.2	10.0	10.1	5.2	4.9	5.0	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3
15	10.0	9.7	9.9	5.2	4.9	5.0	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3
16	9.8	9.3	9.5	5.3	4.8	5.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
17	9.5	9.0	9.3	5.7	5.3	5.5	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
18	9.4	9.1	9.2	5.8	5.5	5.7	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
19	9.1	8.8	8.9	5.5	4.9	5.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
20	9.0	8.5	8.7	5.0	4.6	4.8	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
21	8.6	8.1	8.4	5.0	4.7	4.8	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
22	8.5	7.9	8.2	4.7	4.4	4.6	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3
23	8.4	7.9	8.2	4.6	4.4	4.5	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3
24	8.2	6.5	7.3	4.6	4.3	4.6	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3
25	6.5	5.6	5.9	4.3	3.2	3.8	-0.2	-0.3	-0.2	-0.3	-0.3	-0.3
26	5.6	5.0	5.2	3.2	1.7	2.6	-0.2	-0.3	-0.2	-0.2	-0.3	-0.3
27	5.1	4.4	4.7	1.7	0.3	0.9	-0.2	-0.3	-0.2	-0.3	-0.3	-0.3
28	4.4	4.0	4.2	0.3	0.1	0.2	-0.2	-0.3	-0.2	-0.3	-0.3	-0.3
29	4.5	3.9	4.3	0.2	0.0	0.1	-0.2	-0.3	-0.3	-0.3	-0.4	-0.3
30	4.4	4.1	4.2	0.1	0.0	0.0	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
31	4.3	3.9	4.1	---	---	---	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
MONTH	15.5	3.9	9.4	6.4	0.0	4.4	0.0	-0.3	-0.1	-0.2	-0.4	-0.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	-0.3	-0.4	-0.3	-0.2	-0.4	-0.3	-0.4	-0.4	-0.4	8.6	8.3	8.5
2	-0.3	-0.3	-0.3	-0.2	-0.4	-0.3	-0.4	-0.4	-0.4	8.9	8.1	8.5
3	-0.3	-0.3	-0.3	-0.2	-0.4	-0.3	-0.3	-0.4	-0.4	10.7	8.5	9.4
4	-0.3	-0.4	-0.3	-0.3	-0.4	-0.3	-0.3	-0.4	-0.4	11.6	10.0	10.8
5	-0.3	-0.4	-0.3	-0.3	-0.4	-0.4	-0.3	-0.4	-0.3	11.5	10.4	10.9
6	-0.3	-0.4	-0.3	-0.3	-0.4	-0.4	-0.3	-0.4	-0.3	11.0	10.2	10.5
7	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.1	-0.4	-0.3	10.5	9.8	10.1
8	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	-0.1	-0.4	-0.3	10.3	9.1	9.5
9	-0.3	-0.3	-0.3	-0.4	-0.4	-0.4	0.0	-0.4	-0.2	9.2	8.3	8.6
10	-0.3	-0.4	-0.3	-0.4	-0.4	-0.4	-0.1	-0.3	-0.2	9.1	7.8	8.5
11	-0.3	-0.4	-0.3	-0.4	-0.4	-0.4	3.9	-0.2	1.6	9.3	8.6	9.0
12	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	5.7	3.9	4.7	9.6	8.6	9.1
13	-0.3	-0.3	-0.3	-0.2	-0.4	-0.3	6.8	5.7	6.1	11.1	9.3	10.1
14	-0.3	-0.3	-0.3	-0.3	-0.4	-0.4	8.4	6.7	7.3	12.3	10.5	11.3
15	-0.3	-0.3	-0.3	-0.2	-0.4	-0.3	10.5	8.3	9.1	13.4	12.0	12.7
16	-0.3	-0.4	-0.3	-0.2	-0.4	-0.3	12.9	10.5	11.4	13.9	12.6	13.2
17	-0.2	-0.3	-0.3	-0.3	-0.4	-0.3	13.8	12.3	12.9	14.0	13.0	13.5
18	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	14.0	12.8	13.4	14.1	13.1	13.7
19	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	12.8	12.1	12.3	14.2	13.2	13.7
20	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	12.1	11.4	11.8	14.5	13.4	13.9
21	-0.1	-0.4	-0.2	-0.4	-0.4	-0.4	11.9	10.7	11.1	14.8	13.6	14.2
22	-0.3	-0.4	-0.3	-0.4	-0.4	-0.4	10.7	9.5	10.0	15.1	14.3	14.7
23	-0.2	-0.4	-0.3	-0.3	-0.4	-0.4	10.0	8.9	9.4	15.1	14.2	14.6
24	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	10.0	9.2	9.5	14.8	13.9	14.3
25	-0.3	-0.4	-0.3	-0.3	-0.4	-0.3	9.3	8.8	9.0	15.1	14.2	14.7
26	-0.2	-0.4	-0.3	-0.3	-0.4	-0.3	9.0	8.5	8.8	15.8	14.6	15.2
27	-0.2	-0.4	-0.3	-0.2	-0.4	-0.3	8.9	8.1	8.5	16.6	14.8	15.7
28	-0.2	-0.4	-0.3	-0.1	-0.4	-0.3	8.4	7.7	8.1	17.8	16.0	16.9
29	---	---	---	-0.2	-0.4	-0.3	8.3	7.6	7.9	19.4	17.5	18.4
30	---	---	---	-0.2	-0.4	-0.3	8.6	8.0	8.3	20.3	18.7	19.5
31	---	---	---	-0.2	-0.4	-0.4	---	---	---	21.4	19.7	20.6
MONTH	-0.1	-0.4	-0.3	-0.1	-0.4	-0.4	14.0	-0.4	5.9	21.4	7.8	12.7

05054000 RED RIVER OF THE NORTH AT FARGO, ND--Continued

WATER TEMPERATURE from datalogger, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.2	20.6	21.4	29.1	27.9	28.5	26.8	25.1	25.6	24.4	23.7	24.1
2	21.6	20.1	20.9	28.6	27.9	28.2	25.4	24.6	25.1	24.1	23.1	23.8
3	20.2	19.5	19.9	28.4	27.2	27.8	25.2	24.0	24.5	23.3	22.4	22.9
4	20.2	19.2	19.7	27.8	26.4	26.9	24.6	23.9	24.3	22.7	22.3	22.5
5	20.1	19.5	19.8	27.2	25.7	26.5	24.4	23.4	24.0	23.7	22.3	23.0
6	20.5	19.8	20.1	27.6	26.6	27.1	24.2	23.0	23.4	24.0	22.9	23.5
7	20.1	19.5	19.9	27.3	25.4	26.9	23.3	22.4	22.9	24.7	23.6	24.1
8	20.5	19.3	19.9	26.8	25.1	25.9	24.2	23.3	23.7	24.8	24.0	24.4
9	20.3	19.9	20.0	27.1	26.4	26.7	24.7	24.0	24.2	24.6	23.5	24.0
10	21.5	20.3	21.0	26.9	23.4	25.2	24.3	23.6	23.9	23.7	22.8	23.3
11	22.1	20.6	21.3	24.4	21.3	22.6	24.7	23.2	23.9	23.4	22.5	23.0
12	21.9	21.2	21.6	23.9	22.6	23.3	24.1	23.7	23.9	23.1	22.4	22.8
13	21.5	20.9	21.2	23.4	22.6	22.9	24.1	22.9	23.6	22.8	22.1	22.5
14	21.5	20.2	20.9	23.8	22.5	23.1	23.8	22.8	23.1	22.4	21.1	21.5
15	22.0	20.7	21.3	25.0	23.5	24.2	23.0	22.4	22.7	21.1	19.9	20.4
16	22.3	21.2	21.7	26.1	24.8	25.4	22.8	22.0	22.2	20.4	19.7	20.1
17	22.2	21.2	21.7	26.7	26.1	26.5	22.0	20.9	21.3	20.4	19.7	20.0
18	22.2	21.3	21.8	27.5	26.4	26.9	20.9	20.3	20.6	20.4	19.8	20.0
19	22.7	21.8	22.3	28.3	27.0	27.6	20.8	19.8	20.3	20.0	19.4	19.8
20	22.8	21.8	22.4	28.4	27.5	28.0	20.5	20.1	20.3	19.4	18.7	19.1
21	22.7	22.4	22.6	28.4	27.7	28.0	20.6	20.1	20.4	18.7	17.6	18.1
22	23.0	22.3	22.5	27.9	26.4	27.0	21.0	20.3	20.7	17.6	16.6	17.0
23	23.6	22.0	22.7	26.4	25.0	25.6	21.9	20.6	21.2	16.6	15.7	16.1
24	25.1	23.2	24.1	25.0	24.3	24.6	22.5	21.5	22.0	15.7	14.9	15.2
25	26.2	24.9	25.5	24.8	23.8	24.3	23.2	22.1	22.6	15.1	14.3	14.6
26	26.4	25.6	26.0	25.2	24.0	24.6	24.2	23.0	23.6	14.4	13.4	13.9
27	27.8	26.2	26.9	25.5	24.6	25.0	24.7	23.6	24.1	13.8	13.1	13.4
28	28.1	26.9	27.5	25.5	25.0	25.2	25.3	24.0	24.6	13.3	12.4	12.8
29	28.9	27.3	28.1	26.0	24.6	25.3	24.9	24.2	24.5	12.9	12.3	12.6
30	29.1	28.0	28.5	26.6	25.2	25.9	24.4	24.0	24.3	13.3	12.6	12.9
31	---	---	---	26.8	25.5	26.3	24.5	23.6	24.1	---	---	---
MONTH	29.1	19.2	22.4	29.1	21.3	25.9	26.8	19.8	23.1	24.8	12.3	19.7
YEAR	29.1	-0.4	10.3									

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	603	597	600	624	623	623	858	854	857
2	---	---	---	598	595	596	624	623	624	860	858	859
3	---	---	---	595	590	593	624	622	623	861	859	860
4	---	---	---	590	588	589	622	621	622	860	859	859
5	---	---	---	588	585	587	622	620	621	859	855	857
6	---	---	---	587	584	585	620	618	619	856	854	855
7	---	---	---	587	586	586	619	617	618	854	851	852
8	---	---	---	587	584	585	617	614	615	852	847	850
9	---	---	---	604	586	597	615	613	614	847	844	845
10	---	---	---	604	602	603	613	611	612	844	839	842
11	---	---	---	604	603	604	622	610	614	839	835	837
12	---	---	---	607	604	606	649	622	632	835	829	832
13	---	---	---	608	606	608	685	649	669	830	824	827
14	---	---	---	609	608	609	722	685	703	824	819	821
15	---	---	---	609	608	608	755	722	740	819	813	816
16	---	---	---	608	607	608	774	755	764	814	808	812
17	---	---	---	607	605	606	789	774	782	809	804	806
18	---	---	---	607	605	606	798	789	793	804	798	801
19	---	---	---	609	607	608	810	798	803	798	793	795
20	607	604	605	608	607	608	826	810	817	793	788	790
21	610	604	607	609	608	608	831	826	829	789	785	787
22	613	610	611	609	608	609	836	831	834	785	781	783
23	614	612	613	610	609	609	840	836	838	782	777	779
24	618	614	616	610	608	608	842	840	841	777	774	776
25	619	616	617	612	609	610	845	842	843	774	768	771
26	618	616	617	616	612	614	846	844	845	770	765	767
27	617	614	616	622	616	620	847	845	846	765	762	763
28	615	612	613	624	622	623	850	847	848	762	758	760
29	613	608	611	624	623	623	851	850	851	758	754	756
30	608	606	607	625	623	624	854	851	852	754	751	752
31	606	602	604	---	---	---	855	854	855	751	747	749
MONTH	---	---	---	625	584	605	855	610	735	861	747	810

05054000 RED RIVER OF THE NORTH AT FARGO, ND--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	747	744	746	709	707	708	768	749	756	595	555	578
2	744	741	743	709	708	709	755	749	753	620	591	611
3	741	737	739	710	709	709	756	754	755	614	595	605
4	737	734	736	710	709	709	756	755	755	649	605	629
5	735	731	733	710	709	710	755	744	750	654	630	638
6	731	729	730	710	709	709	744	732	738	663	652	657
7	729	726	727	710	708	709	732	717	725	662	648	651
8	727	725	726	708	707	708	717	695	706	691	626	661
9	725	724	724	707	705	706	695	683	690	695	646	680
10	725	723	724	706	703	704	683	666	675	719	670	690
11	723	722	723	716	703	709	666	641	653	721	648	684
12	722	720	721	733	716	724	641	626	635	719	634	663
13	722	720	721	756	733	744	626	607	614	788	719	756
14	721	719	720	774	756	765	607	588	599	839	788	826
15	720	718	719	791	774	783	588	578	582	830	791	806
16	718	717	718	806	791	799	578	572	576	808	787	796
17	717	714	715	816	806	811	572	559	565	835	808	819
18	716	714	715	824	816	821	---	---	---	823	818	820
19	715	713	714	831	824	827	---	---	---	822	797	810
20	714	712	713	836	831	833	515	511	513	810	786	797
21	713	711	712	834	831	832	513	501	505	808	775	789
22	712	710	711	835	830	832	531	508	519	787	772	778
23	712	710	711	836	834	835	540	529	534	783	777	780
24	711	709	710	837	835	836	541	529	535	790	780	785
25	710	708	709	836	835	836	534	522	526	798	781	792
26	709	708	708	836	831	834	531	521	525	827	795	814
27	709	707	708	834	829	831	555	528	540	832	820	827
28	709	707	708	834	827	831	611	555	588	832	794	819
29	---	---	---	827	809	819	611	584	596	824	774	799
30	---	---	---	809	790	799	589	551	568	802	766	785
31	---	---	---	790	768	780	---	---	---	791	745	758
MONTH	747	707	721	837	703	773	---	---	---	839	555	739

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	748	727	741	793	769	775	645	602	619	---	---	---
2	729	614	685	806	790	801	629	603	620	---	---	---
3	802	616	724	---	---	---	603	589	596	---	---	---
4	866	692	808	---	---	---	595	587	592	---	---	---
5	692	616	633	---	---	---	616	594	603	---	---	---
6	618	596	607	---	---	---	652	607	627	---	---	---
7	611	565	580	---	---	---	659	643	652	---	---	---
8	565	541	554	---	---	---	699	643	669	---	---	---
9	543	360	449	---	---	---	719	699	710	---	---	---
10	416	367	397	---	---	---	719	703	712	---	---	---
11	564	399	475	587	365	449	714	632	683	---	---	---
12	700	562	634	395	368	383	632	599	612	---	---	---
13	813	697	773	456	343	397	604	582	589	---	---	---
14	813	759	782	343	325	330	602	581	591	---	---	---
15	760	738	750	378	340	363	597	569	581	---	---	---
16	738	701	713	412	378	393	569	529	550	---	---	---
17	719	704	710	535	412	455	529	504	515	---	---	---
18	705	690	696	579	523	554	530	513	520	---	---	---
19	695	680	688	530	501	510	664	530	592	---	---	---
20	718	690	708	596	530	572	760	664	714	---	---	---
21	718	691	706	597	586	592	776	760	769	---	---	---
22	731	710	723	640	590	616	778	776	777	---	---	---
23	720	649	678	640	626	633	780	777	778	---	---	---
24	724	669	704	640	626	629	780	765	773	---	---	---
25	736	723	730	634	620	623	765	754	758	---	---	---
26	735	721	729	620	607	613	755	679	723	---	---	---
27	749	718	736	620	611	614	679	657	671	---	---	---
28	769	749	758	631	614	622	657	608	636	---	---	---
29	774	763	768	632	622	629	608	561	583	---	---	---
30	779	774	777	625	619	622	---	---	---	---	---	---
31	---	---	---	629	624	626	---	---	---	---	---	---
MONTH	866	360	681	---	---	---	---	---	---	---	---	---

05054500 SHEYENNE RIVER ABOVE HARVEY, ND

LOCATION.--Lat 47°42'10", long 99°56'55", in SW$^{1}/_{4}$SE$^{1}/_{4}$ sec.24, T.149 N., R.73 W., Wells County, Hydrologic Unit 09020202, on right bank just downstream from county road and 4.5 mi south of Harvey.

DRAINAGE AREA.--424 mi^{2}, of which about 270 mi^{2} is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.- October 1955 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,547.30 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	6.2	e3.0	e0.63	e0.00	e0.00	e9.5	28	9.4	5.3	2.6	3.1
2	2.2	5.5	e2.8	e0.70	e0.00	e0.00	e10	27	9.3	4.6	1.7	2.8
3	2.1	5.3	e2.6	e0.80	e0.00	e0.00	e12	26	9.8	4.3	1.7	2.4
4	2.2	5.1	e2.6	e0.72	e0.00	e0.00	e12	23	9.8	4.0	1.5	2.2
5	2.1	e5.0	e2.4	e0.67	e0.00	e0.00	e13	22	9.2	3.7	1.4	2.2
6	2.2	e4.8	e2.2	e0.62	e0.05	e0.00	e14	22	8.0	3.7	1.5	2.3
7	1.9	e4.8	e1.9	e0.59	e0.05	e0.00	e14	23	7.6	3.7	1.6	2.2
8	2.0	e4.5	e1.8	e0.56	e0.10	e0.02	e15	25	7.3	3.4	1.6	2.9
9	2.4	e4.6	e1.7	e0.55	e0.10	e0.10	e15	30	12	6.1	3.3	2.5
10	3.1	e4.5	e1.7	e0.52	e0.12	e0.15	e16	30	24	9.9	1.8	2.3
11	2.8	e4.4	e1.6	e0.50	e0.15	e0.25	e16	29	26	7.9	1.7	2.1
12	2.9	e4.3	e1.5	e0.49	e0.20	e0.35	16	29	25	7.4	1.6	2.2
13	2.9	e4.5	e1.5	e0.47	e0.22	e0.45	17	27	19	6.5	1.5	2.1
14	3.0	e4.4	e1.5	e0.46	e0.20	e0.53	17	26	15	5.5	1.5	2.2
15	3.1	e4.3	e1.5	e0.44	e0.22	e0.61	16	23	12	4.6	1.5	2.0
16	3.2	e4.4	e1.5	e0.42	e0.25	e0.65	15	22	9.2	4.0	1.6	1.9
17	3.8	e4.3	e1.4	e0.41	e0.25	e0.81	14	21	7.5	8.0	2.3	1.9
18	3.2	e4.2	e1.3	e0.40	e0.24	e0.98	18	20	7.0	6.0	1.7	2.1
19	3.3	e4.0	e1.4	e0.38	e0.22	e1.2	20	18	7.2	5.8	1.6	2.1
20	3.1	e4.2	e1.3	e0.38	e0.20	e1.6	18	17	7.1	6.1	1.5	1.9
21	3.0	e4.3	e1.3	e0.35	e0.22	e1.7	17	16	7.0	5.3	1.6	1.9
22	3.1	e4.2	e1.3	e0.32	e0.20	e2.0	16	14	7.4	5.1	1.7	1.9
23	3.3	e4.1	e1.2	e0.28	e0.15	e2.3	18	13	8.0	4.6	1.6	2.0
24	6.2	e4.0	e1.2	e0.20	e0.12	e2.7	21	13	10	4.0	1.5	1.7
25	12	e3.8	e1.1	e0.12	e0.10	e3.8	21	13	9.6	3.6	1.5	1.8
26	8.5	e3.6	e1.0	e0.05	e0.05	e4.8	23	13	8.3	3.1	2.8	1.7
27	7.2	e3.4	e0.96	e0.00	e0.05	e5.6	26	12	7.3	2.6	3.3	1.6
28	7.0	e3.2	e0.81	e0.00	e0.00	e6.1	28	11	7.1	2.4	3.4	1.8
29	6.1	e3.2	e0.67	e0.00	---	e6.9	29	11	7.3	2.1	3.2	1.8
30	6.1	e3.1	e0.59	e0.00	---	e7.4	28	11	6.2	2.0	3.4	1.8
31	6.0	---	e0.63	e0.00	---	e8.5	---	9.9	---	2.1	3.4	---
TOTAL	122.3	130.2	47.96	12.03	3.46	59.50	524.5	624.9	319.6	147.4	62.6	63.4
MEAN	3.945	4.340	1.547	0.388	0.124	1.919	17.48	20.16	10.65	4.755	2.019	2.113
MAX	12	6.2	3.0	0.80	0.25	8.5	29	30	26	9.9	3.4	3.1
MIN	1.9	3.1	0.59	0.00	0.00	0.00	9.5	9.9	6.2	2.0	1.4	1.6
AC-FT	243	258	95	24	6.9	118	1040	1240	634	292	124	126

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2002, BY WATER YEAR (WY)

MEAN	3.656	3.852	1.963	0.943	3.072	35.28	43.91	21.10	11.45	9.625	4.531	3.083
MAX	34.5	39.0	21.2	6.73	26.8	207	324	117	77.3	67.4	59.4	48.4
(WY)	1995	1995	1995	2000	1983	2001	1997	1995	2000	2000	1999	1999
MIN	0.43	0.26	0.034	0.000	0.000	0.000	2.13	1.59	0.30	0.071	0.000	0.061
(WY)	1991	1977	1996	1959	1956	1969	1991	1977	1961	1961	1959	1976

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1956 - 2002	
ANNUAL TOTAL	15435.36		2117.85			
ANNUAL MEAN	42.29		5.802		11.90	
HIGHEST ANNUAL MEAN					44.3	2001
LOWEST ANNUAL MEAN					0.76	1961
HIGHEST DAILY MEAN	900	Mar 24	30	May 9	900	Mar 24 2001
LOWEST DAILY MEAN	0.59	Dec 30	0.00	Jan 27	0.00	Jan 21 1956
ANNUAL SEVEN-DAY MINIMUM	0.82	Dec 25	0.00	Jan 27	0.00	Jan 21 1956
MAXIMUM PEAK FLOW			a33	Jun 10	1000	Apr 20 1979
MAXIMUM PEAK STAGE			b7.16	Apr 6	b10.76	Apr 6 1997
INSTANTANEOUS LOW FLOW					0.00	Jan 21 1956
ANNUAL RUNOFF (AC-FT)	30620		4200		8620	
10 PERCENT EXCEEDS	104		17		28	
50 PERCENT EXCEEDS	4.6		2.9		1.9	
90 PERCENT EXCEEDS	2.4		0.20		0.01	

a Gage height, 5.61 ft
b Backwater from ice
e Estimated

05054500 SHEYENNE RIVER ABOVE HARVEY, ND--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
05...	1005	5.2	--	--	--	1630	13.0	4.5	--	--	--	--	--
DEC													
11...	1150	1.6	--	--	--	1720	-4.0	.0	--	--	--	--	--
MAR													
20...	0920	1.5	--	--	--	1300	-5.0	.0	--	--	--	--	--
28...	1100	5.8	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	1145	28	8.5	8.3	1820	--e	6.5	7.4	530	74.0	83.0	16.0	4
JUN													
19...	1600	7.5	--	--	--	1590	23.0	20.4	--	--	--	--	--
JUL													
16...	1315	4.1	8.7	8.4	1640	1700	35.0	28.2	330	42.0	55.0	13.0	6
AUG													
20...	1155	1.5	--	--	--	1310	29.0	17.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	220	47	432	20.0	.30	610	101	1340	1280	5.0	60	<1	140
JUN													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
16...	270	63	506	19.0	.30	440	13.1	1180	1140	7.0	40	<1	140
AUG													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
05...	--	--	--	--	--
DEC					
11...	--	--	--	--	--
MAR					
20...	--	--	--	--	--
28...	--	--	--	--	--
MAY					
02...	110	<.10	1	<1	560
JUN					
19...	--	--	--	--	--
JUL					
16...	80	.20	6	1	610
AUG					
20...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05056000 SHEYENNE RIVER NEAR WARWICK, ND

LOCATION.--Lat 47°48'20", long 98°42'57", on south quarter of line between secs.15 and 16, T.150 N., R.63 W., Eddy County, Hydrologic Unit 09020203, on left bank on downstream side of county highway bridge and 3.3 mi south of Warwick.

DRAINAGE AREA.--2,070 mi^2, approximately, of which about 1,310 mi^2 is probably noncontributing, including 227 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder and rubble masonry control. Datum of gage is 1,376.34 ft above National Geodetic Vertical Datum of 1929 (GPS survey by North Dakota State Water Commission).

REMARKS.--Records good except for periods where discharge is less than 40 ft^3/s, which are fair and for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	80	54	18	15	29	e75	130	70	311	19	27
2	28	95	53	17	15	26	e68	129	59	218	18	29
3	27	108	51	16	15	23	e67	132	53	149	20	29
4	20	86	50	16	15	22	e70	125	55	110	17	34
5	21	85	51	16	14	22	e76	128	58	83	13	23
6	24	82	50	16	14	22	e88	121	56	69	11	18
7	22	82	50	16	15	20	e120	112	53	66	8.6	18
8	22	76	48	17	17	20	e146	124	49	56	7.6	19
9	23	79	43	20	18	19	140	132	62	52	7.4	24
10	33	70	38	23	19	19	144	177	113	51	8.0	23
11	48	65	34	26	19	18	149	173	183	56	11	21
12	50	60	32	29	21	22	163	153	216	55	12	18
13	41	58	30	31	22	26	185	156	293	51	18	17
14	39	61	29	32	24	27	194	158	396	43	39	15
15	39	60	27	31	25	32	219	145	422	40	34	15
16	41	60	27	30	26	42	240	140	389	37	30	13
17	37	59	29	29	28	45	231	135	341	39	32	13
18	30	58	29	28	30	44	226	129	287	48	30	15
19	28	57	28	26	33	41	197	e125	233	53	35	15
20	30	57	26	24	e35	37	188	e115	196	47	21	22
21	31	54	24	23	e36	33	172	e105	160	37	15	33
22	30	54	23	22	e36	32	161	94	128	34	16	30
23	31	55	22	22	e37	29	151	88	140	33	27	31
24	40	54	22	22	e36	28	155	89	174	28	38	25
25	43	55	22	20	e35	27	174	89	164	24	36	19
26	60	42	20	20	33	26	156	82	146	23	30	16
27	46	30	19	19	32	31	118	84	190	22	30	14
28	36	50	19	19	31	e43	116	78	343	19	28	14
29	41	54	19	19	---	e55	132	75	431	18	26	13
30	54	56	19	17	---	e73	139	73	398	17	27	14
31	64	---	18	16	---	e83	---	74	---	17	28	---
TOTAL	1108	1942	1006	680	696	1016	4460	3670	5858	1906	692.6	617
MEAN	35.74	64.73	32.45	21.94	24.86	32.77	148.7	118.4	195.3	61.48	22.34	20.57
MAX	64	108	54	32	37	83	240	177	431	311	39	34
MIN	20	30	18	16	14	18	67	73	49	17	7.4	13
AC-FT	2200	3850	2000	1350	1380	2020	8850	7280	11620	3780	1370	1220

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	17.40	18.53	10.57	6.922	11.97	133.2	345.7	122.8	69.23	56.44	32.11	17.40
MAX	136	233	93.4	55.2	154	793	1794	854	326	441	423	154
(WY)	2001	2001	2001	2001	1981	1983	1997	1950	1954	2000	1993	2000
MIN	1.16	1.28	0.76	0.47	0.75	1.46	15.8	10.4	1.75	0.36	0.090	0.71
(WY)	1953	1961	1961	1990	1990	1964	1977	1990	1961	1989	1961	1961

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1950 - 2002	
ANNUAL TOTAL	72456		23651.6			
ANNUAL MEAN	198.5		64.80		70.17	
HIGHEST ANNUAL MEAN					226	2001
LOWEST ANNUAL MEAN					5.31	1977
HIGHEST DAILY MEAN	1870	Apr 8	431	Jun 29	4370	Apr 14 1969
LOWEST DAILY MEAN	18	Dec 31	7.4	Aug 9	0.00	Aug 7 1961
ANNUAL SEVEN-DAY MINIMUM	19	Dec 25	9.4	Aug 6	0.00	Aug 7 1961
MAXIMUM PEAK FLOW			442	Jun 29	a4660	Apr 14 1969
MAXIMUM PEAK STAGE			3.61	Jun 29	8.08	Apr 21 1997
INSTANTANEOUS LOW FLOW					0.00	Aug 7 1961
ANNUAL RUNOFF (AC-FT)	143700		46910		50830	
10 PERCENT EXCEEDS	462		155		140	
50 PERCENT EXCEEDS	62		35		12	
90 PERCENT EXCEEDS	33		17		1.6	

a Gage height, 7.51 ft
e Estimated

05056000 SHEYENNE RIVER NEAR WARWICK, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951, 1953, 1958 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
04...	1340	20	--	--	--	981	11.5	12.5	--	--	--	--	--
29...	1130	41	--	--	--	--	--	--	--	--	--	--	--
NOV													
28...	1650	53	--	--	--	1100	-7.0	.5	--	--	--	--	--
DEC													
18...	1410	29	--	--	--	--	--	--	--	--	--	--	--
JAN													
23...	1140	22	--	--	--	1630	-7.0	.0	--	--	--	--	--
FEB													
22...	0940	36	--	--	--	1360	2.5	.5	--	--	--	--	--
MAR													
25...	1305	27	--	--	--	1060	-1.0	1.0	--	--	--	--	--
APR													
12...	1010	162	8.2	--e	718	680	20.0	2.0	220	42.0	27.0	11.0	2
MAY													
08...	1040	124	--	--	--	1390	2.5	6.0	--	--	--	--	--
JUL													
02...	1240	219	--	--	--	1070	23.5	26.0	--	--	--	--	--
09...	1215	52	--e	8.2	1140	--e	--e	--e	320	53.5	44.4	12.3	4
24...	1625	27	7.7	8.0	1190	1200	23.5	22.5	360	61.0	50.0	13.0	3

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, TOTAL (MG/L AS N) (00600)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	69.0	39	226	11.0	.10	--	150	--	--	--	--	--	--
MAY													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	146	49	416	11.8	.2	33.2	239	2.2	E.04	.047	.51	.56	2.8
24...	150	47	470	18.0	.20	--	220	--	--	--	--	--	--

05056000 SHEYENNE RIVER NEAR WARWICK, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	<.1	<.1	--	--	--	--	--	--
NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
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FEB													
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25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	--	--	202	461	446	--	--	4.0	130	<1	50	120	<.10
MAY													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	.12	.57	121	862	793	E6.5	E1.1	--	17	--	--	383	--
24...	--	--	62.6	859	795	--	--	13.0	70	1	100	410	.10

Date	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
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NOV													
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DEC													
18...	--	--	--	<.004	<.007	<.002	<.02	<.008	<.04	<.005	<.007	<.050	<.03
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
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MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	<1	<1	220	--	--	--	--	--	--	--	--	--	--
MAY													
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24...	1	<1	330	--	--	--	--	--	--	--	--	--	--

Date	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENOMYL WATER FLTRD REC (UG/L) (50300)	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)
OCT													
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NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	<.010	<.004	<.02	E.03	<.002	<.010	<.03	<.041	<.006	<.020	<.006	<2	<.02
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
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05056000 SHEYENNE RIVER NEAR WARWICK, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)
OCT													
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DEC													
18...	<.010	<.04	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	<.005	<.01
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
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Date	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHEN-AMID, WATER, DISS, REC (UG/L) (04033)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMET-SULAM WATER FLTRD REC (UG/L) (61694)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)
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DEC													
18...	<.01	<.005	<.002	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	<.03
JAN													
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Date	FONOFOS WATER DISS REC (UG/L) (04095)	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)	IMAZ-AQUIN WATER FLTRD REC (UG/L) (50356)	IMAZE-THAPYR WATER FLTRD REC (UG/L) (50407)	IMID-ACLOP-RID WATER FLTRD REC (UG/L) (61695)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METAL-AXYL WATER FLTRD REC (UG/L) (50359)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)
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NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	<.003	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008
JAN													
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MAY													
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JUL													
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05056000 SHEYENNE RIVER NEAR WARWICK, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	METH-OMYL OXIME WATER FLTRD REC (UG/L) (61696)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MET-SUL-FURON METHYL WAT FLT REC (UG/L) (61697)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSUL FURON WATER FLTRD REC (UG/L) (50364)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL OXIME WATER FLTRD REC (UG/L) (50410)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
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28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	--q	<.004	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02	<.02	--q
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
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MAR													
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MAY													
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Date	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)
OCT													
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NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	<.01	<.003	<.007	<.002	<.010	<.006	<.011	<.02	<.004	<.010	<.011	<.02	<.010
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
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MAY													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
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Date	PROP-ICONA-ZOLE , WATER FLTRD REC (UG/L) (50471)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SIDURON WATER FLTRD REC (UG/L) (38548)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	SULFO-MET-RURON METHYL WTR FLT REC (UG/L) (50337)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL, WATER, DISS, REC (UG/L) (04032)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-BENURON METHYL WATER FLTRD (UG/L) (61159)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)
OCT													
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NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	<.02	<.008	<.02	<.011	<.009	<.02	<.010	<.034	<.02	<.005	<.002	--u	<.02
JAN													
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MAY													
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05056000 SHEYENNE RIVER NEAR WARWICK, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UREA 3(4-CHLOR OPHENYL METHYL WAT FLT REC (UG/L) (61692)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)
OCT					
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28...	--	--	--	--	--
DEC					
18...	<.009	<.02	<.009	<.02	<.02
JAN					
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FEB					
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JUL					
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09...	--	--	--	--	--
24...	--	--	--	--	--

< Less than
E Estimated value
e Required equipment not functional/available
q Sample discarded: holding time exceeded
u Unable to determine-matrix interference

05056060 MAUVAIS COULEE TRIBUTARY NO. 3 NEAR CANDO, ND

LOCATION.--Lat 48°27'28", long 99°13'24", in NE$^1/_4$NW$^1/_4$ sec.6, T.157 N., R.66 W., Towner County, Hydrologic Unit 09020201, at bridge 2.1 mi southwest of Cando.

DRAINAGE AREA.--60.2 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1955-73 (annual maximum discharges only), 1986-88 (discharge measurements only), March 1989 to current year (seasonal records only since 1989).

GAGE.--Water-stage recorder. Datum of gage is 1,460 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to 1986 gage was at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,300 ft^3/s, Apr. 14, 1969, gage height, 9.35 ft, datum then in use.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 43 ft^3/s, June 15, gage height, 4.64 ft; no flow much of the time.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e0.00	e0.00	0.00	0.00	2.5	0.00	13
2	---	---	---	---	---	e0.00	e0.00	0.00	0.00	1.8	0.00	13
3	---	---	---	---	---	e0.00	e0.00	0.00	0.00	1.4	0.00	8.9
4	---	---	---	---	---	e0.00	e0.00	0.00	0.00	1.1	0.00	5.4
5	---	---	---	---	---	e0.00	e0.00	0.00	0.00	0.99	0.00	3.9
6	---	---	---	---	---	e0.00	e0.00	0.00	0.00	0.91	0.00	3.0
7	---	---	---	---	---	e0.00	e0.00	0.00	0.00	0.84	0.00	2.5
8	---	---	---	---	---	e0.00	e0.00	0.00	0.00	0.77	0.00	2.5
9	---	---	---	---	---	e0.00	e0.00	0.00	0.12	1.8	11	2.3
10	---	---	---	---	---	e0.00	e0.04	0.00	14	1.5	30	2.3
11	---	---	---	---	---	e0.00	0.07	0.00	8.6	0.91	13	2.0
12	---	---	---	---	---	e0.00	0.07	0.00	3.9	0.76	5.7	1.7
13	---	---	---	---	---	e0.00	0.13	0.00	4.5	0.64	3.3	1.5
14	---	---	---	---	---	e0.00	0.21	0.00	27	0.56	2.4	1.3
15	---	---	---	---	---	e0.00	0.03	0.00	42	0.47	2.0	1.3
16	---	---	---	---	---	e0.00	0.05	0.00	39	0.40	1.9	1.2
17	---	---	---	---	---	e0.00	0.0	0.00	30	0.35	2.6	1.0
18	---	---	---	---	---	e0.00	0.00	0.00	21	0.32	2.4	1.4
19	---	---	---	---	---	e0.00	0.00	0.00	15	0.26	2.0	2.4
20	---	---	---	---	---	e0.00	0.00	0.00	10	0.22	1.5	2.6
21	---	---	---	---	---	e0.00	0.00	0.00	7.3	0.14	1.3	1.8
22	---	---	---	---	---	e0.00	0.00	0.00	17	0.04	1.2	1.6
23	---	---	---	---	---	e0.00	0.00	0.00	21	0.00	1.2	1.9
24	---	---	---	---	---	e0.00	0.00	0.00	19	0.00	1.1	1.6
25	---	---	---	---	---	0.00	0.00	0.00	14	0.00	1.0	1.5
26	---	---	---	---	---	e0.00	0.00	0.00	13	0.00	1.7	1.4
27	---	---	---	---	---	e0.01	0.00	0.00	10	0.00	2.4	1.2
28	---	---	---	---	---	e0.01	0.00	0.00	7.5	0.00	7.7	1.2
29	---	---	---	---	---	e0.00	0.00	0.00	5.3	0.00	14	1.2
30	---	---	---	---	---	e0.00	0.00	0.00	3.7	0.00	10	1.1
31	---	---	---	---	---	e0.00	---	0.00	---	0.00	7.1	---
TOTAL	---	---	---	---	---	0.02	0.60	0.00	332.92	18.68	126.50	87.7
MEAN	---	---	---	---	---	0.001	0.020	0.000	11.10	0.603	4.081	2.923
MAX	---	---	---	---	---	0.01	0.21	0.00	42	2.5	30	13
MIN	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	1.0
AC-FT	---	---	---	---	---	0.04	1.2	0.00	660	37	251	174

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	21.84	82.36	15.05	5.526	12.51	9.013	1.358
MAX	---	---	---	---	---	141	252	94.5	40.0	93.6	59.7	13.9
(WY)	---	---	---	---	---	1992	1999	1999	1996	1997	1996	1993
MIN	---	---	---	---	---	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	---	---	---	---	---	1989	1990	1988	1988	1988	1988	1988

e Estimated

05056060 MAUVAIS COULEE TRIBUTARY NO. 3 NEAR CANDO, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
FEB													
21...	1520	.0	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	1630	.0	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	1410	.06	7.8	--e	910	875	15.5	5.0	320	62.0	40.0	7.70	2
MAY													
03...	1150	.0	--	--	--	--	--	--	--	--	--	--	--
22...	1200	.0	--	--	--	--	--	--	--	--	--	--	--
JUN													
19...	1235	15	--	--	--	1450	--	21.5	--	--	--	--	--
24...	2015	15	--	--	--	1160	--	25.0	--	--	--	--	--
JUL													
24...	1145	.0	--	--	--	--	--	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	66.0	30	103	29.0	.10	320	.10	624	588	4.0	60	<1	40
MAY													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
FEB					
21...	--	--	--	--	--
MAR					
25...	--	--	--	--	--
APR					
11...	920	<.10	<1	<1	300
MAY					
03...	--	--	--	--	--
22...	--	--	--	--	--
JUN					
19...	--	--	--	--	--
24...	--	--	--	--	--
JUL					
24...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05056100 MAUVAIS COULEE NEAR CANDO, ND

LOCATION.--Lat 48°26'53", long 99°06'08", in $SE^1/_4NE^1/_4SE^1/_4$ sec.1, T.157 N., R.66 W., Towner County, Hydrologic Unit 09020201, on left bank 0.3 mi upstream from highway bridge, about 4 mi upstream from West Fork Mauvais Coulee, and 5.5 mi southeast of Cando.

DRAINAGE AREA.--387 mi^2, of which about 10 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1956 to current year (seasonal records only since 1982).

GAGE.--Water-stage recorder. Elevation of gage is 1,445 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 2, 1957, nonrecording gage at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 180 ft^3/s, June 16, gage height, 5.02 ft; minimum recorded daily discharge, 0.03 ft^3/s, on several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	0.04	0.04	0.31	0.48	e22	0.27	22
2	---	---	---	---	---	0.04	0.04	0.30	0.40	19	0.21	26
3	---	---	---	---	---	0.03	0.04	e0.10	0.36	14	0.20	24
4	---	---	---	---	---	0.03	0.04	0.36	0.35	11	0.15	24
5	---	---	---	---	---	0.04	0.04	0.40	0.32	9.2	0.11	27
6	---	---	---	---	---	0.03	0.05	0.39	0.27	6.7	0.11	26
7	---	---	---	---	---	0.03	0.04	0.40	0.23	5.6	0.17	22
8	---	---	---	---	---	0.03	0.04	0.60	0.23	4.6	0.18	18
9	---	---	---	---	---	0.03	0.04	1.6	2.0	4.1	0.42	14
10	---	---	---	---	---	0.03	0.04	1.4	21	4.7	0.43	11
11	---	---	---	---	---	0.04	0.06	2.1	48	3.3	0.34	9.3
12	---	---	---	---	---	0.06	0.09	3.1	54	3.0	0.25	7.8
13	---	---	---	---	---	0.05	0.13	3.5	78	2.6	3.0	6.7
14	---	---	---	---	---	0.04	0.16	3.7	96	2.3	12	5.8
15	---	---	---	---	---	0.04	0.25	2.6	116	2.1	10	5.1
16	---	---	---	---	---	0.04	0.24	1.8	166	1.8	8.6	4.4
17	---	---	---	---	---	0.04	0.32	1.1	170	1.7	8.9	3.9
18	---	---	---	---	---	0.04	0.54	1.1	136	1.7	7.3	4.8
19	---	---	---	---	---	0.04	0.55	0.95	108	1.5	6.3	5.4
20	---	---	---	---	---	0.04	0.45	0.71	93	1.3	5.6	4.5
21	---	---	---	---	---	0.04	0.39	0.96	94	1.0	5.2	4.0
22	---	---	---	---	---	0.04	0.36	0.71	e97	0.90	4.9	4.2
23	---	---	---	---	---	0.04	0.34	0.82	e96	0.96	4.7	4.9
24	---	---	---	---	---	0.03	0.35	0.56	e95	0.82	4.7	4.8
25	---	---	---	---	---	0.03	0.29	0.47	e91	0.70	4.0	e4.6
26	---	---	---	---	---	0.04	0.24	0.57	e85	0.59	5.2	e4.5
27	---	---	---	---	---	0.11	0.22	0.55	e75	0.46	9.8	e4.5
28	---	---	---	---	---	0.12	0.21	0.54	e63	0.40	16	e4.4
29	---	---	---	---	---	0.08	0.24	0.69	e46	0.37	12	e4.2
30	---	---	---	---	---	0.05	0.25	0.90	e30	0.29	11	e4.0
31	---	---	---	---	---	0.05	---	0.68	---	0.29	14	---
TOTAL	---	---	---	---	---	1.39	6.09	33.97	1862.64	128.98	156.04	315.8
MEAN	---	---	---	---	---	0.045	0.203	1.096	62.09	4.161	5.034	10.53
MAX	---	---	---	---	---	0.12	0.55	3.7	170	22	16	27
MIN	---	---	---	---	---	0.03	0.04	0.10	0.23	0.29	0.11	3.9
AC-FT	---	---	---	---	---	2.8	12	67	3690	256	310	626

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2002, BY WATER YEAR (WY)

MEAN	2.409	1.177	0.279	0.020	0.183	22.21	196.8	58.53	12.99	15.96	14.32	4.552
MAX	27.1	10.4	3.86	0.34	5.01	198	946	527	87.6	226	274	62.3
(WY)	1966	1981	1981	1981	1981	1992	1997	1999	1999	1997	1993	1965
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1959	1960	1957	1957	1957	1958	1991	1961	1961	1959	1959	1959

SUMMARY STATISTICS WATER YEARS 1956 - 2002

ANNUAL MEAN	a19.68		
HIGHEST ANNUAL MEAN	a71.7		1974
LOWEST ANNUAL MEAN	a0.004		1961
HIGHEST DAILY MEAN	2980	Apr 21	1997
LOWEST DAILY MEAN	0.00	Aug 21	1956
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 21	1956
MAXIMUM PEAK FLOW	3000	Apr 21	1997
MAXIMUM PEAK STAGE	11.68	Apr 21	1997
ANNUAL RUNOFF (AC-FT)	a14260		
10 PERCENT EXCEEDS	25		
50 PERCENT EXCEEDS	0.06		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1957-82)
e Estimated

05056100 MAUVAIS COULEE NEAR CANDO, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1740	.10	--	--	--	1610	15.5	13.0	--	--	--	--	--
FEB													
21...	1450	.05	--	--	--	2110	9.0	1.5	--	--	--	--	--
MAR													
25...	1600	.03	--	--	--	1890	--	1.0	--	--	--	--	--
APR													
11...	1215	.06	8.1	7.8	1260	1210	13.5	4.0	590	130	65.0	7.00	1
MAY													
22...	1400	.68	--	--	--	2220	--	15.0	--	--	--	--	--
JUN													
19...	1110	107	--	--	--	1450	--	21.5	--	--	--	--	--
JUL													
24...	1110	.81	8.5	8.2	1460	1440	18.0	19.5	640	120	82.0	15.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	62.0	18	218	29.0	.20	460	.15	927	885	1.0	60	<1	80
MAY													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
24...	110	27	313	39.0	.20	500	2.47	1130	1050	8.0	20	1	90

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
03...	--	--	--	--	--
FEB					
21...	--	--	--	--	--
MAR					
25...	--	--	--	--	--
APR					
11...	570	<.10	<1	<1	520
MAY					
22...	--	--	--	--	--
JUN					
19...	--	--	--	--	--
JUL					
24...	310	.10	2	1	510

< Less than

05056200 EDMORE COULEE NEAR EDMORE, ND

LOCATION.--Lat 48°20'14", long 98°39'33", in $NW^1/_4NW^1/_4$ sec.17, T.156 N., R.62 W., Ramsey County, Hydrologic Unit 09020201, on right bank 50 ft upstream from bridge on county highway, 11 mi southwest of Edmore, and about 13 mi upstream from Sweetwater Lake.

DRAINAGE AREA.--382 mi^2, of which about 100 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to June 1956, June 1957 to current year (seasonal records only since 1982).

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above National Geodetic Vertical Datum of 1929. June 26, 1957, to Sept. 30, 1985, water-stage recorder at same site at a datum of 1,479.79 ft above National Geodetic Vertical Datum of 1929. Prior to June 26, 1957, nonrecording gage at same site and datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 436 ft^3/s, June 28, gage height, 85.18 ft; no flow several days during year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e0.00	e0.00	0.63	2.4	e295	4.9	e1.4
2	---	---	---	---	---	e0.00	e0.00	0.61	2.0	233	4.2	e1.2
3	---	---	---	---	---	e0.00	e0.00	0.45	2.0	191	3.9	e1.1
4	---	---	---	---	---	e0.00	e0.00	0.43	2.1	142	3.5	e0.95
5	---	---	---	---	---	e0.00	e0.00	0.46	2.3	108	3.0	e0.65
6	---	---	---	---	---	e0.00	e0.50	0.35	2.2	80	2.9	e0.50
7	---	---	---	---	---	e0.00	e7.0	0.33	1.9	60	3.2	e0.30
8	---	---	---	---	---	e0.00	e10	1.1	1.7	45	2.7	e0.30
9	---	---	---	---	---	e0.00	10	5.3	29	34	4.2	e0.20
10	---	---	---	---	---	e0.00	9.9	4.6	50	30	3.3	e0.14
11	---	---	---	---	---	e0.00	5.7	5.9	75	25	3.1	e0.13
12	---	---	---	---	---	e0.00	4.5	9.1	44	21	3.0	e0.07
13	---	---	---	---	---	0.00	3.8	9.3	72	17	2.6	e0.05
14	---	---	---	---	---	e0.00	4.6	6.8	161	14	2.3	e0.00
15	---	---	---	---	---	e0.00	3.9	7.8	269	12	2.0	e0.00
16	---	---	---	---	---	e0.00	3.4	11	346	10	1.9	e0.00
17	---	---	---	---	---	e0.00	3.1	9.8	371	9.5	2.0	e0.00
18	---	---	---	---	---	e0.00	2.1	8.6	344	9.7	1.8	e0.10
19	---	---	---	---	---	e0.00	2.0	7.6	297	8.9	1.6	e0.20
20	---	---	---	---	---	e0.00	2.0	6.9	266	8.1	1.3	e0.15
21	---	---	---	---	---	e0.00	2.1	6.0	237	7.7	1.2	e0.15
22	---	---	---	---	---	e0.00	1.7	5.5	255	7.2	1.0	e0.15
23	---	---	---	---	---	e0.00	1.4	5.3	270	6.9	0.86	e0.18
24	---	---	---	---	---	e0.00	1.7	4.3	313	6.5	0.94	e0.15
25	---	---	---	---	---	0.00	1.4	4.6	303	6.2	0.71	e0.10
26	---	---	---	---	---	e0.00	0.71	3.7	332	5.8	0.66	e0.08
27	---	---	---	---	---	e0.00	1.2	2.8	400	5.5	0.88	e0.07
28	---	---	---	---	---	e0.00	1.2	3.5	430	5.4	0.88	e0.05
29	---	---	---	---	---	e0.00	1.0	3.8	405	5.1	0.73	e0.03
30	---	---	---	---	---	e0.00	0.77	3.7	354	4.7	0.72	e0.05
31	---	---	---	---	---	e0.00	---	2.9	---	5.0	1.2	---
TOTAL	---	---	---	---	---	0.00	85.68	143.16	5639.6	1419.2	67.18	8.45
MEAN	---	---	---	---	---	0.000	2.856	4.618	188.0	45.78	2.167	0.282
MAX	---	---	---	---	---	0.00	10	11	430	295	4.9	1.4
MIN	---	---	---	---	---	0.00	0.00	0.33	1.7	4.7	0.66	0.00
AC-FT	---	---	---	---	---	0.00	170	284	11190	2810	133	17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2002, BY WATER YEAR (WY)

MEAN	0.967	0.321	0.055	0.000	0.445	26.36	121.2	35.86	15.22	20.75	15.34	2.238
MAX	9.79	5.73	0.98	0.000	11.6	232	529	309	188	306	437	45.4
(WY)	1986	1981	1981	1958	1981	1995	1997	1997	2002	1993	1993	1993
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1959	1959	1958	1958	1959	1960	1991	1958	1958	1958	1958	1958

SUMMARY STATISTICS	WATER YEARS 1957 - 2002		
ANNUAL MEAN	a14.20		
HIGHEST ANNUAL MEAN	a47.7		1974
LOWEST ANNUAL MEAN	a0.028		1958
HIGHEST DAILY MEAN	1770	Apr 24	1997
LOWEST DAILY MEAN	0.00	Jul 1	1957
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 1	1957
MAXIMUM PEAK FLOW	1830	Apr 24	1997
MAXIMUM PEAK STAGE	87.95	Apr 24	1997
ANNUAL RUNOFF (AC-FT)	a10280		
10 PERCENT EXCEEDS	18		
50 PERCENT EXCEEDS	0.00		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1953-82, 1994)
e Estimated

05056200 EDMORE COULEE NEAR EDMORE, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1230	.19	--	--	--	1320	15.5	11.0	--	--	--	--	--
MAR													
13...	1043	.0	--	--	--	--	--	--	--	--	--	--	--
25...	1820	.0	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	1520	8.1	8.1	--e	599	617	12.0	5.0	180	39.0	21.0	14.0	1
MAY													
15...	1335	7.4	--	--	--	1280	--	11.5	--	--	--	--	--
JUN													
18...	1340	340	--	--	--	739	--	22.0	--	--	--	--	--
JUL													
23...	1410	7.0	7.9	8.1	1130	1120	17.5	21.5	420	92.0	47.0	15.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	44.0	32	117	18.0	.10	160	8.47	386	367	4.0	80	<1	30
MAY													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
23...	100	33	360	28.0	.20	280	15.7	829	778	9.0	60	1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
03...	--	--	--	--	--
MAR					
13...	--	--	--	--	--
25...	--	--	--	--	--
APR					
10...	780	<.10	<1	<1	180
MAY					
15...	--	--	--	--	--
JUN					
18...	--	--	--	--	--
JUL					
23...	90	<.10	1	<1	420

< Less than
e Required equipment not functional/available

05056215 EDMORE COULEE TRIBUTARY NEAR WEBSTER, ND

LOCATION.--Lat 48°15'59", long 98°40'50", in $NW^1/_4NW^1/_4$ sec.7, T.155 N., R.62 W., Ramsey County, Hydrologic Unit 09020201, on upstream side of bridge on county road, 9 mi east and 1.1 mi south of Webster.

DRAINAGE AREA.--148 mi^2, approximately, of which about 44 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1986 to current year (seasonal records only). Discharge record available for 1986 water year in files of the District office.

GAGE.--Water-stage recorder. Datum of gage is 1,400 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1986 nonrecording gage at present site and datum.

REMARKS.--Records fair except for periods where discharge is less than 5.0 ft^3/s and for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft^3/s, Apr. 25, 1997, gage height, 74.41 ft; maximum gage height, 75.06 ft, Aug. 2, 1993.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in spring of 1959 reached a stage of about 75.00 ft, from conversation with local residents.

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 358 ft^3/s, June 24, gage height, 72.12 ft, may have been slightly higher on June 24; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e0.00	e0.00	0.46	0.49	204	9.3	22
2	---	---	---	---	---	e0.00	e0.00	0.43	0.41	197	5.8	23
3	---	---	---	---	---	e0.00	e0.00	0.36	0.37	179	4.6	20
4	---	---	---	---	---	e0.00	e0.00	0.34	0.32	154	3.3	17
5	---	---	---	---	---	e0.00	e0.00	0.32	0.29	138	2.3	16
6	---	---	---	---	---	e0.00	e0.40	0.32	0.24	118	1.6	16
7	---	---	---	---	---	e0.00	e0.60	0.28	0.18	98	1.5	16
8	---	---	---	---	---	e0.00	e0.60	0.43	0.13	85	1.3	16
9	---	---	---	---	---	e0.00	e0.40	4.0	55	72	3.3	16
10	---	---	---	---	---	e0.00	0.24	4.0	102	65	3.6	16
11	---	---	---	---	---	e0.00	0.22	4.0	70	52	6.4	16
12	---	---	---	---	---	e0.00	0.53	1.8	53	42	5.2	15
13	---	---	---	---	---	0.00	1.3	5.5	41	34	4.2	15
14	---	---	---	---	---	e0.00	e2.3	3.7	46	26	3.8	16
15	---	---	---	---	---	e0.00	e2.3	2.9	49	20	3.4	16
16	---	---	---	---	---	e0.00	e2.2	3.8	49	15	3.5	16
17	---	---	---	---	---	e0.00	e2.1	4.2	49	13	4.8	16
18	---	---	---	---	---	e0.00	1.5	4.0	53	13	5.0	17
19	---	---	---	---	---	e0.00	1.3	3.8	75	13	5.0	19
20	---	---	---	---	---	e0.00	1.1	3.5	86	11	5.0	18
21	---	---	---	---	---	e0.00	e0.94	2.8	64	10	5.1	16
22	---	---	---	---	---	e0.00	e0.82	2.5	144	8.7	5.5	16
23	---	---	---	---	---	e0.00	e0.58	2.4	260	8.8	6.0	16
24	---	---	---	---	---	e0.00	e0.89	1.9	304	8.9	7.0	16
25	---	---	---	---	---	0.00	e0.60	1.6	325	10	6.9	16
26	---	---	---	---	---	e0.00	0.47	1.2	238	11	8.5	15
27	---	---	---	---	---	e0.00	0.47	0.90	224	12	16	e15
28	---	---	---	---	---	e0.00	0.48	0.80	228	12	24	14
29	---	---	---	---	---	e0.00	0.48	0.77	229	11	27	14
30	---	---	---	---	---	e0.00	0.47	0.73	228	8.3	21	14
31	---	---	---	---	---	e0.00	---	0.63	---	9.1	21	---
TOTAL	---	---	---	---	---	0.00	23.29	64.37	2974.43	1658.8	230.9	494
MEAN	---	---	---	---	---	0.000	0.776	2.076	99.15	53.51	7.448	16.47
MAX	---	---	---	---	---	0.00	2.3	5.5	325	204	27	23
MIN	---	---	---	---	---	0.00	0.00	0.28	0.13	8.3	1.3	14
AC-FT	---	---	---	---	---	0.00	46	128	5900	3290	458	980

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	30.62	141.6	44.59	16.22	29.23	55.76	9.965
MAX	---	---	---	---	---	233	493	303	99.1	226	858	134
(WY)	---	---	---	---	---	1995	1997	1997	2002	1993	1993	1993
MIN	---	---	---	---	---	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	---	---	---	---	---	1989	1990	1990	1988	1988	1988	1987

SUMMARY STATISTICS WATER YEARS 1986 - 2002

HIGHEST DAILY MEAN	1390	Apr 25 1997
LOWEST DAILY MEAN	0.00	Mar 1 1986
ANNUAL SEVEN-DAY MINIMUM	0.00	Mar 1 1986
MAXIMUM PEAK FLOW	1390	Apr 25 1997
MAXIMUM PEAK STAGE	75.06	Aug 2 1993

e Estimated

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1110	.17	--	--	--	1760	16.0	9.5	--	--	--	--	--
MAR													
13...	1010	.0	--	--	--	--	--	--	--	--	--	--	--
25...	1835	.0	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	1335	.24	7.7	--e	423	425	15.0	6.0	140	32.0	15.0	10.0	1
18...	1150	1.6	--	--	--	860	--	6.0	--	--	--	--	--
MAY													
15...	1450	2.9	--	--	--	1320	8.0	11.0	--	--	--	--	--
JUN													
18...	1615	52	--	--	--	737	--	22.5	--	--	--	--	--
JUL													
23...	1515	8.8	7.4	7.8	955	957	17.5	21.0	360	82.0	38.0	10.0	2
SEP													
04...	1040	18	--	--	--	860	23.5	19.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	26.0	27	107	17.0	.10	89.0	.17	264	255	3.0	150	<1	20
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
23...	83.0	33	344	21.0	.20	190	16.2	687	631	7.0	50	2	50
SEP													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
03...	--	--	--	--	--
MAR					
13...	--	--	--	--	--
25...	--	--	--	--	--
APR					
10...	2000	<.10	<1	<1	150
18...	--	--	--	--	--
MAY					
15...	--	--	--	--	--
JUN					
18...	--	--	--	--	--
JUL					
23...	50	.10	<1	<1	320
SEP					
04...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05056220 SWEETWATER LAKE AT SWEETWATER, ND

LOCATION.--Lat 48°12'39", long 98°52'15", in NE$^1/_4$SW$^1/_4$SW$^1/_4$ sec.27, T.155 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, at southwest arm of lake 6 mi north of Devils Lake.

DRAINAGE AREA.--670 mi^2 of which about 290 mi^2 is probably noncontributing.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960, 1962-87, 1993 to current year.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
01...	1455	.0	1.7	1250	--e	430	85.0	52.0	20.0	3	130	39	304
FEB													
04...	1501	.70	1.5	1820	--	650	130	78.0	25.0	3	180	37	460
MAY													
06...	1535	.0	1.5	1270	7.6	400	81.0	49.0	19.0	2	110	36	272
JUL													
29...	1510	.0	1.7	--	--	--	--	--	--	--	--	--	--

Date	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
OCT													
01...	32.0	.20	370	1.9	<.04	E.005	E.04	--	--	.43	.55	938	873
FEB													
04...	49.0	.20	570	3.2	.09	E.004	.07	3.1	3.2	.32	.47	1390	1310
MAY													
06...	29.0	.20	350	2.7	.05	E.004	E.05n	2.6	--	.02	.53	859	801
JUL													
29...	--	--	--	2.5	<.04	<.008	E.03	--	--	.68	.82	--	--

Date	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT											
01...	17.1	.6	8.0	60	2	100	30	<.10	2	3	350
FEB											
04...	E25.3	E9.2	7.0	70	1	100	290	<.10	4	1	480
MAY											
06...	E26.6	E3.1	4.0	80	1	60	10	<.10	4	1	360
JUL											
29...	E28.3	<.1	--	--	--	--	--	--	--	--	--

05056220 SWEETWATER LAKE AT SWEETWATER, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
01...	1450	1.7	.0	1290	8.7	14.9	9.1	95	724	--	16.8	24.0	90
01...	1451	--	.50	1290	8.7	14.9	8.9	--	--	--	--	--	--
01...	1452	--	1.0	1290	8.7	14.8	9.0	--	--	--	--	--	--
01...	1453	--	1.5	1290	8.7	14.6	8.5	--	--	--	--	--	--
01...	1454	--	1.7	1290	8.7	14.2	6.6	--	--	--	--	--	--
FEB													
04...	1455	1.5	.70	1870	7.4	.8	9.5	70	730	.55	18.0	5.0	225
04...	1457	--	1.5	1850	7.4	2.5	6.9	--	--	--	--	--	--
MAY													
06...	1530	1.5	.0	1270	7.9	4.8	11.8	96	730	--	3.60	5.0	45
06...	1531	--	1.0	1270	8.1	4.8	11.6	--	--	--	--	--	--
06...	1532	--	1.5	1270	8.1	4.8	11.5	--	--	--	--	--	--
JUL													
29...	1505	1.7	.0	924	8.9	27.4	--	--	720	--	16.8	30.5	225
29...	1506	--	.50	941	8.7	24.4	14.2	--	--	--	--	--	--
29...	1507	--	1.0	953	8.5	22.8	10.9	--	--	--	--	--	--
29...	1508	--	1.5	957	8.4	22.6	9.6	--	--	--	--	--	--
29...	1509	--	1.7	956	8.4	22.6	9.3	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
01...	<5.0
01...	--
01...	--
01...	--
01...	--
FEB	
04...	9.0
04...	--
MAY	
06...	14
06...	--
06...	--
JUL	
29...	<5.0
29...	--
29...	--
29...	--
29...	--

< Less than
E Estimated value
n Below the non-detection value
e Required equipment not functional/available

05056222 MORRISON LAKE NEAR WEBSTER, ND

LOCATION.--Lat 48°15'35", long 98°50'48", in NW$^{1}/_{4}$ sec.11, T.155 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, on northwest shoreline of Morrison Lake and 2 mi southeast of Webster.

DRAINAGE AREA.--501 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Stage frequently affected by wind. Gage heights for Jan. 22, Feb. 6, Mar. 13, and Apr. 10, from once daily observation of gage height.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height recorded, 62.60 ft, Apr. 27-28, 1997; minimum recorded, 53.35 ft, Sept. 17, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum gage height recorded, 60.46 ft, July 2, may have been higher between June 29 through July 1; minimum recorded, 57.78 ft, June 8.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59.20	58.32	58.20	---	---	---	---	58.06	57.93	60.43	59.61	59.86
2	59.17	58.31	58.20	---	---	---	---	58.06	57.94	60.44	59.66	59.74
3	59.14	58.33	58.19	---	---	---	---	58.07	57.93	60.41	59.65	59.74
4	59.09	58.35	58.18	---	---	---	---	58.07	57.92	60.32	59.63	59.72
5	59.05	58.34	58.20	---	---	---	---	58.06	57.92	60.36	59.63	59.68
6	59.00	58.30	58.20	---	58.09	---	---	58.05	57.91	60.31	59.63	59.64
7	58.93	58.30	58.20	---	---	---	---	58.07	57.85	---	59.64	59.61
8	58.89	58.29	58.21	---	---	---	---	58.09	57.85	---	59.63	59.58
9	58.84	58.30	58.23	---	---	---	---	58.03	58.07	---	59.69	59.57
10	58.83	58.29	58.27	---	---	---	58.05	58.12	58.22	60.14	59.68	59.54
11	58.79	58.30	58.29	---	---	---	---	58.16	58.34	60.11	59.68	59.52
12	58.74	58.28	58.31	---	---	---	---	58.15	58.42	60.06	59.61	59.48
13	58.71	58.28	58.36	---	---	58.06	---	58.12	58.45	60.00	59.62	59.45
14	58.63	58.29	58.40	---	---	---	---	58.16	58.54	59.95	59.61	59.40
15	58.57	58.28	58.45	---	---	---	---	58.15	58.61	59.89	59.59	59.40
16	58.58	58.28	58.45	---	---	---	---	58.11	58.70	59.81	59.62	59.38
17	58.56	58.27	---	---	---	---	---	58.12	58.82	59.81	59.57	59.35
18	58.52	58.18	---	---	---	---	58.09	58.12	58.95	59.82	59.65	59.38
19	58.49	58.20	---	---	---	---	58.12	58.12	59.13	59.81	59.65	59.38
20	58.47	58.23	---	---	---	---	58.15	58.15	59.27	59.79	59.66	59.36
21	58.46	58.22	---	---	---	---	58.13	58.14	59.41	59.72	59.63	59.30
22	58.45	58.22	---	58.10	---	---	58.13	58.11	59.62	59.68	59.63	59.30
23	58.42	58.22	---	---	---	---	58.14	57.98	59.79	59.71	59.63	59.32
24	58.35	58.17	---	---	---	---	57.94	58.03	60.05	59.70	59.62	59.36
25	58.26	58.11	---	---	---	---	57.93	58.00	60.15	59.67	59.62	59.34
26	58.37	58.16	---	---	---	---	58.06	57.98	60.23	59.69	59.67	59.31
27	58.36	58.19	---	---	---	---	58.10	58.00	60.26	59.66	59.93	59.31
28	58.38	58.20	---	---	---	---	58.13	58.03	60.31	59.63	60.02	59.31
29	58.39	58.20	---	---	---	---	58.08	58.02	---	59.63	59.98	59.25
30	58.40	58.20	---	---	---	---	58.10	57.95	---	59.61	59.93	59.30
31	58.38	---	---	---	---	---	---	57.95	---	59.63	59.91	---
MEAN	58.66	58.25	---	---	---	---	---	58.07	---	---	59.69	59.46
MAX	59.20	58.35	---	---	---	---	---	58.16	---	---	60.02	59.86
MIN	58.26	58.11	---	---	---	---	---	57.95	---	---	59.57	59.25

05056222 MORRISON LAKE NEAR WEBSTER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1993 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
01...	1605	.0	2.3	1080	8.1	370	79.0	43.0	21.0	2	88.0	32	244
FEB													
04...	1533	.70	2.2	1540	--	560	120	64.0	24.0	2	130	32	358
MAY													
06...	1605	.0	2.0	1220	7.8	400	86.0	46.0	20.0	2	100	34	244
JUL													
29...	1620	.0	2.2	--	--	--	--	--	--	--	--	--	--

Date	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
OCT													
01...	27.0	.20	340	1.4	<.04	<.008	E.02	--	--	.10	.19	778	130
FEB													
04...	39.0	.20	510	2.4	.10	<.008	.05	2.3	2.4	.13	.23	1170	1100
MAY													
06...	31.0	.20	350	1.7	<.04	<.008	<.09	--	--	.07	.38	842	780
JUL													
29...	--	--	--	2.4	<.04	<.008	E.03	--	--	.40	.54	--	--

Date	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT											
01...	17.6	.9	7.0	40	2	100	10	<.10	4	3	320
FEB											
04...	6.3	.7	7.0	80	<1	80	120	<.10	5	<1	490
MAY											
06...	E9.0	E.7	3.0	80	<1	50	10	<.10	4	<1	370
JUL											
29...	E24.2	E1.1	--	--	--	--	--	--	--	--	--

05056222 MORRISON LAKE NEAR WEBSTER, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
01...	1600	2.3	.0	1120	7.9	15.2	8.9	94	724	--	10.8	24.0	90
01...	1601	--	.70	1120	8.0	15.1	8.7	--	--	--	--	--	--
01...	1602	--	1.4	1120	8.0	15.1	8.6	--	--	--	--	--	--
01...	1603	--	2.3	1120	8.0	14.8	7.1	--	--	--	--	--	--
FEB													
04...	1525	2.2	.70	1600	7.6	1.7	10.7	80	732	.60	14.4	5.0	225
04...	1527	--	1.5	1590	7.6	2.4	10.7	--	--	--	--	--	--
04...	1529	--	2.0	1590	7.6	2.5	10.5	--	--	--	--	--	--
MAY													
06...	1600	2.0	.0	1220	8.2	5.2	11.9	98	731	--	3.00	6.0	60
06...	1601	--	.70	1220	8.2	5.3	11.8	--	--	--	--	--	--
06...	1602	--	1.4	1220	8.2	5.3	11.7	--	--	--	--	--	--
06...	1603	--	2.0	1220	8.2	5.3	11.6	--	--	--	--	--	--
JUL													
29...	1610	2.2	.0	1080	8.8	25.2	13.9	180	719	--	18.0	30.0	225
29...	1611	--	.50	1080	8.8	24.6	13.4	--	--	--	--	--	--
29...	1612	--	1.0	1080	8.7	23.8	10.5	--	--	--	--	--	--
29...	1613	--	1.5	1080	8.6	22.9	8.4	--	--	--	--	--	--
29...	1614	--	2.0	1080	8.6	22.6	7.8	--	--	--	--	--	--
29...	1615	--	2.2	1080	8.6	22.6	7.7	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
01...	7.0
01...	--
01...	--
01...	--
FEB	
04...	9.0
04...	--
04...	--
MAY	
06...	12
06...	--
06...	--
06...	--
JUL	
29...	<5.0
29...	--
29...	--
29...	--
29...	--
29...	--

< Less than
E Estimated value

05056239 STARKWEATHER COULEE NEAR WEBSTER, ND

LOCATION.--Lat 48°19'13", long 98°56'23", in NW$^1/_4$SW$^1/_4$NW$^1/_4$ sec.19, T.156 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, on right bank 100 ft upstream from bridge on township road and 3.8 mi northwest of Webster.

DRAINAGE AREA.--About 310 mi^2, of which about 100 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year (seasonal records only since 1988).

GAGE.--Water-stage recorder. Elevation of gage is 1,448 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 23, 1986, nonrecording gage 100 ft downstream at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 528 ft^3/s, June 24, gage height, 6.67 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e0.00	e0.00	0.16	0.00	166	0.60	5.5
2	---	---	---	---	---	e0.00	e0.00	0.01	0.00	128	0.48	3.2
3	---	---	---	---	---	e0.00	e0.00	0.0	0.00	97	0.90	1.9
4	---	---	---	---	---	e0.00	e0.00	0.74	0.00	76	0.39	1.4
5	---	---	---	---	---	e0.00	e0.00	0.36	0.00	e65	0.19	1.1
6	---	---	---	---	---	e0.00	e0.00	0.16	0.00	e54	0.10	0.53
7	---	---	---	---	---	e0.00	e0.25	0.05	0.00	e43	0.59	0.58
8	---	---	---	---	---	e0.00	e0.50	0.25	0.00	e35	1.1	0.18
9	---	---	---	---	---	e0.00	e1.0	0.67	6.8	e27	1.7	0.03
10	---	---	---	---	---	e0.00	e2.0	1.3	e28	e21	1.4	0.14
11	---	---	---	---	---	e0.00	e2.8	9.7	e41	e19	1.6	0.13
12	---	---	---	---	---	e0.00	e3.5	13	e20	e15	0.65	0.07
13	---	---	---	---	---	0.00	e3.2	13	e46	e12	0.76	0.05
14	---	---	---	---	---	e0.00	e3.0	11	e74	e8.7	0.87	0.00
15	---	---	---	---	---	e0.00	e2.6	7.1	e158	e6.4	0.44	0.00
16	---	---	---	---	---	e0.00	e2.4	5.2	e194	e5.3	0.33	0.00
17	---	---	---	---	---	e0.00	e2.2	2.8	e210	e4.7	0.47	0.00
18	---	---	---	---	---	e0.00	e2.0	0.82	157	e4.4	0.37	0.00
19	---	---	---	---	---	e0.00	1.9	0.23	140	e4.1	0.36	0.20
20	---	---	---	---	---	e0.00	1.6	0.09	121	e3.8	0.46	0.06
21	---	---	---	---	---	e0.00	0.89	0.02	103	e2.9	0.10	0.00
22	---	---	---	---	---	e0.00	5.5	0.01	222	e2.1	0.15	0.00
23	---	---	---	---	---	e0.00	7.7	0.00	338	1.4	0.18	0.00
24	---	---	---	---	---	e0.00	9.4	0.03	485	1.6	0.15	0.00
25	---	---	---	---	---	0.00	9.0	0.02	485	2.0	0.16	0.00
26	---	---	---	---	---	e0.00	6.8	0.00	485	1.6	0.18	0.00
27	---	---	---	---	---	e0.00	3.1	0.00	471	1.8	3.2	0.00
28	---	---	---	---	---	e0.00	1.2	0.00	442	0.84	5.7	0.00
29	---	---	---	---	---	e0.00	0.74	0.00	381	1.2	2.3	0.00
30	---	---	---	---	---	e0.00	0.23	0.00	249	0.87	0.47	0.00
31	---	---	---	---	---	e0.00	---	0.00	---	1.3	0.54	---
TOTAL	---	---	---	---	---	0.00	73.51	66.72	4856.80	813.01	26.89	15.07
MEAN	---	---	---	---	---	0.000	2.450	2.152	161.9	26.23	0.867	0.502
MAX	---	---	---	---	---	0.00	9.4	13	485	166	5.7	5.5
MIN	---	---	---	---	---	0.00	0.00	0.00	0.00	0.84	0.10	0.00
AC-FT	---	---	---	---	---	0.00	146	132	9630	1610	53	30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002, BY WATER YEAR (WY)

MEAN	1.296	0.122	0.010	0.000	0.694	23.69	117.8	32.74	17.22	23.08	16.43	2.939
MAX	5.53	1.09	0.092	0.000	6.61	180	357	284	162	119	138	22.0
(WY)	1983	1981	1983	1980	1981	1992	2001	1997	2002	1993	1993	1993
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.92	0.000	0.000	0.000	0.000	0.000
(WY)	1980	1980	1980	1980	1980	1980	2000	1980	1980	1980	1980	1981

SUMMARY STATISTICS WATER YEARS 1980 - 2002

ANNUAL MEAN	a12.14		
HIGHEST ANNUAL MEAN	a24.5		1987
LOWEST ANNUAL MEAN	a0.88		1980
HIGHEST DAILY MEAN	779	Apr 27	1997
LOWEST DAILY MEAN	0.00	Oct 1	1979
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 1	1979
MAXIMUM PEAK FLOW	782	Apr 27	1997
MAXIMUM PEAK STAGE	b10.05	Apr 6	1989
ANNUAL RUNOFF (AC-FT)	a8790		
10 PERCENT EXCEEDS	27		
50 PERCENT EXCEEDS	0.00		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1980-87, 1994)
b Backwater from ice
e Estimated

05056239 STARKWEATHER COULEE NEAR WEBSTER, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1355	.23	--	--	--	1820	15.5	13.5	--	--	--	--	--
FEB													
21...	1205	.0	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	1125	.0	--	--	--	--	--	--	--	--	--	--	--
25...	1855	.0	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	1850	1.9	8.2	--e	563	574	9.5	5.5	220	45.0	25.0	7.70	.8
MAY													
15...	1640	6.1	--	--	--	1210	7.0	9.0	--	--	--	--	--
JUN													
18...	1130	157	--	--	--	730	--	20.5	--	--	--	--	--
24...	1725	495	--	--	--	361	21.7	25.5	--	--	--	--	--
JUL													
23...	1740	1.4	8.0	--	1010	999	17.5	22.0	410	67.0	59.0	11.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	28.0	21	111	16.0	.10	160	1.86	356	349	6.0	50	2	20
MAY													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
23...	70.0	26	210	37.0	.20	320	2.72	742	684	12.0	40	1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
03...	--	--	--	--	--
FEB					
21...	--	--	--	--	--
MAR					
13...	--	--	--	--	--
25...	--	--	--	--	--
APR					
10...	630	<.10	1	<1	200
MAY					
15...	--	--	--	--	--
JUN					
18...	--	--	--	--	--
24...	--	--	--	--	--
JUL					
23...	20	.10	4	1	340

< Less than
e Required equipment not functional/available

05056241 DRY LAKE NEAR PENN, ND

LOCATION.--Lat 48°13'52", long 98°58'59", in $NW^1/_4NW^1/_4SW^1/_4$ sec.23, T.155 N., R.65 W., Ramsey County, Hydrologic Unit 09020201, on west shoreline of Dry Lake and 6 mi east of Penn.

DRAINAGE AREA.--920 mi^2, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--October 1983 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Stage is affected by wind at times. Gage heights for Feb. 21, Mar. 13, Apr. 18, 25, May 3, 21, and June 3 from once daily observations of gage height.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height recorded, 52.02 ft, May 2, 1997; minimum recorded, 41.80 ft, Sept. 14 and Oct. 1-20, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum gage height recorded, 48.92 ft, June 30; minimum recorded, 46.68 ft, Jan. 13, may have been lower during period of no record, May 1 to June 20.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47.25	47.12	47.09	46.82	47.01	---	47.08	---	---	48.77	47.40	47.55
2	47.25	47.12	47.08	46.82	47.03	---	47.09	---	---	48.63	47.33	47.54
3	47.16	47.12	47.08	46.80	47.03	---	47.10	46.97	47.00	48.56	47.35	47.50
4	47.15	47.12	47.07	46.78	47.05	---	47.09	---	---	48.44	47.32	47.47
5	47.08	47.15	47.08	46.76	47.05	---	47.09	---	---	48.42	47.28	47.49
6	47.07	47.16	47.08	46.75	47.06	---	47.09	---	---	48.40	47.28	47.45
7	47.13	47.16	47.07	46.74	47.06	---	47.09	---	---	48.33	47.34	47.42
8	47.22	47.08	47.07	46.71	47.05	---	47.09	---	---	48.29	47.32	47.40
9	47.24	47.14	47.05	46.72	47.06	---	47.08	---	---	48.23	47.36	47.36
10	47.27	47.14	47.05	46.71	47.06	---	47.07	---	---	48.24	47.37	47.35
11	47.23	47.14	47.04	46.71	47.06	---	---	---	---	48.15	47.34	47.33
12	47.27	47.13	47.04	46.70	---	---	---	---	---	48.09	47.31	47.34
13	47.25	47.12	47.02	46.70	---	47.09	---	---	---	48.05	47.25	47.28
14	47.24	47.13	47.01	46.73	---	---	---	---	---	48.00	47.25	47.34
15	47.20	47.14	46.99	46.76	---	---	---	---	---	47.94	47.23	47.23
16	47.12	47.14	46.97	46.78	---	---	---	---	---	47.94	47.23	47.30
17	47.12	47.15	46.97	46.79	---	---	---	---	---	47.89	47.26	47.26
18	47.16	47.15	46.97	46.81	---	---	47.17	---	---	47.84	47.19	47.39
19	47.14	47.05	46.96	46.83	---	---	---	---	---	47.77	47.21	47.35
20	47.12	47.08	46.95	46.86	---	---	---	---	---	47.72	47.20	47.30
21	47.08	47.11	46.94	46.87	47.09	---	---	46.88	48.50	47.68	47.26	47.24
22	47.08	47.09	46.93	46.90	---	---	---	---	48.50	47.60	47.20	47.19
23	47.11	47.09	46.92	46.92	---	---	---	---	48.50	47.51	47.20	47.18
24	47.19	47.15	46.91	46.92	---	---	---	---	48.70	47.51	47.20	47.17
25	47.07	47.15	46.90	46.93	---	---	47.08	---	48.77	47.49	47.19	47.15
26	46.94	---	46.88	46.92	---	47.08	---	---	48.85	47.45	47.21	47.15
27	46.93	---	46.84	46.93	---	47.09	---	---	48.85	47.47	47.37	47.15
28	47.08	---	46.85	46.94	---	47.09	---	---	48.85	47.44	47.45	47.11
29	47.06	47.09	46.85	46.96	---	47.09	---	---	48.84	47.41	47.45	47.08
30	47.08	47.09	46.85	46.98	---	47.08	---	---	48.83	47.39	47.43	47.16
31	47.14	---	46.84	47.00	---	47.08	---	---	---	47.41	47.55	---
MEAN	47.14	---	46.98	46.82	---	---	---	---	---	47.94	47.30	47.31
MAX	47.27	---	47.09	47.00	---	---	---	---	---	48.77	47.55	47.55
MIN	46.93	---	46.84	46.70	---	---	---	---	---	47.39	47.19	47.08

05056241 DRY LAKE NEAR PENN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1993 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
01...	1335	.0	.70	1090	--	380	72.0	48.0	24.0	2	84.0	31	249
FEB													
04...	1336	.70	1.2	1740	--	660	130	81.0	32.0	2	150	32	428
MAY													
07...	1355	.0	1.4	1200	8.0	390	74.0	51.0	22.0	2	98.0	34	253
JUL													
29...	1400	.0	1.0	888	--	280	46.0	41.0	19.0	2	78.0	35	160

Date	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT													
01...	31.0	.20	300	3.8	.08	.018	--	E.05	3.7	--	.24	.47	769
FEB													
04...	50.0	.30	530	3.6	.58	.016	1.18	1.20	3.0	4.8	.62	.68	1330
MAY													
07...	33.0	.20	330	1.8	<.04	<.008	--	<.05	--	--	.16	.26	814
JUL													
29...	31.0	.20	270	2.9	<.04	<.008	--	E.04	--	--	.03	.22	595

Date	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT												
01...	721	61.2	<.1	9.0	70	2	100	50	<.10	2	3	320
FEB												
04...	1240	.9	.2	11.0	70	<1	100	270	<.10	4	<1	540
MAY												
07...	760	E1.8	E.1	5.0	90	1	60	20	<.10	3	1	360
JUL												
29...	581	E63.3	<.1	7.0	50	1	50	20	<.10	2	<1	220

05056241 DRY LAKE NEAR PENN, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
01...	1330	.70	.0	1080	8.6	15.3	11.4	120	725	--	26.4	21.0	30
01...	1331	--	.70	1080	8.7	15.3	11.0	--	--	--	--	--	--
FEB													
04...	1330	1.2	.70	1770	7.1	1.2	5.2	39	730	.50	43.2	3.0	--
04...	1332	--	1.2	1760	7.1	1.9	4.6	--	--	--	--	--	--
MAY													
07...	1350	1.4	.0	1200	8.2	4.9	11.9	97	733	--	6.00	6.0	90
07...	1351	--	.50	1190	8.2	4.9	11.7	--	--	--	--	--	--
07...	1352	--	1.0	1200	8.2	4.9	11.6	--	--	--	--	--	--
07...	1353	--	1.4	1210	8.2	4.9	11.6	--	--	--	--	--	--
JUL													
29...	1355	1.0	.0	906	9.1	25.3	--	--	720	--	18.0	30.0	225
29...	1356	--	.50	902	9.1	23.3	15.8	--	--	--	--	--	--
29...	1357	--	1.0	915	8.9	22.4	9.6	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
01...	10
01...	--
FEB	
04...	10
04...	--
MAY	
07...	<5.0
07...	--
07...	--
07...	--
JUL	
29...	<5.0
29...	--
29...	--

< Less than
E Estimated value

05056250 LAKE ALICE NEAR CHURCHS FERRY, ND

LOCATION.--Lat 48°19'33", long 99°05'42", in $SE^1/_4NE^1/_4NE^1/_4$ sec.11, T.156 N., R.66 W., Ramsey County, Hydrologic Unit 09020201, at northwest corner of lake 7.5 mi northwest of Churchs Ferry.

DRAINAGE AREA.--2,100 mi^2, approximately, of which about 500 mi^2 is probably noncontributing.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960, 1962-64, 1966-87, 1993 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
01...	1155	.0	2.4	1150	--	480	95.0	58.0	18.0	1	70.0	23	314
FEB													
04...	1140	.70	2.3	1430	--	630	130	73.0	23.0	2	92.0	23	405
MAY													
07...	1515	.0	2.5	1200	8.2	470	93.0	58.0	18.0	2	75.0	25	312
JUL													
29...	1220	.0	2.2	1250	8.2	520	100	65.0	21.0	2	87.0	26	331

Date	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT													
01...	27.0	.20	320	1.7	.11	.012	.10	.12	1.6	1.8	.21	.32	831
FEB													
04...	32.0	.20	410	2.8	.62	E.004	--	.15	2.2	3.0	.44	.49	1090
MAY													
07...	28.0	.20	300	2.1	.15	.009	.13	.14	1.9	2.2	.22	.31	830
JUL													
29...	34.0	.20	350	2.3	<.04	<.008	--	E.02	--	--	.46	.57	940

Date	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT												
01...	778	15.7	1.1	7.0	40	2	100	10	<.10	2	3	370
FEB												
04...	1010	<.1	<.1	8.0	70	<1	90	730	<.10	3	<1	470
MAY												
07...	760	E1.2	E.2	5.0	80	1	60	20	<.10	2	<1	400
JUL												
29...	856	E25.5	<.1	10.0	90	<1.0	70	60	.10	3	<1	360

05056250 LAKE ALICE NEAR CHURCHS FERRY, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
01...	1150	2.4	.0	1190	7.6	13.9	8.2	84	725	--	15.6	19.0	15
01...	1151	--	1.0	1190	7.7	13.8	8.0	--	--	--	--	--	--
01...	1152	--	2.0	1190	7.7	13.7	8.0	--	--	--	--	--	--
01...	1153	--	2.4	1190	7.7	13.7	7.7	--	--	--	--	--	--
FEB													
04...	1130	2.3	.70	1500	7.0	.7	4.3	31	732	.55	73.2	<-5.0	225
04...	1132	--	1.4	1470	7.1	2.3	3.1	--	--	--	--	--	--
04...	1134	--	2.1	1470	7.1	2.8	4.0	--	--	--	--	--	--
04...	1136	--	2.3	1460	7.1	3.1	3.1	--	--	--	--	--	--
MAY													
07...	1510	2.5	.0	1200	8.2	5.3	11.8	97	734	--	13.2	10.0	90
07...	1511	--	.70	1200	8.3	5.3	11.6	--	--	--	--	--	--
07...	1512	--	1.4	1200	8.3	5.3	11.5	--	--	--	--	--	--
07...	1513	--	2.1	1200	8.3	5.3	11.4	--	--	--	--	--	--
07...	1514	--	2.5	1200	8.3	5.3	11.4	--	--	--	--	--	--
JUL													
29...	1210	2.2	.0	1300	8.3	22.9	7.4	92	720	--	20.4	24.5	220
29...	1211	--	.50	1300	8.3	22.8	7.2	--	--	--	--	--	--
29...	1212	--	1.0	1300	8.3	22.2	6.2	--	--	--	--	--	--
29...	1213	--	1.5	1300	8.2	21.9	5.1	--	--	--	--	--	--
29...	1214	--	2.0	1300	8.2	21.9	3.9	--	--	--	--	--	--
29...	1215	--	2.2	1300	8.2	21.9	3.7	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
01...	7.0
01...	--
01...	--
01...	--
FEB	
04...	15
04...	--
04...	--
04...	--
MAY	
07...	<5.0
07...	--
07...	--
07...	--
07...	--
JUL	
29...	<5.0
29...	--
29...	--
29...	--
29...	--
29...	--

< Less than
E Estimated value

05056255 LAKE ALICE-IRVINE CHANNEL NEAR CHURCHS FERRY, ND

LOCATION.--Lat 48°19'25", long 99°08'41", in $NW^{1}/_{4}NE^{1}/_{4}$ sec.21, T.156 N., R.66 W., Ramsey County, Hydrologic Unit 09020201, on downstream side of control structure between Lake Alice and Lake Irvine, 5 mi northwest of Churchs Ferry.

DRAINAGE AREA.--999 mi^2, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--March 1985 to September 1987 (seasonal records only) and April 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above National Geodetic Vertical Datum of 1929.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 48.63 ft, Apr. 25-27 2001; minimum recorded, 39.51 ft, Oct. 7, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 47.83 ft, June 30; minimum, 47.07 ft, June 7.

GAGE HEIGHT from dcp, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47.58	47.37	47.17	47.21	47.23	47.21	47.24	47.24	47.13	47.73	47.45	47.53
2	47.55	47.37	47.18	47.21	47.23	47.21	47.25	47.22	47.13	47.69	47.44	47.46
3	47.51	47.36	47.18	47.22	47.23	---	47.26	47.27	47.12	47.67	47.45	47.46
4	47.48	47.35	47.19	47.22	47.23	---	47.26	47.24	47.11	47.69	47.42	47.47
5	47.46	47.34	47.20	47.21	47.23	---	47.26	47.25	47.11	47.70	47.40	47.45
6	47.47	47.32	47.21	47.21	47.24	---	47.27	47.20	47.12	47.66	47.43	47.42
7	47.50	47.30	47.21	47.22	47.24	---	47.27	47.19	47.09	47.64	47.47	47.40
8	47.51	47.28	47.21	47.22	47.23	---	47.26	47.23	47.10	47.63	47.45	47.38
9	47.50	47.29	47.21	47.22	47.23	47.23	47.26	47.20	47.21	47.61	47.47	47.38
10	47.49	47.28	47.21	47.21	47.23	---	47.26	47.23	47.26	47.62	47.46	47.39
11	47.50	47.28	47.20	47.22	47.25	---	47.27	47.27	47.31	47.61	47.45	47.38
12	47.49	47.26	47.21	47.21	47.24	47.25	47.28	47.29	47.35	47.62	47.39	47.38
13	47.49	47.26	47.21	47.21	47.24	47.23	47.28	47.28	47.38	47.63	47.37	47.38
14	47.45	47.27	47.21	47.21	47.23	47.22	47.29	47.31	47.41	47.64	47.36	47.34
15	47.42	47.27	47.21	47.21	47.24	47.23	47.29	47.31	47.43	47.65	47.34	47.34
16	47.44	47.28	47.21	47.22	47.23	47.22	47.28	47.24	47.45	47.64	47.35	47.35
17	47.48	47.27	47.21	47.21	47.23	47.23	47.29	47.22	47.48	47.63	47.32	47.36
18	47.45	47.21	47.21	47.22	47.23	47.23	47.27	47.21	47.52	47.63	47.33	47.37
19	47.44	47.19	47.21	47.22	47.22	47.23	47.27	47.20	47.54	47.64	47.34	47.35
20	47.43	47.21	47.20	47.22	47.22	47.24	47.29	47.21	47.54	47.65	47.35	47.32
21	47.42	47.22	47.20	47.22	47.22	47.26	47.30	47.27	47.55	47.61	47.34	47.27
22	47.43	47.21	47.21	47.23	47.23	47.25	47.33	47.31	47.66	47.56	47.32	47.25
23	47.42	47.22	47.21	47.23	47.23	47.24	47.35	47.21	47.71	47.56	47.31	47.25
24	47.38	47.20	47.20	47.23	47.22	47.23	47.25	47.20	47.79	47.57	47.31	47.26
25	47.33	47.13	47.21	47.24	47.22	47.23	47.19	47.19	47.80	47.56	47.30	47.25
26	47.38	47.10	47.21	47.23	47.21	47.24	47.23	47.18	47.79	47.55	47.34	47.24
27	47.44	47.08	47.21	47.22	47.22	47.25	47.27	47.18	47.78	47.55	47.48	47.23
28	47.45	47.11	47.21	47.22	47.21	47.26	47.27	47.21	47.80	47.52	47.49	47.22
29	47.45	47.13	47.21	47.23	---	47.26	47.27	47.21	47.80	47.51	47.47	47.24
30	47.46	47.15	47.21	47.23	---	47.25	47.26	47.17	47.76	47.49	47.49	47.25
31	47.44	---	47.21	47.23	---	47.24	---	47.16	---	47.51	47.52	---
TOTAL	1471.24	1417.31	1463.34	1463.81	1322.41	---	1418.12	1464.10	1423.23	1475.97	1469.41	1420.37
MEAN	47.46	47.24	47.20	47.22	47.23	---	47.27	47.23	47.44	47.61	47.40	47.35
MAX	47.58	47.37	47.21	47.24	47.25	---	47.35	47.31	47.80	47.73	47.52	47.53
MIN	47.33	47.08	47.17	47.21	47.21	---	47.19	47.16	47.09	47.49	47.30	47.22

05056260 LAKE IRVINE NEAR CHURCHS FERRY, ND

LOCATION.--Lat 48°16'57", long 99°10'25", in SE$^{1}/_{4}$SW$^{1}/_{4}$SW$^{1}/_{4}$ sec.32, T.156 N., R.66 W., Ramsey County, Hydrologic Unit 09020201, at south end of lake 1$^{1}/_{4}$ mi northwest of Churchs Ferry.

DRAINAGE AREA.--2,120 mi^{2}, approximately, of which about 500 mi^{2} is probably noncontributing.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966-87, 1993 to current year.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
01...	1215	.0	2.7	1010	8.3	420	84.0	51.0	19.0	1	63.0	24	299
FEB													
04...	1220	.70	2.9	1320	--	230	120	69.0	24.0	2	88.0	24	389
MAY													
07...	1535	.0	3.0	1170	8.2	450	88.0	55.0	18.0	2	73.0	25	303
JUL													
29...	1240	.0	2.7	1170	8.3	470	88.0	61.0	21.0	2	83.0	27	311

Date	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT													
01...	28.0	.20	270	1.6	.13	.015	.10	.11	1.5	1.7	.33	.40	710
FEB													
04...	37.0	--	370	2.3	.29	E.006	--	.39	2.0	2.7	.36	.40	984
MAY													
07...	28.0	.20	290	1.9	.14	E.005	--	.10	1.8	2.0	.21	.32	803
JUL													
29...	32.0	.10	320	1.8	<.04	<.008	--	.03	--	1.8	.26	.33	858

Date	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT												
01...	697	3.3	<.1	9.0	60	2	100	50	<.10	4	3	360
FEB												
04...	945	E.1	<.1	9.0	60	<1	80	280	<.10	3	<1	450
MAY												
07...	734	E.6	<.1	5.0	70	1	60	10	<.10	2	1	380
JUL												
29...	792	E13.7	<.1	8.0	70	1	70	60	.20	3	<1	350

05056260 LAKE IRVINE NEAR CHURCHS FERRY, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
01...	1210	2.7	.0	1050	8.0	14.6	7.6	79	726	--	7.20	18.5	20
01...	1211	--	1.0	1050	8.0	14.4	7.2	--	--	--	--	--	--
01...	1212	--	2.0	1050	8.0	14.1	7.0	--	--	--	--	--	--
01...	1213	--	2.7	1050	8.0	14.0	6.9	--	--	--	--	--	--
FEB													
04...	1210	2.9	.70	1380	7.3	.5	8.9	65	733	.60	64.8	<-5.0	--
04...	1212	--	1.3	1360	7.4	1.4	8.6	--	--	--	--	--	--
04...	1214	--	2.0	1350	7.4	2.1	8.3	--	--	--	--	--	--
04...	1216	--	2.7	1350	7.4	2.5	2.7	--	--	--	--	--	--
MAY													
07...	1530	3.0	.0	1160	8.3	5.6	11.5	95	734	--	21.6	9.0	30
07...	1531	--	.70	1160	8.3	5.6	11.4	--	--	--	--	--	--
07...	1532	--	1.4	1160	8.3	5.5	11.3	--	--	--	--	--	--
07...	1533	--	2.1	1160	8.3	5.5	11.2	--	--	--	--	--	--
07...	1534	--	3.0	1160	8.3	5.5	11.2	--	--	--	--	--	--
JUL													
29...	1230	2.7	.0	1220	8.3	23.9	7.8	98	720	--	22.8	25.5	225
29...	1231	--	.50	1220	8.3	23.0	7.7	--	--	--	--	--	--
29...	1232	--	1.0	1220	8.3	22.5	7.6	--	--	--	--	--	--
29...	1233	--	1.5	1220	8.3	22.3	6.8	--	--	--	--	--	--
29...	1234	--	2.0	1220	8.3	22.1	6.4	--	--	--	--	--	--
29...	1235	--	2.5	1220	8.3	22.0	5.6	--	--	--	--	--	--
29...	1236	--	2.7	1220	8.2	22.0	5.3	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
01...	5.0
01...	--
01...	--
01...	--
FEB	
04...	15
04...	--
04...	--
04...	--
MAY	
07...	5.0
07...	--
07...	--
07...	--
07...	--
JUL	
29...	<5.0
29...	--
29...	--
29...	--
29...	--
29...	--
29...	--

< Less than
E Estimated value

05056270 BIG COULEE BELOW CHURCHS FERRY, ND

LOCATION.--Lat 48°15'33", long 99°12'00", in $NE^{1}/_{4}SE^{1}/_{4}$ sec.12, T. 155 N., R.67 W., Benson County, Hydrologic Unit 09020201, on downstream side of bridge 1 mi south of Churchs Ferry.

DRAINAGE AREA.--1,260 mi^2, approximately, of which about 140 mi^2 is probably noncontributing, drainage area reduced from approximately 2,510 mi^2 with the completion of Channel A in March 1979.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1998 to current year.

Miscellaneous discharge measurements for Big Coulee below Churchs Ferry

Date	Discharge
October 3, 2001	0
February 21, 2002	0
March 25, 2002	0
April 11, 2002	0
April 25, 2002	591
June 25, 2002	474
July 24, 2002	0

05056270 BIG COULEE BELOW CHURCHS FERRY, ND

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958, 1961-99, 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR													
25...	1200	591	8.6	--e	1050	1040	9.0	3.5	420	84.0	50.0	17.0	1
JUN													
25...	1325	474	--	--	--	1110	29.5	23.5	--	--	--	--	--
JUL													
24...	1102	.0	--	--	--	--	--	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR													
25...	67.0	25	287	21.0	.10	270	1170	736	681	5.0	40	<1	60
JUN													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR					
25...	10	<.10	<1	1	340
JUN					
25...	--	--	--	--	--
JUL					
24...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05056340 LITTLE COULEE NEAR LEEDS, ND

LOCATION.--Lat 48°14'37", long 99°22'23", in NE$^1/_4$NE$^1/_4$SE$^1/_4$ sec.15, T.155 N., R.68 W., Benson County, Hydrologic Unit 09020201, at bridge 3.5 miles southeast of Leeds.

DRAINAGE AREA.--320 mi^2, of which about 150 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.-- March 1998 to current year.

GAGE.--Water-stage recorder. This station was moved upstream from 05056390 Little Coulee near Brinsmade due to rising water from Devils Lake. Records may not be equivalent to prior locations due to change in drainage area. Datum of gage is 1,480 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed discharge, 269 ft^3/s, Apr. 23, 1999, gage height, 66.30 ft; maximum gage height observed 66.41 ft, Apr. 13, 16, 18 and 19, 1999; no flow for several days.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14 ft^3/s, Sept. 20, gage height, 64.01 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e0.00	e0.00	e0.00	0.03	3.3	0.00	0.93
2	---	---	---	---	---	e0.00	e0.00	e0.00	0.00	2.4	0.00	4.9
3	---	---	---	---	---	e0.00	e0.00	0.00	0.00	1.9	0.00	4.9
4	---	---	---	---	---	e0.00	e0.00	e0.00	0.00	1.6	0.00	5.9
5	---	---	---	---	---	e0.00	e0.00	e0.00	0.00	1.5	0.00	6.8
6	---	---	---	---	---	e0.00	e0.00	e0.00	0.00	1.0	0.00	7.4
7	---	---	---	---	---	e0.00	e0.00	e0.00	0.00	0.77	0.00	7.1
8	---	---	---	---	---	e0.00	e0.00	0.00	e0.00	0.57	0.00	8.1
9	---	---	---	---	---	e0.00	e0.00	0.00	0.21	0.50	0.00	9.3
10	---	---	---	---	---	e0.00	e0.03	0.03	0.03	0.74	0.00	9.9
11	---	---	---	---	---	e0.00	0.05	0.13	0.00	0.59	0.00	9.5
12	---	---	---	---	---	e0.00	0.02	0.20	0.00	0.43	0.00	9.9
13	---	---	---	---	---	e0.00	0.00	0.23	0.00	0.31	0.00	9.2
14	---	---	---	---	---	e0.00	0.00	0.25	0.00	0.21	0.00	9.2
15	---	---	---	---	---	e0.00	0.00	0.25	0.00	0.13	0.00	7.2
16	---	---	---	---	---	e0.00	0.00	0.26	0.00	0.06	0.00	6.4
17	---	---	---	---	---	e0.00	0.00	0.26	0.00	0.06	0.00	5.9
18	---	---	---	---	---	e0.00	0.00	0.26	0.00	0.11	0.00	9.1
19	---	---	---	---	---	e0.00	e0.00	0.24	0.00	0.06	0.00	11
20	---	---	---	---	---	e0.00	e0.00	0.23	0.00	0.02	0.00	11
21	---	---	---	---	---	e0.00	e0.00	0.22	0.00	0.00	0.00	11
22	---	---	---	---	---	e0.00	e0.00	0.21	0.31	0.00	0.00	7.3
23	---	---	---	---	---	e0.00	e0.00	0.21	0.18	0.00	0.00	8.4
24	---	---	---	---	---	e0.00	e0.00	0.20	0.59	0.00	0.00	7.1
25	---	---	---	---	---	0.00	e0.00	0.20	1.5	0.00	0.00	8.5
26	---	---	---	---	---	e0.00	e0.00	0.17	3.9	0.00	0.00	11
27	---	---	---	---	---	e0.01	e0.00	0.15	5.6	0.00	0.18	12
28	---	---	---	---	---	e0.10	e0.00	0.15	5.4	0.00	0.38	11
29	---	---	---	---	---	e0.05	e0.00	0.15	4.8	0.00	0.38	9.6
30	---	---	---	---	---	e0.02	e0.00	0.14	3.8	0.00	0.36	12
31	---	---	---	---	---	e0.01	---	0.09	---	0.00	0.38	---
TOTAL	---	---	---	---	---	0.19	0.10	4.23	26.35	16.26	1.68	251.53
MEAN	---	---	---	---	---	0.006	0.003	0.136	0.878	0.525	0.054	8.384
MAX	---	---	---	---	---	0.10	0.05	0.26	5.6	3.3	0.38	12
MIN	---	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.93
AC-FT	---	---	---	---	---	0.4	0.2	8.4	52	32	3.3	499

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2002, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	6.715	96.04	69.98	32.66	11.31	1.461	2.630
MAX	---	---	---	---	---	24.8	217	207	110	28.2	6.51	8.38
(WY)	---	---	---	---	---	1998	1999	1999	1999	1999	1999	2002
MIN	---	---	---	---	---	0.000	0.003	0.041	0.040	0.52	0.005	0.000
(WY)	---	---	---	---	---	2001	2002	2000	2000	2002	1998	1998

SUMMARY STATISTICS WATER YEARS 1998 - 2002

HIGHEST DAILY MEAN	267	Apr 23 1999
LOWEST DAILY MEAN	0.00	Jul 31 1998
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 6 1998
MAXIMUM PEAK FLOW	a269	Apr 23 1999
MAXIMUM PEAK STAGE	66.41	Apr 13 1999

a Observed gage height, 66.30 ft
e Estimated

05056340 LITTLE COULEE NEAR LEEDS, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1998 to current year.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1830	.0	--	--	--	--	--	--	--	--	--	--	--
FEB													
21...	1730	.0	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	1430	.0	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	0955	.04	--e	7.1	822	775	11.0	4.0	280	58.0	34.0	21.0	1
MAY													
03...	1015	.0	--	--	--	--	--	--	--	--	--	--	--
JUN													
25...	1435	1.6	--	--	--	805	25.5	25.5	--	--	--	--	--
JUL													
24...	0915	.0	--	--	--	--	--	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	54.0	27	127	18.0	.10	280	.06	574	542	4.0	70	1	40
MAY													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
03...	--	--	--	--	--
FEB					
21...	--	--	--	--	--
MAR					
25...	--	--	--	--	--
APR					
11...	310	<.10	<1	<1	240
MAY					
03...	--	--	--	--	--
JUN					
25...	--	--	--	--	--
JUL					
24...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05056410 CHANNEL A NEAR PENN, ND

LOCATION.--Lat 48°10'00", long 98°58'47", in $SE^1/_4SW^1/_4SW^1/_4$ sec.11, T.154 N., R.65 W., Ramsey County, Hydrologic Unit 09020201, on right bank 200 ft upstream from U.S. Highway 2, 9 mi northwest of Devils Lake, and 7 mi southeast of Penn.

DRAINAGE AREA.--930 mi^2, approximately, of which about 140 mi^2 is probably noncontributing. Drainage area reduced from approximately 2,510 mi^2 with the completion of Channel A in March 1979.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Water year 1983 to current year.

Miscellaneous discharge measurements for Channel A near Penn

Date	Discharge
October 4, 2001	0
March 26, 2002	0
April 11, 2002	0
April 25, 2002	157
June 25, 2002	774
July 23, 2002	0

05056410 CHANNEL A NEAR PENN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1984-99, 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR													
25...	1410	157	8.4	--	1150	1120	6.0	4.0	370	71.0	47.0	22.0	2
JUN													
25...	1125	774	--	--	--	1260	30.5	23.5	--	--	--	--	--
JUL													
24...	1925	.0	--	--	--	--	--	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR													
25...	92.0	33	233	16.0	.20	320	331	780	708	5.0	90	<1	60
JUN													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR					
25...	10	<.10	1	<1	260
JUN					
25...	--	--	--	--	--
JUL					
24...	--	--	--	--	--

< Less than

05056500 DEVILS LAKE NEAR DEVILS LAKE, ND

LOCATION.--Lat 48°04'00", long 98°56'07", in SW$^{1}/_{4}$ sec.18, T.153 N., R.64 W., Ramsey County, Hydrologic Unit 09020201, at Lakewood on east bank of Creel Bay, and 4.5 mi southwest of city of Devils Lake. Creel Bay, which is 0.5 mi wide, is an arm of Devils Lake, and extends 2 mi to the north of the lake.

DRAINAGE AREA.--3,130 mi^2, approximately, of which about 1,000 mi^2 is probably noncontributing.

GAGE-HEIGHT RECORDS

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

REVISED RECORDS.--WSP 1913: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above National Geodetic Vertical Datum of 1929. June 23, 1950, to June 6, 1963, nonrecording gage at present site and datum. See WSP 1913 for history of changes prior to June 23, 1950. Prior to October 1979 only monthend elevations were published.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 1,448.33 ft, July 21, 2001, affected by wind, present datum; minimum observed, 1,400.87 ft, Oct. 24, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--The lake level was at an elevation of about 1,441 ft around 1830 and lower thereafter. Reference is Geological Survey monograph, volume XXV, the Glacial History of Lake Agassiz by Warren Upham.

EXTREMES FOR CURRENT YEAR.--Maximum daily mean elevation, 1,447.56 ft, July 17, affected by wind; minimum daily mean 1,446.69 ft, June 9, affected by wind.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47.17	47.15	47.04	47.06	47.09	47.06	47.08	47.17	46.95	47.41	47.35	47.27
2	47.14	47.09	47.03	47.06	47.09	47.06	47.10	47.15	46.93	47.42	47.27	47.32
3	47.15	47.09	47.02	47.06	47.09	47.05	47.10	47.13	46.93	47.40	47.24	47.21
4	47.13	47.09	47.02	47.06	47.09	47.06	47.10	47.12	46.93	47.33	47.24	47.21
5	47.09	47.09	47.04	47.06	47.09	47.06	47.09	47.11	46.92	47.38	47.20	47.22
6	47.06	47.09	47.04	47.06	47.09	47.06	47.09	47.13	46.91	47.38	47.18	47.22
7	47.03	47.12	47.04	47.06	47.09	47.06	47.09	47.12	46.90	47.37	47.19	47.22
8	47.04	47.12	47.04	47.06	47.09	47.07	47.10	47.14	46.85	47.37	47.21	47.23
9	47.06	47.10	47.05	47.06	47.10	47.08	47.09	47.28	47.06	47.38	47.27	47.23
10	47.12	47.10	47.04	47.06	47.09	47.07	47.10	47.20	47.20	47.42	47.24	47.21
11	47.10	47.09	47.05	47.06	47.09	47.07	47.10	47.18	47.23	47.42	47.22	47.20
12	47.10	47.10	47.05	47.06	47.08	47.07	47.10	47.18	47.23	47.40	47.23	47.19
13	47.10	47.10	47.04	47.06	47.08	47.07	47.11	47.18	47.23	47.39	47.19	47.17
14	47.13	47.09	47.04	47.07	47.08	47.07	47.11	47.14	47.23	47.37	47.17	47.16
15	47.10	47.09	47.05	47.07	47.08	47.06	47.12	47.14	47.23	47.36	47.17	47.13
16	47.05	47.09	47.04	47.07	47.08	47.06	47.13	47.15	47.22	47.36	47.13	47.09
17	47.05	47.09	47.04	47.08	47.08	47.07	47.13	47.13	47.20	47.38	47.29	47.07
18	47.06	47.13	47.04	47.07	47.08	47.07	47.16	47.11	47.21	47.40	47.17	47.13
19	47.05	47.10	47.04	47.07	47.08	47.07	47.17	47.10	47.25	47.39	47.16	47.17
20	47.03	47.08	47.05	47.08	47.08	47.09	47.16	47.07	47.23	47.39	47.14	47.17
21	47.02	47.08	47.04	47.08	47.08	47.08	47.16	47.02	47.20	47.40	47.13	47.15
22	47.01	47.07	47.06	47.09	47.07	47.07	47.13	47.00	47.23	47.36	47.13	47.08
23	47.02	47.07	47.06	47.10	47.08	47.07	47.15	47.04	47.28	47.33	47.12	47.11
24	47.16	47.09	47.05	47.10	47.07	47.07	47.27	47.01	47.35	47.38	47.12	47.08
25	47.15	47.07	47.05	47.10	47.07	47.07	47.20	47.02	47.37	47.40	47.11	47.07
26	47.07	47.05	47.05	47.09	47.06	47.07	47.13	46.99	47.39	47.38	47.13	47.05
27	47.04	47.07	47.06	47.10	47.06	47.06	47.13	46.97	47.40	47.36	47.19	47.03
28	47.06	47.06	47.07	47.09	47.07	47.07	47.16	46.98	47.40	47.35	47.24	47.03
29	47.05	47.04	47.06	47.09	---	47.07	47.17	46.98	47.41	47.34	47.25	47.01
30	47.06	47.05	47.06	47.09	---	47.07	47.16	47.01	47.43	47.32	47.24	47.02
31	47.08	---	47.06	47.09	---	47.06	---	46.97	---	47.30	47.28	---
MEAN	47.08	47.09	47.05	47.07	47.08	47.07	47.13	47.09	47.18	47.38	47.20	47.15
MAX	47.17	47.15	47.07	47.10	47.10	47.09	47.27	47.28	47.43	47.42	47.35	47.32
MIN	47.01	47.04	47.02	47.06	47.06	47.05	47.08	46.97	46.85	47.30	47.11	47.01

05056636 DEVILS LAKE OUTLET TO STUMP LAKE NEAR LAKOTA, ND

LOCATION.--Lat 47°57'29", long 98°29'00", in NE$^1/_4$SE$^1/_4$NE$^1/_4$ sec.29, T.152 N., R.61 W., Nelson County, Hydrologic Unit 09020201, on right bank, 3 mi upstream of Stump Lake.

DRAINAGE AREA.--Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1999 to current year.

GAGE.--Water stage recorder. Datum of gage is 1,400.00 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1999, at datum 37.73 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	13	e7.6	e0.07	e0.00	e0.00	e0.00	25	14	25	21	21
2	12	13	e7.7	e0.12	e0.00	e0.00	e0.00	24	13	25	21	22
3	12	13	e7.7	e0.11	e0.00	e0.00	e0.00	23	13	24	21	22
4	12	13	e7.7	e0.10	e0.00	e0.00	e0.00	23	12	22	20	21
5	8.6	13	e7.6	e0.11	e0.00	e0.00	e0.02	22	12	21	19	20
6	6.3	12	e7.6	e0.11	e0.00	e0.00	e0.10	20	12	21	18	20
7	5.7	12	e7.4	e0.13	e0.01	e0.00	e0.28	19	12	23	17	20
8	7.0	12	e7.2	e0.15	e0.00	e0.00	e0.30	19	11	22	17	20
9	6.8	12	e7.0	e0.17	e0.00	e0.00	e0.36	22	19	22	17	20
10	5.9	12	e6.8	e0.22	e0.00	e0.00	e0.38	21	15	23	17	20
11	3.3	12	e6.5	e0.24	e0.00	e0.00	e3.5	20	15	22	17	20
12	2.5	12	e6.2	e0.26	e0.00	e0.00	e12	20	16	23	18	21
13	2.0	12	e6.0	e0.28	e0.00	e0.00	e13	20	17	23	18	20
14	1.8	12	e5.7	e0.30	e0.01	e0.00	16	19	17	23	18	20
15	1.5	12	e5.4	e0.30	e0.01	e0.00	18	19	18	23	18	20
16	1.3	12	e5.0	e0.28	e0.01	e0.01	20	19	18	23	19	20
17	1.1	12	e4.7	e0.27	e0.01	e0.02	23	18	18	24	21	19
18	1.1	12	e4.4	e0.26	e0.01	e0.03	23	18	19	23	20	19
19	1.1	12	e4.2	e0.28	e0.01	e0.02	23	17	20	24	20	19
20	1.1	12	e3.8	e0.29	e0.01	e0.01	23	16	21	24	20	18
21	1.1	12	e3.3	e0.24	e0.01	e0.01	23	16	21	24	20	20
22	1.2	12	e2.7	e0.20	e0.01	e0.00	23	15	31	23	19	20
23	12	12	e2.3	e0.10	e0.00	e0.00	23	15	22	23	19	21
24	18	12	e1.9	e0.01	e0.00	e0.00	27	15	28	23	18	20
25	18	11	e1.3	e0.01	e0.00	e0.00	28	15	25	23	18	20
26	12	7.5	e0.80	e0.00	e0.00	e0.01	25	15	25	22	17	20
27	10	e13	e0.25	e0.00	e0.00	e0.01	24	14	26	22	23	19
28	8.9	e11	e0.15	e0.00	e0.00	e0.00	24	14	26	22	22	19
29	9.0	e9.0	e0.10	e0.00	---	e0.00	25	14	26	21	22	18
30	10	e8.1	e0.08	e0.00	---	e0.00	25	15	26	21	22	18
31	11	---	e0.07	e0.00	---	e0.00	---	14	---	20	22	---
TOTAL	217.3	352.6	139.15	4.61	0.10	0.12	422.94	566	568	704	599	597
MEAN	7.010	11.75	4.489	0.149	0.004	0.004	14.10	18.26	18.93	22.71	19.32	19.90
MAX	18	13	7.7	0.30	0.01	0.03	28	25	31	25	23	22
MIN	1.1	7.5	0.07	0.00	0.00	0.00	0.00	14	11	20	17	18
AC-FT	431	699	276	9.1	0.2	0.2	839	1120	1130	1400	1190	1180

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

MEAN	3.646	6.582	2.244	0.074	0.002	0.944	10.15	13.63	21.20	24.31	24.27	19.53
MAX	7.01	11.8	4.49	0.15	0.004	1.88	14.1	18.3	23.5	25.9	29.2	19.9
(WY)	2002	2002	2002	2002	2002	2001	2002	2002	2001	2001	2001	2002
MIN	0.28	1.41	0.000	0.000	0.000	0.004	6.21	9.00	18.9	22.7	19.3	19.2
(WY)	2001	2001	2001	2001	2001	2002	2001	2001	2002	2002	2002	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	4220.74		4170.82			
ANNUAL MEAN	11.56		11.43		10.59	
HIGHEST ANNUAL MEAN					11.4	2002
LOWEST ANNUAL MEAN					9.76	2001
HIGHEST DAILY MEAN	39	Jul 31	31	Jun 22	39	Jul 31 2001
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Jan 26	0.00	Oct 1 1999
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Jan 26	0.00	Oct 1 1999
MAXIMUM PEAK FLOW			79	Jun 22	a79	Jun 22 2002
MAXIMUM PEAK STAGE			39.94	Jun 22	b40.44	Mar 21 2001
ANNUAL RUNOFF (AC-FT)	8370		8270		7670	
10 PERCENT EXCEEDS	27		23		25	
50 PERCENT EXCEEDS	8.6		12		7.6	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Gage height, 39.94 ft
b Backwater from ice
e Estimated

05056636 DEVILS LAKE OUTLET TO STUMP LAKE NEAR LAKOTA, ND

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water year 1999 to current year.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
29...	1415	9.3	--	--	--	6300	4.0	.5	--	--	--	--	--
NOV													
29...	1410	9.0	--	--	--	6760	6.5	.0	--	--	--	--	--
JAN													
22...	1210	.20	--	--	--	6660	-9.5	.0	--	--	--	--	--
FEB													
21...	1000	.01	--	--	--	--e	.0	.0	--	--	--	--	--
MAR													
25...	1100	.0	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	1130	.40	--	--	--	--e	6.5	.0	--	--	--	--	--
MAY													
08...	1320	19	8.3	8.2	5200	5310	5.5	2.5	1100	110	200	83.0	11
JUN													
24...	1405	23	--	--	--	5500	23.5	26.5	--	--	--	--	--
JUL													
23...	1235	23	--e	8.0	6110	6190	17.0	19.5	1400	130	250	126	13

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
08...	830	60	506	320	.10	2000	200	3970	3850	6.0	60	<1	320
JUN													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
23...	1100	61	647	480	.20	2500	312	4980	4980	22.0	90	1	400

05056636 DEVILS LAKE OUTLET TO STUMP LAKE NEAR LAKOTA, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
29...	--	--	--	--	--
NOV					
29...	--	--	--	--	--
JAN					
22...	--	--	--	--	--
FEB					
21...	--	--	--	--	--
MAR					
25...	--	--	--	--	--
APR					
10...	--	--	--	--	--
MAY					
08...	30	<.10	1	2	500
JUN					
24...	--	--	--	--	--
JUL					
23...	200	.20	<1	1	410

< Less than
e Required equipment not functional/available

05056665 EASTERN STUMP LAKE NEAR LAKOTA, ND

LOCATION.--Lat 47°52'07", long 98°21'27", in $SW^1/_4SE^1/_4NE^1/_4$ sec.29, T.151 N., R.60 W., Nelson County, Hydrologic Unit 09020201, on north shore in southwest corner of Nelson County Old Settlers Park.

DRAINAGE AREA.--Not determined.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--June 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,400 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Gage heights are frequently affected by wind.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 13.68 ft, July 21; minimum gage height, 11.71 ft, Oct. 22.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.85	11.87	11.91	11.92	11.92	11.91	11.99	12.28	12.38	13.47	13.54	13.49
2	11.84	11.85	11.90	11.92	11.92	11.91	12.01	12.26	12.36	13.47	13.48	13.51
3	11.84	11.84	11.90	11.92	11.93	11.90	12.01	12.25	12.36	13.47	13.46	13.46
4	11.84	11.84	11.91	11.92	11.92	11.91	12.01	12.29	12.36	13.44	13.45	13.44
5	11.81	11.85	11.94	11.92	11.92	11.91	12.01	12.29	12.37	13.46	13.42	13.45
6	11.77	11.86	11.94	11.92	11.93	11.91	12.01	12.30	12.36	13.47	13.40	13.45
7	11.75	11.88	11.94	11.91	11.92	11.92	12.02	12.30	12.37	13.48	13.39	13.45
8	11.77	11.87	11.93	11.92	11.93	11.93	12.03	12.31	12.34	13.50	13.40	13.45
9	11.78	11.87	11.92	11.92	11.93	11.96	12.03	12.39	12.45	13.50	13.42	13.45
10	11.84	11.87	11.93	11.92	11.92	11.94	12.05	12.39	12.53	13.57	13.42	13.45
11	11.81	11.87	11.93	11.92	11.93	11.95	12.06	12.39	12.56	13.58	13.40	13.44
12	11.83	11.88	11.93	11.92	11.93	11.95	12.06	12.40	12.57	13.58	13.41	13.44
13	11.82	11.88	11.93	11.91	11.92	11.95	12.07	12.41	12.60	13.58	13.37	13.42
14	11.85	11.89	11.93	11.91	11.92	11.95	12.08	12.38	12.61	13.58	13.37	13.41
15	11.84	11.89	11.92	11.91	11.92	11.94	12.09	12.40	12.62	13.58	13.36	13.37
16	11.80	11.89	11.93	11.92	11.92	11.94	12.11	12.38	12.63	13.59	13.36	13.36
17	11.77	11.90	11.93	11.92	11.92	11.95	12.12	12.36	12.62	13.61	13.47	13.34
18	11.79	11.93	11.93	11.91	11.92	11.96	12.15	12.36	12.64	13.63	13.38	13.37
19	11.78	11.91	11.93	11.91	11.92	11.96	12.16	12.34	12.71	13.62	13.37	13.40
20	11.77	11.90	11.93	11.91	11.92	11.97	12.16	12.32	12.72	13.63	13.39	13.38
21	11.76	11.90	11.93	11.91	11.92	11.97	12.16	12.30	12.71	13.65	13.40	13.36
22	11.74	11.90	11.93	11.92	11.91	11.97	12.16	12.31	12.88	13.63	13.40	13.32
23	11.75	11.91	11.94	---	11.92	11.97	12.18	12.35	13.05	13.59	13.40	13.33
24	11.91	11.93	11.94	11.93	11.92	11.97	12.30	12.33	13.21	13.57	13.40	13.30
25	11.95	11.92	11.93	11.93	11.92	11.96	12.26	12.34	13.28	13.57	13.40	13.29
26	11.86	11.90	11.93	11.93	11.91	11.96	12.20	12.34	13.34	13.56	13.40	13.29
27	11.81	11.90	11.93	11.93	11.91	11.96	12.21	12.32	13.38	13.56	13.42	13.28
28	11.83	11.89	11.93	11.93	11.92	11.97	12.23	12.35	13.39	13.55	13.45	13.26
29	11.82	11.88	11.93	11.93	---	11.98	12.27	12.36	13.42	13.54	13.46	13.25
30	11.82	11.92	11.93	11.91	---	11.98	12.26	12.40	13.47	13.53	13.44	13.26
31	11.83	---	11.93	11.92	---	11.98	---	12.38	---	13.51	13.49	---
MEAN	11.81	11.89	11.93	---	11.92	11.95	12.12	12.34	12.74	13.55	13.42	13.38
MAX	11.95	11.93	11.94	---	11.93	11.98	12.30	12.41	13.47	13.65	13.54	13.51
MIN	11.74	11.84	11.90	---	11.91	11.90	11.99	12.25	12.34	13.44	13.36	13.25

05056665 EASTERN STUMP LAKE NEAR LAKOTA, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--1958-79, 1993 to present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
02...	1300	.0	9.6	10700	8.6	2200	140	450	132	19	2100	66	394
FEB													
05...	1250	.0	9.9	11100	8.3	2200	140	450	132	20	2200	67	417
MAY													
07...	1130	.0	10.0	11100	8.3	2200	140	440	130	19	2100	66	404
JUL													
30...	1210	.0	10.3	10200	8.1	2100	140	420	132	19	2000	66	408

Date	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT													
02...	820	.20	5400	1.7	E.02	<.008	--	<.05	--	--	.15	.20	9370
FEB													
05...	790	.10	5700	2.7	.28	.008	.06	.07	2.5	2.8	.18	.23	9660
MAY													
07...	780	.10	5300	2.2	.25	.009	.08	.09	1.9	2.3	.16	.21	9360
JUL													
30...	810	.10	5100	2.8	.22	<.008	--	E.03	2.6	--	.21	.26	8890

Date	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT												
02...	9280	E9.9	<.1	26.0	150	2	590	110	<.10	5	27	660
FEB												
05...	9660	.5	<.1	6.0	240	<1	680	120	<.10	<1	2	450
MAY												
07...	9130	E8.3	E3.9	4.0	180	<1	650	130	<.10	1	<1	410
JUL												
30...	8850	E55.2	<.1	16.0	90	1	610	660	.10	<1	5	330

05056665 EASTERN STUMP LAKE NEAR LAKOTA, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
02...	1245	9.6	.0	11100	8.4	15.3	9.5	104	720	--	50.4	18.0	30
02...	1246	--	1.0	11100	8.4	15.3	9.5	--	--	--	--	--	--
02...	1247	--	2.1	11100	8.5	15.3	9.4	--	--	--	--	--	--
02...	1248	--	3.0	11100	8.5	15.3	9.3	--	--	--	--	--	--
02...	1249	--	4.0	11100	8.5	15.3	9.3	--	--	--	--	--	--
02...	1250	--	5.2	11100	8.5	15.3	9.3	--	--	--	--	--	--
02...	1251	--	6.1	11100	8.5	15.3	9.2	--	--	--	--	--	--
02...	1252	--	7.5	11100	8.5	15.3	9.2	--	--	--	--	--	--
02...	1253	--	9.6	11100	8.5	15.3	9.1	--	--	--	--	--	--
FEB													
05...	1230	9.9	.70	11400	8.5	-.1	10.1	75	733	.50	80.4	-3.0	--
05...	1232	--	2.0	11400	8.5	-.3	10.9	--	--	--	--	--	--
05...	1234	--	3.0	11400	8.5	-.3	11.0	--	--	--	--	--	--
05...	1236	--	4.0	11400	8.5	-.3	11.1	--	--	--	--	--	--
05...	1238	--	5.0	11400	8.5	-.3	11.0	--	--	--	--	--	--
05...	1240	--	6.0	11300	8.5	-.3	11.1	--	--	--	--	--	--
05...	1242	--	7.0	11400	8.5	-.3	11.1	--	--	--	--	--	--
05...	1244	--	8.0	11400	8.5	-.3	11.1	--	--	--	--	--	--
05...	1246	--	9.0	11400	8.0	-.3	11.1	--	--	--	--	--	--
05...	1248	--	9.9	11400	8.5	1.2	.9	--	--	--	--	--	--
MAY													
07...	1115	10	.0	11200	8.4	4.0	12.8	105	738	--	61.2	5.0	90
07...	1116	--	1.0	11200	8.4	4.0	12.7	--	--	--	--	--	--
07...	1117	--	2.0	11200	8.4	4.0	12.6	--	--	--	--	--	--
07...	1118	--	3.0	11200	8.4	4.0	12.6	--	--	--	--	--	--
07...	1119	--	4.0	11200	8.4	4.0	12.5	--	--	--	--	--	--
07...	1120	--	5.0	11200	8.4	4.0	12.5	--	--	--	--	--	--
07...	1121	--	6.0	11200	8.4	4.0	12.4	--	--	--	--	--	--
07...	1122	--	7.0	11200	8.4	4.0	12.4	--	--	--	--	--	--
07...	1123	--	8.0	11300	8.4	4.0	12.4	--	--	--	--	--	--
07...	1124	--	9.0	11300	8.4	4.0	12.4	--	--	--	--	--	--
07...	1125	--	10.0	11300	8.4	4.0	12.4	--	--	--	--	--	--
JUL													
30...	1155	10	.0	10600	8.5	24.0	11.9	153	727	--	19.2	24.0	330
30...	1156	--	1.0	10700	8.5	23.9	11.8	--	--	--	--	--	--
30...	1157	--	2.0	10700	8.5	23.9	11.4	--	--	--	--	--	--
30...	1158	--	3.0	10700	8.5	23.9	11.2	--	--	--	--	--	--
30...	1159	--	4.0	10700	8.5	23.7	10.2	--	--	--	--	--	--
30...	1200	--	5.0	10700	8.4	23.4	8.7	--	--	--	--	--	--
30...	1201	--	6.0	10700	8.4	23.2	7.9	--	--	--	--	--	--
30...	1202	--	7.0	10700	8.3	22.4	4.8	--	--	--	--	--	--
30...	1203	--	8.0	10700	8.3	21.6	1.2	--	--	--	--	--	--
30...	1204	--	9.0	10800	8.2	20.0	.3	--	--	--	--	--	--
30...	1205	--	10.0	10800	8.0	18.7	.2	--	--	--	--	--	--
30...	1206	--	10.3	11000	7.9	17.9	.1	--	--	--	--	--	--

05056665 EASTERN STUMP LAKE NEAR LAKOTA, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
02...	20
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
FEB	
05...	7.0
05...	--
05...	--
05...	--
05...	--
05...	--
05...	--
05...	--
05...	--
05...	--
MAY	
07...	6.0
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
JUL	
30...	6.0
30...	--
30...	--
30...	--
30...	--
30...	--
30...	--
30...	--
30...	--
30...	--
30...	--
30...	--

< Less than
E Estimated value

05056670 WESTERN STUMP LAKE NEAR LAKOTA, ND

LOCATION.--Lat 47°54'48", long 98°23'26", in $SE^1/_4NE^1/_4NW^1/_4$ sec.7, T.151 N., R.60 W., Nelson County, Hydrologic Unit 09020201, at southeast arm of lake.

DRAINAGE AREA.--Not determined.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-79, 1993 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
02...	1230	.0	5.1	10600	8.5	2200	140	440	130	20	2100	66	404
FEB													
05...	1145	.70	5.4	11200	8.2	2300	150	460	140	20	2200	66	432
MAY													
07...	1100	.0	5.5	10900	8.3	2100	140	430	130	19	2000	66	399
JUL													
30...	1140	.0	5.9	10000	8.4	2000	140	410	132	19	2000	66	416

Date	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)
OCT													
02...	780	.20	5300	1.4	<.04	<.008	--	<.05	--	--	.11	.13	9220
FEB													
05...	820	.10	5800	2.8	.27	.008	.08	.09	2.6	2.9	.16	.21	9840
MAY													
07...	800	.10	5200	1.1	<.04	.008	--	E.08n	--	--	.12	.11	9280
JUL													
30...	800	.10	5000	1.6	.11	<.008	--	E.04	1.5	--	.28	.27	8840

Date	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT												
02...	9130	12.0	<.1	22.0	140	2	580	70	<.10	3	23	670
FEB												
05...	9830	.8	.2	5.0	220	<1	690	110	3.00	<1	<1	440
MAY												
07...	8940	E23.6	E11.3	4.0	160	<1	640	110	<.10	2	<1	420
JUL												
30...	8730	E13.5	<.1	17.0	100	1	610	450	.20	1	4	330

05056670 WESTERN STUMP LAKE NEAR LAKOTA, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
02...	1220	5.1	.0	10900	8.4	14.9	9.1	99	720	--	39.6	18.0	30
02...	1221	--	1.1	10900	8.5	14.9	9.2	--	--	--	--	--	--
02...	1222	--	2.1	10900	8.5	14.9	9.1	--	--	--	--	--	--
02...	1223	--	3.1	10900	8.5	14.9	9.0	--	--	--	--	--	--
02...	1224	--	4.0	10900	8.5	14.9	9.1	--	--	--	--	--	--
02...	1225	--	5.1	10900	8.5	14.9	8.8	--	--	--	--	--	--
FEB													
05...	1130	5.4	.70	11600	8.5	-.1	10.9	81	734	.55	75.6	.0	270
05...	1132	--	1.7	11500	8.5	-.2	10.8	--	--	--	--	--	--
05...	1134	--	2.8	11500	8.5	-.2	10.9	--	--	--	--	--	--
05...	1136	--	3.7	11500	8.5	-.2	10.9	--	--	--	--	--	--
05...	1138	--	4.7	11500	8.4	.4	9.4	--	--	--	--	--	--
05...	1140	--	5.4	11500	8.4	.1	8.8	--	--	--	--	--	--
MAY													
07...	1050	5.5	.0	11000	8.5	4.6	14.2	118	738	--	32.4	5.0	90
07...	1051	--	1.0	11000	8.5	4.6	14.1	--	--	--	--	--	--
07...	1052	--	2.0	11000	8.5	4.6	14.0	--	--	--	--	--	--
07...	1053	--	3.0	11000	8.5	4.6	13.9	--	--	--	--	--	--
07...	1054	--	4.0	11000	8.5	4.6	13.9	--	--	--	--	--	--
07...	1055	--	5.0	11100	8.5	4.5	13.4	--	--	--	--	--	--
07...	1056	--	5.5	11200	8.4	4.1	12.5	--	--	--	--	--	--
JUL													
30...	1130	5.9	.0	10600	8.5	24.1	11.3	146	727	--	51.6	23.0	330
30...	1131	--	1.0	10600	8.5	24.0	11.2	--	--	--	--	--	--
30...	1132	--	2.0	10600	8.5	23.9	11.0	--	--	--	--	--	--
30...	1133	--	3.0	10600	8.5	23.7	10.4	--	--	--	--	--	--
30...	1134	--	4.0	10600	8.5	23.5	8.9	--	--	--	--	--	--
30...	1135	--	5.0	10600	8.3	22.2	.6	--	--	--	--	--	--
30...	1136	--	5.9	10600	8.2	21.9	.3	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
02...	30
02...	--
02...	--
02...	--
02...	--
02...	--
FEB	
05...	5.0
05...	--
05...	--
05...	--
05...	--
05...	--
MAY	
07...	5.0
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
JUL	
30...	6.0
30...	--
30...	--
30...	--
30...	--
30...	--
30...	--

< Less than
E Estimated value
n Below the non-detection value

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND

LOCATION.--Lat 47°25'58", long 98°01'38", in $NW^1/_4NW^1/_4SW^1/_4$ sec.26, T.146 N., R.58 W., Griggs County, Hydrologic Unit 09020203, on right bank at Ueland Dam 0.7 mi downstream from State Highway 200 and 5 mi east of Cooperstown.

DRAINAGE AREA.--6,470 mi^2, approximately, of which about 5,200 mi^2 is probably noncontributing, includes 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area. WRD ND-80-1: Gage datum.

GAGE.--Water-stage recorder and artificial control. Datum of gage is 1,271.76 ft above National Geodetic Vertical Datum of 1929 (Coast and Geodetic Survey benchmark). Aug. 3, 1950, to Oct. 22, 1985, gage located on right bank 300 ft downstream of present site and datum. Prior to Aug. 3, 1950, nonrecording gage at site 150 ft downstream of present site at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e60	116	e79	e33	e31	e52	e45	237	155	265	54	101
2	e56	125	e80	e32	e30	e50	e59	223	152	300	48	106
3	e54	130	e78	e31	e30	e46	e79	216	148	362	44	83
4	e52	137	e76	e29	e29	e41	e104	220	138	399	41	e71
5	50	148	e72	e28	e29	e39	e122	216	133	398	38	e62
6	50	157	e71	e27	e27	e37	e141	212	130	352	36	e57
7	51	164	e69	e27	e26	e37	e141	216	128	284	35	e56
8	52	163	e68	e26	e24	e37	e146	224	121	226	34	e55
9	51	154	e67	e26	e24	e36	e161	243	131	189	e37	e56
10	50	146	e66	e26	e23	e36	e192	266	146	192	e35	55
11	55	142	e65	e26	e23	e35	e213	284	165	223	e35	51
12	62	135	e63	e27	e23	e37	e250	303	161	224	43	49
13	67	130	e61	e28	e24	e36	e324	321	162	200	36	46
14	69	127	e58	e31	e28	e36	e349	336	182	164	33	45
15	67	123	e56	e34	e29	e36	e360	339	229	139	31	44
16	70	122	e53	e38	e31	e37	338	334	267	123	30	44
17	73	120	e51	e42	e32	e38	335	318	305	108	34	40
18	76	117	e48	e47	e35	e42	354	301	351	103	e35	38
19	73	114	e46	e48	e37	e45	373	285	392	96	e42	38
20	72	110	e43	e47	e39	e49	381	267	410	91	e53	36
21	70	110	e43	e45	e41	e58	372	250	410	89	e52	36
22	69	110	e45	e43	e43	e66	357	237	392	86	e47	41
23	68	107	e47	e41	e45	e69	329	220	361	86	e47	52
24	78	106	e47	e39	e48	e63	308	208	308	86	e47	41
25	86	107	e46	e38	e50	e59	289	196	268	90	e48	37
26	e90	69	e44	e36	e53	e56	273	193	264	80	e33	39
27	e95	28	e41	e35	e54	e53	270	184	304	74	39	45
28	98	63	e37	e34	e52	e50	264	175	341	72	40	46
29	93	e75	e35	e33	---	e47	258	170	330	69	47	47
30	98	e78	e35	e32	---	e45	253	162	290	62	55	46
31	109	---	e34	e31	---	e42	---	158	---	52	73	---
TOTAL	2164	3533	1724	1060	960	1410	7440	7514	7274	5284	1302	1563
MEAN	69.81	117.8	55.61	34.19	34.29	45.48	248.0	242.4	242.5	170.5	42.00	52.10
MAX	109	164	80	48	54	69	381	339	410	399	73	106
MIN	50	28	34	26	23	35	45	158	121	52	30	36
AC-FT	4290	7010	3420	2100	1900	2800	14760	14900	14430	10480	2580	3100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2002, BY WATER YEAR (WY)

MEAN	39.43	39.71	23.00	14.65	16.50	185.0	666.6	253.7	146.3	112.2	64.86	40.85
MAX	392	375	144	68.2	112	1381	2623	1953	873	722	1033	321
(WY)	1995	2001	2001	1995	1998	1995	1996	1950	2000	2000	1993	1994
MIN	0.83	2.83	3.14	1.94	0.000	2.14	42.4	37.3	6.66	3.84	0.68	0.000
(WY)	1964	1977	1977	1964	1963	1964	1991	1961	1961	1961	1961	1959

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1945 - 2002	
ANNUAL TOTAL	121746		41228			
ANNUAL MEAN	333.6		113.0		133.5	
HIGHEST ANNUAL MEAN					399	1950
LOWEST ANNUAL MEAN					13.2	1977
HIGHEST DAILY MEAN	3110	Apr 8	410	Jun 20	7410	Apr 17 1950
LOWEST DAILY MEAN	28	Nov 27	23	Feb 10	0.00	Aug 29 1959
ANNUAL SEVEN-DAY MINIMUM	39	Dec 25	24	Feb 7	0.00	Aug 29 1959
MAXIMUM PEAK FLOW			418	Jun 20	a7830	Apr 17 1950
MAXIMUM PEAK STAGE			11.08	Jun 20	19.13	Apr 18 1996
ANNUAL RUNOFF (AC-FT)	241500		81780		96690	
10 PERCENT EXCEEDS	688		289		294	
50 PERCENT EXCEEDS	107		65		29	
90 PERCENT EXCEEDS	47		33		4.5	

a Gage height, 18.69 ft.
e Estimated

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1997 to current year.

SPECIFIC CONDUCTANCE: June 1997 to current year.

INSTRUMENTATION.--Water-quality sensors since June 1997.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 29.5°C, July 20,2002; minimum recorded, -0.2°C, on many days in November 2000, December 2000, and January 2001.

SPECIFIC CONDUCTANCE: Maximum recorded, 2,230 microsiemens, Feb. 15-17, 2002; minimum recorded, 539 microsiemens, June 16, 2000.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 29.5°C, July 20; minimum recorded, 0.1°C, on many days.

SPECIFIC CONDUCTANCE: Maximum recorded, 2,230 microsiemens, Feb. 15-17; minimum recorded, 591 microsiemens, April 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
09...	1655	54	--	--	--	*718	15.5	--	--	--	--	--	--
NOV													
28...	1305	65	--	--	--	*1090	-4.5	.5	--	--	--	--	--
JAN													
24...	1120	38	--	--	--	2000	-11.5	-.5	--	--	--	--	--
MAR													
04...	1125	40	--	--	--	*1350	-7.5	.0	--	--	--	--	--
APR													
10...	0920	186	8.2	7.8	840	*818	-5.0	1.5	270	53.0	33.0	9.60	2
MAY													
07...	1730	219	--	--	--	1100	4.5	7.0	--	--	--	--	--
JUL													
01...	1545	260	--	--	--	--	--	27.5	--	--	--	--	--
AUG													
06...	1110	36	7.6	--e	1100	1110	18.0	21.0	360	71.0	45.0	12.0	3

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	74.0	36	258	13.0	.20	170	274	546	508	2.0	30	<1	60
MAY													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	120	41	414	7.9	.20	220	75.9	774	726	11.0	50	1	80

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
09...	--	--	--	--	--
NOV					
28...	--	--	--	--	--
JAN					
24...	--	--	--	--	--
MAR					
04...	--	--	--	--	--
APR					
10...	40	<.10	<1	<1	200
MAY					
07...	--	--	--	--	--
JUL					
01...	--	--	--	--	--
AUG					
06...	400	<.10	2	1	390

* Not at water-quality monitor probe location
< Less than
e Required equipment not functional/available

WATER TEMPERATURE from datalogger, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.3	14.6	15.6	4.7	3.9	4.3	0.3	0.2	0.2	0.2	0.1	0.2
2	16.5	14.5	15.3	4.9	4.0	4.4	0.3	0.2	0.2	0.2	0.1	0.2
3	15.2	13.9	14.5	5.0	4.0	4.4	0.3	0.2	0.2	0.2	0.1	0.1
4	14.0	12.0	12.7	4.9	3.9	4.3	0.3	0.2	0.2	0.2	0.1	0.1
5	12.0	9.5	10.4	5.3	4.3	4.7	0.3	0.2	0.2	0.2	0.1	0.2
6	9.5	7.7	8.4	5.2	4.5	4.7	0.3	0.2	0.3	0.2	0.1	0.2
7	8.1	6.9	7.6	4.7	4.2	4.5	0.3	0.2	0.3	0.2	0.1	0.2
8	9.0	7.2	8.0	4.3	3.5	3.9	0.3	0.2	0.2	0.2	0.1	0.1
9	9.2	7.7	8.4	3.7	3.1	3.4	0.3	0.2	0.2	0.3	0.1	0.2
10	9.7	8.8	9.1	3.7	3.0	3.3	0.3	0.2	0.2	0.3	0.1	0.2
11	10.0	8.4	9.2	3.4	2.8	3.0	0.3	0.2	0.2	0.3	0.1	0.2
12	10.6	9.3	9.9	3.5	2.7	2.9	0.3	0.2	0.2	0.3	0.1	0.2
13	10.1	9.2	9.7	3.2	2.3	2.7	0.3	0.2	0.2	0.3	0.1	0.2
14	9.2	8.3	8.9	3.2	2.3	2.7	0.3	0.2	0.2	0.2	0.1	0.2
15	8.3	6.9	7.8	4.2	2.7	3.5	0.3	0.2	0.2	0.2	0.1	0.1
16	6.9	5.9	6.5	4.9	3.7	4.2	0.3	0.2	0.3	0.3	0.1	0.3
17	6.8	5.6	6.2	5.2	4.2	4.5	0.3	0.2	0.2	0.3	0.2	0.3
18	7.5	6.3	6.8	4.6	3.3	4.2	0.3	0.2	0.2	0.3	0.2	0.2
19	7.6	6.9	7.2	3.3	1.5	2.6	0.3	0.2	0.2	0.3	0.2	0.2
20	7.7	6.7	7.1	1.8	1.1	1.4	0.3	0.2	0.2	0.3	0.2	0.2
21	7.3	6.2	6.8	1.8	1.1	1.4	0.3	0.2	0.3	0.3	0.2	0.2
22	7.3	6.1	6.7	2.4	1.4	1.9	0.3	0.2	0.2	0.3	0.2	0.2
23	7.2	6.1	6.7	3.0	2.2	2.5	0.3	0.2	0.2	0.3	0.2	0.2
24	6.1	2.1	4.1	3.0	2.6	2.7	0.3	0.2	0.2	0.3	0.2	0.2
25	2.1	0.7	1.2	2.6	1.2	2.0	0.3	0.2	0.2	0.3	0.2	0.2
26	1.6	0.5	0.9	1.2	0.3	0.5	0.3	0.2	0.2	0.3	0.2	0.2
27	1.2	0.5	0.8	0.5	0.2	0.4	0.3	0.2	0.2	0.3	0.2	0.2
28	1.4	0.4	0.8	0.4	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2
29	2.1	1.0	1.7	0.3	0.2	0.3	0.3	0.2	0.2	0.3	0.2	0.2
30	3.2	2.0	2.6	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2
31	4.0	3.0	3.5	---	---	---	0.3	0.1	0.2	0.2	0.1	0.2
MONTH	17.3	0.4	7.3	5.3	0.2	2.9	0.3	0.1	0.2	0.3	0.1	0.2

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

WATER TEMPERATURE from datalogger, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.2	0.1	0.2	0.4	0.1	0.2	0.2	0.2	0.2	8.5	7.3	7.8
2	0.2	0.1	0.1	0.4	0.2	0.3	0.2	0.2	0.2	9.3	6.5	7.8
3	0.2	0.1	0.1	0.5	0.1	0.3	0.3	0.2	0.2	11.7	8.0	9.6
4	0.2	0.1	0.2	0.4	0.1	0.2	0.3	0.2	0.2	12.6	10.2	11.4
5	0.2	0.1	0.2	0.3	0.1	0.2	0.3	0.2	0.2	12.5	10.5	11.1
6	0.2	0.1	0.2	0.3	0.1	0.2	0.3	0.1	0.2	10.6	8.0	8.8
7	0.3	0.1	0.2	0.2	0.1	0.2	0.6	0.2	0.3	8.0	6.9	7.1
8	0.3	0.2	0.2	0.2	0.1	0.1	0.6	0.1	0.3	7.0	6.2	6.5
9	0.3	0.1	0.2	0.2	0.1	0.2	0.5	0.2	0.3	7.3	5.3	6.2
10	0.3	0.1	0.2	0.2	0.1	0.2	0.4	0.2	0.3	10.0	6.5	8.0
11	0.4	0.1	0.2	0.2	0.1	0.2	0.7	0.2	0.3	10.0	9.1	9.6
12	0.4	0.2	0.3	0.3	0.1	0.2	0.7	0.2	0.4	11.3	8.7	10
13	0.4	0.1	0.3	0.6	0.2	0.3	6.0	0.2	2.6	13.3	9.9	11.5
14	0.4	0.2	0.3	0.4	0.2	0.3	7.4	3.8	5.4	14.6	11.3	12.9
15	0.4	0.2	0.3	0.6	0.2	0.3	9.4	6.0	7.6	15.0	13.2	14.1
16	0.5	0.2	0.3	0.7	0.2	0.4	11.2	8.3	9.5	14.0	11.7	13.0
17	0.5	0.2	0.3	0.5	0.2	0.3	12.9	9.4	11.0	13.4	11.5	12.6
18	0.6	0.2	0.3	0.3	0.2	0.3	12.4	8.5	10.8	14.0	11.2	12.6
19	0.6	0.2	0.3	0.3	0.2	0.2	8.5	7.2	7.9	14.5	11.7	13.1
20	0.6	0.2	0.3	0.2	0.2	0.2	9.0	7.2	8.0	15.3	12.4	13.8
21	0.5	0.2	0.3	0.3	0.1	0.2	7.9	6.8	7.2	16.1	13.2	14.7
22	0.3	0.2	0.2	0.3	0.2	0.2	7.4	6.2	6.7	16.4	14.7	15.6
23	0.5	0.2	0.3	0.3	0.2	0.2	9.0	6.3	7.6	16.3	13.3	14.2
24	0.4	0.2	0.3	0.4	0.2	0.2	8.8	7.4	8.0	13.8	11.9	12.9
25	0.5	0.2	0.3	0.4	0.1	0.2	7.6	5.2	6.3	15.4	13.2	14.1
26	0.6	0.2	0.3	0.4	0.1	0.2	7.5	5.1	6.3	16.1	14.1	15.1
27	0.5	0.1	0.3	0.6	0.2	0.3	7.4	5.9	6.3	18.2	15.0	16.3
28	0.4	0.1	0.3	0.8	0.2	0.4	6.6	5.5	6.1	20.2	17.7	18.6
29	---	---	---	0.8	0.2	0.4	8.8	5.9	7.2	21.0	19.8	20.3
30	---	---	---	0.7	0.2	0.4	8.7	7.3	8.0	21.2	20.0	20.7
31	---	---	---	0.6	0.2	0.3	---	---	---	21.6	20.2	21.0
MONTH	0.6	0.1	0.2	0.8	0.1	0.3	12.9	0.1	4.5	21.6	5.3	12.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.8	20.4	21.2	27.7	25.6	26.8	27.1	23.4	24.3	24.3	22.0	23.1
2	21.2	17.8	19.5	27.1	25.0	26.0	24.2	21.4	22.7	23.4	21.6	22.9
3	17.8	17.1	17.4	26.4	23.9	25.2	23.8	20.9	22.1	22.8	20.6	21.3
4	18.0	17.1	17.5	25.6	22.7	24.0	24.8	20.9	22.6	22.4	20.4	21.3
5	19.2	16.9	18.0	24.6	22.0	23.2	24.4	21.0	22.6	23.6	21.2	22.2
6	20.5	18.6	19.4	26.2	23.7	24.9	23.1	21.0	21.4	25.3	22.0	23.6
7	19.9	18.7	19.6	25.7	24.3	24.7	22.5	20.7	21.5	25.6	23.2	24.5
8	19.6	18.2	18.8	25.8	23.3	24.5	24.8	22.0	23.4	26.6	23.9	24.9
9	19.5	18.6	19.0	26.0	24.6	25.4	25.5	22.9	24.0	24.1	21.4	23.0
10	18.9	17.3	18.3	25.3	21.5	23.3	24.7	22.8	23.7	22.6	19.4	21.0
11	19.0	16.7	17.7	22.8	20.0	21.4	24.0	22.2	23.1	21.4	18.8	20.0
12	19.0	17.9	18.3	24.4	22.4	23.2	23.1	21.6	22.0	22.3	18.8	20.1
13	17.9	17.1	17.4	25.9	23.4	24.5	22.2	19.8	21.0	20.4	18.8	19.8
14	19.0	16.6	17.7	26.9	25.1	26.1	21.8	20.1	20.8	19.6	18.0	18.8
15	20.8	18.1	19.3	28.3	26.1	27.2	21.3	19.9	20.5	18.3	17.0	17.7
16	21.2	19.0	20.1	29.3	26.9	28.0	20.7	19.0	19.8	19.3	16.4	18.0
17	22.3	19.6	20.9	28.3	26.0	27.6	19.1	17.7	18.5	18.7	17.0	18.1
18	22.5	20.5	21.4	27.1	24.8	25.8	19.0	16.8	17.7	19.1	17.9	18.5
19	22.3	21.2	21.7	28.3	25.6	26.7	19.4	16.2	17.4	18.6	17.0	17.9
20	22.4	20.1	21.3	29.5	26.7	27.7	19.8	17.1	18.5	17.3	15.6	16.6
21	23.1	20.8	21.9	27.9	26.7	27.5	20.7	18.7	19.5	15.6	13.4	14.8
22	23.1	21.8	22.3	26.7	23.3	25.0	21.0	19.2	20.0	13.4	11.9	12.8
23	24.2	22.0	22.9	23.3	20.3	21.8	22.4	19.3	20.5	11.9	10.6	11.5
24	26.3	23.3	24.6	20.6	19.6	20.0	24.2	20.2	22.0	11.2	10.1	10.8
25	26.5	24.7	25.6	23.7	20.0	21.6	25.8	21.4	23.3	11.6	10.0	10.7
26	26.9	24.4	25.7	26.5	22.4	24.3	25.6	22.3	24.0	12.3	10.1	11.1
27	27.7	25.0	26.3	26.3	24.3	25.0	24.9	22.9	24.0	11.4	10.6	10.9
28	28.1	25.6	26.8	27.1	24.4	25.1	26.0	23.1	24.1	11.9	9.9	10.7
29	28.7	26.1	27.3	27.0	23.6	24.9	24.8	23.0	23.8	11.2	9.7	10.6
30	28.4	26.4	27.5	27.9	24.1	25.5	23.6	21.9	22.8	13.8	10.8	12.0
31	---	---	---	27.9	24.1	25.6	24.4	21.2	22.5	---	---	---
MONTH	28.7	16.6	21.2	29.5	19.6	24.9	27.1	16.2	21.7	26.6	9.7	17.6

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

SPECIFIC CONDUCTANCE from datalogger, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1140	1130	1140	1360	1350	1350	1430	1400	1410	2160	2150	2150
2	1150	1140	1140	1370	1310	1360	1490	1430	1460	2170	2160	2170
3	1150	1140	1140	1370	1360	1370	1540	1490	1510	2180	2170	2170
4	1140	1130	1130	1360	1300	1360	1590	1540	1570	2180	2170	2180
5	1130	1130	1130	1360	1300	1350	1640	1590	1620	2180	2160	2170
6	1130	1120	1120	1360	1290	1330	1690	1640	1670	2160	2140	2160
7	1120	1120	1120	1320	1310	1310	1700	1670	1700	2150	2130	2140
8	1120	1110	1120	1330	1320	1320	1670	1640	1660	2130	2110	2120
9	1120	1110	1120	1330	1330	1330	1640	1590	1620	2110	2090	2100
10	1120	1110	1110	1380	1330	1350	1590	1580	1590	2100	2080	2080
11	1110	1100	1100	1390	1320	1360	1580	1520	1540	2080	2060	2060
12	1100	1100	1100	1410	1340	1380	1550	1460	1530	2060	2040	2050
13	1100	1100	1100	1440	1410	1420	1510	1460	1480	2040	2010	2030
14	1110	1100	1100	1480	1430	1460	1530	1480	1500	2020	2000	2010
15	1120	1110	1120	1490	1470	1480	1580	1530	1550	2010	2000	2000
16	1140	1120	1130	1500	1490	1490	1600	1580	1590	2000	1990	1990
17	1150	1140	1140	1530	1500	1510	1590	1510	1550	1990	1990	1990
18	1160	1140	1140	1570	1530	1550	1600	1540	1570	1990	1990	1990
19	1170	1150	1160	1590	1570	1580	1660	1600	1630	1990	1980	1980
20	1180	1170	1170	1600	1590	1590	1740	1660	1700	1990	1980	1980
21	1230	1180	1190	1600	1580	1590	1780	1710	1750	1980	1980	1980
22	1240	1210	1230	1590	1580	1580	1860	1780	1820	1990	1980	1980
23	1230	1220	1230	1600	1580	1590	1910	1860	1880	1990	1990	1990
24	1250	1230	1240	1610	1590	1610	1940	1910	1930	2000	1980	1990
25	1260	1250	1260	1620	1610	1620	1980	1940	1960	2000	1990	1990
26	1270	1260	1260	1630	1620	1620	2020	1980	2000	2000	1990	2000
27	1300	1270	1280	1620	1420	1500	2060	2020	2040	2010	2000	2000
28	1320	1300	1310	1420	1370	1390	2090	2060	2070	2020	2010	2020
29	1320	1300	1320	1390	1370	1380	2110	2090	2100	2040	2020	2030
30	1340	1320	1330	1400	1370	1390	2130	2110	2120	2080	2040	2050
31	1350	1340	1340	---	---	---	2150	2130	2140	2060	2050	2060
MONTH	1350	1100	1180	1630	1290	1450	2150	1400	1720	2180	1980	2050

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2080	2060	2070	2130	2110	2120	1800	1780	1790	970	959	964
2	2090	2080	2080	2120	2100	2110	1780	1760	1770	982	964	976
3	2100	2090	2100	2100	2090	2090	1760	1740	1750	1000	982	994
4	2120	2100	2110	2090	2070	2080	1750	1730	1740	1000	997	1000
5	2130	2120	2120	2080	2060	2070	1730	1710	1720	997	987	992
6	2150	2130	2140	2070	2050	2060	1710	1690	1700	1010	991	1000
7	2160	2140	2150	2050	2040	2040	1700	1690	1700	1050	1010	1030
8	2180	2160	2160	2040	2030	2030	1700	727	1120	1080	1050	1060
9	2190	2170	2180	2030	2020	2030	727	684	696	1140	1080	1130
10	2200	2190	2200	2020	2010	2020	695	662	683	1150	1130	1140
11	2210	2200	2200	2020	2000	2010	704	640	668	1180	1140	1160
12	2210	2200	2210	2000	1990	2000	698	608	639	1180	1160	1170
13	2220	2210	2220	2000	1980	1990	667	591	630	1180	1180	1180
14	2220	2220	2220	1980	1970	1980	691	663	682	1200	1180	1190
15	2230	2220	2220	1980	1960	1970	679	651	667	1220	1200	1210
16	2230	2220	2230	1960	1950	1960	670	639	658	1220	1200	1220
17	2230	2220	2220	1960	1950	1950	675	639	660	1220	1200	1210
18	2220	2210	2220	1950	1940	1940	837	670	703	1210	1200	1200
19	2220	2210	2210	1940	1920	1930	813	724	760	1220	1210	1220
20	2220	2200	2210	1920	1900	1920	750	735	741	1210	1210	1210
21	2210	2200	2200	1910	1900	1910	758	742	752	1230	1210	1220
22	2200	2190	2200	1900	1890	1900	775	754	768	1240	1220	1230
23	2200	2180	2190	1890	1880	1890	792	775	782	1260	1240	1250
24	2180	2170	2180	1880	1870	1880	812	792	801	1260	1260	1260
25	2180	2160	2170	1870	1860	1870	843	812	825	1280	1260	1270
26	2160	2150	2150	1860	1850	1860	868	843	859	1290	1280	1290
27	2150	2140	2140	1860	1840	1850	900	868	887	1290	1290	1290
28	2140	2120	2130	1840	1830	1840	927	900	912	1290	1280	1290
29	---	---	---	1840	1830	1830	960	927	947	1280	1260	1270
30	---	---	---	1830	1820	1820	966	960	964	1280	1270	1280
31	---	---	---	1820	1800	1810	---	---	---	1280	1270	1280
MONTH	2230	2060	2170	2130	1800	1960	1800	591	999	1290	959	1170

05057000 SHEYENNE RIVER NEAR COOPERSTOWN, ND--Continued

SPECIFIC CONDUCTANCE from datalogger, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1280	1280	1280	1150	1100	1120	1100	1080	1090	1090	1070	1080
2	1280	1280	1280	1170	1140	1160	1080	1070	1070	1100	1080	1090
3	1280	1280	1280	1190	1130	1150	1080	1060	1070	1100	1040	1080
4	1290	1270	1280	1370	1190	1280	1070	1050	1060	1050	1020	1040
5	1270	1240	1260	1410	1320	1380	1090	1070	1080	1050	1030	1040
6	1250	1230	1240	1320	1130	1210	1090	1080	1090	1070	1050	1060
7	1240	1230	1240	1130	1060	1090	1090	1080	1090	1090	1060	1080
8	1240	1220	1230	1060	1060	1060	1090	1080	1090	1110	1090	1100
9	1260	1200	1210	1060	1050	1060	1090	1060	1070	1100	1060	1070
10	1300	1220	1250	1050	991	1020	1060	1050	1050	1100	1070	1080
11	1250	1220	1240	1190	1020	1110	1080	1060	1070	1140	1100	1120
12	1250	1230	1240	1110	1060	1090	1080	1040	1050	1140	1130	1140
13	1280	1230	1250	1060	1020	1040	1100	1030	1060	1150	1130	1140
14	1290	1270	1280	1090	1060	1080	1100	1080	1090	1170	1150	1160
15	1280	1210	1260	1100	1090	1100	1080	1060	1070	1170	1170	1170
16	1220	1210	1210	1130	1100	1120	1060	1040	1050	1170	1160	1160
17	1230	1200	1210	1140	1110	1130	1040	1030	1040	1190	1170	1180
18	1230	1180	1220	1110	1090	1100	1040	1030	1040	1200	1190	1190
19	1310	1160	1210	1110	1090	1100	1060	1040	1050	1200	1190	1190
20	1450	1310	1400	1110	1100	1110	1050	1040	1040	1190	1190	1190
21	1450	1360	1410	1110	1100	1110	1070	1050	1060	1190	1180	1190
22	1360	1280	1320	1100	1100	1100	1070	1060	1070	1200	1190	1200
23	1280	1230	1250	1100	1090	1100	1070	1060	1070	1200	1190	1190
24	1250	1240	1250	1100	1100	1100	1080	1060	1070	1210	1200	1200
25	1270	1250	1260	1100	1080	1090	1100	1080	1090	1210	1200	1210
26	1300	1270	1280	1110	1090	1100	1090	1080	1090	1210	1200	1210
27	1300	1260	1280	1110	1080	1090	1100	1090	1100	1230	1200	1220
28	1260	1120	1190	1100	1100	1100	1110	1100	1100	1230	1210	1220
29	1120	1090	1100	1110	1100	1100	1110	1100	1110	1260	1210	1230
30	1100	1090	1090	1110	1100	1100	1100	1060	1080	1390	1260	1320
31	---	---	---	1110	1090	1100	1080	1060	1070	---	---	---
MONTH	1450	1090	1250	1410	991	1120	1110	1030	1070	1390	1020	1150

05057200 BALDHILL CREEK NEAR DAZEY, ND

LOCATION.--Lat 47°13'45", long 98°07'28", in NW$^1/_4$SE$^1/_4$SW$^1/_4$ sec.2, T.143 N., R.59 W., Barnes County, Hydrologic Unit 09020203, on left bank 500 ft upstream from bridge on county highway, 4.5 mi northeast of Dazey, and 14 mi upstream from mouth.

DRAINAGE AREA.--691 mi^2, of which about 340 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,330 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 9, 1956, nonrecording gage 500 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	35	e16	e3.2	e2.2	e4.5	e19	34	20	5.9	11	2.9
2	6.8	38	e15	e3.1	e2.2	e3.7	e19	31	18	5.0	8.9	5.2
3	6.3	40	e15	e3.1	e2.2	e3.4	e19	38	17	3.4	8.0	5.9
4	5.9	41	e15	e3.1	e2.2	e3.5	e18	33	17	3.6	7.5	3.6
5	5.0	41	e15	e3.2	e2.2	e3.5	e16	28	17	3.9	6.7	2.0
6	5.2	43	e14	e3.3	e2.3	e3.3	e18	28	16	2.2	5.6	1.3
7	4.8	44	e14	e3.5	e3.1	e3.1	e29	29	16	6.3	5.4	1.4
8	5.2	42	e12	e3.8	e3.7	e3.1	e31	35	16	9.1	5.1	1.4
9	6.2	40	e11	e5.3	e3.7	e3.1	e35	44	15	7.5	8.0	1.7
10	10	38	e8.9	e7.3	e3.6	e3.2	36	47	16	35	7.0	2.8
11	9.1	35	e7.8	e7.6	e4.4	e3.2	39	54	18	42	6.7	4.1
12	12	32	e7.6	e7.7	e4.6	e4.7	42	58	19	39	7.0	3.6
13	12	30	e7.4	e7.7	e4.5	e8.3	46	57	26	27	6.5	2.7
14	16	28	e7.2	e7.3	e4.6	e9.3	51	55	32	32	5.6	2.4
15	15	32	e7.0	e6.8	e5.0	e8.7	46	55	34	39	5.2	2.3
16	12	27	e6.9	e6.0	e5.4	e9.0	41	52	32	39	4.9	3.3
17	8.5	26	e6.5	e5.6	e6.2	e10	38	49	28	42	6.3	3.3
18	6.4	26	e6.2	e5.4	e6.9	e11	44	46	22	42	4.8	2.5
19	7.0	23	e5.9	e4.9	e7.0	e9.6	47	44	20	37	4.7	1.9
20	9.9	22	e5.6	e4.6	e6.8	e7.8	49	40	16	28	4.4	1.3
21	11	21	e5.4	e4.6	e6.9	e8.2	46	35	14	23	4.4	1.2
22	10	23	e5.2	e4.6	e7.3	e8.1	42	33	13	23	3.9	1.3
23	11	23	e4.7	e4.1	e7.5	e8.0	40	32	18	21	3.7	1.7
24	17	24	e4.7	e4.0	e7.4	e6.7	42	29	15	21	3.3	1.7
25	13	22	e4.2	e4.3	e7.2	e6.6	37	29	13	22	2.8	2.0
26	13	15	e3.9	e4.3	e7.6	e6.4	31	27	12	28	2.6	2.1
27	16	e16	e3.7	e3.3	e5.4	e9.4	32	26	11	20	2.4	1.8
28	14	e16	e3.6	e2.7	e5.1	e20	35	25	8.8	16	2.3	2.0
29	21	e16	e3.4	e2.4	---	e22	35	24	6.6	14	2.4	2.2
30	23	e16	e3.3	e2.3	---	e21	35	23	6.9	12	2.3	2.3
31	28	---	e3.2	e2.3	---	e19	---	21	---	10	2.3	---
TOTAL	347.5	875	249.3	141.4	137.2	251.4	1058	1161	533.3	658.9	161.7	73.9
MEAN	11.21	29.17	8.042	4.561	4.900	8.110	35.27	37.45	17.78	21.25	5.216	2.463
MAX	28	44	16	7.7	7.6	22	51	58	34	42	11	5.9
MIN	4.8	15	3.2	2.3	2.2	3.1	16	21	6.6	2.2	2.3	1.2
AC-FT	689	1740	494	280	272	499	2100	2300	1060	1310	321	147

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2002, BY WATER YEAR (WY)

MEAN	7.727	7.205	3.295	1.564	2.806	62.58	132.0	31.90	20.04	19.12	8.851	7.178
MAX	106	54.9	16.1	7.31	34.2	475	1040	220	180	273	133	58.5
(WY)	1995	2001	1995	1995	1998	1995	1997	1997	1999	1993	1993	1957
MIN	0.47	0.38	0.15	0.000	0.000	0.59	2.44	1.71	0.91	0.021	0.076	0.094
(WY)	1992	1960	1959	1959	1957	1964	1981	1981	1961	1989	1984	1984

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1956 - 2002	
ANNUAL TOTAL	15738.6		5648.6			
ANNUAL MEAN	43.12		15.48		25.48	
HIGHEST ANNUAL MEAN					115	1997
LOWEST ANNUAL MEAN					1.52	1981
HIGHEST DAILY MEAN	439	Apr 12	58	May 12	4500	Apr 19 1979
LOWEST DAILY MEAN	2.2	Feb 23	1.2	Sep 21	0.00	Jan 25 1957
ANNUAL SEVEN-DAY MINIMUM	2.2	Feb 22	1.6	Sep 19	0.00	Jan 25 1957
MAXIMUM PEAK FLOW			a58	May 11	b9000	Apr 19 1979
MAXIMUM PEAK STAGE			6.93	Apr 14	17.78	Apr 19 1979
ANNUAL RUNOFF (AC-FT)	31220		11200		18460	
10 PERCENT EXCEEDS	110		39		42	
50 PERCENT EXCEEDS	16		8.8		3.7	
90 PERCENT EXCEEDS	3.8		2.7		0.27	

a Gage height, 6.87 ft
b About
e Estimated

05057200 BALDHILL CREEK NEAR DAZEY, ND--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1997 to Sept. 30, 2001.

SPECIFIC CONDUCTANCE: April 1997 Sept. 30, 2001.

INSTRUMENTATION.--Water-quality sensors April 1997 to Sept. 30, 2001.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 31.0°C, July 10, 1998; minimum recorded,-0.2°C, on many days in November and December 2000.

SPECIFIC CONDUCTANCE: Maximum recorded, 2,210 microsiemens, May 7-8, 1997; minimum recorded, 291 microsiemens, Mar. 31, 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
DEC													
10...	1600	8.7	--	--	--	1350	-2.5	.5	--	--	--	--	--
JAN													
23...	1500	4.1	--	--	--	1310	-11.0	.0	--	--	--	--	--
MAR													
04...	1355	3.5	--	--	--	1270	-3.5	.5	--	--	--	--	--
26...	1230	6.5	--	--	--	903	-2.5	.5	--	--	--	--	--
APR													
18...	1840	45	8.1	7.7	732	703	6.0	8.0	280	61.0	32.0	9.70	1
MAY													
07...	1650	30	--	--	--	1180	9.0	5.5	--	--	--	--	--
JUL													
02...	1600	5.1	--	--	--	1100	29.5	27.5	--	--	--	--	--
AUG													
07...	1335	5.6	8.2	8.2	1020	1020	--	21.5	410	77.0	54.0	9.10	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
DEC													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
18...	37.0	21	230	11.0	.20	140	56.9	468	430	2.0	110	<1	40
MAY													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07...	76.0	28	323	15.0	.20	250	11.1	738	675	4.0	70	1	70

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
DEC					
10...	--	--	--	--	--
JAN					
23...	--	--	--	--	--
MAR					
04...	--	--	--	--	--
26...	--	--	--	--	--
APR					
18...	570	<.10	<1	<1	250
MAY					
07...	--	--	--	--	--
JUL					
02...	--	--	--	--	--
AUG					
07...	60	<.10	1	1	420

< Less than

05057500 LAKE ASHTABULA AT BALDHILL DAM, ND

LOCATION.--Lat 47°02'00", long 98°05'00", in NW$^{1}/_{4}$ sec.18, T.141 N., R.58 W., Barnes County, Hydrologic Unit 09020203, at Baldhill Dam on Sheyenne River and 8 mi northwest of Valley City.

DRAINAGE AREA.--7,470 mi^2, approximately, of which about 5,560 mi^2 is probably noncontributing, including 3,800 mi^2 in closed basins.

MONTHEND-ELEVATION AND CONTENTS RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 1,200 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by an earth-filled dam, 1,650 ft long; storage began on July 30, 1949; dam completed September 1949. Usable capacity, 69,100 acre-ft between invert of outlet conduit, elevation, 1,238.0 ft, and normal pool level, elevation, 1,266.0 ft. Dead storage below elevation 1,238.0 ft, 1,500 acre-ft. Maximum pool elevation, 1,273.2 ft, capacity, 116,500 acre-ft. Low flows are controlled by 2 sluice gates 3 ft in diameter. The spillway crest is 120 ft long at elevation 1,252.0 ft, surmounted by 3 taintor gates, each 15 ft high and 40 ft long. The reservoir is operated for flood control and to increase low-water flow. Figures given for storage capacity (in acre-ft) based on capacity table dated 1978 (provided by U.S. Army Corps of Engineers).

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 91,400 acre-ft, May 14, 1950, elevation, 1,269.46 ft; minimum since reservoir first reached spillway level, 6,660 acre-ft, Aug. 11-14, 1950, elevation, 1,245.13 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 73,906 acre-ft, July 10, elevation, 1,266.58 ft; minimum, 52,385 acre-ft, January 8, elevation, 1,262.53 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,266.06	70,940	--
Oct. 31	1,265.48	67,690	-3,250
Nov 30	1,264.63	62,960	-4,730
Dec. 31	1,262.63	52,840	-10,120
CAL YR 2001	--	--	+1,980
Jan. 31	1,262.67	53,020	+180
Feb. 28	1,262.72	53,240	+220
Mar. 31	1,263.07	54,850	+1,610
Apr. 30	1,266.07	71,000	+16,150
May 31	1,265.95	70,320	-680
June 30	1,266.09	71,110	+790
July 31	1,266.01	70,660	-450
Aug. 31	1,265.96	70,380	-280
Sept. 30	1,265.93	70,210	-170
WTR YR 2002	--	--	-730

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND

LOCATION.--Lat 47°01'50", long 98°05'50", in $NW^1/_4NW^1/_4$ sec.18, T.141 N., R.58 W., Barnes County, Hydrologic Unit 09020204, on right bank 0.1 mi downstream from Baldhill Dam, 8 mi northwest of Valley City, and at mile 270.5.

DRAINAGE AREA.--7,470 mi^2, approximately, of which about 5,560 mi^2 is probably noncontributing, including 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft above National Geodetic Vertical Datum of 1929. From Dec. 29, 1994, to Sept. 18, 2000, at site 0.7 mi downstream at same datum.

REMARKS.--Records good for entire water year. Flow completely regulated by Lake Ashtabula (station 05057500). Records 1955 to 1972 include releases at Baldhill Dam to the fish-rearing ponds of the Fish and Wildlife Service. Daily discharges from Dec. 29, 1994, to current water year include releases through fish hatchery siphon.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	224	288	94	46	62	31	232	171	260	84	19
2	99	225	276	92	46	61	31	242	173	260	60	19
3	114	225	283	71	46	62	30	244	172	259	46	19
4	121	225	303	51	46	62	30	252	172	261	47	19
5	121	228	304	48	46	62	30	255	172	254	47	20
6	120	238	316	48	46	62	30	201	125	265	44	19
7	121	247	324	48	46	62	30	157	95	266	39	19
8	120	255	313	48	46	62	30	244	92	317	34	19
9	110	258	301	48	46	62	30	317	91	403	30	20
10	69	258	319	48	46	61	30	377	94	440	30	20
11	41	257	315	48	46	61	30	392	93	435	30	20
12	113	257	309	48	46	61	30	392	94	432	30	20
13	139	238	315	48	46	61	30	440	134	395	31	21
14	139	144	318	48	46	61	30	519	149	200	26	20
15	95	129	305	48	46	61	30	517	148	82	20	20
16	57	190	313	48	46	60	30	517	145	92	21	20
17	57	271	313	48	46	60	31	483	188	89	21	21
18	57	271	316	48	46	55	31	427	266	88	21	21
19	117	259	322	48	46	47	30	426	365	87	20	22
20	170	240	323	48	48	46	29	348	416	86	20	22
21	170	234	247	48	50	46	28	268	416	86	20	22
22	169	234	200	48	50	46	26	214	418	85	20	22
23	168	236	193	48	50	45	32	176	419	83	20	23
24	211	238	186	48	50	45	44	175	419	83	20	23
25	229	237	181	49	57	45	63	176	419	85	20	22
26	227	256	184	49	62	39	88	171	369	90	20	30
27	227	278	129	48	61	34	124	167	293	90	20	88
28	225	275	93	48	62	31	132	167	254	89	19	73
29	224	274	92	47	---	30	146	168	255	87	19	73
30	230	279	94	46	---	31	193	168	260	86	19	73
31	232	---	91	46	---	31	---	167	---	84	19	---
TOTAL	4374	7180	7866	1601	1364	1614	1479	8999	6877	5919	917	849
MEAN	141.1	239.3	253.7	51.65	48.71	52.06	49.30	290.3	229.2	190.9	29.58	28.30
MAX	232	279	324	94	62	62	193	519	419	440	84	88
MIN	41	129	91	46	46	30	26	157	91	82	19	19
AC-FT	8680	14240	15600	3180	2710	3200	2930	17850	13640	11740	1820	1680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	59.89	85.06	78.16	66.12	76.13	217.9	644.4	322.5	188.9	146.6	89.97	61.88
MAX	622	587	375	227	300	1567	3329	2906	1154	1272	1555	577
(WY)	1995	2001	2001	2001	1996	1995	1997	1950	1950	1993	1993	1994
MIN	1.92	5.27	4.32	3.64	7.66	7.81	2.07	6.86	5.88	7.28	6.72	0.81
(WY)	1956	1956	1980	1956	1956	1955	1953	1959	1958	1959	1977	1955

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1950 - 2002	
ANNUAL TOTAL	153893		49039			
ANNUAL MEAN	421.6		134.4		169.7	
HIGHEST ANNUAL MEAN					574	1995
LOWEST ANNUAL MEAN					12.8	1991
HIGHEST DAILY MEAN	2320	Apr 13	519	May 14	5410	Apr 20 1996
LOWEST DAILY MEAN	41	Oct 11	19	Aug 28	0.00	Sep 8 1950
ANNUAL SEVEN-DAY MINIMUM	55	Sep 20	19	Aug 28	0.00	Aug 8 1952
MAXIMUM PEAK FLOW			569	May 14	5460	Apr 20 1996
MAXIMUM PEAK STAGE			25.66	May 14	36.46	Apr 20 1996
ANNUAL RUNOFF (AC-FT)	305200		97270		122900	
10 PERCENT EXCEEDS	939		313		347	
50 PERCENT EXCEEDS	279		84		49	
90 PERCENT EXCEEDS	87		22		9.5	

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1997 to current year.

SPECIFIC CONDUCTANCE: April 1997 to current year.

INSTRUMENTATION.--Water-quality sensors since April 1997.

REMARKS.--Records good. Missing data is result of equipment malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 28.3°C, July 20, 1998; minimum recorded, 0.3°C, Apr. 16, 1997, Nov. 20, 2000, and Dec. 1-2, 2001.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,640 microsiemens, Feb. 27-28, 2001; minimum recorded, 401 microsiemens, Apr. 14, 1999.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 27.0°C, Aug. 24; minimum recorded, 0.3°C, Dec. 1-2.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,440 microsiemens, Mar. 22; minimum recorded, 949 microsiemens, June 23.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1250	12	--	--	--	1220	16.0	13.5	--	--	--	--	--
DEC													
11...	0855	313	--	--	--	1350	-2.5	1.0	--	--	--	--	--
JAN													
23...	1600	49	--	--	--	1370	-8.5	2.5	--	--	--	--	--
MAR													
04...	1440	66	--	--	--	1400	.5	4.0	--	--	--	--	--
26...	1335	35	--	--	--	1330	--	5.0	--	--	--	--	--
APR													
19...	1120	30	8.6	8.4	1280	1240	1.0	8.5	430	78.0	56.0	12.0	3
MAY													
07...	1430	134	--	--	--	1270	6.0	7.5	--	--	--	--	--
JUL													
02...	1720	264	--	--	--	1060	--	24.5	--	--	--	--	--
AUG													
07...	1535	37	7.8	--	1050	1050	28.5	26.0	360	65.0	48.0	12.0	2
16...	1215	20	--	--	--	1030	22.0	21.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
19...	130	39	413	19.0	.20	290	69.7	861	834	4.0	100	<1	80
MAY													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07...	100	37	332	21.0	.20	260	72.8	725	706	6.0	60	1	70
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
11...	--	--	--	--	--
DEC					
11...	--	--	--	--	--
JAN					
23...	--	--	--	--	--
MAR					
04...	--	--	--	--	--
26...	--	--	--	--	--
APR					
19...	460	<.10	<1	<1	360
MAY					
07...	--	--	--	--	--
JUL					
02...	--	--	--	--	--
AUG					
07...	180	.10	1	<1	370
16...	--	--	--	--	--

< Less than

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.6	15.4	16.2	6.5	5.9	6.1	0.5	0.3	0.4	2.0	1.5	1.7
2	17.6	15.5	16.4	6.5	5.8	6.0	0.8	0.3	0.4	1.9	1.2	1.5
3	16.8	15.3	15.9	6.6	5.9	6.1	0.8	0.4	0.5	2.2	1.0	1.5
4	16.1	14.7	15.3	6.6	5.8	6.1	0.9	0.5	0.6	2.6	1.5	1.9
5	14.8	13.6	14.3	6.7	5.9	6.2	0.7	0.6	0.7	2.9	1.6	2.0
6	14.5	13.1	13.6	6.6	5.9	6.2	0.9	0.6	0.7	2.6	1.1	1.7
7	14.2	12.8	13.2	6.2	5.9	6.0	1.0	0.7	0.8	2.8	1.1	1.8
8	14.2	12.8	13.2	6.0	5.6	5.7	1.1	0.7	0.9	3.3	2.0	2.4
9	13.2	12.6	12.8	---	---	---	1.3	0.9	1.0	3.4	2.0	2.4
10	13.4	11.4	12.6	---	---	---	1.3	1.0	1.1	3.0	2.0	2.4
11	15.9	9.9	12.0	---	---	---	1.4	1.1	1.2	3.2	1.9	2.3
12	12.9	11.9	12.4	---	---	---	1.2	1.1	1.2	3.2	1.8	2.3
13	12.7	12.0	12.2	---	---	---	1.4	1.1	1.2	3.2	2.0	2.4
14	12.0	11.5	11.8	---	---	---	1.5	1.2	1.3	2.8	1.9	2.3
15	11.6	10.1	11.2	6.1	5.2	5.6	1.5	1.4	1.5	3.1	1.7	2.1
16	12.3	9.6	10.4	6.4	5.4	5.9	1.6	1.4	1.5	2.8	1.8	2.1
17	11.6	9.3	10.2	6.0	5.4	5.6	1.7	1.4	1.5	2.7	1.7	2.1
18	11.9	9.5	10.4	5.7	5.3	5.6	1.7	1.5	1.5	2.2	1.6	1.8
19	10.8	9.3	9.9	5.3	4.7	5.0	1.7	1.4	1.6	2.7	1.7	2.1
20	10.4	9.7	10	5.3	4.7	4.9	1.8	1.5	1.6	2.8	1.7	2.2
21	10.4	9.6	9.8	5.3	4.7	4.9	1.8	1.5	1.6	3.6	1.9	2.5
22	10.2	9.6	9.8	5.0	4.6	4.8	1.8	1.4	1.6	2.9	1.4	2.0
23	9.7	8.6	9.4	5.1	4.6	4.9	1.8	1.4	1.5	3.0	1.6	2.1
24	8.6	7.5	8.2	4.9	4.3	4.6	1.9	1.5	1.6	3.5	1.9	2.4
25	7.5	6.6	7.0	4.3	3.2	3.8	1.8	1.5	1.6	4.1	1.8	2.7
26	6.8	5.9	6.4	3.2	1.8	2.6	2.0	1.5	1.7	2.7	1.5	1.9
27	6.6	5.8	6.1	1.8	0.8	1.2	1.9	1.6	1.8	2.2	1.4	1.7
28	6.7	5.9	6.1	0.8	0.5	0.7	1.8	1.4	1.5	1.6	0.9	1.2
29	6.4	5.9	6.1	1.0	0.6	0.8	1.9	1.4	1.6	2.7	0.9	1.7
30	6.3	5.8	6.0	0.7	0.4	0.6	1.9	1.3	1.6	3.0	1.6	2.1
31	6.4	5.9	6.1	---	---	---	2.0	1.3	1.5	3.4	1.8	2.3
MONTH	17.6	5.8	10.8	---	---	---	2.0	0.3	1.3	4.1	0.9	2.1

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.1	1.8	2.3	4.8	2.1	3.0	5.7	2.0	3.9	8.1	7.2	7.6
2	3.7	2.1	2.6	4.1	1.9	2.7	8.1	2.0	4.3	8.0	6.8	7.4
3	3.2	1.8	2.4	4.4	1.9	2.8	9.2	1.9	4.6	9.0	7.6	8.2
4	2.8	1.6	2.2	4.2	2.3	3.1	9.7	2.4	5.1	9.4	7.7	8.5
5	3.5	2.2	2.6	4.0	2.0	3.0	10.1	2.9	5.6	9.5	8.0	8.6
6	4.5	2.5	3.1	5.2	2.0	3.1	10.6	2.1	5.6	8.6	7.5	7.9
7	4.7	2.6	3.2	2.8	1.9	2.4	9.2	3.3	5.6	7.8	7.0	7.4
8	3.7	2.3	2.8	4.4	1.7	2.7	9.1	3.2	5.5	7.3	7.0	7.1
9	3.6	1.8	2.3	4.5	1.7	2.7	9.3	3.4	5.8	7.7	6.9	7.2
10	3.7	2.0	2.7	3.9	1.8	2.7	5.7	3.8	4.7	8.0	6.8	7.3
11	4.6	2.4	3.0	5.2	2.2	3.2	8.9	4.2	6.0	7.7	7.1	7.4
12	4.4	2.3	3.1	6.2	2.8	4.0	11.6	4.0	7.1	8.6	7.4	7.8
13	5.4	2.4	3.4	5.9	2.6	3.7	11.6	5.7	7.6	9.5	7.5	8.4
14	4.8	2.8	3.4	3.5	2.8	3.1	12.8	5.2	8.5	9.6	8.8	9.1
15	4.7	2.5	3.3	6.5	2.5	3.8	14.5	7.0	10	10.5	9.0	9.7
16	6.2	2.7	3.7	7.4	2.8	4.2	16.3	7.8	11.0	10.6	9.3	10.0
17	5.8	2.4	3.6	5.6	3.0	4.0	15.1	7.6	10.9	11.4	9.7	10.5
18	5.0	2.5	3.5	4.6	3.2	3.8	10.2	5.9	7.9	11.6	10.1	10.8
19	5.2	2.2	3.1	6.3	2.6	3.7	11.2	5.3	8.0	11.9	10.5	11.2
20	5.3	2.5	3.3	3.6	1.8	2.6	13.3	5.6	8.9	12.2	10.7	11.4
21	5.8	2.6	3.6	3.9	1.8	2.8	9.6	6.6	7.9	12.2	10.5	11.3
22	4.0	2.8	3.3	3.7	1.3	2.6	12.3	5.5	8.5	12.7	11.4	11.8
23	5.4	3.1	3.8	5.4	2.5	3.5	14.1	5.8	9.5	12.2	11.3	11.6
24	4.0	2.3	2.9	5.3	1.8	3.1	10.5	6.9	8.2	13.2	11.0	11.7
25	3.4	1.9	2.5	5.1	2.2	3.4	8.7	6.5	7.4	12.2	10.9	11.5
26	4.0	1.8	2.6	5.3	2.9	4.1	8.6	6.6	7.4	12.9	11.5	12.1
27	4.4	2.2	3.0	8.2	3.6	5.6	7.2	6.7	6.9	14.0	12.1	12.9
28	3.7	2.1	2.5	9.8	5.3	7.0	7.2	6.6	6.8	13.5	12.3	12.8
29	---	---	---	8.5	4.8	6.3	7.8	6.5	7.1	15.3	13.0	13.7
30	---	---	---	8.4	3.9	5.6	8.3	7.1	7.7	13.8	12.9	13.3
31	---	---	---	7.9	2.9	4.9	---	---	---	15.4	13.3	14.5
MONTH	6.2	1.6	3.0	9.8	1.3	3.7	16.3	1.9	7.1	15.4	6.8	10.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.0	13.9	15.5	23.4	22.3	22.8	25.0	22.6	23.6	---	---	---
2	16.7	15.6	16.2	24.5	22.7	23.4	25.8	21.9	23.4	---	---	---
3	16.5	15.5	16.0	25.6	23.4	24.4	24.4	21.6	22.8	---	---	---
4	16.7	15.8	16.2	25.4	23.8	24.7	25.1	21.5	22.8	---	---	---
5	17.1	15.6	16.2	24.1	23.0	23.6	25.1	21.1	22.8	---	---	---
6	16.9	15.6	16.0	24.8	22.9	23.9	22.3	21.4	21.8	---	---	---
7	17.4	15.7	16.4	24.2	23.6	23.9	25.8	21.5	23.2	---	---	---
8	18.6	16.3	17.3	25.3	23.4	24.3	26.9	22.2	23.9	---	---	---
9	18.7	17.1	17.7	25.0	23.9	24.4	26.4	20.8	22.8	---	---	---
10	18.3	17.2	17.9	24.9	22.5	23.7	25.2	19.9	22.1	---	---	---
11	18.8	17.1	17.7	23.9	22.3	22.9	26.4	20.1	22.6	---	---	---
12	17.9	16.8	17.2	22.9	22.1	22.4	23.4	20.2	21.6	---	---	---
13	17.4	16.6	17.0	22.9	21.9	22.3	25.2	19.0	21.8	---	---	---
14	18.2	16.9	17.6	23.8	21.7	22.5	22.9	19.5	21.2	---	---	---
15	19.9	17.8	18.7	24.2	21.2	22.5	24.1	19.6	21.4	---	---	---
16	19.2	18.1	18.6	24.0	21.5	22.7	21.7	18.2	19.8	---	---	---
17	19.8	18.3	19.0	25.6	22.3	23.5	22.8	16.9	19.6	---	---	---
18	18.6	17.6	18.0	25.6	23.3	24.3	22.4	16.5	19.1	21.7	18.5	19.8
19	19.7	18.5	19.1	25.6	23.1	24.1	24.5	16.4	20.0	22.8	17.3	19.5
20	20.2	17.7	18.8	25.7	23.3	24.0	21.8	17.3	19.6	21.4	16.0	17.9
21	19.8	18.6	19.1	25.1	23.2	23.9	22.1	19.0	20.1	18.2	14.3	15.9
22	21.0	19.3	20.0	24.7	22.6	23.5	21.4	18.1	19.8	17.3	12.9	15.0
23	22.0	20.4	21.1	23.2	22.3	22.8	26.3	19.1	21.9	17.6	12.9	14.8
24	21.5	20.4	21.0	23.8	22.1	22.9	27.0	19.4	22.7	17.1	11.8	14.1
25	21.8	20.4	20.9	24.9	22.3	23.4	26.5	19.4	22.7	18.6	12.7	14.8
26	24.1	21.1	22.5	25.1	22.3	23.3	26.9	19.8	22.9	17.9	11.6	14.2
27	24.2	22.0	23.4	24.6	22.4	23.1	26.3	20.0	22.6	16.1	13.4	14.5
28	22.0	20.0	20.8	24.9	22.5	23.2	26.3	20.5	22.7	16.1	13.0	14.1
29	21.5	18.9	20.3	25.2	22.3	23.5	25.8	20.2	22.4	16.1	13.7	14.5
30	22.7	20.2	21.7	25.9	22.6	24.0	---	---	---	16.8	14.1	14.9
31	---	---	---	26.4	23.0	24.4	---	---	---	---	---	---
MONTH	24.2	13.9	18.6	26.4	21.2	23.5	---	---	---	---	---	---

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

SPECIFIC CONDUCTANCE, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1210	1200	1200	1230	1220	1220	1270	1260	1260	1280	1270	1280
2	1230	1200	1220	1230	1220	1230	1270	1260	1270	1280	1270	1280
3	1220	1170	1190	1230	1230	1230	1270	1270	1270	1290	1270	1280
4	1200	1170	1190	1230	1220	1230	1270	1270	1270	1280	1270	1280
5	1200	1180	1190	1230	1230	1230	1270	1270	1270	1280	1260	1280
6	1200	1180	1190	1230	1220	1230	1280	1270	1280	1290	1270	1280
7	1200	1170	1190	1230	1220	1230	1280	1280	1280	1290	1260	1280
8	1200	1170	1190	1230	1220	1230	1280	1280	1280	1280	1260	1280
9	1200	1180	1200	1240	1230	1230	1280	1280	1280	1280	1260	1280
10	1200	1170	1200	1240	1220	1230	1290	1280	1280	1280	1270	1280
11	1210	1180	1200	1230	1220	1230	1290	1280	1280	1290	1270	1280
12	1200	1180	1200	1240	1220	1230	1280	1270	1270	1280	1270	1280
13	1200	1180	1190	---	---	---	1270	1270	1270	1280	1270	1280
14	1200	1180	1200	---	---	---	1270	1270	1270	1290	1270	1280
15	1210	1180	1200	1240	1230	1240	1270	1260	1270	1290	1280	1280
16	1210	1190	1200	1230	1220	1230	1270	1260	1260	1300	1280	1290
17	1210	1190	1210	1240	1230	1230	1260	1260	1260	1300	1290	1300
18	1210	1180	1210	1240	1230	1230	1260	1260	1260	1300	1280	1300
19	1210	1190	1210	1240	1230	1240	1260	1260	1260	1290	1280	1290
20	1210	1200	1210	1240	1240	1240	1260	1260	1260	1290	1290	1290
21	1210	1190	1210	1250	1240	1240	1260	1260	1260	1300	1280	1290
22	1210	1190	1210	1250	1240	1240	1270	1260	1260	1300	1280	1290
23	1220	1190	1210	1240	1230	1240	1270	1260	1270	1330	1290	1310
24	1210	1190	1200	1240	1240	1240	1270	1260	1270	1330	1300	1320
25	1220	1190	1210	1250	1240	1240	1270	1260	1270	1320	1300	1310
26	1230	1200	1210	1250	1240	1250	1270	1270	1270	1330	1310	1320
27	1230	1200	1220	1260	1250	1250	1270	1270	1270	1330	1320	1320
28	1230	1220	1220	1260	1260	1260	1270	1260	1270	1330	1320	1330
29	1230	1220	1220	1260	1260	1260	1270	1270	1270	1340	1310	1320
30	1230	1220	1220	1260	1260	1260	1280	1270	1270	1330	1310	1320
31	1230	1220	1230	---	---	---	1280	1270	1280	1330	1300	1320
MONTH	1230	1170	1200	---	---	---	1290	1260	1270	1340	1260	1290

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1330	1300	1320	1350	1310	1340	1380	1340	1360	1210	1170	1190
2	1330	1300	1320	1350	1320	1340	1380	1320	1360	1170	1160	1170
3	1330	1310	1320	1360	1310	1340	1400	1320	1360	1170	1160	1160
4	1330	1300	1320	1360	1320	1340	1410	1330	1370	1160	1150	1160
5	1330	1300	1310	1360	1340	1350	1390	1320	1350	1160	1150	1150
6	1320	1290	1310	1370	1330	1350	1400	1320	1350	1150	1140	1150
7	1320	1290	1310	1360	1350	1360	1370	1330	1350	1150	1140	1140
8	1320	1300	1320	1360	1340	1350	1380	1330	1350	1140	1100	1130
9	1330	1300	1320	1360	1340	1350	1370	1310	1340	1120	1100	1110
10	1330	1310	1320	1390	1340	1360	1370	1340	1360	1120	1110	1110
11	1320	1290	1310	1380	1330	1360	1360	1300	1330	1120	1110	1110
12	1330	1310	1320	1360	1310	1340	1350	1300	1330	1120	1110	1120
13	1330	1300	1320	1360	1330	1350	1360	1320	1340	1120	1100	1110
14	1330	1300	1320	1360	1350	1360	1370	1320	1340	1100	1090	1100
15	1330	1310	1320	1370	1320	1350	1350	1240	1290	1100	1080	1090
16	1330	1290	1320	1370	1310	1350	1250	1200	1230	1080	1070	1080
17	1330	1300	1320	1360	1330	1350	1240	1200	1220	1090	1080	1090
18	1330	1300	1320	1360	1340	1350	1240	1180	1220	1090	1090	1090
19	1340	1300	1330	1380	1330	1360	1250	1190	1220	1090	1080	1090
20	1340	1300	1320	1380	1350	1370	1240	1190	1210	1110	1070	1090
21	1340	1300	1320	1400	1340	1370	1240	1210	1220	1140	1110	1120
22	1340	1320	1330	1440	1370	1400	1230	1200	1220	1110	1090	1100
23	1340	1310	1330	1390	1340	1370	1240	1200	1220	1090	1080	1080
24	1340	1310	1330	1380	1340	1360	1230	1210	1220	1130	1090	1110
25	1350	1320	1340	1400	1340	1370	1230	1220	1230	1150	1130	1140
26	1350	1320	1340	1390	1260	1330	1240	1230	1230	1160	1140	1150
27	1350	1310	1330	1340	1280	1310	1230	1210	1220	1150	1140	1140
28	1350	1320	1340	1350	1290	1330	1220	1190	1210	1140	1130	1140
29	---	---	---	1360	1330	1340	1220	1210	1220	1140	1120	1130
30	---	---	---	1360	1330	1350	1220	1210	1210	1130	1120	1120
31	---	---	---	1390	1270	1360	---	---	---	1130	1080	1110
MONTH	1350	1290	1320	1440	1260	1350	1410	1180	1280	1210	1070	1120

05058000 SHEYENNE RIVER BELOW BALDHILL DAM, ND--Continued

SPECIFIC CONDUCTANCE, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1120	1090	1120	962	953	957	---	---	---	---	---	---
2	1120	1100	1110	1060	961	1020	---	---	---	---	---	---
3	1110	1100	1100	1010	962	982	---	---	---	---	---	---
4	1110	1100	1110	991	970	978	---	---	---	---	---	---
5	1110	1080	1090	1000	975	988	---	---	---	---	---	---
6	1090	1080	1090	1030	1000	1020	---	---	---	---	---	---
7	1100	1090	1100	1040	1030	1040	---	---	---	---	---	---
8	1100	1080	1090	1040	1030	1030	---	---	---	---	---	---
9	1090	1080	1090	1050	1030	1040	---	---	---	---	---	---
10	1090	1080	1080	1050	1040	1040	---	---	---	---	---	---
11	1090	1080	1090	1060	1030	1040	---	---	---	---	---	---
12	1090	1090	1090	1060	1030	1040	---	---	---	---	---	---
13	1090	1080	1090	1050	1040	1040	---	---	---	---	---	---
14	1090	1080	1080	1040	1020	1030	---	---	---	---	---	---
15	1090	1080	1090	1040	1030	1040	---	---	---	---	---	---
16	1090	1080	1090	1040	1030	1030	---	---	---	---	---	---
17	1090	1030	1060	1040	1030	1040	---	---	---	---	---	---
18	1030	1000	1010	1040	1030	1040	---	---	---	---	---	---
19	1000	985	993	1040	1020	1040	---	---	---	---	---	---
20	987	978	984	1040	1020	1030	---	---	---	---	---	---
21	980	972	975	1040	1020	1040	---	---	---	---	---	---
22	976	970	973	1040	1030	1030	---	---	---	---	---	---
23	973	949	963	1030	1020	1030	---	---	---	---	---	---
24	966	960	963	1040	1030	1040	---	---	---	---	---	---
25	986	958	970	1040	1030	1040	---	---	---	---	---	---
26	976	963	972	1040	1030	1040	---	---	---	---	---	---
27	963	959	961	1040	1030	1040	---	---	---	---	---	---
28	968	955	961	1040	1020	1030	---	---	---	---	---	---
29	971	958	966	1060	1030	1040	---	---	---	---	---	---
30	966	955	961	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	1120	949	1040	---	---	---	---	---	---	---	---	---

05058500 SHEYENNE RIVER AT VALLEY CITY, ND

LOCATION.--Lat 46°54'50", long 98°00'30", in $SE^1/_4NW^1/_4$ sec.28, T.140 N., R.58 W., Barnes County, Hydrologic Unit 09020204, on left bank 100 ft downstream from College Dam in Valley City and at mile 253.0.

DRAINAGE AREA.--7,810 mi^2, approximately, of which about 5,700 mi^2 is probably noncontributing, includes 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to August 1919, March 1938 to September 1975; October 1979 to current year (gage heights and annual maximum discharge); seasonal discharge record for March to September 1995, 1996, and 2002. Records for July 1938, published in WSP 855, have been found to be unreliable and should not be used.

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

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,199.27 ft above National Geodetic Vertical Datum of 1929. March to August 1919, nonrecording gage at site 0.5 mi upstream at different datum. March 18, 1938, to Oct. 13, 1938, nonrecording gage at present site and datum.

REMARKS.--Flow regulated by Lake Ashtabula 13 mi upstream (see station 05057500). Small diversions above station for municipal supply.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,250 ft^3/s, Apr. 21, 1996, gage height, 18.78 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 733 ft^3/s, May 14, gage height, 6.44 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	62	45	215	166	259	85	48
2	---	---	---	---	---	62	40	225	169	258	76	40
3	---	---	---	---	---	62	31	236	170	259	47	26
4	---	---	---	---	---	63	30	240	169	271	42	24
5	---	---	---	---	---	63	26	239	169	264	41	25
6	---	---	---	---	---	63	48	234	158	259	42	25
7	---	---	---	---	---	64	81	158	102	299	38	24
8	---	---	---	---	---	65	68	214	87	335	33	25
9	---	---	---	---	---	64	63	279	93	376	35	27
10	---	---	---	---	---	62	78	387	93	448	29	33
11	---	---	---	---	---	66	60	421	93	450	28	39
12	---	---	---	---	---	95	51	424	93	445	27	40
13	---	---	---	---	---	112	55	438	105	438	26	39
14	---	---	---	---	---	97	57	614	146	307	25	37
15	---	---	---	---	---	85	58	609	146	81	24	34
16	---	---	---	---	---	89	51	592	144	86	22	33
17	---	---	---	---	---	97	46	583	150	101	26	32
18	---	---	---	---	---	96	56	490	208	91	20	34
19	---	---	---	---	---	74	53	463	289	80	21	37
20	---	---	---	---	---	68	46	444	484	85	20	36
21	---	---	---	---	---	63	42	180	438	92	22	36
22	---	---	---	---	---	61	39	214	438	83	22	34
23	---	---	---	---	---	61	33	181	507	84	23	224
24	---	---	---	---	---	61	40	171	488	85	25	46
25	---	---	---	---	---	58	59	171	460	85	25	29
26	---	---	---	---	---	56	81	170	431	81	28	22
27	---	---	---	---	---	47	124	169	286	99	32	7.5
28	---	---	---	---	---	69	141	169	247	88	34	11
29	---	---	---	---	---	62	152	169	257	84	35	13
30	---	---	---	---	---	52	170	168	260	82	37	13
31	---	---	---	---	---	48	---	164	---	81	42	---
TOTAL	---	---	---	---	---	2147	1924	9431	7046	6136	1032	1093.5
MEAN	---	---	---	---	---	69.26	64.13	304.2	234.9	197.9	33.29	36.45
MAX	---	---	---	---	---	112	170	614	507	450	85	224
MIN	---	---	---	---	---	47	26	158	87	80	20	7.5

05058500 SHEYENNE RIVER AT VALLEY CITY, ND--Continued

GAGE HEIGHT from dcp, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.41	4.29	4.41	3.57	3.17	3.23	3.06	4.66	4.41	4.87	3.98	3.76
2	3.47	4.26	4.46	3.59	3.17	3.23	3.04	4.71	4.42	4.87	3.94	3.71
3	3.55	4.26	4.39	3.55	3.16	3.24	3.00	4.76	4.43	4.87	3.80	3.58
4	3.61	4.25	4.44	3.37	3.15	3.24	3.00	4.78	4.42	4.91	3.76	3.55
5	3.62	4.25	4.50	3.25	3.17	3.24	2.97	4.77	4.43	4.89	3.74	3.57
6	3.62	4.23	4.53	3.20	3.17	3.24	3.08	4.75	4.37	4.87	3.74	3.57
7	3.63	4.25	4.58	3.19	3.17	3.25	3.24	4.37	4.09	4.99	3.71	3.56
8	3.63	4.27	4.63	3.21	3.16	3.25	3.17	4.65	4.02	5.13	3.67	3.56
9	3.64	4.32	4.55	3.22	3.15	3.25	3.15	4.94	4.04	5.26	3.68	3.59
10	3.63	4.32	4.54	3.22	3.14	3.24	3.23	5.30	4.04	5.50	3.62	3.67
11	3.31	4.32	4.58	3.20	3.15	3.25	3.37	5.41	4.05	5.51	3.60	3.72
12	3.34	4.32	4.53	3.19	3.15	3.32	3.73	5.42	4.05	5.49	3.61	3.73
13	3.72	4.32	4.59	3.19	3.13	3.38	3.86	5.47	4.10	5.47	3.59	3.72
14	3.80	4.04	4.58	3.18	3.13	3.31	3.87	6.05	4.31	5.02	3.57	3.70
15	3.76	3.73	4.57	3.18	3.12	3.25	3.87	6.03	4.31	3.92	3.55	3.67
16	3.43	3.77	4.53	3.17	3.12	3.27	3.84	5.98	4.30	3.99	3.53	3.67
17	3.34	4.23	4.58	3.17	3.13	3.31	3.79	5.95	4.33	4.05	3.58	3.65
18	3.34	4.36	4.55	3.17	3.14	3.31	3.86	5.64	4.62	4.01	3.51	3.67
19	3.37	4.33	4.63	3.17	3.14	3.21	3.84	5.55	4.97	3.96	3.52	3.70
20	3.82	4.25	4.61	3.18	3.14	3.17	3.79	5.49	5.62	3.98	3.51	3.69
21	3.93	4.18	4.50	3.18	3.16	3.15	3.76	4.39	5.47	4.01	3.53	3.69
22	3.93	4.17	4.02	3.17	3.17	3.14	3.72	4.65	5.47	3.97	3.54	3.68
23	3.93	4.17	4.00	3.16	3.19	3.14	3.67	4.48	5.70	3.98	3.55	4.55
24	4.04	4.18	4.00	3.18	3.19	3.14	3.73	4.44	5.64	3.98	3.56	3.77
25	4.17	4.17	3.96	3.20	3.18	3.13	3.87	4.44	5.54	3.98	3.57	3.62
26	4.18	4.19	3.93	3.19	3.22	3.12	3.99	4.43	5.45	3.97	3.62	3.54
27	4.19	4.31	3.89	3.18	3.24	3.08	4.20	4.43	4.91	4.04	3.65	3.36
28	4.22	4.42	3.53	3.14	3.24	3.18	4.28	4.42	4.82	3.99	3.67	3.41
29	4.23	4.37	3.48	3.19	---	3.15	4.34	4.42	4.87	3.98	3.69	3.43
30	4.24	4.36	3.48	3.18	---	3.11	4.43	4.42	4.88	3.97	3.71	3.43
31	4.29	---	3.53	3.17	---	3.08	---	4.40	---	3.97	3.73	---
MEAN	3.75	4.23	4.29	3.23	3.16	3.21	3.62	4.95	4.67	4.50	3.65	3.65
MAX	4.29	4.42	4.63	3.59	3.24	3.38	4.43	6.05	5.70	5.51	3.98	4.55
MIN	3.31	3.73	3.48	3.14	3.12	3.08	2.97	4.37	4.02	3.92	3.51	3.36

05058500 SHEYENNE RIVER AT VALLEY CITY, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAR													
06...	1455	62	--	--	--	1480	-5.0	.5	--	--	--	--	--
APR													
02...	1600	40	--	--	--	1310	--	2.5	--	--	--	--	--
19...	0915	50	8.5	8.1	1130	1110	2.0	7.5	390	76.0	48.0	9.50	2
MAY													
07...	1340	141	--	--	--	1300	7.0	9.0	--	--	--	--	--
JUL													
03...	0945	255	--	--	--	1060	25.5	24.0	--	--	--	--	--
AUG													
20...	1730	20	--	--	--	1080	24.5	20.0	--	--	--	--	--
SEP													
27...	1400	7.7	--	--	--	1420	16.0	13.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAR													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
19...	95.0	34	308	52.0	.20	270	101	748	736	4.0	80	<1	70
MAY													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAR					
06...	--	--	--	--	--
APR					
02...	--	--	--	--	--
19...	250	<.10	1	<1	370
MAY					
07...	--	--	--	--	--
JUL					
03...	--	--	--	--	--
AUG					
20...	--	--	--	--	--
SEP					
27...	--	--	--	--	--

< Less than

05058600 SHEYENNE RIVER NEAR KATHRYN, ND

LOCATION.--Lat 46°37'47", long 97°56'22", in $NW^1/_4NW^1/_4NE^1/_4$ sec.2, T.136 N., R.50 W., Ransom County, Hydrologic Unit 09020204, at bridge on State Highway No. 46, 3.5 mi southeast of Kathryn.

DRAINAGE AREA.--8,000 mi^2, approximately, of which about 5,800 mi^2 is probably noncontributing, includes 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1995 to September 1996, March to September 2002 (discontinued).

GAGE.--Nonrecording gage March 1 to April 26, 2002. Recording gage April 27 to September 30, 2002. Datum of gage is 1,150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 565 ft^3/s, May 15, gage height, 6.12 ft (recorded); minimum daily discharge 21 ft^3/s, Sept. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e62	e81	e175	e144	235	e87	e40
2	---	---	---	---	---	e62	e74	e200	e144	255	e87	e46
3	---	---	---	---	---	e62	e67	e216	145	247	e84	e53
4	---	---	---	---	---	e62	e62	e235	150	245	e67	e48
5	---	---	---	---	---	e63	e58	e244	147	254	e56	e38
6	---	---	---	---	---	e64	e62	e252	147	248	e49	e33
7	---	---	---	---	---	e64	e78	e241	143	247	e53	e31
8	---	---	---	---	---	e64	e99	e209	107	269	e57	e29
9	---	---	---	---	---	e70	e140	190	145	e289	e56	28
10	---	---	---	---	---	e76	e124	247	110	e326	e52	25
11	---	---	---	---	---	e78	e117	315	e103	370	e46	26
12	---	---	---	---	---	e83	e120	370	e100	389	e42	33
13	---	---	---	---	---	e91	e107	370	e99	378	e40	e37
14	---	---	---	---	---	e105	e90	376	e102	372	e37	e37
15	---	---	---	---	---	e113	e90	503	e127	e195	e36	e36
16	---	---	---	---	---	e106	e87	519	e133	148	e37	e34
17	---	---	---	---	---	e98	e79	514	123	e87	e37	e32
18	---	---	---	---	---	e103	e75	505	121	84	e33	e32
19	---	---	---	---	---	e105	e81	441	e127	e93	e32	e30
20	---	---	---	---	---	e100	e88	399	e194	e91	e30	e30
21	---	---	---	---	---	e88	e82	380	368	e83	e28	e30
22	---	---	---	---	---	e81	e75	232	358	e88	e26	e32
23	---	---	---	---	---	e77	e69	169	364	e91	e26	e32
24	---	---	---	---	---	e74	e68	179	418	e87	e27	e160
25	---	---	---	---	---	e72	e72	156	410	e87	e28	e107
26	---	---	---	---	---	e72	e81	156	395	e88	e29	e56
27	---	---	---	---	---	e76	e100	155	368	e86	e30	e39
28	---	---	---	---	---	e75	e121	150	272	e86	e32	e24
29	---	---	---	---	---	e86	e150	148	213	e96	e34	e21
30	---	---	---	---	---	e94	e165	148	226	e92	e35	e22
31	---	---	---	---	---	e93	---	147	---	e87	e36	---
TOTAL	---	---	---	---	---	2519	2762	8541	6003	5793	1349	1221
MEAN	---	---	---	---	---	81.26	92.07	275.5	200.1	186.9	43.52	40.70
MAX	---	---	---	---	---	113	165	519	418	389	87	160
MIN	---	---	---	---	---	62	58	147	99	83	26	21
AC-FT	---	---	---	---	---	5000	5480	16940	11910	11490	2680	2420

e Estimated

05058700 SHEYENNE RIVER AT LISBON, ND

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

DRAINAGE AREA.--8,190 mi^2, approximately, of which about 5,700 mi^2 is probably noncontributing, including 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,066.46 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by Lake Ashtabula (station 05057500), 108.5 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	190	234	99	57	62	110	171	136	211	87	e38
2	e65	196	244	e98	57	60	97	176	134	210	83	e41
3	e65	202	238	e96	54	59	87	201	134	204	83	e49
4	e70	194	245	e96	56	60	83	225	136	201	83	61
5	e77	191	262	e96	56	62	82	234	138	207	79	58
6	e88	190	242	e95	54	64	87	240	137	216	69	51
7	e110	192	245	e90	53	64	102	239	137	239	67	42
8	e122	201	249	e77	52	64	115	250	134	e240	71	36
9	e120	208	260	e74	55	75	135	212	124	e250	77	33
10	e117	214	264	e72	57	87	165	209	149	e270	76	32
11	e112	218	260	e70	58	86	145	276	125	e320	70	32
12	e105	211	251	e67	59	88	138	357	113	e400	66	31
13	e93	208	264	e65	59	98	138	381	110	e390	61	31
14	e77	209	246	e62	60	106	130	373	109	e385	53	34
15	e90	209	254	e60	60	108	128	386	106	e350	49	37
16	119	186	267	e59	59	117	127	503	120	e260	46	36
17	123	140	260	e58	61	120	122	521	127	133	50	32
18	110	126	249	57	64	110	120	501	126	82	46	31
19	85	162	256	55	64	110	113	488	126	84	43	32
20	75	212	245	55	65	111	108	426	144	87	39	e31
21	74	216	265	56	66	105	112	396	222	91	39	e30
22	86	206	264	56	65	92	109	379	360	88	37	e30
23	134	194	284	57	66	86	104	238	372	87	37	e29
24	144	190	194	56	66	85	98	166	374	89	36	e31
25	144	189	158	55	64	83	91	172	413	88	36	77
26	150	189	158	55	66	81	85	152	408	89	34	123
27	165	121	151	56	63	85	92	149	392	90	33	67
28	171	95	147	56	61	96	112	146	371	89	32	46
29	175	128	151	55	---	105	136	143	288	90	32	37
30	181	203	129	52	---	109	163	140	200	91	34	32
31	188	---	117	54	---	114	---	137	---	87	e36	---
TOTAL	3504	5590	7053	2109	1677	2752	3434	8587	5965	5718	1684	1270
MEAN	113.0	186.3	227.5	68.03	59.89	88.77	114.5	277.0	198.8	184.5	54.32	42.33
MAX	188	218	284	99	66	120	165	521	413	400	87	123
MIN	65	95	117	52	52	59	82	137	106	82	32	29
AC-FT	6950	11090	13990	4180	3330	5460	6810	17030	11830	11340	3340	2520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2002, BY WATER YEAR (WY)

MEAN	74.82	98.78	91.22	76.11	93.30	346.4	829.9	382.9	211.1	196.2	119.2	79.03
MAX	716	480	393	217	413	1525	4181	2394	970	1424	1945	561
(WY)	1995	2001	2001	2001	1996	1995	1997	1997	2000	1993	1993	1994
MIN	7.66	12.2	8.69	8.15	10.7	19.8	20.3	17.5	14.8	6.07	6.54	5.25
(WY)	1957	1991	1991	1991	1991	1964	1991	1959	1961	1973	1961	1959

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1957 - 2002	
ANNUAL TOTAL	155896		49343			
ANNUAL MEAN	427.1		135.2		216.5	
HIGHEST ANNUAL MEAN					719	1997
LOWEST ANNUAL MEAN					25.9	1991
HIGHEST DAILY MEAN	2800	Apr 15	521	May 17	5650	Apr 23 1997
LOWEST DAILY MEAN	65	Oct 2	29	Sep 23	0.00	Oct 23 1956
ANNUAL SEVEN-DAY MINIMUM	72	Sep 29	31	Sep 18	0.87	Oct 1 1956
MAXIMUM PEAK FLOW			541	May 16	5670	Apr 23 1997
MAXIMUM PEAK STAGE			4.92	May 16	a19.29	Apr 5 1997
ANNUAL RUNOFF (AC-FT)	309200		97870		156900	
10 PERCENT EXCEEDS	966		260		467	
50 PERCENT EXCEEDS	250		106		67	
90 PERCENT EXCEEDS	89		46		16	

a Backwater from ice
e Estimated

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
29...	1445	168	--	--	--	--	8.0	7.5	--	--	--	--	--
JAN													
10...	1020	69	--	--	--	976	1.5	--	--	--	--	--	--
MAR													
13...	1545	100	--	--	--	1260	-1.0	.5	--	--	--	--	--
APR													
09...	1220	122	8.5	8.1	1080	1060	5.0	2.0	360	76.0	42.0	9.70	2
23...	1200	102	--	--	--	749	11.0	6.0	--	--	--	--	--
JUN													
06...	0715	136	--	--	--	978	10.5	9.0	--	--	--	--	--
SEP													
18...	0940	31	8.4	8.2	1270	1260	19.0	19.5	400	76.0	52.0	13.0	3

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	91.0	35	272	27.0	.20	270	237	719	680	3.0	90	<1	70
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
18...	130	40	294	48.0	.30	340	75.9	895	836	5.0	50	<1	90

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
29...	--	--	--	--	--
JAN					
10...	--	--	--	--	--
MAR					
13...	--	--	--	--	--
APR					
09...	170	<.10	<1	2	380
23...	--	--	--	--	--
JUN					
06...	--	--	--	--	--
SEP					
18...	390	<.10	3	1	560

< Less than

05058810 SHEYENNE RIVER NEAR SHELDON, ND

LOCATION.--Lat 46°31'22", long 97°20'31", in $SW^1/_4SW^1/_4$ sec.10, T.135 N., R.53 W., Ransom County, Hydrologic Unit 09020204, on upstream side of Ylvisaker Bridge on county road, 7 mi east and 5 mi south of Sheldon.

DRAINAGE AREA.--Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 2002 (discontinued).

GAGE.--Nonrecording gage. Datum of gage is 950 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 530 ft^3/s, May 18, gage height, unknown; maximum observed, 4.78 ft, May 16; minimum daily discharge, 22 ft^3/s, Sept. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e91	e123	142	e200	e330	96	37
2	---	---	---	---	---	e90	e130	e163	e200	272	91	38
3	---	---	---	---	---	e88	e116	e190	204	e250	86	40
4	---	---	---	---	---	e88	e110	e210	e200	e245	85	43
5	---	---	---	---	---	e86	e100	e235	e200	e240	80	e57
6	---	---	---	---	---	e83	94	e270	201	e240	82	e66
7	---	---	---	---	---	e82	e108	e343	192	e270	80	e72
8	---	---	---	---	---	e81	144	e290	e190	e377	68	e58
9	---	---	---	---	---	e82	e140	e270	e190	373	62	45
10	---	---	---	---	---	e82	e155	e260	e190	e350	63	42
11	---	---	---	---	---	e93	e171	e260	e190	e350	67	40
12	---	---	---	---	---	e93	e159	e300	e185	e344	63	40
13	---	---	---	---	---	e97	e156	e360	e150	e369	60	35
14	---	---	---	---	---	e105	e153	e410	124	e390	61	27
15	---	---	---	---	---	e110	e145	e420	e116	e391	59	22
16	---	---	---	---	---	e115	e137	e430	e110	e381	51	26
17	---	---	---	---	---	e120	e132	e450	105	e350	59	34
18	---	---	---	---	---	e123	e134	e528	135	e260	56	41
19	---	---	---	---	---	e135	e135	e521	149	183	50	37
20	---	---	---	---	---	e135	e130	e520	151	e150	51	33
21	---	---	---	---	---	e129	e125	e500	164	e120	51	36
22	---	---	---	---	---	e122	e126	e470	245	110	50	37
23	---	---	---	---	---	e110	e128	e430	e290	e103	50	36
24	---	---	---	---	---	e102	e125	e373	e335	e98	48	39
25	---	---	---	---	---	e101	e119	e290	e400	e97	46	38
26	---	---	---	---	---	e98	e115	e264	e410	98	44	38
27	---	---	---	---	---	e97	e110	e242	e405	103	41	83
28	---	---	---	---	---	e97	e104	227	e403	105	36	120
29	---	---	---	---	---	e99	e106	e220	e403	103	34	82
30	---	---	---	---	---	e105	e120	e210	e390	94	38	68
31	---	---	---	---	---	e115	---	e205	---	96	37	---
MEAN	---	---	---	---	---	101.7	128.3	322.7	227.6	233.6	59.52	47.00
MAX	---	---	---	---	---	135	171	528	410	391	96	120
MIN	---	---	---	---	---	81	94	142	105	94	34	22
AC-FT	---	---	---	---	---	6260	7640	19840	13540	14360	3660	2800

e Estimated

05058850 DITCH 10 ABOVE IRON SPRINGS CREEK NEAR McLEOD, ND

LOCATION.--Lat 46°29'07", long 97°16'03", in $NW^1/_4NE^1/_4$ sec.30, T.135 N., R.52 W., Richland County, Hydrologic Unit 09020204, in Sheyenne River Grasslands, 6.2 mi northeast of McLeod.

DRAINAGE AREA.--Not determined.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 2 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,055 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6.2 ft^3/s, July 19, 2001, gage height, 7.24 ft.

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 3.9 ft^3/s, May 8, gage height, 6.74 ft; maximum gage height, 6.76 ft, May 13; no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	0.00	0.00	0.25	0.31	e0.00	e0.00	0.00
2	---	---	---	---	---	0.00	0.00	0.33	0.24	0.00	e0.00	0.00
3	---	---	---	---	---	0.00	0.00	0.47	0.20	0.00	0.00	0.00
4	---	---	---	---	---	0.00	0.00	0.54	0.18	0.00	0.00	0.00
5	---	---	---	---	---	0.00	0.00	0.73	0.15	0.00	0.00	0.00
6	---	---	---	---	---	0.00	0.00	0.91	e0.15	0.00	0.00	0.00
7	---	---	---	---	---	0.00	0.00	1.0	e0.14	0.00	0.00	0.00
8	---	---	---	---	---	0.00	0.00	2.7	e0.13	0.00	0.00	0.00
9	---	---	---	---	---	0.00	0.00	3.5	e0.12	0.00	0.00	0.00
10	---	---	---	---	---	0.00	0.00	3.2	e0.11	0.00	0.00	0.00
11	---	---	---	---	---	0.00	0.00	2.9	e0.10	0.00	0.00	0.00
12	---	---	---	---	---	0.00	0.00	3.6	e0.09	0.00	0.00	0.00
13	---	---	---	---	---	0.00	0.00	3.5	e0.08	0.00	0.00	0.00
14	---	---	---	---	---	0.00	0.00	3.4	e0.07	0.00	0.00	0.00
15	---	---	---	---	---	0.00	0.00	2.2	e0.06	0.00	0.00	0.00
16	---	---	---	---	---	0.00	0.00	1.8	e0.05	0.00	0.00	0.00
17	---	---	---	---	---	0.00	0.00	1.6	e0.04	0.00	0.00	0.00
18	---	---	---	---	---	0.00	e0.25	1.3	e0.03	0.00	0.00	0.00
19	---	---	---	---	---	0.00	e1.0	1.1	e0.02	0.00	0.00	0.00
20	---	---	---	---	---	0.00	e2.0	1.1	e0.01	0.00	0.00	0.00
21	---	---	---	---	---	0.00	e1.5	1.0	e0.01	0.00	0.00	0.00
22	---	---	---	---	---	0.00	e1.0	1.0	e0.01	0.00	0.00	0.00
23	---	---	---	---	---	0.00	e0.50	0.85	e0.01	0.00	0.00	0.00
24	---	---	---	---	---	0.00	e0.45	0.80	e0.00	0.00	0.00	0.00
25	---	---	---	---	---	0.00	e0.40	0.76	e0.00	0.00	0.00	0.00
26	---	---	---	---	---	0.00	e0.50	0.73	e0.00	0.00	0.00	0.00
27	---	---	---	---	---	0.00	e0.55	0.69	e0.00	0.00	0.00	0.00
28	---	---	---	---	---	0.00	e0.60	0.65	e0.00	0.00	0.00	0.00
29	---	---	---	---	---	0.00	e0.40	0.56	e0.00	0.00	0.00	0.00
30	---	---	---	---	---	0.00	e0.30	0.45	e0.00	0.00	0.00	0.00
31	---	---	---	---	---	0.00	---	0.39	---	0.00	0.00	---
TOTAL	---	---	---	---	---	0.00	9.45	44.01	2.31	0.00	0.00	0.00
MEAN	---	---	---	---	---	0.000	0.315	1.420	0.077	0.000	0.000	0.000
MAX	---	---	---	---	---	0.00	2.0	3.6	0.31	0.00	0.00	0.00
MIN	---	---	---	---	---	0.00	0.00	0.25	0.00	0.00	0.00	0.00
AC-FT	---	---	---	---	---	0.00	19	87	4.6	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	0.000	0.315	1.218	0.073	0.815	0.114	0.000
MAX	---	---	---	---	---	0.000	0.32	1.22	0.073	1.63	0.23	0.000
(WY)	---	---	---	---	---	2002	2002	2002	2002	2001	2001	2001
MIN	---	---	---	---	---	0.000	0.32	1.22	0.073	0.000	0.000	0.000
(WY)	---	---	---	---	---	2002	2002	2002	2002	2002	2002	2001

SUMMARY STATISTICS WATER YEARS 2001 - 2002

HIGHEST DAILY MEAN	5.3	Jul 19 2001
LOWEST DAILY MEAN	0.00	Aug 21 2001
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 21 2001
MAXIMUM PEAK FLOW	6.2	Jul 19 2001
MAXIMUM PEAK STAGE	7.24	Jul 19 2001

e Estimated

Miscellaneous discharge measurements on Iron Springs Creek, 1.1 mile below gage

Date	Discharge
April 17, 2002	0.06
July 31, 2002	0.46

05059000 SHEYENNE RIVER NEAR KINDRED, ND

LOCATION.--Lat 46°37'54", long 97°00'01", in $SE^1/_4SE^1/_4SW^1/_4$ sec.33, T.137 N., R.50 W., Cass County, Hydrologic Unit 09020204, on left bank 100 ft downstream from North Dakota State Highway 46 bridge crossing, 1.5 mi southeast of Kindred, and at mile 67.9.

DRAINAGE AREA.--8,800 mi^2, approximately, of which about 5,780 mi^2 is probably noncontributing, including 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 925.55 ft above National Geodetic Vertical Datum of 1929. From Oct. 1, 1962, to Sept. 30, 1989, gage was located at site 1,500 ft upstream. July 1949 to Sept. 30, 1962, nonrecording gage at same site and datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated to a large degree by Lake Ashtabula (station 05057500), 202 mi upstream, and several small reservoirs.

EXTREMES OUTSIDE PERIOD OF RECORD.--Spring flood in 1947 or 1948 reached a stage of 22.1 ft from floodmarks, discharge about 3,600 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	e175	e215	e210	e84	e138	e143	158	232	366	133	61
2	60	e180	e220	e190	e83	e137	e164	178	226	292	133	61
3	58	e187	e270	e183	e83	e135	e168	204	223	266	128	56
4	58	e191	e280	e179	e82	e130	e165	216	223	267	124	56
5	61	e200	e290	e179	e82	e128	e155	222	221	273	118	56
6	65	e210	e290	e179	e81	e128	e143	247	219	273	114	52
7	68	209	e292	e179	e81	e125	e126	264	220	279	114	49
8	70	206	e292	e175	e81	e120	e120	312	218	363	115	62
9	82	207	e292	e145	e83	e119	e124	390	218	372	107	69
10	120	211	e292	e130	e84	e118	e134	361	221	360	100	64
11	147	216	e295	e120	e86	e115	e150	329	219	364	95	e60
12	147	222	e295	e115	e88	e115	e163	305	205	358	99	e55
13	136	227	e295	e110	e93	e118	e172	331	217	359	96	52
14	126	230	e296	e108	e97	e125	e162	383	203	378	93	48
15	124	227	e298	e105	e105	e130	e154	431	188	396	91	48
16	114	225	e296	e104	e108	e137	e140	435	176	393	90	49
17	93	227	e294	e102	e114	e143	e136	433	166	387	86	48
18	81	225	e292	e100	e118	e160	e138	490	159	372	80	49
19	110	201	e292	e97	e123	e175	e142	546	174	303	79	57
20	123	167	e292	e95	e129	e180	e145	544	186	219	76	62
21	115	156	e290	e94	e131	e180	e155	540	185	164	73	63
22	94	189	e290	e93	e135	e178	e158	513	191	144	70	58
23	80	224	e290	e92	e138	e163	e160	471	232	143	74	59
24	79	229	e290	e91	e143	e150	166	452	345	146	68	57
25	88	223	e290	e90	e145	e135	161	403	415	143	68	54
26	124	216	e285	e89	e145	e128	151	301	406	138	62	53
27	147	e170	e240	e88	e142	e125	152	277	418	138	59	52
28	e150	e125	e230	e87	e140	e123	162	264	431	138	57	53
29	e151	e190	e228	e86	---	e123	158	249	419	138	61	128
30	e160	e200	e225	e85	---	e125	153	243	404	137	57	124
31	e170	---	e220	e85	---	e136	---	236	---	132	60	---
TOTAL	3263	6065	8556	3785	3004	4242	4520	10728	7560	8201	2780	1815
MEAN	105.3	202.2	276.0	122.1	107.3	136.8	150.7	346.1	252.0	264.5	89.68	60.50
MAX	170	230	298	210	145	180	172	546	431	396	133	128
MIN	58	125	215	85	81	115	120	158	159	132	57	48
AC-FT	6470	12030	16970	7510	5960	8410	8970	21280	15000	16270	5510	3600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002, BY WATER YEAR (WY)

MEAN	96.77	116.7	101.7	85.69	96.18	337.7	875.3	537.1	305.6	268.5	151.7	102.5
MAX	693	589	400	242	317	1256	3957	3053	1938	1466	2231	528
(WY)	1995	1995	2001	2001	1996	1987	1997	1950	1950	1975	1993	1999
MIN	24.6	22.7	17.6	17.5	21.7	35.1	71.7	53.6	48.4	26.7	17.5	25.1
(WY)	1957	1956	1956	1991	1956	1956	1991	1990	1961	1988	1988	1959

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1949 - 2002	
ANNUAL TOTAL	186134		64519			
ANNUAL MEAN	510.0		176.8		256.7	
HIGHEST ANNUAL MEAN					770	1997
LOWEST ANNUAL MEAN					48.0	1991
HIGHEST DAILY MEAN	3250	Apr 10	546	May 19	5610	Apr 29 1997
LOWEST DAILY MEAN	58	Oct 3	48	Sep 14	9.2	Aug 16 1990
ANNUAL SEVEN-DAY MINIMUM	61	Sep 30	50	Sep 12	11	Dec 26 1990
MAXIMUM PEAK FLOW			549	May 19	5970	Apr 27 1997
MAXIMUM PEAK STAGE			5.26	May 19	a22.33	Apr 8 1997
ANNUAL RUNOFF (AC-FT)	369200		128000		185900	
10 PERCENT EXCEEDS	1130		308		544	
50 PERCENT EXCEEDS	294		147		98	
90 PERCENT EXCEEDS	105		63		35	

a Backwater from ice
e Estimated

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
05...	0830	62	--	8.1	1150	1170	5.5	9.5	430	91.0	50.0	10.0	2
NOV													
02...	0945	--	--	--	--	820	--	--	--	--	--	--	--
JAN													
09...	1035	142	--	--	--	976	2.5	.0	--	--	--	--	--
FEB													
25...	1540	145	--	--	--	661	--	.5	--	--	--	--	--
MAR													
25...	1300	133	--	--	--	--	--	.5	--	--	--	--	--
APR													
11...	1020	--	8.3	--	--	763	4.5	2.5	--	--	--	--	--
JUN													
07...	1425	--	--	--	--	1090	19.5	18.5	--	--	--	--	--
JUL													
16...	1520	--	--	--	--	1110	--	--	--	--	--	--	--
SEP													
19...	1155	56	8.3	8.2	1040	1040	18.0	19.0	380	85.0	41.0	9.10	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
05...	95.0	32	357	29.0	.30	250	126	747	740	5.0	80	2	100
NOV													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
19...	86.0	32	299	38.0	.30	220	102	678	660	8.0	20	1	70

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
05...	90	<.10	3	3	440
NOV					
02...	--	--	--	--	--
JAN					
09...	--	--	--	--	--
FEB					
25...	--	--	--	--	--
MAR					
25...	--	--	--	--	--
APR					
11...	--	--	--	--	--
JUN					
07...	--	--	--	--	--
JUL					
16...	--	--	--	--	--
SEP					
19...	140	<.10	3	<1	460

< Less than

05059300 SHEYENNE RIVER ABOVE SHEYENNE RIVER DIVERSION NEAR HORACE, ND

LOCATION.--Lat 46°45'01", long 96°55'35", in $NE^1/_4SE^1/_4SE^1/_4$ sec.24, T.138 N., R.50 W., Cass County, Hydrologic Unit 09020204, on right bank 300 ft upstream from diversion structure 1 mi southwest of Horace.

DRAINAGE AREA.--8,840 mi^2, approximately, of which about 7,580 mi^2 is probably noncontributing, including 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 890 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated to a large degree by Lake Ashtabula (station 05057500), 230 mi upstream. These records represent the total Sheyenne River flow immediately upstream from the Horace flood diversion.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	165	215	e219	e87	e143	e157	156	245	433	131	68
2	67	174	251	e212	e86	e141	e170	e175	237	377	131	69
3	61	180	272	e190	e86	e139	e175	e198	229	299	131	e64
4	59	189	e285	e184	e85	e137	e175	e208	224	276	126	e62
5	58	196	e293	e185	e85	e134	e168	e218	223	278	123	e63
6	64	205	e294	e184	e85	e132	e153	e226	222	283	118	e61
7	69	209	e295	e180	e85	e129	e140	e255	219	285	112	e58
8	71	206	e296	e179	e85	e126	e128	e285	217	325	113	e53
9	75	206	e296	e175	e85	e126	e128	e334	222	408	110	e58
10	103	210	e296	e148	e87	e124	e144	e404	217	416	102	72
11	145	218	e298	e127	e91	e121	e156	338	220	403	94	e66
12	175	229	e298	e120	e93	e120	e169	297	211	398	89	e60
13	175	242	e299	e116	e96	e121	185	274	198	386	91	e58
14	159	253	e298	e113	e99	e125	169	313	209	395	88	e53
15	146	254	e302	e109	e104	e134	153	367	188	418	87	e51
16	144	249	e299	e106	e112	e139	143	417	e175	431	86	e52
17	130	246	e298	e104	e116	e148	e140	420	e165	426	87	e52
18	105	248	e297	e104	e121	e158	e140	430	e158	421	83	58
19	91	241	e296	e101	e127	e169	e144	515	e152	390	79	61
20	125	205	e295	e99	e131	e179	e150	561	e165	307	79	61
21	144	159	e295	e97	e136	e184	e156	559	e171	219	78	64
22	132	146	e295	e96	e141	e180	e165	550	e180	159	76	64
23	106	198	e294	e94	e144	e169	e168	505	e190	142	74	63
24	91	244	e294	e94	e146	e153	e167	461	252	140	75	63
25	88	251	e293	e93	e148	e141	e164	446	397	141	73	63
26	92	242	e293	e92	e148	e132	e159	405	448	139	72	60
27	127	205	e283	e91	e148	e128	155	309	443	136	69	58
28	146	148	e242	e89	e146	e126	155	291	462	135	e63	58
29	143	151	e238	e88	---	e125	154	286	466	135	e64	59
30	144	163	e233	e87	---	e130	155	265	453	134	68	110
31	149	---	e226	e87	---	e145	---	255	---	134	e64	---
TOTAL	3456	6232	8759	3963	3103	4358	4685	10723	7558	8969	2836	1862
MEAN	111.5	207.7	282.5	127.8	110.8	140.6	156.2	345.9	251.9	289.3	91.48	62.07
MAX	175	254	302	219	148	184	185	561	466	433	131	110
MIN	58	146	215	87	85	120	128	156	152	134	63	51
AC-FT	6850	12360	17370	7860	6150	8640	9290	21270	14990	17790	5630	3690

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

MEAN	233.7	291.6	248.5	180.1	198.6	643.1	1691	1082	573.4	630.5	484.7	289.5
MAX	673	617	429	268	302	1214	2964	2737	946	1157	2221	582
(WY)	1995	1995	2001	1997	2001	1995	1997	1997	1999	1993	1993	1999
MIN	52.9	54.8	31.7	73.0	98.6	141	156	232	252	289	91.5	62.1
(WY)	1993	1993	1993	1993	1993	2002	2002	1993	2002	2002	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1993 - 2002	
ANNUAL TOTAL	206329		66504			
ANNUAL MEAN	565.3		182.2		546.4	
HIGHEST ANNUAL MEAN					749	1999
LOWEST ANNUAL MEAN					182	2002
HIGHEST DAILY MEAN	3600	Apr 11	561	May 20	4480	May 8 1997
LOWEST DAILY MEAN	58	Oct 5	51	Sep 15	13	Dec 18 1992
ANNUAL SEVEN-DAY MINIMUM	64	Oct 2	55	Sep 12	16	Dec 13 1992
MAXIMUM PEAK FLOW			564	May 20	a5210	May 8 1997
MAXIMUM PEAK STAGE			15.85	May 20	b26.66	Mar 25 1999
ANNUAL RUNOFF (AC-FT)	409300		131900		395800	
10 PERCENT EXCEEDS	1260		311		1270	
50 PERCENT EXCEEDS	298		150		290	
90 PERCENT EXCEEDS	112		69		110	

a Gage height, 25.44 ft, backwater from ice
b From high-water mark, backwater from ice and closure of diversion channel
e Estimated

05059300 SHEYENNE RIVER ABOVE SHEYENNE RIVER DIVERSION NEAR HORACE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1993 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1997 to current year.

SPECIFIC CONDUCTANCE: June 1997 to current year.

INSTRUMENTATION.--Water-quality sensors since June 1997.

REMARKS.--Records good. Missing data is result of sensor probe malfunction and probe being out of the water.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 29.8°C, Aug. 6, 2001; minimum recorded, -0.2°C, on many days in 2002.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,610 microsiemens, May 7-8, 2000; minimum recorded, 658 microsiemens, Apr. 17, 1999.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum recorded, 29.0°C, June 30; minimum recorded, -0.2°C, on many days.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,640 microsiemens, July 6; minimum recorded, 859 microsiemens, Apr. 12.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	0830	60	--e	8.2	1200	1100	11.5	13.0	440	94.0	49.0	11.0	2
JAN													
09...	1300	179	--	--	--	*863	4.0	.0	--	--	--	--	--
MAR													
25...	1530	134	--	--	--	875	--	.5	--	--	--	--	--
APR													
16...	0830	136	--	8.0	928	--	12.0	5.0	340	76.0	36.0	7.70	2
25...	0950	161	--	--	--	990	--	6.0	--	--	--	--	--
JUN													
17...	1110	153	--	--	--	947	--	19.5	--	--	--	--	--
SEP													
20...	1225	63	8.2	8.2	1050	1030	25.0	19.0	390	86.0	42.0	9.10	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	94.0	31	349	29.0	.30	300	135	832	787	6.0	70	2	100
JAN													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	68.0	30	280	26.0	.20	210	229	623	592	4.0	50	<1	60
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
20...	86.0	32	296	39.0	.30	230	118	698	670	8.0	30	1	70

05059300 SHEYENNE RIVER ABOVE SHEYENNE RIVER DIVERSION NEAR HORACE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
03...	100	<.10	3	3	460
JAN					
09...	--	--	--	--	--
MAR					
25...	--	--	--	--	--
APR					
16...	90	<.10	<1	<1	360
25...	--	--	--	--	--
JUN					
17...	--	--	--	--	--
SEP					
20...	60	<.10	3	<1	460

< Less than
e Required equipment not functional/available
* Not at water-quality monitor probe location

WATER TEMPERATURE from Datalogger, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.0	15.5	16.7	5.9	5.1	5.5	0.0	-0.2	0	0.1	0.0	0
2	---	---	---	6.0	5.3	5.6	0.0	-0.2	-0.1	0.1	-0.1	0.0
3	---	---	---	6.3	5.2	5.7	0.0	-0.2	-0.1	0.1	-0.1	0.0
4	13.7	11.9	12.7	6.1	5.2	5.7	0.0	-0.2	-0.1	0.1	-0.1	0.0
5	11.9	9.8	10.8	6.5	5.4	5.9	0.0	-0.1	0	0.1	-0.1	0.0
6	9.8	8.6	9.1	6.2	5.5	5.9	0.0	-0.2	-0.1	0.1	-0.1	0.0
7	8.8	7.6	8.2	5.8	5.4	5.6	0.0	-0.2	-0.1	0.1	-0.1	0.0
8	8.5	7.9	8.2	5.4	4.8	5.1	0.0	-0.1	0.0	0.1	-0.1	0.0
9	9.6	8.1	8.7	4.9	4.3	4.6	0.0	-0.2	0	0.1	-0.1	0.0
10	9.7	9.5	9.6	4.8	4.2	4.5	0.0	-0.2	0	0.1	0.0	0.0
11	10.1	8.7	9.4	4.4	3.6	4.0	0.0	-0.2	0.0	0.1	-0.1	0.0
12	10.3	9.7	10.0	4.4	3.6	3.9	0.0	-0.2	0	0.1	-0.1	0.0
13	10.5	9.6	10.1	4.4	3.5	4.0	0.1	-0.2	0.0	0.1	0.0	0.0
14	10.3	9.7	10	5.0	4.0	4.5	0.1	-0.2	0.0	0.1	-0.1	0.0
15	9.8	8.8	9.2	5.1	4.4	4.8	0.1	-0.1	0.0	0.1	-0.1	0.0
16	8.8	7.7	8.1	5.4	4.6	4.9	0.0	-0.1	0.0	0.1	-0.1	0.0
17	7.8	6.6	7.4	5.9	4.9	5.4	0.1	-0.2	0	0.1	-0.1	0.0
18	8.1	7.3	7.7	5.7	4.9	5.5	0.1	-0.2	0.0	0.2	-0.1	0
19	7.8	7.1	7.5	4.9	3.7	4.3	0.1	-0.1	0.0	0.1	-0.1	0.0
20	8.0	6.9	7.5	3.7	3.0	3.3	0.0	-0.1	0.0	0.1	-0.1	0.0
21	7.7	6.8	7.3	3.1	2.5	2.8	0.1	-0.2	0.0	0.1	-0.1	0.0
22	8.0	6.8	7.4	3.2	2.6	2.9	0.1	-0.2	0	0.2	0.0	0.0
23	8.0	7.2	7.5	3.2	2.6	2.9	0.1	-0.1	0.0	0.1	0.0	0
24	7.5	4.6	6.1	3.2	2.9	3.1	0.1	-0.1	0.0	0.2	0.0	0.0
25	4.6	3.2	3.6	---	---	---	0.1	-0.1	0.0	0.1	-0.1	0.0
26	3.3	2.2	2.6	---	---	---	0.1	-0.1	0.0	0.1	-0.1	0.0
27	2.4	1.4	1.9	---	---	---	0.0	-0.2	0	0.1	-0.1	0.0
28	2.7	1.9	2.3	-0.1	-0.2	-0.1	0.1	-0.2	0.0	0.2	-0.1	0
29	3.1	2.2	2.6	-0.1	-0.2	-0.1	0.1	-0.1	0.0	0.1	0.0	0.0
30	3.8	2.9	3.3	-0.1	-0.2	-0.1	0.2	-0.1	0.0	0.1	0.0	0.0
31	5.2	3.7	4.5	---	---	---	0.1	-0.1	0.0	0.1	0.0	0.0
MONTH	---	---	---	---	---	---	0.2	-0.2	0.0	0.2	-0.1	0.0

05059300 SHEYENNE RIVER ABOVE SHEYENNE RIVER DIVERSION NEAR HORACE, ND--Continued

WATER TEMPERATURE from Datalogger, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.1	0.0	0.0	0.1	0.0	0	0.0	-0.1	0.0	10.0	9.0	9.5
2	0.1	-0.1	0.0	0.1	-0.1	0.0	0.0	-0.1	0.0	10.6	7.9	9.3
3	0.1	0.0	0.0	0.0	-0.2	0	0.1	-0.1	0.0	12.1	9.1	10.6
4	0.0	-0.1	0.0	0.0	-0.2	-0.1	0.1	-0.1	0.0	13.4	10.9	12.1
5	0.0	-0.1	0.0	0.0	-0.1	0.0	0.0	-0.1	0.0	12.8	11.5	12.0
6	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	11.8	10.9	11.2
7	0.0	-0.1	0	0.0	-0.1	0.0	0.0	-0.1	0.0	10.9	9.6	10.2
8	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	9.6	8.4	8.9
9	0.0	-0.1	0.0	0.2	0.0	0.0	0.0	-0.1	0.0	8.4	7.3	7.7
10	0.0	-0.2	0	0.2	0.1	0.1	0.0	0.0	0.0	9.2	6.5	7.8
11	0.0	-0.2	0	0.2	0.1	0.1	0.1	-0.1	0.0	9.7	9.1	9.5
12	0.0	-0.1	0	0.2	0.1	0.1	3.3	-0.1	0.2	11.7	9.7	10.5
13	0.0	-0.1	0	0.2	0.1	0.2	8.7	3.3	7.0	13.1	11.0	12.0
14	0.0	-0.1	0	0.2	0.1	0.1	11.9	8.5	10.0	14.7	12.3	13.4
15	0.0	-0.1	0	0.1	0.1	0.1	14.2	11.4	12.6	15.9	14.1	14.9
16	0.0	-0.1	0	0.1	0.0	0	16.2	13.4	14.7	15.5	14.3	14.9
17	0.0	-0.1	0	0.2	0.1	0.1	16.0	14.0	15.1	15.0	14.1	14.6
18	0.0	-0.1	0.0	0.1	0.1	0.1	15.5	12.0	14.0	14.9	13.3	14.1
19	0.0	0.0	0.0	0.1	0.0	0	12.0	10.3	11.0	14.9	13.3	14.1
20	0.0	0.0	0.0	0.1	0.0	0	10.7	9.0	9.9	15.7	13.9	14.7
21	0.1	-0.1	0.0	0.1	0.0	0	10.0	8.6	9.1	16.3	14.6	15.4
22	0.1	0.0	0	0.1	-0.1	0.0	9.1	7.5	8.3	16.8	15.4	16.1
23	0.1	0.0	0	0.1	-0.1	0.0	11.2	7.8	9.4	16.7	15.0	15.8
24	0.1	0.0	0	0.1	-0.1	0.0	11.1	9.1	10.0	15.7	14.2	14.9
25	0.2	0.0	0	0.0	-0.1	0	9.1	7.3	8.1	15.7	14.5	15.2
26	0.2	0.0	0.1	0.0	-0.1	0.0	8.6	6.8	7.8	17.0	15.2	16.1
27	0.2	-0.1	0	0.0	-0.1	0.0	8.1	6.9	7.3	18.8	16.1	17.3
28	0.2	0.0	0	0.0	0.0	0.0	7.4	6.3	6.9	20.6	18.1	19.3
29	---	---	---	0.0	0.0	0.0	8.9	6.6	7.6	21.6	19.7	20.6
30	---	---	---	0.0	-0.1	0.0	10.2	7.9	9.0	22.6	20.6	21.5
31	---	---	---	0.0	-0.1	0.0	---	---	---	23.0	20.9	21.9
MONTH	0.2	-0.2	0.0	0.2	-0.2	0.0	16.2	-0.1	5.9	23.0	6.5	13.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	23.1	21.2	22.1	28.9	27.4	28.2	26.6	24.5	25.3	25.1	23.1	24.2
2	22.1	19.7	20.8	28.3	27.0	27.4	24.7	22.5	23.7	24.5	22.5	23.7
3	19.7	18.7	19.1	27.5	25.7	26.6	24.0	22.5	23.0	23.1	21.0	22.2
4	19.7	17.8	18.7	26.8	24.6	25.7	23.6	21.4	22.5	22.9	21.3	22.2
5	20.7	18.2	19.4	26.2	23.9	24.9	24.0	21.8	22.9	24.3	22.0	23.1
6	21.2	19.1	20.1	27.4	25.3	26.2	23.3	21.6	22.1	25.2	23.2	24.2
7	20.8	19.9	20.3	27.0	25.6	26.4	24.2	20.9	22.3	26.2	24.0	25.1
8	21.3	19.2	20.2	27.0	24.9	25.8	25.6	23.2	24.3	26.6	24.2	25.3
9	21.1	20.4	20.7	26.4	25.3	26.0	25.6	24.3	24.9	25.3	22.3	23.7
10	21.8	20.8	21.2	26.1	23.8	25.0	---	---	---	22.4	20.8	21.8
11	22.5	20.1	21.2	24.7	23.1	23.8	---	---	---	21.8	20.4	21.3
12	22.2	20.9	21.6	24.8	23.2	24.0	---	---	---	21.7	20.3	21.1
13	21.3	19.8	20.4	25.5	23.7	24.6	---	---	---	21.4	20.2	20.8
14	21.5	19.3	20.3	26.0	24.4	25.2	---	---	---	21.0	19.3	19.9
15	22.2	20.0	21.0	27.2	25.3	26.2	---	---	---	19.3	17.4	18.3
16	22.3	20.4	21.4	28.2	26.3	27.2	---	---	---	19.3	16.9	18.2
17	22.7	20.6	21.7	28.2	27.7	28.0	---	---	---	19.9	18.0	19.1
18	23.0	21.0	22.0	28.4	27.1	27.7	---	---	---	20.4	18.8	19.6
19	23.7	22.2	23.0	28.4	27.1	27.7	---	---	---	19.9	18.7	19.1
20	23.4	21.5	22.5	28.3	27.3	27.8	---	---	---	18.8	17.1	17.8
21	22.9	21.9	22.2	28.0	27.1	27.6	---	---	---	17.3	15.2	15.9
22	23.3	21.5	22.3	27.1	24.3	25.4	---	---	---	15.2	13.5	14.0
23	25.2	22.4	23.7	24.3	22.2	22.9	---	---	---	13.7	12.5	13.0
24	27.0	24.1	25.4	22.8	21.3	22.1	---	---	---	12.5	11.1	11.9
25	27.2	26.1	26.6	24.7	21.8	23.1	---	---	---	12.5	11.5	11.9
26	27.5	26.3	26.9	26.4	23.5	24.8	---	---	---	12.1	10.5	11.5
27	28.0	26.3	27.1	27.0	25.0	26.0	---	---	---	12.0	10.7	11.5
28	28.1	26.7	27.4	26.5	24.8	25.6	---	---	---	12.1	10.8	11.5
29	28.6	26.8	27.6	26.3	23.5	24.8	---	---	---	12.2	11.2	11.7
30	29.0	27.5	28.2	27.0	25.0	25.9	---	---	---	13.9	12.2	13.0
31	---	---	---	27.0	24.3	25.8	24.5	22.0	23.4	---	---	---
MONTH	29.0	17.8	22.5	28.9	21.3	25.8	---	---	---	26.6	10.5	18.6

05059300 SHEYENNE RIVER ABOVE SHEYENNE RIVER DIVERSION NEAR HORACE, ND--Continued

SPECIFIC CONDUCTANCE from Datalogger, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	1280	1250	1260	1310	1280	1290	1360	1350	1360
2	---	---	---	1270	1250	1260	1280	1260	1270	1370	1350	1360
3	---	---	---	1270	1250	1260	1300	1280	1280	1390	1370	1380
4	1180	1180	1180	1260	1250	1260	1300	1290	1300	1390	1380	1380
5	1180	1170	1180	1260	1230	1240	1340	1290	1320	1380	1360	1370
6	1170	1160	1170	1230	1220	1230	1370	1340	1360	1360	1340	1350
7	1170	1160	1170	1240	1230	1230	1380	1360	1370	1350	1340	1350
8	1190	1170	1190	1240	1230	1230	1380	1360	1360	1350	1320	1340
9	1200	1190	1190	1240	1230	1230	1380	1360	1370	1330	1320	1330
10	1190	1160	1170	1260	1240	1260	1370	1360	1370	1330	1320	1320
11	1180	1160	1170	1270	1260	1270	1380	1370	1370	1320	1310	1320
12	1170	1110	1140	1280	1270	1280	1370	1350	1360	1310	1300	1300
13	1130	1110	1120	1300	1280	1290	1370	1350	1360	1300	1290	1290
14	1180	1120	1150	1300	1280	1290	1370	1350	1360	1300	1290	1290
15	1200	1180	1190	1290	1280	1290	1360	1350	1360	1290	1280	1280
16	1230	1200	1210	1290	1270	1280	1360	1340	1350	1280	1270	1280
17	1250	1230	1240	1280	1260	1270	1350	1340	1340	1280	1270	1270
18	1260	1250	1250	1290	1260	1280	1340	1330	1340	1300	1280	1290
19	1250	1220	1240	1300	1290	1300	1350	1320	1340	1330	1300	1310
20	1220	1180	1200	1300	1300	1300	1340	1340	1340	1330	1320	1330
21	1230	1180	1210	1300	1280	1290	1360	1340	1360	1330	1320	1320
22	1240	1230	1240	1280	1250	1260	1360	1350	1360	1330	1310	1320
23	1230	1200	1220	1250	1240	1240	1370	1340	1360	1320	1310	1320
24	1200	1190	1200	1270	1240	1260	1370	1360	1360	1320	1310	1320
25	1190	1170	1180	1280	1270	1270	1370	1350	1360	1320	1310	1320
26	1170	1160	1170	1280	1270	1280	1370	1360	1370	1320	1300	1310
27	1170	1130	1150	1290	1270	1280	1380	1360	1370	1330	1310	1320
28	1240	1170	1210	1300	1280	1290	1370	1350	1360	1340	1320	1340
29	1260	1240	1260	1320	1300	1300	1360	1330	1350	1360	1340	1350
30	1280	1260	1270	1320	1300	1320	1340	1320	1330	1380	1360	1370
31	1270	1260	1260	---	---	---	1360	1330	1350	---	---	---
MONTH	---	---	---	1320	1220	1270	1380	1260	1350	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	967	938	951	985	969	978
2	---	---	---	---	---	---	976	934	952	983	973	977
3	---	---	---	---	---	---	990	945	973	1040	983	1010
4	---	---	---	---	---	---	1000	974	990	1130	1040	1080
5	---	---	---	---	---	---	1030	992	1010	1190	1130	1160
6	---	---	---	---	---	---	1070	1030	1060	1210	1190	1200
7	---	---	---	---	---	---	1070	1030	1060	1220	1190	1210
8	---	---	---	---	---	---	1030	962	1000	1250	1190	1210
9	---	---	---	---	---	---	962	892	927	1300	1250	1290
10	---	---	---	---	---	---	909	883	896	1270	1170	1210
11	---	---	---	---	---	---	902	876	889	1200	1170	1190
12	---	---	---	---	---	---	892	859	878	1200	1180	1190
13	---	---	---	---	---	---	945	873	912	1180	1140	1160
14	---	---	---	---	---	---	977	945	963	1140	1120	1130
15	---	---	---	---	---	---	977	953	970	1140	1120	1130
16	---	---	---	---	---	---	953	922	933	1160	1130	1140
17	---	---	---	---	---	---	934	902	916	1180	1150	1160
18	---	---	---	---	---	---	937	905	927	1250	1170	1220
19	---	---	---	---	---	---	938	899	924	1260	1220	1250
20	---	---	---	---	---	---	944	935	940	1260	1210	1220
21	---	---	---	---	---	---	991	925	966	1270	1210	1250
22	---	---	---	---	---	---	989	917	962	1260	1230	1250
23	---	---	---	---	---	---	997	986	992	1240	1230	1240
24	1160	1130	1140	---	---	---	999	986	990	1240	1180	1210
25	1160	1140	1150	---	---	---	1000	973	991	1180	1160	1170
26	1160	1150	1150	---	---	---	980	968	973	1200	1140	1170
27	1190	1160	1170	---	---	---	993	976	985	1140	1120	1140
28	1210	1170	1180	---	---	---	1000	993	999	1130	1110	1120
29	---	---	---	---	---	---	1000	974	994	1160	1120	1140
30	---	---	---	---	---	---	980	967	973	1160	1110	1130
31	---	---	---	---	---	---	---	---	---	1140	1120	1130
MONTH	---	---	---	---	---	---	1070	859	963	1300	969	1160

05059300 SHEYENNE RIVER ABOVE SHEYENNE RIVER DIVERSION NEAR HORACE, ND--Continued

SPECIFIC CONDUCTANCE from Datalogger, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1170	1140	1160	1120	1070	1100	1020	1020	1020	---	---	---
2	1170	1150	1160	1070	1060	1070	1030	1010	1020	---	---	---
3	1160	1140	1150	1060	1040	1050	1020	993	1000	---	---	---
4	1160	1140	1150	1130	1060	1080	1020	993	1010	---	---	---
5	1170	1160	1160	1520	1130	1280	1030	1020	1020	995	980	986
6	1180	1150	1160	1640	1470	1560	1020	1020	1020	985	971	976
7	1190	1160	1170	1470	1420	1440	1030	1020	1030	1000	984	989
8	1200	1190	1190	1510	1430	1480	1040	1030	1030	1020	1000	1010
9	1200	1160	1180	1510	1470	1490	1040	1030	1040	1020	1000	1010
10	1180	1170	1180	1510	1350	1450	---	---	---	1010	998	1000
11	1170	1170	1170	1350	1160	1230	---	---	---	1060	1000	1030
12	1170	1140	1150	1210	1170	1190	---	---	---	1100	1060	1090
13	1140	1120	1130	1200	1160	1190	---	---	---	1100	1090	1100
14	1120	1110	1120	1160	1040	1100	---	---	---	1090	1080	1080
15	1130	1120	1130	1080	973	1020	---	---	---	1080	1080	1080
16	1120	1100	1110	1070	1050	1060	---	---	---	1080	1080	1080
17	1100	1090	1090	1050	1010	1030	---	---	---	1080	1070	1070
18	1090	1070	1080	1010	940	980	---	---	---	---	---	---
19	1080	1080	1080	940	903	912	---	---	---	---	---	---
20	1090	1070	1070	903	885	893	---	---	---	---	---	---
21	1070	1060	1070	901	887	893	---	---	---	---	---	---
22	1060	995	1020	965	900	930	---	---	---	---	---	---
23	1080	1010	1060	1000	965	983	---	---	---	1110	1080	1100
24	1100	1080	1090	1030	1000	1010	---	---	---	1130	1110	1120
25	1110	1080	1100	1050	1030	1040	---	---	---	1130	1100	1110
26	1110	1080	1100	1060	1050	1060	---	---	---	1100	1090	1100
27	1140	1100	1120	1070	1060	1060	---	---	---	1120	1100	1110
28	1150	1120	1130	1070	1060	1060	---	---	---	1120	1110	1120
29	1130	1100	1120	1060	1050	1060	---	---	---	1110	1090	1100
30	1110	1100	1110	1060	1000	1040	---	---	---	1090	1060	1080
31	---	---	---	1020	1000	1020	987	967	975	---	---	---
MONTH	1200	995	1120	1640	885	1120	---	---	---	---	---	---

05059310 SHEYENNE RIVER DIVERSION NEAR HORACE, ND

LOCATION.--Lat 46°45'06", long 96°55'33", in $NE^1/_4SE^1/_4SE^1/_4$ sec.24, T.138 N., R.50 W., Cass County, Hydrologic Unit 09020204, at diversion structure 1 mi southwest of Horace.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder for Sheyenne River above Sheyenne River Diversion near Horace (station 05059300) is used to obtain stage record for this station. Datum of gage is 890 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. The records are for the flow that is diverted from the Sheyenne River at this location. When flows are greater than about 1,000 ft^3/s at Sheyenne River above Sheyenne River Diversion near Horace (05059300), diversions are made in order to control flood discharges downstream. The diverted flow returns to the Sheyenne River main channel at a location about 13 mi downstream, below the city of West Fargo. See Sheyenne River Diversion at West Fargo (station 05059480) for return flows.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

MEAN	0.065	0.650	0.000	0.000	0.000	80.35	569.9	219.7	33.61	48.39	87.22	0.000
MAX	0.65	6.50	0.000	0.000	0.000	471	1507	1181	139	281	872	0.000
(WY)	1995	1995	1993	1993	1993	1995	1997	1997	2000	1993	1993	1993
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1993	1993	1993	1993	1993	1997	2000	1993	1993	1996	1994	1993

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1993 - 2002	
ANNUAL TOTAL	29020.06		0.00			
ANNUAL MEAN	79.51		0.000		86.62	
HIGHEST ANNUAL MEAN					226	1997
LOWEST ANNUAL MEAN					0.000	2002
HIGHEST DAILY MEAN	1990	Apr 10	0.00	Oct 1	2390	Apr 26 1997
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1 1992
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1 1992
MAXIMUM PEAK FLOW			(a)		b2760	Apr 10 2001
MAXIMUM PEAK STAGE			(a)		c26.66	Mar 25 1999
ANNUAL RUNOFF (AC-FT)	57560		0.00		62750	
10 PERCENT EXCEEDS	74		0.00		101	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a No flow routed through diversion channel
b Gage height, 25.01 ft
c From high-water mark, backwater from closure of diversion channel

05059480 SHEYENNE RIVER DIVERSION AT WEST FARGO, ND

LOCATION.--Lat 46°53'15", long 96°55'09", in $NE^1/_4NE^1/_4NW^1/_4$ sec.6, T.139 N., R.50 W., Cass County, Hydrologic Unit 09020204, on right bank, 50 ft upstream from 12th Ave N bridge in West Fargo, and 0.5 mi upstream from confluence with the Sheyenne River.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 876.78 ft above National Geodetic Vertical Datum of 1929. Datum incorrectly set 13.56 ft lower from Oct. 1, 1996 to Sept. 30, 1999. Prior to Oct. 1, 1996, at datum 6.78 ft lower.

REMARKS.--Records poor. These records are for the flood flows that are diverted around West Fargo.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	8.8
2	0.00	4.1	0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	9.1
3	0.00	35	0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	6.8
4	0.00	34	0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	6.7
5	0.00	27	0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	8.4
6	0.00	22	e0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	8.9
7	0.00	18	e0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	8.1
8	0.00	11	e0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	6.5
9	0.00	8.3	e0.00	e0.00	e0.00	e0.00	e0.00	0.00	129	0.49	0.00	8.4
10	0.00	2.7	e0.00	e0.00	e0.00	e0.00	e0.00	0.09	176	55	0.00	12
11	0.00	0.21	e0.00	e0.00	e0.00	e0.00	e0.00	2.6	95	119	0.00	e6.5
12	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	3.4	36	96	0.00	e3.0
13	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	1.0	4.1	60	0.00	e1.0
14	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	0.00	0.00	29	0.00	0.00
15	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	0.02	0.00	7.8	0.00	0.00
16	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	0.12	0.00	0.08	0.27	0.00
17	16	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	25	0.00	0.00	2.0	0.00
18	13	0.00	0.00	e0.00	e0.00	e0.00	e0.00	16	0.00	0.00	0.44	0.00
19	0.42	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	48	0.00	0.00	7.1	0.00
20	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	116	0.00	0.00	25	0.00
21	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	121	0.00	0.00	25	0.00
22	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	117	0.00	0.00	16	0.00
23	0.00	0.00	e0.00	e0.00	e0.00	e0.00	e0.00	87	1.1	0.00	6.4	0.00
24	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	24	15	0.00	0.65	0.00
25	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	13	11	0.00	0.00	0.00
26	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.00	6.8	2.8	0.00	0.00	0.00
27	0.00	0.00	0.00	e0.00	e0.00	e0.00	0.00	1.3	0.07	0.00	0.00	0.00
28	0.00	0.00	0.00	e0.00	e0.00	e0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	e0.00	---	e0.00	0.00	0.00	0.01	0.00	0.74	0.00
30	0.00	0.00	0.00	e0.00	---	e0.00	0.00	0.00	0.00	0.00	6.2	0.00
31	0.00	---	0.00	e0.00	---	e0.00	---	0.00	---	0.00	11	---
TOTAL	29.42	162.31	0.00	0.00	0.00	0.00	0.00	582.33	470.08	367.37	100.80	94.20
MEAN	0.949	5.410	0.000	0.000	0.000	0.000	0.000	18.78	15.67	11.85	3.252	3.140
MAX	16	35	0.00	0.00	0.00	0.00	0.00	121	176	119	25	12
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	58	322	0.00	0.00	0.00	0.00	0.00	1160	932	729	200	187

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

MEAN	17.45	30.51	1.161	0.000	14.86	413.0	1522	811.6	259.1	334.7	267.7	52.66
MAX	127	138	11.6	0.000	90.2	1111	3288	2937	834	1000	2144	292
(WY)	1995	2001	1999	1993	1996	1995	1997	1997	2000	1993	1993	1995
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.97	0.000	0.000
(WY)	1993	1993	1993	1993	1993	2002	2000	1993	1993	1996	1994	1996

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1993 - 2002	
ANNUAL TOTAL	98185.58		1806.51			
ANNUAL MEAN	269.0		4.949		310.9	
HIGHEST ANNUAL MEAN					549	1995
LOWEST ANNUAL MEAN					4.95	2002
HIGHEST DAILY MEAN	3510	Apr 11	176	Jun 10	4800	Apr 19 1997
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1 1992
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Oct 1 1992
MAXIMUM PEAK FLOW			284	Jun 9	4810	Apr 19 1997
MAXIMUM PEAK STAGE			10.36	Jun 9	a22.90	Apr 9 1997
ANNUAL RUNOFF (AC-FT)	194800		3580		225300	
10 PERCENT EXCEEDS	711		8.6		950	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Backwater from ice
e Estimated

05059500 SHEYENNE RIVER AT WEST FARGO, ND

LOCATION.--Lat 46°53'28", long 96°54'24", in $SE^1/_4SE^1/_4$ sec.31, T.140 N., R.49 W., Cass County, Hydrologic Unit 09020204, on right bank at downstream side of county highway bridge, 1 mi north of West Fargo, 3 mi upstream from Maple River, and at mile 24.5.

DRAINAGE AREA.--8,870 mi^2, approximately, of which about 5,780 mi^2 is probably noncontributing, including 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

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

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

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated to a large degree by Lake Ashtabula (station 05057500), 246 mi upstream. Since March 1993, flood flows that are diverted from the Sheyenne River just downstream from gaging station Sheyenne River above Sheyenne River Diversion near Horace (station 05059300) bypass this station. These flows are measured at streamflow station Sheyenne River Diversion at West Fargo (station 05059480). Figures of discharge given here include flow of the bypass. During some years, flow is diverted from just above the station into the Red River of the North in order to maintain adequate supply for municipal uses. Figures of daily discharge do not include this diversion.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	e160	e207	e230	e93	e152	e146	e170	e258	e450	136	85
2	67	e165	e233	e222	e93	e150	e160	e178	e247	e420	127	96
3	63	e173	e263	e210	e92	e147	e171	e196	e238	e341	128	80
4	60	e181	e287	e197	e92	e144	e179	e208	e232	e304	124	76
5	58	e193	e295	e192	e92	e142	e179	e208	e227	e295	119	76
6	59	e202	e298	e191	e91	e140	e174	e225	e224	e296	114	77
7	63	e207	e301	e189	e91	e138	e155	e248	e220	e312	110	75
8	65	e213	e301	e187	e92	e137	e144	e277	e217	e327	107	72
9	66	e215	e301	e182	e93	e135	e134	e320	543	e367	108	73
10	93	e217	e301	e177	e93	e133	e134	e375	518	492	107	84
11	e127	e221	e301	e158	e94	e131	e144	e423	343	526	99	80
12	e164	e227	e302	e130	e95	e129	e158	332	251	458	97	73
13	e179	e235	e304	e125	e99	e128	e168	e318	203	398	91	68
14	e168	e247	e304	e122	e104	e129	e185	e333	200	e384	92	65
15	e154	e258	e304	e119	e107	e132	177	e372	191	e409	91	64
16	e147	e258	e305	e114	e110	e137	168	e405	176	e426	89	63
17	e133	e255	e304	e112	e114	e146	161	e426	163	e432	97	62
18	e115	e254	e304	e111	e118	e154	e162	e439	e162	e425	88	68
19	e90	e249	e302	e108	e124	e162	e159	e473	e161	e411	91	68
20	e115	e235	e301	e106	e130	e172	e156	575	e172	e358	107	64
21	e136	e182	e300	e104	e135	e179	e159	587	e180	e240	106	66
22	e147	e160	e300	e103	e139	e183	e168	583	e193	173	97	66
23	e130	e185	e300	e102	e143	e181	e169	567	e203	e152	85	69
24	e111	e243	e300	e100	e148	e165	e172	478	217	139	78	66
25	e93	e254	e299	e99	e151	e154	e171	442	e333	140	77	65
26	e94	e249	e298	e98	e154	e143	e169	399	e434	138	75	64
27	e110	e229	e292	e97	e155	e138	e165	315	e454	136	74	63
28	e131	e160	e271	e96	e155	e134	e164	e309	e462	133	89	63
29	e152	e163	e250	e96	---	e131	e163	e294	e473	132	102	63
30	e155	e175	e242	e95	---	e130	e164	e279	e466	130	79	75
31	e158	---	e236	e94	---	e134	---	e269	---	131	82	---
TOTAL	3473	6365	8906	4266	3197	4510	4878	11023	8361	9475	3066	2129
MEAN	112.0	212.2	287.3	137.6	114.2	145.5	162.6	355.6	278.7	305.6	98.90	70.97
MAX	179	258	305	230	155	183	185	587	543	526	136	96
MIN	58	160	207	94	91	128	134	170	161	130	74	62
AC-FT	6890	12620	17670	8460	6340	8950	9680	21860	16580	18790	6080	4220

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2002, BY WATER YEAR (WY)

MEAN	83.26	101.6	85.60	69.98	77.25	279.4	810.2	492.5	286.5	234.8	135.5	91.79
MAX	713	687	468	276	320	1184	3312	3235	1785	1373	2218	609
(WY)	1995	2001	2001	2001	2001	1999	1997	1997	1950	2000	1993	1999
MIN	9.88	12.4	7.48	6.37	5.47	6.76	65.2	54.0	25.2	14.7	7.46	7.43
(WY)	1937	1937	1937	1940	1937	1940	1991	1959	1934	1934	1936	1976

05059500 SHEYENNE RIVER AT WEST FARGO, ND--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1903 - 2002	
ANNUAL TOTAL	219128		69649			
ANNUAL MEAN	600.4		190.8		228.7	
HIGHEST ANNUAL MEAN					804	1997
LOWEST ANNUAL MEAN					37.1	1934
HIGHEST DAILY MEAN	3510	Apr 11	587	May 21	4800	Apr 19 1997
LOWEST DAILY MEAN	58	Oct 5	58	Oct 5	a1.0	Sep 23 1976
ANNUAL SEVEN-DAY MINIMUM	62	Oct 3	62	Oct 3	2.0	Sep 17 1976
MAXIMUM PEAK FLOW			b859	Jun 9	c4810	Apr 19 1997
MAXIMUM PEAK STAGE			d9.89	Jun 9	f22.90	Apr 9 1997
ANNUAL RUNOFF (AC-FT)	434600		138100		165700	
10 PERCENT EXCEEDS	1410		342		510	
50 PERCENT EXCEEDS	323		160		82	
90 PERCENT EXCEEDS	115		77		22	

a Caused by diversion to Red River of the North
b Combined flows from diversion channel and Sheyenne River
c All flow through diversion channel; gage height, 22.68 ft
d Maximum gage height in Sheyenne River
e Estimated
f Maximum gage height in diversion channel; backwater from ice

05059500 SHEYENNE RIVER AT WEST FARGO, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
31...	1335	--	--	--	--	1110	9.0	8.0	--	--	--	--	--
JAN													
08...	0900	--	--	--	--	762	3.0	.5	--	--	--	--	--
APR													
17...	1500	161	8.2	--e	926	899	--	6.0	340	78.0	36.0	7.70	2
JUN													
18...	1140	--	--	--	--	1540	20.0	18.5	--	--	--	--	--
JUL													
18...	1035	--	--	--	--	1410	20.0	26.0	--	--	--	--	--
AUG													
16...	1510	86	--	--	--	--	16.0	16.5	--	--	--	--	--
SEP													
16...	1140	60	8.3	8.3	1070	1060	26.0	21.5	390	85.0	44.0	9.80	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	69.0	30	272	22.0	.20	210	228	612	586	3.0	40	<1	60
JUN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	90.0	33	295	33.0	.30	260	122	753	699	9.0	40	1	70

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
31...	--	--	--	--	--
JAN					
08...	--	--	--	--	--
APR					
17...	20	<.10	2	<1	380
JUN					
18...	--	--	--	--	--
JUL					
18...	--	--	--	--	--
AUG					
16...	--	--	--	--	--
SEP					
16...	60	<.10	4	<1	490

< Less than
e Required equipment not functional/available

05059600 MAPLE RIVER NEAR HOPE, ND

LOCATION.--Lat 47°19'30", long 97°47'25", in NW$^1/_4$NW$^1/_4$ sec.4, T.144 N., R.56 W., Steele County, Hydrologic Unit 09020205, 100 ft downstream from box culvert on State Highway 38, 500 ft east of the intersection of State Highways 32 and 38, and 3 mi west of Hope.

DRAINAGE AREA.--20.2 mi^2, of which about 2.8 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year (seasonal records only since 1983).

GAGE.--Water-stage recorder. Datum of gage is 1,296.62 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44 ft^3/s, July 13, gage height, 4.49 ft; maximum gage height, 4.65 ft, Mar. 31, backwater from ice; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e0.00	e1.6	1.9	0.16	0.00	0.00	0.00
2	---	---	---	---	---	e0.00	e1.5	1.8	0.08	0.00	0.00	0.00
3	---	---	---	---	---	e0.00	e1.1	1.8	0.05	0.00	0.00	0.00
4	---	---	---	---	---	0.00	e0.90	1.7	0.12	0.00	0.00	0.00
5	---	---	---	---	---	e0.00	e0.80	1.6	0.40	0.00	0.00	0.00
6	---	---	---	---	---	e0.00	e0.60	1.7	0.03	0.00	0.00	0.00
7	---	---	---	---	---	e0.00	e1.1	1.8	0.04	0.00	0.00	0.00
8	---	---	---	---	---	e0.00	1.5	4.8	0.03	0.00	0.00	0.00
9	---	---	---	---	---	e0.00	e1.8	7.7	0.10	0.00	0.00	0.00
10	---	---	---	---	---	e0.00	2.5	6.6	0.18	0.55	0.00	0.00
11	---	---	---	---	---	e0.00	3.9	7.4	0.21	2.2	0.00	0.00
12	---	---	---	---	---	e0.00	3.7	7.5	0.19	5.5	0.00	0.00
13	---	---	---	---	---	e0.00	3.2	6.6	0.21	32	0.00	0.00
14	---	---	---	---	---	e0.00	e3.0	6.0	0.21	8.2	0.00	0.00
15	---	---	---	---	---	e0.00	2.9	5.3	0.09	3.1	0.00	0.00
16	---	---	---	---	---	e0.00	2.7	4.3	0.0	1.7	0.00	0.00
17	---	---	---	---	---	e0.00	2.2	3.6	0.00	0.95	0.00	0.00
18	---	---	---	---	---	e0.00	5.2	3.1	0.04	1.0	0.00	0.00
19	---	---	---	---	---	e0.00	5.8	2.5	0.42	0.64	0.00	0.00
20	---	---	---	---	---	e0.00	4.9	2.0	0.49	0.26	0.00	0.00
21	---	---	---	---	---	e0.00	5.2	1.5	0.28	0.19	0.00	0.00
22	---	---	---	---	---	e0.00	5.2	1.4	0.21	0.05	0.00	0.00
23	---	---	---	---	---	e0.00	4.3	1.4	0.58	0.00	e0.00	0.00
24	---	---	---	---	---	e0.00	3.8	0.80	0.33	0.00	e0.00	0.00
25	---	---	---	---	---	e0.00	2.7	0.83	0.29	0.00	e0.00	0.00
26	---	---	---	---	---	e0.20	2.2	0.75	0.28	0.00	e0.00	0.00
27	---	---	---	---	---	e0.40	2.2	0.59	0.16	0.00	e0.00	0.00
28	---	---	---	---	---	e0.70	2.1	0.45	0.02	0.00	e0.00	0.00
29	---	---	---	---	---	e0.90	2.5	0.35	0.00	0.00	0.00	0.00
30	---	---	---	---	---	e1.2	2.3	0.36	0.00	0.00	0.00	0.00
31	---	---	---	---	---	e1.6	---	0.20	---	0.00	0.00	---
TOTAL	---	---	---	---	---	5.00	83.40	88.33	5.20	56.34	0.00	0.00
MEAN	---	---	---	---	---	0.161	2.780	2.849	0.173	1.817	0.000	0.000
MAX	---	---	---	---	---	1.6	5.8	7.7	0.58	32	0.00	0.00
MIN	---	---	---	---	---	0.00	0.60	0.20	0.00	0.00	0.00	0.00
AC-FT	---	---	---	---	---	9.9	165	175	10	112	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

MEAN	0.060	0.003	0.000	0.000	0.000	10.77	15.58	3.508	2.892	4.682	0.855	0.473
MAX	1.07	0.054	0.000	0.000	0.006	41.8	63.8	44.0	34.5	65.3	13.7	15.3
(WY)	1966	1966	1965	1965	1981	1987	1997	1999	1968	1993	2001	1994
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000
(WY)	1965	1965	1965	1965	1965	1969	1991	1980	1973	1973	1967	1967

SUMMARY STATISTICS	WATER YEARS 1965 - 2002		
ANNUAL MEAN	a2.822		
HIGHEST ANNUAL MEAN	a5.55		1969
LOWEST ANNUAL MEAN	a0.002		1981
HIGHEST DAILY MEAN	560	Mar 31	1997
LOWEST DAILY MEAN	0.00	Oct 1	1964
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 1	1964
MAXIMUM PEAK FLOW	b900	Apr 18	1979
MAXIMUM PEAK STAGE	c8.83	Mar 31	1997
ANNUAL RUNOFF (AC-FT)	a2040		
10 PERCENT EXCEEDS	2.5		
50 PERCENT EXCEEDS	0.00		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1965-82)
b Gage height, 5.86 ft; backwater from ice
c Backwater from ice
e Estimated

05059600 MAPLE RIVER NEAR HOPE, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR													
09...	1130	1.7	7.8	7.4	865	777	.5	6.5	300	61.0	36.0	11.0	1
19...	1055	5.7	--	--	--	2120	.0	3.0	--	--	--	--	--
MAY													
07...	1450	1.8	--	--	--	2500	4.0	5.0	--	--	--	--	--
JUN													
05...	1810	.10	--	--	--	1660	--	25.5	--	--	--	--	--
AUG													
06...	0955	.0	--	--	--	--	--	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR													
09...	56.0	28	163	21.0	.10	250	2.74	608	534	3.0	50	<1	40
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR					
09...	520	<.10	<1	1	240
19...	--	--	--	--	--
MAY					
07...	--	--	--	--	--
JUN					
05...	--	--	--	--	--
AUG					
06...	--	--	--	--	--

< Less than

05059700 MAPLE RIVER NEAR ENDERLIN, ND

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

DRAINAGE AREA.--843 mi^2, of which about 47 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.72 ft above National Geodetic Vertical Datum of 1929. Sept. 21, 1956, to June 9, 1969, recording gage on right bank at same datum. Prior to Sept. 20, 1956, nonrecording gage at site 25 ft upstream at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	7.8	e3.0	e0.92	e0.96	e0.96	e3.4	52	4.9	3.2	6.8	0.77
2	5.4	8.7	e2.9	e0.92	e0.96	e0.95	e3.6	48	3.7	2.9	5.0	1.0
3	4.1	13	e2.9	e0.92	e0.96	e0.94	e3.9	44	3.2	2.1	4.5	2.6
4	3.3	13	e2.9	e0.92	e0.96	e0.92	e4.4	43	2.7	1.9	6.5	9.9
5	3.0	18	e2.8	e0.92	e0.96	e0.94	e5.2	43	2.3	2.0	7.3	22
6	2.8	21	e2.8	e0.96	e0.98	e0.95	5.9	42	2.1	1.8	6.7	21
7	2.5	23	e2.8	e0.97	e1.0	e0.96	8.4	39	2.0	5.1	5.7	16
8	2.4	21	e3.0	e0.97	e1.1	e1.1	6.7	34	1.8	18	4.7	11
9	2.3	19	e2.9	e1.2	e1.2	e1.5	5.8	35	69	4.8	4.1	8.9
10	3.9	17	e2.8	e1.8	e1.2	e2.4	7.9	40	78	3.7	3.4	7.7
11	4.1	17	e2.7	e1.6	e1.3	e3.5	11	42	57	3.7	2.6	7.1
12	3.6	22	e2.6	e1.7	e1.4	e5.4	20	46	22	2.6	2.2	6.3
13	2.7	23	e2.4	e2.2	e1.3	e7.9	28	49	18	14	1.7	5.9
14	2.2	22	e2.1	e2.4	e1.3	e8.0	33	50	11	17	1.5	5.1
15	2.5	21	e2.0	e2.2	e1.2	e7.9	33	50	7.9	e22	1.4	4.4
16	2.7	20	e1.9	e2.0	e1.2	e7.9	34	47	e6.1	44	1.4	4.0
17	2.9	18	e1.9	e1.8	e1.4	e7.0	39	43	e3.2	53	1.5	4.5
18	2.7	18	e1.8	e1.6	e1.5	e6.5	41	40	e2.0	78	1.0	5.9
19	2.8	16	e1.8	e1.5	e1.6	e5.8	39	36	e1.2	110	0.94	6.8
20	2.4	15	e1.7	e1.4	e1.7	e5.3	37	30	0.84	126	0.90	5.5
21	2.3	12	e1.6	e1.4	e1.7	e4.8	40	25	0.68	112	0.87	5.0
22	2.2	7.7	e1.5	e1.3	e1.7	e4.5	34	21	0.60	89	0.90	5.4
23	2.2	7.0	e1.4	e1.3	e1.6	e4.3	30	20	0.76	71	0.88	5.3
24	2.0	6.9	e1.3	e1.2	e1.5	e4.1	29	17	0.71	56	0.86	5.5
25	1.8	5.8	e1.2	e1.2	e1.4	e3.9	50	15	42	44	0.86	5.8
26	1.8	3.5	e1.1	e1.2	e1.3	e3.7	51	13	67	34	0.81	6.0
27	2.1	e3.5	e1.1	e1.2	e1.1	e3.9	54	11	49	27	0.83	6.4
28	2.4	e3.3	e1.1	e1.2	e1.0	e4.4	53	11	31	20	0.85	7.7
29	2.3	e3.1	e1.0	e1.0	---	e4.3	54	9.1	18	16	0.84	7.1
30	4.7	e3.0	e0.98	e1.0	---	e3.5	56	8.9	e8.0	12	0.85	6.4
31	7.7	---	e0.95	e0.98	---	e3.4	---	6.0	---	9.3	0.96	---
TOTAL	95.3	409.3	62.93	41.88	35.48	121.62	821.2	1010.0	516.69	1006.1	79.35	216.97
MEAN	3.074	13.64	2.030	1.351	1.267	3.923	27.37	32.58	17.22	32.45	2.560	7.232
MAX	7.7	23	3.0	2.4	1.7	8.0	56	52	78	126	7.3	22
MIN	1.8	3.0	0.95	0.92	0.96	0.92	3.4	6.0	0.60	1.8	0.81	0.77
AC-FT	189	812	125	83	70	241	1630	2000	1020	2000	157	430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2002, BY WATER YEAR (WY)

MEAN	10.48	7.741	4.717	2.676	5.909	145.6	285.5	70.56	45.23	64.32	22.05	13.01
MAX	211	63.6	50.4	7.78	123	622	2162	669	424	875	506	122
(WY)	1995	1995	1999	1999	1998	1966	1997	1999	1975	1993	1993	1999
MIN	1.52	1.49	1.32	1.21	1.27	2.10	2.06	2.19	1.41	1.44	1.33	1.28
(WY)	1993	1961	1961	1969	2002	1969	1991	1992	1961	1961	1961	1984

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1956 - 2002	
ANNUAL TOTAL	32905.83		4416.82			
ANNUAL MEAN	90.15		12.10		56.74	
HIGHEST ANNUAL MEAN					242	1997
LOWEST ANNUAL MEAN					2.14	1990
HIGHEST DAILY MEAN	1860	Apr 10	126	Jul 20	5450	Jun 30 1975
LOWEST DAILY MEAN	0.95	Dec 31	0.60	Jun 22	0.10	Dec 7 1963
ANNUAL SEVEN-DAY MINIMUM	1.1	Dec 25	0.84	Aug 24	0.67	Dec 7 1963
MAXIMUM PEAK FLOW			186	Jun 9	7610	Jun 30 1975
MAXIMUM PEAK STAGE			4.74	Jun 9	15.41	Jun 30 1975
ANNUAL RUNOFF (AC-FT)	65270		8760		41110	
10 PERCENT EXCEEDS	232		40		87	
50 PERCENT EXCEEDS	9.1		3.7		3.9	
90 PERCENT EXCEEDS	2.1		0.96		1.8	

e Estimated

05059700 MAPLE RIVER NEAR ENDERLIN, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1330	4.2	--e	8.0	1890	1800	11.5	13.0	730	160	80.0	15.0	2
29...	1115	2.2	--	--	--	1740	--	--	--	--	--	--	--
JAN													
10...	1400	1.6	--	--	--	847	1.5	2.0	--	--	--	--	--
MAR													
13...	1400	7.2	--	--	--	1780	--	2.0	--	--	--	--	--
APR													
10...	1320	8.7	7.7	7.5	991	948	6.5	2.0	350	80.0	37.0	10.0	2
JUN													
05...	1400	2.4	--	--	--	947	--	--	--	--	--	--	--
SEP													
17...	1500	4.7	7.9	7.8	1770	1800	30.5	19.5	740	180	70.0	14.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	150	30	358	94.0	.30	560	15.1	1330	1280	6.0	100	2	120
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	71.0	30	200	39.0	.10	280	15.9	678	638	3.0	60	<1	60
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	140	29	364	110	.20	540	15.6	1230	1270	4.0	120	<1	110

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
03...	490	<.10	2	4	680
29...	--	--	--	--	--
JAN					
10...	--	--	--	--	--
MAR					
13...	--	--	--	--	--
APR					
10...	350	<.10	<1	<1	350
JUN					
05...	--	--	--	--	--
SEP					
17...	1200	.10	3	1	760

< Less than
e Required equipment not functional/available

05060000 MAPLE RIVER NEAR MAPLETON, ND

LOCATION.--Lat 46°52'00", long 97°06'20", in $SW^1/_4NE^1/_4$ sec.10, T.139 N., R.51 W., Cass County, Hydrologic Unit 09020204, on right bank upstream of county bridge and 3 mi southwest of Mapleton.

DRAINAGE AREA.-- 1,450 mi^2, approximately, of which 70 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to September 1975, March 1, 2001, to current year (seasonal).

GAGE.--Water-stage recorder and rubble masonary dam. Datum of gage is 885.20 ft above National Geodetic Vertical Datum of 1929, revised. Prior to Oct. 1, 2001, at datum 8.33 ft higher.

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 868 ft^3/s, June 10, gage height, 13.89 ft; minimum daily discharge, 8.0 ft^3/s, Mar. 14 and Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e12	e107	86	23	146	101	18
2	---	---	---	---	---	e12	e94	83	19	119	92	23
3	---	---	---	---	---	e11	e84	84	18	98	83	31
4	---	---	---	---	---	e11	e81	77	16	81	75	27
5	---	---	---	---	---	e10	e79	73	14	78	70	28
6	---	---	---	---	---	e9.7	e81	66	14	68	67	30
7	---	---	---	---	---	e8.9	e99	67	11	74	74	24
8	---	---	---	---	---	e8.4	127	72	10	107	71	20
9	---	---	---	---	---	e7.8	154	85	77	198	71	37
10	---	---	---	---	---	e7.4	183	92	721	169	67	40
11	---	---	---	---	---	e6.9	163	88	673	230	62	43
12	---	---	---	---	---	e7.2	133	88	306	265	59	33
13	---	---	---	---	---	e7.5	134	89	198	219	56	25
14	---	---	---	---	---	e8.0	e98	93	e147	186	52	19
15	---	---	---	---	---	e9.3	e81	89	e131	166	48	13
16	---	---	---	---	---	e9.9	e81	84	e102	151	44	11
17	---	---	---	---	---	e14	e92	85	e82	150	45	12
18	---	---	---	---	---	e14	94	82	e64	146	43	14
19	---	---	---	---	---	e14	96	78	e57	167	41	24
20	---	---	---	---	---	e12	94	77	e52	193	43	46
21	---	---	---	---	---	e11	91	73	e50	187	39	33
22	---	---	---	---	---	e11	89	68	50	189	35	30
23	---	---	---	---	---	e11	87	59	91	198	34	22
24	---	---	---	---	---	e11	84	59	147	194	32	16
25	---	---	---	---	---	e12	80	52	142	182	32	16
26	---	---	---	---	---	e14	77	46	143	172	30	12
27	---	---	---	---	---	e20	78	43	127	165	29	11
28	---	---	---	---	---	e50	83	40	152	150	27	8.0
29	---	---	---	---	---	e79	88	37	183	135	30	9.9
30	---	---	---	---	---	e96	89	33	169	120	26	9.4
31	---	---	---	---	---	e102	---	26	---	109	20	---
TOTAL	---	---	---	---	---	618.0	3001	2174	3989	4812	1598	685.3
MEAN	---	---	---	---	---	19.94	100.0	70.13	133.0	155.2	51.55	22.84
MAX	---	---	---	---	---	102	183	93	721	265	101	46
MIN	---	---	---	---	---	6.9	77	26	10	68	20	8.0
AC-FT	---	---	---	---	---	1230	5950	4310	7910	9540	3170	1360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2002, BY WATER YEAR (WY)

MEAN	14.28	12.15	4.438	1.401	9.527	186.7	542.6	150.8	97.94	198.0	32.53	20.61
MAX	51.1	36.2	12.2	4.30	178	1040	1708	428	478	2375	267	65.8
(WY)	1996	1972	1963	1973	1997	1966	1969	1970	1970	1975	1962	1962
MIN	0.000	0.000	0.000	0.000	0.000	0.000	13.9	8.35	1.71	0.000	0.000	0.000
(WY)	1961	1961	1961	1959	1959	1969	1959	1959	1961	1961	1960	1959

SUMMARY STATISTICS	WATER YEARS 1958 - 2002		
ANNUAL MEAN	a97.69		
HIGHEST ANNUAL MEAN	a374		1975
LOWEST ANNUAL MEAN	a5.98		1961
HIGHEST DAILY MEAN	11300	Jul 2	1975
LOWEST DAILY MEAN	0.00	Dec 13	1958
ANNUAL SEVEN-DAY MINIMUM	0.00	Dec 13	1958
MAXIMUM PEAK FLOW	11600	Jul 2	1975
MAXIMUM PEAK STAGE	23.03	Jul 2	1975
ANNUAL RUNOFF (AC-FT)	a70770		
10 PERCENT EXCEEDS	150		
50 PERCENT EXCEEDS	8.0		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1959-75)
e Estimated

05060000 MAPLE RIVER NEAR MAPLETON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2001 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
04...	0900	20	--e	8.2	1740	1630	--	--	600	130	67.0	13.0	3
MAR													
14...	1040	7.9	--	--	--	1370	--	.0	--	--	--	--	--
APR													
12...	0845	138	--	--	--	1070	6.0	2.5	--	--	--	--	--
26...	0845	77	--	--	--	1100	.0	3.0	--	--	--	--	--
JUN													
10...	1640	852	--	--	--	--e	--	21.5	--	--	--	--	--
SEP													
17...	1330	13	--	--	--	1500	25.5	15.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
04...	150	35	349	93.0	.30	510	67.4	1260	1170	9.0	40	2	100
MAR													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
04...	20	<.10	3	3	570
MAR					
14...	--	--	--	--	--
APR					
12...	--	--	--	--	--
26...	--	--	--	--	--
JUN					
10...	--	--	--	--	--
SEP					
17...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05060100 MAPLE RIVER BELOW MAPLETON, ND

LOCATION.--Lat 46°54'19", long 97°03'08", in $NW^1/_4NW^1/_4NW^1/_4$ sec.31, T.140 N., R.50 W., Cass County, Hydrologic Unit 09020205, on left bank just downstream from bridge on county highway 1.0 mi north of Mapleton.

DRAINAGE AREA.-- 1,480 mi^2, approximately, of which 70 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1944 to September 1975, March 1995 to current year. April 1944 to September 1958 published as "at Mapleton". Record not equivalent at extreme high flows to station 05060000 (site 9 mi upstream), which was operated for water years 1959 to 1975, and operated as a seasonal gage beginnning in March 2001.

GAGE.--Water-stage recorder. Datum of gage is 890.00 ft above National Geodetic Vertical Datum of 1929. Feb. 16, 1944, to Sept. 30, 1958, nonrecording gage at site 2 mi upstream at datum 3.33 ft lower.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	29	e13	e14	e10	e14	e110	96	30	175	113	28
2	30	41	e13	e14	e10	e13	e95	90	30	146	102	26
3	29	46	e14	e14	e10	e13	e90	89	29	118	94	28
4	21	43	e18	e14	e10	e12	e85	85	26	101	86	32
5	e20	41	e18	e14	e10	e12	e82	81	23	89	80	30
6	19	39	e18	e14	e10	e11	e82	79	21	80	75	31
7	20	36	e18	e15	e11	e10	e90	74	20	77	76	29
8	20	34	e18	e15	e12	e9.0	e120	81	21	91	74	25
9	18	34	e18	e16	e12	e9.0	e155	78	38	195	72	29
10	23	35	e17	e17	e13	e8.0	e195	96	e680	241	71	40
11	31	37	e17	e18	e13	e8.0	e175	101	e710	235	69	45
12	43	37	e17	e19	e14	e8.0	e160	98	364	305	65	42
13	42	36	e17	e20	e14	e8.0	e140	98	211	255	57	33
14	33	34	e17	e20	e14	e9.0	104	100	154	210	50	26
15	27	34	e17	e20	e14	e11	86	102	149	185	45	20
16	24	35	e17	e19	e15	e12	87	96	106	166	43	15
17	23	38	e17	e19	e15	e16	92	91	83	164	39	11
18	21	40	e17	e19	e16	e17	111	89	70	161	38	14
19	19	37	e17	e19	e16	e16	109	87	65	167	38	19
20	19	37	e17	e18	e16	e14	106	83	58	207	37	31
21	19	38	e17	e18	e16	e13	102	77	58	213	38	41
22	21	43	e16	e18	e18	e13	99	71	59	208	35	34
23	23	39	e16	e17	e18	e13	94	65	97	220	32	31
24	21	35	e15	e17	e18	e13	87	61	154	222	30	26
25	21	32	e15	e17	e17	e14	85	53	158	208	28	21
26	24	29	e15	e17	e16	e16	85	47	173	194	28	17
27	22	18	e14	e14	e15	e20	92	46	154	183	25	14
28	22	e13	e14	e12	e14	e60	87	46	162	173	24	11
29	22	e13	e14	e12	---	e88	91	42	208	151	30	7.8
30	24	e13	e14	e11	---	e95	95	34	203	136	34	7.1
31	28	---	e14	e10	---	e110	---	31	---	123	29	---
TOTAL	758	1016	499	501	387	685.0	3191	2367	4314	5399	1657	763.9
MEAN	24.45	33.87	16.10	16.16	13.82	22.10	106.4	76.35	143.8	174.2	53.45	25.46
MAX	43	46	18	20	18	110	195	102	710	305	113	45
MIN	18	13	13	10	10	8.0	82	31	20	77	24	7.1
AC-FT	1500	2020	990	994	768	1360	6330	4690	8560	10710	3290	1520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2002, BY WATER YEAR (WY)

MEAN	16.09	26.18	12.81	4.603	18.40	224.6	569.2	180.7	138.9	79.97	18.26	33.39
MAX	96.5	256	125	20.7	288	1376	2956	1035	867	373	57.0	401
(WY)	1999	2001	1999	1999	1998	1998	1997	1999	2000	2000	2001	1999
MIN	0.000	1.75	0.63	0.016	0.000	0.000	21.0	6.30	6.52	2.90	0.042	0.000
(WY)	1953	1953	1956	1956	1945	1956	1953	1955	1954	1956	1946	1949

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 2002	
ANNUAL TOTAL	85000		21537.9			
ANNUAL MEAN	232.9		59.01		109.1	
HIGHEST ANNUAL MEAN					343	1999
LOWEST ANNUAL MEAN					11.1	1954
HIGHEST DAILY MEAN	6180	Apr 9	710	Jun 11	6620	Apr 16 1997
LOWEST DAILY MEAN	13	Feb 2	7.1	Sep 30	0.00	Jan 16 1945
ANNUAL SEVEN-DAY MINIMUM	13	Feb 2	8.4	Mar 8	0.00	Jan 16 1945
MAXIMUM PEAK FLOW			746	Jun 11	a7150	Apr 16 1997
MAXIMUM PEAK STAGE			14.02	Jun 11	b24.96	Apr 8 1997
INSTANTANEOUS LOW FLOW			6.8	Sep 30	0.00	Jan 16 1945
ANNUAL RUNOFF (AC-FT)	168600		42720		79010	
10 PERCENT EXCEEDS	509		154		170	
50 PERCENT EXCEEDS	38		30		11	
90 PERCENT EXCEEDS	14		13		0.10	

a Gage height, 23.76 ft
b Observed, backwater from ice, may have been higher during period of no gage-height record, April 6-9, 1997
e Estimated

05060100 MAPLE RIVER BELOW MAPLETON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1995 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1997 to September 30, 2001.

SPECIFIC CONDUCTANCE: April 1997 to September 30, 2001.

INSTRUMENTATION.--Water-quality sensors April 1997 to September 30, 2001.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 30.9°C, July 17, 2001; minimum recorded, less than 0.0°C, April 16, 1997.

SPECIFIC CONDUCTANCE: Maximum recorded, 2,180 microsiemens, Feb. 1-17, 2001; minimum recorded, 276 microsiemens, June 20, 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
04...	1040	21	--e	8.2	2070	1930	11.0	12.5	600	130	67.0	16.0	4
31...	0830	27	--	--	--	1740	7.5	8.0	--	--	--	--	--
JAN													
09...	1525	16	--	--	--	1320	.5	.0	--	--	--	--	--
APR													
15...	1330	82	8.4	--e	905	--e	12.5	5.0	340	74.0	37.0	7.30	1
22...	1510	99	--	--	--	1200	7.5	4.0	--	--	--	--	--
JUN													
18...	1525	67	--	--	--	1100	17.0	15.0	--	--	--	--	--
SEP													
17...	1030	11	8.2	8.1	1390	1390	20.5	18.0	570	110	71.0	12.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
04...	230	45	368	93.0	.30	630	82.8	1460	1390	12.0	30	2	100
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
15...	59.0	27	191	37.0	.20	240	133	602	570	3.0	40	1	60
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	100	27	290	70.0	.30	410	30.6	1030	948	9.0	60	<1	90

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
04...	20	<.10	4	5	550
31...	--	--	--	--	--
JAN					
09...	--	--	--	--	--
APR					
15...	130	<.10	<1	1	350
22...	--	--	--	--	--
JUN					
18...	--	--	--	--	--
SEP					
17...	160	.10	3	<1	560

< Less than
e Required equipment not functional/available

05060400 SHEYENNE RIVER AT HARWOOD, ND

LOCATION.--Lat 46°58'38", long 96°53'36", in $SW^1/_4SE^1/_4SW^1/_4$ sec.33, T.141 N., R.49 W., Cass County, Hydrologic Unit 09020204, at bridge crossing 0.5 mi west of Harwood.

DRAINAGE AREA.--Revised drainage area will be published when available.

GAGE HEIGHT RECORDS

PERIOD OF RECORD.--March 1995 to current year (gage heights and maximum discharge only).

GAGE.--Water stage recorder. Datum of gage is 800 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated to a large degree by Lake Ashtabula (station 05057500), 255 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 11,000 ft^3/s, Apr. 16, 1997, gage height, 92.02 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 1,300 ft^3/s, June 11, gage height, 74.57 ft.

GAGE HEIGHT from dcp, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68.41	69.83	68.85	69.68	68.90	69.24	71.44	69.09	69.20	71.01	---	67.48
2	68.37	69.95	69.42	69.63	68.93	69.20	71.11	69.02	69.11	70.74	---	67.57
3	68.31	70.00	69.67	69.55	68.86	69.17	70.82	69.03	69.06	70.22	68.42	67.50
4	68.29	69.98	69.71	69.37	68.95	69.09	70.57	69.25	68.99	69.77	68.33	67.37
5	68.26	69.92	70.08	69.22	68.90	68.99	70.44	69.38	68.95	69.62	68.16	67.34
6	68.23	69.86	70.47	69.16	68.88	68.96	70.31	69.41	68.92	69.55	68.10	67.31
7	68.26	69.84	70.60	69.13	68.94	68.95	70.38	69.49	68.90	69.57	---	67.31
8	68.31	69.80	70.56	69.11	68.94	69.01	70.60	69.83	68.87	70.00	---	67.24
9	68.35	69.83	70.60	69.15	68.88	69.12	70.90	70.18	70.40	70.54	---	67.19
10	68.69	69.73	70.41	69.18	68.89	69.12	71.30	70.53	73.94	72.11	68.12	67.34
11	68.82	69.72	70.38	69.16	68.96	69.11	71.42	70.73	74.25	73.11	---	67.50
12	69.16	69.76	70.31	69.13	69.03	69.07	71.20	70.59	72.65	72.55	---	67.39
13	69.41	69.80	70.40	69.09	69.05	69.26	70.84	70.37	70.94	71.96	67.89	67.24
14	69.37	69.83	70.41	69.06	69.09	69.35	70.47	70.30	70.18	71.38	67.96	67.13
15	69.20	69.86	70.39	69.03	69.11	69.34	70.06	70.68	69.93	---	68.00	---
16	69.06	69.85	70.35	69.01	69.14	69.42	69.90	70.80	69.52	71.06	67.91	---
17	69.06	69.84	70.38	69.00	69.19	69.57	69.84	70.93	69.06	70.90	68.01	---
18	69.01	69.84	70.38	69.00	69.29	69.76	69.74	70.97	68.83	70.83	67.86	---
19	68.77	69.84	70.47	68.99	69.42	69.79	69.67	71.00	68.69	70.70	67.70	67.26
20	68.65	69.78	70.44	68.98	69.59	69.83	69.63	71.38	68.56	70.63	67.66	67.09
21	68.87	69.68	70.41	68.95	69.72	69.90	69.57	71.50	68.64	70.24	67.65	67.17
22	68.97	69.55	70.28	68.91	69.83	69.99	69.44	71.50	68.68	---	67.62	67.21
23	68.91	69.50	70.42	68.87	69.85	70.02	69.31	71.45	69.30	---	67.59	67.22
24	68.80	69.77	70.40	68.84	69.82	69.97	69.26	71.18	69.75	69.65	67.54	67.17
25	68.72	69.91	70.36	68.85	69.74	69.93	69.15	70.94	70.28	69.66	67.51	67.12
26	68.60	69.82	70.32	68.88	69.67	69.89	69.07	70.75	70.85	69.69	67.44	67.09
27	68.65	69.51	70.22	68.87	69.54	69.88	69.02	70.24	70.92	69.74	67.41	67.05
28	68.99	68.77	69.99	68.85	69.35	70.24	69.04	69.76	70.82	69.29	67.37	67.00
29	69.19	68.55	69.73	68.86	---	70.87	69.07	69.48	71.09	---	68.05	67.00
30	69.41	68.48	69.67	68.91	---	71.57	69.12	69.48	71.18	---	67.44	67.02
31	69.57	---	69.73	68.89	---	71.62	---	69.30	---	68.86	67.39	---
TOTAL	2132.67	2090.40	2175.81	2141.31	1938.46	2159.23	2102.69	2178.54	2100.46	---	---	---
MEAN	68.80	69.68	70.19	69.07	69.23	69.65	70.09	70.28	70.02	---	---	---
MAX	69.57	70.00	70.60	69.68	69.85	71.62	71.44	71.50	74.25	---	---	---
MIN	68.23	68.48	68.85	68.84	68.86	68.95	69.02	69.02	68.56	---	---	---

Miscellaneous discharge measurements for Sheyenne River at Harwood

Date	Discharge
April 19, 2002	311

05060400 SHEYENNE RIVER AT HARWOOD, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD -- Water year 1997 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR 19...	0945	311	8.3	--	961	933	.0	3.5	370	82.0	39.0	8.10	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR 19...	66.0	28	264	37.0	.20	230	543	647	621	5.0	50	<1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR 19...	20	<.10	1	8	400

< Less than

05060500 RUSH RIVER AT AMENIA, ND

LOCATION.--Lat 47°01'00", long 97°12'50", in $SE^1/_4NW^1/_4$ sec.24, T.141 N., R.52 W., Cass County, Hydrologic Unit 09020204, on left bank on downstream side of bridge on State Highway 18 and 0.6 mi north of Amenia.

DRAINAGE AREA.--116 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 943 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1913 for history of changes prior to June 10, 1961.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.8	e2.2	e1.3	e0.91	e1.4	e11	2.0	0.15	0.12	0.94	2.4
2	0.77	1.9	e2.3	e1.3	e0.91	e1.2	e8.4	1.8	0.14	0.0	0.63	2.5
3	0.63	1.8	e2.4	e1.2	e0.97	e1.1	e8.4	1.7	0.26	0.00	0.54	2.5
4	1.4	2.0	e2.5	e1.2	e0.87	e1.1	e8.7	1.4	0.27	0.00	0.50	2.0
5	1.4	5.2	e2.5	e1.2	e0.83	e1.2	e6.7	1.2	0.23	0.04	0.65	1.6
6	0.33	3.8	e2.6	e1.2	e0.88	e1.2	e6.2	1.2	0.17	0.03	0.60	1.3
7	0.16	3.0	e2.5	e1.2	e1.0	e1.2	e5.6	1.3	0.17	0.0	0.52	0.93
8	0.37	2.7	e2.4	e1.4	e1.1	e1.2	e5.7	1.7	0.29	0.19	0.48	0.79
9	0.74	2.5	e2.3	e1.6	e1.2	e1.3	5.5	2.0	0.71	0.13	0.48	0.66
10	1.0	2.6	e2.3	e1.7	e1.1	e1.4	6.5	5.1	1.2	243	0.43	0.57
11	0.54	2.9	e2.2	e2.0	e1.2	e1.4	6.0	5.3	0.76	152	0.43	0.54
12	0.86	2.8	e2.2	e2.5	e1.4	e1.8	5.4	4.4	0.61	30	0.68	0.29
13	0.77	3.2	e2.1	e2.4	e1.4	e2.5	6.0	3.6	0.69	14	0.80	0.13
14	1.0	2.9	e2.1	e2.4	e1.5	e3.2	6.3	3.6	0.66	9.3	0.86	0.06
15	1.6	2.4	e2.1	e2.4	e1.5	e3.0	7.1	3.0	0.50	5.6	0.48	0.04
16	1.4	2.7	e2.1	e2.0	e1.7	e3.5	6.3	2.5	0.31	3.7	0.26	0.28
17	1.4	3.2	e2.1	e1.9	e2.0	e4.4	5.1	2.0	0.19	2.3	0.34	0.44
18	1.2	2.6	e2.1	e1.8	e2.2	e4.6	4.6	1.7	0.10	1.6	0.33	0.30
19	1.1	2.3	e2.1	e1.5	e2.2	e4.8	4.0	1.5	0.08	1.2	0.40	0.41
20	1.0	2.3	e2.1	e1.5	e2.2	e4.5	4.1	1.2	0.05	0.84	0.64	0.30
21	1.2	2.3	e2.0	e1.5	e2.4	e4.1	3.6	0.96	0.03	0.83	0.62	0.23
22	1.2	2.4	e2.0	e1.5	e2.7	e3.8	2.8	0.78	0.02	0.80	0.66	0.20
23	1.1	2.3	e1.9	e1.4	e2.8	e3.7	2.1	0.64	21	0.71	0.64	0.28
24	2.4	2.5	e1.7	e1.4	e2.9	e3.6	1.6	0.64	7.9	0.66	0.68	0.32
25	1.4	e2.5	e1.6	e1.4	e2.8	e3.3	1.3	0.63	3.4	120	0.72	0.33
26	1.2	e2.5	e1.6	e1.5	e2.7	e3.2	1.2	0.51	2.1	118	0.43	0.33
27	1.6	e2.5	e1.5	e1.3	e2.0	e4.3	1.4	0.41	1.3	15	0.27	0.31
28	1.9	e2.4	e1.5	e1.1	e1.7	e7.7	1.5	0.36	0.90	5.1	0.26	0.36
29	1.7	e2.4	e1.4	e1.0	---	e9.9	1.6	0.31	0.60	2.8	0.43	0.36
30	2.0	e2.4	e1.4	e1.0	---	e17	2.0	0.24	0.34	1.6	0.57	0.35
31	2.1	---	e1.4	e0.98	---	e14	---	0.19	---	1.2	1.8	---
TOTAL	36.47	78.8	63.2	47.78	47.07	120.6	146.7	53.87	45.13	730.75	18.07	21.11
MEAN	1.176	2.627	2.039	1.541	1.681	3.890	4.890	1.738	1.504	23.57	0.583	0.704
MAX	2.4	5.2	2.6	2.5	2.9	17	11	5.3	21	243	1.8	2.5
MIN	0.16	1.8	1.4	0.98	0.83	1.1	1.2	0.19	0.02	0.00	0.26	0.04
AC-FT	72	156	125	95	93	239	291	107	90	1450	36	42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	2.203	1.602	0.626	0.216	1.804	28.72	71.85	14.26	13.40	11.72	1.400	2.184
MAX	50.7	22.1	12.5	2.84	84.2	200	531	81.3	123	168	22.3	47.3
(WY)	1995	2001	1999	1997	1998	1999	1997	1950	1998	1993	1993	1996
MIN	0.000	0.000	0.000	0.000	0.000	0.000	1.12	0.12	0.009	0.000	0.000	0.000
(WY)	1949	1953	1950	1947	1947	1948	1981	1955	1988	1955	1946	1946

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1946 - 2002	
ANNUAL TOTAL	8188.87		1409.55			
ANNUAL MEAN	22.44		3.862		12.48	
HIGHEST ANNUAL MEAN					62.9	1997
LOWEST ANNUAL MEAN					0.68	1977
HIGHEST DAILY MEAN	1300	Apr 8	243	Jul 10	3160	Apr 19 1979
LOWEST DAILY MEAN	0.16	Oct 7	0.00	Jul 2	0.00	Aug 1 1946
ANNUAL SEVEN-DAY MINIMUM	0.57	Oct 6	0.03	Jul 1	0.00	Aug 1 1946
MAXIMUM PEAK FLOW			457	Jul 10	3490	Apr 19 1979
MAXIMUM PEAK STAGE			7.07	Jul 10	a12.15	Mar 23 1966
ANNUAL RUNOFF (AC-FT)	16240		2800		9040	
10 PERCENT EXCEEDS	22		4.9		16	
50 PERCENT EXCEEDS	2.3		1.4		0.16	
90 PERCENT EXCEEDS	0.85		0.29		0.00	

a Backwater from ice
e Estimated

05060500 RUSH RIVER AT AMENIA, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
30...	1345	1.7	--	--	--	978	7.5	7.0	--	--	--	--	--
JAN													
11...	1055	1.8	--	--	--	984	.5	.5	--	--	--	--	--
APR													
12...	1030	6.2	8.0	7.6	673	639	6.5	3.0	290	70.0	27.0	7.10	.7
22...	1330	3.6	--	--	--	878	7.0	5.5	--	--	--	--	--
JUN													
07...	1315	.22	--	--	--	1340	20.0	17.0	--	--	--	--	--
JUL													
11...	1140	99	--	--	--	362	21.0	19.0	--	--	--	--	--
AUG													
13...	0935	.89	--	--	--	--	14.0	16.0	--	--	--	--	--
SEP													
16...	1500	.09	8.1	7.9	1240	1240	28.0	20.5	590	130	65.0	12.0	1

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	27.0	96	190	10.0	.10	170	7.60	454	426	5.0	60	<1	60
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	59.0	17	282	21.0	.20	430	.23	960	887	8.0	70	<1	110

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
30...	--	--	--	--	--
JAN					
11...	--	--	--	--	--
APR					
12...	150	<.10	<1	2	340
22...	--	--	--	--	--
JUN					
07...	--	--	--	--	--
JUL					
11...	--	--	--	--	--
AUG					
13...	--	--	--	--	--
SEP					
16...	400	<.10	3	2	640

< Less than

05064500 RED RIVER OF THE NORTH AT HALSTAD, MN

LOCATION.--Lat 47°21'07", long 96°50'36", sec.25, T.145 N., R.49 W., Traill County, Hydrologic Unit 09020107, on center pier on upstream side of highway bridge, 0.5 mi west of Halstad, MN, 2.5 mi downstream from Wild Rice River, and at mile 375.2.

DRAINAGE AREA.--21,800 mi^2, approximately, including 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

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

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

REMARKS.--Records good except for estimated daily discharges, which are poor.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	921	1630	e820	e970	e800	e1000	e2000	2220	2200	11800	3290	2550
2	854	1840	e900	e980	e800	e960	e2100	2210	2260	10600	3060	2970
3	837	2110	e1000	e970	e800	e870	e2130	2220	2240	9140	2860	3000
4	834	2220	e1120	e970	e800	e830	e2130	2240	2130	7660	2700	2810
5	833	2220	e1220	e960	e800	e820	e2050	2240	2010	6410	2570	2520
6	824	2160	e1350	e960	e800	e810	e2000	2220	1880	5380	2460	2290
7	808	2090	e1380	e950	e800	e800	e1920	2220	1790	4470	2330	2090
8	829	2000	e1400	e960	e800	e820	e1900	2230	1710	3860	2210	1990
9	811	1910	e1450	e970	e800	e810	e1950	2450	2120	4260	2090	1930
10	852	1820	e1500	e980	e800	e830	e2100	3220	6580	6190	1960	1820
11	946	1730	e1550	e980	e810	e840	e2500	3560	10800	10600	1890	1730
12	1240	1670	e1600	e980	e810	e870	e2900	3980	12300	13200	1860	1690
13	1270	1610	e1700	e980	e810	e900	3210	4310	12400	14300	1830	1660
14	1350	1570	e1800	e980	e800	e950	3530	4410	11600	14900	1760	1600
15	1410	1540	e1830	e970	e800	e1000	3250	4140	10600	14800	1680	1530
16	1460	1540	e1850	e960	e810	e1100	3010	3770	9340	13600	1620	1450
17	1510	1530	e1850	e950	e820	e1230	2790	3400	7880	11800	1630	1350
18	1510	1510	e1830	e940	e810	e1380	2600	3240	6350	9650	1760	1240
19	1480	1500	e1800	e930	e820	e1480	2550	3110	4680	7830	1910	1170
20	1450	1470	e1650	e920	e850	e1650	2630	2930	3200	6470	1940	1270
21	1400	1460	e1500	e900	e880	e1700	2700	2850	2830	5650	1870	1320
22	1360	1440	e1400	e880	e930	e1700	2620	2840	3010	5260	1790	1290
23	1340	1410	e1300	e870	e1000	e1650	2460	2810	3890	5030	1720	1320
24	1340	1400	e1200	e860	e1050	e1500	2320	2760	6180	4700	1680	1270
25	1340	1420	e1100	e850	e1100	e1430	2280	2680	7740	4490	1680	1210
26	1370	1470	e1050	e840	e1100	e1280	2280	2590	9300	4720	1650	1140
27	1390	1440	e1030	e830	e1100	e1170	2270	2470	10700	4900	1610	1100
28	1350	e1100	e1000	e820	e1050	e1150	2230	2340	11600	4860	1750	1080
29	1360	e900	e960	e820	---	e1170	2220	2290	12000	4500	1770	1040
30	1410	e1000	e960	e810	---	e1300	2210	2310	12100	4050	2010	993
31	1500	---	e960	e810	---	e1700	---	2220	---	3630	2230	---
TOTAL	37189	48710	42060	28550	24350	35700	72840	88480	193420	238710	63170	50423
MEAN	1200	1624	1357	921.0	869.6	1152	2428	2854	6447	7700	2038	1681
MAX	1510	2220	1850	980	1100	1700	3530	4410	12400	14900	3290	3000
MIN	808	900	820	810	800	800	1900	2210	1710	3630	1610	993
AC-FT	73760	96620	83430	56630	48300	70810	144500	175500	383600	473500	125300	100000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

MEAN	889.6	906.4	670.7	528.8	569.5	2617	8140	4066	3138	3048	1240	890.6
MAX	2875	5707	2413	1240	1952	9444	38460	15570	10480	20060	11700	4705
(WY)	1995	2001	2001	2001	1998	1995	1997	1997	2000	1975	1993	1999
MIN	61.5	92.3	51.2	32.1	45.9	249	705	449	242	153	59.5	38.4
(WY)	1977	1977	1977	1977	1977	1962	1981	1977	1977	1988	1977	1976

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002	
ANNUAL TOTAL	1937589		923602			
ANNUAL MEAN	5308		2530		2240	
HIGHEST ANNUAL MEAN					6028	1997
LOWEST ANNUAL MEAN					214	1977
HIGHEST DAILY MEAN	37800	Apr 14	14900	Jul 14	69900	Apr 19 1997
LOWEST DAILY MEAN	808	Oct 7	800	Feb 1	10	Sep 2 1976
ANNUAL SEVEN-DAY MINIMUM	825	Oct 3	800	Feb 1	17	Aug 28 1976
MAXIMUM PEAK FLOW			15000	Jul 14	71500	Apr 19 1997
MAXIMUM PEAK STAGE			21.99	Jul 14	40.74	Apr 19 1997
INSTANTANEOUS LOW FLOW					5.4	Oct 8 1936
ANNUAL RUNOFF (AC-FT)	3843000		1832000		1623000	
10 PERCENT EXCEEDS	15600		4950		5000	
50 PERCENT EXCEEDS	1550		1660		903	
90 PERCENT EXCEEDS	1100		832		230	

e Estimated

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

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1997 to current year.

SPECIFIC CONDUCTANCE: October 1997 to current year.

INSTRUMENTATION.--Water-quality sensors since October 1997.

REMARKS.--Records good except for specific conductance record, which is poor. Missing record is result of problems with circulation in well.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 29.0°C, Aug. 8, 2001; minimum recorded, -0.1°C, Feb. 7-15 and Mar. 17-18, 2002.

SPECIFIC CONDUCTANCE: Maximum recorded, 1,120 microsiemens, Dec. 31, 1998; minimum recorded, 235 microsiemens, June 21, 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
18...	1255	1500	--	--	--	785	13.0	9.5	--	--	--	--	--
NOV													
08...	1450	1990	--	--	--	1120	--	7.0	--	--	--	--	--
JAN													
04...	1055	971	--	--	--	951	-4.0	.0	--	--	--	--	--
25...	0935	842	--	--	--	871	-1.5	.0	--	--	--	--	--
MAR													
15...	1315	993	--	--	--	903	.5	.5	--	--	--	--	--
APR													
16...	1240	3000	8.3	--	558	518	27.5	--	230	49.0	27.0	4.40	.6
MAY													
01...	1455	2220	--	--	--	651	7.5	8.0	--	--	--	--	--
21...	0910	2850	--	--	--	893	16.0	13.5	--	--	--	--	--
JUL													
01...	1230	11900	--	--	--	471	30.0	28.5	--	--	--	--	--
03...	0905	9140	--	--	--	545	--	25.5	--	--	--	--	--
08...	1140	3790	--	--	--	604	--	25.5	--	--	--	--	--
31...	0925	3630	--	--	--	636	--	25.0	--	--	--	--	--
AUG													
13...	1240	1830	--e	8.3	709	717	22.0	23.5	330	66.0	40.0	5.50	16
29...	1330	1770	--	--	--	663	--	23.3	--	--	--	--	--
SEP													
04...	1230	2810	--	--	--	614	--	26.0	--	--	--	--	--
11...	1420	1730	--	--	--	623	--	24.5	--	--	--	--	--
17...	1015	1350	--	--	--	628	--	19.0	--	--	--	--	--
20...	1230	1270	--	--	--	643	--	19.0	--	--	--	--	--
25...	1520	1210	--	--	--	599	--	13.0	--	--	--	--	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	21.0	16	182	15.0	.20	90.0	2850	352	316	2.0	60	<1	30
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	29.0	16	242	14.0	.20	150	2450	496	451	6.0	20	1	40
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
18...	--	--	--	--	--
NOV					
08...	--	--	--	--	--
JAN					
04...	--	--	--	--	--
25...	--	--	--	--	--
MAR					
15...	--	--	--	--	--
APR					
16...	10	<.10	1	<1	160
MAY					
01...	--	--	--	--	--
21...	--	--	--	--	--
JUL					
01...	--	--	--	--	--
03...	--	--	--	--	--
08...	--	--	--	--	--
31...	--	--	--	--	--
AUG					
13...	20	.10	3	<1	330
29...	--	--	--	--	--
SEP					
04...	--	--	--	--	--
11...	--	--	--	--	--
17...	--	--	--	--	--
20...	--	--	--	--	--
25...	--	--	--	--	--

< Less than
e Required equipment not functional/available

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

WATER TEMPERATURE from datalogger, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.3	15.2	15.2	5.5	5.2	5.3	1.5	1.3	1.4	0.6	0.5	0.6
2	15.6	15.3	15.5	5.8	5.4	5.6	1.5	1.3	1.4	0.6	0.5	0.5
3	15.7	15.5	15.6	5.8	5.7	5.8	1.5	0.7	1.2	0.6	0.5	0.6
4	15.5	15.0	15.3	6.0	5.8	5.9	1.3	0.7	0.9	0.5	0.5	0.5
5	15.0	14.3	14.7	6.2	5.9	6.0	1.3	1.0	1.2	0.5	0.4	0.4
6	14.3	12.9	13.6	6.3	6.1	6.2	1.2	1.1	1.1	0.4	0.3	0.3
7	12.9	11.9	12.5	6.3	6.1	6.2	1.1	0.9	1.0	0.4	0.3	0.4
8	11.9	11.3	11.6	6.4	6.1	6.2	1.0	0.9	0.9	0.4	0.3	0.3
9	11.3	11.1	11.2	6.3	5.9	6.1	0.9	0.9	0.9	0.3	0.1	0.2
10	11.1	11.1	11.1	6.2	5.7	5.9	1.0	0.9	0.9	0.1	0.1	0.1
11	11.1	10.7	10.9	5.9	5.5	5.7	1.0	0.9	1.0	0.2	0.1	0.2
12	10.9	10.7	10.8	5.8	5.4	5.6	1.1	1.0	1.0	0.3	0.2	0.3
13	10.9	10.9	10.9	5.7	5.4	5.5	1.1	1.0	1.0	0.3	0.3	0.3
14	11.0	10.9	10.9	5.5	5.4	5.4	1.0	0.9	1.0	0.3	0.3	0.3
15	10.9	10.7	10.8	5.5	5.4	5.4	1.1	0.9	1.0	0.3	0.3	0.3
16	10.7	10.2	10.4	5.7	5.5	5.6	1.2	1.1	1.2	0.3	0.2	0.2
17	10.2	9.6	9.9	5.9	5.7	5.7	1.2	1.1	1.1	0.3	0.2	0.3
18	9.6	9.4	9.5	6.2	5.9	6.1	1.2	1.1	1.1	0.5	0.3	0.4
19	9.4	9.2	9.3	6.2	6.1	6.2	1.1	0.9	1.0	0.5	0.5	0.5
20	9.2	9.1	9.2	6.1	5.7	5.9	0.9	0.8	0.8	0.5	0.5	0.5
21	9.2	9.0	9.1	5.7	5.2	5.4	0.8	0.7	0.8	0.5	0.4	0.4
22	9.2	9.1	9.1	5.2	4.8	5.0	0.8	0.7	0.7	0.4	0.3	0.4
23	9.2	9.0	9.1	4.8	4.7	4.7	0.8	0.7	0.7	0.4	0.3	0.4
24	9.1	8.1	8.6	4.8	4.6	4.7	0.7	0.7	0.7	0.4	0.4	0.4
25	8.5	7.3	7.6	4.8	4.5	4.7	0.7	0.6	0.6	0.4	0.3	0.3
26	7.6	6.5	7.0	4.5	4.2	4.4	0.6	0.5	0.6	0.3	0.3	0.3
27	6.8	5.8	6.3	4.2	2.3	3.1	0.5	0.4	0.5	0.3	0.2	0.3
28	5.9	4.9	5.4	2.9	2.0	2.3	0.4	0.4	0.4	0.3	0.2	0.3
29	4.9	4.8	4.9	2.1	1.3	1.7	0.4	0.4	0.4	0.3	0.3	0.3
30	5.1	4.7	4.8	1.6	1.2	1.4	0.4	0.4	0.4	0.3	0.3	0.3
31	5.2	4.8	5.0	---	---	---	0.6	0.4	0.5	0.3	0.2	0.2
MONTH	15.7	4.7	10.2	6.4	1.2	5.1	1.5	0.4	0.9	0.6	0.1	0.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.2	0.2	0.2	0.6	0.5	0.6	0.4	0.3	0.3	8.2	7.9	8.1
2	0.2	0.1	0.2	0.6	0.5	0.5	0.4	0.3	0.4	8.3	8.2	8.2
3	0.1	0.1	0.1	0.5	0.5	0.5	0.4	0.3	0.3	8.4	8.2	8.3
4	0.1	0.1	0.1	0.5	0.4	0.5	0.3	0.3	0.3	9.0	8.4	8.7
5	0.1	0.1	0.1	0.4	0.3	0.4	0.3	0.2	0.3	9.5	9.0	9.3
6	0.1	0.0	0.0	0.3	0.3	0.3	0.4	0.3	0.3	9.6	9.5	9.6
7	0.0	-0.1	0.0	0.3	0.3	0.3	0.5	0.0	0.3	9.6	8.7	9.3
8	0.0	-0.1	0.0	0.3	0.2	0.3	0.6	0.0	0.2	9.2	8.9	9.0
9	-0.1	-0.1	-0.1	0.3	0.2	0.2	0.7	0.5	0.5	8.9	8.4	8.6
10	-0.1	-0.1	-0.1	0.3	0.2	0.2	0.5	0.4	0.5	8.4	8.2	8.3
11	0.0	-0.1	0.0	0.2	0.2	0.2	---	---	---	8.2	8.1	8.2
12	0.0	-0.1	0.0	0.2	0.1	0.2	1.7	1.0	1.3	8.6	8.2	8.4
13	0.0	-0.1	0.0	0.1	0.0	0.0	2.0	1.7	1.8	9.0	8.6	8.7
14	0.0	-0.1	0.0	0.1	0.0	0.0	2.5	2.0	2.3	9.7	9.0	9.3
15	0.0	-0.1	0.0	0.1	0.0	0.0	4.4	2.5	3.2	10.4	9.7	10.1
16	0.1	0.0	0.0	0.1	0.0	0.0	6.4	4.4	5.3	10.9	10.4	10.7
17	0.1	0.0	0.0	0.0	-0.1	0.0	7.9	6.3	7.0	11.3	10.9	11.1
18	0.2	0.1	0.2	0.1	-0.1	0.0	8.9	7.9	8.3	11.5	11.3	11.3
19	0.3	0.2	0.3	0.1	0.1	0.1	9.8	8.9	9.6	11.7	11.5	11.5
20	0.3	0.3	0.3	0.1	0.1	0.1	9.5	9.1	9.3	12.2	11.7	11.9
21	0.3	0.3	0.3	0.2	0.1	0.1	9.1	8.9	9.0	12.8	12.2	12.5
22	0.5	0.3	0.4	0.3	0.2	0.2	8.9	8.7	8.8	13.2	12.8	13.0
23	0.5	0.5	0.5	0.3	0.3	0.3	8.8	8.6	8.7	13.3	13.2	13.3
24	0.5	0.4	0.5	0.3	0.3	0.3	9.3	8.8	9.1	13.2	13.0	13.1
25	0.6	0.4	0.5	0.3	0.3	0.3	9.0	8.6	8.8	13.2	13.0	13.1
26	0.5	0.4	0.5	0.3	0.3	0.3	8.6	8.1	8.3	13.6	13.1	13.3
27	0.4	0.3	0.3	0.3	0.2	0.3	8.2	7.8	8.0	14.4	13.6	14.0
28	0.5	0.4	0.4	0.2	0.1	0.1	7.8	7.6	7.7	15.4	14.4	14.9
29	---	---	---	0.3	0.1	0.3	7.6	7.5	7.6	16.7	15.4	15.9
30	---	---	---	0.4	0.3	0.3	7.9	7.6	7.7	17.7	16.4	16.9
31	---	---	---	0.3	0.3	0.3	---	---	---	18.2	17.3	17.6
MONTH	0.6	-0.1	0.2	0.6	-0.1	0.2	---	---	---	18.2	7.9	11.2

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

WATER TEMPERATURE from datalogger, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.6	17.9	18.2	---	---	---	23.5	22.7	23.4	---	---	---
2	18.5	18.4	18.5	---	---	---	23.4	23.1	23.2	---	---	---
3	18.5	18.3	18.4	---	---	---	23.2	22.8	23.0	---	---	---
4	18.3	18.1	18.1	---	---	---	22.9	22.6	22.8	---	---	---
5	18.9	18.2	18.4	---	---	---	22.8	22.5	22.6	---	---	---
6	19.6	18.9	19.2	---	---	---	22.7	22.4	22.6	---	---	---
7	19.7	19.5	19.6	---	---	---	22.5	22.3	22.4	---	---	---
8	20.0	19.5	19.8	23.0	23.1	23.2	23.0	22.4	22.6	---	---	---
9	20.0	18.6	19.4	23.3	23.1	23.2	23.4	22.8	23.0	---	---	---
10	18.6	16.2	17.9	23.1	21.4	22.5	23.4	23.0	23.2	23.6	23.3	23.4
11	17.0	15.5	16.0	21.4	20.4	20.7	23.5	23.0	23.2	23.3	23.1	23.2
12	18.2	17.0	17.7	20.9	20.6	20.7	23.2	22.9	23.1	23.1	22.7	22.9
13	19.0	18.1	18.6	20.9	20.8	20.9	22.9	22.7	22.8	22.7	22.4	22.5
14	19.0	16.6	17.4	21.0	20.6	20.8	22.8	22.4	22.5	22.4	21.9	22.2
15	18.5	17.3	17.9	21.2	20.8	21.0	22.4	22.2	22.3	21.9	21.2	21.6
16	19.2	18.5	19.0	21.6	21.1	21.3	22.2	21.8	22.0	21.2	20.5	20.9
17	19.6	19.2	19.4	22.0	21.5	21.7	21.8	21.3	21.5	20.5	20.2	20.4
18	19.8	19.6	19.7	22.7	21.5	21.9	21.3	20.7	21.0	20.2	19.8	20.1
19	20.1	19.6	19.8	25.3	22.7	23.9	20.7	20.3	20.5	20.1	20.0	20.1
20	20.4	19.5	20.2	26.4	25.3	25.9	20.3	20.1	20.2	20.0	19.6	19.8
21	19.5	19.2	19.3	26.5	26.1	26.3	20.2	20.1	20.1	19.6	19.0	19.3
22	---	---	---	26.3	25.1	25.7	20.3	20.1	20.2	19.0	18.2	18.6
23	---	---	---	25.1	24.7	24.9	20.8	20.3	20.5	18.2	17.2	17.6
24	---	---	---	24.7	24.2	24.5	21.6	20.8	21.1	17.2	15.8	16.5
25	---	---	---	24.2	23.7	23.8	22.2	21.5	21.7	15.8	15.0	15.4
26	---	---	---	23.8	23.7	23.8	22.7	22.0	22.3	15.1	14.4	14.7
27	---	---	---	24.0	23.8	23.8	23.0	22.6	22.7	14.4	14.0	14.2
28	---	---	---	24.1	23.9	24.0	23.0	22.6	22.8	14.0	13.4	13.7
29	---	---	---	24.3	24.1	24.2	---	---	---	13.4	12.9	13.2
30	---	---	---	24.3	23.4	23.9	---	---	---	13.1	12.9	12.9
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

SPECIFIC CONDUCTANCE from datalogger, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	1050	1040	1040
4	---	---	---	---	---	---	---	---	---	1040	1030	1040
5	---	---	---	---	---	---	---	---	---	1030	1020	1030
6	---	---	---	---	---	---	---	---	---	1020	1010	1010
7	---	---	---	---	---	---	---	---	---	1010	996	1000
8	---	---	---	---	---	---	---	---	---	997	989	992
9	---	---	---	---	---	---	---	---	---	989	979	984
10	---	---	---	---	---	---	---	---	---	979	964	971
11	---	---	---	---	---	---	---	---	---	964	953	958
12	---	---	---	---	---	---	---	---	---	953	944	947
13	---	---	---	---	---	---	---	---	---	944	933	939
14	---	---	---	---	---	---	---	---	---	933	921	926
15	---	---	---	---	---	---	---	---	---	921	918	919
16	---	---	---	---	---	---	---	---	---	920	918	919
17	---	---	---	---	---	---	---	---	---	918	910	915
18	---	---	---	---	---	---	---	---	---	910	900	904
19	---	---	---	---	---	---	---	---	---	900	893	897
20	---	---	---	---	---	---	---	---	---	893	887	890
21	---	---	---	---	---	---	---	---	---	887	885	886
22	---	---	---	---	---	---	---	---	---	886	879	883
23	---	---	---	---	---	---	---	---	---	880	873	876
24	---	---	---	---	---	---	---	---	---	891	879	886
25	---	---	---	---	---	---	---	---	---	899	891	895
26	---	---	---	---	---	---	---	---	---	904	899	902
27	---	---	---	---	---	---	---	---	---	903	894	901
28	---	---	---	---	---	---	---	---	---	894	889	890
29	---	---	---	---	---	---	---	---	---	891	888	889
30	---	---	---	---	---	---	---	---	---	895	890	892
31	---	---	---	---	---	---	---	---	---	901	895	898
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

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

SPECIFIC CONDUCTANCE from datalogger, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	899	895	897	---	---	---	797	793	795	660	656	658
2	896	887	892	---	---	---	---	---	---	663	660	661
3	887	877	881	846	831	838	---	---	---	669	663	666
4	885	877	882	858	845	853	---	---	---	670	667	668
5	880	872	876	864	858	862	---	---	---	670	663	666
6	879	861	871	864	855	860	---	---	---	683	670	678
7	862	855	861	855	848	852	---	---	---	719	683	697
8	855	851	853	848	841	845	---	---	---	739	719	730
9	854	851	853	841	832	838	---	---	---	---	---	---
10	855	849	852	832	827	828	---	---	---	---	---	---
11	850	848	849	830	822	827	---	---	---	---	---	---
12	853	850	852	822	813	819	589	547	564	---	---	---
13	853	850	851	813	802	806	548	543	546	---	---	---
14	850	847	849	802	796	799	553	544	549	---	---	---
15	847	843	845	798	796	797	560	512	544	---	---	---
16	843	836	840	802	798	800	515	492	506	---	---	---
17	837	828	833	808	802	805	522	495	511	---	---	---
18	829	822	825	808	804	807	561	522	537	---	---	---
19	822	817	819	807	803	805	586	561	571	---	---	---
20	818	814	816	808	807	808	615	586	604	---	---	---
21	815	813	814	809	805	807	645	615	636	---	---	---
22	---	---	---	805	801	804	666	644	653	---	---	---
23	---	---	---	803	801	802	676	657	670	---	---	---
24	---	---	---	802	800	801	---	---	---	---	---	---
25	---	---	---	800	798	799	666	658	662	---	---	---
26	---	---	---	799	797	797	673	661	666	---	---	---
27	---	---	---	801	797	799	---	---	---	---	---	---
28	---	---	---	805	801	804	---	---	---	---	---	---
29	---	---	---	803	795	797	686	651	659	---	---	---
30	---	---	---	796	794	795	656	651	653	---	---	---
31	---	---	---	797	795	796	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	839	721	781
2	---	---	---	---	---	---	---	---	---	781	718	748
3	---	---	---	---	---	---	---	---	---	766	703	738
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	---	---	---	---	---	---	888	783	835	---	---	---
31	---	---	---	---	---	---	887	796	854	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

05064900 BEAVER CREEK NEAR FINLEY, ND
(Hydrologic benchmark network station)

LOCATION.--Lat 47°35'40", long 97°42'18", in NE$^1/_4$ sec.31, T.148 N., R.55 W., Steele County, Hydrologic Unit 09020109, on right bank 500 ft upstream from bridge on county highway and 7 mi northeast of Finley.

DRAINAGE AREA.--160 mi^2, approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and concrete broad-crested weir. Datum of gage is 1,170.08 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those below 1.0 ft^3/s and those for estimated daily discharges, which are poor. Since June 1987, some regulation by flood control dam 2.0 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.22	1.9	e1.6	e0.17	e0.00	e0.00	e2.7	2.7	1.9	20	5.4	9.2
2	0.09	e2.0	e1.5	e0.15	e0.00	e0.00	e2.3	2.8	1.4	15	4.8	12
3	0.00	e2.2	e1.4	e0.15	e0.00	e0.00	e2.0	2.6	1.1	13	4.4	9.9
4	0.00	e2.4	e1.3	e0.14	e0.00	e0.00	e1.9	2.3	1.1	13	3.8	7.7
5	0.00	2.7	e1.2	e0.14	e0.00	e0.00	e1.9	2.4	0.90	13	3.3	5.7
6	0.00	3.3	e1.1	e0.14	e0.00	e0.00	e2.5	2.4	0.75	15	2.6	4.3
7	0.00	4.2	e1.0	e0.16	e0.00	e0.00	e3.5	2.4	0.70	17	2.4	3.4
8	0.00	4.8	e0.95	e0.18	e0.00	e0.00	4.9	3.1	0.70	21	2.3	2.8
9	e0.05	4.6	e0.90	e0.20	e0.00	e0.00	7.0	3.8	8.5	23	2.3	2.4
10	e0.40	4.2	e0.85	e0.20	e0.00	e0.00	5.6	4.0	33	52	2.1	2.4
11	0.36	3.8	e0.80	e0.22	e0.00	e0.00	6.3	5.0	20	101	1.9	2.0
12	0.39	3.4	e0.75	e0.22	e0.00	e0.00	8.2	6.6	32	56	2.0	1.9
13	0.35	3.1	e0.70	e0.22	e0.00	e0.00	11	9.5	31	34	1.9	1.7
14	0.33	2.8	e0.75	e0.20	e0.00	e0.00	11	11	17	29	1.7	1.6
15	0.29	2.4	e0.80	e0.18	e0.00	e0.00	9.7	9.5	12	25	1.5	1.6
16	0.29	2.2	e0.80	e0.16	e0.00	e0.00	8.8	8.2	9.9	22	1.4	1.5
17	0.30	2.2	e0.75	e0.14	e0.00	e0.00	7.6	7.0	8.2	19	1.5	1.4
18	0.30	2.1	e0.70	e0.13	e0.00	e0.00	8.3	5.8	6.8	18	1.2	1.3
19	0.36	e2.0	e0.65	e0.12	e0.00	e0.00	7.9	4.7	5.8	16	1.1	1.3
20	0.41	1.8	e0.60	e0.11	e0.00	e0.00	7.3	3.7	4.9	14	1.0	1.2
21	0.42	2.9	e0.55	e0.11	e0.00	e0.10	6.1	2.9	4.9	12	0.96	1.1
22	0.45	3.9	e0.50	e0.11	e0.00	e0.20	5.2	2.2	4.7	11	0.91	1.1
23	0.42	3.7	e0.45	e0.11	e0.00	e0.30	4.3	1.9	4.6	10	0.84	1.2
24	1.5	3.4	e0.40	e0.10	e0.00	e0.50	3.9	1.7	4.2	9.8	0.74	1.1
25	1.8	2.7	e0.35	e0.05	e0.00	e1.0	3.3	2.1	4.4	9.7	0.65	1.1
26	5.3	2.4	e0.32	e0.00	e0.00	e2.0	3.0	2.3	4.8	9.1	0.54	0.97
27	1.8	2.9	e0.29	e0.00	e0.00	e4.0	3.2	2.0	25	8.4	0.48	0.91
28	1.3	2.1	e0.26	e0.00	e0.00	e4.7	3.1	3.7	53	7.5	0.74	0.94
29	1.4	1.8	e0.23	e0.00	---	e4.7	2.9	3.9	41	6.8	0.88	0.91
30	1.6	e1.7	e0.21	e0.00	---	e4.1	2.7	3.3	30	6.0	0.87	0.93
31	1.8	---	e0.19	e0.00	---	e3.3	---	2.5	---	5.5	2.9	---
TOTAL	21.93	85.6	22.85	3.81	0.00	24.90	158.1	128.0	374.25	631.8	59.11	85.56
MEAN	0.707	2.853	0.737	0.123	0.000	0.803	5.270	4.129	12.47	20.38	1.907	2.852
MAX	5.3	4.8	1.6	0.22	0.00	4.7	11	11	53	101	5.4	12
MIN	0.00	1.7	0.19	0.00	0.00	0.00	1.9	1.7	0.70	5.5	0.48	0.91
AC-FT	43	170	45	7.6	0.00	49	314	254	742	1250	117	170

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

MEAN	1.829	1.677	0.311	0.089	0.577	26.23	60.19	15.43	11.77	13.21	4.059	2.179
MAX	30.3	25.4	4.33	1.06	7.90	151	252	89.1	150	116	43.4	21.2
(WY)	1995	1995	1995	1995	1998	1995	1996	1999	2000	2000	1994	1993
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.19	0.042	0.001	0.000	0.000	0.000
(WY)	1968	1968	1965	1965	1965	1965	1981	1977	1980	1972	1969	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1965 - 2002	
ANNUAL TOTAL	5820.47		1595.91			
ANNUAL MEAN	15.95		4.372		11.46	
HIGHEST ANNUAL MEAN					36.2	1995
LOWEST ANNUAL MEAN					0.12	1977
HIGHEST DAILY MEAN	230	Apr 8	101	Jul 11	1540	Apr 19 1979
LOWEST DAILY MEAN	0.00	Feb 15	0.00	Oct 3	0.00	Nov 21 1964
ANNUAL SEVEN-DAY MINIMUM	0.00	Feb 15	0.00	Jan 26	0.00	Nov 21 1964
MAXIMUM PEAK FLOW			113	Jul 11	a1900	Apr 19 1979
MAXIMUM PEAK STAGE			3.72	Jul 11	b10.79	Apr 11 1996
ANNUAL RUNOFF (AC-FT)	11540		3170		8300	
10 PERCENT EXCEEDS	43		10		23	
50 PERCENT EXCEEDS	2.2		1.7		0.25	
90 PERCENT EXCEEDS	0.23		0.00		0.00	

a Gage height, 8.35 ft; backwater from ice
b Backwater from ice
e Estimated

05064900 BEAVER CREEK NEAR FINLEY, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
28...	1050	2.7	--	--	--	2410	-8.0	.0	--	--	--	--	--
JAN													
24...	1245	.09	--	--	--	3650	-9.0	.0	--	--	--	--	--
APR													
09...	1340	5.0	7.9	7.5	911	864	-3.0	8.0	320	70.0	36.0	11.0	2
19...	1310	7.8	--	--	--	1010	.0	6.0	--	--	--	--	--
MAY													
07...	1030	2.4	--	--	--	1620	5.0	4.0	--	--	--	--	--
JUN													
28...	1355	53	--	--	--	2050	31.5	25.5	--	--	--	--	--
JUL													
11...	1710	105	--	--	--	1670	--	23.5	--	--	--	--	--
AUG													
07...	1030	2.5	8.4	8.2	--	1780	20.0	19.0	660	110	93.0	17.0	5

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	63.0	29	171	16.0	.10	290	8.51	630	589	2.0	30	<1	50
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07...	290	48	465	48.0	.20	820	11.5	1710	1660	12.0	60	1	120

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
28...	--	--	--	--	--
JAN					
24...	--	--	--	--	--
APR					
09...	390	<.10	1	3	310
19...	--	--	--	--	--
MAY					
07...	--	--	--	--	--
JUN					
28...	--	--	--	--	--
JUL					
11...	--	--	--	--	--
AUG					
07...	310	.10	1	1	640

< Less than

05066500 GOOSE RIVER AT HILLSBORO, ND

LOCATION.--Lat 47°24'34", long 97°03'39", in NW$^1/_4$ sec.5, T.145 N., R.50 W., Traill County, Hydrologic Unit 09020109, on right bank 600 ft upstream from Foogman Dam in Hillsboro and 27.5 mi upstream from mouth.

DRAINAGE AREA.--1,203 mi^2, of which about 110 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and masonry dam. Datum of gage is 879.52 ft above National Geodetic Vertical Datum of 1929. Sept. 26, 1941, to Oct. 27, 1965, at site 600 ft downstream at same datum. See WSP 1728 or 1913 for history of changes prior to Sept. 26, 1941.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	69	e43	e21	e20	e21	106	59	59	276	66	280
2	14	74	e42	e20	e19	e21	88	56	65	222	55	224
3	14	90	e41	e20	e19	e20	96	56	58	177	48	112
4	12	104	e40	e19	e18	e20	87	59	55	141	50	66
5	12	135	e39	e19	e18	e19	78	55	53	118	50	49
6	12	145	e38	e19	e17	e19	83	44	49	105	50	48
7	8.9	158	e37	e20	e17	e18	93	37	49	99	49	42
8	10	156	e36	e21	e18	e18	101	47	44	95	50	34
9	11	149	e35	e21	e18	e17	93	60	52	90	161	29
10	15	139	e34	e22	e19	e17	96	91	615	1920	401	24
11	15	130	e33	e23	e19	e18	101	168	660	3920	173	22
12	19	127	e33	e24	e19	e18	111	194	734	4820	110	21
13	23	122	e32	e25	e20	e19	167	189	1120	4290	75	21
14	32	115	e32	e28	e21	e19	192	196	1020	2630	54	21
15	26	108	e32	e30	e21	e20	211	188	716	1360	44	21
16	30	108	e32	e30	e22	e21	196	173	513	831	42	20
17	28	107	e32	e30	e23	e22	175	168	342	499	46	25
18	29	108	e31	e29	e24	e23	166	155	e250	468	44	27
19	29	100	e30	e28	e25	e23	169	134	e200	414	41	18
20	29	91	e29	e28	e25	e23	157	122	172	475	38	14
21	28	84	e28	e27	e25	e23	160	112	161	266	37	14
22	29	83	e28	e27	e25	e24	160	96	145	190	34	18
23	30	81	e27	e27	e25	e25	141	84	141	150	35	27
24	38	81	e26	e27	e24	e29	114	78	326	127	32	42
25	37	81	e25	e26	e25	e37	102	73	281	170	31	47
26	41	73	e24	e25	e23	e43	89	72	171	157	30	40
27	41	54	e23	e24	e22	e50	79	68	129	158	32	36
28	36	e51	e22	e23	e21	63	75	66	122	574	36	33
29	32	e48	e22	e23	---	75	70	64	350	419	46	32
30	34	e46	e22	e21	---	93	63	61	338	187	145	32
31	43	---	e21	e21	---	110	---	58	---	116	69	---
TOTAL	771.9	3017	969	748	592	968	3619	3083	8990	25464	2174	1439
MEAN	24.90	100.6	31.26	24.13	21.14	31.23	120.6	99.45	299.7	821.4	70.13	47.97
MAX	43	158	43	30	25	110	211	196	1120	4820	401	280
MIN	8.9	46	21	19	17	17	63	37	44	90	30	14
AC-FT	1530	5980	1920	1480	1170	1920	7180	6120	17830	50510	4310	2850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2002, BY WATER YEAR (WY)

MEAN	16.82	20.09	8.932	5.459	9.407	171.2	515.4	142.0	84.86	82.72	26.62	18.21
MAX	436	469	79.9	47.1	217	1220	3412	2275	954	821	515	326
(WY)	1995	2001	1995	2001	1998	1995	1997	1950	2000	2002	1993	1994
MIN	0.000	0.000	0.000	0.000	0.000	0.000	6.51	1.12	1.35	0.000	0.000	0.000
(WY)	1939	1939	1939	1939	1939	1940	1938	1939	1938	1940	1938	1938

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1931 - 2002	
ANNUAL TOTAL	78348.2		51834.9			
ANNUAL MEAN	214.7		142.0		94.44	
HIGHEST ANNUAL MEAN					400	1999
LOWEST ANNUAL MEAN					3.47	1937
HIGHEST DAILY MEAN	3730	Apr 9	4820	Jul 12	14400	Apr 21 1979
LOWEST DAILY MEAN	6.7	Sep 18	8.9	Oct 7	0.00	Mar 1 1936
ANNUAL SEVEN-DAY MINIMUM	8.6	Sep 13	11	Oct 3	0.00	Mar 1 1936
MAXIMUM PEAK FLOW			4940	Jul 12	14800	Apr 21 1979
MAXIMUM PEAK STAGE			12.24	Jul 12	16.76	Apr 21 1979
ANNUAL RUNOFF (AC-FT)	155400		102800		68420	
10 PERCENT EXCEEDS	567		195		149	
50 PERCENT EXCEEDS	48		44		6.8	
90 PERCENT EXCEEDS	20		19		0.12	

e Estimated

05066500 GOOSE RIVER AT HILLSBORO, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
15...	1555	24	--	--	--	1390	8.5	9.5	--	--	--	--	--
DEC													
10...	1120	34	--	--	--	1720	-2.0	.5	--	--	--	--	--
JAN													
24...	1530	27	--	--	--	2130	-4.5	.5	--	--	--	--	--
MAR													
18...	1010	23	--	--	--	1520	-1.0	.1	--	--	--	--	--
APR													
10...	0930	96	8.4	--	864	--e	3.0	6.0	390	89.0	40.0	6.00	.9
MAY													
06...	1100	54	--	--	--	985	1.5	7.0	--	--	--	--	--
JUN													
20...	1100	170	--	--	--	1310	16.0	20.0	--	--	--	--	--
AUG													
13...	0920	78	7.5	7.8	825	838	17.0	21.0	350	78.0	38.0	10.0	.9
SEP													
27...	0910	32	--	--	--	1520	--	12.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	40.0	18	186	19.0	.20	270	151	581	576	4.0	60	<1	50
MAY													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	37.0	18	182	28.0	.20	230	124	588	531	6.0	50	2	60
SEP													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
15...	--	--	--	--	--
DEC					
10...	--	--	--	--	--
JAN					
24...	--	--	--	--	--
MAR					
18...	--	--	--	--	--
APR					
10...	210	<.10	1	<1	380
MAY					
06...	--	--	--	--	--
JUN					
20...	--	--	--	--	--
AUG					
13...	260	<.10	3	1	290
SEP					
27...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05070000 RED RIVER OF THE NORTH NEAR THOMPSON, ND

LOCATION.--Lat 47°45'32", long 96°56'37", in $NW^1/_4NE^1/_4$ sec.5, T.149 N.,R.49 W., Grand Forks County, Hydrologic Unit 09020301, on left bank 50 ft upstream of county highway, 7.6 miles east of Thompson, and at river mile 317.7.

DRAINAGE AREA.--Not determined.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--March 1999 to current year; gage heights and maximum discharge only.

GAGE.--Water stage recorder. Datum of gage is 779.00 ft above National Geodetic Vertical Datum of 1929 (levels by Grand Forks County Highway Department).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 41,000 ft^3/s, Apr. 14, 2001, gage height, 57.66 ft; minimum recorded gage height, 16.75 ft., Oct. 6, 2001.

EXTREMES OUTSIDE PERIOD OF RECORD.--A peak stage from floodmarks of 67.74 ft for spring 1997 and 63.66 ft for spring 1979, from U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 22,000 ft^3/s, gage height, 47.10 ft on July 14; minimum gage height, 16.75 ft, Oct. 6.

GAGE HEIGHT from DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.12	18.04	17.27	17.69	17.34	18.03	21.01	19.64	19.51	---	22.32	26.04
2	17.03	18.27	16.98	17.73	17.33	17.91	21.47	19.66	19.56	34.70	21.66	26.94
3	16.93	18.64	16.86	17.75	17.31	17.66	21.70	19.56	19.66	32.54	21.15	27.55
4	16.85	19.10	17.23	17.74	17.25	17.44	21.82	19.59	19.57	30.35	20.79	26.55
5	16.84	19.38	17.81	17.73	17.26	17.41	21.80	19.62	19.22	28.35	20.47	24.02
6	16.78	19.48	---	17.74	17.28	17.43	---	19.64	18.82	26.57	20.22	21.55
7	16.77	19.43	---	17.72	17.27	17.38	21.35	19.58	18.53	25.01	19.98	20.34
8	16.78	19.29	18.40	17.76	17.24	17.39	21.09	19.64	18.36	23.73	19.75	19.72
9	16.78	19.06	18.27	17.82	17.22	17.45	21.05	19.82	20.68	23.09	19.57	19.36
10	16.86	18.88	18.41	17.85	17.18	17.53	21.33	20.29	27.27	29.94	19.35	19.13
11	16.82	18.72	18.28	17.86	17.23	17.61	21.66	21.18	34.66	39.03	19.45	18.93
12	16.87	18.63	18.57	17.87	17.31	17.69	22.08	21.71	39.37	43.92	19.37	18.71
13	17.19	18.57	18.63	17.87	17.36	17.78	22.31	22.11	42.23	46.31	19.10	18.54
14	17.38	18.50	18.68	17.87	17.42	17.83	21.49	22.32	43.28	47.01	18.95	18.43
15	17.55	18.48	18.78	17.86	17.42	17.93	21.29	22.36	42.68	46.35	18.77	18.26
16	17.65	18.41	19.08	17.83	17.42	18.05	20.99	22.26	40.98	44.65	18.62	18.08
17	17.74	18.41	19.32	17.78	17.44	18.19	20.70	22.05	38.54	42.28	18.58	17.90
18	17.85	18.53	19.44	17.72	17.50	18.41	20.50	21.79	35.57	39.44	18.49	17.78
19	17.86	18.61	19.23	17.68	17.58	18.64	20.31	21.53	32.46	36.21	18.59	17.77
20	17.84	18.60	19.03	17.63	17.67	18.87	20.23	21.23	29.07	32.90	18.78	17.60
21	17.78	18.55	18.65	17.59	17.77	19.07	20.34	20.90	26.04	29.86	18.89	17.61
22	17.70	18.46	18.43	17.63	17.85	19.26	20.40	20.68	24.79	27.48	18.86	17.67
23	17.64	18.38	18.06	17.62	17.94	19.37	20.31	20.64	25.73	26.04	18.75	17.66
24	17.78	18.31	17.84	17.57	18.02	19.39	20.23	20.53	29.02	25.09	18.65	17.64
25	17.80	18.27	17.69	17.53	18.11	19.31	20.04	20.39	32.17	24.27	18.57	17.60
26	17.75	18.22	17.52	17.50	18.22	19.11	19.88	20.23	34.88	23.82	18.55	17.50
27	17.72	18.22	17.66	17.48	18.19	18.88	19.89	20.06	37.56	24.07	18.53	17.43
28	17.77	17.76	17.78	17.45	18.09	18.82	19.84	19.86	38.89	24.32	19.65	17.37
29	17.82	17.12	17.74	17.38	---	19.11	19.75	19.63	38.74	24.31	21.63	17.31
30	17.84	17.20	17.69	17.31	---	19.76	19.67	19.50	37.86	23.97	23.07	17.27
31	17.90	---	17.63	17.31	---	20.41	---	19.50	---	23.08	25.05	---
MEAN	17.39	18.52	---	17.67	17.54	18.36	---	20.56	30.19	---	19.81	19.61
MAX	17.90	19.48	---	17.87	18.22	20.41	---	22.36	43.28	---	25.05	27.55
MIN	16.77	17.12	---	17.31	17.18	17.38	---	19.50	18.36	---	18.49	17.27

05080000 RED LAKE RIVER AT FISHER, MN

LOCATION.--Lat 47°48'01", long 96°48'31", in $SW^1/_4NE^1/_4$ sec. 21, T.150 N., R.48 W., Polk County, Hydrologic Unit 09020303, on left bank 10 ft upstream from bridge on county highway, 0.3 mile west of Fisher, and at river mile 27.6.

DRAINAGE AREA.--5,678 mi^2.

PERIOD OF RECORD.--March to September 1999 (gage heights and maximum discharge only), October 1, 1999, to current year.

GAGE.--Water-stage recorder. Datum of gage is 800.00 ft above National Geodetic Vertical Datum of 1929 (levels by Minnesota Department of Transportation).

REMARKS.-- Records good except for estimated daily discharges, which are poor. Runoff from 1,950 mi^2 of Red Lake River basin above Lower Red Lake outlet is completely comtrolled by dam at outlet of Lower Red Lake. Flow partially affected by occasional runoff of Thief and Mud Lakes in Thief River basin.

EXTREMES OUTSIDE PERIOD OF RECORD.-- A stage of 41.00 ft occurred in spring of 1997 (from information provided by the National Weather Service).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1180	1660	1290	e1430	e840	e700	e1300	2030	2220	5810	3280	9250
2	1190	1660	1230	e1410	e840	e720	e1350	1990	2170	5340	3150	10200
3	1170	1690	e1250	e1380	e840	e740	e1400	1900	1920	5030	3050	9010
4	1140	1730	e1300	e1360	e840	e770	e1450	1860	1750	4860	3070	6590
5	1100	1660	e1400	e1330	e850	e800	e1460	1800	1660	4800	2990	4460
6	1120	1650	e1550	e1290	e850	e830	e1500	1800	1660	4740	2890	3490
7	1110	1660	e1650	e1270	e850	e850	e1530	1820	1640	4610	2690	3030
8	1050	1660	e1750	e1240	e850	e880	e1570	1920	1660	4970	2490	2760
9	1010	1630	e1730	e1220	e850	e900	e1580	2210	3170	5430	2510	2610
10	1050	1610	e1680	e1200	e850	e910	e1600	3080	8740	7380	2400	2620
11	1050	1660	e1650	e1170	e850	e920	e1610	3650	13600	11700	2310	2500
12	1000	1770	e1450	e1140	e850	e930	e1650	3540	14200	14100	2210	2330
13	1030	1890	e1450	e1120	e850	e940	e1700	3090	10700	12400	2200	2200
14	1170	1960	e1580	e1080	e850	e940	e1750	2740	8830	10200	1880	2090
15	1130	1950	e1600	e1070	e850	e930	1810	2500	7900	8360	1890	1880
16	1230	1980	e1600	e1040	e850	e920	1740	2290	7320	7000	1820	1750
17	1280	2100	e1600	e1020	e850	e910	1670	2140	6750	6020	1740	1640
18	1290	2180	e1750	e982	e830	e900	1670	1950	6160	5330	1730	1660
19	1300	e2600	e2030	e951	e820	e900	1750	1850	5650	4730	1710	1630
20	1270	2720	2140	e923	e820	e880	2080	1780	5540	4330	1760	1550
21	1260	2550	1910	e880	e840	e880	2250	1690	6300	4070	1810	1470
22	1240	2380	1690	e860	e860	e880	2190	1660	6800	3920	1840	1420
23	1220	2240	1620	e850	e880	e890	2110	1660	7540	3820	1810	1360
24	1270	2000	e1620	e850	e880	e910	2080	1610	9020	3740	1790	1330
25	1380	1980	e1590	e850	e870	e940	1990	1550	9660	3690	1780	1270
26	1410	2000	e1560	e840	e850	e970	2080	1550	9170	3610	1760	1250
27	1390	1940	e1520	e840	e770	e1020	2120	1540	8450	3550	1860	1270
28	1490	1470	e1490	e840	e680	e1080	2060	1510	7650	3480	3180	1260
29	1590	1350	e1470	e810	---	e1150	2020	1450	6990	3400	7920	1240
30	1600	1340	e1470	e840	---	e1200	2040	1500	6410	3330	9050	1210
31	1650	---	e1430	e840	---	e1250	---	1790	---	3280	7970	---
TOTAL	38370	56670	49050	32926	23510	28440	53110	63450	191230	177030	88540	86330
MEAN	1238	1889	1582	1062	839.6	917.4	1770	2047	6374	5711	2856	2878
MAX	1650	2720	2140	1430	880	1250	2250	3650	14200	14100	9050	10200
MIN	1000	1340	1230	810	680	700	1300	1450	1640	3280	1710	1210
AC-FT	76110	112400	97290	65310	46630	56410	105300	125900	379300	351100	175600	171200
CFSM	0.22	0.33	0.28	0.19	0.15	0.16	0.31	0.36	1.12	1.01	0.50	0.51
IN.	0.25	0.37	0.32	0.22	0.15	0.19	0.35	0.42	1.25	1.16	0.58	0.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1531	2645	1444	1106	1017	1443	4031	2423	4022	3334	2350	1735
MAX	2261	4103	1566	1187	1106	2280	8063	3666	6374	5711	3188	2878
(WY)	2000	2001	2002	2001	2001	2000	2001	2001	2002	2002	2001	2002
MIN	1095	1889	1324	1044	840	917	1770	1555	2770	1772	1006	858
(WY)	2001	2002	2000	2002	2002	2002	2002	2000	2000	2001	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2000 - 2002	
ANNUAL TOTAL	888010		888656			
ANNUAL MEAN	2433		2435		2257	
HIGHEST ANNUAL MEAN					2591	2001
LOWEST ANNUAL MEAN					1748	2000
HIGHEST DAILY MEAN	22200	Apr 10	14200	Jun 12	22200	Apr 10 2001
LOWEST DAILY MEAN	1000	Oct 12	680	Feb 28	589	Sep 21 2000
ANNUAL SEVEN-DAY MINIMUM	1030	Mar 7	740	Feb 27	613	Sep 17 2000
MAXIMUM PEAK FLOW			15000	Jun 12	24500	Apr 10 2001
MAXIMUM PEAK STAGE			34.35	Jun 12	38.00	Apr 10 2001
ANNUAL RUNOFF (AC-FT)	1761000		1763000		1635000	
ANNUAL RUNOFF (CFSM)	0.43		0.43		0.40	
ANNUAL RUNOFF (INCHES)	5.82		5.82		5.40	
10 PERCENT EXCEEDS	4540		5580		4380	
50 PERCENT EXCEEDS	1640		1650		1610	
90 PERCENT EXCEEDS	1100		850		940	

e Estimated.

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND

LOCATION.--Lat 47°55'39", long 97°01'40", in sec.2, T.151 N., R.50 W., Polk County, MN, Hydrologic Unit 09020301, on right bank 30 ft downstream from the DeMers Avenue bridge, 0.4 mi downstream from Red Lake River, and at mile 297.6.

DRAINAGE AREA.--30,100 mi^2, approximately, including 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1882 to current year. Prior to January 1904 monthly discharge only, published in WSP 1308.

REVISED RECORDS.--WSP 855: 1936(M). WSP 1115: 1942. WSP 1175: 1897(M). WSP 1388: 1904, 1914-15, 1917-19, 1921-22, 1927, 1950. WSP 1728: Drainage area. WRD-ND-81-1: 1882, 1897 (M).

GAGE.--Acoustic doppler velocity meter and water stage recorder. Datum of gage is 779.00 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1983, to Sept. 30, 1986, datum of gage was 780.00 ft at same site. Apr. 14, 1965, to Sept. 30, 1983, water-stage recorder 1.9 mi downstream at a datum of 778.35 ft. Nov. 3, 1933, to Apr. 13, 1965, water-stage recorder 0.3 mi upstream at 778.35 ft datum. See WSP 1728 or 1913 for history of changes prior to Nov. 3, 1933.

REMARKS.--Records good except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2040	2980	1960	2010	1890	2050	e3670	4490	4450	21300	7420	16600
2	1920	3130	1720	2000	1870	1940	e3810	4480	4530	19200	6880	17000
3	1820	3440	1630	1990	1880	1880	e3790	e4400	4450	16800	6270	16600
4	1810	3730	1950	1980	1810	1730	e3760	e4300	4360	14600	6060	14300
5	1730	3930	2310	1950	1700	e1710	e3700	e4310	4070	12900	5750	10600
6	1760	4030	2630	1980	1690	1710	3660	e4300	3700	11400	5410	7460
7	1760	3930	2740	1940	1700	1670	3480	e4300	3460	10200	5100	6200
8	1620	3860	2750	1970	1730	1670	3390	4360	3300	9240	5030	5580
9	1690	3670	2690	2160	e1750	1700	3390	4580	6310	9090	5030	5200
10	1790	3530	2740	2190	e1670	e1750	3740	5280	13200	14900	4790	4980
11	1640	3400	2690	2170	1720	e1670	4190	6330	20900	24700	4680	4780
12	1680	3460	2910	2170	1750	e1750	4660	6870	26500	33200	4690	4580
13	1860	3500	2770	2160	1750	1730	5640	6940	28700	36600	4420	4300
14	2110	3470	2760	2130	1770	1840	5880	6730	29100	37400	4210	4200
15	2260	3560	2820	2150	1740	2010	5600	6670	27100	36000	3910	3970
16	2210	3420	3120	2160	1710	2060	5180	6500	25100	32900	3740	3720
17	2180	3500	3290	2130	1710	2020	5170	6300	22000	29300	3590	3520
18	2360	3720	3320	2110	1710	e2200	5080	6020	18900	25100	3440	3390
19	2360	3960	3160	2060	1740	e2460	4760	5710	15800	21300	3370	3440
20	2370	3940	3020	2020	1840	e2580	4880	5400	12800	17500	3440	3140
21	2410	3910	2720	1960	1950	e2710	5000	5120	10900	14200	3660	3050
22	2110	3750	2530	1960	2000	e2760	e5200	4880	10700	11800	3710	2990
23	2310	3630	2230	1980	2060	e2750	e5100	4870	12000	e10600	3690	2950
24	2470	3430	2120	1950	2150	e2660	e4850	4730	15600	e9700	3710	2800
25	2580	3350	2030	1900	2270	e2500	e4690	4600	19500	9170	3700	2530
26	2620	3280	1860	1880	e2340	e2490	4590	4520	22200	8630	3700	2450
27	2560	3320	1920	1870	2340	e2480	4580	4390	24200	8700	3720	2380
28	2620	2550	2030	1970	2210	e2420	e4630	4210	25100	8910	5120	2320
29	2720	1900	2050	1960	---	e2540	4570	4040	24700	8890	8450	2230
30	2710	1910	2040	1920	---	e2940	4460	3970	22900	8610	13200	2270
31	2810	---	2010	1860	---	e3380	---	4110	---	7880	15600	---
TOTAL	66890	103190	76520	62640	52450	67760	135100	157710	466530	540720	165490	169530
MEAN	2158	3440	2468	2021	1873	2186	4503	5087	15550	17440	5338	5651
MAX	2810	4030	3320	2190	2340	3380	5880	6940	29100	37400	15600	17000
MIN	1620	1900	1630	1860	1670	1670	3390	3970	3300	7880	3370	2230
AC-FT	132700	204700	151800	124200	104000	134400	268000	312800	925400	1073000	328200	336300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2002, BY WATER YEAR (WY)

MEAN	1496	1377	1080	893.8	875.2	2789	10290	5595	4307	3752	1898	1615
MAX	5127	9971	3832	2656	3520	15370	56210	36510	19340	25270	17050	11340
(WY)	1995	2001	2001	2001	1998	1995	1997	1950	1962	1975	1993	1999
MIN	12.1	30.5	17.8	18.8	2.87	42.1	954	373	151	88.8	30.6	20.3
(WY)	1937	1937	1937	1937	1937	1937	1938	1934	1934	1936	1934	1936

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1904 - 2002	
ANNUAL TOTAL	2785480		2064530			
ANNUAL MEAN	7631		5656		2983	
HIGHEST ANNUAL MEAN					10070	1997
LOWEST ANNUAL MEAN					244	1934
HIGHEST DAILY MEAN	57300	Apr 14	37400	Jul 14	127000	Apr 18 1997
LOWEST DAILY MEAN	1620	Oct 8	1620	Oct 8	1.80	Sep 2 1977
ANNUAL SEVEN-DAY MINIMUM	1710	Oct 6	1700	Mar 5	2.5	Feb 12 1937
MAXIMUM PEAK FLOW			a38000	Jul 13	b137000	Apr 18 1997
MAXIMUM PEAK STAGE			38.67	Jul 14	c54.35	Apr 22 1997
ANNUAL RUNOFF (AC-FT)	5525000		4095000		2161000	
10 PERCENT EXCEEDS	17400		14200		6500	
50 PERCENT EXCEEDS	3340		3440		1440	
90 PERCENT EXCEEDS	2240		1810		284	

a Gage height, 38.14 ft
b Maximum observed, affected by breakout from Red River of the North about 20 mi upstream of gage that entered Red Lake River about 2 mi upstream of confluence with the Red River of the North
c From floodmark
e Estimated

05082500 RED RIVER OF THE NORTH AT GRAND FORKS, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1956 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
01...	1505	2150	--	--	--	534	27.5	16.5	--	--	--	--	--
NOV													
14...	1355	3490	--	--	--	830	13.5	5.0	--	--	--	--	--
JAN													
23...	1655	2080	--	--	--	572	--	.5	--	--	--	--	--
FEB													
11...	1055	1720	--	--	--	585	.0	.5	--	--	--	--	--
APR													
12...	1435	4420	--	--	--	453	.0	1.5	--	--	--	--	--
22...	1050	5180	--e	8.0	520	496	5.0	9.5	240	53.0	25.0	4.10	.4
JUN													
27...	0910	24500	--	--	--	360	--	26.0	--	--	--	--	--
AUG													
08...	1255	5000	7.3	--	541	554	28.5	24.0	260	60.0	28.0	4.20	.5

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	16.0	13	197	10.0	.1	74.0	4570	327	301	2.0	20	<1	20.0
JUN													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
08...	18.0	13	218	5.7	.1	83.0	5060	375	330	4.0	20	2	20

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
01...	--	--	--	--	--
NOV					
14...	--	--	--	--	--
JAN					
23...	--	--	--	--	--
FEB					
11...	--	--	--	--	--
APR					
12...	--	--	--	--	--
22...	20	<.10	<1	1.0	150
JUN					
27...	--	--	--	--	--
AUG					
08...	10	.1	2	1	380

< Less than
e Required equipment not functional/available

05082625 TURTLE RIVER AT TURTLE RIVER STATE PARK NEAR ARVILLA, ND

LOCATION.--Lat 47°55'55", long 97°30'51", in NE$^1/_4$NW$^1/_4$NW$^1/_4$ sec.1, T.l51 N., R.54 W., Grand Forks County, Hydrologic Unit 09020307, on right bank 200 ft upstream from U.S. Highway 2, 0.25 mi upstream from Turtle River State Park, 1 mi northwest of Arvilla, and 65 mi above mouth.

DRAINAGE AREA.--311 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 980 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some regulation by Larimore Dam located 4 mi upstream on the south branch of the Turtle River.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	15	e13	e12	e15	e15	e27	18	18	132	13	13
2	9.1	18	e13	e12	e16	e15	e27	18	17	97	13	13
3	9.2	19	e13	e12	e17	e15	e27	18	17	76	13	12
4	9.3	18	e13	e12	e18	e15	e26	18	16	61	12	11
5	9.3	16	e13	e12	e18	e15	e27	20	16	51	12	10
6	9.4	15	e13	e12	e18	e15	e26	21	16	43	12	10
7	9.6	15	e12	e13	e18	e15	e25	22	15	36	11	10
8	10	15	e13	e13	e18	e15	e24	24	14	32	11	9.9
9	10	16	e12	e13	e18	e16	23	28	132	29	13	10
10	12	16	e12	e13	e19	e16	22	29	397	31	12	10
11	12	16	e12	e13	e19	e16	24	30	696	30	11	10
12	12	16	e12	e12	e19	e16	23	33	346	29	11	9.8
13	11	17	e13	e12	e19	e16	24	34	235	27	11	9.8
14	11	18	e15	e11	e19	e16	23	35	182	26	11	9.6
15	11	17	e15	e11	e18	e16	23	33	140	24	11	9.5
16	11	17	e16	e11	e18	e16	22	31	111	22	11	9.4
17	11	18	e15	e11	e19	e16	22	29	91	22	13	9.3
18	11	17	e15	e11	e18	e16	22	26	71	21	13	9.6
19	11	16	e13	e11	e18	e16	22	24	59	20	13	10
20	11	18	e13	e11	e17	e16	20	24	50	19	12	10
21	11	15	e14	e10	e17	e16	19	23	40	18	11	11
22	11	14	e14	e10	e16	e15	18	22	39	18	11	10
23	11	14	e14	e10	e15	e14	18	22	82	16	11	10
24	13	14	e14	e10	e15	e15	21	21	426	16	11	10
25	14	14	e14	e10	e14	e15	19	21	612	16	10	10
26	12	e15	e14	e11	e15	e16	18	20	631	15	9.9	10
27	12	e14	e13	e11	e15	e17	18	19	423	15	10	9.7
28	13	e13	e13	e11	e15	e19	18	19	323	14	13	9.9
29	13	e13	e13	e11	---	e23	19	19	240	14	13	9.8
30	13	e13	e12	e12	---	e25	18	19	173	13	13	9.9
31	13	---	e12	e13	---	e26	---	18	---	13	14	---
TOTAL	344.9	472	413	357	481	513	665	738	5628	996	365.9	306.2
MEAN	11.13	15.73	13.32	11.52	17.18	16.55	22.17	23.81	187.6	32.13	11.80	10.21
MAX	14	19	16	13	19	26	27	35	696	132	14	13
MIN	9.0	13	12	10	14	14	18	18	14	13	9.9	9.3
AC-FT	684	936	819	708	954	1020	1320	1460	11160	1980	726	607

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2002, BY WATER YEAR (WY)

MEAN	17.09	19.98	11.87	9.580	12.72	92.63	173.9	59.18	133.4	55.35	27.49	22.14
MAX	70.0	58.3	18.2	13.5	32.3	250	525	192	923	168	84.4	74.7
(WY)	1995	2001	2001	2001	1998	1995	1997	1999	2000	1997	1993	1993
MIN	5.47	7.71	5.59	3.97	4.59	11.5	18.3	12.5	13.8	12.8	5.47	2.80
(WY)	1993	1993	1993	1993	1993	1996	2000	1993	1993	2001	1998	1998

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1993 - 2002	
ANNUAL TOTAL	12795.9		11280.0			
ANNUAL MEAN	35.06		30.90		52.88	
HIGHEST ANNUAL MEAN					94.7	2000
LOWEST ANNUAL MEAN					30.8	1998
HIGHEST DAILY MEAN	648	Apr 9	696	Jun 11	5000	Jun 13 2000
LOWEST DAILY MEAN	8.0	Sep 6	9.0	Oct 1	2.5	Sep 25 1998
ANNUAL SEVEN-DAY MINIMUM	8.2	Sep 3	9.3	Oct 1	2.6	Sep 19 1998
MAXIMUM PEAK FLOW			1030	Jun 10	12400	Jun 13 2000
MAXIMUM PEAK STAGE			7.15	Jun 10	a18.74	Jun 13 2000
ANNUAL RUNOFF (AC-FT)	25380		22370		38310	
10 PERCENT EXCEEDS	91		30		111	
50 PERCENT EXCEEDS	13		15		15	
90 PERCENT EXCEEDS	9.3		10		7.9	

a From floodmark
e Estimated

05082625 TURTLE RIVER AT TURTLE RIVER STATE PARK NEAR ARVILLA, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1993 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
26...	1300	15	--	--	--	647	-5.5	.5	--	--	--	--	--
JAN													
09...	1520	13	--	--	--	--	2.0	.5	--	--	--	--	--
MAR													
20...	1130	16	--	--	--	659	--	.0	--	--	--	--	--
APR													
10...	1450	22	7.9	8.0	699	675	-3.0	1.5	300	77.0	26.0	4.30	.7
19...	1525	23	--	--	--	702	2.0	7.0	--	--	--	--	--
MAY													
08...	1440	23	--	--	--	767	1.0	5.5	--	--	--	--	--
JUN													
07...	1310	15	--	--	--	1010	17.5	18.0	--	--	--	--	--
11...	1125	676	--	--	--	1010	17.0	17.5	--	--	--	--	--
28...	1110	337	--	--	--	904	27.5	25.5	--	--	--	--	--
AUG													
07...	1445	11	8.2	8.3	955	956	24.0	22.0	420	99.0	41.0	5.70	1

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	26.0	16	203	15.0	.20	130	26.7	447	401	2.0	50	<1	30
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07...	54.0	3	280	26.0	.20	240	19.7	681	634	7.0	60	1	50

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
26...	--	--	--	--	--
JAN					
09...	--	--	--	--	--
MAR					
20...	--	--	--	--	--
APR					
10...	150	<.10	1	2	280
19...	--	--	--	--	--
MAY					
08...	--	--	--	--	--
JUN					
07...	--	--	--	--	--
11...	--	--	--	--	--
28...	--	--	--	--	--
AUG					
07...	140	.10	3	1	360

< Less than

05083500 RED RIVER OF THE NORTH AT OSLO, MN

LOCATION.--Lat 48°11'40", long 97°08'30", in $SW^1/_4SW^1/_4$ sec.36, T.154 N., R.50 W., Marshall County, MN, Hydrologic Unit 09020306, on bridge crossing the Red River of the North, 0.5 mi west of Oslo, and at mile 271.2.

DRAINAGE AREA.--31,200 mi^2, approximately, including 3,800 mi^2 in closed basins.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--1936-37, 1941-47 (high-water periods only), 1948 to March 1973 (spring and summer months only), October 1984 to September 2001 (peak gage height and discharge only), Apri1 to September 2002 (gage height and maximum discharge only).

GAGE.--Water stage recorder. Datum of gage is 772.79 ft above National Geodetic Vertical Datum of 1929. Prior to September 1959 at datum 5.00 ft higher.

REMARKS.--Gage heights for April 12, 24, June 11, August 28-30, September 18 and 24 based on once daily readings by U.S. Geological Survey personnel.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 120,000 ft^3/s, Apr. 23, 1997, gage height, 38.00 ft (observed).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 34,000 ft^3/s, gage height, 33.96 ft, July 15; minimum gage height, 7.53 ft, September 30.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	10.66	10.28	28.59	14.72	22.41
2	---	---	---	---	---	---	---	10.62	10.66	27.61	14.08	---
3	---	---	---	---	---	---	---	10.61	10.75	26.31	13.48	---
4	---	---	---	---	---	---	---	10.48	10.65	24.81	13.00	23.64
5	---	---	---	---	---	---	---	10.48	10.33	23.23	12.67	21.51
6	---	---	---	---	---	---	---	10.47	9.93	21.63	12.37	18.56
7	---	---	---	---	---	---	---	10.44	9.48	20.06	12.14	---
8	---	---	---	---	---	---	---	10.49	9.14	18.55	11.99	---
9	---	---	---	---	---	---	---	10.81	11.52	17.63	11.82	---
10	---	---	---	---	---	---	---	11.27	---	19.64	11.53	---
11	---	---	---	---	---	---	---	12.44	26.92	25.48	11.26	---
12	---	---	---	---	---	---	12.75	13.59	---	29.69	11.23	---
13	---	---	---	---	---	---	---	14.02	32.24	32.25	10.99	10.45
14	---	---	---	---	---	---	---	13.99	33.10	33.52	---	10.11
15	---	---	---	---	---	---	---	13.85	33.16	33.92	---	9.84
16	---	---	---	---	---	---	---	13.54	32.71	33.69	---	9.46
17	---	---	---	---	---	---	---	13.26	31.89	32.91	---	9.15
18	---	---	---	---	---	---	---	12.88	30.66	31.67	---	8.74
19	---	---	---	---	---	---	---	12.53	29.16	30.01	---	---
20	---	---	---	---	---	---	---	12.17	---	27.91	---	---
21	---	---	---	---	---	---	---	11.91	---	25.54	---	---
22	---	---	---	---	---	---	---	11.56	23.35	23.17	---	---
23	---	---	---	---	---	---	---	11.29	22.97	21.04	---	---
24	---	---	---	---	---	---	11.38	11.13	24.04	19.27	---	8.15
25	---	---	---	---	---	---	---	10.93	25.86	17.83	---	8.02
26	---	---	---	---	---	---	10.93	10.73	27.34	16.68	---	7.88
27	---	---	---	---	---	---	10.93	10.57	28.34	16.10	---	7.81
28	---	---	---	---	---	---	10.95	10.42	29.13	16.02	10.87	7.74
29	---	---	---	---	---	---	10.86	10.27	29.45	15.97	16.06	7.68
30	---	---	---	---	---	---	10.73	10.05	29.23	15.82	19.89	7.59
31	---	---	---	---	---	---	---	9.98	---	15.36	21.49	---
MAX	---	---	---	---	---	---	---	14.02	---	33.92	---	---
MIN	---	---	---	---	---	---	---	9.98	---	15.36	---	---

Miscellaneous discharge measurements for Red River of the North at Oslo, MN

Date	Discharge	Gage height
April 24, 2002	5,050	11.38
June 18, 2002	23,400	30.72
July 16, 2002	33,200	33.68

05083500 RED RIVER OF THE NORTH AT OSLO, MN--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973-77, 1986-96, 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR 24...	1235	5050	7.5	--	566	519	3.0	7.5	240	54.0	26.0	3.80	.5

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR 24...	19.0	14	185	15.0	.20	83.0	4690	344	312	2.0	50	<1	20

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR 24...	10	<.10	1	<1	170

< Less than

05084000 FOREST RIVER NEAR FORDVILLE, ND

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

DRAINAGE AREA.--456 mi^2, of which about 120 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 1,035 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 21, 1951, nonrecording gage at site 50 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some regulation of high flows by temporary retention in several retarding basins above station. Retarding basins have a combined capacity of about 14,000 acre-ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e8.0	14	e11	e10	e9.0	e8.0	33	15	14	166	26	105
2	e7.8	14	e11	e10	e9.0	e8.0	31	14	13	141	23	100
3	e7.6	14	e11	e10	e9.0	e8.0	32	13	12	117	19	72
4	7.7	14	e11	e10	e9.0	e8.0	28	13	12	104	17	54
5	7.6	14	e11	e10	e9.0	e8.0	26	14	11	100	15	44
6	7.7	14	e11	e10	e9.0	e8.0	25	15	10	90	14	39
7	9.1	14	e11	e10	e9.0	e8.0	26	14	9.4	80	14	35
8	9.1	14	e11	e10	e9.0	e8.0	27	17	8.4	72	15	33
9	9.6	14	e11	e11	e9.0	e8.0	26	22	36	68	19	30
10	13	14	e11	e11	e10	e8.0	27	24	75	75	16	29
11	12	14	e11	e10	e10	e9.0	28	26	88	70	14	27
12	11	14	e11	e10	e11	e9.0	26	27	113	65	14	25
13	12	13	e11	e9.0	e11	e9.0	29	36	120	62	12	23
14	12	13	e11	e9.0	e11	e9.0	29	37	117	59	12	20
15	12	12	e11	e9.0	e11	e9.0	29	34	109	53	11	18
16	11	12	e11	e9.0	e11	e9.0	28	31	105	50	12	16
17	11	12	e11	e9.0	e11	e9.0	27	29	95	48	15	16
18	11	12	e11	e9.0	e11	e9.0	26	28	80	48	13	17
19	11	12	e11	e9.0	e11	e9.0	23	25	73	45	12	25
20	11	12	e11	e9.0	e11	e9.0	21	23	65	43	11	21
21	11	e12	e11	e9.0	e10	e10	20	22	57	41	11	22
22	10	e12	e11	e9.0	e9.0	e10	18	20	211	38	11	20
23	11	e11	e11	e9.0	e9.0	e10	18	22	452	35	11	19
24	15	e12	e11	e9.0	e9.0	e10	19	20	299	33	11	17
25	14	e12	e11	e9.0	e9.0	e10	18	20	286	31	9.2	16
26	12	12	e11	e9.0	e9.0	e11	16	19	252	29	9.8	16
27	11	11	e11	e9.0	e8.0	e12	16	18	232	28	19	15
28	10	e11	e11	e9.0	e8.0	e13	16	18	215	27	51	15
29	11	e11	e11	e9.0	---	18	16	18	213	24	529	14
30	12	e11	e11	e9.0	---	31	15	18	189	23	190	15
31	14	---	e11	e9.0	---	38	---	17	---	22	114	---
TOTAL	332.2	381	341	293.0	271.0	343.0	719	669	3571.8	1887	1270.0	918
MEAN	10.72	12.70	11.00	9.452	9.679	11.06	23.97	21.58	119.1	60.87	40.97	30.60
MAX	15	14	11	11	11	38	33	37	452	166	529	105
MIN	7.6	11	11	9.0	8.0	8.0	15	13	8.4	22	9.2	14
AC-FT	659	756	676	581	538	680	1430	1330	7080	3740	2520	1820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2002, BY WATER YEAR (WY)

MEAN	10.53	9.843	7.951	6.865	8.097	66.81	208.3	69.14	35.90	28.29	13.82	9.293
MAX	57.9	36.5	19.3	16.3	38.4	323	1182	1037	255	232	280	53.3
(WY)	1983	2001	1998	1986	1998	1995	1950	1950	1964	1982	1993	1993
MIN	1.52	2.03	2.06	2.70	1.21	4.07	9.46	7.07	2.74	3.34	1.64	0.91
(WY)	1941	1941	1941	1941	1963	1941	1991	1961	1940	1941	1945	1940

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1940 - 2002	
ANNUAL TOTAL	15278.9		10996.0			
ANNUAL MEAN	41.86		30.13		39.94	
HIGHEST ANNUAL MEAN					193	1950
LOWEST ANNUAL MEAN					6.37	1990
HIGHEST DAILY MEAN	607	Apr 8	529	Aug 29	10900	Apr 18 1950
LOWEST DAILY MEAN	6.0	Sep 14	7.6	Oct 3	0.00	Apr 1 1940
ANNUAL SEVEN-DAY MINIMUM	6.6	Sep 13	7.9	Oct 1	0.00	Apr 1 1940
MAXIMUM PEAK FLOW			746	Aug 29	a16400	Apr 18 1950
MAXIMUM PEAK STAGE			4.48	Aug 29	b14.48	Apr 18 1950
ANNUAL RUNOFF (AC-FT)	30310		21810		28940	
10 PERCENT EXCEEDS	90		66		55	
50 PERCENT EXCEEDS	12		13		9.0	
90 PERCENT EXCEEDS	8.3		9.0		3.8	

a From rating curve extended above 5,600 ft^3/s on basis of indirect measurement
b From floodmark
e Estimated

05084000 FOREST RIVER NEAR FORDVILLE, ND--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1150	7.5	--	--	--	758	13.5	11.0	--	--	--	--	--
NOV													
26...	1655	12	--	--	--	757	-6.0	.5	--	--	--	--	--
JAN													
09...	1210	12	--	--	--	--	1.5	--	--	--	--	--	--
MAR													
04...	1440	7.9	--	--	--	849	--	.5	--	--	--	--	--
28...	1025	13	--	--	--	648	.5	2.5	--	--	--	--	--
APR													
09...	1320	30	--	--	--	740	--	2.0	--	--	--	--	--
18...	1155	25	7.8	7.9	787	745	-1.0	7.7	300	72.0	30.0	5.50	1
MAY													
08...	1235	18	--	--	--	860	.5	4.0	--	--	--	--	--
JUN													
27...	1500	226	--	--	--	956	29.5	26.5	--	--	--	--	--
AUG													
02...	1300	23	8.4	--	864	845	22.0	22.0	340	80.0	35.0	6.70	1
20...	1150	11	--	--	--	829	21.0	19.0	--	--	--	--	--
29...	1115	656	--	--	--	407	22.0	20.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	44.0	24	199	13.0	.20	190	35.5	518	475	1.0	40	<1	30
MAY													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
02...	57.0	20	235	20.0	.20	220	37.5	614	560	5.0	50	2	40
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--

05084000 FOREST RIVER NEAR FORDVILLE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
03...	--	--	--	--	--
NOV					
26...	--	--	--	--	--
JAN					
09...	--	--	--	--	--
MAR					
04...	--	--	--	--	--
28...	--	--	--	--	--
APR					
09...	--	--	--	--	--
18...	220	<.10	1	1	310
MAY					
08...	--	--	--	--	--
JUN					
27...	--	--	--	--	--
AUG					
02...	260	.10	2	<1	270
20...	--	--	--	--	--
29...	--	--	--	--	--

< Less than

05085000 FOREST RIVER AT MINTO, ND

LOCATION.--Lat 48°16'10", long 97°22'10", in SE$^{1}/_{4}$ sec.31, T.156 N., R.52 W., Walsh County, Hydrologic Unit 09020308, on right bank 30 ft upstream from dam in Minto, 150 ft upstream from Burlington Northern Railway bridge, and 900 ft east of U.S. Highway 81.

DRAINAGE AREA.--740 mi^2, of which about 120 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	18	e12	e11	e9.3	e8.0	e41	16	19	199	30	239
2	8.4	20	e12	e11	e9.3	e8.0	e36	19	20	170	28	192
3	8.2	20	e13	e10	e9.5	e8.0	e33	21	16	144	26	154
4	7.4	21	e12	e9.8	e9.3	e8.0	e32	20	19	127	25	124
5	10	19	e12	e10	e9.5	e8.0	e30	17	18	113	22	103
6	9.8	18	e12	e9.8	e9.6	e8.0	e29	12	15	102	21	86
7	9.8	18	e12	e9.8	e9.6	e8.0	e28	17	18	93	20	70
8	9.7	17	e12	e10	e10	e8.0	e26	19	18	87	22	60
9	12	18	e12	e11	e10	e8.0	e22	21	29	84	22	54
10	12	17	e12	e12	e11	e8.0	26	29	63	88	20	48
11	13	17	e12	e11	e11	e9.0	30	28	69	85	19	42
12	13	16	e12	e10	e12	e9.0	37	28	73	78	18	38
13	16	17	e12	e9.8	e12	e9.0	49	31	91	73	16	35
14	14	17	e13	e8.6	e12	e9.0	55	28	98	68	16	31
15	12	17	e13	e8.7	e12	e9.0	52	32	99	65	15	29
16	12	15	e13	e8.9	e13	e9.6	42	32	95	60	15	26
17	12	14	e13	e9.0	e13	e9.6	37	31	89	57	16	25
18	13	14	e13	e9.5	e13	e9.6	33	29	94	55	16	22
19	16	14	e13	e9.3	e12	e9.6	33	26	85	53	16	26
20	16	9.9	e12	e9.0	e12	e9.6	29	26	72	52	15	37
21	16	12	e12	e8.9	e11	e10	26	25	69	48	14	64
22	16	17	e12	e9.2	e10	e10	29	23	123	42	12	62
23	16	15	e12	e9.5	e9.9	e10	25	20	237	40	14	51
24	19	14	e12	e9.5	e9.4	e10	22	21	758	39	14	44
25	15	11	e12	e9.2	e9.0	e10	25	23	616	37	13	39
26	8.5	11	e12	e9.0	e9.0	e11	21	20	448	36	14	35
27	11	8.8	e12	e9.2	e8.0	e12	22	21	372	34	53	30
28	19	8.6	e12	e9.2	e8.0	e13	20	21	303	31	168	27
29	18	8.9	e12	e9.2	---	e25	19	20	259	30	208	23
30	20	12	e12	e9.2	---	e34	20	22	225	27	517	25
31	19	---	e11	e9.2	---	e42	---	19	---	29	358	---
TOTAL	411.8	455.2	378	299.5	293.4	360.0	929	717	4510	2246	1783	1841
MEAN	13.28	15.17	12.19	9.661	10.48	11.61	30.97	23.13	150.3	72.45	57.52	61.37
MAX	20	21	13	12	13	42	55	32	758	199	517	239
MIN	7.4	8.6	11	8.6	8.0	8.0	19	12	15	27	12	22
AC-FT	817	903	750	594	582	714	1840	1420	8950	4450	3540	3650

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2002, BY WATER YEAR (WY)

MEAN	9.948	9.952	5.916	3.432	3.561	70.40	300.9	99.98	49.29	34.89	17.28	10.06
MAX	59.1	32.4	20.9	15.8	50.2	438	1573	1515	267	348	328	69.0
(WY)	1983	2001	1998	1998	1998	1966	1950	1950	1964	1997	1993	1993
MIN	0.000	0.97	0.29	0.000	0.000	0.000	17.8	10.6	4.21	1.87	0.000	0.000
(WY)	1991	1991	1990	1977	1961	1962	2000	1946	1991	1980	1946	1961

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 2002	
ANNUAL TOTAL	17027.5		14223.9			
ANNUAL MEAN	46.65		38.97		51.73	
HIGHEST ANNUAL MEAN					268	1950
LOWEST ANNUAL MEAN					4.36	1990
HIGHEST DAILY MEAN	690	Apr 9	758	Jun 24	11600	Apr 19 1950
LOWEST DAILY MEAN	6.0	Sep 12	7.4	Oct 4	0.00	Sep 5 1945
ANNUAL SEVEN-DAY MINIMUM	6.7	Sep 10	8.0	Feb 27	0.00	Sep 5 1945
MAXIMUM PEAK FLOW			791	Jun 24	a16600	Apr 18 1950
MAXIMUM PEAK STAGE			3.66	Jun 24	b11.80	Apr 18 1950
ANNUAL RUNOFF (AC-FT)	33770		28210		37470	
10 PERCENT EXCEEDS	97		84		78	
50 PERCENT EXCEEDS	16		17		8.9	
90 PERCENT EXCEEDS	10		9.2		0.50	

a From rating curve extended above 7,200 ft^3/s on basis of contracted opening measurement of peak flow
b From floodmark
e Estimated

05085000 FOREST RIVER AT MINTO, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
12...	1035	10	--	--	--	930	9.5	13.0	--	--	--	--	--
NOV													
27...	1705	9.2	--	--	--	--e	-5.0	.5	--	--	--	--	--
JAN													
15...	1425	8.6	--	--	--	856	-6.5	-.5	--	--	--	--	--
MAR													
18...	1320	9.6	--	--	--	680	-2.5	.5	--	--	--	--	--
APR													
17...	1435	39	7.5	7.9	677	651	14.5	7.6	270	65.0	26.0	5.20	.8
JUN													
27...	1200	397	--	--	--	913	26.5	--	--	--	--	--	--
AUG													
05...	1000	25	7.8	8.0	914	897	22.0	20.5	370	84.0	39.0	7.20	1

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	32.0	20	181	13.0	.20	160	47.9	450	410	2.0	20	1	30
JUN													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	58.0	25	242	26.0	.20	230	24.6	363	590	7.0	50	1	40

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
12...	--	--	--	--	--
NOV					
27...	--	--	--	--	--
JAN					
15...	--	--	--	--	--
MAR					
18...	--	--	--	--	--
APR					
17...	280	<.10	1	3	220
JUN					
27...	--	--	--	--	--
AUG					
05...	260	.10	2	1	280

< Less than
e Required equipment not functional/available

05090000 PARK RIVER AT GRAFTON, ND

LOCATION.--Lat 48°25'29", long 97°24'42", in NE$^{1}/_{4}$ sec.13, T.157 N., R.53 W., Walsh County, Hydrologic Unit 09020310, on right bank just upstream of U.S. Highway 81 bridge in Grafton and 3.5 mi downstream from South Branch Park River.

DRAINAGE AREA.--695 mi^2, approximately.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 811.00 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1984, gage located on right bank 30 ft upstream of Wakeman Avenue bridge. Datum of gage was 807.39 ft. Prior to Sept. 30, 1940, nonrecording gage at site 30 ft downstream at same datum. Oct. 1, 1940, to Sept. 17, 1946, nonrecording gage at site 2 mi downstream above masonry dam at same datum. Sept. 18, 1946, to July 25, 1952, nonrecording gage at site 30 ft downstream at same datum.

REMARKS.--Records good except for periods where discharge is less than 3.0 ft^3/s and for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.04	3.5	e5.0	e4.2	e3.8	e3.8	e45	28	13	212	23	780
2	e0.02	3.7	e4.8	e4.2	e3.9	e3.6	36	29	11	166	20	644
3	e0.01	4.4	e4.6	e4.1	e3.8	e3.3	16	30	10	130	19	574
4	e0.01	7.8	e4.6	e4.1	e3.6	e3.2	24	30	9.8	103	18	479
5	e0.01	8.7	e4.6	e4.1	e3.8	e3.2	26	30	9.3	80	17	447
6	e0.01	9.5	e4.4	e4.1	e3.8	e3.0	23	25	9.2	70	18	351
7	e0.01	7.3	e4.4	e4.0	e3.8	e2.7	24	19	9.4	63	17	265
8	e0.01	5.3	e4.4	e4.2	e3.9	e2.9	23	23	8.5	58	13	204
9	e0.01	5.1	e4.4	e4.5	e3.9	e3.2	23	32	13	51	13	170
10	e0.01	4.8	e4.5	e4.4	e3.8	e3.0	22	31	15	53	11	134
11	e0.01	4.5	e5.3	e4.5	e3.9	e2.9	28	35	23	40	10	106
12	e0.01	4.4	e6.1	e4.7	e4.0	e3.3	25	46	231	36	11	87
13	e0.01	4.3	e5.4	e4.6	e3.9	e3.1	34	54	616	37	7.9	66
14	e0.01	4.2	e4.9	e4.6	e4.2	e2.7	46	62	793	34	7.8	54
15	e0.01	4.2	e4.8	e4.7	e4.2	e1.8	44	63	720	32	8.0	46
16	e0.01	4.0	e5.1	e4.6	e4.3	e1.6	53	93	536	30	8.0	40
17	e0.01	4.4	e5.0	e4.4	e4.3	e1.8	67	107	410	22	8.6	36
18	e0.01	4.7	e4.9	e4.3	e4.4	e2.5	66	101	316	19	7.0	30
19	e0.01	5.0	e4.6	e4.4	e4.4	e2.7	59	91	249	18	6.3	41
20	e0.01	5.1	e4.2	e4.2	e4.3	e2.6	52	83	187	16	5.6	43
21	e0.06	5.2	e3.9	e4.4	e4.2	e2.5	44	67	158	14	5.3	69
22	e0.11	4.9	e4.5	e4.3	e4.3	e2.4	37	38	202	13	4.5	169
23	e0.16	5.1	e4.4	e4.3	e4.4	e2.3	34	27	256	12	3.6	196
24	e0.33	4.5	e4.4	e4.4	e4.3	e2.0	31	25	306	14	3.5	151
25	e0.59	4.2	e4.4	e4.4	e4.1	e1.8	31	20	452	19	3.2	101
26	e0.81	4.0	e4.5	e4.3	e4.1	e2.0	25	16	716	19	2.8	77
27	1.1	4.1	e4.6	e4.2	e4.0	e3.2	22	15	698	16	5.3	64
28	1.4	6.0	e4.6	e4.1	e3.9	e4.8	24	13	531	16	363	52
29	1.8	e5.7	e4.6	e4.1	---	e8.0	27	13	361	15	1430	45
30	2.2	e5.4	e4.6	e4.0	---	e15	26	12	267	14	1140	39
31	2.7	---	e4.3	e4.2	---	e35	---	15	---	19	846	---
TOTAL	11.50	154.0	144.8	133.6	113.3	135.9	1037	1273	8136.2	1441	4056.4	5560
MEAN	0.371	5.133	4.671	4.310	4.046	4.384	34.57	41.06	271.2	46.48	130.9	185.3
MAX	2.7	9.5	6.1	4.7	4.4	35	67	107	793	212	1430	780
MIN	0.01	3.5	3.9	4.0	3.6	1.6	16	12	8.5	12	2.8	30
AC-FT	23	305	287	265	225	270	2060	2520	16140	2860	8050	11030

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2002, BY WATER YEAR (WY)

MEAN	4.978	3.687	2.502	1.481	2.620	76.62	415.2	117.2	49.47	33.87	15.32	9.475
MAX	69.9	31.3	17.4	13.9	45.7	654	2051	2071	576	441	569	185
(WY)	1983	1981	1983	1983	1981	1995	1950	1950	1964	1997	1993	2002
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.05	0.000	0.000	0.000	0.000
(WY)	1934	1934	1933	1932	1933	1936	1991	1939	1961	1990	1932	1932

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1931 - 2002	
ANNUAL TOTAL	31826.81		22196.70			
ANNUAL MEAN	87.20		60.81		61.09	
HIGHEST ANNUAL MEAN					353	1950
LOWEST ANNUAL MEAN					1.38	1990
HIGHEST DAILY MEAN	1820	Apr 10	1430	Aug 29	11700	Apr 19 1950
LOWEST DAILY MEAN	0.00	Aug 29	0.00	Oct 3	0.00	Aug 10 1931
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 29	0.01	Oct 3	0.00	Aug 21 1931
MAXIMUM PEAK FLOW			1610	Aug 29	a12600	Apr 19 1950
MAXIMUM PEAK STAGE			10.81	Aug 29	b20.13	Apr 19 1950
ANNUAL RUNOFF (AC-FT)	63130		44030		44260	
10 PERCENT EXCEEDS	231		154		81	
50 PERCENT EXCEEDS	5.0		6.1		2.0	
90 PERCENT EXCEEDS	0.01		2.3		0.00	

a From rating curve extended above 9,000 ft^3/s
b Site and datum then in use
e Estimated

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
27...	1225	4.2	--	--	--	--	-5.0	.5	--	--	--	--	--
JAN													
16...	0940	4.6	--	--	--	1670	6.0	-.5	--	--	--	--	--
MAR													
19...	1335	2.7	--	--	--	1690	--	1.0	--	--	--	--	--
APR													
11...	1200	27	--	--	--	1180	13.0	1.0	--	--	--	--	--
15...	1100	42	--e	7.8	1000	969	19.0	1.5	320	74.0	33.0	7.90	2
MAY													
06...	1230	24	--	--	--	1040	4.5	7.5	--	--	--	--	--
JUN													
14...	1205	803	--	--	--	743	21.5	17.0	--	--	--	--	--
26...	1520	743	--	--	--	689	32.5	23.0	--	--	--	--	--
AUG													
05...	1325	19	8.1	8.1	948	1040	24.0	22.5	330	77.0	33.0	11.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	79.0	34	208	75.0	.20	190	71.2	628	585	3.0	40	<1	40
MAY													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
05...	81.0	34	246	39.0	.30	240	33.1	660	630	8.0	50	2	50

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
27...	--	--	--	--	--
JAN					
16...	--	--	--	--	--
MAR					
19...	--	--	--	--	--
APR					
11...	--	--	--	--	--
15...	600	<.10	1	3	330
MAY					
06...	--	--	--	--	--
JUN					
14...	--	--	--	--	--
26...	--	--	--	--	--
AUG					
05...	470	.10	4	<1	350

< Less than
e Required equipment not functional/available

05092000 RED RIVER OF THE NORTH AT DRAYTON, ND

LOCATION.--Lat 48°34'20", long 97°08'50", in $SE^1/_4SE^1/_4SE^1/_4$ sec.24, T.159 N., R.51 W., Pembina County, Hydrologic Unit 09020311, on downstream side of bridge on North Dakota State Highway 66, at the North Dakota-Minnesota border, 1.5 mi northeast of Drayton, and at mile 206.7.

DRAINAGE AREA.--34,800 mi^2, approximately, includes 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1388: 1949-50. WSP 1728: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 755.00 ft above National Geodetic Vertical Datum of 1929 (Minnesota highway bench mark). Prior to Nov. 30, 1954, nonrecording gage at site 1.5 mi upstream at datum 1.59 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1897 reached a stage of about 41 ft at site and datum in use prior to Nov. 30, 1954.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2460	3050	2410	e2200	e1900	e2350	e3500	4630	4030	25300	7870	17900
2	2460	3160	2130	e2150	e1900	e2250	e3900	4530	4230	24900	7480	18800
3	2430	3290	2060	e2100	e1900	e2100	e4300	4500	4440	24300	7100	e19000
4	2390	3460	2120	e2100	e1900	e2050	e4700	4420	4510	23200	6620	e19000
5	2330	3740	2130	e2050	e1900	e1900	e4750	4370	4460	21900	6090	e18000
6	2280	4030	2100	e2000	e1800	e1850	e4700	4350	4270	20100	5690	e15000
7	2250	4210	2350	e2000	e1750	e1750	e4500	4330	4030	18100	5360	e11000
8	2220	4260	2740	e2000	e1750	e1750	e4400	4330	3840	16000	5110	e9000
9	2190	4190	2930	e2100	e1700	e1750	e4200	4530	3850	13800	5000	e7600
10	2160	4050	3080	e2200	e1700	e1750	e4200	5060	7240	12300	e4850	e6400
11	2140	3870	3180	e2200	e1700	e1750	e4500	5410	15500	13700	e4800	5560
12	2120	3750	3180	e2200	e1750	e1750	e5300	6220	22000	17300	e4800	4940
13	2110	3700	3230	e2200	e1750	e1750	e5800	7220	26900	21100	e4750	4590
14	2100	3710	3260	e2200	e1750	e1850	e6150	7710	30200	24300	e4650	e4400
15	2090	3740	3240	e2150	e1750	e1900	6220	7660	e32000	26800	e4500	e4300
16	2250	3760	e3250	e2150	e1750	e1950	6030	7480	e33500	28700	e4300	e4150
17	2420	3780	e3280	e2200	e1700	e2050	5730	7200	e34500	30100	e4100	e4000
18	2490	3800	e3300	e2200	e1700	e2050	5350	6880	34700	31100	e3950	e3850
19	2600	3870	e3300	e2150	e1750	e2100	5040	6560	34700	30900	e3800	e3700
20	2670	3990	e3300	e2100	e1850	e2300	4820	6210	34200	30200	e3600	e3550
21	2720	4020	e3280	e2100	e1900	e2500	4710	5880	33200	28800	e3600	e3450
22	2750	4000	e3180	e2000	e1950	e2700	4800	5520	31900	27000	e3600	e3300
23	2750	3930	2940	e2000	e2050	e2850	4900	5150	30800	24500	e3700	e3200
24	2740	3820	2750	e2000	e2150	e2850	4930	4930	29200	21600	e3800	e3100
25	2720	3730	2570	e2000	e2250	e2850	4870	4720	27800	18600	e3800	e2900
26	2730	3580	2420	e1950	e2300	e2800	4740	4570	26300	15600	e3800	e2800
27	2780	3510	2300	e1900	e2400	e2800	4700	4460	25100	12900	e4000	e2700
28	2790	3610	2190	e1900	e2400	e2750	4860	4350	25200	10900	5840	e2550
29	2790	3310	e2010	e1950	---	e2750	4900	4260	25400	9640	9140	e2500
30	2860	2770	e2180	e1950	---	e2900	4790	4160	25400	8910	13300	e2400
31	2950	---	e2180	e1900	---	e3100	---	4050	---	8350	16100	---
TOTAL	76740	111690	84570	64300	53050	69800	146290	165650	623400	640900	175100	213640
MEAN	2475	3723	2728	2074	1895	2252	4876	5344	20780	20670	5648	7121
MAX	2950	4260	3300	2200	2400	3100	6220	7710	34700	31100	16100	19000
MIN	2090	2770	2010	1900	1700	1750	3500	4050	3840	8350	3600	2400
AC-FT	152200	221500	167700	127500	105200	138400	290200	328600	1237000	1271000	347300	423800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2002, BY WATER YEAR (WY)

MEAN	1979	1905	1459	1200	1167	3389	15460	9651	6092	5550	2696	2186
MAX	5194	11840	4168	2679	2598	16290	54710	58890	23420	28240	21580	12140
(WY)	1995	2001	1999	2001	1998	1998	1997	1950	1962	1975	1993	1999
MIN	317	277	149	174	201	280	1275	938	676	348	243	329
(WY)	1991	1977	1977	1990	1977	1962	1981	1977	1977	1988	1977	1988

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1949 - 2002	
ANNUAL TOTAL	3181980		2425130			
ANNUAL MEAN	8718		6644		4417	
HIGHEST ANNUAL MEAN					11280	1997
LOWEST ANNUAL MEAN					536	1977
HIGHEST DAILY MEAN	55000	Apr 18	34700	Jun 18	124000	Apr 24 1997
LOWEST DAILY MEAN	2010	Dec 29	1700	Feb 9	110	Dec 23 1989
ANNUAL SEVEN-DAY MINIMUM	2130	Oct 9	1730	Feb 7	118	Dec 28 1989
MAXIMUM PEAK FLOW			34800	Jun 18	124000	Apr 24 1997
MAXIMUM PEAK STAGE			35.86	Jun 18	45.55	Apr 24 1997
INSTANTANEOUS LOW FLOW					7.7	Oct 16 1936
ANNUAL RUNOFF (AC-FT)	6311000		4810000		3200000	
10 PERCENT EXCEEDS	28500		20500		10200	
50 PERCENT EXCEEDS	3580		3740		1930	
90 PERCENT EXCEEDS	2500		1950		495	

e Estimated

05092000 RED RIVER OF THE NORTH AT DRAYTON, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
02...	1250	2620	--	--	--	606	8.0	5.5	--	--	--	--	--
MAR													
19...	1105	2110	--	--	--	530	--	.0	--	--	--	--	--
APR													
17...	1530	5920	8.2	7.9	540	512	19.0	8.0	200	44.0	22.0	3.30	.8
MAY													
09...	1110	4250	--	--	--	626	1.0	7.0	--	--	--	--	--
JUL													
02...	1135	25500	--	--	--	428	27.0	26.0	--	--	--	--	--
29...	1135	9630	--	--	--	572	--	25.0	--	--	--	--	--
AUG													
21...	0935	3540	8.0	8.1	597	585	25.5	22.0	270	61.0	29.0	4.40	.6

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	27.0	22	161	26.0	.10	68.0	5070	317	287	2.0	70	<1	20
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
21...	23.0	15	203	22.0	.20	92.0	3640	381	354	5.0	70	1	20

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
02...	--	--	--	--	--
MAR					
19...	--	--	--	--	--
APR					
17...	10	<.10	<1	1	160
MAY					
09...	--	--	--	--	--
JUL					
02...	--	--	--	--	--
29...	--	--	--	--	--
AUG					
21...	10	<.10	1	<1	220

< Less than

05099100 SNOWFLAKE CREEK NEAR SNOWFLAKE, MANITOBA
(International gaging station)

LOCATION.--Lat 49°01'17", long 98°36'13", in SW$^{1}/_{4}$ sec.10, T.1, R.9 W., first meridian, Hydrologic Unit 09020313, at traffic bridge, 2.5 mi east, and 1.5 mi south of Snowflake, Manitoba.

DRAINAGE AREA.--348 mi^{2}.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder since March 1968 and nonrecording gage prior thereto. Datum of gage is Geodetic Survey of Canada Datum of 1929. Prior to Jan. 1, 1987, recording gage at same site at datum of 1221.66 ft above Geodetic Survey of Canada Datum of 1929. Prior to Apr. 2, 1964, nonrecording gage at present site and datum. Apr. 2, 1964, to May 10, 1965, nonrecording gage at site 0.5 mi downstream at present datum.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.4	1.3	e0.25	e0.00	e0.00	e0.00	e2.4	1.5	0.46	105	13	17
2	e2.9	1.9	e0.21	e0.00	e0.00	e0.00	e2.1	1.3	0.42	96	12	24
3	e2.8	4.4	e0.18	e0.00	e0.00	e0.00	e3.8	1.1	0.39	86	12	18
4	e2.6	2.5	e0.14	e0.00	e0.00	e0.00	e2.3	0.99	0.35	76	12	14
5	e2.5	2.2	e0.11	e0.00	e0.00	e0.00	e2.5	1.7	0.32	70	12	12
6	e2.3	2.6	e0.11	e0.00	e0.00	e0.00	e2.8	1.3	0.25	60	12	7.7
7	e2.2	2.1	e0.11	e0.00	e0.00	e0.00	e2.7	1.1	0.14	50	14	5.7
8	e2.0	1.8	e0.07	e0.00	e0.00	e0.00	e4.3	1.3	0.11	42	14	4.4
9	e1.9	1.7	e0.11	e0.00	e0.00	e0.00	e3.9	1.9	5.8	35	16	4.7
10	e1.7	3.7	e0.07	e0.00	e0.00	e0.00	e3.8	2.2	302	31	16	4.9
11	1.6	3.2	e0.04	e0.00	e0.00	e0.00	e3.1	3.0	392	26	16	3.4
12	1.4	4.0	e0.04	e0.00	e0.00	e0.35	e3.6	5.5	187	22	17	2.9
13	1.2	3.0	e0.04	e0.00	e0.00	e2.3	e7.5	4.8	187	18	17	2.3
14	1.5	3.6	e0.04	e0.00	e0.00	e2.4	9.2	2.5	191	15	18	2.8
15	1.4	3.7	e0.04	e0.00	e0.00	e1.9	5.5	2.5	196	13	19	1.9
16	1.1	3.1	e0.04	e0.00	e0.00	e0.92	3.4	2.4	201	12	20	2.0
17	0.81	3.2	e0.04	e0.00	e0.00	e0.64	2.8	1.6	200	12	24	1.8
18	0.71	2.8	e0.0	e0.00	e0.00	e0.39	2.5	1.2	201	12	22	1.7
19	0.92	e1.7	e0.0	e0.00	e0.00	e0.14	2.2	1.3	200	12	21	2.0
20	1.4	e1.0	e0.0	e0.00	e0.00	e0.21	2.0	1.3	192	14	22	1.2
21	0.78	e1.0	e0.0	e0.00	e0.00	e0.04	2.0	1.2	178	14	23	1.6
22	0.64	e1.1	e0.0	e0.00	e0.00	e0.00	1.8	3.4	168	13	23	1.5
23	0.60	e1.1	e0.0	e0.00	e0.00	e0.00	2.1	2.0	162	13	24	1.2
24	0.67	e1.2	e0.0	e0.00	e0.00	e0.00	2.4	1.4	159	14	24	1.2
25	0.67	e1.4	e0.0	e0.00	e0.00	e0.00	e2.3	0.99	150	14	23	1.4
26	0.99	e0.67	e0.0	e0.00	e0.00	e0.00	1.6	0.81	143	12	17	1.3
27	0.49	e0.49	e0.0	e0.00	e0.00	e7.3	1.4	0.85	136	13	15	1.3
28	0.53	e0.35	e0.0	e0.00	e0.00	e11	1.4	0.74	127	12	26	1.1
29	0.46	e0.32	e0.0	e0.00	---	e11	1.7	0.71	122	12	30	0.92
30	0.46	e0.28	e0.0	e0.00	---	e6.5	1.6	0.67	114	13	25	1.5
31	0.64	---	e0.0	e0.00	---	e4.2	---	0.53	---	12	20	---
TOTAL	43.27	61.41	1.64	0.00	0.00	49.29	90.7	53.79	3916.24	949	579	147.42
MEAN	1.396	2.047	0.053	0.000	0.000	1.590	3.023	1.735	130.5	30.61	18.68	4.914
MAX	3.4	4.4	0.25	0.00	0.00	11	9.2	5.5	392	105	30	24
MIN	0.46	0.28	0.00	0.00	0.00	0.00	1.4	0.53	0.11	12	12	0.92
AC-FT	86	122	3.3	0.00	0.00	98	180	107	7770	1880	1150	292

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002, BY WATER YEAR (WY)

MEAN	5.401	2.332	0.270	0.038	0.154	8.777	140.5	89.13	24.40	22.66	11.02	5.908
MAX	70.5	39.9	7.67	1.36	4.90	74.6	668	945	131	529	139	99.7
(WY)	1995	1995	1995	1995	1981	1995	1995	1997	2002	1997	1997	1993
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.22	0.061	0.000	0.000	0.000	0.000
(WY)	1962	1962	1962	1962	1962	1962	1973	1988	1962	1961	1961	1961

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002	
ANNUAL TOTAL	22783.66		5891.76			
ANNUAL MEAN	62.42		16.14		26.49	
HIGHEST ANNUAL MEAN					197	1997
LOWEST ANNUAL MEAN					0.14	2000
HIGHEST DAILY MEAN	968	Apr 21	392	Jun 11	2160	Apr 30 1997
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Dec 18	0.00	Mar 1 1961
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Dec 18	0.00	Mar 1 1961
MAXIMUM PEAK FLOW			851	Jun 10	2710	Jul 12 1997
MAXIMUM PEAK STAGE			1227.10	Jun 10	1232.08	Apr 24 1997
ANNUAL RUNOFF (AC-FT)	45190		11690		19190	
10 PERCENT EXCEEDS	123		24		47	
50 PERCENT EXCEEDS	3.6		1.5		0.05	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

05099150 MOWBRAY CREEK NEAR MOWBRAY, MANITOBA
(International gaging station)

LOCATION.--Lat 49°00'00", long 98°27'15", in SE$^{1}/_{4}$ sec.3, T.1, R.8 W., first meridian, Hydrologic Unit 09020313, on downstream side of bridge on Municipal Road on international boundary and 1.5 mi east of Mowbray, Manitoba.

DRAINAGE AREA.--93.9 mi^{2}.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1962 to current year (seasonal records only most years).

GAGE.--Water-stage recorder. Datum of gage is Geodetic Survey of Canada Datum of 1929. Nonrecording gage prior to 1971.

COOPERATION.--Records furnished by the Water Survey of Canada.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.0	0.42	0.07	e0.00	e0.00	e0.00	e0.85	0.71	0.32	13	0.00	16
2	0.0	0.49	0.07	e0.00	e0.00	e0.00	e5.9	0.71	0.32	9.0	0.00	22
3	0.0	0.95	0.04	e0.00	e0.00	e0.00	e10	0.64	0.35	5.8	0.00	15
4	0.0	0.64	0.04	e0.00	e0.00	e0.00	e8.3	0.49	0.35	4.6	0.00	11
5	0.0	4.3	0.04	e0.00	e0.00	e0.00	e5.9	1.5	0.39	4.2	0.00	11
6	0.0	12	0.04	e0.00	e0.00	e0.00	e5.0	6.3	0.39	3.0	0.00	9.7
7	0.0	6.8	0.04	e0.00	e0.00	e0.00	e4.3	6.2	0.25	2.1	0.00	8.0
8	0.0	3.0	e0.04	e0.00	e0.00	e0.00	e3.6	7.1	0.14	1.3	0.00	7.0
9	0.0	2.1	e0.04	e0.00	e0.00	e0.00	e3.7	7.5	2.6	0.95	0.00	6.3
10	0.0	1.7	e0.04	e0.00	e0.00	e0.00	e6.2	11	102	0.81	0.00	5.3
11	0.0	1.2	e0.04	e0.00	e0.00	e0.00	e9.5	12	201	0.57	0.00	4.6
12	0.0	1.1	e0.04	e0.00	e0.00	e0.00	e9.4	12	228	0.46	0.00	3.8
13	0.0	1.3	e0.04	e0.00	e0.00	e0.00	e10	9.7	288	0.39	0.00	3.2
14	0.0	1.2	e0.0	e0.00	e0.00	e0.00	e7.9	8.8	252	0.35	0.00	2.8
15	0.0	0.92	e0.0	e0.00	e0.00	e0.00	e11	5.9	189	0.32	0.00	2.3
16	0.0	0.71	e0.0	e0.00	e0.00	e0.00	8.4	3.8	142	0.25	0.00	1.8
17	0.0	0.57	e0.0	e0.00	e0.00	e0.00	7.2	2.9	105	0.25	0.00	1.4
18	0.0	0.49	e0.0	e0.00	e0.00	e0.00	5.6	2.4	78	0.21	0.28	1.4
19	0.0	0.35	e0.0	e0.00	e0.00	e0.00	3.7	2.2	63	0.18	0.49	1.4
20	0.0	0.28	e0.0	e0.00	e0.00	e0.00	2.8	1.9	52	0.39	0.39	1.2
21	0.0	0.25	e0.0	e0.00	e0.00	e0.00	2.4	1.6	44	0.39	0.32	0.99
22	0.0	0.25	e0.0	e0.00	e0.00	e0.00	2.3	1.2	42	0.25	1.6	0.78
23	0.0	0.25	e0.0	e0.00	e0.00	e0.00	2.1	0.95	43	0.14	1.9	0.67
24	0.0	0.25	e0.0	e0.00	e0.00	e0.00	2.2	1.1	38	0.11	1.1	0.64
25	0.0	0.21	e0.0	e0.00	e0.00	e0.00	1.8	0.99	39	0.07	0.64	0.60
26	0.0	0.11	e0.0	e0.00	e0.00	e0.00	1.8	0.85	41	0.04	0.46	0.49
27	0.0	0.07	e0.0	e0.00	e0.00	e0.00	1.4	0.64	40	0.04	0.81	0.46
28	0.0	0.07	e0.0	e0.00	e0.00	e4.6	1.1	0.49	34	0.00	3.7	0.46
29	0.04	0.07	e0.0	e0.00	---	e5.7	0.88	0.49	27	0.00	6.0	0.49
30	0.07	0.07	e0.0	e0.00	---	e3.3	0.71	0.49	18	0.00	6.3	0.46
31	0.28	---	e0.0	e0.00	---	e1.4	---	0.39	---	0.00	5.9	---
TOTAL	0.39	42.12	0.58	0.00	0.00	15.00	145.94	112.94	2071.11	49.17	29.89	141.24
MEAN	0.013	1.404	0.019	0.000	0.000	0.484	4.865	3.643	69.04	1.586	0.964	4.708
MAX	0.28	12	0.07	0.00	0.00	5.7	11	12	288	13	6.3	22
MIN	0.00	0.07	0.00	0.00	0.00	0.00	0.71	0.39	0.14	0.00	0.00	0.46
AC-FT	0.8	84	1.2	0.00	0.00	30	289	224	4110	98	59	280

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

MEAN	2.040	0.941	0.069	0.004	0.255	14.68	82.64	19.76	9.337	9.320	8.467	1.928
MAX	56.5	16.4	1.35	0.080	5.68	122	344	159	69.0	189	161	28.6
(WY)	1995	1995	1995	1995	1981	1995	1997	1974	2002	1997	1995	1995
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.41	0.009	0.000	0.000	0.000	0.000
(WY)	1963	1963	1963	1963	1963	1962	2000	1973	1968	1968	1962	1962

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1962 - 2002	
ANNUAL TOTAL	9359.72		2608.38			
ANNUAL MEAN	25.64		7.146		15.63	
HIGHEST ANNUAL MEAN					57.9	1997
LOWEST ANNUAL MEAN					0.59	1963
HIGHEST DAILY MEAN	961	Apr 10	288	Jun 13	1350	Apr 24 1997
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Mar 1 1962
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Mar 1 1962
MAXIMUM PEAK FLOW			292	Jun 13	1470	Apr 23 1997
MAXIMUM PEAK STAGE			1532.22	Jun 13	1534.83	Apr 21 1997
ANNUAL RUNOFF (AC-FT)	18570		5170		11330	
10 PERCENT EXCEEDS	32		9.6		20	
50 PERCENT EXCEEDS	0.07		0.25		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

05099300 PEMBINA RIVER NEAR WINDYGATES, MANITOBA
(International gaging station)

LOCATION.--Lat 49°01'53", long 98°16'40", in SE$^{1}/_{4}$ sec.13, T.1, R.7 W., first meridian, Hydrologic Unit 09020313, on left bank 0.2 mi downstream from bridge and 3 mi northeast of Windygates, Manitoba.

DRAINAGE AREA.--3,020 mi^{2}.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is Geodetic Survey of Canada Datum of 1929. Prior to Jan. 1, 1985, datum of gage at 1102.02 ft above Geodetic Survey of Canada datum of 1929.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	22	e17	e16	e5.8	e3.1	e31	41	13	232	40	162
2	37	20	e17	e9.1	e10	e4.3	e36	43	12	218	33	143
3	33	19	e17	e7.9	e10	e4.3	e31	47	13	205	30	137
4	31	19	e18	e11	e8.1	e4.4	e21	42	12	194	26	126
5	30	19	e17	e13	e8.9	e4.3	e24	43	13	e182	26	115
6	28	23	e17	e15	e10	e4.2	e25	40	12	e170	29	108
7	27	25	e17	e15	e10	e4.1	e29	40	7.8	158	29	103
8	30	24	e17	e14	e9.7	e4.3	e30	53	5.4	142	27	98
9	33	22	e17	e11	e9.2	e4.6	e38	66	18	128	32	98
10	30	20	e17	e14	e7.7	e5.1	e38	62	717	117	28	94
11	29	20	e17	e15	e8.4	e5.3	e37	60	1800	108	26	93
12	27	19	e16	e19	e4.9	e5.8	e40	67	1600	100	24	92
13	26	20	e16	e15	e6.2	e6.3	e50	71	1390	96	26	90
14	28	20	e16	e14	e6.0	e6.6	e62	67	1030	103	28	86
15	30	20	e16	e14	e5.8	e7.0	62	61	756	100	31	89
16	28	20	e16	e14	e4.8	e7.4	63	55	607	95	30	85
17	30	21	e16	e14	e5.3	e7.3	70	49	533	88	47	84
18	30	18	e16	e14	e5.1	e7.8	65	42	473	78	46	84
19	31	17	e16	e14	e5.2	e8.3	64	41	427	75	41	82
20	31	19	e16	e13	e4.9	e8.8	60	34	381	72	44	73
21	28	19	e15	e13	e4.5	e8.8	58	e30	353	73	49	72
22	27	16	e15	e13	e4.7	e8.7	56	e27	347	69	44	74
23	26	17	e15	e14	e5.0	e8.1	51	e24	335	65	38	75
24	29	18	e15	e15	e4.9	e7.3	52	22	331	63	35	81
25	33	e12	e15	e16	e4.1	e7.1	47	20	319	60	36	79
26	28	e11	e15	e16	e3.6	e7.3	46	18	308	56	37	78
27	31	e17	e15	e16	e3.6	e7.8	62	15	304	49	194	76
28	27	e15	e15	e15	e3.6	e11	65	16	290	45	848	74
29	26	e15	e15	e13	---	e14	55	15	267	41	327	77
30	25	e17	e15	e10	---	e13	45	13	245	46	198	77
31	23	---	e15	e8.8	---	e27	---	12	---	44	166	---
TOTAL	911	564	497	421.8	180.0	233.4	1413	1236	12919.2	3272	2615	2805
MEAN	29.39	18.80	16.03	13.61	6.429	7.529	47.10	39.87	430.6	105.5	84.35	93.50
MAX	39	25	18	19	10	27	70	71	1800	232	848	162
MIN	23	11	15	7.9	3.6	3.1	21	12	5.4	41	24	72
AC-FT	1810	1120	986	837	357	463	2800	2450	25630	6490	5190	5560

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

MEAN	56.23	36.36	17.77	9.492	8.292	96.43	1107	857.6	363.1	176.3	113.7	74.75
MAX	343	391	195	82.7	64.9	949	4257	3616	1752	1128	719	543
(WY)	1969	1995	1995	1995	1995	1995	1998	1974	1999	1997	1993	1993
MIN	0.000	0.000	0.000	0.000	0.000	0.000	21.3	27.0	4.03	0.070	0.000	0.000
(WY)	1989	1989	1989	1965	1963	1964	1977	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1962 - 2002	
ANNUAL TOTAL	145803.4		27067.4			
ANNUAL MEAN	399.5		74.16		246.7	
HIGHEST ANNUAL MEAN					936	1995
LOWEST ANNUAL MEAN					9.61	1977
HIGHEST DAILY MEAN	3710	Apr 21	1800	Jun 11	13500	Apr 26 1997
LOWEST DAILY MEAN	3.6	Mar 7	3.1	Mar 1	0.00	Jan 29 1963
ANNUAL SEVEN-DAY MINIMUM	3.7	Mar 4	3.8	Feb 25	0.00	Jan 29 1963
MAXIMUM PEAK FLOW			2690	Jun 10	13700	Apr 26 1997
MAXIMUM PEAK STAGE			1111.80	Jun 10	1122.27	Apr 26 1997
ANNUAL RUNOFF (AC-FT)	289200		53690		178700	
10 PERCENT EXCEEDS	1460		139		609	
50 PERCENT EXCEEDS	39		27		33	
90 PERCENT EXCEEDS	6.0		7.3		0.00	

e Estimated

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND

LOCATION.--Lat 48°51'55", long 98°00'20", in $SE^1/_4SW^1/_4$ sec.10, T.162 N., R.57 W., Cavalier County, Hydrologic Unit 09020313, on right bank 10 ft upstream from county bridge, 3.5 mi above mouth, and 6 mi southwest of Walhalla.

DRAINAGE AREA.--182 mi^2, of which 10 mi^2 is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1956 to Sept. 1982, March 2001 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage not yet determined. Datum of gage was 1,099.48 ft above National Geodetic Vertical Datum of 1929 from April 1956 to Sept. 1982. Prior to Sept. 10, 1956, nonrecording gage at bridge 25 ft downstream at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--A discharge of 5,080 ft^3/s, gage height, unknown, was measured on Apr. 24, 1997. A high-water mark 3 ft higher than gage height of measurement was observed.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	2.3	e1.9	e1.0	e0.90	e0.90	e1.0	3.7	3.7	e13	2.2	165
2	1.6	2.2	e1.7	e1.0	e0.90	e0.90	e1.0	3.3	3.3	e11	2.0	88
3	1.6	1.8	e1.6	e1.0	e0.90	e0.90	e1.0	3.2	3.2	7.9	1.9	53
4	1.6	1.7	e1.5	e1.0	e0.90	e0.90	e1.0	3.2	3.0	7.7	1.8	34
5	1.7	2.0	e1.5	e1.0	e1.0	e0.90	e1.2	3.7	2.8	8.0	1.9	24
6	1.5	2.1	e1.4	e1.1	e1.4	e0.90	e1.5	3.5	2.6	7.2	2.0	18
7	1.6	2.1	e1.3	e1.2	e1.8	e0.90	e2.0	3.3	2.4	6.4	2.5	15
8	1.7	2.1	e1.3	e1.3	e1.2	e0.90	e2.4	5.3	2.2	5.8	2.2	13
9	1.9	1.9	e1.2	e1.2	e0.90	e0.90	e3.2	9.8	15	5.4	5.6	13
10	1.3	1.8	e1.1	e1.2	e1.0	e0.90	e4.0	11	e2000	5.1	3.5	10
11	0.84	2.1	e1.1	e1.2	e1.2	e1.0	e5.2	17	e750	4.8	2.9	8.4
12	0.82	2.2	e1.0	e1.2	e1.1	e1.6	e6.1	20	377	4.5	2.7	7.1
13	0.87	2.1	e1.0	e1.2	e1.8	e1.2	e14	26	241	4.3	2.2	6.8
14	0.99	2.1	e1.0	e1.0	e1.6	e1.0	e28	19	181	4.0	2.1	6.6
15	1.1	2.4	e1.2	e0.90	e1.6	e1.0	e23	15	141	3.8	2.3	6.3
16	1.1	2.1	e1.2	e0.90	e1.6	e1.4	e18	11	105	3.7	2.6	6.5
17	0.95	2.2	e1.2	e0.90	e1.6	e1.2	e16	8.6	90	3.9	3.9	6.5
18	1.0	1.9	e1.0	e0.90	e2.0	e1.0	e14	7.0	e78	3.8	3.1	11
19	1.1	1.8	e1.0	e0.90	e1.4	e0.90	12	5.9	e67	3.5	2.8	20
20	1.2	1.7	e1.0	e0.90	e1.2	e0.90	9.3	5.4	e59	3.4	2.4	14
21	1.2	2.0	e1.0	e0.90	e1.2	e0.90	7.6	5.0	e44	3.2	2.3	14
22	1.2	2.3	e1.0	e0.90	e1.2	e0.90	6.6	4.9	e200	2.8	2.2	e11
23	1.3	2.6	e1.0	e0.90	e1.0	e0.90	6.3	5.2	140	2.5	3.3	e10
24	1.9	2.6	e1.0	e0.90	e0.90	e0.90	7.1	4.7	108	2.4	5.1	e9.5
25	2.2	2.9	e1.0	e0.90	e0.90	e1.0	4.8	4.7	e83	2.4	2.5	e9.1
26	2.0	2.6	e1.0	e0.90	e0.90	e1.4	3.5	4.2	e59	2.2	2.3	e8.8
27	2.6	e2.4	e1.0	e0.90	e0.90	e1.8	3.5	4.0	e41	2.1	41	e8.5
28	2.1	e2.3	e1.0	e0.90	e0.90	e1.4	3.9	4.6	e31	2.1	430	e8.2
29	2.1	e2.1	e1.0	e0.90	---	e1.2	4.3	4.4	e23	1.9	94	e8.0
30	1.9	e2.0	e1.0	e0.90	---	e1.0	3.8	4.2	e17	2.4	42	e7.7
31	1.9	---	e1.0	e0.90	---	e1.0	---	3.7	---	2.4	38	---
TOTAL	46.67	64.4	36.2	30.90	33.90	32.60	215.3	234.5	4873.2	143.6	715.3	621.0
MEAN	1.505	2.147	1.168	0.997	1.211	1.052	7.177	7.565	162.4	4.632	23.07	20.70
MAX	2.6	2.9	1.9	1.3	2.0	1.8	28	26	2000	13	430	165
MIN	0.82	1.7	1.0	0.90	0.90	0.90	1.0	3.2	2.2	1.9	1.8	6.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2002, BY WATER YEAR (WY)

MEAN	1.594	1.248	0.605	0.371	1.427	22.34	177.6	41.37	22.29	9.499	3.848	3.218
MAX	5.45	3.94	1.29	1.00	30.1	139	461	255	162	62.6	23.1	20.7
(WY)	1981	1971	1971	2002	1981	1966	1970	1974	2002	1970	2002	2002
MIN	0.18	0.18	0.053	0.000	0.000	0.000	4.92	2.34	0.44	0.18	0.010	0.090
(WY)	1962	1962	1977	1973	1961	1962	1973	1958	1958	1961	1961	1961

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1956 - 2002	
ANNUAL TOTAL	7047.57			
ANNUAL MEAN	19.31		21.71	
HIGHEST ANNUAL MEAN			63.2	1974
LOWEST ANNUAL MEAN			1.78	1958
HIGHEST DAILY MEAN	2000	Jun 10	3260	Apr 10 1969
LOWEST DAILY MEAN	0.82	Oct 12	0.00	Jan 4 1958
ANNUAL SEVEN-DAY MINIMUM	0.90	Jan 15	0.00	Jan 4 1958
MAXIMUM PEAK FLOW	3000	Jun 10	6600	Apr 25 1970
MAXIMUM PEAK STAGE	a88.75	Jun 10	b13.95	Apr 25 1970
10 PERCENT EXCEEDS	18		25	
50 PERCENT EXCEEDS	2.1		1.0	
90 PERCENT EXCEEDS	0.90		0.12	

a From floodmark; datum of gage not yet determined
b Site and datum then in use
e Estimated

05099400 LITTLE SOUTH PEMBINA RIVER NEAR WALHALLA, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2001 to present.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1340	.93	--	--	--	535	6.0	--	--	--	--	--	--
NOV													
30...	1535	2.0	--	--	--	381	--	.0	--	--	--	--	--
JAN													
18...	1150	.91	--	--	--	1020	-25.0	.5	--	--	--	--	--
APR													
12...	0900	6.2	--e	7.9	799	778	14.0	2.5	250	67.0	21.0	7.20	2
25...	1040	3.5	--	--	--	976	5.5	2.5	--	--	--	--	--
MAY													
10...	1045	8.8	--	--	--	932	6.0	8.0	--	--	--	--	--
JUL													
03...	0935	8.8	--	--	--	951	23.3	18.0	--	--	--	--	--
AUG													
09...	0820	5.3	8.0	8.1	823	826	23.0	20.5	310	83.0	24.0	9.10	2
28...	1120	629	--	--	--	307	20.0	17.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	62.0	34	168	14.0	.30	220	8.94	534	493	1.0	40	<1	40
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
09...	59.0	29	209	15.0	.40	210	8.29	579	527	3.0	20	1	50
28...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
11...	--	--	--	--	--
NOV					
30...	--	--	--	--	--
JAN					
18...	--	--	--	--	--
APR					
12...	70	<.10	1	2	370
25...	--	--	--	--	--
MAY					
10...	--	--	--	--	--
JUL					
03...	--	--	--	--	--
AUG					
09...	50	.10	6	1	310
28...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05099600 PEMBINA RIVER AT WALHALLA, ND

LOCATION.--Lat 48°54'48", long 97°55'00", in $SW^1/_4NE^1/_4NE^1/_4$ sec.29, T.163 N., R.56 W., Pembina County, Hydrologic Unit 09020313, on southeast corner of State Highway 32 bridge, 0.5 mi south of Walhalla, and 7 mi downstream from Little South Pembina River.

DRAINAGE AREA.--3,350 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to September 1990, April 2000 to current year. Prior to October 1963, published as "near Walhalla".

REVISED RECORDS.--WSP 1388: 1943, 1950(P). WSP 1558: 1957. WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 933.34 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 10, 1943, nonrecording gage and Nov. 10, 1943, to Sept. 30, 1963, water stage recorder at site 5.5 mi upstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--A peak gage height of 16.53 ft (from floodmark), discharge not determined, occurred on Apr. 25 or 26, 1997. A measured discharge of 22,500 ft^3/s, gage height, 16.20 ft, occurred on Apr. 26, 1997.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	33	e28	e21	e19	e16	e26	62	35	267	44	960
2	45	31	e27	e22	e20	e16	e31	58	35	253	66	443
3	43	28	e25	e24	e20	e16	e36	55	33	243	38	297
4	41	26	e23	e26	e20	e16	e44	59	32	244	33	242
5	40	26	e20	e27	e20	e16	e52	56	31	230	28	195
6	38	26	e18	e28	e20	e16	e60	57	30	205	27	176
7	37	27	e18	e30	e20	e16	e70	53	28	179	33	156
8	38	30	e18	e30	e20	e16	e75	62	26	163	30	146
9	38	28	e18	e29	e20	e16	e82	98	92	145	63	141
10	40	28	e18	e28	e20	e16	e92	110	1450	136	51	128
11	39	26	e18	e27	e20	e16	e110	140	2830	126	47	113
12	39	26	e19	e25	e20	e17	129	144	1940	114	44	118
13	37	25	e20	e24	e20	e16	153	174	1580	110	43	118
14	36	25	e22	e24	e20	e16	153	146	1210	108	46	113
15	37	25	e24	e24	e20	e16	135	117	906	85	50	108
16	36	25	e24	e23	e20	e17	115	99	715	74	54	104
17	35	27	e24	e22	e20	e17	109	85	602	67	65	100
18	35	27	e22	e21	e20	e16	106	74	522	72	68	113
19	34	31	e20	e20	e20	e15	92	65	499	68	68	157
20	34	33	e20	e19	e20	e14	87	61	455	58	56	125
21	35	53	e19	e18	e20	e14	78	54	413	60	62	109
22	34	40	e18	e18	e20	e14	74	51	453	49	71	106
23	33	30	e18	e18	e19	e14	72	51	500	49	55	104
24	39	e28	e18	e18	e18	e14	76	45	436	48	48	104
25	40	e22	e18	e18	e18	e14	71	43	419	43	47	106
26	38	e16	e18	e18	e17	e14	67	41	383	52	43	103
27	30	e18	e18	e18	e17	e15	63	38	368	51	71	98
28	38	e20	e19	e18	e17	e16	76	39	360	34	1330	95
29	35	e24	e20	e18	---	e18	86	39	339	28	840	93
30	33	e27	e20	e18	---	e20	72	38	308	33	463	94
31	34	---	e20	e18	---	e22	---	35	---	43	347	---
TOTAL	1159	831	632	692	545	495	2492	2249	17030	3437	4331	5065
MEAN	37.39	27.70	20.39	22.32	19.46	15.97	83.07	72.55	567.7	110.9	139.7	168.8
MAX	48	53	28	30	20	22	153	174	2830	267	1330	960
MIN	30	16	18	18	17	14	26	35	26	28	27	93
AC-FT	2300	1650	1250	1370	1080	982	4940	4460	33780	6820	8590	10050

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2002, BY WATER YEAR (WY)

MEAN	65.26	43.76	21.20	12.19	9.354	122.4	1076	782.7	351.6	170.4	116.7	77.13
MAX	600	454	216	120	68.9	1206	4950	4672	1933	814	960	432
(WY)	1995	1995	1995	1995	1995	1995	1995	1974	1974	1970	1995	1944
MIN	0.042	0.15	0.000	0.000	0.000	0.000	49.6	18.8	2.83	0.74	0.10	0.000
(WY)	1940	1941	1941	1940	1940	1940	1977	1940	1940	1940	1961	1940

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1940 - 2002	
ANNUAL TOTAL	171670.5		38958			
ANNUAL MEAN	470.3		106.7		239.3	
HIGHEST ANNUAL MEAN					1146	1995
LOWEST ANNUAL MEAN					9.77	1940
HIGHEST DAILY MEAN	5300	Apr 21	2830	Jun 11	13800	Apr 18 1950
LOWEST DAILY MEAN	9.0	Feb 10	14	Mar 20	0.00	Oct 14 1939
ANNUAL SEVEN-DAY MINIMUM	9.0	Feb 10	14	Mar 20	0.00	Oct 14 1939
MAXIMUM PEAK FLOW			3800	Jun 10	a20400	Apr 18 1950
MAXIMUM PEAK STAGE			10.05	Jun 10	b16.20	Apr 18 1950
ANNUAL RUNOFF (AC-FT)	340500		77270		173400	
10 PERCENT EXCEEDS	1550		185		575	
50 PERCENT EXCEEDS	51		37		39	
90 PERCENT EXCEEDS	9.0		18		2.0	

a From rating curve extended above 7,000 ft^3/s on basis of contracted-opening measurement of discharge
b Present datum
e Estimated

05099600 PEMBINA RIVER AT WALHALLA, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962-90, 1992-95, 2000 to current year.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1055	38	--	--	--	562	--	--	--	--	--	--	--
JAN													
17...	1605	22	--	--	--	--e	-12.5	.0	--	--	--	--	--
MAR													
27...	1410	15	--	--	--	1050	8.0	.0	--	--	--	--	--
APR													
16...	0840	110	--e	7.9	741	807	14.0	8.5	310	76.0	29.0	8.10	1
25...	0910	72	--	--	--	--	-2.5	2.5	--	--	--	--	--
MAY													
09...	1455	105	--	--	--	880	7.5	6.0	--	--	--	--	--
JUL													
03...	1240	242	--	--	--	841	--	23.5	--	--	--	--	--
AUG													
09...	1105	65	8.3	8.3	798	794	28.0	23.0	320	76.0	31.0	10.0	1
28...	1420	1840	--	--	--	--	21.0	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	56.0	28	203	16.0	.30	220	169	568	528	2.0	40	<1	60
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
09...	51.0	25	243	15.0	.20	190	101	579	519	4.0	20	<1	60
28...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
11...	--	--	--	--	--
JAN					
17...	--	--	--	--	--
MAR					
27...	--	--	--	--	--
APR					
16...	100	<.10	2	1	410
25...	--	--	--	--	--
MAY					
09...	--	--	--	--	--
JUL					
03...	--	--	--	--	--
AUG					
09...	50	<.10	5	<1	350
28...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05100000 PEMBINA RIVER AT NECHE, ND
(International gaging station)

LOCATION.--Lat 48°59'23", long 97°33'24", in NW¼NW¼ sec.31, T.164 N., R.53 W., Pembina County, Hydrologic Unit 09020313, on right bank at bridge on State Highway 18 and at northwest corner of Neche.

DRAINAGE AREA.--3,410 mi², approximately.

WATER-DISCHARGE RECORDS

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

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

GAGE.--Water-stage recorder. Datum of gage is 809.69 ft above National Geodetic Vertical Datum of 1929. From Apr. 18, 1939, to July 21, 1999, at site 0.8 miles downstream at same datum. May 25, 1932, to Apr. 17, 1939, nonrecording gage on bridge on State Highway 18 at same datum. Prior to May 24, 1932, nonrecording gage at Burlington Northern Railway bridge, 0.1 mi upstream, at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	56	29	e28	e20	e17	e58	90	35	358	75	519
2	68	47	30	e28	e20	e16	e78	78	35	322	74	1060
3	63	42	31	e28	e20	e16	e90	73	34	301	67	531
4	58	44	28	e28	e20	e16	e116	69	34	292	59	385
5	54	43	28	e28	e20	e16	e140	67	33	285	54	321
6	51	39	27	e28	e20	e16	e165	68	32	269	50	273
7	50	37	23	e29	e20	e16	e180	70	31	257	56	239
8	48	37	21	e30	e20	e16	e200	74	28	240	64	220
9	49	37	e24	e30	e20	e16	e230	83	41	224	85	200
10	56	39	e27	e29	e20	e16	e260	104	109	211	90	184
11	51	39	e28	e28	e20	e17	e280	132	1830	203	92	172
12	49	37	e29	e27	e20	e18	e310	157	3070	191	73	159
13	46	47	e29	e26	e20	e18	368	162	2320	180	66	148
14	45	39	e29	e26	e20	e18	279	171	1900	171	56	142
15	43	37	e30	e26	e20	e17	195	169	1380	159	60	133
16	42	36	e30	e25	e20	e18	159	140	1030	151	60	126
17	41	35	e30	e25	e20	e18	144	118	822	144	75	120
18	42	34	e29	e25	e20	e17	131	101	699	137	78	121
19	40	35	e29	e24	e20	e16	126	86	613	130	85	141
20	40	39	e29	e23	e20	e15	117	75	586	125	83	184
21	39	38	e29	e22	e20	e15	106	65	537	116	74	172
22	39	38	e29	e21	e20	e15	98	57	510	107	62	136
23	41	40	e29	e21	e20	e15	92	51	525	110	67	122
24	43	37	e29	e21	e20	e15	92	49	573	102	82	119
25	e43	37	e28	e21	e19	e15	90	47	512	98	73	115
26	e43	14	e28	e21	e19	e15	91	44	488	97	69	115
27	e43	8.4	e28	e21	e18	e15	83	43	449	87	73	115
28	e43	11	e28	e21	e18	e17	78	41	424	80	99	111
29	e44	19	e28	e21	---	e21	79	40	409	74	981	107
30	e44	27	e28	e21	---	e30	91	39	383	73	770	105
31	46	---	e28	e21	---	e40	---	37	---	78	487	---
TOTAL	1479	1068.4	872	773	554	546	4526	2600	19472	5372	4239	6595
MEAN	47.71	35.61	28.13	24.94	19.79	17.61	150.9	83.87	649.1	173.3	136.7	219.8
MAX	75	56	31	30	20	40	368	171	3070	358	981	1060
MIN	39	8.4	21	18	15	58	37	28	73	50	105	
AC-FT	2930	2120	1730	1530	1100	1080	8980	5160	38620	10660	8410	13080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2002, BY WATER YEAR (WY)

MEAN	75.51	48.99	23.91	12.74	9.240	105.8	923.1	732.7	351.5	190.9	114.8	82.00
MAX	643	486	261	120	65.8	1216	4713	4770	1894	1509	946	648
(WY)	1995	1995	1995	1995	1995	1995	1998	1997	1999	1997	1993	1993
MIN	0.000	0.000	0.000	0.000	0.000	0.000	24.7	11.8	6.56	0.000	0.000	0.000
(WY)	1939	1939	1939	1933	1933	1936	1939	1939	1940	1940	1939	1938

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1903 - 2002	
ANNUAL TOTAL	184648.4		48096.4			
ANNUAL MEAN	505.9		131.8		224.6	
HIGHEST ANNUAL MEAN					1116	1995
LOWEST ANNUAL MEAN					3.96	1939
HIGHEST DAILY MEAN	4370	Apr 10	3070	Jun 12	14300	Apr 27 1997
LOWEST DAILY MEAN	8.4	Nov 27	8.4	Nov 27	0.00	Feb 1 1932
ANNUAL SEVEN-DAY MINIMUM	11	Mar 1	15	Mar 20	0.00	Feb 1 1932
MAXIMUM PEAK FLOW			3440	Jun 12	15100	Apr 27 1997
MAXIMUM PEAK STAGE			15.39	Jun 12	a24.51	Apr 21 1997
ANNUAL RUNOFF (AC-FT)	366300		95400		162700	
10 PERCENT EXCEEDS	1800		279		510	
50 PERCENT EXCEEDS	70		47		43	
90 PERCENT EXCEEDS	12		20		1.3	

a Backwater from ice
e Estimated

05100000 PEMBINA RIVER AT NECHE, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
JAN													
17...	1135	25	--	--	--	--	-11.5	-.5	--	--	--	--	--
FEB													
13...	1100	20	--	--	--	891	-2.0	.5	--	--	--	--	--
MAR													
27...	1110	15	--	--	--	650	7.0	.0	--	--	--	--	--
APR													
03...	1200	73	--	--	--	642	-2.0	1.0	--	--	--	--	--
16...	1320	154	--e	8.0	728	703	16.0	8.2	270	65.0	27.0	8.40	1
MAY													
09...	1135	84	--	--	--	860	2.0	3.5	--	--	--	--	--
JUN													
14...	1510	1860	--	--	--	565	--	17.0	--	--	--	--	--
JUL													
03...	1615	290	--	--	--	900	--	25.0	--	--	--	--	--
AUG													
08...	1410	65	8.4	8.4	886	874	29.0	24.5	370	89.0	36.0	11.0	1

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
JAN													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	41.0	24	191	16.0	.20	170	201	484	443	2.0	10	<1	50
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
08...	52.0	23	287	9.5	.20	200	103	581	571	6.0	50	1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
JAN					
17...	--	--	--	--	--
FEB					
13...	--	--	--	--	--
MAR					
27...	--	--	--	--	--
APR					
03...	--	--	--	--	--
16...	40	<.10	3	2	310
MAY					
09...	--	--	--	--	--
JUN					
14...	--	--	--	--	--
JUL					
03...	--	--	--	--	--
AUG					
08...	30	.10	6	1	400

< Less than
e Required equipment not functional/available

05101000 TONGUE RIVER AT AKRA, ND

LOCATION.--Lat 48°46'42", long 97°44'43", in SW$^{1}/_{4}$ sec.10, T.161 N., R.55 W., Pembina County, Hydrologic Unit 09020313, on left bank 300 ft downstream from Renwick Dam, 0.9 mi northwest of Akra, and 6 mi west of Cavalier.

DRAINAGE AREA.--160 mi^{2}.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to June 1950 (WSP 1137-B), October 1951 to current year (seasonal record since 1983).

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 930.00 ft above National Geodetic Vertical Datum of 1929. Prior to July 10, 1954, nonrecording gage 1.2 mi downstream at datum 30.00 ft lower. July 23, 1954, to Dec. 19, 1973, water stage recorder 2.7 mi downstream at datum 9.10 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by temporary retention in ten retarding basins beginning 300 ft above station, four of which have slow release outlet structures to regulate the flow. Retarding basins were completed during the period l955 to l961 and have a combined capacity of l9,245 acre-ft.

EXTREMES FOR CURRENT YEAR.--Maximum instantaneous discharge, 554 ft^{3}/s, June 11, gage height, 15.05 ft; minimum daily discharge, 0.75 ft^{3}/s, July 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	4.6	25	11	8.3	41	2.4	130
2	---	---	---	---	---	4.2	26	9.9	7.5	31	2.4	170
3	---	---	---	---	---	4.9	25	9.6	7.0	23	2.4	159
4	---	---	---	---	---	4.6	24	9.8	6.6	17	2.4	119
5	---	---	---	---	---	4.4	23	9.6	6.3	16	2.3	88
6	---	---	---	---	---	4.4	21	9.3	6.0	14	2.3	68
7	---	---	---	---	---	4.4	20	9.4	5.8	12	2.3	56
8	---	---	---	---	---	4.1	20	11	5.6	10	2.4	47
9	---	---	---	---	---	e4.0	20	17	7.8	8.9	3.3	38
10	---	---	---	---	---	e4.0	20	25	79	8.2	4.2	30
11	---	---	---	---	---	e4.2	24	37	487	8.0	4.4	24
12	---	---	---	---	---	e5.2	27	41	546	8.3	4.2	20
13	---	---	---	---	---	e6.0	33	39	519	8.3	4.3	17
14	---	---	---	---	---	e6.9	37	39	489	8.1	4.1	14
15	---	---	---	---	---	7.0	39	38	454	7.4	3.9	12
16	---	---	---	---	---	6.8	39	34	417	7.1	3.9	11
17	---	---	---	---	---	6.4	36	29	369	6.8	4.2	11
18	---	---	---	---	---	6.2	31	25	312	6.2	4.3	13
19	---	---	---	---	---	6.3	26	21	245	6.2	4.5	28
20	---	---	---	---	---	6.3	22	17	204	6.3	4.5	39
21	---	---	---	---	---	6.6	19	14	173	6.1	4.3	37
22	---	---	---	---	---	5.8	17	13	153	5.7	4.2	30
23	---	---	---	---	---	e5.4	15	12	191	5.2	4.1	24
24	---	---	---	---	---	e4.8	15	11	273	5.0	4.0	20
25	---	---	---	---	---	e4.3	14	11	297	4.6	3.9	17
26	---	---	---	---	---	e4.1	13	9.8	231	4.2	4.0	15
27	---	---	---	---	---	e4.1	13	9.2	158	3.9	4.5	13
28	---	---	---	---	---	4.1	12	9.2	107	3.5	22	12
29	---	---	---	---	---	4.3	12	9.5	74	2.1	94	12
30	---	---	---	---	---	7.7	11	9.5	54	0.75	140	11
31	---	---	---	---	---	18	---	9.0	---	2.3	132	---
TOTAL	---	---	---	---	---	174.1	679	558.8	5892.9	297.15	485.7	1285
MEAN	---	---	---	---	---	5.616	22.63	18.03	196.4	9.585	15.67	42.83
MAX	---	---	---	---	---	18	39	41	546	41	140	170
MIN	---	---	---	---	---	4.0	11	9.0	5.6	0.75	2.3	11
AC-FT	---	---	---	---	---	345	1350	1110	11690	589	963	2550

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	6.292	6.757	4.464	3.162	3.599	23.68	120.4	62.41	22.34	15.23	7.720	7.114
MAX	30.1	22.7	12.9	7.27	18.7	135	451	587	196	216	144	42.8
(WY)	1981	1981	1971	1971	1981	1966	1950	1950	2002	1997	1993	2002
MIN	0.51	0.56	0.065	0.51	0.24	0.22	0.43	1.63	0.47	0.086	0.21	0.096
(WY)	1962	1976	1953	1953	1953	1964	1991	1980	1988	1978	1988	1989

SUMMARY STATISTICS	WATER YEARS 1950 - 2002		
ANNUAL MEAN	a21.37		
HIGHEST ANNUAL MEAN	a50.1		1956
LOWEST ANNUAL MEAN	a3.11		1961
HIGHEST DAILY MEAN	5240	Apr 18	1950
LOWEST DAILY MEAN	0.00	Dec 1	1952
ANNUAL SEVEN-DAY MINIMUM	0.00	Dec 1	1952
MAXIMUM PEAK FLOW	b11800	Apr 18	1950
MAXIMUM PEAK STAGE	c16.75	Apr 22	1979
ANNUAL RUNOFF (AC-FT)	a15480		
10 PERCENT EXCEEDS	39		
50 PERCENT EXCEEDS	4.1		
90 PERCENT EXCEEDS	0.80		

a Based on complete water years only (1952-82)
b From indirect measurement of flow
c From floodmarks, site and datum then in use
e Estimated

05101000 TONGUE RIVER AT AKRA, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR													
15...	1620	38	--e	7.7	512	474	17.5	6.0	200	54.0	15.0	4.10	.7
25...	1315	15	--	--	--	527	--	5.0	--	--	--	--	--
MAY													
09...	1650	19	--	--	--	591	7.0	6.5	--	--	--	--	--
JUN													
04...	1610	6.6	--	--	--	642	--	18.5	--	--	--	--	--
JUL													
02...	1320	32	--	--	--	489	--	24.5	--	--	--	--	--
AUG													
08...	1055	1.4	8.0	7.8	592	594	25.5	22.0	250	70.0	19.0	6.60	.8

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR													
15...	23.0	20	167	9.2	.20	86.0	33.0	322	292	1.0	30	<1	20
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
08...	29.0	19	229	11.0	.30	91.0	1.61	425	365	7.0	30	1	30

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR					
15...	220	<.10	1	2	200
25...	--	--	--	--	--
MAY					
09...	--	--	--	--	--
JUN					
04...	--	--	--	--	--
JUL					
02...	--	--	--	--	--
AUG					
08...	1300	.10	4	<1	270

< Less than
e Required equipment not functional/available

05102490 RED RIVER OF THE NORTH AT PEMBINA, ND

LOCATION.--Lat 48°58'17", long 97°14'16", in NE$^{1}/_{4}$ sec.4, T.163 N., R.51 W., Pembina County, Hydrologic Unit 09020311, at bridge crossing the Red River 0.1 mi north of Pembina.

DRAINAGE AREA.--Approximately 40,200 mi^{2}, includes 3,800 mi^{2} in closed basins.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1994 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR 17...	1035	6870	7.7	7.8	578	549	.0	5.9	210	46.0	24.0	4.40	.9

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR 17...	29.0	22	162	23.0	.20	82.0	6700	361	306	2.0	40	2	30

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR 17...	10	<.10	<1	<1	230

< Less than

05102500 RED RIVER OF THE NORTH AT EMERSON, MANITOBA
(International gaging station)

LOCATION.--Lat 49°00'30", long 97°12'40", in sec.2, T.1, R.2 E., Hydrologic Unit 09020311, on right bank 1,500 ft downstream from Canadian National Railway bridge in Emerson, 0.8 mi downstream from international boundary, 3.6 mi downstream from Pembina River, and at mile 154.3.

DRAINAGE AREA.--40,200 mi^2, approximately, includes 3,800 mi^2 in closed basins.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is Geodetic Survey of Canada Datum of 1929. See WSP 1728 or 1913 for history of changes prior to Apr. 10, 1953.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2340	2840	e2780	e2080	e1800	e1830	e2650	5190	4270	31200	11400	15600
2	2300	2940	e2170	e2110	e1740	e1850	e2910	5010	4380	31000	10700	17000
3	2250	3050	e2340	e2110	e1720	e1860	e3280	4870	4550	30600	9950	18200
4	2200	3200	e2390	e2120	e1710	e1870	e3670	4770	4690	30100	9250	18900
5	2130	3400	e2360	e2120	e1700	e1840	e4060	4690	4770	29400	8580	19200
6	2080	3710	e2340	e2120	e1680	e1780	e4310	4620	4690	28400	8010	18700
7	2040	4130	e2300	e2120	e1670	e1730	e4450	4550	4520	27100	7520	17100
8	2010	4380	e2290	e2120	e1680	e1670	e4730	4550	4240	25600	7100	14600
9	1980	4480	e2310	e2110	e1680	e1650	e5050	4660	4170	24000	6740	11900
10	1980	4480	e2300	e2110	e1680	e1620	e5330	5190	6180	22300	6420	9600
11	1980	4340	e2230	e2130	e1690	e1640	e5720	5680	16600	21300	6180	7870
12	1970	4170	e2200	e2160	e1690	e1670	e6640	6110	25100	21700	5970	6710
13	1960	4030	e2160	e2210	e1690	e1660	e8400	6950	30500	23100	5720	5970
14	1960	3880	e2160	e2240	e1680	e1700	9320	7730	33000	24600	5440	5370
15	1970	3850	e2160	e2250	e1690	e1720	8580	8010	34300	26100	5150	4940
16	2040	3880	e2130	e2240	e1700	e1740	7380	7980	35100	27300	4870	4550
17	2160	3880	e2110	e2220	e1700	e1780	6640	7800	35300	28200	4590	4240
18	2270	3880	e2120	e2210	e1700	e1850	6110	7550	35700	28900	4340	3990
19	2370	3850	e2140	e2190	e1690	e1920	5750	7200	35300	29400	4200	4060
20	2460	3850	e2160	e2150	e1680	e2000	5440	6850	35200	29700	4090	3950
21	2540	3920	e2210	e2100	e1660	e2060	5220	6500	34600	29600	4020	3810
22	2590	4030	e2190	e2060	e1650	e2130	5080	6140	33700	28900	3990	3710
23	2610	4060	e2150	e2020	e1660	e2190	5080	5820	33000	27600	4020	3530
24	2610	4060	e2130	e1980	e1660	e2250	5120	5540	32300	25700	4020	3400
25	2620	3960	e2100	e1940	e1670	e2300	5150	5330	31900	23500	3950	3310
26	2660	3850	e2090	e1920	e1700	e2350	5120	5120	31600	21100	3850	3220
27	2690	3670	e2060	e1910	e1750	e2390	5010	4940	31400	18500	3780	3110
28	2710	3530	e2010	e1880	e1800	e2410	5120	4770	31300	16100	3950	2990
29	2710	e3390	e1990	e1860	---	e2400	5300	4620	31300	14200	6040	2900
30	2730	e3100	e2010	e1840	---	e2430	5300	4520	31300	13000	10100	2800
31	2760	---	e2040	e1820	---	e2510	---	4410	---	12100	13400	---
TOTAL	71680	113790	68130	64450	47520	60800	161920	177670	684960	770300	197340	245230
MEAN	2312	3793	2198	2079	1697	1961	5397	5731	22830	24850	6366	8174
MAX	2760	4480	2780	2250	1800	2510	9320	8010	35700	31200	13400	19200
MIN	1960	2840	1990	1820	1650	1620	2650	4410	4170	12100	3780	2800
AC-FT	142200	225700	135100	127800	94260	120600	321200	352400	1359000	1528000	391400	486400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2002, BY WATER YEAR (WY)

MEAN	1647	1605	1130	890.9	852.3	2586	14030	9679	5413	4519	2253	1790
MAX	6015	13780	4257	2684	2459	20490	48890	72820	25430	28020	27000	11480
(WY)	1995	2001	1999	2001	2001	1998	1997	1950	1962	1975	1993	1999
MIN	28.6	23.8	33.4	7.05	1.21	2.25	1282	663	196	121	46.6	23.8
(WY)	1937	1937	1937	1937	1937	1937	1938	1934	1934	1936	1934	1934

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1912 - 2002	
ANNUAL TOTAL	3579640		2663790			
ANNUAL MEAN	9807		7298		3874	
HIGHEST ANNUAL MEAN					12830	1997
LOWEST ANNUAL MEAN					333	1934
HIGHEST DAILY MEAN	57600	Apr 25	35700	Jun 18	133000	Apr 26 1997
LOWEST DAILY MEAN	1960	Oct 13	1620	Mar 10	0.90	Feb 6 1937
ANNUAL SEVEN-DAY MINIMUM	1970	Oct 9	1660	Mar 8	0.97	Feb 4 1937
MAXIMUM PEAK FLOW			35700	Jun 18	133000	Apr 26 1997
MAXIMUM PEAK STAGE			780.66	Jun 18	792.41	Apr 26 1997
INSTANTANEOUS LOW FLOW					0.90	Feb 6 1937
ANNUAL RUNOFF (AC-FT)	7100000		5284000		2806000	
10 PERCENT EXCEEDS	33500		25300		8880	
50 PERCENT EXCEEDS	3670		3880		1550	
90 PERCENT EXCEEDS	2240		1770		280	

e Estimated

05113360 LONG CREEK AT WESTERN CROSSING OF INTERNATIONAL BOUNDARY, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°00'01", long 103°21'08", in SE$^{1}/_{4}$ sec.1, T.1, R.11 W., second meridian, Hydrologic Unit 09010001, on right bank 10 mi south of Outram, Saskatchewan.

DRAINAGE AREA.--1,320 mi^{2}.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and artificial control. Datum of gage is 1,894.00 ft above Geodetic Survey of Canada Datum of 1929 (international boundary survey).

REMARKS.--Records good.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.07	3.0	1.5	0.92	0.00	0.00
2	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.14	2.1	1.8	0.74	0.00	0.00
3	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.14	1.7	2.2	0.60	0.00	0.00
4	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.14	1.5	2.4	0.56	0.00	0.00
5	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.18	1.5	2.2	0.74	0.00	0.00
6	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.35	1.5	1.8	0.56	0.00	0.00
7	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.64	1.8	1.4	0.53	0.00	0.00
8	0.00	0.00	0.00	e0.00	e0.00	e0.00	e0.85	2.7	1.2	0.53	0.00	0.00
9	0.00	0.00	0.00	e0.00	e0.00	e0.00	e1.0	3.1	1.2	0.67	0.00	0.00
10	0.00	0.00	0.00	e0.00	e0.00	e0.00	e1.4	3.0	1.8	0.60	0.00	0.00
11	0.00	0.00	0.00	e0.00	e0.00	e0.00	e1.9	2.9	2.9	0.49	0.00	0.00
12	0.00	0.00	0.00	e0.00	e0.00	e0.00	e2.2	2.6	3.9	0.42	0.00	0.00
13	0.00	0.00	0.00	e0.00	e0.00	e0.00	e2.3	2.5	4.0	0.35	0.00	0.00
14	0.00	0.00	0.00	e0.00	e0.00	e0.00	e2.5	3.4	3.8	0.21	0.00	0.00
15	0.00	0.00	0.00	e0.00	e0.00	e0.00	e12	3.4	3.5	0.14	0.00	0.00
16	0.00	0.00	0.00	e0.00	e0.00	e0.00	e24	2.9	2.9	0.07	0.00	0.00
17	0.00	0.00	0.00	e0.00	e0.00	e0.00	e21	2.8	2.7	0.07	0.00	0.00
18	0.00	0.00	0.00	e0.00	e0.00	e0.00	18	2.6	2.7	0.04	0.00	0.00
19	0.00	0.00	0.00	e0.00	e0.00	e0.00	15	2.3	2.6	0.00	0.00	0.00
20	0.00	0.00	0.00	e0.00	e0.00	e0.00	12	2.0	2.3	0.00	0.00	0.00
21	0.00	0.00	0.00	e0.00	e0.00	e0.00	11	1.8	2.0	0.00	0.00	0.00
22	0.00	0.00	0.00	e0.00	e0.00	e0.00	9.8	2.2	1.7	0.00	0.00	0.00
23	0.00	0.00	0.00	e0.00	e0.00	e0.00	9.3	2.6	1.6	0.00	0.00	0.00
24	0.00	0.00	0.00	e0.00	e0.00	e0.00	7.9	2.7	1.7	0.00	0.00	0.00
25	0.00	0.00	0.00	e0.00	e0.00	e0.00	6.9	2.8	1.6	0.00	0.00	0.00
26	0.00	0.00	0.00	e0.00	e0.00	e0.00	6.0	2.6	1.6	0.00	0.00	0.00
27	0.00	0.00	0.00	e0.00	e0.00	e0.00	5.1	2.5	1.7	0.00	0.00	0.00
28	0.00	0.00	0.00	e0.00	e0.00	e0.00	4.9	2.4	1.8	0.00	0.00	0.00
29	0.00	0.00	0.00	e0.00	---	e0.00	4.5	2.3	1.6	0.00	0.00	0.00
30	0.00	0.00	0.00	e0.00	---	e0.00	3.7	1.9	1.2	0.00	0.00	0.00
31	0.00	---	0.00	e0.00	---	e0.04	---	1.6	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.04	184.91	74.7	65.3	8.24	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.000	0.001	6.164	2.410	2.177	0.266	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.00	0.04	24	3.4	4.0	0.92	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.07	1.5	1.2	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	0.00	0.08	367	148	130	16	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	0.934	0.308	0.232	0.114	1.194	83.21	193.5	50.92	27.30	28.79	5.991	2.545
MAX	25.1	4.17	2.75	1.75	26.5	545	1052	578	360	415	115	61.4
(WY)	1979	1979	1994	2001	1981	1994	1979	1970	1976	1978	1993	1978
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1960	1960	1960	1960	1960	1964	1961	1961	1961	1961	1960	1960

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	22438.18		333.19			
ANNUAL MEAN	61.47		0.913		32.91	
HIGHEST ANNUAL MEAN					150	1976
LOWEST ANNUAL MEAN					0.000	1988
HIGHEST DAILY MEAN	1660	Mar 22	24	Apr 16	4350	Apr 1 1976
LOWEST DAILY MEAN	0.00	Aug 26	0.00	Oct 1	0.00	Oct 1 1959
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 26	0.00	Oct 1	0.00	Oct 1 1959
MAXIMUM PEAK FLOW			27	Apr 15	4690	Apr 1 1976
MAXIMUM PEAK STAGE			a2.65	Apr 15	12.05	Apr 1 1976
ANNUAL RUNOFF (AC-FT)	44510		661		23840	
10 PERCENT EXCEEDS	106		2.6		33	
50 PERCENT EXCEEDS	1.0		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Backwater from ice
e Estimated

05113600 LONG CREEK NEAR NOONAN, ND
(International gaging station)

LOCATION.--Lat 48°58'52", long 103°04'34", near north line of NE$^{1}/_{4}$ sec.1, T.163 N., R.96 W., Divide County, Hydrologic Unit 09010001, on right bank 150 ft upstream from county highway bridge, 1.5 mi upstream from international boundary, and 7 mi northwest of Noonan.

DRAINAGE AREA.--1,790 mi^2, approximately, of which about 1,160 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,840 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 18, 1960, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.37	1.4	e0.85	e0.58	e0.22	e0.23	0.75	6.2	2.2	7.1	0.06	0.34
2	0.30	1.5	e0.82	e0.53	0.15	e0.20	0.72	4.9	2.5	5.0	0.00	0.29
3	0.29	1.4	e0.84	0.48	0.11	e0.17	0.64	5.1	3.5	4.0	0.00	0.17
4	0.18	1.4	e0.88	0.43	e0.13	0.13	e0.48	3.8	3.5	2.9	0.00	0.13
5	0.13	e1.3	1.1	0.54	e0.17	0.28	0.50	3.0	3.3	3.6	0.00	0.23
6	0.25	e1.1	1.3	0.54	0.16	e0.17	e1.5	3.3	3.4	6.5	0.00	0.23
7	0.34	1.3	1.2	0.56	e0.23	e0.05	1.5	2.7	3.1	7.8	0.00	0.34
8	0.39	1.3	1.1	0.81	0.35	e0.02	1.2	3.0	2.6	8.4	0.38	0.39
9	0.37	1.3	1.1	0.91	0.26	e0.01	1.4	4.3	3.3	12	0.49	0.24
10	0.34	1.2	0.93	0.96	0.24	e0.00	2.0	5.3	4.3	8.4	0.59	0.15
11	0.34	1.1	0.97	0.88	0.16	e0.00	4.4	5.9	4.2	6.0	0.53	0.12
12	0.45	1.0	0.97	0.91	0.36	0.10	7.3	5.3	3.8	8.1	0.41	0.06
13	0.53	1.0	0.95	1.6	0.34	0.18	6.8	4.6	4.0	6.5	0.24	0.04
14	0.60	0.83	0.87	1.2	0.32	0.04	5.9	5.3	4.9	4.3	0.16	0.00
15	0.60	0.91	0.95	0.75	0.36	0.03	4.3	4.6	5.5	2.3	0.11	0.00
16	0.60	0.90	1.1	0.68	0.51	0.09	3.7	3.6	5.8	1.5	0.13	0.00
17	0.65	0.88	0.99	0.71	0.69	0.09	12	3.9	6.4	2.1	0.52	0.00
18	0.66	0.83	1.1	e0.62	0.56	0.04	21	3.6	6.0	1.9	0.46	0.00
19	e0.71	0.80	0.91	0.55	0.57	0.10	18	3.3	6.8	1.7	0.46	0.00
20	0.59	0.92	e0.78	0.51	0.67	e0.09	16	3.1	5.8	1.7	0.36	0.00
21	0.53	0.90	0.73	0.52	0.67	e0.06	15	2.8	5.1	1.1	0.25	0.00
22	0.52	0.93	0.87	0.52	0.83	e0.03	14	3.1	8.3	0.63	0.23	0.00
23	0.50	1.0	0.85	0.46	1.1	0.0	14	3.7	9.8	0.42	0.17	0.00
24	0.83	0.90	e0.85	0.31	0.79	0.03	13	3.5	11	0.26	0.11	0.00
25	0.99	0.91	e0.77	0.32	0.60	0.01	13	3.7	8.7	0.24	0.03	0.00
26	e1.1	0.90	0.70	0.32	0.48	0.02	9.8	3.5	6.2	0.15	0.06	0.00
27	1.1	1.0	0.73	e0.25	0.41	0.96	5.1	3.4	7.9	0.06	0.14	0.00
28	1.0	0.87	0.76	e0.33	e0.31	1.1	6.8	3.7	7.6	0.04	0.22	0.00
29	0.93	0.79	0.70	e0.28	---	0.87	7.4	3.3	7.3	0.23	0.13	0.00
30	0.88	0.81	e0.68	e0.24	---	0.69	7.1	3.0	9.4	0.14	0.14	0.00
31	0.78	---	e0.62	e0.22	---	0.68	---	2.5	---	0.15	0.49	---
TOTAL	17.85	31.38	27.97	18.52	11.75	6.47	215.29	121.0	166.2	105.22	6.87	2.73
MEAN	0.576	1.046	0.902	0.597	0.420	0.209	7.176	3.903	5.540	3.394	0.222	0.091
MAX	1.1	1.5	1.3	1.6	1.1	1.1	21	6.2	11	12	0.59	0.39
MIN	0.13	0.79	0.62	0.22	0.11	0.00	0.48	2.5	2.2	0.04	0.00	0.00
AC-FT	35	62	55	37	23	13	427	240	330	209	14	5.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	1.513	0.870	0.652	0.428	2.778	106.0	252.0	63.96	32.74	37.69	7.808	3.377
MAX	31.0	7.17	4.35	5.11	71.3	600	1396	728	376	452	131	77.2
(WY)	1979	1979	1976	1976	1981	1994	1979	1970	1976	1978	1993	1978
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1960	1961	1961	1961	1961	1965	1990	1990	1961	1961	1960	1960

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	29777.79		731.25			
ANNUAL MEAN	81.58		2.003		42.46	
HIGHEST ANNUAL MEAN					200	1976
LOWEST ANNUAL MEAN					0.017	1988
HIGHEST DAILY MEAN	2100	Mar 22	21	Apr 18	5710	Apr 1 1976
LOWEST DAILY MEAN	0.00	Aug 30	0.00	Mar 10	0.00	Oct 1 1959
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 30	0.00	Sep 14	0.00	Oct 1 1959
MAXIMUM PEAK FLOW			23	Apr 17	6310	Mar 31 1976
MAXIMUM PEAK STAGE			3.96	Apr 17	17.61	Mar 31 1976
ANNUAL RUNOFF (AC-FT)	59060		1450		30760	
10 PERCENT EXCEEDS	137		6.0		46	
50 PERCENT EXCEEDS	1.8		0.76		0.40	
90 PERCENT EXCEEDS	0.30		0.04		0.00	

e Estimated

05113600 LONG CREEK NEAR NOONAN, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
15...	1545	.88	--	--	--	1130	--	5.2	--	--	--	--	--
JAN													
03...	1215	.45	--	--	--	1600	-13.0	.0	--	--	--	--	--
FEB													
13...	1130	.28	--	--	--	1980	-2.0	.0	--	--	--	--	--
MAR													
28...	1615	1.5	--	--	--	--	7.0	.8	--	--	--	--	--
APR													
25...	1300	13	8.7	--e	1510	1490	1.0	3.2	440	77.0	61.0	17.0	3
MAY													
15...	1630	4.1	--	--	--	1460	8.0	14.7	--	--	--	--	--
JUN													
18...	1800	5.7	--	--	--	1570	22.0	21.4	--	--	--	--	--
AUG													
01...	1615	.05	8.7	--e	2500	2540	18.0	19.3	570	78.0	90.0	23.0	7
SEP													
11...	1245	.10	--	--	--	2460	25.0	20.7	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
25...	160	43	277	23.0	.20	530	38.3	1090	1040	2.0	20	<1	70
MAY													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
01...	370	58	414	42.0	.20	1000	.26	1930	1850	10.0	90	<1	120
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
15...	--	--	--	--	--
JAN					
03...	--	--	--	--	--
FEB					
13...	--	--	--	--	--
MAR					
28...	--	--	--	--	--
APR					
25...	20	<.10	1	1	490
MAY					
15...	--	--	--	--	--
JUN					
18...	--	--	--	--	--
AUG					
01...	220	.20	1	1	570
SEP					
11...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05113750 EAST BRANCH SHORT CREEK RESERVOIR NEAR COLUMBUS, ND

LOCATION.--Lat 48°59'26", long 102°47'07", in $SW^{1}/_{4}NW^{1}/_{4}$ sec.32, T.164 N., R.93 W., Burke County, Hydrologic Unit 09010001, on left bank of reservoir on East Branch Short Creek, 0.5 mi south of international boundary, and 6.0 mi north of Columbus.

DRAINAGE AREA.--280 mi^2, of which 175 mi^2 is probably noncontributing.

MONTHEND-GAGE HEIGHT AND CONTENTS RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated periods, which are fair. Reservoir is formed by earth-fill dam; storage began April 1963. Outlet of lake is a fixed-crest concrete dam; average crest elevation, 1,886.90 ft above sea level. Reservoir capacity at crest elevation, 1,200 acre-ft. The reservoir is operated for water supply and recreation. Records of daily reservoir stage and contents are available from files at the Bismarck District office.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,850 acre-ft, Mar. 28, 1976, gage height, 32.13 ft; minimum, 770 acre-ft, Dec. 10, 1988, gage height, 22.57 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,110 acre-ft, Apr. 22, gage height, 26.21 ft; minimum contents, 1,040 acre-ft, Sept. 30, gage height, 25.46 ft.

MONTHEND GAGE HEIGHT AND CONTENTS AT 2400, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	25.96	1,090	--
Oct. 31	25.71	1,060	-30
Nov. 30	25.58	1,050	-10
Dec. 31	*25.66	1,060	+10
CAL YR 2001	--	--	-100
Jan. 31	25.76	1,070	+10
Feb. 28	25.74	1,060	-10
Mar. 31	25.67	1,060	0
Apr. 30	26.15	1,110	+50
May 31	25.95	1,080	-30
June 30	26.06	1,100	+20
July 31	25.79	1,070	-30
Aug. 31	25.90	1,080	+10
Sept. 30	25.46	1,040	-40
WTR YR 2002	--	--	-50

* Estimated

05113800 SHORT CREEK BELOW INTERNATIONAL BOUNDARY NEAR ROCHE PERCEE, SASKATCHEWAN
(International gaging station)

LOCATION.--Lat 49°01'42", long 102°51'00", in SW$^{1}/_{4}$ sec.14, T.1, R.7 W., second meridian, Hydrologic Unit 09010001, 4 mi southwest of Roche Percee, Saskatchewan, and 5 mi upstream from mouth.

DRAINAGE AREA.--480 mi^{2}.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.04	0.04	0.04	e0.00	e0.00	e0.00	e0.04	1.2	0.04	18	0.25	0.07
2	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.04	0.85	0.04	15	0.25	0.04
3	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.04	0.64	0.04	12	0.18	0.04
4	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.04	0.39	0.04	7.8	0.14	0.04
5	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.04	0.25	0.04	8.9	0.11	0.04
6	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.11	0.18	0.04	6.8	0.11	0.04
7	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.04	0.11	0.04	7.1	0.11	0.04
8	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.04	0.18	0.04	5.5	0.11	0.04
9	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.04	0.25	0.04	4.9	0.11	0.04
10	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e0.04	0.25	0.11	5.0	0.14	0.04
11	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e12	0.25	0.11	4.8	0.14	0.04
12	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e27	0.25	0.04	7.0	0.11	0.04
13	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e29	0.21	0.04	9.1	0.11	0.04
14	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e31	0.18	0.04	9.4	0.11	0.04
15	0.04	0.04	e0.04	e0.00	e0.00	e0.00	e34	0.21	0.04	7.5	0.11	0.04
16	0.04	0.04	e0.04	e0.00	e0.00	e0.00	31	0.21	0.56	5.5	0.11	0.04
17	0.04	0.04	e0.04	e0.00	e0.00	e0.00	28	0.18	4.3	4.1	0.14	0.04
18	0.04	0.04	e0.04	e0.00	e0.00	e0.00	24	0.14	5.9	3.1	0.11	0.04
19	0.04	0.04	e0.04	e0.00	e0.00	e0.00	20	0.11	4.9	2.5	0.07	0.04
20	0.04	0.04	e0.04	e0.00	e0.00	e0.00	16	0.32	2.7	2.2	0.04	0.04
21	0.04	0.04	e0.04	e0.00	e0.00	e0.00	12	0.49	1.5	1.8	0.04	0.04
22	0.04	0.04	e0.04	e0.00	e0.04	e0.00	8.8	0.46	1.7	1.4	0.04	0.04
23	0.04	0.04	e0.04	e0.00	e0.00	e0.00	6.2	0.53	7.5	1.1	0.04	0.04
24	0.04	0.04	e0.04	e0.00	e0.00	e0.00	4.9	0.42	19	0.81	0.04	0.04
25	0.04	0.04	e0.04	e0.00	e0.00	e0.00	3.3	0.32	29	0.74	0.04	0.04
26	0.04	0.04	e0.04	e0.00	e0.00	e0.00	2.7	0.21	36	0.56	0.07	0.04
27	0.04	0.04	e0.04	e0.00	e0.00	e0.07	2.4	0.11	30	0.42	0.07	0.04
28	0.04	0.04	e0.00	e0.00	e0.00	e0.14	2.0	0.04	26	0.42	0.07	0.04
29	0.04	0.04	e0.00	e0.00	---	e0.11	1.8	0.07	25	0.42	0.04	0.04
30	0.04	0.04	e0.00	e0.00	---	e0.07	1.6	0.04	21	0.35	0.04	0.04
31	0.04	---	e0.00	e0.00	---	e0.04	---	0.04	---	0.28	0.11	---
TOTAL	1.24	1.20	1.08	0.00	0.04	0.43	298.17	9.09	215.80	154.50	3.16	1.23
MEAN	0.040	0.040	0.035	0.000	0.001	0.014	9.939	0.293	7.193	4.984	0.102	0.041
MAX	0.04	0.04	0.04	0.00	0.04	0.14	34	1.2	36	18	0.25	0.07
MIN	0.04	0.04	0.00	0.00	0.00	0.00	0.04	0.04	0.04	0.28	0.04	0.04
AC-FT	2.5	2.4	2.1	0.00	0.08	0.9	591	18	428	306	6.3	2.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	0.786	0.332	0.086	0.028	1.309	37.03	61.51	19.17	8.215	6.268	3.975	1.221
MAX	10.9	6.00	1.42	0.28	27.9	285	311	169	100	41.1	69.9	16.5
(WY)	1976	1976	1976	1976	1983	1976	1979	1975	1975	1986	1993	1975
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.010	0.000	0.000	0.000	0.000
(WY)	1962	1962	1961	1962	1962	1965	1991	1990	1980	1961	1961	1961

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	3501.70		685.94			
ANNUAL MEAN	9.594		1.879		11.47	
HIGHEST ANNUAL MEAN					51.9	1976
LOWEST ANNUAL MEAN					0.029	1988
HIGHEST DAILY MEAN	385	Mar 19	36	Jun 26	1410	Apr 7 1969
LOWEST DAILY MEAN	0.00	Dec 28	0.00	Dec 28	0.00	Mar 1 1960
ANNUAL SEVEN-DAY MINIMUM	0.02	Dec 25	0.00	Dec 28	0.00	Mar 1 1960
MAXIMUM PEAK FLOW			57	Apr 12	1700	Apr 7 1969
MAXIMUM PEAK STAGE			a4.91	Apr 12	14.39	Mar 28 1960
ANNUAL RUNOFF (AC-FT)	6950		1360		8310	
10 PERCENT EXCEEDS	22		4.9		14	
50 PERCENT EXCEEDS	0.07		0.04		0.07	
90 PERCENT EXCEEDS	0.04		0.00		0.00	

a Backwater from ice
e Estimated

05114000 SOURIS (MOUSE) RIVER NEAR SHERWOOD, ND
(International gaging station)

LOCATION.--Lat 48°59'24", long 101°57'28", in NW$^1/_4$SE$^1/_4$NE$^1/_4$ sec.33, T.164 N., R.87 W., Renville County, Hydrologic Unit 09010001, on right bank 0.8 mi downstream from international boundary, 16 mi northwest of Sherwood, and at mile 511.4.

DRAINAGE AREA.--8,940 mi^2, approximately, of which about 5,900 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1308: 1934, 1945. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,603.73 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 8, 1935, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow is regulated by reservoirs in Canada (Boundary Reservoir, 48,990 acre-ft - 1958; Rafferty Reservoir, 356,400 acre-ft - 1991; and Alameda Reservoir, 85,560 ac-ft - 1992). Total reservoir capacity is about 490,000 acre-ft. Some diversions for irrigation and municipal supply.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of about 22 ft and flood in 1904 reached a stage of about 25.8 ft from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	15	9.4	e3.3	e5.5	e4.2	e9.0	25	37	49	12	27
2	91	14	9.7	e3.2	e5.4	e4.1	e9.0	22	23	43	12	24
3	89	14	10	e3.2	e5.3	e4.1	e10	18	19	39	11	21
4	89	14	10	e3.3	e5.2	e4.0	e12	17	16	36	11	19
5	87	13	10	e3.5	e5.1	e3.9	e11	14	13	34	11	20
6	87	13	11	e4.2	e5.0	e3.8	e10	13	12	36	9.9	19
7	88	13	9.9	e5.0	e4.9	e3.9	e10	13	11	38	11	20
8	88	13	9.1	e5.5	e4.8	e4.0	e12	13	10	48	14	20
9	89	13	9.6	e6.0	e4.8	e3.8	e15	13	10	45	35	19
10	87	13	9.4	e6.1	e4.7	e3.7	e18	13	11	57	29	21
11	86	13	8.8	e6.2	e4.7	e3.6	e23	14	12	62	21	22
12	85	14	8.7	e6.3	e4.6	e3.6	e25	53	12	54	18	22
13	86	13	8.0	e6.5	e4.6	e3.6	e35	74	12	48	17	22
14	87	13	7.7	e6.2	e4.6	e3.7	79	74	13	42	16	22
15	87	12	8.3	e6.0	e4.7	e3.8	73	76	13	37	15	20
16	85	12	8.3	e5.9	e4.7	e3.9	57	77	13	33	15	18
17	85	12	8.2	e5.8	e4.8	e4.0	61	74	12	29	16	18
18	73	12	7.5	e5.5	e5.0	e4.0	81	75	12	25	17	17
19	84	11	7.0	e5.1	e5.2	e4.1	69	75	12	22	18	17
20	86	11	6.9	e5.0	e5.4	e4.1	65	74	12	19	18	17
21	87	11	6.7	e4.9	e5.7	e4.1	64	76	12	17	17	16
22	87	11	e6.3	e4.8	e5.9	e4.1	57	79	13	16	16	15
23	87	11	e6.0	e4.7	e6.0	e4.1	53	80	12	15	17	15
24	70	11	e5.6	e4.6	e5.8	e4.1	47	79	12	14	19	16
25	37	11	e5.2	e4.5	e5.2	e4.1	40	78	13	14	18	15
26	26	10	e4.9	e5.0	e4.8	e4.1	34	78	16	15	17	15
27	22	9.8	e4.6	e5.8	e4.4	e4.2	30	79	20	14	17	16
28	19	9.5	e4.2	e5.8	e4.2	e5.0	30	79	17	12	19	15
29	17	9.9	e3.8	e5.7	---	e12	29	80	37	11	23	15
30	16	9.3	e3.6	e5.7	---	e16	26	79	55	9.3	26	15
31	15	---	e3.4	e5.6	---	e12	---	68	---	11	33	---
TOTAL	2214	361.5	231.8	158.9	141.0	151.7	1094.0	1682	492	944.3	548.9	558
MEAN	71.42	12.05	7.477	5.126	5.036	4.894	36.47	54.26	16.40	30.46	17.71	18.60
MAX	92	15	11	6.5	6.0	16	81	80	55	62	35	27
MIN	15	9.3	3.4	3.2	4.2	3.6	9.0	13	10	9.3	9.9	15
AC-FT	4390	717	460	315	280	301	2170	3340	976	1870	1090	1110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

MEAN	13.49	9.762	4.768	3.063	6.366	136.7	690.0	410.9	126.0	84.20	27.24	16.54
MAX	121	65.4	47.7	44.5	143	1148	6739	3995	954	1050	324	173
(WY)	1994	1955	1976	1976	1981	1972	1976	1975	1953	1953	1999	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	1.82	2.63	0.17	0.000	0.000	0.000
(WY)	1932	1935	1932	1931	1931	1936	1988	1988	1988	1937	1931	1931

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1930 - 2002	
ANNUAL TOTAL	127799.6		8578.1			
ANNUAL MEAN	350.1		23.50		128.3	
HIGHEST ANNUAL MEAN					878	1976
LOWEST ANNUAL MEAN					0.62	1988
HIGHEST DAILY MEAN	2200	May 11	92	Oct 1	13700	Apr 10 1976
LOWEST DAILY MEAN	2.8	Feb 18	3.2	Jan 2	0.00	Sep 4 1930
ANNUAL SEVEN-DAY MINIMUM	2.9	Feb 13	3.4	Dec 30	0.00	Sep 4 1930
MAXIMUM PEAK FLOW			93	Oct 1	14800	Apr 10 1976
MAXIMUM PEAK STAGE			3.06	Oct 1	25.15	Apr 10 1976
ANNUAL RUNOFF (AC-FT)	253500		17010		92940	
10 PERCENT EXCEEDS	1480		75		221	
50 PERCENT EXCEEDS	105		13		6.3	
90 PERCENT EXCEEDS	4.2		4.2		0.00	

e Estimated

05114000 SOURIS RIVER NEAR SHERWOOD, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970, 1972 to current year.

REMARKS.-- Quality assurance samples also collected at this location. Environment Canada also collected a sample on Aug. 22.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1983 to current year.

SPECIFIC CONDUCTANCE: August 1983 to current year.

PH: August 1992 to current year.

DISSOLVED OXYGEN: May 1993 to current year.

INSTRUMENTATION.--Water-quality monitor since August 1983.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 31.3°C, June 29, 2002; minimum, 0.0°C several days during winter months each year.

SPECIFIC CONDUCTANCE: Maximum, 3,490 microsiemens, Apr. 28, 1991; minimum, 94 microsiemens, Apr. 5, 1990.

PH: Maximum, 9.8 units, Sept. 17, 21, 22, 1992 (revised); minimum, 7.3 units, Jan. 16-23, 2000, and Jan. 3, 2002

DISSOLVED OXYGEN: Maximum, 19.6 mg/L, Mar. 16-21, 2000; minimum, 1.3 mg/L, Jan. 27, 2000.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 31.3°C, June 29; minimum, 0.0°C, Feb. 1.

SPECIFIC CONDUCTANCE: Maximum, 1,840 microsiemens, Aug. 3-4; minimum, 819 microsiemens, Oct. 19.

PH: Maximum, 8.8 units, Oct. 10, 12, 13, and many days in November; minimum, 7.3 units, Jan. 3.

DISSOLVED OXYGEN: Maximum, 15.7 milligrams per liter, Dec. 4; minimum, 1.7 milligrams per liter, Feb. 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT													
18...	1500	68	711	95	11.1	8.5	--	--	860	11.0	5.8	--	--
NOV													
19...	1500	11	726	103	14.1	8.3	8.3	1140	1200	7.0	.6	390	79.3
JAN													
03...	1515	3.2	710	16	2.1	7.4	--	--	1480	--	.0	--	--
FEB													
13...	1415	4.6	710	24	3.2	7.5	7.7	1400	1440	5.5	.0	430	96.1
MAR													
29...	1350	13	--	--	9.9	7.6	--	--	1070	--	.1	--	--
APR													
17...	1145	61	--	--	--	--	--	--	1270	9.5	2.2	--	--
25...	1600	39	722	123	14.6	8.6	8.4	972	1030	4.0	5.5	230	49.9
MAY													
16...	1045	77	724	82	8.6	8.3	--	--	1060	--	10.9	--	--
JUN													
06...	1130	13	708	59	5.0	8.0	8.0	885	920	23.0	19.9	340	62.3
18...	1530	12	--	--	--	--	--	--	1010	22.5	22.1	--	--
27...	1115	20	714	32	2.4	7.9	7.7	1020	1050	27.0	25.7	340	65.5
JUL													
18...	1045	26	--	--	5.0	8.3	8.3	1490	1510	20.0	25.2	290	53.1
AUG													
22...	1030	16	719	82	7.4	8.6	8.5	1230	1260	21.0	17.1	290	50.8
SEP													
11...	1600	23	711	89	7.6	8.3	--	--	1020	27.0	19.2	--	--

05114000 SOURIS RIVER NEAR SHERWOOD, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
19...	46.6	2	93.6	225	68.0	.1	205	.79	E.03	<.05	--	--	E.05
JAN													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	44.9	3	128	444	65.7	.2	229	1.7	.81	.32	.86	2.0	.06
MAR													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	25.2	4	142	281	25.8	.1	231	1.2	<.04	<.05	--	--	.16
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	45.7	2	68.3	296	21.8	.1	174	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	42.5	2	94.6	321	51.7	.1	170	2.3	.39	.17	1.9	2.4	.35
JUL													
18...	39.1	6	226	355	38.2	.2	396	1.9	E.04	E.05	--	--	.55
AUG													
22...	40.3	4	174	342	37.0	.2	290	1.2	<.04	<.05	--	--	.34
SEP													
11...	--	--	--	--	--	--	--	1.2	.05	.08	1.2	1.3	.19

Date	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
19...	11.0	764	13k	.5	<.1	90	E2	79.1	<2	130	<.1	E.4	E1.1
JAN													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	10.2	896	<2	--	--	40	E1	90.8	<2	230	<.1	<.8	<2.0
MAR													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	12.9	681	<2	--r	--r	100	2	52.9	<2	150	<.1	<.8	<2.0
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	--	615	540	2.9	.5	530	5	77.4	<2	110	<.1	.8	E1.1
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	15.5	683	>1200	E3.2	E.6	--	8	75.0	E1	150	<.1	E.8	<2.0
JUL													
18...	21.9	1050	75	E24.9	E5.1	480	15	59.4	<2	220	<.1	.8	E1.0
AUG													
22...	15.5	859	135	1.3	<.1	90	E8dn	32.5	<2	220	<.1	<.8	<2.0
SEP													
11...	14.9	--	104	.9	<.1	--	--	--	--	--	--	--	--

05114000 SOURIS RIVER NEAR SHERWOOD, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	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)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	TRIAZIN SCREEN (ELISA) WAT,WH REC,AS ATRAZIN (UG/L) (34757)	2,4-D SCREEN TOTAL (UG/L) (99906)
OCT									
18...	--	--	--	--	--	--	--	--	--
NOV									
19...	1.8	450	<1	E1	2.0	<2	<20	.1	<.700
JAN									
03...	--	--	--	--	--	--	--	--	--
FEB									
13...	1.6	220	<1	3	3.3	<2	<20	--	--
MAR									
29...	--	--	--	--	--	--	--	--	--
APR									
17...	--	--	--	--	--	--	--	--	--
25...	1.5	410	<1	2	2.8	<2	<20	<.1	<.700
MAY									
16...	--	--	--	--	--	--	--	--	--
JUN									
06...	2.4	1460	M	E2	5.9	<2	E30	<.1	<.700
18...	--	--	--	--	--	--	--	--	--
27...	2.9	1760	2	2	5.1	<2	<20	--	--
JUL									
18...	3.6	1340	M	3	5.0	<2	<20	.1	<.700
AUG									
22...	1.8	260	<1	2	3.9	<14d	<20	--	--
SEP									
11...	--	--	--	--	--	--	--	--	--

< Less than
> Greater than
E Estimated value
M Presence verified, not quantified
d Diluted sample: method hi range exceeded
k Counts outside acceptable range
n Below the NDV
r Sample ruined in preparation

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	16.3	13.9	15.1	4.2	3.3	3.8	0.2	0.2	0.2	0.1	0.1	0.1
2	15.4	13.5	14.4	3.9	2.6	3.3	0.3	0.2	0.2	0.1	0.1	0.1
3	14.0	11.8	12.7	4.0	2.5	3.3	0.4	0.1	0.2	0.2	0.1	0.1
4	12.0	9.8	10.7	3.9	2.2	3.1	0.4	0.1	0.2	0.1	0.1	0.1
5	9.9	8.2	8.9	4.4	2.8	3.6	0.2	0.1	0.1	0.4	0.1	0.1
6	9.5	7.1	8.2	4.2	2.9	3.5	0.1	0.1	0.1	0.1	0.1	0.1
7	9.3	7.0	8.1	3.5	3.1	3.3	0.2	0.1	0.1	0.1	0.1	0.1
8	10.4	7.8	8.9	3.4	2.4	2.9	0.2	0.1	0.1	0.2	0.1	0.1
9	9.8	8.2	9.1	3.8	2.3	3.0	0.2	0.1	0.1	0.2	0.1	0.1
10	9.8	7.9	8.8	3.4	2.2	2.9	0.2	0.1	0.1	0.2	0.1	0.1
11	9.3	7.9	8.6	2.8	1.2	1.9	0.2	0.1	0.1	0.2	0.1	0.1
12	9.8	8.1	8.9	2.5	1.7	2.0	0.1	0.1	0.1	0.2	0.1	0.1
13	9.1	8.2	8.6	2.1	0.8	1.6	0.1	0.1	0.1	0.1	0.1	0.1
14	8.7	7.4	7.9	2.7	1.2	1.9	0.1	0.1	0.1	0.1	0.1	0.1
15	---	---	---	4.0	2.7	3.2	0.1	0.1	0.1	0.1	0.1	0.1
16	---	---	---	4.0	2.4	3.3	0.1	0.1	0.1	0.1	0.1	0.1
17	---	---	---	4.6	3.2	3.8	0.1	0.1	0.1	0.1	0.1	0.1
18	---	---	---	4.5	2.1	3.3	0.1	0.1	0.1	0.1	0.1	0.1
19	6.4	4.5	5.4	2.1	0.4	0.9	0.1	0.1	0.1	0.1	0.1	0.1
20	6.5	5.0	5.7	1.7	0.4	0.9	0.1	0.1	0.1	0.1	0.1	0.1
21	6.0	4.7	5.4	1.9	1.2	1.5	0.1	0.1	0.1	0.1	0.1	0.1
22	6.2	4.8	5.4	1.8	1.3	1.5	0.1	0.1	0.1	0.1	0.1	0.1
23	5.7	4.2	5.0	2.3	1.7	1.9	0.1	0.1	0.1	0.1	0.1	0.1
24	4.2	2.5	3.1	2.3	1.8	2.1	0.1	0.1	0.1	0.1	0.1	0.1
25	2.5	0.8	1.6	1.8	0.2	1.1	0.1	0.1	0.1	0.1	0.1	0.1
26	1.4	0.1	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
27	1.9	0.3	0.9	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
28	2.2	1.2	1.7	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
29	1.9	0.5	1.2	0.2	0.2	0.2	---	---	---	0.1	0.1	0.1
30	2.5	1.5	1.9	0.2	0.2	0.2	---	---	---	0.1	0.1	0.1
31	3.8	2.5	3.2	---	---	---	---	---	---	0.1	0.1	0.1
MONTH	---	---	---	4.6	0.2	2.2	---	---	---	0.4	0.1	0.1

05114000 SOURIS RIVER NEAR SHERWOOD, ND--Continued

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.1	0.0	0	0.3	0.1	0.1	0.1	0.1	0.1	11.0	7.1	8.9
2	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.1	10.0	5.5	7.9
3	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	11.4	7.1	9.1
4	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	10.8	7.2	9.0
5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	11.7	8.8	10.2
6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	10.9	8.0	9.1
7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	9.2	6.4	7.7
8	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	7.7	5.8	6.6
9	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	10.2	4.4	6.7
10	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	12.8	7.6	9.8
11	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.1	13.1	10.2	11.6
12	0.1	0.1	0.1	0.2	0.1	0.1	0.4	0.1	0.2	14.8	10.5	12.5
13	0.1	0.1	0.1	0.3	0.1	0.1	0.6	0.1	0.2	15.9	11.2	13.2
14	0.1	0.1	0.1	0.9	0.1	0.2	0.8	0.1	0.3	16.2	12.3	14.2
15	0.1	0.1	0.1	0.2	0.1	0.1	1.1	0.1	0.5	15.6	13.3	14.1
16	0.1	0.1	0.1	0.2	0.1	0.1	2.2	0.8	1.5	14.8	10.6	12.8
17	0.2	0.1	0.1	0.1	0.1	0.1	5.9	1.2	3.0	15.5	11.0	13.0
18	0.2	0.1	0.1	0.1	0.1	0.1	5.2	3.8	4.4	15.9	11.7	13.6
19	0.2	0.1	0.1	0.1	0.1	0.1	4.8	1.7	3.2	16.2	12.1	14.0
20	0.2	0.1	0.1	0.1	0.1	0.1	4.9	1.9	3.1	16.5	12.5	14.4
21	0.2	0.1	0.1	0.1	0.1	0.1	5.4	3.4	4.2	18.1	13.3	15.4
22	0.2	0.1	0.1	0.1	0.1	0.1	9.1	4.1	6.1	17.2	13.8	15.7
23	0.3	0.1	0.1	0.1	0.1	0.1	10.0	6.9	8.3	14.4	11.5	12.8
24	0.3	0.1	0.1	0.1	0.1	0.1	8.5	5.8	6.8	13.9	11.0	12.5
25	0.2	0.1	0.1	0.1	0.1	0.1	7.5	2.4	4.8	14.8	11.6	13.1
26	0.3	0.1	0.1	0.1	0.1	0.1	8.1	2.7	5.4	16.8	12.0	14.1
27	0.2	0.1	0.1	0.2	0.1	0.1	7.8	5.0	6.2	18.4	13.7	15.7
28	0.2	0.1	0.1	0.3	0.1	0.1	7.8	5.7	6.7	21.0	16.1	18.3
29	---	---	---	0.2	0.1	0.1	10.5	5.6	7.8	21.4	18.1	19.7
30	---	---	---	0.2	0.1	0.1	11.1	6.8	9.1	21.7	18.3	19.9
31	---	---	---	0.2	0.1	0.1	---	---	---	22.5	18.4	20.2
MONTH	0.3	0.0	0.0	0.9	0.1	0.1	11.1	0.1	2.8	22.5	4.4	12.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.9	17.9	20.3	28.3	24.2	26.3	24.1	19.5	20.5	---	---	---
2	22.5	16.6	18.6	27.0	22.2	24.7	21.2	16.4	18.6	---	---	---
3	16.6	15.8	16.2	26.5	20.9	23.8	23.4	19.4	21.0	---	---	---
4	18.0	15.0	16.2	26.1	21.0	23.0	22.5	19.1	20.2	---	---	---
5	21.1	15.6	17.9	26.7	21.7	24.0	20.0	17.1	18.4	---	---	---
6	22.1	18.5	20.1	26.1	21.1	23.4	21.6	18.8	19.8	---	---	---
7	20.9	17.7	19.4	24.8	21.6	23.2	21.8	20.1	20.9	---	---	---
8	20.4	16.9	18.3	26.2	22.2	24.1	23.2	21.0	21.8	---	---	---
9	17.9	14.4	15.7	25.4	21.6	23.0	23.0	21.0	22.3	---	---	---
10	14.4	12.8	13.4	26.2	21.2	23.5	23.7	20.3	21.9	---	---	---
11	13.6	12.4	13.1	26.5	21.2	23.7	23.5	21.3	22.4	---	---	---
12	15.3	12.1	13.4	28.4	22.5	25.1	22.4	19.5	20.7	---	---	---
13	17.8	13.9	15.4	29.8	23.5	26.4	22.1	18.6	20.2	---	---	---
14	20.9	15.7	17.7	30.1	24.7	27.4	21.8	20.0	21.0	---	---	---
15	22.7	17.5	19.9	30.4	25.4	27.9	21.0	18.9	19.7	---	---	---
16	21.8	18.6	20.4	30.1	26.5	28.3	19.7	16.8	18.0	---	---	---
17	21.2	18.3	19.9	28.8	25.7	27.1	18.0	14.3	16.1	---	---	---
18	22.0	19.0	20.3	28.9	24.6	26.8	18.6	14.8	16.6	---	---	---
19	21.7	19.7	20.7	29.6	25.5	27.6	20.3	16.1	18.0	---	---	---
20	23.1	17.5	19.9	30.0	26.4	28.2	21.1	17.3	19.1	---	---	---
21	24.7	19.5	21.8	29.1	25.2	26.6	20.6	18.7	19.5	---	---	---
22	26.0	21.6	23.7	25.7	22.1	24.0	---	---	---	---	---	---
23	25.1	22.4	23.1	24.6	21.0	22.7	---	---	---	---	---	---
24	25.6	21.2	22.8	25.2	21.1	22.8	---	---	---	---	---	---
25	27.4	22.5	24.7	27.1	22.4	24.4	---	---	---	---	---	---
26	28.8	23.8	26.0	26.4	23.7	24.9	---	---	---	---	---	---
27	29.4	25.2	27.2	26.6	23.5	25.0	---	---	---	---	---	---
28	30.2	25.9	27.9	25.8	22.9	24.5	---	---	---	---	---	---
29	31.3	27.2	29.1	26.5	22.1	24.2	---	---	---	---	---	---
30	29.8	25.4	27.5	26.4	22.3	24.3	---	---	---	---	---	---
31	---	---	---	26.2	22.4	24.2	---	---	---	---	---	---
MONTH	31.3	12.1	20.4	30.4	20.9	25.0	---	---	---	---	---	---

05114000 SOURIS RIVER NEAR SHERWOOD, ND--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	854	848	851	932	916	924	1280	1280	1280	---	---	---
2	857	851	855	949	932	939	1300	1280	1290	1490	1460	1480
3	863	854	859	972	949	960	1310	1290	1300	1500	1450	1480
4	866	857	862	991	972	982	1320	1310	1320	1450	1450	1450
5	867	857	862	1010	991	999	1320	1310	1320	1450	1440	1450
6	863	859	861	1020	1010	1010	1310	1310	1310	1440	1440	1440
7	872	860	866	1040	1020	1030	1310	1310	1310	1440	1440	1440
8	868	860	865	1060	1040	1050	1310	1310	1310	1440	1440	1440
9	868	863	866	1070	1060	1060	1310	1310	1310	1440	1430	1440
10	874	864	869	1080	1070	1080	1330	1310	1320	1430	1430	1430
11	871	864	867	1090	1080	1090	1340	1330	1330	1430	1430	1430
12	874	864	869	1110	1090	1100	1360	1340	1350	1450	1430	1440
13	883	865	872	1120	1110	1120	1380	1360	1370	1450	1440	1450
14	874	865	870	1140	1120	1130	1400	1380	1390	1450	1450	1450
15	---	---	---	1150	1140	1140	1400	1400	1400	1460	1450	1460
16	---	---	---	1160	1150	1150	1410	1400	1410	1460	1450	1460
17	---	---	---	1170	1160	1170	1420	1410	1410	1450	1440	1440
18	---	---	---	1180	1170	1180	1440	1420	1430	1440	1430	1430
19	825	819	823	1200	1180	1190	1460	1440	1450	1430	1430	1430
20	837	823	831	1200	1200	1200	1460	1460	1460	1430	1420	1420
21	839	825	832	1200	1190	1200	1460	1450	1460	1430	1420	1420
22	830	821	826	1190	1190	1190	1450	1450	1450	1460	1430	1440
23	836	826	832	1200	1190	1200	1460	1440	1450	1470	1460	1470
24	827	825	826	1210	1200	1210	1470	1430	1460	1480	1470	1480
25	837	826	830	1210	1200	1210	1490	1450	1480	1470	1450	1460
26	853	837	846	1220	1200	1210	1500	1460	1490	1450	1430	1440
27	863	845	857	1260	1220	1240	1490	1460	1480	1430	1410	1420
28	873	862	869	1280	1260	1270	1480	1460	1480	1410	1390	1400
29	884	873	879	1290	1280	1280	---	---	---	1390	1390	1390
30	894	884	889	1280	1280	1280	---	---	---	1400	1390	1400
31	916	894	905	---	---	---	---	---	---	1400	1400	1400
MONTH	---	---	---	1290	916	1130	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1410	1400	1400	1520	1480	1500	1250	1020	1170	1260	1230	1260
2	1410	1400	1400	1550	1520	1540	1400	1210	1330	1250	1220	1240
3	1400	1400	1400	1580	1550	1570	1540	1380	1480	1250	1240	1250
4	1400	1400	1400	1580	1560	1570	1610	1530	1580	1240	1220	1230
5	1410	1400	1400	1570	1560	1560	1580	1490	1540	1230	1220	1220
6	1400	1400	1400	1590	1560	1580	1540	1460	1510	1220	1210	1210
7	1400	1390	1390	1610	1580	1600	1460	1250	1370	1220	1200	1210
8	1390	1370	1380	1620	1610	1620	1250	1140	1190	1230	1220	1220
9	1390	1370	1380	1620	1620	1620	1260	1220	1250	1290	1230	1260
10	1400	1390	1390	1620	1610	1620	1290	1260	1270	1320	1280	1300
11	1400	1400	1400	1640	1620	1630	1440	1280	1400	1300	1280	1290
12	1400	1400	1400	1650	1630	1640	1520	1400	1460	1320	1270	1280
13	1400	1400	1400	1650	1620	1640	1640	1420	1540	1320	1280	1300
14	---	---	---	1660	1620	1640	1420	1210	1290	1340	1310	1320
15	1400	1400	1400	1670	1650	1660	1320	1260	1290	1340	1130	1210
16	1410	1400	1400	1650	1630	1640	1370	1300	1340	1130	938	1050
17	1410	1400	1400	1660	1640	1650	1350	1250	1300	938	884	896
18	1410	1390	1400	1660	1640	1650	1260	1190	1220	885	874	879
19	1400	1380	1390	1680	1660	1670	1210	1150	1170	878	873	874
20	1390	1380	1390	1700	1680	1690	1310	1150	1220	879	871	875
21	1400	1390	1390	1710	1700	1710	1370	1290	1350	887	876	885
22	1400	1380	1390	1730	1710	1720	1330	1160	1260	887	874	880
23	1380	1350	1370	1740	1720	1740	1190	1060	1140	878	868	872
24	1370	1360	1360	1760	1740	1760	1090	1050	1080	873	868	869
25	1420	1370	1400	1780	1760	1770	1080	1050	1060	873	865	869
26	1450	1420	1440	1800	1780	1790	1110	1070	1080	869	863	866
27	1460	1450	1460	1800	1680	1780	1190	1090	1130	875	868	871
28	1480	1450	1470	1760	1300	1580	1260	1190	1240	877	872	875
29	---	---	---	1320	1020	1150	1250	1200	1230	882	864	872
30	---	---	---	1260	1110	1210	1250	1220	1240	881	871	877
31	---	---	---	1280	1020	1190	---	---	---	887	877	883
MONTH	---	---	---	1800	1020	1600	1640	1020	1290	1340	863	1060

05114000 SOURIS RIVER NEAR SHERWOOD, ND--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	898	885	893	1150	1110	1120	1810	1770	1780	---	---	---
2	903	894	898	1210	1150	1190	1820	1800	1810	---	---	---
3	901	890	895	1220	1190	1200	1840	1820	1820	---	---	---
4	914	900	906	1230	1210	1220	1840	1800	1820	---	---	---
5	924	908	915	1220	1220	1220	1810	1800	1800	---	---	---
6	929	916	923	1280	1220	1240	1820	1790	1800	---	---	---
7	932	921	926	1320	1280	1300	1820	1720	1760	---	---	---
8	944	926	933	1320	1310	1320	1730	1670	1690	---	---	---
9	933	914	923	1330	1280	1300	1680	1640	1670	---	---	---
10	925	892	907	1310	1280	1290	1640	1560	1580	---	---	---
11	917	900	909	1290	1270	1280	1630	1560	1600	---	---	---
12	919	906	913	1300	1180	1240	1650	1630	1640	---	---	---
13	942	916	928	1380	1300	1350	1660	1640	1640	---	---	---
14	985	939	949	1430	1380	1410	1640	1620	1630	---	---	---
15	990	971	978	1470	1430	1450	1620	1580	1600	---	---	---
16	1040	974	1000	1500	1470	1490	1580	1470	1530	---	---	---
17	1040	1020	1030	1500	1480	1490	1470	1440	1450	---	---	---
18	1070	1020	1050	1520	1500	1510	1450	1420	1430	---	---	---
19	1070	1020	1030	1540	1520	1540	1440	1370	1410	---	---	---
20	1050	1040	1040	1560	1540	1550	1400	1310	1340	---	---	---
21	1060	1040	1040	1580	1550	1560	1310	1260	1280	---	---	---
22	1040	983	1010	1600	1570	1590	---	---	---	---	---	---
23	1040	1010	1020	1620	1590	1610	---	---	---	---	---	---
24	1050	1030	1040	1640	1610	1620	---	---	---	---	---	---
25	1060	1040	1050	1650	1620	1640	---	---	---	---	---	---
26	1070	1040	1050	1700	1650	1680	---	---	---	---	---	---
27	1100	1050	1070	1730	1700	1710	---	---	---	---	---	---
28	1170	1100	1130	1750	1720	1730	---	---	---	---	---	---
29	1210	1170	1190	1740	1720	1730	---	---	---	---	---	---
30	1210	1110	1150	1760	1730	1740	---	---	---	---	---	---
31	---	---	---	1770	1740	1750	---	---	---	---	---	---
MONTH	1210	885	990	1770	1110	1450	---	---	---	---	---	---

PH, WH, FIELD, in (STANDARD UNITS), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.4	7.7	8.3	8.3	8.1	8.0	---	---	7.4	7.4	7.6	7.5
2	8.4	8.2	8.3	8.3	8.2	8.1	7.4	7.4	7.4	7.4	7.6	7.5
3	8.5	8.3	8.3	8.3	8.2	8.1	7.4	7.3	7.5	7.4	7.6	7.5
4	8.6	8.4	8.3	8.3	8.3	8.2	7.4	7.4	7.5	7.5	7.6	7.6
5	8.7	8.4	8.3	8.3	8.3	8.1	7.4	7.4	7.5	7.5	7.6	7.6
6	8.7	8.5	8.3	8.3	8.1	8.1	7.4	7.4	7.5	7.5	7.6	7.6
7	8.7	8.5	8.3	8.3	8.1	8.0	7.4	7.4	7.5	7.5	7.6	7.6
8	8.7	8.5	8.3	8.3	8.0	7.9	7.4	7.4	7.5	7.5	7.6	7.6
9	8.7	8.5	8.3	8.3	7.9	7.9	7.4	7.4	7.5	7.5	7.6	7.6
10	8.8	8.6	8.3	8.3	7.9	7.8	7.4	7.4	7.5	7.5	7.6	7.6
11	8.7	8.6	8.4	8.3	7.8	7.7	7.4	7.4	7.5	7.5	7.6	7.5
12	8.8	8.6	8.3	8.3	7.7	7.7	7.4	7.4	7.5	7.5	7.5	7.5
13	8.8	8.6	8.3	8.3	7.7	7.6	7.5	7.4	7.5	7.5	7.6	7.5
14	8.7	8.6	8.3	8.3	7.6	7.6	7.4	7.4	---	---	7.6	7.5
15	---	---	8.3	8.3	7.6	7.6	7.5	7.5	7.5	7.5	7.6	7.6
16	---	---	8.3	8.3	7.6	7.6	7.5	7.5	7.5	7.5	7.6	7.6
17	---	---	8.3	8.2	7.6	7.6	7.5	7.5	7.6	7.5	7.6	7.6
18	---	---	8.3	8.2	7.6	7.6	7.5	7.5	7.6	7.5	7.6	7.5
19	8.7	8.6	8.3	8.3	7.6	7.6	7.5	7.5	7.6	7.6	7.5	7.5
20	8.7	8.6	8.3	8.3	7.6	7.5	7.5	7.5	7.6	7.6	7.5	7.5
21	8.7	8.6	8.3	8.3	7.5	7.5	7.5	7.5	7.6	7.6	7.5	7.4
22	8.7	8.6	8.3	8.3	7.5	7.5	7.5	7.5	7.6	7.6	7.4	7.4
23	8.7	8.6	8.3	8.2	7.5	7.5	7.5	7.5	7.6	7.6	7.4	7.4
24	8.7	8.6	8.3	8.2	7.5	7.5	7.5	7.5	7.6	7.5	7.4	7.4
25	8.7	8.6	8.3	8.2	7.5	7.4	7.5	7.5	7.6	7.5	7.4	7.4
26	8.6	8.5	8.3	8.2	7.4	7.4	7.5	7.4	7.6	7.6	7.4	7.4
27	8.6	8.6	8.2	8.2	7.4	7.4	7.4	7.4	7.6	7.5	7.4	7.4
28	8.6	8.5	8.2	8.1	7.4	7.4	7.4	7.4	7.6	7.6	7.6	7.4
29	8.6	8.4	8.1	8.1	---	---	7.4	7.4	---	---	7.6	7.5
30	8.4	8.4	8.1	8.0	---	---	7.4	7.4	---	---	7.6	7.6
31	8.4	8.3	---	---	---	---	7.4	7.4	---	---	7.7	7.6
MONTH	---	---	8.4	8.0	---	---	---	---	---	---	7.7	7.4

05114000 SOURIS RIVER NEAR SHERWOOD, ND--Continued

PH, WH, FIELD, in (STANDARD UNITS), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.6	7.6	8.5	8.4	8.4	8.2	8.0	8.0	8.7	8.6	---	---
2	7.6	7.6	8.5	8.4	8.4	8.1	8.1	8.0	8.8	8.7	---	---
3	7.6	7.6	8.4	8.3	8.2	8.2	8.1	8.0	8.8	8.7	---	---
4	7.7	7.6	8.4	8.3	8.2	8.1	8.1	8.1	8.8	8.6	---	---
5	7.7	7.6	8.3	8.2	8.1	8.0	8.5	8.1	8.7	8.6	---	---
6	7.7	7.6	8.3	8.2	8.1	8.0	8.6	8.4	8.7	8.6	---	---
7	7.7	7.6	8.3	8.3	8.1	8.0	8.5	8.3	8.7	8.6	---	---
8	7.6	7.5	8.3	8.3	8.1	8.0	8.3	8.1	8.6	8.6	---	---
9	7.8	7.6	8.3	8.3	8.2	8.0	8.2	8.1	8.7	8.6	---	---
10	7.9	7.7	8.3	8.2	8.1	8.0	8.2	8.1	8.7	8.5	---	---
11	8.0	7.8	8.3	8.2	8.2	8.1	8.2	8.1	8.6	8.5	---	---
12	8.0	7.9	8.3	8.2	8.2	8.2	8.2	8.0	8.7	8.6	---	---
13	8.1	8.0	8.3	8.3	8.2	8.1	8.3	8.1	8.8	8.6	---	---
14	8.2	8.1	8.3	8.3	8.1	8.1	8.4	8.2	8.7	8.6	---	---
15	8.3	8.2	8.3	8.2	8.1	8.1	8.5	8.3	8.8	8.6	---	---
16	8.3	8.2	8.2	8.1	8.2	8.0	8.5	8.3	8.8	8.7	---	---
17	8.3	8.2	8.4	8.2	8.0	8.0	8.4	8.2	8.7	8.7	---	---
18	8.3	8.2	8.3	8.3	8.0	8.0	8.4	8.3	8.8	8.6	---	---
19	8.3	8.2	8.4	8.2	8.0	7.9	8.4	8.3	8.8	8.6	---	---
20	8.3	8.2	8.5	8.3	8.0	8.0	8.4	8.2	8.8	8.5	---	---
21	8.3	8.3	8.5	8.3	8.0	8.0	8.4	8.3	8.7	8.5	---	---
22	8.3	8.2	8.4	8.3	8.0	7.9	8.6	8.4	---	---	---	---
23	8.3	8.2	8.5	8.3	7.9	7.8	8.6	8.5	---	---	---	---
24	8.3	8.2	8.5	8.4	7.8	7.7	8.6	8.5	---	---	---	---
25	8.4	8.3	8.5	8.3	7.8	7.7	8.5	8.4	---	---	---	---
26	8.5	8.4	8.6	8.4	7.8	7.7	8.6	8.4	---	---	---	---
27	8.5	8.4	8.6	8.4	7.8	7.8	8.5	8.5	---	---	---	---
28	8.5	8.4	8.6	8.4	7.9	7.8	8.6	8.5	---	---	---	---
29	8.5	8.4	8.5	8.3	8.0	7.8	8.6	8.5	---	---	---	---
30	8.5	8.4	8.5	8.3	8.0	8.0	8.6	8.5	---	---	---	---
31	---	---	8.5	8.3	---	---	8.6	8.5	---	---	---	---
MONTH	8.5	7.5	8.6	8.1	8.4	7.7	8.6	8.0	---	---	---	---

OXYGEN DISSOLVED, in (MG/L), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	9.9	7.2	8.1	11.2	10.6	10.9	12.8	11.8	12.3	---	---	---
2	10.1	7.2	8.3	11.8	10.6	11.1	13.6	12.0	12.7	2.7	2.3	2.4
3	10.5	7.8	8.8	12.1	11.2	11.6	14.9	12.8	13.7	2.4	2.1	2.2
4	11.2	8.3	9.4	12.3	11.4	11.9	15.7	13.6	14.6	2.4	2.1	2.2
5	11.9	9.2	10.1	12.3	11.4	11.9	15.2	12.8	14.0	2.2	1.9	2.1
6	12.4	9.5	10.6	12.5	11.4	11.9	12.8	11.7	12.3	2.0	1.9	2.0
7	12.3	9.9	10.7	12.2	11.5	11.9	11.7	10.8	11.2	2.3	1.9	2.0
8	12.2	9.8	10.6	12.8	11.4	12.0	10.8	10.3	10.5	2.4	2.0	2.2
9	11.4	9.6	10.3	12.9	12.1	12.5	10.4	9.8	10.0	3.2	2.3	2.5
10	12.3	9.7	10.6	13.0	12.1	12.6	9.9	8.9	9.3	3.7	3.1	3.3
11	11.9	9.7	10.3	13.3	12.6	12.9	8.9	8.0	8.3	3.9	3.2	3.5
12	12.5	9.7	10.6	13.2	12.4	12.9	8.0	7.3	7.5	3.9	3.4	3.7
13	11.8	9.5	10.2	13.2	12.7	13.0	7.4	6.9	7.1	3.8	3.3	3.6
14	10.9	9.6	10.1	13.5	12.6	13.0	7.1	6.4	6.6	3.9	3.6	3.7
15	---	---	---	13.1	12.4	12.8	6.7	6.0	6.3	3.8	3.7	3.8
16	---	---	---	13.1	12.4	12.7	6.6	6.0	6.3	4.0	3.7	3.9
17	---	---	---	13.0	12.2	12.5	6.5	5.9	6.2	3.9	3.8	3.8
18	---	---	---	13.0	11.8	12.4	6.4	5.8	6.0	3.9	3.5	3.7
19	11.3	10.6	10.9	13.9	12.6	13.1	6.2	5.3	5.6	3.7	3.4	3.6
20	11.4	10.3	10.7	13.9	13.1	13.5	5.5	4.7	5.0	3.7	3.4	3.5
21	11.7	10.4	10.9	13.8	12.7	13.3	5.1	4.4	4.7	3.4	3.2	3.3
22	11.6	10.6	11.0	13.8	12.8	13.3	4.6	4.0	4.3	3.4	3.1	3.3
23	11.2	10.4	10.8	13.4	12.4	12.9	4.1	3.6	3.8	3.5	3.3	3.4
24	11.9	10.6	11.1	13.0	12.0	12.5	3.8	3.5	3.6	3.4	3.0	3.2
25	12.3	11.3	11.8	13.1	11.8	12.3	3.6	3.2	3.4	3.0	2.5	2.7
26	12.6	11.9	12.2	13.4	12.3	12.9	3.4	3.1	3.2	2.5	2.2	2.3
27	12.7	12.1	12.4	13.4	12.4	12.9	3.2	2.9	3.0	2.3	2.1	2.1
28	12.5	11.7	12.0	13.3	12.4	12.8	3.0	2.6	2.7	2.1	1.9	2.0
29	12.2	11.8	12.1	13.1	11.9	12.4	---	---	---	2.2	2.0	2.1
30	12.0	11.5	11.8	12.3	11.5	12.0	---	---	---	2.4	2.1	2.2
31	11.8	11.0	11.4	---	---	---	---	---	---	2.5	2.4	2.4
MONTH	---	---	---	13.9	10.6	12.5	---	---	---	---	---	---

05114000 SOURIS RIVER NEAR SHERWOOD, ND--Continued

OXYGEN DISSOLVED, in (MG/L), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.5	2.2	2.3	9.3	7.7	8.3	9.8	9.1	9.3	11.8	9.1	10.5
2	2.2	2.0	2.1	9.8	8.1	8.7	9.4	8.5	8.9	11.5	9.5	10.5
3	2.1	1.9	2.0	10.3	8.4	9.2	10.7	8.9	9.5	10.6	9.3	10.0
4	2.1	1.7	1.9	10.6	8.9	9.7	13.1	9.9	11.1	10.6	8.4	9.4
5	2.1	1.9	1.9	10.6	9.1	9.8	13.0	10.8	11.8	10.2	8.2	9.2
6	2.1	1.8	1.9	10.2	9.0	9.6	13.1	10.5	11.7	10.2	8.5	9.2
7	2.2	1.9	2.0	10.2	8.9	9.5	12.4	8.8	10.0	10.5	9.3	9.9
8	2.2	1.9	2.1	9.7	8.7	9.1	9.6	7.7	8.5	11.1	9.4	10.1
9	2.6	2.1	2.3	9.3	8.4	8.8	11.5	8.8	9.7	11.6	10.4	11.0
10	2.8	2.5	2.6	9.0	8.0	8.4	12.2	9.9	11.0	11.4	9.7	10.6
11	3.1	2.6	2.8	8.4	7.6	7.9	13.9	11.1	12.2	11.1	8.8	9.7
12	3.3	2.9	3.0	8.4	6.9	7.4	13.5	12.0	12.8	10.6	8.5	9.6
13	3.3	2.9	3.1	10.0	7.1	8.2	13.2	12.4	12.7	10.7	8.6	9.5
14	---	---	---	11.0	8.1	9.3	12.8	12.0	12.4	10.0	8.3	9.1
15	3.6	3.2	3.4	11.0	8.9	9.9	13.2	12.2	12.6	8.8	7.5	8.0
16	3.8	3.3	3.5	11.6	8.6	10	12.6	12.0	12.3	10.3	7.8	8.8
17	3.7	3.4	3.5	11.6	9.6	10.4	13.5	11.7	12.4	11.3	8.2	9.5
18	3.8	3.4	3.5	10.5	9.0	9.5	13.1	11.2	12.1	11.2	8.3	9.6
19	4.1	3.5	3.7	9.0	7.8	8.1	13.7	11.8	12.7	11.0	8.0	9.3
20	4.5	3.9	4.1	7.8	6.8	7.1	14.3	12.4	13.2	10.8	7.5	8.9
21	5.1	4.3	4.5	7.0	5.7	6.0	13.5	11.8	12.7	10.3	7.1	8.5
22	5.5	4.7	5.0	5.8	5.0	5.4	13.0	11.0	12.0	8.4	6.4	7.0
23	6.4	5.2	5.6	5.4	4.4	5.0	11.9	10.1	11.0	10.1	6.8	8.2
24	7.1	6.1	6.4	5.6	4.4	5.0	11.9	9.6	10.7	10.5	7.9	9.1
25	7.6	6.8	7.0	6.3	4.7	5.5	13.3	10.8	11.9	10.8	7.8	9.2
26	8.0	7.1	7.4	6.3	5.1	5.8	13.6	11.4	12.4	11.1	7.8	9.2
27	8.0	7.1	7.5	7.8	5.0	6.0	13.4	10.7	12.0	10.5	7.4	8.8
28	8.5	7.3	7.8	10.1	5.8	7.8	13.0	10.4	11.7	9.7	6.5	7.9
29	---	---	---	10.2	9.3	9.7	12.5	10.1	11.4	8.7	5.6	7.0
30	---	---	---	10.5	9.6	10.1	12.8	9.6	11.1	8.9	5.5	7.0
31	---	---	---	10.6	9.8	10.3	---	---	---	8.7	5.7	7.0
MONTH	---	---	---	11.6	4.4	8.2	14.3	7.7	11.5	11.8	5.5	9.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	4.9	6.5	4.2	3.2	3.7	7.0	5.2	5.9	---	---	---
2	7.7	4.4	5.4	4.5	3.4	3.9	7.2	5.9	6.4	---	---	---
3	5.4	4.5	5.0	4.5	3.5	4.1	7.0	5.8	6.3	---	---	---
4	5.7	4.8	5.2	4.8	3.8	4.4	6.3	5.3	5.7	---	---	---
5	5.9	4.9	5.4	8.3	4.4	5.8	6.3	5.0	5.5	---	---	---
6	5.7	4.6	5.1	8.3	4.6	6.3	6.5	5.4	5.9	---	---	---
7	5.4	4.3	4.8	7.4	4.6	5.7	6.1	5.4	5.7	---	---	---
8	5.9	4.2	4.9	6.7	4.3	5.5	6.1	5.0	5.5	---	---	---
9	6.0	5.4	5.7	6.1	4.6	5.3	7.4	4.8	6.0	---	---	---
10	6.8	5.8	6.4	6.4	4.5	5.3	7.0	4.7	5.7	---	---	---
11	7.5	6.4	6.9	6.4	4.7	5.3	6.1	4.7	5.4	---	---	---
12	7.6	7.1	7.4	6.4	4.5	5.3	6.3	5.3	5.8	---	---	---
13	7.5	7.0	7.2	6.7	4.4	5.5	6.2	5.6	6.0	---	---	---
14	7.2	6.5	6.8	7.3	4.2	5.6	6.3	5.5	6.0	---	---	---
15	6.8	6.2	6.5	7.3	4.2	5.7	6.3	5.7	6.0	---	---	---
16	6.6	5.8	6.2	6.4	3.7	4.8	6.1	5.8	6.0	---	---	---
17	5.9	5.3	5.5	5.9	3.5	4.6	7.2	5.9	6.3	---	---	---
18	5.5	4.9	5.1	6.3	3.9	5.0	7.4	6.7	7.0	---	---	---
19	5.5	4.4	4.9	6.0	3.9	4.8	7.5	6.4	7.0	---	---	---
20	5.8	4.6	5.1	5.4	3.6	4.4	7.5	6.1	6.8	---	---	---
21	5.6	4.8	5.1	5.7	3.8	4.6	7.2	6.0	6.6	---	---	---
22	4.9	3.8	4.3	6.1	4.6	5.3	---	---	---	---	---	---
23	3.8	3.0	3.2	6.1	5.2	5.6	---	---	---	---	---	---
24	3.4	2.6	2.9	6.0	5.0	5.4	---	---	---	---	---	---
25	3.2	2.4	2.8	5.6	4.8	5.2	---	---	---	---	---	---
26	2.9	2.4	2.6	5.4	4.5	4.9	---	---	---	---	---	---
27	3.1	2.3	2.6	5.7	4.4	5.0	---	---	---	---	---	---
28	3.1	2.4	2.6	5.4	4.6	5.0	---	---	---	---	---	---
29	3.7	2.3	2.9	6.0	4.3	4.9	---	---	---	---	---	---
30	4.0	2.9	3.4	6.3	4.4	5.2	---	---	---	---	---	---
31	---	---	---	6.4	4.6	5.4	---	---	---	---	---	---
MONTH	8.1	2.3	4.9	8.3	3.2	5.1	---	---	---	---	---	---

05115500 LAKE DARLING NEAR FOXHOLM, ND

LOCATION.--Lat 48°27'29", long 101°35'00", in NE¼NE¼ sec.1, T.157 N., R.85 W., Ward County, Hydrologic Unit 09010001, on embankment of Lake Darling Dam, reservoir of Fish and Wildlife Service, on Souris River about 6 mi north of Foxholm, and at mile 430.0.

DRAINAGE AREA.--9,450 mi^2, approximately, of which about 6,200 mi^2 is probably noncontributing.

MONTHEND-ELEVATION AND CONTENTS RECORDS

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

REVISED RECORDS.--WSP 1338: 1942. WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,577.00 ft above National Geodetic Vertical Datum of 1929. April 1936 to Aug. 8, 1963, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam; storage began in April 1936; dam completed in July 1936. Usable capacity, 118,600 acre-ft between elevation of 1,577 ft, sill of control gages, and 1598 feet, legal full-capacity level. Flood-emergency maximum level is 1,601 ft (148,600 ac-ft). Dead storage below sill at control gages is 144 acre-ft. Figures given herein represent total contents based on capacity table dated April 12, 1995 (provided by U.S. Fish and Wildlife Service). Water is used during periods of low flow at wildlife refuges downstream. Elevations are adjusted for wind effect.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 145,400 acre-ft, Apr. 17, 1976, elevation, 1601.24 ft; minimum observed since April 1943 when reservoir was first filled to spillway level, 31,200 acre-ft, Feb. 18 and 25, 1963, elevation, 1587.04 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily contents, 105,050 acre-ft, May 23, elevation, 1,596.60 ft; minimum daily contents, 93,750 acre-ft, Sept. 29, elevation, 1,595.41 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,595.97	99,040	--
Oct. 31	1,595.93	98,660	-380
Nov. 30	1,595.80	97,420	-1,240
Dec. 31	1,595.91	98,470	+1,050
CAL YR 2001	--	--	-470
Jan. 31	1,595.98	99,130	-660
Feb. 28	1,596.03	99,600	+470
Mar. 31	1,596.10	100,270	+670
Apr. 30	*1,596.13	100,560	+290
May 31	1,596.10	100,270	-290
June 30	1,596.10	100,270	0
July 31	1,595.94	98,750	-1,520
Aug. 31	1,595.68	96,290	-2,460
Sept. 30	1,595.51	94,690	-1,600
WTR YR 2002	--	--	-4,350

* Estimated

05115500 LAKE DARLING NEAR FOXHOLM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1993 to current year.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT													
31...	0935	1.0	--	800	8.3	240	47.8	28.6	2	70.5	237	19.1	.2
31...	0940	.0	1.8	--	--	--	--	--	--	--	--	--	--
31...	0945	5.9	--	805	8.2	240	48.3	28.9	2	72.5	237	19.1	.2
APR													
25...	1520	1.0	--	796	8.2	250	50.2	29.9	2	73.4	234	18.7	.2
25...	1530	6.0	--	795	8.2	250	50.3	29.7	2	71.9	234	18.6	.2
25...	1540	.0	1.5	--	--	--	--	--	--	--	--	--	--
MAY													
17...	0930	1.0	--	795	8.4	260	51.8	31.1	2	76.1	235	19.8	.2
17...	0935	.0	1.2	--	--	--	--	--	--	--	--	--	--
17...	0940	7.2	--	787	8.3	270	54.3	32.1	2	78.2	235	19.8	.2
JUN													
14...	1045	1.0	--	817	8.4	260	53.0	31.1	2	77.5	239	20.6	.3
14...	1050	6.0	--	812	8.4	260	52.8	30.9	2	77.8	239	21.3	.3
14...	1055	.0	4.5	--	--	--	--	--	--	--	--	--	--
AUG													
08...	1250	1.0	--	787	8.8	250	47.4	30.8	2	80.8	234	21.2	.2
08...	1255	.0	1.6	--	--	--	--	--	--	--	--	--	--
08...	1300	6.6	--	787	8.8	250	47.4	31.0	2	81.4	233	21.4	.2
21...	0925	1.0	--	805	8.4	230	41.2	31.5	2	85.2	218	22.6	.2
21...	0930	.0	3.1	--	--	--	--	--	--	--	--	--	--
21...	0935	6.5	--	795	8.3	220	39.7	30.3	2	82.3	219	22.0	.2
SEP													
03...	1240	.85	1.1	811	8.2	240	43.8	31.4	2	83.9	220	21.7	.2
03...	1245	6.7	7.0	814	8.1	240	44.3	31.4	2	84.5	220	21.0	.2
03...	1250	.0	4.0	--	--	--	--	--	--	--	--	--	--

Date	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHENOLS TOTAL (UG/L) (32730)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
OCT													
31...	164	1.2	<.04	<.05	--	--	.10	13.0	<16	522	<10	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--r	--r
31...	164	1.1	<.04	<.05	--	--	.11	15.2	<16	520	<10	--	--
APR													
25...	163	1.0	<.04	<.05	--	--	.10	11.3	<17	531	<10	--	--
25...	165	1.1	<.04	E.03	--	--	.09	10.3	<16	535	<10	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	E2.7	E.4
MAY													
17...	174	1.2	<.04	<.05	--	--	.09	13.1	--	551	10	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	5.0	.4
17...	174	1.1	<.04	<.05	--	--	.10	12.6	--	552	14	--	--
JUN													
14...	175	1.1	<.04	.05	--	1.2	.09	11.2	<17	560	<10	--	--
14...	176	1.0	<.04	.05	--	1.1	.09	11.9	<18	565	<10	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	2.3	.3
AUG													
08...	183	2.1	<.04	<.05	--	--	.22	14.0	<18	555	<10	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	47.6	<.1
08...	183	1.7	<.04	<.05	--	--	.20	13.0	<18	552	<10	--	--
21...	183	1.4	.08	.18	1.3	1.6	.13	12.2	<16	542	<10	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	1.9	.2
21...	183	1.2	.13	.14	1.1	1.4	.12	11.0	<16	560	<10	--	--
SEP													
03...	185	1.1	<.04	.07	--	1.2	.12	10.3	<16	539	<10	--	--
03...	185	1.1	E.03	.08	--	1.2	.12	12.0	<16	559	<10	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	2.7	<.1

05115500 LAKE DARLING NEAR FOXHOLM, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	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)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)
OCT													
31...	30	7	80.9	<2	250	<.1	<.8	<2.0	2.6	80	<1	E.01	6
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	40	5	79.7	<2	240	<.1	E.7	<2.0	1.7	90	<1	E.01	6
APR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
17...	60	3	83.8	<2	230	<.1	<.8	<2.0	1.6	70	<1	E.01n	6
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
17...	50	3	83.7	<2	230	<.1	<.8	<2.0	1.7	110	<1	E.01n	6
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	50	5	73.3	<2	240	<.1	<.8	<2.0	1.3	60	<1	.01	5
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	50	5	74.8	<2	240	<.1	<.8	<2.0	E1.1	100	<1	E.01n	6
SEP													
03...	E20	5	79.1	<2	260	.2	<.8	<2.0	1.7	40	<1	E.01n	7
03...	40	5	79.9	E1	260	E.1	<.8	<2.0	1.6	90	<1	E.01n	6
03...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	TRIAZIN SCREEN (ELISA) WAT,WH REC,AS ATRAZIN (UG/L) (34757)	2,4-D SCREEN TOTAL (UG/L) (99906)
OCT					
31...	3.0	2	<20	.1	<.700
31...	--	--	--	--	--
31...	3.1	<2	<20	--	--
APR					
25...	--	--	--	<.1	<.700
25...	--	--	--	<.1	<.700
25...	--	--	--	--	--
MAY					
17...	2.9	<2	<20	.2	<.700
17...	--	--	--	--	--
17...	2.5	<2	<20	--	--
JUN					
14...	--	--	--	<.1	<.700
14...	--	--	--	--	--
14...	--	--	--	--	--
AUG					
08...	--	--	--	<.1	<.700
08...	--	--	--	--	--
08...	--	--	--	--	--
21...	2.6	<2	E20	.1	<.700
21...	--	--	--	--	--
21...	2.2	E1	<20	--	--
SEP					
03...	E1.9	<2	<20	.1	<.700
03...	3.1	<2	<20	.1	<.700
03...	--	--	--	--	--

05115500 LAKE DARLING NEAR FOXHOLM, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY FIELD WATER UNFLTRD (NTU) (61028)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
31...	0925	5.9	.0	812	8.1	2.8	--	12.7	101	710	36.0	5.0	210
31...	0926	--	1.1	810	8.1	2.8	--	12.2	--	--	--	--	--
31...	0927	--	2.2	811	8.1	2.9	--	11.9	--	--	--	--	--
31...	0928	--	3.3	812	8.2	2.8	--	12.0	--	--	--	--	--
31...	0929	--	4.4	813	8.2	2.8	--	12.0	--	--	--	--	--
31...	0930	--	5.9	812	8.2	2.8	--	11.8	--	--	--	--	--
APR													
25...	1510	6.5	.0	822	7.9	4.3	1.0	13.0	105	730	28.8	7.0	300
25...	1511	--	1.0	822	7.9	4.3	2.0	12.4	--	--	--	--	--
25...	1512	--	2.0	822	7.9	4.3	1.0	12.3	--	--	--	--	--
25...	1513	--	3.0	822	7.9	4.3	1.0	12.2	--	--	--	--	--
25...	1514	--	4.0	821	7.9	4.3	2.0	12.1	--	--	--	--	--
25...	1515	--	5.0	822	7.9	4.3	1.0	12.0	--	--	--	--	--
25...	1516	--	6.0	822	7.9	4.3	1.0	12.0	--	--	--	--	--
25...	1517	--	6.5	821	7.9	4.3	7.0	11.9	--	--	--	--	--
MAY													
17...	0920	7.3	1.0	829	8.5	10.2	--	9.8	91	735	24.0	7.0	0
17...	0921	--	2.0	830	8.5	10.1	--	9.6	--	--	--	--	--
17...	0922	--	3.0	830	8.5	10.1	--	9.5	--	--	--	--	--
17...	0923	--	4.0	831	8.5	10.1	--	9.4	--	--	--	--	--
17...	0924	--	5.0	830	8.5	10.0	--	9.5	--	--	--	--	--
17...	0925	--	6.0	831	8.5	10.0	--	9.5	--	--	--	--	--
17...	0926	--	7.0	831	8.5	10.0	--	8.4	--	--	--	--	--
17...	0927	--	7.3	832	8.4	9.9	--	8.2	--	--	--	--	--
JUN													
14...	1030	6.3	.0	815	8.3	15.1	--	9.1	96	723	82.0	21.5	250
14...	1032	--	1.0	817	8.3	15.1	--	8.7	--	--	--	--	--
14...	1034	--	2.0	818	8.3	15.1	--	8.9	--	--	--	--	--
14...	1036	--	3.0	818	8.3	15.0	--	8.8	--	--	--	--	--
14...	1038	--	4.0	819	8.3	15.0	--	8.8	--	--	--	--	--
14...	1040	--	5.0	819	8.3	14.9	--	8.8	--	--	--	--	--
14...	1042	--	6.0	820	8.3	14.9	--	8.5	--	--	--	--	--
14...	1044	--	6.3	815	8.3	14.9	--	7.9	--	--	--	--	--
AUG													
08...	1240	6.6	.0	837	8.7	21.0	--	9.7	115	721	26.2	26.5	290
08...	1241	--	.60	837	8.7	21.0	--	9.6	--	--	--	--	--
08...	1242	--	1.2	837	8.7	21.0	--	9.3	--	--	--	--	--
08...	1243	--	2.2	840	8.7	20.8	--	8.6	--	--	--	--	--
08...	1244	--	3.0	840	8.7	20.8	--	8.5	--	--	--	--	--
08...	1245	--	4.0	841	8.7	20.7	--	7.9	--	--	--	--	--
08...	1246	--	4.9	842	8.6	20.7	--	7.3	--	--	--	--	--
08...	1247	--	5.7	843	8.6	20.5	--	6.6	--	--	--	--	--
08...	1248	--	6.6	846	8.6	20.5	--	5.7	--	--	--	--	--
21...	0915	6.5	.0	845	8.2	18.8	--	6.8	77	720	60.3	16.5	15
21...	0916	--	1.0	843	8.2	18.8	--	6.7	--	--	--	--	--
21...	0917	--	2.0	842	8.2	18.9	--	6.8	--	--	--	--	--
21...	0918	--	3.0	844	8.2	18.5	--	6.8	--	--	--	--	--
21...	0919	--	4.0	841	8.2	16.9	--	4.5	--	--	--	--	--
21...	0920	--	5.0	846	8.1	16.7	--	3.3	--	--	--	--	--
21...	0921	--	6.0	844	8.0	16.4	--	2.2	--	--	--	--	--
21...	0922	--	6.5	845	8.0	16.4	--	1.8	--	--	--	--	--
SEP													
03...	1230	7.1	.0	842	7.9	19.4	--	7.8	90	719	80.4	22.0	60
03...	1231	--	.50	840	7.9	19.4	--	7.8	--	--	--	--	--
03...	1232	--	1.0	841	7.9	19.3	--	7.6	--	--	--	--	--
03...	1233	--	2.0	841	8.0	19.2	--	7.4	--	--	--	--	--
03...	1234	--	3.0	841	8.0	19.1	--	7.0	--	--	--	--	--
03...	1235	--	4.0	841	8.0	19.1	--	6.7	--	--	--	--	--
03...	1236	--	5.0	842	8.0	19.1	--	6.6	--	--	--	--	--
03...	1237	--	6.0	842	8.0	19.1	--	6.6	--	--	--	--	--
03...	1238	--	7.1	842	7.9	19.1	--	6.3	--	--	--	--	--

05115500 LAKE DARLING NEAR FOXHOLM, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
31...	--
31...	--
31...	--
31...	--
31...	--
31...	--
APR	
25...	15
25...	--
25...	--
25...	--
25...	--
25...	--
25...	--
25...	--
MAY	
17...	<5.0
17...	--
17...	--
17...	--
17...	--
17...	--
17...	--
17...	--
JUN	
14...	10
14...	--
14...	--
14...	--
14...	--
14...	--
14...	--
14...	--
AUG	
08...	8.0
08...	--
08...	--
08...	--
08...	--
08...	--
08...	--
08...	--
08...	--
21...	10
21...	--
21...	--
21...	--
21...	--
21...	--
21...	--
21...	--
SEP	
03...	<5.0
03...	--
03...	--
03...	--
03...	--
03...	--
03...	--
03...	--
03...	--

< Less than
E Estimated value
n Below the non-detection value
r Sample ruined in preparation

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND

LOCATION.--Lat 48°22'20", long 101°30'18", in SW$^1/_4$SE$^1/_4$ sec.34, T.157 N., R.84 W., Ward County, Hydrologic Unit 09010001, on left bank 30 ft upstream from county highway bridge, 3 mi east of Foxholm, 19 mi upstream from Des Lacs River, and at mile 414.5.

DRAINAGE AREA.--9,470 mi^2, approximately, of which about 6,200 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1904 to November 1905, March to July 1906 (gage heights only), October 1936 to current year. Monthly discharge only for some periods, published in WSP 1308. Published as Mouse River near Foxholm, 1904-06.

REVISED RECORDS.--WSP 1308: 1905. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and sheet piling weir. Datum of gage is 1,560.73 ft above National Geodetic Vertical Datum of 1929. June 23, 1904, to July 31, 1906, nonrecording gage at site 3.2 mi upstream at different datum. Apr. 1, 1937, to Mar. 25, 1938, nonrecording gage at site 600 ft downstream at datum about 0.5 ft higher.

REMARKS.--Records good. Flow almost completely regulated since 1936 by Lake Darling (station 05115500), 15 mi upstream, Canadian Reservoirs (Boundary Reservoir, 48,990 acre-ft - 1958; Rafferty Reservoir, 356,400 acre-ft - 1991; and Alameda Reservoir, 85,560 ac-ft - 1992) and several small reservoirs, combined capacity, about 646,000 acre-feet. Some small diversions for irrigation and municipal supply.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121	50	0.20	0.05	0.06	0.06	0.08	2.3	0.00	0.20	5.1	0.42
2	121	49	0.19	0.06	0.06	0.06	0.09	0.40	0.00	0.18	2.2	0.32
3	121	49	0.18	0.05	0.06	0.05	0.08	0.17	0.02	0.17	0.90	0.19
4	121	49	0.18	0.05	0.06	0.05	0.08	0.10	0.72	0.16	0.40	0.11
5	121	49	0.25	0.06	0.06	0.05	0.08	0.08	2.0	0.16	0.17	0.08
6	120	49	0.26	0.06	0.06	0.06	0.08	0.07	2.1	0.15	0.10	0.06
7	120	49	0.23	0.06	0.07	0.06	0.09	0.06	1.3	0.15	0.08	0.05
8	120	49	0.22	0.06	0.08	0.06	0.09	0.11	0.95	0.17	0.10	0.06
9	98	49	0.21	0.08	0.08	0.06	0.09	0.16	3.8	0.19	0.08	0.04
10	73	49	0.19	0.08	0.08	0.07	0.10	0.11	3.3	0.19	0.08	0.03
11	67	49	0.17	0.08	0.07	0.07	0.10	0.09	1.2	0.20	0.06	0.02
12	56	49	0.17	0.08	0.07	0.06	0.11	0.08	1.0	0.21	0.07	0.02
13	56	49	0.17	0.08	0.08	0.08	0.10	0.06	0.90	0.21	0.05	0.02
14	56	49	0.15	0.08	0.07	0.08	0.10	0.05	0.49	0.22	0.02	0.01
15	53	49	0.13	0.08	0.07	0.07	0.12	0.04	0.38	0.23	0.00	0.01
16	50	43	0.12	0.08	0.06	0.06	0.12	0.03	0.34	0.24	0.02	0.0
17	50	6.1	0.11	0.07	0.07	0.06	3.3	0.02	0.36	0.23	0.08	0.00
18	50	1.8	0.11	0.07	0.07	0.07	67	0.02	0.33	0.17	0.07	0.03
19	42	0.94	0.10	0.07	0.07	0.07	92	0.02	0.30	0.11	38	0.03
20	6.3	0.66	0.09	0.07	0.08	0.07	100	0.0	0.30	0.08	81	0.02
21	2.1	0.53	0.09	0.07	0.07	0.07	100	0.00	0.27	0.05	77	0.02
22	1.3	0.44	0.09	0.07	0.06	0.07	100	0.00	0.28	0.02	75	0.02
23	1.0	0.37	0.08	0.07	0.07	0.06	100	0.01	0.31	0.0	75	0.02
24	0.99	0.32	0.08	0.07	0.08	0.06	101	0.00	0.78	0.00	74	0.02
25	0.88	0.29	0.08	0.05	0.08	0.06	100	0.00	1.1	0.00	76	0.02
26	0.72	0.26	0.08	0.07	0.07	0.05	99	0.00	0.88	0.00	75	0.02
27	0.61	0.24	0.07	0.07	0.07	0.05	98	0.00	0.50	0.00	74	0.02
28	0.55	0.22	0.07	0.07	0.07	0.08	98	0.00	0.25	0.15	71	0.02
29	0.49	0.21	0.07	0.07	---	0.08	98	0.00	0.23	3.6	69	0.02
30	14	0.21	0.07	0.07	---	0.08	63	0.00	0.22	5.9	25	0.04
31	49	---	0.06	0.06	---	0.07	---	0.00	---	5.7	0.72	---
TOTAL	1693.94	791.59	4.27	2.11	1.95	2.00	1220.81	3.98	24.61	19.04	820.30	1.74
MEAN	54.64	26.39	0.138	0.068	0.070	0.065	40.69	0.128	0.820	0.614	26.46	0.058
MAX	121	50	0.26	0.08	0.08	0.08	101	2.3	3.8	5.9	81	0.42
MIN	0.49	0.21	0.06	0.05	0.06	0.05	0.08	0.00	0.00	0.00	0.00	0.00
AC-FT	3360	1570	8.5	4.2	3.9	4.0	2420	7.9	49	38	1630	3.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2002, BY WATER YEAR (WY)

MEAN	26.73	25.69	25.23	26.22	32.39	104.8	499.2	491.4	142.6	100.2	57.87	37.86
MAX	146	137	144	166	334	1058	5443	4242	1138	1238	440	345
(WY)	2000	1952	1976	1976	1997	1976	1976	1975	1975	1953	1999	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.010	0.000	0.000
(WY)	1937	1937	1937	1937	1937	1937	1942	1942	1991	1991	1937	1937

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1937 - 2002	
ANNUAL TOTAL	125009.80		4586.34			
ANNUAL MEAN	342.5		12.57		131.1	
HIGHEST ANNUAL MEAN					948	1976
LOWEST ANNUAL MEAN					1.13	1989
HIGHEST DAILY MEAN	2210	May 7	121	Oct 1	8500	Apr 17 1976
LOWEST DAILY MEAN	0.06	Dec 31	0.00	May 20	-5.0	Apr 5 1949
ANNUAL SEVEN-DAY MINIMUM	0.07	Dec 25	0.00	May 24	0.00	Oct 1 1936
MAXIMUM PEAK FLOW			121	Oct 1	8600	Apr 17 1976
MAXIMUM PEAK STAGE			6.53	Oct 1	17.17	Apr 17 1976
INSTANTANEOUS LOW FLOW					a,b-25	Apr 4 1949
ANNUAL RUNOFF (AC-FT)	248000		9100		94970	
10 PERCENT EXCEEDS	1430		56		246	
50 PERCENT EXCEEDS	119		0.09		12	
90 PERCENT EXCEEDS	0.28		0.02		0.00	

a Reverse flow caused by backwater from Des Lacs River
b No flow at times in most years

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
19...	1145	50	--	--	--	830	7.0	5.5	--	--	--	--	--
NOV													
16...	1000	48	--	--	--	845	8.0	4.7	--	--	--	--	--
JAN													
02...	1640	.05	--	--	--	1200	-7.0	.0	--	--	--	--	--
MAR													
13...	0930	.08	--	--	--	1540	--	.0	--	--	--	--	--
APR													
19...	1250	88	8.5	--e	686	650	7.0	9.0	200	40.0	25.0	11.0	2
MAY													
17...	1240	.02	--	--	--	910	--	14.4	--	--	--	--	--
JUN													
28...	1030	.25	--	--	--	948	27.0	25.1	--	--	--	--	--
JUL													
17...	1050	.25	9.2	--e	--e	951	20.0	25.2	440	83.0	57.0	14.0	4
AUG													
02...	1045	3.4	--	--	--	1030	--	19.5	--	--	--	--	--
SEP													
11...	0905	.03	--	--	--	1100	--	17.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
19...	61.0	38	178	18.0	.20	150	104	439	412	1.0	30	<1	30
MAY													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	180	46	365	25.0	.30	470	.74	1090	1050	16.0	50	<1	70
AUG													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--

05116000 SOURIS (MOUSE) RIVER NEAR FOXHOLM, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
19...	--	--	--	--	--
NOV					
16...	--	--	--	--	--
JAN					
02...	--	--	--	--	--
MAR					
13...	--	--	--	--	--
APR					
19...	40	<.10	1	1	260
MAY					
17...	--	--	--	--	--
JUN					
28...	--	--	--	--	--
JUL					
17...	210	<.10	3	1	420
AUG					
02...	--	--	--	--	--
SEP					
11...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05116500 DES LACS RIVER AT FOXHOLM, ND

LOCATION.--Lat 48°22'14", long 101°34'11", in $NW^1/_4NE^1/_4NW^1/_4$ sec 2, T.156 N., R.85 W., Ward County, Hydrologic Unit 09010002, on left bank 200 ft upstream from county highway bridge in Foxholm and at mile 23.0.

DRAINAGE AREA.--939 mi^2, of which about 400 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,632.98 ft above National Geodetic Vertical Datum of 1929. June 14 to Oct. 23, 1955, non-recording gage at site 200 ft downstream from present gage at same datum. See WSP 1728 or 1913 for history of changes prior to June 14, 1955.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow is affected by reservoirs of Des Lacs National Wildlife Refuge. Combined reservoir capacity is about 54,000 acre-ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	7.4	4.5	e1.5	e1.3	2.6	25	6.1	2.8	5.3	2.2	16
2	4.4	9.5	4.4	e1.4	e1.4	2.4	7.3	5.6	2.8	4.5	2.0	13
3	4.9	11	4.4	e1.4	e1.4	2.0	10	5.1	2.9	4.0	2.1	9.5
4	6.6	12	4.4	e1.3	e1.5	1.8	9.2	4.9	3.1	3.6	2.3	7.0
5	7.5	12	4.4	e1.4	e1.5	1.8	8.3	4.6	3.2	3.3	2.3	5.4
6	8.0	11	4.2	e1.5	e1.6	1.8	12	4.4	3.2	3.0	2.2	4.7
7	8.4	10	e4.0	e1.5	e1.7	1.6	16	4.4	3.2	2.9	2.2	4.2
8	8.4	10	e3.9	e1.6	e1.7	1.5	17	4.7	3.2	2.9	2.2	3.8
9	8.2	9.3	e4.0	e1.7	e1.8	1.5	22	5.8	4.5	3.0	2.2	3.5
10	8.0	8.4	e3.9	e1.8	e1.8	1.4	40	6.7	8.6	3.8	2.1	3.3
11	7.5	8.0	e3.8	e1.8	e1.9	1.3	67	6.9	32	4.0	2.0	3.0
12	7.3	7.7	e3.6	e1.7	e2.0	1.4	82	7.8	47	3.8	2.0	2.8
13	7.1	7.2	e3.6	e1.6	e2.1	1.5	75	8.4	28	3.7	2.0	2.5
14	6.9	7.0	e3.6	e1.6	e2.2	1.6	56	7.9	17	3.5	1.9	2.2
15	7.2	6.6	e3.7	e1.6	e2.2	1.7	35	7.3	12	3.2	1.8	2.1
16	7.3	6.3	e3.7	e1.5	e2.3	1.7	24	6.6	9.3	2.9	1.8	1.8
17	7.3	6.1	e3.8	e1.5	e2.3	1.8	19	6.0	8.1	2.7	2.0	1.6
18	7.3	5.9	e3.6	e1.4	e2.4	1.9	16	5.5	7.1	2.6	2.0	1.5
19	8.0	5.6	e3.5	e1.5	e2.5	2.0	14	5.1	6.7	2.5	2.0	1.5
20	9.4	5.4	e3.4	e1.6	e2.5	2.1	12	4.7	6.5	2.4	1.9	1.7
21	9.1	5.3	e3.2	e1.7	e2.6	2.2	11	4.2	6.1	2.3	1.9	2.0
22	8.6	5.2	e3.0	e1.7	e2.8	2.1	9.9	3.8	5.4	2.2	2.0	2.0
23	8.1	5.2	e2.9	e1.6	e2.9	2.4	9.2	3.7	5.0	2.1	2.1	2.0
24	e7.5	5.1	e2.7	e1.6	e3.0	2.6	9.1	3.7	12	2.0	2.3	2.0
25	7.3	5.0	e2.6	e1.7	e2.9	2.6	8.5	3.6	32	2.0	2.4	2.0
26	7.5	4.8	e2.4	e1.7	2.9	2.8	7.8	3.5	20	2.0	2.5	1.9
27	7.3	4.8	e2.3	e1.6	2.9	3.1	7.3	3.4	13	2.0	2.5	1.9
28	7.5	4.8	e2.2	e1.5	2.8	5.0	7.3	3.3	9.3	2.0	2.6	1.9
29	7.9	4.7	e2.0	e1.5	---	5.8	7.0	3.3	7.7	2.1	5.2	1.9
30	7.7	4.6	e1.8	e1.4	---	19	6.6	3.3	6.3	2.2	17	1.8
31	7.6	---	e1.7	e1.4	---	34	---	3.1	---	2.3	19	---
TOTAL	230.4	215.9	105.2	48.3	60.9	117.0	650.5	157.4	328.0	90.8	100.7	110.5
MEAN	7.432	7.197	3.394	1.558	2.175	3.774	21.68	5.077	10.93	2.929	3.248	3.683
MAX	9.4	12	4.5	1.8	3.0	34	82	8.4	47	5.3	19	16
MIN	4.4	4.6	1.7	1.3	1.3	1.3	6.6	3.1	2.8	2.0	1.8	1.5
AC-FT	457	428	209	96	121	232	1290	312	651	180	200	219

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2002, BY WATER YEAR (WY)

MEAN	9.768	6.508	2.969	1.370	4.331	48.41	117.8	61.24	36.87	22.85	11.94	10.93
MAX	83.5	50.7	16.3	8.52	76.1	362	730	399	228	216	108	97.9
(WY)	1976	1976	2000	2000	1981	1976	1976	1975	1975	1999	1972	1975
MIN	0.000	0.000	0.000	0.000	0.000	0.10	1.77	0.30	0.020	0.000	0.000	0.000
(WY)	1993	1993	1959	1946	1946	1948	1963	1993	1961	1961	1961	1958

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1904 - 2002	
ANNUAL TOTAL	4379.10		2215.6			
ANNUAL MEAN	12.00		6.070		27.94	
HIGHEST ANNUAL MEAN					148	1976
LOWEST ANNUAL MEAN					0.44	1991
HIGHEST DAILY MEAN	147	Mar 29	82	Apr 12	3200	Apr 30 1970
LOWEST DAILY MEAN	0.62	Feb 26	1.3	Jan 4	0.00	Dec 11 1945
ANNUAL SEVEN-DAY MINIMUM	0.64	Feb 21	1.4	Jan 28	0.00	Dec 11 1945
MAXIMUM PEAK FLOW			87	Apr 12	4260	Apr 19 1979
MAXIMUM PEAK STAGE			6.98	Apr 12	a21.23	Apr 19 1979
ANNUAL RUNOFF (AC-FT)	8690		4390		20240	
10 PERCENT EXCEEDS	28		10		59	
50 PERCENT EXCEEDS	4.8		3.5		3.0	
90 PERCENT EXCEEDS	0.80		1.6		0.01	

a From high-water mark
e Estimated

05116500 DES LACS RIVER AT FOXHOLM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-51, 1969-70, 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
19...	1045	7.8	--	--	--	1830	5.5	4.6	--	--	--	--	--
NOV													
16...	1115	6.4	--	--	--	1830	13.0	4.7	--	--	--	--	--
JAN													
02...	1600	1.4	--	--	--	2690	-7.0	.0	--	--	--	--	--
MAR													
13...	1030	1.4	--	--	--	2060	--	.0	--	--	--	--	--
APR													
17...	1415	19	7.8	7.6	890	853	16.5	7.4	220	46.0	26.0	14.0	3
MAY													
17...	1200	5.9	--	--	--	1850	--	12.0	--	--	--	--	--
JUN													
28...	0945	10	--	--	--	1270	26.5	25.5	--	--	--	--	--
JUL													
17...	0945	2.8	8.3	--e	--e	1510	20.0	25.0	250	35.0	39.0	17.0	3
SEP													
11...	1015	3.1	--	--	--	1550	--	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	92.0	45	184	15.0	.20	260	29.9	593	564	3.0	240	<1	30
MAY													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	110	47	244	34.0	.30	230	4.78	639	611	15.0	40	<1	50
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
19...	--	--	--	--	--
NOV					
16...	--	--	--	--	--
JAN					
02...	--	--	--	--	--
MAR					
13...	--	--	--	--	--
APR					
17...	230	<.10	1	2	260
MAY					
17...	--	--	--	--	--
JUN					
28...	--	--	--	--	--
JUL					
17...	110	.10	5	<1	280
SEP					
11...	--	--	--	--	--

< Less than
e Required equipment not functional/available

05117500 SOURIS (MOUSE) RIVER ABOVE MINOT, ND

LOCATION.--Lat 48°14'45", long 101°22'15", in NW$^1/_4$NW$^1/_4$SE$^1/_4$ sec.17, T.155 N., R.83 W., Ward County, Hydrologic Unit 09010001, on right bank 180 ft downstream from county highway bridge, 3.5 mi west of Minot, 7 mi downstream from Des Lacs River, and at mile 388.5.

DRAINAGE AREA.--10,600 mi^2, approximately, of which about 6,700 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

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

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

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by reservoirs on Souris and Des Lacs Rivers, combined capacity, about 700,000 acre-ft; some small diversions for irrigation and municipal supply.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage in Minot at least 3 ft higher than 1904 peak, in 1881, according to Apr. 20, 1904, issue of Minot Daily Optic. This peak probably occurred in 1882.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	11	7.5	3.8	4.0	3.9	42	81	3.2	7.7	0.11	55
2	137	47	7.4	3.9	3.7	3.7	43	23	3.1	5.7	0.08	29
3	136	67	7.4	3.8	3.8	3.6	19	10	3.6	4.6	0.06	18
4	136	76	7.4	3.7	3.7	3.2	17	8.3	e3.8	3.8	0.04	12
5	136	79	10	3.9	3.8	3.4	15	6.5	e4.6	3.3	0.02	8.8
6	140	79	10	4.0	3.5	3.4	13	6.1	5.2	2.6	0.01	7.7
7	140	80	8.2	3.9	3.8	3.3	21	6.3	4.6	2.1	0.01	6.3
8	142	77	7.2	4.4	4.3	3.4	24	8.5	3.7	e1.7	0.02	6.3
9	142	77	7.2	5.1	4.6	3.4	30	11	8.3	e2.3	0.02	6.2
10	118	76	7.1	5.5	4.6	3.5	49	10	14	e3.2	e0.00	5.6
11	91	76	6.7	5.5	4.1	3.5	74	8.7	12	e3.7	e0.00	4.8
12	82	76	6.9	5.2	4.7	4.2	105	8.6	28	e4.2	e0.00	4.2
13	69	74	6.4	5.9	4.7	5.1	121	8.4	67	e4.2	e0.00	3.5
14	66	96	6.0	6.4	4.6	5.0	105	8.1	47	e3.7	e0.00	2.7
15	65	102	6.1	5.7	4.5	4.5	77	8.8	30	e3.2	e0.00	2.1
16	61	77	5.9	5.6	4.5	4.3	50	8.5	23	e2.5	e0.00	1.8
17	59	70	6.1	6.5	4.7	4.0	34	7.7	22	2.4	e0.00	1.6
18	58	36	6.4	6.2	5.1	4.4	25	7.1	18	2.2	e0.00	1.6
19	58	17	6.6	5.5	5.3	4.4	65	6.3	15	1.8	e0.00	1.8
20	53	12	6.4	5.4	5.4	4.3	128	5.7	11	1.6	e0.00	1.7
21	32	9.7	5.7	5.6	5.0	4.1	138	5.1	9.6	1.3	e0.00	1.4
22	21	8.6	6.1	5.5	4.9	4.0	137	5.0	9.7	0.98	34	1.2
23	19	8.2	6.2	5.0	5.4	3.9	137	6.9	10	0.78	81	1.2
24	17	7.5	5.7	4.6	5.4	4.0	130	6.4	13	0.71	83	1.00
25	14	7.6	5.5	4.2	4.9	4.0	120	5.7	12	0.60	89	0.93
26	9.3	7.3	4.9	4.6	4.4	3.9	116	5.3	28	0.52	94	0.75
27	7.5	6.7	4.9	4.5	4.2	5.3	119	4.6	31	0.45	94	0.64
28	7.7	6.7	4.9	4.5	4.1	8.4	120	4.4	19	0.35	95	0.54
29	7.7	6.7	4.5	4.3	---	13	120	4.2	13	0.29	92	0.48
30	7.4	7.5	4.5	4.4	---	13	117	4.2	10	0.23	91	0.49
31	7.5	---	4.2	4.2	---	12	---	3.8	---	0.17	86	---
TOTAL	2174.1	1381.5	200.0	151.3	125.7	154.1	2311	304.2	482.4	72.88	839.37	189.33
MEAN	70.13	46.05	6.452	4.881	4.489	4.971	77.03	9.813	16.08	2.351	27.08	6.311
MAX	142	102	10	6.5	5.4	13	138	81	67	7.7	95	55
MIN	7.4	6.7	4.2	3.7	3.5	3.2	13	3.8	3.1	0.17	0.00	0.48
AC-FT	4310	2740	397	300	249	306	4580	603	957	145	1660	376

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2002, BY WATER YEAR (WY)

MEAN	32.99	28.13	22.77	20.93	28.53	138.3	650.6	563.8	195.1	124.0	62.56	46.30
MAX	266	159	164	170	399	1272	6209	4916	1402	1393	480	748
(WY)	1904	1952	1976	1976	1997	1976	1976	1904	1975	1953	1999	1903
MIN	0.000	0.000	0.000	0.000	0.000	0.000	1.27	0.31	0.000	0.000	0.000	0.000
(WY)	1935	1935	1935	1935	1935	1936	1937	1993	1938	1937	1937	1935

05117500 SOURIS (MOUSE) RIVER ABOVE MINOT, ND--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1903 - 2002	
ANNUAL TOTAL	126500.6		8385.88			
ANNUAL MEAN	346.6		22.98		159.1	
HIGHEST ANNUAL MEAN					1105	1976
LOWEST ANNUAL MEAN					1.30	1931
HIGHEST DAILY MEAN	2060	May 7	142	Oct 8	11400	Apr 22 1904
LOWEST DAILY MEAN	4.2	Dec 31	0.00	Aug 10	0.00	Sep 26 1917
ANNUAL SEVEN-DAY MINIMUM	4.8	Dec 25	0.00	Aug 10	0.00	Sep 26 1917
MAXIMUM PEAK FLOW			146	Nov 14	12000	Apr 20 1904
MAXIMUM PEAK STAGE			4.96	Nov 14	a,b21.90	Apr 20 1904
ANNUAL RUNOFF (AC-FT)	250900		16630		115200	
10 PERCENT EXCEEDS	1400		81		311	
50 PERCENT EXCEEDS	119		5.9		21	
90 PERCENT EXCEEDS	7.5		0.96		0.20	

a At site in Minot, from rating curve extended above 8,000 ft^3/s
b Maximum stage at present site about 23 ft in April 1904
e Estimated

05117500 SOURIS (MOUSE) RIVER ABOVE MINOT, ND--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT													
19...	1200	57	--	--	--	--	--	--	960	--	6.0	--	--
NOV													
20...	0945	13	726	95	12.4	8.4	8.3	1020	1060	8.0	2.2	300	58.7
JAN													
16...	1715	6.7	--	--	--	--	--	--	1990	-7.0	.0	--	--
FEB													
12...	1630	4.2	721	105	14.3	7.9	7.8	2230	2340	1.0	.1	650	127
APR													
17...	1715	32	--	--	--	--	--	--	590	17.0	8.7	--	--
26...	0900	112	725	109	13.1	8.6	8.3	828	870	-2.0	5.4	260	54.2
JUN													
07...	0930	4.8	715	85	7.4	8.2	8.1	1260	1310	18.0	18.7	370	69.2
27...	1430	29	715	100	7.4	8.4	8.3	1660	1660	31.0	27.1	400	68.2
JUL													
16...	1700	2.3	716	138	9.9	8.8	8.6	1610	1630	32.0	28.8	400	65.5
AUG													
08...	1910	.02	--	--	--	--	--	--	1680	27.0	26.1	--	--
21...	1815	.0	--	--	--	--	--	--	--	--	--	--	--
SEP													
12...	0845	4.7	713	87	7.6	8.5	--	--	1560	15.0	18.1	--	--

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
20...	37.8	3	101	298	25.3	.2	245	1.2	E.02	<.05	--	--	.09
JAN													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
12...	81.5	4	255	592	59.5	.3	620	2.5	E.03	.12	--	2.7	.20
APR													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	31.4	2	79.0	238	21.9	.2	188	1.2	<.04	<.05	--	--	.15
JUN													
07...	46.9	4	158	313	36.5	.2	339	--	--	--	--	--	--
27...	56.8	5	227	359	38.8	.3	492	1.5	.05	<.05	1.4	--	.35
JUL													
16...	56.8	5	221	339	37.9	.2	504	1.7	<.04	<.05	--	--	.64
AUG													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
12...	--	--	--	--	--	--	--	2.0	<.04	<.05	--	--	.56

05117500 SOURIS (MOUSE) RIVER ABOVE MINOT, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
20...	13.2	706	<2	5.2	.9	50	3	82.5	<2	240	<.1	<.8	<2.0
JAN													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
12...	19.1	1620	<4	--	--	30	3	108	<2	210	<.1	<.8	<2.0
APR													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	13.4	566	6k	15.0	.9	90	2	68.0	<2	210	<.1	<.8	<2.0
JUN													
07...	--	908	20k	3.5	.5	40	6	69.8	<2	120	<.1	<.8	E1.1
27...	16.6	1170	56	E4.1	E.9	80	9	56.9	<2	170	<.1	<.8	<2.0
JUL													
16...	18.3	1170	55	E19.6	E6.4	70	14	54.4	<2	150	<.1	<.8	E1.1
AUG													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
12...	24.4	--	17k	37.1	5.2	--	--	--	--	--	--	--	--

Date	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)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT							
19...	--	--	--	--	--	--	--
NOV							
20...	1.6	180	M	4	2.5	<2	<20
JAN							
16...	--	--	--	--	--	--	--
FEB							
12...	1.2	390	<1	3	4.4	<2	<20
APR							
17...	--	--	--	--	--	--	--
26...	1.3	230	<1	4	2.9	<2	<20
JUN							
07...	E.9	230	<1	3	5.0	<2	E20
27...	E.9	170	2	3	4.4	<2	E20
JUL							
16...	1.6	200	<1	2	3.4	E1	<20
AUG							
08...	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--
SEP							
12...	--	--	--	--	--	--	--

< Less than
E Estimated value
M Presence verified, not quantified
k Counts outside acceptable range

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND

LOCATION.--Lat 48°09'35", long 100°43'45", in NW$^1/_4$SW$^1/_4$ sec.17, T.154 N., R.78 W., McHenry County, Hydrologic Unit 09010003, on left bank 2.7 mi north of Verendrye, 19 mi upstream from mouth of Wintering River, and at mile 302.0.

DRAINAGE AREA.--11,300 mi^2, approximately, of which about 6,900 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,464.87 ft above National Geodetic Vertical Datum of 1929. February to June 1933, at site 4 mi upstream at datum 1.65 ft higher. Apr. 1, 1937, to Mar. 3, 1938, nonrecording gage at present site, at datum 1.97 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by reservoirs on Souris and Des Lacs Rivers, combined capacity about 700,000 acre-ft; some diversions for irrigation and municipal supply.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121	33	e19	e15	e20	11	e100	132	19	60	18	118
2	121	30	20	e15	e21	11	e90	129	17	48	23	146
3	121	28	20	e16	e21	9.7	e80	126	17	38	18	127
4	122	27	20	e16	e21	9.0	e70	110	17	32	12	92
5	122	27	21	e17	e21	8.8	e65	82	17	29	7.3	73
6	121	33	21	e17	e21	8.8	68	64	16	25	5.3	57
7	121	59	20	e18	e21	9.7	71	53	19	23	5.2	41
8	121	67	21	e18	e21	11	68	49	19	22	7.5	31
9	123	69	21	e18	e21	13	82	52	29	23	10	29
10	125	70	22	e17	21	17	124	56	70	23	12	25
11	125	70	23	e17	20	21	140	62	119	22	16	21
12	125	69	24	e18	20	23	156	79	235	26	17	19
13	124	69	24	e17	19	22	180	76	247	37	15	19
14	109	70	23	e19	18	18	199	69	153	29	13	21
15	94	71	23	e20	17	15	178	61	103	24	12	26
16	86	70	23	e20	16	13	170	52	91	22	12	24
17	80	73	23	e20	17	15	153	44	89	21	14	22
18	76	89	23	e21	17	19	140	39	73	21	15	20
19	75	83	23	e23	17	23	107	35	66	18	16	18
20	71	71	22	e23	17	28	89	32	74	17	15	13
21	68	63	e21	e23	17	31	83	30	55	16	15	9.5
22	65	51	e20	e23	17	26	79	29	45	15	16	8.1
23	65	41	e20	e23	17	23	110	29	43	14	17	8.7
24	65	35	e20	e23	17	22	132	27	79	14	17	13
25	58	32	e19	e23	e17	21	135	25	497	14	17	25
26	49	29	e17	e22	e16	21	136	26	562	8.8	16	13
27	41	22	e18	e21	15	20	132	31	308	6.3	16	9.6
28	46	19	e18	e21	13	23	129	33	144	5.2	52	9.0
29	42	e18	e17	e20	---	24	128	28	93	5.4	110	8.5
30	38	e18	e16	e20	---	e30	131	23	71	7.5	104	11
31	34	---	e15	e20	---	e70	---	21	---	9.2	106	---
TOTAL	2754	1506	637	604	516	617.0	3525	1704	3387	675.4	749.3	1057.4
MEAN	88.84	50.20	20.55	19.48	18.43	19.90	117.5	54.97	112.9	21.79	24.17	35.25
MAX	125	89	24	23	21	70	199	132	562	60	110	146
MIN	34	18	15	15	13	8.8	65	21	16	5.2	5.2	8.1
AC-FT	5460	2990	1260	1200	1020	1220	6990	3380	6720	1340	1490	2100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2002, BY WATER YEAR (WY)

MEAN	52.21	43.58	34.38	30.73	48.75	230.9	683.6	682.1	259.4	164.2	86.87	56.29
MAX	225	169	160	171	277	1209	6280	4918	2122	1599	512	363
(WY)	2000	1976	1976	1976	1976	1976	1976	1975	1975	1953	1976	1999
MIN	1.50	1.00	1.00	0.50	0.50	2.25	11.7	6.80	2.33	0.67	0.42	0.10
(WY)	1938	1938	1938	1938	1938	1940	1937	1938	1938	1937	1937	1937

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1937 - 2002	
ANNUAL TOTAL	146797		17732.1			
ANNUAL MEAN	402.2		48.58		200.6	
HIGHEST ANNUAL MEAN					1185	1976
LOWEST ANNUAL MEAN					18.8	1991
HIGHEST DAILY MEAN	2210	May 13	562	Jun 26	9700	Apr 20 1976
LOWEST DAILY MEAN	15	Dec 31	5.2	Jul 28	0.10	Sep 1 1937
ANNUAL SEVEN-DAY MINIMUM	17	Dec 25	8.1	Jul 25	0.10	Sep 1 1937
MAXIMUM PEAK FLOW			631	Jun 25	9900	Apr 19 1976
MAXIMUM PEAK STAGE			7.92	Jun 25	17.84	Apr 19 1976
ANNUAL RUNOFF (AC-FT)	291200		35170		145300	
10 PERCENT EXCEEDS	1610		121		431	
50 PERCENT EXCEEDS	126		23		38	
90 PERCENT EXCEEDS	27		13		4.0	

e Estimated

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-51, 1957 to current year.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT													
12...	1500	124	--	--	--	--	--	--	940	11.0	10.0	--	--
NOV													
20...	1515	68	726	109	14.2	8.5	8.4	1400	1400	16.0	2.2	380	73.9
JAN													
16...	1335	20	--	--	--	--	--	--	2030	-7.0	.0	--	--
FEB													
12...	1415	20	725	46	6.4	7.6	7.7	1810	1880	-4.0	.0	550	122
APR													
26...	1215	141	726	127	14.9	9.1	8.8	938	990	3.0	6.3	270	56.7
JUN													
05...	1600	16	718	166	14.4	8.3	8.1	1650	1650	24.0	18.9	500	104
26...	1330	540	718	49	3.9	7.8	7.7	740	750	28.0	23.7	210	44.2
JUL													
16...	1345	23	715	90	7.8	8.2	8.1	1430	1440	31.0	18.8	430	91.7
AUG													
21...	1600	15	718	111	9.7	8.3	8.2	1500	1530	--	18.6	430	89.6
SEP													
10...	1315	24	724	65	5.7	8.1	--	--	1230	22.0	18.7	--	--

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
OCT													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
20...	47.7	3	146	348	46.0	.2	373	1.1	<.04	<.05	--	--	.08
JAN													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
12...	59.8	3	186	498	45.1	.3	464	1.5	.72	.39	.81	1.9	.12
APR													
26...	30.5	3	106	204	43.1	E.1n	254	1.6	<.04	<.05	--	--	.28
JUN													
05...	57.6	4	198	389	52.0	.2	450	--	--	--	--	--	--
26...	24.2	2	74.1	160	7.92	.1	210	2.4	.15	.92	2.3	3.3	.44
JUL													
16...	48.2	3	162	360	38.3	.2	384	1.3	<.04	<.05	--	--	.36
AUG													
21...	49.0	4	189	365	53.0	.3	387	1.0	<.04	<.05	--	--	.24
SEP													
10...	--	--	--	--	--	--	--	1.5	.09	.07	1.4	1.6	.37

Date	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
20...	13.8	924	--	5.1	.6	100	2	67.6	<2	240	<.1	<.8	<2.0
JAN													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
12...	9.0	1280	196	--	--	70	2	87.4	<2	270	<.1	<.8	<2.0
APR													
26...	20.3	666	4k	28.7	3.0	260	3	45.2	<2	90	E.1	E.5	<2.0
JUN													
05...	--	1180	14k	56.8	10.7	170	5	98.5	<2	250	<.1	<.8	E1.0
26...	19.5	514	760	E2.2	E.2	2280	5	100	E2	130	.1	3.9	1.9
JUL													
16...	13.0	988	21k	E27.0	E6.6	140	13	79.4	<2	240	<.1	<.8	<2.0
AUG													
21...	11.8	987	108	17.0	4.9	60	E9dn	64.7	<2	280	<.1	<.8	<2.0
SEP													
10...	18.1	--	50	4.7	<.1	--	--	--	--	--	--	--	--

05120000 SOURIS (MOUSE) RIVER NEAR VERENDRYE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	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)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT							
12...	--	--	--	--	--	--	--
NOV							
20...	1.8	290	<1	4	2.6	<2	<20
JAN							
16...	--	--	--	--	--	--	--
FEB							
12...	1.3	610	<1	3	2.9	2	<20
APR							
26...	3.2	750	M	E2	4.3	<2	E20n
JUN							
05...	E.9	470	<1	6	4.1	<2	<20
26...	6.9	4270	4	E1	9.9	<2	E20
JUL							
16...	2.3	400	M	3	3.6	E1	<20
AUG							
21...	1.4	210	<1	3	3.5	<14d	<20
SEP							
10...	--	--	--	--	--	--	--

< Less than
E Estimated value
M Presence verified, not quantified
d Diluted sample: method hi range exceeded
k Counts outside acceptable range
n Below the non-detection value

05120500 WINTERING RIVER NEAR KARLSRUHE, ND

LOCATION.--Lat 48°08'18", long 100°32'22", SW¼SW¼SW¼ sec.23, T.154 N., R.77 W., McHenry County, Hydrologic Unit 09010003, on right bank downstream from county highway bridge, 9 mi upstream from mouth, and 5 mi northeast of Karlsruhe.

DRAINAGE AREA.--705 mi^2, of which about 420 mi^2 is probably noncontributing. (Drainage area shown is for former location 5 river miles downstream. Total drainage area has been reduced about 10 percent, which mostly consists of noncontributing area. New drainage areas will be published, but have not been delineated.)

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1728: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,500 ft above National Geodetic Vertical Datum of 1929, from topographic map. Mar. 1937 to Sept. 30, 1994, at site 5 miles downstream, at datum 20 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some regulation by Fish and Wildlife Service dams on Cottonwood and Wintering Lakes, controlled capacity, about 850 acre-ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	8.6	e9.6	e9.5	e7.0	e4.3	e4.2	20	7.3	38	e0.00	0.51
2	3.7	7.3	e9.8	e9.6	e6.7	e4.1	e4.2	19	7.5	34	e0.00	0.45
3	3.7	7.1	e9.8	e9.8	e6.3	e3.9	e4.3	19	8.3	31	e0.00	0.47
4	3.5	7.0	e9.6	e10	e6.2	e3.6	e4.4	19	8.4	28	e0.00	0.73
5	3.7	6.6	e9.5	e10	e6.2	e3.5	e4.4	19	7.0	26	e0.00	0.93
6	3.4	5.7	e9.6	e10	e6.3	e3.5	e4.5	19	6.3	22	e0.00	1.0
7	3.4	6.1	e9.7	e11	e6.3	e3.5	e4.7	19	5.7	20	e0.00	1.0
8	7.6	5.6	e9.8	e12	e6.4	e3.5	e4.7	20	5.2	19	e0.10	1.3
9	2.8	5.2	e9.9	e12	e6.4	e3.4	e4.8	23	24	18	e0.14	1.3
10	2.5	4.3	e9.8	e11	e6.5	e3.5	e5.5	24	36	17	e0.17	1.3
11	4.1	4.3	e9.7	e11	e6.5	e3.6	e6.0	23	51	14	e0.22	1.5
12	1.3	4.2	e9.6	e11	e6.5	e3.6	e12	23	52	12	e0.26	1.5
13	3.8	4.2	e9.6	e11	e6.5	e3.7	e17	23	38	9.9	e0.25	1.8
14	3.3	4.3	e9.7	e10	e6.5	e3.7	20	23	40	8.4	e0.27	1.8
15	3.3	5.0	e9.8	e10	e6.5	e3.7	21	23	45	8.6	e0.32	1.8
16	3.4	5.3	e9.9	e10	e6.6	e3.7	19	22	47	3.7	e0.58	2.1
17	3.3	5.0	e9.9	e10	e6.6	e3.7	18	22	48	6.0	e0.52	2.1
18	3.1	5.3	e9.8	e9.8	e6.6	e3.7	18	21	53	6.2	e0.48	2.4
19	3.3	5.5	e9.7	e9.6	e6.8	e3.6	19	21	64	5.4	e0.44	1.4
20	4.2	6.5	e9.7	e9.5	e6.9	e3.5	22	21	78	4.8	e0.38	1.8
21	2.5	6.4	e9.8	e9.4	e7.0	e3.5	23	20	87	5.8	e0.32	2.1
22	2.7	6.7	e9.8	e9.3	e7.0	e3.5	24	20	96	5.0	e0.27	2.1
23	3.5	6.8	e9.7	e9.2	e6.8	e3.6	24	20	98	3.6	0.24	2.3
24	5.1	6.7	e9.6	e9.1	e6.2	e3.7	23	19	101	2.2	0.27	2.5
25	7.0	7.8	e9.6	e9.1	e6.0	e3.8	21	18	89	1.7	0.50	2.5
26	4.9	10	e9.7	e9.0	e5.5	e4.0	20	16	79	0.67	0.77	2.5
27	6.0	9.6	e9.9	e9.0	e5.0	e4.4	21	15	67	0.21	0.78	3.2
28	10	e9.5	e9.8	e8.8	e4.8	e5.0	21	14	57	0.00	0.33	4.2
29	9.8	e9.4	e9.7	e8.2	---	e4.9	21	13	49	e0.00	0.35	3.7
30	9.1	e9.4	e9.6	e7.8	---	e4.7	20	11	43	e0.00	0.33	4.2
31	9.2	---	e9.5	e7.2	---	e4.3	---	6.5	---	e0.00	0.59	---
TOTAL	140.6	195.4	301.2	302.9	178.6	118.7	435.7	595.5	1397.7	351.18	8.88	56.49
MEAN	4.535	6.513	9.716	9.771	6.379	3.829	14.52	19.21	46.59	11.33	0.286	1.883
MAX	10	10	9.9	12	7.0	5.0	24	24	101	38	0.78	4.2
MIN	1.3	4.2	9.5	7.2	4.8	3.4	4.2	6.5	5.2	0.00	0.00	0.45
AC-FT	279	388	597	601	354	235	864	1180	2770	697	18	112

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2002, BY WATER YEAR (WY)

MEAN	6.370	6.207	2.596	1.276	1.571	26.16	72.23	33.91	18.44	12.10	7.506	5.728
MAX	109	98.8	22.7	9.77	10.7	343	465	304	194	95.1	87.3	67.3
(WY)	1995	1995	2001	2002	2000	1995	1997	1999	1999	1999	1993	1999
MIN	0.034	0.50	0.000	0.000	0.000	0.000	2.81	1.65	0.43	0.23	0.006	0.000
(WY)	1993	1938	1938	1938	1938	1951	1992	1992	1992	1989	1989	1992

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1937 - 2002	
ANNUAL TOTAL	14253.6		4082.85			
ANNUAL MEAN	39.05		11.19		16.37	
HIGHEST ANNUAL MEAN					82.0	1999
LOWEST ANNUAL MEAN					1.36	1992
HIGHEST DAILY MEAN	440	Mar 25	101	Jun 24	2500	Apr 7 1949
LOWEST DAILY MEAN	1.3	Oct 12	0.00	Jul 28	0.00	Mar 1 1937
ANNUAL SEVEN-DAY MINIMUM	2.5	Aug 30	0.00	Jul 28	0.00	Mar 1 1937
MAXIMUM PEAK FLOW			a108	Jun 23	3000	Apr 7 1949
MAXIMUM PEAK STAGE			b6.59	Aug 16	c12.00	Apr 7 1949
ANNUAL RUNOFF (AC-FT)	28270		8100		11860	
10 PERCENT EXCEEDS	147		23		33	
50 PERCENT EXCEEDS	9.6		6.6		3.5	
90 PERCENT EXCEEDS	3.6		0.59		0.10	

a Gage height, 4.56 ft
b Backwater from beaver dam
c Backwater from ice
e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-56, 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
12...	1315	2.9	--	--	--	763	10.0	8.8	--	--	--	--	--
NOV													
20...	1245	6.3	--	--	--	930	14.0	2.6	--	--	--	--	--
JAN													
16...	1445	9.9	--	--	--	835	-7.0	.0	--	--	--	--	--
FEB													
12...	1220	6.5	--	--	--	686	-4.0	.0	--	--	--	--	--
MAR													
12...	1245	3.6	--	--	--	700	5.0	.0	--	--	--	--	--
APR													
16...	1400	19	8.4	--e	1810	1740	10.0	9.6	410	74.0	54.0	20.0	5
JUN													
05...	1400	7.1	--	--	--	--	21.0	20.2	--	--	--	--	--
26...	1545	77	--	--	--	1750	28.5	27.0	--	--	--	--	--
JUL													
17...	1715	7.7	8.4	8.5	1730	1750	26.0	28.6	390	70.0	53.0	13.0	6

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	250	56	351	38.0	.20	570	67.2	1290	1220	4.0	150	<1	70
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	280	60	528	25.0	.20	460	26.9	1300	1220	8.0	110	<1	80

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
12...	--	--	--	--	--
NOV					
20...	--	--	--	--	--
JAN					
16...	--	--	--	--	--
FEB					
12...	--	--	--	--	--
MAR					
12...	--	--	--	--	--
APR					
16...	190	<.10	3	<1	220
JUN					
05...	--	--	--	--	--
26...	--	--	--	--	--
JUL					
17...	150	<.10	1	1	360

< Less than
e Required equipment not functional/available

05122000 SOURIS (MOUSE) RIVER NEAR BANTRY, ND

LOCATION.--Lat 48°30'20", long 100°26'04", in $SE^1/_4NW^1/_4SE^1/_4$ sec.14, T.158 N., R.76 W., McHenry County, Hydrologic Unit 09010003, on left bank 200 ft upstream from Nelson bridge, 8 mi east of Bantry, 18 mi upstream from Willow Creek, and at mile 228.0.

DRAINAGE AREA.--12,300 mi^2 approximately, of which about 7,600 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2113: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,427.56 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 16, 1938, nonrecording gage at same site at datum 0.17 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by reservoirs on Souris, Des Lacs, and Wintering Rivers, total capacity, about 700,800 acre-ft. Diversions for irrigation of about 7,600 acres at Eaton Dam about 42 mi above station and other small diversions for irrigation and municipal supply.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	e75	65	e56	e28	e19	32	17	159	373	28	52
2	120	e73	62	e55	e27	e17	29	e16	171	280	23	77
3	120	e71	61	e54	e27	e17	26	16	221	210	22	90
4	121	e68	61	e52	e27	e16	e23	16	253	165	20	100
5	119	e65	62	e51	e26	e16	21	16	249	137	22	114
6	117	e63	62	e50	e26	e15	20	17	227	114	25	120
7	118	e61	62	e50	e26	e14	20	e18	193	98	28	113
8	119	61	63	e49	e26	e13	19	21	155	87	26	98
9	120	60	63	e47	e25	e14	20	26	139	80	25	81
10	122	62	64	e45	e25	e16	24	28	144	74	23	66
11	123	70	64	e43	e25	e18	35	29	182	70	20	53
12	126	79	64	e41	e24	e19	42	26	226	67	19	44
13	129	86	65	e40	e24	e24	43	24	275	63	18	38
14	132	90	67	e39	e24	e25	33	23	333	59	19	32
15	134	92	69	e37	e23	e24	28	24	386	56	21	28
16	133	92	70	e36	e23	e23	25	23	382	55	24	25
17	132	92	71	e34	e23	e21	26	23	334	54	29	22
18	124	92	72	e33	e23	e20	35	23	275	53	28	22
19	114	92	71	e32	e22	e19	e40	23	229	50	28	23
20	104	93	e71	e31	e23	e18	47	23	197	47	26	23
21	96	96	e71	e31	e23	e17	49	38	174	44	26	23
22	92	100	e69	e30	e23	e23	48	289	166	40	26	23
23	e89	102	e68	e30	e23	25	43	438	182	38	26	24
24	e87	99	e66	e31	e22	e24	35	457	194	36	26	22
25	e85	93	e65	e31	e22	e24	e30	420	197	37	25	20
26	e82	82	e64	e32	e22	23	e25	352	201	34	24	19
27	e79	76	e63	e32	e22	25	21	281	311	32	25	18
28	e76	e72	e62	e31	e20	30	20	235	460	30	26	16
29	e74	e69	e61	e30	---	36	20	204	501	30	26	18
30	e72	e67	e59	e30	---	38	19	181	458	28	27	22
31	e71	---	e58	e29	---	35	---	166	---	25	30	---
TOTAL	3352	2393	2015	1212	674	668	898	3493	7574	2566	761	1426
MEAN	108.1	79.77	65.00	39.10	24.07	21.55	29.93	112.7	252.5	82.77	24.55	47.53
MAX	134	102	72	56	28	38	49	457	501	373	30	120
MIN	71	60	58	29	20	13	19	16	139	25	18	16
AC-FT	6650	4750	4000	2400	1340	1320	1780	6930	15020	5090	1510	2830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2002, BY WATER YEAR (WY)

MEAN	67.27	59.58	42.68	33.65	42.74	144.4	634.9	810.1	410.6	220.5	122.9	72.69
MAX	421	219	172	175	388	912	5666	5161	2821	1616	1080	633
(WY)	2000	1976	1976	1976	1997	1995	1976	1979	1975	1953	1999	1999
MIN	0.68	0.50	1.00	0.50	0.000	0.44	5.60	3.04	11.7	2.73	1.03	0.010
(WY)	1941	1941	1938	1938	1938	1937	1990	1937	1992	1992	1992	1939

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1937 - 2002	
ANNUAL TOTAL	162493		27032			
ANNUAL MEAN	445.2		74.06		225.4	
HIGHEST ANNUAL MEAN					1226	1976
LOWEST ANNUAL MEAN					15.9	1938
HIGHEST DAILY MEAN	2260	Apr 6	501	Jun 29	9260	Apr 23 1976
LOWEST DAILY MEAN	45	Feb 17	13	Mar 8	0.00	Mar 1 1937
ANNUAL SEVEN-DAY MINIMUM	46	Feb 12	15	Mar 4	0.00	Mar 1 1937
MAXIMUM PEAK FLOW			506	Jun 29	9330	Apr 23 1976
MAXIMUM PEAK STAGE			7.23	Jun 29	14.59	Apr 23 1976
ANNUAL RUNOFF (AC-FT)	322300		53620		163300	
10 PERCENT EXCEEDS	1610		172		540	
50 PERCENT EXCEEDS	135		41		53	
90 PERCENT EXCEEDS	60		20		5.4	

e Estimated

05122000 SOURIS (MOUSE) RIVER NEAR BANTRY, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
12...	1115	126	--	--	--	952	8.0	9.6	--	--	--	--	--
NOV													
07...	1615	60	--	--	--	1140	4.5	4.4	--	--	--	--	--
JAN													
17...	1245	34	--	--	--	1760	--	.0	--	--	--	--	--
MAR													
12...	1530	19	--	--	--	1400	7.0	.0	--	--	--	--	--
APR													
16...	1545	25	--	--	--	760	--	--	--	--	--	--	--
MAY													
24...	1430	438	8.2	8.2	1250	1230	14.2	13.7	350	66.0	46.0	13.0	3
JUL													
17...	1515	55	8.2	8.4	1490	1520	24.0	26.1	380	70.0	49.0	15.0	5
AUG													
21...	1300	26	--	--	--	1360	16.0	19.7	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
24...	140	45	308	28.0	.20	340	992	839	818	3.0	30	<1	60
JUL													
17...	210	54	423	29.0	.20	410	162	1100	1040	13.0	40	<1	70
AUG													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
12...	--	--	--	--	--
NOV					
07...	--	--	--	--	--
JAN					
17...	--	--	--	--	--
MAR					
12...	--	--	--	--	--
APR					
16...	--	--	--	--	--
MAY					
24...	70	<.10	3	<1	340
JUL					
17...	180	<.10	2	1	390
AUG					
21...	--	--	--	--	--

< Less than

05123400 WILLOW CREEK NEAR WILLOW CITY, ND

LOCATION.--Lat 48°35'20", long 100°26'30", in NE$^1/_4$NW$^1/_4$ sec.23, T.159 N., R.76 W., McHenry County, Hydrologic Unit 09010004, on left bank 50 ft downstream from culverts on county road, 1.5 mi upstream from Snake Creek, and 7 mi west of Willow City.

DRAINAGE AREA.--1,160 mi^2, approximately, of which about 430 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 1,430 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 5, 1956, nonrecording gage at site 50 ft upstream at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.00	e2.6	e8.7	e0.00	e0.00	e0.00	e2.7	4.3	e1.6	116	e0.00	0.00
2	e0.00	e2.4	e8.2	e0.00	e0.00	e0.00	e2.6	8.2	e1.5	67	e0.00	0.00
3	e0.00	e2.3	e7.5	e0.00	e0.00	e0.00	e2.6	16	e1.5	49	e0.00	0.00
4	e0.00	e2.2	e6.4	e0.00	e0.00	e0.00	e2.7	15	e1.9	e37	e0.00	0.00
5	e0.00	e3.1	e5.4	e0.00	e0.00	e0.00	e2.9	14	2.2	e30	e0.00	0.00
6	e0.00	e4.6	e4.7	e0.00	e0.00	e0.00	e3.8	11	1.9	e25	e0.00	0.00
7	e0.00	e5.3	e4.3	e0.00	e0.00	e0.00	e5.0	10	2.0	e18	e0.00	0.00
8	e0.00	6.2	e3.9	e0.00	e0.00	e0.00	e8.0	10	3.8	e15	e0.00	0.00
9	e0.00	9.3	e3.5	e0.00	e0.00	e0.00	e11	13	9.4	e12	e0.00	0.00
10	e0.00	14	e3.0	e0.00	e0.00	e0.00	e14	13	20	e9.5	e0.00	0.00
11	e0.00	13	e2.6	e0.00	e0.00	e0.00	e19	12	58	e8.5	e0.00	0.00
12	e0.00	12	e2.2	e0.00	e0.00	e0.00	e22	19	100	e7.5	e0.00	0.00
13	e0.00	11	e1.9	e0.00	e0.00	e0.00	e24	17	126	e6.3	e0.00	0.00
14	e0.00	11	e1.6	e0.00	e0.00	e0.00	e25	14	128	e5.7	e0.00	0.00
15	e0.00	11	e1.4	e0.00	e0.00	e0.00	e26	12	129	e4.9	e0.00	0.00
16	e0.00	11	e1.2	e0.00	e0.00	e0.00	24	9.6	128	e4.1	e0.00	0.00
17	e0.00	13	e1.3	e0.00	e0.00	e0.00	22	9.2	123	e3.6	e0.00	0.00
18	e0.00	14	e1.2	e0.00	e0.00	e0.00	21	8.0	115	e3.2	e0.00	0.00
19	e0.00	14	e1.1	e0.00	e0.00	e0.00	22	9.1	102	e2.5	e0.00	0.00
20	e0.00	13	e1.1	e0.00	e0.00	e0.00	25	11	89	e1.9	e0.00	0.00
21	e0.00	e14	e1.0	e0.00	e0.00	e0.00	24	9.6	73	e1.5	0.00	0.00
22	e0.20	e14	e0.90	e0.00	e0.00	e0.00	22	9.3	60	e1.0	0.00	0.00
23	e0.50	e13	e0.82	e0.00	e0.00	e0.00	19	8.8	52	e0.65	0.00	0.00
24	e1.1	e13	e0.74	e0.00	e0.00	e0.00	18	8.3	51	e0.50	0.00	0.00
25	e1.7	e12	e0.61	e0.00	e0.00	e0.00	14	8.8	48	e0.35	0.00	0.00
26	e2.3	e12	e0.52	e0.00	e0.00	e0.00	9.6	7.4	62	e0.20	0.00	0.00
27	e2.7	e11	e0.40	e0.00	e0.00	e0.10	8.8	5.8	88	e0.15	0.00	0.00
28	e2.9	e10	e0.30	e0.00	e0.00	e0.50	9.5	4.9	128	e0.10	0.00	0.00
29	e3.0	e9.8	e0.10	e0.00	---	e1.0	7.7	2.7	153	e0.05	0.00	0.00
30	e2.9	e9.2	e0.10	e0.00	---	e1.8	5.9	e1.7	154	e0.00	0.00	0.00
31	e2.8	---	e0.00	e0.00	---	e2.8	---	e1.4	---	e0.00	0.00	---
TOTAL	20.10	293.0	76.69	0.00	0.00	6.20	423.8	304.1	2012.8	431.20	0.00	0.00
MEAN	0.648	9.767	2.474	0.000	0.000	0.200	14.13	9.810	67.09	13.91	0.000	0.000
MAX	3.0	14	8.7	0.00	0.00	2.8	26	19	154	116	0.00	0.00
MIN	0.00	2.2	0.00	0.00	0.00	0.00	2.6	1.4	1.5	0.00	0.00	0.00
AC-FT	40	581	152	0.00	0.00	12	841	603	3990	855	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2002, BY WATER YEAR (WY)

MEAN	7.166	7.351	2.153	0.301	0.611	38.65	261.3	149.4	59.31	26.98	22.31	8.811
MAX	71.8	57.7	24.8	4.39	16.4	342	1242	1424	769	255	197	75.5
(WY)	1981	2001	1960	1960	1981	1995	1969	1999	1999	1999	2001	1980
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1957	1957	1957	1957	1958	1959	1977	1959	1959	1958	1957	1957

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1956 - 2002	
ANNUAL TOTAL	43906.46		3567.89			
ANNUAL MEAN	120.3		9.775		48.68	
HIGHEST ANNUAL MEAN					323	1999
LOWEST ANNUAL MEAN					0.005	1990
HIGHEST DAILY MEAN	1770	Apr 11	154	Jun 30	5310	Apr 12 1969
LOWEST DAILY MEAN	0.00	Sep 11	0.00	Oct 1	0.00	Sep 23 1956
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 11	0.00	Oct 1	0.00	Sep 23 1956
MAXIMUM PEAK FLOW			159	Jun 29	5900	Apr 12 1969
MAXIMUM PEAK STAGE			7.78	Jun 29	16.76	Apr 12 1969
INSTANTANEOUS LOW FLOW			0.00	Oct 1		
ANNUAL RUNOFF (AC-FT)	87090		7080		35270	
10 PERCENT EXCEEDS	445		21		98	
50 PERCENT EXCEEDS	7.3		0.50		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated

05123400 WILLOW CREEK NEAR WILLOW CITY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-62, 1964-65, 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
12...	0915	.0	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	1345	5.3	--	--	--	2190	5.0	4.5	--	--	--	--	--
APR													
16...	1730	24	8.6	--e	1600	1550	8.0	9.0	430	77.0	59.0	13.0	4
JUN													
07...	1450	1.8	--	--	--	1580	20.0	18.8	--	--	--	--	--
JUL													
17...	1400	3.6	8.5	8.5	2120	2160	23.0	26.0	580	77.0	95.0	21.0	5

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	170	45	203	68.0	.20	550	72.9	1120	1060	2.0	90	1	100
JUN													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	270	49	386	160	.30	630	15.0	1560	1490	13.0	60	<1	170

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
12...	--	--	--	--	--
NOV					
07...	--	--	--	--	--
APR					
16...	210	<.10	2	<1	370
JUN					
07...	--	--	--	--	--
JUL					
17...	280	.10	<1	<1	520

< Less than
e Required equipment not functional/available

05123510 DEEP RIVER NEAR UPHAM, ND

LOCATION.--Lat 48°35'03", long 100°51'44", in SW$^{1}/_{4}$NW$^{1}/_{4}$ sec.22, T.159 N., R.79 W., McHenry County, Hydrologic Unit 09010005, 60 ft downstream from county highway bridge, 0.8 mi downstream from Little Deep River, and 6.3 mi west of Upham.

DRAINAGE AREA.--975 mi^2, of which about 605 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1957 to September 1980, March 1985 to current year (seasonal records only since 1985).

GAGE.--Water-stage recorder. Elevation of gage is 1,430 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1951 reached a stage of about 16 ft, discharge, 2,700 ft^3/s, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11 ft^3/s, April 18, gage height, 7.29 ft, no flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	e0.09	0.13	8.0	0.49	e0.15	e0.00	e0.00
2	---	---	---	---	---	e0.09	0.17	8.0	0.25	e0.10	e0.00	e0.00
3	---	---	---	---	---	e0.08	0.19	7.5	0.15	e0.10	e0.00	e0.00
4	---	---	---	---	---	e0.08	0.18	6.7	0.09	e0.00	e0.00	e0.00
5	---	---	---	---	---	e0.07	0.15	5.7	0.06	e0.00	e0.00	e0.00
6	---	---	---	---	---	e0.07	0.14	4.9	0.03	e0.00	e0.00	0.00
7	---	---	---	---	---	e0.08	0.29	4.3	e0.00	e0.00	e0.00	0.00
8	---	---	---	---	---	e0.08	0.61	3.9	e0.00	e0.00	e0.00	0.00
9	---	---	---	---	---	e0.08	0.68	5.1	e0.00	e0.00	e0.00	0.00
10	---	---	---	---	---	e0.08	0.64	5.9	e0.00	e0.00	e0.00	0.00
11	---	---	---	---	---	e0.08	0.71	6.4	e0.10	e0.00	e0.00	0.00
12	---	---	---	---	---	e0.08	1.1	7.1	e0.10	e0.00	e0.00	0.00
13	---	---	---	---	---	0.12	1.4	7.3	e0.10	e0.00	e0.00	0.00
14	---	---	---	---	---	0.12	1.8	7.0	e0.10	e0.00	e0.00	0.00
15	---	---	---	---	---	0.10	1.9	6.5	e0.15	e0.00	e0.00	0.00
16	---	---	---	---	---	0.09	2.1	5.7	e0.25	e0.00	e0.00	0.00
17	---	---	---	---	---	0.08	6.1	5.0	e0.35	e0.00	e0.00	0.00
18	---	---	---	---	---	0.07	10	4.9	e0.45	e0.00	e0.00	0.00
19	---	---	---	---	---	0.07	11	4.3	e0.50	e0.00	e0.00	0.00
20	---	---	---	---	---	0.07	11	3.8	e0.40	e0.00	e0.00	0.00
21	---	---	---	---	---	0.07	9.2	3.5	e0.35	e0.00	e0.00	0.00
22	---	---	---	---	---	0.07	7.9	3.2	e0.30	e0.00	e0.00	0.00
23	---	---	---	---	---	0.07	6.8	3.0	e0.35	e0.00	e0.00	0.00
24	---	---	---	---	---	0.06	5.7	3.0	e0.38	e0.00	e0.00	0.00
25	---	---	---	---	---	0.06	5.6	3.0	e0.40	e0.00	e0.00	0.00
26	---	---	---	---	---	0.06	5.6	2.9	e0.35	e0.00	e0.00	0.00
27	---	---	---	---	---	0.05	5.6	2.7	e0.32	e0.00	e0.00	0.00
28	---	---	---	---	---	0.09	6.2	2.4	e0.30	e0.00	e0.00	0.00
29	---	---	---	---	---	0.13	7.2	2.0	e0.25	e0.00	e0.00	0.00
30	---	---	---	---	---	0.13	7.7	1.5	e0.20	e0.00	e0.00	0.00
31	---	---	---	---	---	0.12	---	0.92	---	e0.00	e0.00	---
TOTAL	---	---	---	---	---	2.59	117.79	146.12	6.77	0.35	0.00	0.00
MEAN	---	---	---	---	---	0.084	3.926	4.714	0.226	0.011	0.000	0.000
MAX	---	---	---	---	---	0.13	11	8.0	0.50	0.15	0.00	0.00
MIN	---	---	---	---	---	0.05	0.13	0.92	0.00	0.00	0.00	0.00
AC-FT	---	---	---	---	---	5.1	234	290	13	0.7	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2002, BY WATER YEAR (WY)

MEAN	0.122	0.724	0.245	0.034	0.102	28.09	145.1	44.99	8.003	4.684	3.413	0.224
MAX	1.99	16.1	5.08	0.77	2.37	276	1300	469	121	57.6	81.5	6.17
(WY)	1976	1976	1976	1976	1976	1976	1976	1999	1999	2000	2001	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1958	1958	1958	1958	1958	1959	1959	1959	1958	1958	1958	1958

SUMMARY STATISTICS WATER YEARS 1958 - 2002

ANNUAL MEAN	a20.45		
HIGHEST ANNUAL MEAN	a140		1976
LOWEST ANNUAL MEAN	a0.000		1959
HIGHEST DAILY MEAN	5700	Apr 12	1969
LOWEST DAILY MEAN	0.00	Oct 1	1957
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 1	1957
MAXIMUM PEAK FLOW	6760	Apr 12	1969
MAXIMUM PEAK STAGE	18.18	Apr 12	1969
ANNUAL RUNOFF (AC-FT)	a14820		
10 PERCENT EXCEEDS	6.8		
50 PERCENT EXCEEDS	0.00		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1958-80)
e Estimated

05123510 DEEP RIVER NEAR UPHAM, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972-80, 1985 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1340	.01	--	--	--	945	--	--	--	--	--	--	--
MAR													
12...	1715	.08	--	--	--	1510	.0	.0	--	--	--	--	--
MAY													
17...	1430	5.0	8.5	8.3	1260	1220	11.0	14.3	530	82.0	80.0	19.0	1
JUN													
07...	1330	.0	--	--	--	1150	19.0	17.4	--	--	--	--	--
JUL													
19...	1030	.0	--	--	--	--	--	--	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
17...	65.0	70	263	38.0	.10	390	11.8	867	832	2.0	30	<1	70
JUN													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
11...	--	--	--	--	--
MAR					
12...	--	--	--	--	--
MAY					
17...	30	<.10	2	<1	320
JUN					
07...	--	--	--	--	--
JUL					
19...	--	--	--	--	--

< Less than

05123990 J. CLARK SALYER POOL 357 NEAR WESTHOPE, ND

LOCATION.--Lat 48°58'40", long 100°57'45", in SW$^{1}/_{4}$ sec.31, T.164 N., R.79 W., Bottineau County, Hydrologic Unit 09010003, just upstream from U.S. Fish and Wildlife Service Dam 357, 1.2 mi upstream of International border, 7 mi northeast of Westhope, 10 mi downstream from Boundary Creek, and at mile 154.2.

DRAINAGE AREA.--16,900 mi^2, of which about 10,300 mi^2 is probably noncontributing.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1994 to current year.

REVISED RECORDS.--WSP 1728: Drainage area.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)
OCT													
11...	1330	--	.50	1160	9.1	310	39.0	51.8	4	161	350	34.4	.3
11...	1335	.0	1.0	--	--	--	--	--	--	--	--	--	--
11...	1340	--	2.0	1160	9.2	310	38.4	51.1	4	159	349	34.6	.3
APR													
25...	1230	--	1.0	1160	--	370	68.5	47.5	3	119	374	35.6	.2
25...	1240	--	2.3	1150	--	370	69.0	47.2	3	119	375	35.9	.2
25...	1250	.0	.20	--	--	--	--	--	--	--	--	--	--
MAY													
16...	1135	--	.50	1070	8.4	360	65.4	46.8	3	118	356	34.7	.2
16...	1140	.0	.04	--	--	--	--	--	--	--	--	--	--
16...	1145	--	2.0	1070	8.3	360	66.3	47.9	3	121	356	35.0	.2
JUL													
18...	1450	--	.50	1440	9.0	400	59.2	60.9	4	178	340	39.0	.1
18...	1455	.0	2.0	--	--	--	--	--	--	--	--	--	--
18...	1500	--	2.0	1420	9.0	390	56.3	60.4	4	175	336	39.4	.1
AUG													
22...	1710	--	.50	1470	--	340	37.7	60.1	5	194	280	39.8	.2
22...	1715	.0	.80	--	--	--	--	--	--	--	--	--	--
22...	1720	--	2.0	1450	9.0	350	39.1	61.0	5	196	295	39.5	.2
SEP													
03...	1505	--	.50	1430	--	310	31.5	56.9	5	193	253	39.8	.2
03...	1510	--	2.5	1440	--	310	31.5	56.7	5	193	256	39.5	.2
03...	1515	.0	.20	--	--	--	--	--	--	--	--	--	--
10...	1640	--	.50	1430	8.9	330	37.3	57.9	5	191	283	39.2	.2
10...	1645	.0	.60	--	--	--	--	--	--	--	--	--	--
10...	1650	--	2.0	1430	8.9	340	37.4	59.5	5	194	287	39.3	.2

Date	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHENOLS TOTAL (UG/L) (32730)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)
OCT													
11...	275	2.0	<.04	<.05	--	--	.19	36.0	<16	832	<10	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	11.8	1.8
11...	272	2.1	<.04	<.05	--	--	.16	32.2	<16	824	16	--	--
APR													
25...	230	1.7	.08	<.05	1.6	--	.33	38.0	<16	792	216	--	--
25...	231	1.6	.10	.10	1.5	1.7	.34	34.8	<17	777	220	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	17.8	1.7
MAY													
16...	223	1.9	<.04	<.05	--	--	.19	15.7	--	749	73	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	52.1	4.3
16...	223	1.6	<.04	<.05	--	--	.19	17.8	--	775	83	--	--
JUL													
18...	398	2.1	.09	E.03	2.0	--	.42	24.2	18	1050	<10	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	E7.0	E.8
18...	392	2.1	.15	E.03	1.9	--	.36	23.0	<18	1030	<10	--	--
AUG													
22...	430	7.5	E.03	<.05	--	--	.59	33.0	<16	1010	34	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	E395	<.1
22...	434	3.4	.15	.07	3.3	3.5	.27	35.4	<16	1050	<10	--	--
SEP													
03...	427	9.1	.09	E.03	9.0	--	.54	47.4	<16	1000	80	--	--
03...	421	7.2	.15	E.03	7.1	--	.44	43.7	<16	1020	84	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	1320	<.1
10...	422	4.9	.06	<.05	4.8	--	.35	42.1	<16	1050	23	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	212	<.1
10...	427	3.7	.10	<.05	3.6	--	.26	35.9	<16	1040	25	--	--

05123990 J. CLARK SALYER POOL 357 NEAR WESTHOPE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	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)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)
OCT													
11...	280	9	57.5	<2	240	<.1	E.5	E1.1	2.4	320	M	.02	2
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	220	9	56.9	<2	230	<.1	E.4	2.1	2.0	300	1	E.01	E2
APR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
16...	570	4	131	<2	220	<.1	1.5	<2.0	3.2	1060	2	E.01n	5
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	600	4	131	<2	220	<.1	1.5	E1.0	2.6	1090	2	.01	5
JUL													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
22...	40	E8dn	53.5	<2	250	<.1	<.8	E.9	1.5	60	<1	E.01n	E2
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	110	E8n	57.6	<2	260	<.1	<.8	<2.0	E1.1	180	<1	E.01n	E2
SEP													
03...	420	8	69.8	E2	240	<.1	1.1	E1.3	2.4	750	M	.02	2
03...	440	8	70.4	<2	250	<.1	1.0	2.3	2.8	800	1	.02	2
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	TRIAZIN SCREEN (ELISA) WAT,WH REC,AS ATRAZIN (UG/L) (34757)	2,4-D SCREEN TOTAL (UG/L) (99906)
OCT					
11...	2.6	<2	<20	.4	<.700
11...	--	--	--	--	--
11...	3.2	<2	E10	--	--
APR					
25...	--	--	--	--	--
25...	--	--	--	--	--
25...	--	--	--	--	--
MAY					
16...	4.5	<2	<20	.1	<.700
16...	--	--	--	--	--
16...	4.8	<2	E20n	--	--
JUL					
18...	--	--	--	--	--
18...	--	--	--	--	--
18...	--	--	--	--	--
AUG					
22...	3.1	<14d	<20	.1	<.700
22...	--	--	--	--	--
22...	3.1	<14	<20	--	--
SEP					
03...	5.0	<2	<20	--	--
03...	4.2	<2	<20	--	--
03...	--	--	--	--	--
10...	--	--	--	.2	<.700
10...	--	--	--	--	--
10...	--	--	--	--	--

05123990 J. CLARK SALYER POOL 357 NEAR WESTHOPE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY FIELD WATER UNFLTRD (NTU) (61028)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
11...	1324	2.3	.0	1250	8.8	8.2	--	11.0	100	711	19.0	16.0	205
11...	1325	--	.50	1240	8.9	8.2	--	10.5	--	--	--	--	--
11...	1326	--	1.0	1240	8.9	8.1	--	10.6	--	--	--	--	--
11...	1327	--	1.8	1240	8.9	8.1	--	10.7	--	--	--	--	--
11...	1328	--	2.3	1250	8.9	8.1	--	10.6	--	--	--	--	--
APR													
25...	1215	2.3	.0	1190	7.4	1.4	72	12.1	90	733	4.20	2.5	30
25...	1216	--	1.0	1190	7.5	1.4	75	12.1	--	--	--	--	--
25...	1217	--	2.0	1190	7.6	1.3	90	11.9	--	--	--	--	--
25...	1218	--	2.3	1140	7.5	4.4	--	.5	--	--	--	--	--
MAY													
16...	1125	2.1	.0	1110	8.4	11.1	--	9.9	95	731	.70	11.0	30
16...	1126	--	.50	1120	8.4	11.0	--	9.8	--	--	--	--	--
16...	1127	--	1.0	1110	8.4	10.8	--	9.3	--	--	--	--	--
16...	1128	--	1.6	1120	8.4	10.7	--	9.4	--	--	--	--	--
16...	1129	--	2.1	1120	8.4	10.6	--	8.2	--	--	--	--	--
JUL													
18...	1540	2.5	.0	1460	8.8	27.1	--	8.2	110	724	48.0	27.0	120
18...	1541	--	.50	1460	8.8	26.9	--	8.0	--	--	--	--	--
18...	1542	--	1.0	1460	8.8	26.5	--	7.3	--	--	--	--	--
18...	1543	--	1.6	1440	8.9	25.0	--	8.2	--	--	--	--	--
18...	1544	--	2.3	1450	8.8	24.8	--	6.5	--	--	--	--	--
18...	1545	--	2.5	1440	8.8	24.6	--	6.4	--	--	--	--	--
AUG													
22...	1700	2.4	.0	1440	9.3	21.6	--	--	--	722	15.7	24.0	140
22...	1701	--	.50	1440	9.3	21.5	--	--	--	--	--	--	--
22...	1702	--	1.0	1470	9.1	19.0	--	9.2	--	--	--	--	--
22...	1703	--	1.6	1470	9.0	18.1	--	8.8	--	--	--	--	--
22...	1704	--	2.1	1460	8.9	17.6	--	7.4	--	--	--	--	--
22...	1705	--	2.4	1460	8.9	17.5	--	6.8	--	--	--	--	--
SEP													
03...	1500	2.6	.0	1400	9.0	20.8	--	13.8	163	724	3.60	25.5	115
03...	1501	--	.50	1400	9.0	20.4	--	12.7	--	--	--	--	--
03...	1502	--	1.0	1400	9.0	19.7	--	10.2	--	--	--	--	--
03...	1503	--	2.0	1420	8.8	17.2	--	3.1	--	--	--	--	--
03...	1504	--	2.6	1410	8.8	17.2	--	2.7	--	--	--	--	--
10...	1630	2.4	.0	1440	9.1	18.3	--	16.7	188	723	12.0	25.0	220
10...	1631	--	.50	1450	9.1	17.9	--	14.1	--	--	--	--	--
10...	1632	--	1.0	1450	9.0	17.0	--	10.2	--	--	--	--	--
10...	1633	--	1.5	1450	9.0	16.9	--	8.3	--	--	--	--	--
10...	1634	--	2.0	1440	9.0	16.7	--	8.1	--	--	--	--	--
10...	1635	--	2.4	1440	8.9	16.7	--	7.7	--	--	--	--	--

05123990 J. CLARK SALYER POOL 357 NEAR WESTHOPE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
11...	12
11...	--
11...	--
11...	--
11...	--
APR	
25...	10
25...	--
25...	--
25...	--
MAY	
16...	5.0
16...	--
16...	--
16...	--
16...	--
JUL	
18...	5.0
18...	--
18...	--
18...	--
18...	--
18...	--
AUG	
22...	<5.0
22...	--
22...	--
22...	--
22...	--
22...	--
SEP	
03...	5.0
03...	--
03...	--
03...	--
03...	--
10...	<5.0
10...	--
10...	--
10...	--
10...	--
10...	--

< Less than
E Estimated value
M Presence verified, not quantified
d Diluted sample: method hi range exceeded
n Below the non-detection value

05124000 SOURIS (MOUSE) RIVER NEAR WESTHOPE, ND
(International gaging station)

LOCATION.--Lat 48°59'47", long 100°57'29", in $SW^1/_4SE^1/_4$ sec.30, T.164 N., R.79 W., Bottineau County, Hydrologic Unit 09010003, on left bank 1,200 ft upstream from second crossing of international boundary, 1 mi downstream from Fish and Wildlife Service Dam 357, 7 mi northeast of Westhope, 11 mi downstream from Boundary Creek, and at mile 154.5.

DRAINAGE AREA.--16,900 mi^2, approximately, of which about 10,300 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to October 1929, April 1930 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1338: 1932. WSP 2113: Drainage area.

GAGE.--Water-stage recorder and control. Datum of gage is 1,402.45 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 28, 1938, nonrecording gage at site 6.3 mi upstream at datum 2.52 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by dams on Souris River and tributaries, combined capacity, about 321,000 acre-ft. Diversion at Eaton Dam for irrigation of about 7,000 acres and other small diversions for irrigation and municipal supply upstream from station.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	97	119	72	20	15	5.1	2.4	30	229	29	26
2	118	101	119	72	19	15	4.2	2.5	32	250	30	25
3	118	120	118	72	19	15	3.9	2.9	32	317	33	24
4	109	121	118	73	23	14	3.9	5.2	30	335	33	26
5	90	121	119	73	24	13	3.9	5.3	30	338	34	33
6	91	120	118	72	19	14	4.0	5.7	31	338	34	34
7	84	120	118	65	43	13	4.2	6.3	34	349	32	35
8	67	121	118	43	23	13	4.1	6.1	34	353	34	35
9	75	122	117	43	22	13	4.3	6.5	34	350	32	35
10	96	121	111	43	22	13	5.4	6.4	37	296	31	33
11	97	121	90	37	22	13	6.9	6.0	39	289	30	33
12	96	122	89	25	22	13	7.6	6.2	33	286	29	33
13	96	123	90	19	22	12	7.2	5.8	42	285	28	31
14	95	123	90	19	22	12	6.2	8.7	77	285	27	29
15	94	123	89	20	22	12	4.9	8.3	79	283	27	28
16	95	124	89	20	22	11	4.0	9.0	78	241	28	28
17	96	123	89	20	21	11	4.5	9.2	121	104	28	35
18	95	120	89	20	21	11	3.5	7.8	231	79	28	34
19	95	120	89	19	21	11	3.9	8.5	233	71	28	31
20	95	121	83	19	20	11	3.7	9.6	231	68	29	29
21	95	121	73	19	15	11	3.6	9.7	236	65	32	33
22	95	121	72	19	15	11	3.7	7.7	238	62	30	32
23	94	121	72	19	15	11	2.4	8.7	237	64	30	32
24	91	119	72	19	15	11	2.0	9.5	237	64	28	32
25	91	e119	72	19	15	11	1.6	15	234	63	28	33
26	93	e119	72	19	15	9.9	2.1	15	234	61	27	28
27	94	120	72	19	15	6.8	2.2	15	234	47	26	28
28	94	120	72	19	15	7.4	2.4	15	233	45	26	28
29	94	120	72	19	---	7.5	2.4	14	232	40	27	26
30	95	120	72	19	---	6.0	2.5	27	230	39	29	24
31	96	---	72	20	---	5.3	---	30	---	31	28	---
TOTAL	2954	3584	2855	1056	569	352.9	120.3	295.0	3833	5727	915	913
MEAN	95.29	119.5	92.10	34.06	20.32	11.38	4.010	9.516	127.8	184.7	29.52	30.43
MAX	120	124	119	73	43	15	7.6	30	238	353	34	35
MIN	67	97	72	19	15	5.3	1.6	2.4	30	31	26	24
AC-FT	5860	7110	5660	2090	1130	700	239	585	7600	11360	1810	1810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2002, BY WATER YEAR (WY)

MEAN	68.28	55.92	34.88	28.17	26.80	72.59	867.1	1011	586.9	283.3	132.8	74.23
MAX	473	387	201	191	190	779	8850	5967	4919	1726	1014	657
(WY)	1976	1995	1976	1976	1976	1983	1976	1976	1999	1999	1953	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.000
(WY)	1933	1935	1935	1935	1935	1936	1941	1937	1937	1937	1931	1931

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1929 - 2002	
ANNUAL TOTAL	250819		23174.2			
ANNUAL MEAN	687.2		63.49		272.7	
HIGHEST ANNUAL MEAN					1697	1976
LOWEST ANNUAL MEAN					0.15	1937
HIGHEST DAILY MEAN	3290	Apr 11	353	Jul 8	12400	Apr 26 1976
LOWEST DAILY MEAN	51	Jan 31	1.6	Apr 25	0.00	Jul 20 1931
ANNUAL SEVEN-DAY MINIMUM	51	Feb 9	2.2	Apr 23	0.00	Jul 20 1931
MAXIMUM PEAK FLOW			368	Jul 9	12600	Apr 26 1976
MAXIMUM PEAK STAGE			7.55	Jul 9	19.16	Apr 26 1976
INSTANTANEOUS LOW FLOW					a-35	Apr 8 1943
ANNUAL RUNOFF (AC-FT)	497500		45970		197500	
10 PERCENT EXCEEDS	2750		121		620	
50 PERCENT EXCEEDS	203		32		27	
90 PERCENT EXCEEDS	52		6.1		0.00	

a Reverse flow caused by backwater from downstream tributary inflow
e Estimated

05124000 SOURIS RIVER NEAR WESTHOPE, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970, 1972 to current year.

REMARKS.--Environment Canada also collected a sample on Aug. 22.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Water years 1974-81 and June 1992 to current year.

SPECIFIC CONDUCTANCE: Water years 1974-81 and June 1992 to current year.

PH: June 1992 to current year.

DISSOLVED OXYGEN: May 1993 to current year.

INSTRUMENTATION.--Water-quality monitor since June 1992.

REMARKS.--Records good. Quality assurance sample also collected at this location.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 28.5°C, July 11, 1998; minimum recorded, -0.4°C, Dec. 20, 1995, and Feb. 1, 2002.

SPECIFIC CONDUCTANCE: Maximum recorded, 3,250 microsiemens, Jan 3, 2001; minimum recorded, 512 microsiemens, Sept. 22, 2002.

PH: Maximum recorded, 10.1 units, July 12, 1993; minimum recorded, 7.3 units, on many days in February and March 2002.

DISSOLVED OXYGEN: Maximum recorded, 19.1 milligrams per liter, Dec. 29-31, 1999, Jan. 1-5, 2000; minimum recorded, 0.0 milligrams per liter, Feb. 17, 2002.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 19.7°C, Sept. 12-13; minimum recorded, -0.4°C, Feb. 1.

SPECIFIC CONDUCTANCE: Maximum recorded, 2,770 microsiemens, Mar. 15; minimum recorded, 512 microsiemens, Sept. 22.

PH: Maximum recorded, 9.5 units, Sept. 28-30; minimum recorded, 7.3 units, on many days in February and March.

DISSOLVED OXYGEN: Maximum recorded, 17.3 milligrams per liter, Sept. 11; minimum recorded, 0.0 milligrams per liter, Feb. 17.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT													
11...	1645	98	711	104	11.4	9.1	--	--	1210	--	8.2	--	--
NOV													
19...	1700	122	--	--	13.4	8.7	--	--	1110	--	1.4	--	--
JAN													
04...	1415	74	718	5	.7	7.6	--	--	1810	--	.0	--	--
MAR													
07...	1300	13	--	--	--	--	--	--	--	2.0	.0	--	--
29...	1030	6.4	--	--	.3	7.5	--	--	2430	--	2.0	--	--
MAY													
16...	1550	8.8	--	--	11.6	8.5	--	--	1150	--	10.3	--	--
JUL													
18...	1330	79	--	--	--	8.9	--	--	1430	26.0	24.8	--	--
AUG													
22...	1500	30	723	138	12.2	9.4	9.1	1420	1440	23.0	18.5	350	40.4
SEP													
10...	1545	33	--	--	11.5	9.4	--	--	1430	25.0	16.9	--	--

05124000 SOURIS RIVER NEAR WESTHOPE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
22...	60.3	5	195	292	39.6	.2	426	3.3	<.04	<.05	.24	30.8	1050
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ALUM-INUM, TOTAL RECOV-ERABLE (UG/L AS AL) (01105)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)	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)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
22...	9.8	<.1	90	E8dn	55.2	<2	250	<.1	<.8	<2.0	1.2	160	<1
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MOLYB-DENUM, TOTAL RECOV-ERABLE (UG/L AS MO) (01062)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT				
11...	--	--	--	--
NOV				
19...	--	--	--	--
JAN				
04...	--	--	--	--
MAR				
07...	--	--	--	--
29...	--	--	--	--
MAY				
16...	--	--	--	--
JUL				
18...	--	--	--	--
AUG				
22...	E2	2.7	<14d	<20
SEP				
10...	--	--	--	--

< Less than
E Estimated value
d Diluted sample: method hi range exceeded
n Below the non-detection value

05124000 SOURIS RIVER NEAR WESTHOPE, ND--Continued

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.6	13.9	14.7	3.1	2.3	2.7	0.2	0.0	0	-0.1	-0.1	-0.1
2	14.4	12.8	13.5	3.8	2.3	3.0	0.2	0.1	0.1	-0.1	-0.1	-0.1
3	13.0	11.3	12.1	3.8	2.4	3.1	0.2	0.1	0.1	-0.1	-0.1	-0.1
4	11.3	8.4	9.9	4.0	2.6	3.3	0.3	0.1	0.1	0.0	-0.1	0
5	8.4	6.7	7.6	4.3	2.8	3.5	0.1	0.1	0.1	0.0	-0.1	0
6	7.7	5.5	6.6	4.0	3.1	3.5	0.1	0.0	0	0.0	-0.1	0
7	8.4	5.5	6.8	3.4	2.7	3.2	0.1	0.1	0.1	0.0	-0.1	0
8	9.2	6.6	7.6	3.0	2.0	2.5	0.1	0.0	0.0	0.1	-0.1	0.0
9	8.7	7.1	7.9	2.8	1.8	2.3	0.1	0.0	0	0.2	0.0	0
10	9.1	7.3	8.1	3.0	1.9	2.4	0.1	0.0	0	0.3	0.1	0.2
11	8.2	6.8	7.6	2.9	1.7	2.2	0.0	0.0	0.0	0.2	0.0	0.1
12	9.0	7.6	8.1	2.4	1.7	2.1	0.1	0.0	0.0	0.3	0.0	0.1
13	8.5	7.2	7.8	2.4	1.1	1.7	0.0	0.0	0.0	0.4	0.0	0.2
14	7.8	6.6	7.2	2.4	1.3	1.9	0.0	0.0	0.0	0.4	0.3	0.3
15	6.6	4.9	5.8	3.4	2.1	2.7	0.1	0.0	0.0	0.4	0.0	0.1
16	5.6	3.9	4.7	4.2	2.8	3.4	0.2	0.1	0.1	0.1	-0.1	0.0
17	4.9	3.5	4.3	4.6	3.0	3.7	0.1	0.0	0	0.1	0.0	0
18	5.2	3.8	4.4	4.0	2.4	3.3	0.1	0.0	0	0.0	-0.1	0
19	5.7	4.2	4.9	2.4	0.8	1.4	0.0	0.0	0.0	0.0	-0.1	0.0
20	5.8	4.8	5.1	1.7	0.6	1.1	0.1	0.0	0.0	0.0	-0.1	0
21	5.9	4.6	5.2	1.9	1.0	1.4	0.0	0.0	0.0	0.0	-0.1	0
22	5.9	4.8	5.3	1.6	1.2	1.4	0.0	0.0	0.0	0.0	-0.1	0
23	5.2	3.4	4.6	1.8	1.3	1.5	0.0	0.0	0.0	0.0	-0.1	0
24	3.4	1.3	2.2	1.7	1.3	1.6	0.0	-0.1	0.0	0.0	-0.1	0
25	1.3	0.3	0.7	1.3	-0.3	0.5	0.0	-0.1	0	0.1	-0.1	0.0
26	1.3	0.0	0.6	0.1	-0.2	0	0.0	-0.1	0	0.0	-0.1	0.0
27	1.4	0.3	0.9	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0
28	2.4	1.2	1.8	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	0.0
29	2.5	1.4	1.9	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	0
30	2.5	1.4	1.9	0.1	0.0	0	0.0	-0.1	0	0.0	-0.2	-0.1
31	2.9	2.0	2.4	---	---	---	-0.1	-0.1	-0.1	-0.1	-0.3	-0.2
MONTH	15.6	0.0	5.9	4.6	-0.3	2.0	0.3	-0.1	0.0	0.4	-0.3	0.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	-0.2	-0.4	-0.3	0.7	0.1	0.4	---	---	---	---	---	---
2	0.0	-0.3	-0.1	0.6	0.1	0.4	---	---	---	---	---	---
3	0.1	0.0	0.0	0.6	0.0	0.4	---	---	---	---	---	---
4	0.1	0.0	0.0	0.7	0.2	0.5	---	---	---	---	---	---
5	0.1	0.0	0.0	0.8	0.4	0.6	---	---	---	---	---	---
6	0.2	0.0	0	0.7	0.1	0.4	---	---	---	---	---	---
7	0.2	0.0	0	0.5	0.1	0.2	---	---	---	---	---	---
8	0.2	0.0	0.1	0.3	0.1	0.2	---	---	---	---	---	---
9	0.2	0.0	0	0.4	0.1	0.3	---	---	---	---	---	---
10	0.1	0.0	0	0.4	0.2	0.3	---	---	---	---	---	---
11	0.2	0.0	0	0.4	0.2	0.3	---	---	---	---	---	---
12	0.3	0.1	0.2	1.0	0.3	0.6	---	---	---	---	---	---
13	0.4	0.1	0.2	1.3	0.7	1.0	---	---	---	---	---	---
14	0.6	0.1	0.3	1.3	0.8	1.1	---	---	---	---	---	---
15	0.6	0.2	0.4	1.3	0.9	1.1	---	---	---	---	---	---
16	0.9	0.4	0.6	1.3	0.8	1.0	---	---	---	---	---	---
17	1.0	0.4	0.7	1.3	0.9	1.0	---	---	---	---	---	---
18	1.2	0.7	0.9	1.0	0.7	0.8	---	---	---	---	---	---
19	1.2	0.6	0.9	0.9	0.6	0.8	---	---	---	---	---	---
20	1.2	0.4	0.8	0.8	0.4	0.5	---	---	---	---	---	---
21	1.5	0.7	1.0	0.7	0.3	0.5	---	---	---	---	---	---
22	1.7	0.9	1.2	0.9	0.2	0.5	---	---	---	---	---	---
23	1.7	1.1	1.3	1.1	0.4	0.7	---	---	---	---	---	---
24	1.4	0.5	0.8	1.2	0.6	0.9	---	---	---	---	---	---
25	1.1	0.0	0.5	1.2	0.6	0.9	---	---	---	---	---	---
26	0.9	0.1	0.5	1.3	0.6	1.0	---	---	---	---	---	---
27	0.9	0.2	0.6	1.4	0.7	1.1	---	---	---	---	---	---
28	0.9	0.3	0.6	2.1	0.7	1.4	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	1.7	-0.4	0.4	---	---	---	---	---	---	---	---	---

05124000 SOURIS RIVER NEAR WESTHOPE, ND--Continued

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	19.5	16.1	17.7
12	---	---	---	---	---	---	---	---	---	19.7	17.6	18.4
13	---	---	---	---	---	---	---	---	---	19.7	17.1	18.5
14	---	---	---	---	---	---	---	---	---	18.7	16.1	17.1
15	---	---	---	---	---	---	---	---	---	18.2	14.8	16.5
16	---	---	---	---	---	---	---	---	---	18.7	15.7	17.2
17	---	---	---	---	---	---	---	---	---	18.8	16.5	17.4
18	---	---	---	---	---	---	---	---	---	18.7	15.6	16.9
19	---	---	---	---	---	---	---	---	---	17.1	14.6	15.6
20	---	---	---	---	---	---	---	---	---	16.3	14.3	15.1
21	---	---	---	---	---	---	---	---	---	14.5	11.4	12.5
22	---	---	---	---	---	---	---	---	---	11.4	9.4	10.2
23	---	---	---	---	---	---	---	---	---	10.5	8.7	9.6
24	---	---	---	---	---	---	---	---	---	10.0	8.3	8.9
25	---	---	---	---	---	---	---	---	---	9.7	7.4	8.4
26	---	---	---	---	---	---	---	---	---	9.0	7.4	8.2
27	---	---	---	---	---	---	---	---	---	9.9	8.2	8.8
28	---	---	---	---	---	---	---	---	---	9.8	7.5	8.7
29	---	---	---	---	---	---	---	---	---	9.9	7.6	8.6
30	---	---	---	---	---	---	---	---	---	11.5	8.8	9.7
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1160	948	1030	1330	1020	1170	1440	1260	1350	1850	1690	1740
2	1160	914	1010	1260	990	1110	1460	1310	1360	1860	1660	1730
3	1050	897	965	1310	1090	1180	1460	1290	1390	1860	1730	1800
4	1050	919	989	1300	1030	1180	1420	1340	1380	1860	1750	1800
5	1140	924	1030	1290	1150	1230	1410	1300	1370	1820	1790	1810
6	1030	872	983	1290	1140	1210	1460	1330	1380	1840	1820	1830
7	1100	872	953	1290	1170	1230	1480	1370	1430	1850	1840	1850
8	1170	988	1050	1280	1030	1180	1500	1350	1420	1850	1820	1840
9	1180	950	1040	1330	1070	1140	1580	1350	1430	1900	1820	1860
10	1130	890	1000	1350	1070	1210	1560	1340	1440	1910	1890	1900
11	1220	1060	1140	1300	1080	1170	1560	1220	1420	1910	1840	1890
12	1220	1160	1190	1330	1240	1300	1590	1250	1450	1950	1860	1890
13	1260	1170	1210	1380	1190	1300	1600	1410	1520	1950	1920	1950
14	1260	1120	1170	1390	1220	1310	1600	1220	1440	1960	1950	1950
15	1160	1020	1100	1380	1140	1270	1580	1460	1540	1990	1960	1980
16	1180	1060	1120	1340	1000	1170	1580	1460	1520	1990	1980	1990
17	1210	953	1110	1290	999	1090	1590	1430	1520	1990	1970	1980
18	1140	994	1060	1260	1110	1200	1580	1390	1470	2020	1980	2010
19	1190	1080	1150	1220	1030	1100	1570	1500	1540	2040	1960	2010
20	1230	1070	1130	1200	1020	1120	1560	1440	1490	2030	2020	2030
21	1180	1100	1130	1230	1060	1150	1560	1480	1520	2050	2020	2030
22	1210	1080	1150	1190	1060	1130	1600	1500	1550	2080	2040	2070
23	1240	1130	1190	1210	1060	1150	1650	1510	1570	2100	2060	2080
24	1240	1120	1180	1240	1060	1160	1700	1500	1560	2110	2070	2100
25	1260	1170	1210	1360	1130	1200	1720	1640	1670	2130	2040	2080
26	1310	1170	1260	1400	1300	1350	1710	1660	1690	2140	2080	2120
27	1280	1070	1200	1400	1280	1330	1770	1640	1700	2160	2130	2140
28	1330	1180	1260	1440	1320	1370	1770	1670	1710	2160	2140	2150
29	1340	1230	1270	1440	1140	1320	1760	1700	1730	2200	2160	2180
30	1320	1210	1260	1440	1240	1350	1760	1690	1720	2220	2200	2210
31	1340	1260	1290	---	---	---	1830	1740	1800	2240	2210	2230
MONTH	1340	872	1120	1440	990	1210	1830	1220	1520	2240	1660	1980

05124000 SOURIS RIVER NEAR WESTHOPE, ND--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	2520	2500	2510	---	---	---	---	---	---
2	---	---	---	2530	2500	2520	---	---	---	---	---	---
3	2290	2250	2280	2550	2520	2540	---	---	---	---	---	---
4	2310	2290	2300	2540	2520	2530	---	---	---	---	---	---
5	2330	2310	2320	2550	2520	2540	---	---	---	---	---	---
6	2330	2270	2320	2580	2550	2570	---	---	---	---	---	---
7	2330	2300	2320	2590	2580	2590	---	---	---	---	---	---
8	2370	2330	2340	2590	2590	2590	---	---	---	---	---	---
9	2380	2370	2380	2600	2590	2590	---	---	---	---	---	---
10	2420	2380	2400	2620	2600	2610	---	---	---	---	---	---
11	2420	2380	2410	2630	2620	2630	---	---	---	---	---	---
12	2440	2400	2420	2650	2630	2640	---	---	---	---	---	---
13	2430	2400	2410	2660	2570	2620	---	---	---	---	---	---
14	2430	2410	2420	2610	2530	2580	---	---	---	---	---	---
15	2430	2400	2420	2770	2530	2620	---	---	---	---	---	---
16	2440	2410	2430	2630	2540	2590	---	---	---	---	---	---
17	2440	2420	2430	2640	2530	2580	---	---	---	---	---	---
18	2460	2420	2450	2700	2580	2620	---	---	---	---	---	---
19	2460	2440	2450	2640	2600	2620	---	---	---	---	---	---
20	2480	2430	2450	2670	2600	2620	---	---	---	---	---	---
21	2480	2440	2470	2700	2600	2660	---	---	---	---	---	---
22	2460	2450	2460	2640	2540	2610	---	---	---	---	---	---
23	2460	2440	2450	2650	2490	2540	---	---	---	---	---	---
24	2450	2430	2440	2580	2490	2510	---	---	---	---	---	---
25	2500	2450	2470	2650	2470	2540	---	---	---	---	---	---
26	2500	2480	2490	2620	2520	2550	---	---	---	---	---	---
27	2490	2470	2480	2560	2450	2520	---	---	---	---	---	---
28	2500	2470	2490	2540	2400	2470	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	1410	1370	1400
12	---	---	---	---	---	---	---	---	---	1410	1260	1390
13	---	---	---	---	---	---	---	---	---	1420	1180	1370
14	---	---	---	---	---	---	---	---	---	1410	1010	1310
15	---	---	---	---	---	---	---	---	---	1420	929	1290
16	---	---	---	---	---	---	---	---	---	1440	707	1260
17	---	---	---	---	---	---	---	---	---	1440	1380	1430
18	---	---	---	---	---	---	---	---	---	1460	752	1200
19	---	---	---	---	---	---	---	---	---	1430	640	1010
20	---	---	---	---	---	---	---	---	---	1430	607	914
21	---	---	---	---	---	---	---	---	---	1070	607	769
22	---	---	---	---	---	---	---	---	---	1240	512	692
23	---	---	---	---	---	---	---	---	---	1290	534	713
24	---	---	---	---	---	---	---	---	---	1160	561	799
25	---	---	---	---	---	---	---	---	---	999	569	742
26	---	---	---	---	---	---	---	---	---	1310	600	757
27	---	---	---	---	---	---	---	---	---	989	578	723
28	---	---	---	---	---	---	---	---	---	988	606	748
29	---	---	---	---	---	---	---	---	---	1380	623	893
30	---	---	---	---	---	---	---	---	---	1060	650	847
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

05124000 SOURIS RIVER NEAR WESTHOPE, ND--Continued

PH, WH, FIELD, in (STANDARD UNITS), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	9.1	9.1	8.8	8.7	8.6	8.5	7.7	7.7	7.4	7.3	7.4	7.3
2	9.1	9.0	8.8	8.7	8.6	8.5	7.7	7.7	7.3	7.3	7.3	7.3
3	9.0	9.0	8.8	8.7	8.6	8.5	7.7	7.7	7.4	7.3	7.3	7.3
4	9.1	9.0	8.8	8.7	8.6	8.5	7.7	7.3	7.4	7.3	7.3	7.3
5	9.1	9.0	8.8	8.7	8.5	8.4	7.5	7.4	7.4	7.3	7.3	7.3
6	9.1	9.0	8.7	8.7	8.4	8.4	7.5	7.5	7.4	7.4	7.3	7.3
7	9.2	9.1	8.8	8.6	8.4	8.4	7.5	7.5	7.4	7.4	7.3	7.3
8	9.3	9.2	8.7	8.6	8.4	8.3	7.5	7.5	7.4	7.4	7.3	7.3
9	9.2	9.1	8.7	8.6	8.3	8.3	7.5	7.5	7.4	7.4	7.3	7.3
10	9.1	9.0	8.7	8.6	8.3	8.2	7.5	7.5	7.4	7.4	7.3	7.3
11	9.1	8.9	8.7	8.7	8.2	8.2	7.5	7.5	7.4	7.4	7.3	7.3
12	8.9	8.9	8.7	8.6	8.2	8.2	7.5	7.5	7.4	7.4	7.3	7.3
13	8.9	8.9	8.8	8.7	8.2	8.2	7.5	7.5	7.4	7.4	7.4	7.3
14	8.9	8.8	8.8	8.8	8.2	8.1	7.5	7.5	7.4	7.4	7.3	7.3
15	8.8	8.8	8.8	8.8	8.1	8.1	7.5	7.4	7.4	7.4	7.4	7.3
16	8.9	8.8	8.9	8.8	8.1	8.1	7.5	7.4	7.4	7.4	7.4	7.3
17	9.2	8.8	8.9	8.8	8.1	8.0	7.5	7.4	7.4	7.4	7.4	7.4
18	9.1	8.8	8.8	8.8	8.0	8.0	7.4	7.4	7.4	7.4	7.4	7.4
19	8.9	8.9	8.8	8.7	8.0	8.0	7.4	7.4	7.4	7.4	7.4	7.4
20	8.9	8.9	8.7	8.7	8.0	8.0	7.4	7.4	7.4	7.4	7.4	7.4
21	8.9	8.8	8.7	8.7	8.0	7.9	7.4	7.4	7.4	7.4	7.4	7.4
22	9.0	8.8	8.7	8.7	7.9	7.9	7.4	7.4	7.4	7.4	7.4	7.4
23	8.9	8.8	8.8	8.7	7.9	7.9	7.4	7.4	7.4	7.4	7.4	7.4
24	8.8	8.8	8.8	8.7	7.9	7.9	7.4	7.4	7.4	7.4	7.4	7.4
25	8.8	8.6	8.7	8.6	7.9	7.8	7.4	7.4	7.4	7.4	7.4	7.4
26	8.6	8.5	8.6	8.6	7.8	7.8	7.4	7.4	7.4	7.4	7.4	7.4
27	8.7	8.6	8.6	8.6	7.8	7.8	7.4	7.4	7.4	7.3	7.4	7.4
28	8.8	8.7	8.6	8.6	7.8	7.8	7.4	7.4	7.3	7.3	7.4	7.4
29	8.8	8.7	8.6	8.6	7.8	7.8	7.4	7.4	---	---	---	---
30	8.7	8.6	8.6	8.6	7.8	7.7	7.4	7.4	---	---	---	---
31	8.8	8.6	---	---	7.7	7.7	7.4	7.3	---	---	---	---
MONTH	9.3	8.5	8.9	8.6	8.6	7.7	7.7	7.3	7.4	7.3	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	9.4	9.1
12	---	---	---	---	---	---	---	---	---	---	9.4	9.2
13	---	---	---	---	---	---	---	---	---	---	9.4	9.2
14	---	---	---	---	---	---	---	---	---	---	9.4	9.2
15	---	---	---	---	---	---	---	---	---	---	9.3	9.1
16	---	---	---	---	---	---	---	---	---	---	9.3	9.2
17	---	---	---	---	---	---	---	---	---	---	9.3	9.2
18	---	---	---	---	---	---	---	---	---	---	9.2	9.1
19	---	---	---	---	---	---	---	---	---	---	9.3	9.1
20	---	---	---	---	---	---	---	---	---	---	9.3	9.1
21	---	---	---	---	---	---	---	---	---	---	9.3	9.1
22	---	---	---	---	---	---	---	---	---	---	9.2	9.1
23	---	---	---	---	---	---	---	---	---	---	9.3	9.2
24	---	---	---	---	---	---	---	---	---	---	9.3	9.2
25	---	---	---	---	---	---	---	---	---	---	9.4	9.3
26	---	---	---	---	---	---	---	---	---	---	9.4	9.3
27	---	---	---	---	---	---	---	---	---	---	9.4	9.4
28	---	---	---	---	---	---	---	---	---	---	9.5	9.4
29	---	---	---	---	---	---	---	---	---	---	9.5	9.4
30	---	---	---	---	---	---	---	---	---	---	9.5	9.4
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

05124000 SOURIS RIVER NEAR WESTHOPE, ND--Continued

OXYGEN DISSOLVED, in (MG/L), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.0	7.7	8.7	13.3	11.5	12.6	13.3	12.5	12.9	1.7	1.4	1.6
2	9.9	8.1	8.8	11.8	10.5	11.3	12.9	12.2	12.6	1.4	1.1	1.3
3	10.0	7.7	8.7	12.3	10.6	11.4	12.8	12.1	12.4	1.1	0.8	0.9
4	10.8	8.2	9.3	11.8	11.1	11.5	12.7	11.9	12.2	0.9	0.6	0.8
5	11.2	9.0	10	12.4	11.3	11.7	12.2	11.4	11.9	0.7	0.6	0.7
6	11.6	9.9	10.7	13.3	11.9	12.5	11.4	10.7	11.1	0.6	0.4	0.5
7	12.2	10.4	11.2	13.1	11.8	12.3	10.7	10.0	10.4	0.5	0.3	0.4
8	11.5	9.4	10.4	12.4	11.4	12.1	10.1	9.1	9.6	0.7	0.2	0.4
9	11.4	9.6	10.4	12.8	11.3	12.1	9.1	8.4	8.8	0.9	0.4	0.7
10	11.4	9.9	10.6	13.0	11.3	12.2	8.4	7.9	8.1	1.2	0.7	0.9
11	11.4	9.9	10.5	13.5	12.3	12.8	7.9	7.6	7.8	1.9	0.9	1.4
12	11.7	9.5	10.5	13.4	12.3	13.0	7.6	6.9	7.2	2.1	1.2	1.7
13	11.8	9.7	10.6	13.4	12.4	12.9	7.0	6.7	6.8	3.0	1.5	1.8
14	10.9	9.3	10.3	13.6	12.6	13.2	6.9	6.4	6.5	4.3	3.0	3.7
15	11.6	9.6	10.6	13.8	12.8	13.3	6.4	5.9	6.1	6.2	3.9	4.9
16	12.9	10.4	11.4	13.1	12.0	12.4	6.0	5.6	5.7	5.5	4.4	5.0
17	12.5	11.4	11.9	13.5	11.9	12.6	5.6	5.3	5.5	4.8	1.8	2.4
18	12.5	10.7	11.6	13.2	12.4	12.8	5.5	5.2	5.3	4.6	2.3	3.4
19	12.4	10.9	11.6	13.4	11.9	12.8	5.2	4.9	5.1	4.2	2.3	3.2
20	12.5	10.7	11.6	13.3	12.5	12.9	5.0	4.7	4.8	4.5	1.5	3.0
21	12.8	10.9	11.8	13.4	12.7	13.0	4.7	4.5	4.6	3.7	1.7	2.6
22	12.4	11.5	12.0	13.2	12.4	12.8	4.6	4.4	4.5	2.2	0.7	1.3
23	12.2	11.0	11.7	13.0	12.3	12.6	4.5	4.1	4.3	1.3	0.3	0.8
24	12.6	11.5	12.0	12.6	12.1	12.4	4.2	3.9	4.1	1.0	0.2	0.5
25	13.1	11.8	12.4	12.9	11.9	12.4	4.0	3.7	3.8	0.7	0.2	0.3
26	13.8	12.3	13.1	13.4	12.1	13.0	3.7	3.2	3.5	0.4	0.1	0.2
27	14.5	13.4	13.8	13.7	12.8	13.3	3.3	3.0	3.2	0.1	0.1	0.1
28	14.2	13.6	13.9	13.5	13.1	13.3	3.1	2.8	2.9	0.2	0.1	0.1
29	15.1	13.9	14.3	13.8	12.9	13.3	2.8	2.4	2.6	0.1	0.1	0.1
30	14.1	13.4	13.7	13.6	13.0	13.3	2.5	2.0	2.2	0.1	0.1	0.1
31	14.0	13.0	13.4	---	---	---	2.0	1.7	1.9	0.1	0.1	0.1
MONTH	15.1	7.7	11.3	13.8	10.5	12.6	13.3	1.7	6.7	6.2	0.1	1.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.2	0.1	0.1	0.3	0.1	0.2	---	---	---	---	---	---
2	0.2	0.1	0.1	0.4	0.3	0.3	---	---	---	---	---	---
3	0.2	0.1	0.1	0.6	0.3	0.4	---	---	---	---	---	---
4	0.2	0.1	0.1	0.7	0.5	0.6	---	---	---	---	---	---
5	0.1	0.1	0.1	0.6	0.1	0.4	---	---	---	---	---	---
6	0.1	0.1	0.1	0.2	0.1	0.1	---	---	---	---	---	---
7	0.1	0.1	0.1	0.4	0.2	0.2	---	---	---	---	---	---
8	0.1	0.1	0.1	0.8	0.4	0.6	---	---	---	---	---	---
9	0.1	0.1	0.1	0.8	0.6	0.8	---	---	---	---	---	---
10	0.1	0.1	0.1	0.9	0.7	0.8	---	---	---	---	---	---
11	0.1	0.1	0.1	0.9	0.8	0.8	---	---	---	---	---	---
12	0.1	0.1	0.1	0.9	0.8	0.8	---	---	---	---	---	---
13	0.1	0.1	0.1	0.9	0.8	0.8	---	---	---	---	---	---
14	0.1	0.1	0.1	0.9	0.8	0.8	---	---	---	---	---	---
15	0.1	0.1	0.1	0.9	0.8	0.8	---	---	---	---	---	---
16	0.1	0.1	0.1	0.8	0.7	0.8	---	---	---	---	---	---
17	0.1	0.0	0	0.8	0.7	0.7	---	---	---	---	---	---
18	0.2	0.1	0.1	0.7	0.6	0.7	---	---	---	---	---	---
19	0.3	0.2	0.2	0.7	0.6	0.6	---	---	---	---	---	---
20	0.3	0.3	0.3	0.6	0.5	0.6	---	---	---	---	---	---
21	0.3	0.1	0.1	0.5	0.5	0.5	---	---	---	---	---	---
22	0.1	0.1	0.1	0.5	0.3	0.4	---	---	---	---	---	---
23	0.1	0.1	0.1	0.3	0.3	0.3	---	---	---	---	---	---
24	0.1	0.1	0.1	0.3	0.3	0.3	---	---	---	---	---	---
25	0.1	0.1	0.1	0.3	0.3	0.3	---	---	---	---	---	---
26	0.1	0.1	0.1	0.3	0.3	0.3	---	---	---	---	---	---
27	0.1	0.1	0.1	0.3	0.3	0.3	---	---	---	---	---	---
28	0.1	0.1	0.1	0.3	0.2	0.3	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	0.3	0.0	0.1	---	---	---	---	---	---	---	---	---

05124000 SOURIS RIVER NEAR WESTHOPE, ND--Continued

OXYGEN DISSOLVED, in (MG/L), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	17.3	6.7	11.5
12	---	---	---	---	---	---	---	---	---	14.8	8.0	10.6
13	---	---	---	---	---	---	---	---	---	14.3	6.8	10.5
14	---	---	---	---	---	---	---	---	---	10.3	3.8	5.6
15	---	---	---	---	---	---	---	---	---	12.1	3.1	7.6
16	---	---	---	---	---	---	---	---	---	10.6	3.4	7.1
17	---	---	---	---	---	---	---	---	---	8.2	3.9	5.3
18	---	---	---	---	---	---	---	---	---	7.2	5.0	5.8
19	---	---	---	---	---	---	---	---	---	9.7	3.0	5.8
20	---	---	---	---	---	---	---	---	---	12.1	4.8	8.3
21	---	---	---	---	---	---	---	---	---	10.4	5.8	8.2
22	---	---	---	---	---	---	---	---	---	11.2	6.8	8.3
23	---	---	---	---	---	---	---	---	---	13.4	8.3	10.1
24	---	---	---	---	---	---	---	---	---	13.7	9.9	11.6
25	---	---	---	---	---	---	---	---	---	15.1	10.8	12.7
26	---	---	---	---	---	---	---	---	---	14.5	11.0	12.6
27	---	---	---	---	---	---	---	---	---	15.5	11.1	13.0
28	---	---	---	---	---	---	---	---	---	16.6	11.9	14.2
29	---	---	---	---	---	---	---	---	---	15.3	11.2	12.5
30	---	---	---	---	---	---	---	---	---	11.6	7.1	8.6
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

06185500 MISSOURI RIVER NEAR CULBERTSON, MT
(National stream quality accounting network station)

LOCATION.--Lat 48 07'30",long 104 28'20"(NAD 27), in $SE^1/_4NW^1/_4$ sec.3, T.27 N., R.56 E., Richland County, Hydrologic Unit 10060005, on right bank at upstream side of bridge on State Highway 16, 2.5 mi southeast of Culbertson, 10 mi downstream from Big Muddy Creek, and at river mile 1,620.76.

DRAINAGE AREA.--91,557 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1941 to December 1951, April 1958 to current year.

REVISED RECORDS.--WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,883.4 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). July 1 to Nov. 6, 1941, water-stage recorder at site 400 ft upstream at datum 0.11 ft higher. Nov. 7, 1941, to Aug. 17, 1950, water-stage recorder at site 580 ft downstream at present datum. Aug. 18, 1950, to Dec. 31, 1951, nonrecording gage on bridge at present datum. Apr. 1, 1958, to Nov. 1, 1967, water-stage recorder at site 580 ft downstream at present datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are fair. Flow partly regulated by Fort Peck Lake (station number 06131500) and many other reservoirs upstream from station. Diversions for irrigation of about 1,030,400 acres upstream from station. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3960	4470	e5700	e5800	e5600	e5600	e4500	4620	8860	9760	8640	9570
2	4000	4620	e5800	e5600	e5600	e5600	e4300	4590	9150	9440	8730	9280
3	4050	4440	e6000	e5400	e5600	e5600	e4300	4560	9200	9290	8600	9320
4	4150	4350	e6000	e5100	e5600	e5700	e4300	4590	9120	9050	8550	9190
5	4100	4360	e5800	e5200	e5600	e5500	e4300	4600	9070	9270	8680	9160
6	4140	4390	e5700	e5200	e5600	e5500	e4500	4630	8920	9390	8710	9070
7	4190	4390	e5700	e5300	e5600	e5500	e4700	4470	8980	9520	8960	9250
8	4210	4390	e5700	e5400	e5300	e5500	e4900	4550	9000	9410	9280	9240
9	4150	4390	e5700	e5300	e5500	e5500	e5200	4790	8880	9440	9590	9330
10	4180	4390	e5700	e5400	e5500	e5600	e5500	4830	8990	9560	9670	9350
11	4210	4420	e5700	e5200	e5500	e5600	e5800	4780	9610	9710	9650	9190
12	4220	4430	e5700	e5100	e5500	e5600	e6000	4790	9890	9360	9430	9310
13	4150	4450	e5700	e5100	e5500	e5500	e5800	4930	9790	9290	9280	9460
14	4200	4520	e5900	e5000	e5300	e5500	e5500	6790	9690	9240	9490	9240
15	4150	4540	e5700	e5000	e5400	e5400	5300	9080	9970	8930	9400	9230
16	4190	4470	e5600	e5100	e5400	e5200	5130	10600	10400	8700	9390	8980
17	4230	4440	e5600	e5100	e5400	e4900	5070	9210	10400	8860	9610	7680
18	4250	4420	e5600	e5100	e5400	e4900	5110	6920	10200	e9000	9860	6370
19	4270	4450	e5600	e5100	e5500	e4800	5220	6830	9780	e9100	10000	5980
20	4230	4460	e5600	e5400	e5600	e4800	5130	8500	9530	e9100	10000	5750
21	4250	4460	e5600	e5600	e5700	e4600	5070	9200	9600	e9000	10000	5550
22	4220	4500	e5700	e5400	e5800	e4600	5000	8940	9680	e8900	10000	5560
23	4270	4480	e5600	e5200	e5900	e4300	4890	9250	9710	e8900	10700	5490
24	4310	4460	e5600	e5200	e5700	e4300	4820	9760	9760	8730	10300	5570
25	4320	4470	e5600	e5200	e5500	e4300	4760	9410	9850	8670	10500	5530
26	4310	4460	e5600	e5100	e5300	e4300	4720	9040	9550	8660	11800	5530
27	4370	4490	e5600	e5200	e5400	e4400	4690	9020	9650	8600	11100	5550
28	4380	5070	e5600	e5500	e5400	e4600	4700	9080	10100	8710	10100	5460
29	4450	e5600	e5600	e5600	---	e4800	4740	9080	10300	8700	9670	5390
30	4500	e5400	e5800	e5800	---	e5000	4710	9050	10300	8710	9530	5320
31	4480	---	e5700	e5900	---	e4800	---	8920	---	8700	9410	---
TOTAL	131090	136180	176500	164600	154700	157800	148660	219410	287930	281700	298630	228900
MEAN	4229	4539	5694	5310	5525	5090	4955	7078	9598	9087	9633	7630
MAX	4500	5600	6000	5900	5900	5700	6000	10600	10400	9760	11800	9570
MIN	3960	4350	5600	5000	5300	4300	4300	4470	8860	8600	8550	5320
AC-FT	260000	270100	350100	326500	306800	313000	294900	435200	571100	558800	592300	454000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2002, BY WATER YEAR (WY)*

MEAN	10700	9260	9143	9914	10520	10350	10540	9543	9737	10250	11370	11110
MAX	28570	22440	13280	14400	17450	20690	32840	26220	26650	37050	25300	26590
(WY)	1949	1952	1944	1986	1976	1976	1979	1979	1975	1975	1948	1948
MIN	1237	1126	1061	1010	1167	2674	1965	1353	1366	1273	3823	3771
(WY)	1942	1942	1942	1943	1942	1950	1945	1945	1945	1945	1963	1992

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1941 - 2002*	
ANNUAL TOTAL	2437380		2386100			
ANNUAL MEAN	6678		6537		10200	
HIGHEST ANNUAL MEAN					16580	1975
LOWEST ANNUAL MEAN					4083	1942
HIGHEST DAILY MEAN	12200	Jan 28	11800	Aug 26	69200	Mar 27 1943
LOWEST DAILY MEAN	3870	Sep 29	3960	Oct 1	575	Nov 22 1941
ANNUAL SEVEN-DAY MINIMUM	3930	Sep 25	4080	Oct 1	709	Nov 19 1941
MAXIMUM PEAK FLOW			12000	Aug 26	a78200	Mar 26 1943
MAXIMUM PEAK STAGE			6.23	Aug 26	b19.66	Apr 14 1979
INSTANTANEOUS LOW FLOW			3920	Oct 1	575	Nov 22 1941
ANNUAL RUNOFF (AC-FT)	4835000		4733000		7391000	
10 PERCENT EXCEEDS	10700		9600		15900	
50 PERCENT EXCEEDS	6260		5600		9490	
90 PERCENT EXCEEDS	4270		4370		4440	

06185500 MISSOURI RIVER NEAR CULBERTSON, MT--Continued

SUMMARY STATISTICS	FOR WATER YEARS 1941-51**		WATER YEARS 1958 - 2002***	
ANNUAL TOTAL				
ANNUAL MEAN	9245		10420	
HIGHEST ANNUAL MEAN	14520	1948	16580	1975
LOWEST ANNUAL MEAN	4083	1942	6121	1963
HIGHEST DAILY MEAN	69200	Mar 27 1943	52000	Apr 18 1979
LOWEST DAILY MEAN	575	Nov 22 1941	2000	Nov 20 1964
ANNUAL SEVEN-DAY MINIMUM	709	Nov 19 1941	2130	Nov 19 1964
MAXIMUM PEAK FLOW	a78200	Mar 26 1943	c55000	Mar 23 1960
MAXIMUM PEAK STAGE	b15.12	Mar 26 1943	b19.66	Apr 14 1979
ANNUAL RUNOFF (AC-FT)	6698000		7550000	
10 PERCENT EXCEEDS	21000		15200	
50 PERCENT EXCEEDS	6910		9720	
90 PERCENT EXCEEDS	1400		5790	

* During period of operation (1941-52, 1958 to current year)
** Before operational level at Fort Peck Lake was reached
*** After operational level at Fort Peck Lake was reached
a Gage height, 14.80 ft, from rating curve extended above 30,000 ft^3/s
b Backwater from ice
c Gage height, 19.14 ft
e Estimated

06185600 MISSOURI RIVER STAGE GAGE NO. 4 NEAR NOHLY, MT

LOCATION.--Lat 48°02'10", long 104°09'40", in NE$^{1}/_{4}$ sec.1, T.26 N., R.58 E., Richland County, Hydrologic Unit 10060005, on right bank 4.5 mi northwest of Nohly, MT, and at mile 1,595.7.

DRAINAGE AREA.--93,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 18, 1962, at datum 60.00 ft lower.

REMARKS.--Stage regulated by Fort Peck Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 21.20 ft, Mar. 23, 1960, present datum; minimum daily recorded, 6.87 ft, Apr. 18, 1963.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	9.55	11.55	12.32	11.61	11.87
2	---	---	---	---	---	---	---	9.49	11.72	12.07	11.66	11.84
3	---	---	---	---	---	---	---	9.49	11.80	12.01	11.67	11.78
4	---	---	---	---	---	---	---	9.45	11.80	11.96	11.64	11.81
5	---	---	---	---	---	---	---	9.50	11.82	11.97	11.67	11.67
6	---	---	---	---	---	---	---	9.55	11.77	12.07	11.66	11.69
7	---	---	---	---	---	---	---	9.50	11.82	12.05	11.72	11.68
8	---	---	---	---	---	---	---	9.48	11.84	12.10	11.96	11.66
9	---	---	---	---	---	---	---	9.56	11.81	12.14	12.16	11.70
10	---	---	---	---	---	---	---	9.63	11.85	12.10	12.17	11.77
11	---	---	---	---	---	---	---	9.61	11.97	12.17	12.11	11.71
12	---	---	---	---	---	---	---	9.59	12.24	12.12	12.03	11.69
13	---	---	---	---	---	---	---	9.55	12.27	12.01	11.98	11.74
14	---	---	---	---	---	---	---	9.96	12.22	12.03	12.06	11.73
15	---	---	---	---	---	---	---	11.02	12.26	11.95	12.04	11.68
16	---	---	---	---	---	---	---	11.82	12.42	11.80	12.03	11.82
17	---	---	---	---	---	---	---	11.93	12.48	11.80	12.06	11.43
18	---	---	---	---	---	---	---	10.98	12.48	11.86	12.19	10.77
19	---	---	---	---	---	---	---	10.52	12.36	11.82	12.15	10.35
20	---	---	---	---	---	---	---	10.86	12.15	11.88	12.20	10.27
21	---	---	---	---	---	---	---	11.49	12.14	11.88	12.20	10.14
22	---	---	---	---	---	---	---	11.61	12.23	11.79	12.26	10.09
23	---	---	---	---	---	---	---	11.51	12.23	11.78	12.37	10.02
24	---	---	---	---	---	---	---	11.76	12.22	11.79	12.39	10.03
25	---	---	---	---	---	---	---	11.83	12.23	11.77	12.26	10.00
26	---	---	---	---	---	---	---	11.66	12.19	11.72	12.60	9.93
27	---	---	---	---	---	---	---	11.57	12.10	11.68	12.73	9.98
28	---	---	---	---	---	---	---	11.62	12.25	11.74	12.29	9.86
29	---	---	---	---	---	---	---	11.79	12.41	11.71	12.00	9.81
30	---	---	---	---	---	---	---	11.64	12.43	11.71	11.94	9.76
31	---	---	---	---	---	---	---	11.63	---	11.67	11.84	---
MEAN	---	---	---	---	---	---	---	10.62	12.10	11.92	12.05	11.01
MAX	---	---	---	---	---	---	---	11.93	12.48	12.32	12.73	11.87
MIN	---	---	---	---	---	---	---	9.45	11.55	11.67	11.61	9.76

06185650 MISSOURI RIVER STAGE GAGE NO. 5 AT NOHLY, MT

LOCATION.--Lat 48°00'10", long 104°05'30", in SE$^{1}/_{4}$ sec.16, T.26 N., R.59 E., Richland County, Hydrologic Unit 10060005, at downstream side of bridge, 0.2 mi northwest of Nohly, MT, and at mile 1,587.7.

DRAINAGE AREA.--93,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,800.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated by Fort Peck Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 77.22 ft, Mar. 15, 1972; minimum daily recorded, 59.12 ft, Nov. 22, 1964.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	62.39	64.75	65.74	64.74	65.07
2	---	---	---	---	---	---	---	62.36	64.94	65.47	64.74	65.08
3	---	---	---	---	---	---	---	62.35	65.39	65.35	64.76	64.95
4	---	---	---	---	---	---	---	62.36	66.09	65.25	64.68	64.98
5	---	---	---	---	---	---	---	62.37	66.67	65.20	64.73	64.92
6	---	---	---	---	---	---	---	62.44	66.91	65.23	64.74	64.91
7	---	---	---	---	---	---	---	62.39	66.67	65.25	64.78	64.90
8	---	---	---	---	---	---	---	62.39	66.16	65.26	64.92	64.99
9	---	---	---	---	---	---	---	62.47	65.76	65.28	65.11	64.98
10	---	---	---	---	---	---	---	62.55	65.89	65.23	65.18	65.02
11	---	---	---	---	---	---	---	62.55	66.15	65.29	65.19	64.99
12	---	---	---	---	---	---	---	62.54	66.25	65.27	65.14	64.94
13	---	---	---	---	---	---	---	62.50	66.10	65.11	65.02	65.02
14	---	---	---	---	---	---	---	62.79	65.83	65.11	65.03	65.03
15	---	---	---	---	---	---	---	63.84	65.66	65.04	65.09	64.89
16	---	---	---	---	---	---	---	64.78	65.68	64.88	65.03	64.93
17	---	---	---	---	---	---	---	65.12	65.74	64.86	65.09	64.62
18	---	---	---	---	---	---	---	64.24	65.72	64.91	65.18	63.89
19	---	---	---	---	---	---	---	63.58	65.60	64.91	65.26	63.42
20	---	---	---	---	---	---	---	63.87	65.48	64.92	65.30	63.26
21	---	---	---	---	---	---	---	64.55	65.60	64.93	65.29	63.08
22	---	---	---	---	---	---	---	64.73	65.88	64.84	65.26	63.05
23	---	---	---	---	---	---	---	64.66	66.14	64.84	65.37	63.01
24	---	---	---	---	---	---	---	65.02	65.91	64.82	65.49	63.00
25	---	---	---	---	---	---	---	65.40	65.73	64.82	65.33	63.02
26	---	---	---	---	---	---	---	65.34	65.73	64.76	65.65	62.97
27	---	---	---	---	---	---	---	65.07	65.63	64.76	65.89	63.01
28	---	---	---	---	---	---	---	64.94	65.74	64.76	65.52	62.95
29	---	---	---	---	---	---	---	64.88	65.83	64.77	65.22	62.90
30	---	---	---	---	---	---	---	64.85	65.83	64.77	65.13	62.85
31	---	---	---	---	---	---	---	64.83	---	64.77	65.06	---
MEAN	---	---	---	---	---	---	---	63.68	65.85	65.05	65.13	64.15
MAX	---	---	---	---	---	---	---	65.40	66.91	65.74	65.89	65.08
MIN	---	---	---	---	---	---	---	62.35	64.75	64.76	64.68	62.85

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT
(National water-quality assessment program)

LOCATION.--Lat 47°40'42", long 104°09'22" (NAD 27), in $SW^1/_4NE^1/_4SW^1/_4$ sec.9, T.22 N., R.59 E., Richland County, Hydrologic Unit 10100004, on left bank at Montana-Dakota Utilities Company powerplant, 0.2 mi downstream from bridge on State Highway 23, 2.5 mi south of Sidney, 3.0 mi downstream from Fox Creek, and at river mile 29.2.

DRAINAGE AREA.--69,103 mi^2. Area at site 4.5 mi upstream, 68,812 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1910 to September 1931 (published as "at Intake"), October 1933 to current year. If monthly figures of diversions to Lower Yellowstone Canal at Intake are added to records at this site, records equivalent to those published as Yellowstone River at Glendive (1898-1910, 1931-34) can be obtained. Monthly discharge only for some periods, published in WSP 1309. Monthly figures of diversions into Lower Yellowstone Canal prior to 1951 published in WSP 1309, 1951-60 published in WSP 1729, 1961-65 published in WSP 1916, 1966-70 published in WSP 2116, and 1971 to current year are published in annual reports.

GAGE.--Water-stage recorder. Datum of gage is 1,881.3 ft above National Geodetic Verticla Datum of 1929 (levels by U.S. Army Corps of Engineers). Jan. 1, 1911, to Sept. 30, 1931, nonrecording gage at site 32 miles upstream at different datum. Apr. 9, 1934, water-stage recorder at two sites within 500 ft of highway bridge 0.2 mi upstream and May 17, 1945, to Apr. 3, 1952, nonrecording gage on same bridge at datum 1.36 ft higher. Apr. 4, 1952, to Nov. 19, 1967, water-stage recorder at site 4.5 mi upstream at different datum.

REMARKS.--Water-discharge records good except those for estimated daily discharges, which are poor. Flow regulated to some extent by Bighorn Lake, usable capacity, 1,312,000 acre-ft, on the Bighorn River and on other tributary streams in Wyoming and Montana. Diversion for irrigation of about 1,250,000 acres upstream from station. Lower Yellowstone Project Main Canal diverts from left bank in $NW^1/_4$ sec.36, T.18 N., R.56 E., at Lower Yellowstone diversion dam at Intake about 36.6 mi upstream for irrigation of about 52,000 acres of which about one-third lies upstream from station. U. S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3460	4740	e3600	e2700	e3400	e3000	e4400	5140	14200	21500	5630	3390
2	3500	4730	e3800	e2600	e3000	e2800	e4600	4890	20600	19800	5520	3660
3	3580	4780	e4000	e2300	e2900	e2700	e4500	5280	30200	18900	5090	4720
4	3480	4760	e4200	e2400	e3500	e3000	e4800	5220	36800	18200	4680	4450
5	3450	4790	e4400	e2300	e4000	e3100	e5200	5620	41300	16700	4530	4180
6	3450	4810	e4400	e2400	e4200	e3100	e5200	6500	42600	14800	4580	4000
7	3470	4870	e4300	e3000	e4200	e3200	e5200	6340	35200	13300	4670	3790
8	3490	4870	e4500	e4000	e4200	e3200	e5400	6890	29000	12400	4670	3800
9	3590	4780	e4500	e4200	e4200	e3200	e5500	7670	28300	11600	4740	4210
10	3710	4730	e4500	e4200	e4200	e3200	e5600	8230	33200	10700	5020	4400
11	3810	4660	e4500	e4200	e4400	e3200	e5600	7910	32700	9830	4800	4620
12	3850	4710	e4500	e4400	e4400	e2800	e5600	7460	30300	9180	5000	4660
13	3940	4820	e4400	e4600	e4400	e2700	5610	7140	26500	8660	5000	4710
14	4020	4910	e4300	e4600	e4400	e3000	5500	6560	22500	8080	4890	4960
15	4090	4800	e4300	e4400	e4400	e3400	5350	6120	19200	7360	4510	4750
16	4110	4760	e4200	e4300	e4300	e3300	5140	5870	17100	6710	4140	4520
17	4140	4720	e4400	e4300	e4400	e3200	5120	5650	15800	6570	3790	4440
18	4160	4710	e4300	e4300	e4500	e3200	5240	6370	15600	7690	3400	4330
19	4390	4700	e4200	e4300	e4600	e3200	6080	8980	17600	6760	3220	4280
20	4530	4710	e4200	e4200	e4600	e3200	7660	10100	20700	6580	3000	4290
21	4560	4790	e4200	e4200	e4600	e3200	8000	9960	24200	6650	2880	4220
22	4460	4860	e4100	e4200	e4600	e3100	7580	10200	28700	6670	2810	4330
23	4420	4890	e3800	e4200	e4700	e3000	6720	14700	27100	6710	3910	4330
24	4580	4840	e3600	e4200	e4800	e3100	6250	21800	23600	6770	3400	4380
25	4660	4820	e3100	e4200	e4800	e3400	5860	25500	23800	6760	3290	4480
26	4620	4820	e3100	e4200	e4400	e3600	5630	22800	23900	6440	3590	4520
27	4580	e4400	e3000	e4100	e4000	e3600	5510	18700	23800	6210	3260	4530
28	4540	e3600	e3100	e4100	e3400	e3600	5500	15900	24100	6170	3400	4550
29	4650	e3300	e3200	e4000	---	e3800	5410	13800	23600	5940	3460	4600
30	4820	e3300	e3300	e3800	---	e4000	5270	12300	22800	5780	3360	4530
31	4780	---	e3100	e3600	---	e4200	---	12300	---	5740	3340	---
TOTAL	126890	138980	123100	118500	117500	100300	169030	311900	775000	305160	127580	130630
MEAN	4093	4633	3971	3823	4196	3235	5634	10060	25830	9844	4115	4354
MAX	4820	4910	4500	4600	4800	4200	8000	25500	42600	21500	5630	4960
MIN	3450	3300	3000	2300	2900	2700	4400	4890	14200	5740	2810	3390
AC-FT	251700	275700	244200	235000	233100	198900	335300	618700	1537000	605300	253100	259100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2002, BY WATER YEAR (WY)*

MEAN	8304	7350	5961	5733	6867	10940	10330	18300	38840	23040	8725	7155
MAX	29130	12150	9594	13110	17750	25980	39160	38100	77280	55000	20470	16000
(WY)	1924	1924	1976	1925	1971	1972	1924	1928	1918	1917	1912	1941
MIN	3726	3700	3019	2087	2702	3235	2821	5409	11580	3311	1602	2389
(WY)	1922	1922	1961	1937	1936	2002	1961	1961	1919	1919	1961	1934

06329500 YELLOWSTONE RIVER NEAR SIDNEY, MT--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1911 – 2002*	
ANNUAL TOTAL	2208360		2544570			
ANNUAL MEAN	6050		6971		12640	
HIGHEST ANNUAL MEAN					21250	1924
LOWEST ANNUAL MEAN					5814	1934
HIGHEST DAILY MEAN	23900	Jun 17	42600	Jun 6	142000	Jun 21 1921
LOWEST DAILY MEAN	1010	Aug 26	2300	Jan 3	570	May 17 1961
ANNUAL SEVEN-DAY MINIMUM	1060	Aug 23	2530	Jan 1	1010	Aug 8 1961
MAXIMUM PEAK FLOW			43600	Jun 6	a159000	Jun 21 1921
MAXIMUM PEAK STAGE			12.11	Jun 6	b24.03	Mar 6 1994
INSTANTANEOUS LOW FLOW			2300	Jan 3	c470	May 17 1961
ANNUAL RUNOFF (AC-FT)	4380000		5047000		9159000	
10 PERCENT EXCEEDS	12300		16200		28400	
50 PERCENT EXCEEDS	4820		4560		8060	
90 PERCENT EXCEEDS	2920		3200		4130	
90 PERCENT EXCEEDS	2920		3200		4120	

SUMMARY STATISTICS	WATER YEARS 1911 – 1965**		WATER YEARS 1967 – 2002***	
ANNUAL MEAN	12890		12400	
HIGHEST ANNUAL MEAN	21250	1924	19150	1997
LOWEST ANNUAL MEAN	5814	1934	6387	2001
HIGHEST DAILY MEAN	142000	Jun 21 1921	104000	May 23 1978
LOWEST DAILY MEAN	570	May 17 1961	800	Jan 2 1989
ANNUAL SEVEN-DAY MINIMUM	1010	Aug 8 1961	1060	Aug 23 2001
MAXIMUM PEAK FLOW	a159000	Jun 21 1921	f111000	May 23 1978
MAXIMUM PEAK STAGE	d21.85	Mar 22 1947	b24.03	Mar 6 1994
INSTANTANEOUS LOW FLOW	c470	May 17 1961	470	May 17 1961
ANNUAL RUNOFF (AC-FT)	9341000		8983000	
10 PERCENT EXCEEDS	29900		26700	
50 PERCENT EXCEEDS	7690		8610	
90 PERCENT EXCEEDS	3820		4800	

* During period of operation 1911-31, 1934-current year; published as “at Intake” 1911-31
** Prior to Bighorn Lake reaching operational level
*** After Bighorn Lake reached operational level
a Gage height, 12.6 ft, site and datum then in use
b Backwater from ice
c Gage height, 2.73 ft, site and datum then in use
d Backwater from ice, site and datum then in use
e Estimated
f Gage height, 20.02 ft

06329590 YELLOWSTONE RIVER STAGE GAGE NO. 1 NEAR FAIRVIEW, MT

LOCATION.--Lat 47°48'34", long 104°02'36", sec. 18, T.150 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on left bank 3 mi south of Fairview, MT, and at mile 15.2.

DRAINAGE AREA.--70,000 mi^2, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,860.00 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 19, 1962, at datum 60.00 ft lower.

REVISED RECORDS.--WDR ND-82: 1980-81.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 23.78 ft, Mar. 21, 1960, present datum; minimum daily recorded, 6.99 ft, Aug. 29, 2001, present datum.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	9.51	---	---	---	---
2	---	---	---	---	---	---	---	9.35	---	---	---	---
3	---	---	---	---	---	---	---	9.52	---	---	---	---
4	---	---	---	---	---	---	---	9.55	---	---	---	---
5	---	---	---	---	---	---	---	9.60	---	---	---	---
6	---	---	---	---	---	---	---	10.02	---	---	9.43	---
7	---	---	---	---	---	---	---	10.0	---	---	9.50	---
8	---	---	---	---	---	---	---	10.14	---	---	9.44	---
9	---	---	---	---	---	---	---	10.41	---	---	9.48	9.35
10	---	---	---	---	---	---	---	10.61	---	---	9.60	9.53
11	---	---	---	---	---	---	---	10.61	---	---	9.53	9.59
12	---	---	---	---	---	---	---	10.41	---	---	9.45	9.67
13	---	---	---	---	---	---	---	10.31	---	---	9.40	9.64
14	---	---	---	---	---	---	---	10.10	---	---	9.33	9.78
15	---	---	---	---	---	---	---	9.88	---	---	9.07	9.72
16	---	---	---	---	---	---	---	9.79	---	---	9.06	9.60
17	---	---	---	---	---	---	---	9.67	---	---	9.03	9.53
18	---	---	---	---	---	---	---	9.84	12.77	---	8.92	9.46
19	---	---	---	---	---	---	---	10.65	13.15	---	8.82	9.44
20	---	---	---	---	---	---	---	11.17	13.90	---	---	9.39
21	---	---	---	---	---	---	---	11.21	14.74	---	---	9.37
22	---	---	---	---	---	---	---	---	15.64	---	8.79	9.40
23	---	---	---	---	---	---	---	---	15.69	---	9.17	9.41
24	---	---	---	---	---	---	---	---	14.78	---	---	9.43
25	---	---	---	---	---	---	---	---	14.64	---	---	9.47
26	---	---	---	---	---	---	---	---	14.71	---	---	9.50
27	---	---	---	---	---	---	---	---	14.63	---	---	9.51
28	---	---	---	---	---	---	---	---	---	---	---	9.51
29	---	---	---	---	---	---	---	---	---	---	---	9.53
30	---	---	---	---	---	---	---	---	---	---	---	9.48
31	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

06329610 YELLOWSTONE RIVER STAGE GAGE NO. 2 NEAR CARTWRIGHT, ND

LOCATION.--Lat 47°51'43", long 103°57'59", in $NW^1/_4NW^1/_4NW^1/_4$, sec. 35, T.151 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on bridge on State Highway 200, 2 mi west of Cartwright, and at mile 8.5.

DRAINAGE AREA.--70,000 mi^2, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--April 1959 to September 2001 (seasonal), October 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,800.00 ft above National Geodetic Vertical Datum of 1929.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 87.08 ft, Mar. 23, 1978; minimum daily recorded, 58.58 ft, July 26, 1974.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	63.83	63.53	65.14	64.86	64.37	67.92	63.95	66.43	68.75	64.07	63.22
2	---	63.81	63.55	65.09	64.64	64.13	67.26	63.81	67.55	68.33	64.02	63.23
3	63.48	63.82	63.58	64.75	64.35	63.98	67.18	63.94	69.85	67.99	63.91	63.53
4	63.44	63.82	63.84	64.64	64.44	64.96	67.23	63.97	71.67	67.82	63.72	63.66
5	63.42	63.81	64.67	64.55	64.75	65.17	67.04	63.98	72.51	67.53	63.62	63.55
6	63.40	63.82	65.01	64.49	65.04	65.09	67.03	64.33	72.90	67.06	63.59	63.47
7	63.41	63.84	65.00	64.46	65.25	65.35	66.62	64.33	72.00	66.63	63.67	63.38
8	63.41	63.85	64.89	64.98	65.34	65.92	66.98	64.44	70.71	66.37	63.62	63.35
9	63.44	63.82	64.91	---	65.44	66.27	66.98	64.72	70.17	66.15	63.69	63.44
10	63.48	63.80	64.74	---	65.38	65.92	---	64.88	71.10	65.95	63.77	63.60
11	63.52	63.78	64.65	65.87	65.39	65.62	67.94	64.94	71.43	65.70	63.75	63.66
12	63.55	63.79	64.72	66.28	65.42	65.38	65.23	64.77	71.06	65.49	63.73	63.74
13	63.55	63.82	64.69	66.22	65.41	65.09	64.22	64.66	70.23	65.31	63.82	63.72
14	63.59	63.86	64.77	---	65.54	65.07	64.14	64.49	69.52	65.13	63.77	63.82
15	63.63	63.84	64.62	66.06	65.44	65.78	64.07	64.31	68.67	64.89	63.65	63.79
16	63.63	63.82	64.39	---	65.42	66.64	64.01	64.21	68.08	64.64	63.52	63.69
17	63.63	63.80	64.34	---	65.47	---	63.96	64.11	67.70	64.47	63.39	63.64
18	63.64	63.81	64.45	---	65.43	67.41	63.97	64.20	67.53	64.73	63.25	63.60
19	63.69	63.81	64.32	---	65.48	67.47	64.15	64.85	67.89	64.77	63.15	63.57
20	63.76	63.79	64.32	---	65.56	67.24	64.62	65.41	68.64	64.49	63.04	63.55
21	63.78	63.81	64.41	---	65.56	66.92	64.91	65.50	69.39	64.48	62.96	63.55
22	63.76	63.82	64.43	65.06	65.66	66.63	64.84	65.42	70.17	64.53	62.92	63.56
23	63.73	63.82	64.34	65.10	65.84	66.28	64.60	66.20	70.46	64.52	63.15	63.57
24	63.77	63.81	64.30	---	65.66	65.73	64.37	68.13	69.45	64.53	63.27	63.58
25	63.80	63.78	63.99	---	65.73	65.59	64.25	69.55	69.21	64.57	63.09	63.62
26	63.80	63.76	63.90	---	65.59	65.55	64.12	69.32	69.29	64.46	63.29	63.64
27	63.78	63.77	63.86	---	65.10	65.88	64.06	68.31	69.20	64.34	63.13	63.65
28	63.76	63.33	63.72	65.26	64.84	66.54	64.04	67.44	69.29	64.31	63.17	63.66
29	63.76	63.38	---	65.32	---	67.26	64.03	66.82	69.21	64.23	63.20	63.68
30	63.83	63.48	64.66	65.27	---	67.66	63.98	66.36	69.03	64.13	63.20	63.66
31	63.84	---	65.20	64.96	---	67.94	---	66.24	---	64.14	63.11	---
MEAN	---	63.77	---	---	65.29	---	---	65.41	69.68	65.50	63.46	63.58
MAX	---	63.86	---	---	65.84	---	---	69.55	72.90	68.75	64.07	63.82
MIN	---	63.33	---	---	64.35	---	---	63.81	66.43	64.13	62.92	63.22

06329620 YELLOWSTONE RIVER STAGE GAGE NO. 3 NEAR BUFORD, ND

LOCATION.--Lat 47°55'14", long 103°57'56", in SW$^{1}/_{4}$ sec.2, T.151 N., R.104 W., McKenzie County, Hydrologic Unit 10100004, on left bank 4 mi south of Buford and 6.5 mi southeast of Nohly, MT.

DRAINAGE AREA.--70,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--April 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,850.00 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 19, 1962, at datum 50.00 ft lower. Prior to Apr. 23, 1987, gage was located 1 mi downstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 36.20 ft from floodmark, probably occurred sometime between Mar. 3-10, 1994; minimum daily recorded, 6.18 ft, Aug. 24, 1961, present datum.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.86	---	---	---	---	---	---	9.74	---	15.52	---	9.15
2	---	---	---	---	---	---	---	9.57	---	15.04	---	9.16
3	---	---	---	---	---	---	---	9.70	---	14.63	---	9.48
4	---	---	---	---	---	---	---	9.77	17.91	14.42	---	9.78
5	---	---	---	---	---	---	---	9.78	18.85	14.10	---	9.60
6	---	---	---	---	---	---	---	10.20	19.13	13.59	9.59	9.44
7	---	---	---	---	---	---	---	10.27	18.23	13.09	9.69	9.32
8	---	---	---	---	---	---	---	10.38	16.99	12.78	9.67	9.30
9	---	---	---	---	---	---	---	10.74	16.09	12.57	9.80	9.40
10	---	---	---	---	---	---	---	10.93	17.00	12.35	9.92	9.66
11	---	---	---	---	---	---	---	11.12	17.66	12.11	9.95	9.72
12	---	---	---	---	---	---	---	10.89	17.12	---	9.88	9.84
13	---	---	---	---	---	---	---	10.72	16.23	---	9.99	9.84
14	---	---	---	---	---	---	---	10.56	---	---	9.94	9.97
15	---	---	---	---	---	---	---	10.35	---	---	9.81	9.95
16	---	---	---	---	---	---	---	10.33	---	---	9.64	9.82
17	---	---	---	---	---	---	---	10.31	---	---	9.47	9.68
18	---	---	---	---	---	---	---	10.25	---	---	9.27	---
19	---	---	---	---	---	---	---	10.86	14.20	---	9.15	---
20	---	---	---	---	---	---	---	11.66	14.93	---	9.02	---
21	---	---	---	---	---	---	---	11.94	15.88	---	8.92	---
22	---	---	---	---	---	---	---	11.90	16.86	---	8.83	---
23	---	---	---	---	---	---	---	12.57	17.28	---	9.07	---
24	---	---	---	---	---	---	---	---	16.35	---	9.44	---
25	---	---	---	---	---	---	---	---	15.98	---	9.09	---
26	---	---	---	---	---	---	---	---	16.07	---	9.38	---
27	---	---	---	---	---	---	---	---	15.97	---	9.33	---
28	---	---	---	---	---	---	---	---	16.07	---	9.25	---
29	---	---	---	---	---	---	---	---	16.01	---	9.18	---
30	---	---	---	---	---	---	---	---	15.82	---	9.14	---
31	---	---	---	---	---	---	---	---	---	---	8.99	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

06329640 MISSOURI RIVER STAGE GAGE NO. 5A AT BUFORD, ND

LOCATION.--Lat 47°59'06", long 103°59'05", in SE$^{1}/_{4}$ sec.15, T.152 N., R.104 W., Williams County, Hydrologic Unit 10110101, on left bank 1.5 mi southwest of Buford, at confluence, and at mile 1,580.7.

DRAINAGE AREA.--164,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--April 1960 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,850.00 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 8, 1962, at datum 50.00 ft lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 20.37 ft, June 18, 1997; minimum daily recorded, 2.63 ft, Aug. 15, 16, 1966.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	12.67	---	---
2	---	---	---	---	---	---	---	---	---	12.21	---	---
3	---	---	---	---	---	---	---	---	---	11.79	---	---
4	---	---	---	---	---	---	---	---	---	11.56	---	---
5	---	---	---	---	---	---	---	---	15.66	11.29	---	---
6	---	---	---	---	---	---	---	---	16.09	10.92	7.62	---
7	---	---	---	---	---	---	---	---	15.60	10.54	7.67	---
8	---	---	---	---	---	---	---	---	14.58	10.28	7.73	---
9	---	---	---	---	---	---	---	---	13.81	10.10	7.93	---
10	---	---	---	---	---	---	---	---	14.23	9.89	8.03	---
11	---	---	---	---	---	---	---	---	14.74	9.72	8.06	---
12	---	---	---	---	---	---	---	---	14.63	---	7.98	---
13	---	---	---	---	---	---	---	---	14.16	---	8.00	---
14	---	---	---	---	---	---	---	---	13.43	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	11.46	---	---	---
19	---	---	---	---	---	---	---	---	11.56	---	---	---
20	---	---	---	---	---	---	---	---	12.00	---	---	---
21	---	---	---	---	---	---	---	---	12.70	---	---	---
22	---	---	---	---	---	---	---	---	13.49	---	---	---
23	---	---	---	---	---	---	---	---	14.08	---	---	---
24	---	---	---	---	---	---	---	---	13.48	---	---	---
25	---	---	---	---	---	---	---	---	12.98	---	---	---
26	---	---	---	---	---	---	---	---	13.02	---	---	---
27	---	---	---	---	---	---	---	---	12.92	---	---	---
28	---	---	---	---	---	---	---	---	12.97	---	---	---
29	---	---	---	---	---	---	---	---	13.00	---	---	---
30	---	---	---	---	---	---	---	---	12.89	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

06329650 MISSOURI RIVER STAGE GAGE NO. 6 NEAR BUFORD, ND

LOCATION.--Lat 47°57'18", long 103°54'36", in SE$^{1}/_{4}$ sec.30, T.152 N., R.103 W., McKenzie County, Hydrologic Unit 10110101, on right bank 5 mi southeast of Buford and at mile 1,576.0.

DRAINAGE AREA.--164,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--December 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 17, 1962, at datum 40.00 ft lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 27.39 ft, June 24, 1997; minimum daily recorded, 8.23 ft, Aug. 15, 22, 1963.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	13.68	17.31	20.09	15.42	14.89
2	---	---	---	---	---	---	---	13.54	18.04	19.65	15.38	14.92
3	---	---	---	---	---	---	---	13.51	19.99	19.21	15.36	14.99
4	---	---	---	---	---	---	---	13.66	21.79	18.97	15.18	15.27
5	---	---	---	---	---	---	---	13.66	22.64	18.72	15.09	15.17
6	---	---	---	---	---	---	---	13.99	23.13	18.34	15.06	15.09
7	---	---	---	---	---	---	---	14.20	22.78	17.97	15.10	15.00
8	---	---	---	---	---	---	---	14.22	21.83	17.69	15.16	15.01
9	---	---	---	---	---	---	---	14.49	21.08	17.54	15.33	15.04
10	---	---	---	---	---	---	---	14.72	21.37	17.32	15.47	15.20
11	---	---	---	---	---	---	---	14.91	21.93	17.15	15.51	15.26
12	---	---	---	---	---	---	---	14.76	21.85	16.98	15.43	15.32
13	---	---	---	---	---	---	---	14.66	21.43	16.74	15.45	15.35
14	---	---	---	---	---	---	---	14.54	20.71	16.56	15.39	15.45
15	---	---	---	---	---	---	---	14.80	19.95	16.35	15.36	15.41
16	---	---	---	---	---	---	---	15.44	19.36	16.06	15.23	15.34
17	---	---	---	---	---	---	---	15.78	19.03	15.84	15.16	15.16
18	---	---	---	---	---	---	---	15.38	18.79	15.92	15.09	14.68
19	---	---	---	---	---	---	---	15.16	18.86	16.17	15.05	14.21
20	---	---	---	---	---	---	---	15.88	19.33	15.87	15.02	14.02
21	---	---	---	---	---	---	---	16.50	20.04	15.85	14.96	13.93
22	---	---	---	---	---	---	---	16.66	20.79	15.85	14.89	13.88
23	---	---	---	---	---	---	---	16.96	21.49	15.82	14.95	13.90
24	---	---	---	---	---	---	---	18.47	20.96	15.81	15.36	13.91
25	---	---	---	---	---	---	---	20.04	20.39	15.89	15.07	13.97
26	---	---	---	---	---	---	---	20.29	20.41	15.79	15.23	13.98
27	---	---	---	---	---	---	---	19.61	20.31	15.70	15.49	14.01
28	---	---	---	---	---	---	---	18.78	20.34	15.65	15.30	14.00
29	---	---	---	---	---	---	---	18.07	20.39	15.64	15.06	13.97
30	---	---	---	---	---	---	13.73	17.53	20.29	15.53	14.97	13.94
31	---	---	---	---	---	---	---	17.29	---	15.48	14.86	---
MEAN	---	---	---	---	---	---	---	15.84	20.55	16.84	15.21	14.68
MAX	---	---	---	---	---	---	---	20.29	23.13	20.09	15.51	15.45
MIN	---	---	---	---	---	---	---	13.51	17.31	15.48	14.86	13.88

06329660 MISSOURI RIVER STAGE GAGE NO. 7 NEAR TRENTON, ND

LOCATION.--Lat 47°59'21", long 103°47'57", in NE$^{1}/_{4}$ sec.13, T.152 N., R.103 W., McKenzie County, Hydrologic Unit 10110101, on right bank 5 mi south of Trenton and at mile 1,566.7.

DRAINAGE AREA.--164,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--March 1959 to current year (seasonal).

GAGE.--Water-stage recorder. Datum of gage is 1,840.00 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 7, 1962, at site 0.8 mi upstream. Prior to May 29, 1963, at datum 40.00 ft lower.

REMARKS.--Stage regulated by upstream reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 23.46 ft, June 24, 1997; minimum daily recorded, 4.34 ft, Aug. 19, 22, 1963.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	10.11	13.53	16.45	11.66	11.09
2	---	---	---	---	---	---	---	9.93	14.13	16.04	11.60	11.16
3	---	---	---	---	---	---	---	9.90	15.91	15.60	11.59	11.20
4	---	---	---	---	---	---	---	9.99	17.98	15.35	11.42	11.50
5	---	---	---	---	---	---	---	10.00	18.98	15.11	11.30	11.40
6	---	---	---	---	---	---	---	10.27	19.38	14.72	11.27	11.31
7	---	---	---	---	---	---	---	10.50	19.06	14.35	11.31	11.22
8	---	---	---	---	---	---	---	10.55	18.20	14.06	11.39	11.23
9	---	---	---	---	---	---	---	10.80	17.59	13.92	11.57	11.26
10	---	---	---	---	---	---	---	11.02	17.68	13.67	11.70	11.43
11	---	---	---	---	---	---	---	11.19	18.14	13.48	11.77	11.50
12	---	---	---	---	---	---	---	11.05	18.07	13.31	11.69	11.54
13	---	---	---	---	---	---	---	10.88	17.69	13.06	11.69	11.59
14	---	---	---	---	---	---	---	10.76	17.09	12.86	11.63	11.68
15	---	---	---	---	---	---	---	11.02	16.42	12.66	11.62	11.66
16	---	---	---	---	---	---	---	11.61	15.85	12.34	11.47	11.57
17	---	---	---	---	---	---	---	11.97	15.49	12.10	11.40	11.41
18	---	---	---	---	---	---	---	11.61	15.20	12.17	11.31	10.92
19	---	---	---	---	---	---	---	11.33	15.22	12.46	11.26	10.42
20	---	---	---	---	---	---	---	12.02	15.57	12.13	11.23	10.25
21	---	---	---	---	---	---	---	12.66	16.19	12.10	11.17	10.15
22	---	---	---	---	---	---	---	12.86	16.93	12.10	11.10	10.08
23	---	---	---	---	---	---	---	13.12	17.60	12.06	11.13	10.10
24	---	---	---	---	---	---	---	14.57	17.30	12.07	11.59	10.10
25	---	---	---	---	---	---	---	16.25	16.79	12.15	11.30	10.16
26	---	---	---	---	---	---	---	16.63	16.74	12.05	11.42	10.17
27	---	---	---	---	---	---	---	15.99	16.66	11.95	11.75	10.19
28	---	---	---	---	---	---	---	15.14	16.67	11.88	11.55	10.18
29	---	---	---	---	---	---	---	14.43	16.72	11.88	11.28	10.16
30	---	---	---	---	---	---	10.18	13.85	16.64	11.76	11.18	10.14
31	---	---	---	---	---	---	---	13.56	---	11.71	11.09	---
MEAN	---	---	---	---	---	---	---	12.12	16.85	13.15	11.43	10.89
MAX	---	---	---	---	---	---	---	16.63	19.38	16.45	11.77	11.68
MIN	---	---	---	---	---	---	---	9.90	13.53	11.71	11.09	10.08

06330000 MISSOURI RIVER NEAR WILLISTON, ND

LOCATION.--Lat 48°06'29", long 103°42'51", in NW$^1/_4$NE$^1/_4$ sec.06, T.153 N., R.101 W., McKenzie County, Hydrologic Unit 10110101, on right bank, 5 mi southwest of Williston, 29.3 mi downstream from Yellowstone River, and at mile 1,552.7.

DRAINAGE AREA.--164,500 mi^2, approximately.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--April 1966 to current year. Operated as a stage-discharge station October 1897 to July 1965.

GAGE.--Water-stage recorder. Datum of gage is 1,830.20 ft above National Geodetic Vertical Datum of 1929. See WSP 1917 for history of changes prior to April 1966.

REMARKS.--Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height observed, 26.60 ft, Mar. 8, 1994; minimum daily recorded, 7.80 ft, Nov. 2, 1966.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.17	12.65	---	---	15.26	14.77	17.06	13.14	16.53	18.70	---	14.09
2	12.09	12.70	12.93	---	15.25	14.47	17.02	13.12	16.85	18.47	---	14.12
3	12.10	12.72	13.28	---	15.27	14.72	16.61	12.96	18.04	18.16	---	14.20
4	12.15	12.71	---	---	---	14.77	16.49	13.11	19.30	17.94	---	14.43
5	12.15	12.66	14.06	---	---	14.67	16.38	13.12	19.75	17.68	---	14.40
6	12.13	12.67	---	---	---	14.70	16.13	13.36	19.75	17.43	14.38	14.31
7	12.12	12.66	---	---	---	14.85	16.18	13.68	19.74	17.13	14.32	14.25
8	12.15	12.71	---	---	15.85	15.21	16.56	13.71	19.34	16.89	14.36	14.22
9	12.17	12.69	14.29	15.69	15.98	15.55	17.01	13.86	18.97	16.77	14.50	14.24
10	12.18	12.68	---	16.03	16.02	15.50	17.20	14.11	18.86	16.55	14.64	14.35
11	12.23	12.65	---	16.25	16.02	15.10	17.14	14.29	19.06	16.39	14.70	14.45
12	12.28	12.64	---	16.54	16.05	14.96	17.03	14.24	19.10	16.23	14.65	14.48
13	12.26	12.67	---	16.75	16.03	14.98	---	14.15	18.96	16.01	14.68	14.52
14	12.23	12.72	---	16.65	16.05	14.86	---	14.09	18.63	15.81	14.63	14.58
15	12.30	12.78	---	16.45	16.09	15.01	---	14.16	18.30	15.61	14.61	14.62
16	12.37	12.77	---	16.33	15.99	15.69	---	14.67	17.95	14.94	14.53	14.52
17	12.34	12.72	---	16.35	15.98	16.35	13.52	15.06	17.75	14.59	14.44	14.42
18	12.37	12.68	---	16.40	16.00	16.65	13.39	15.03	17.60	14.57	14.37	14.04
19	12.40	12.67	---	16.50	16.00	16.75	13.44	14.74	17.53	14.83	14.32	13.55
20	12.49	12.68	---	16.63	16.03	16.66	13.71	15.21	17.74	14.58	14.28	13.24
21	12.55	12.69	---	16.66	16.09	16.37	14.11	15.73	18.17	14.52	14.22	13.12
22	12.57	12.72	---	16.63	16.12	16.09	14.23	15.91	18.71	14.55	14.16	13.04
23	12.55	12.77	---	16.63	16.29	15.74	---	15.94	19.26	14.57	14.11	13.07
24	12.51	12.77	---	16.62	16.40	15.19	---	16.89	19.36	---	14.45	13.05
25	12.58	12.76	---	16.68	16.38	14.74	---	18.31	18.89	---	14.32	13.09
26	12.63	12.74	---	16.29	16.40	14.75	---	18.81	18.81	---	14.30	13.13
27	12.63	12.72	---	15.44	16.18	14.86	---	18.58	18.77	---	14.62	13.14
28	12.61	---	---	15.58	15.45	15.21	---	18.07	18.74	---	14.54	13.18
29	12.64	---	---	15.88	---	15.78	---	17.52	18.79	---	14.34	13.14
30	12.65	12.60	---	15.84	---	16.38	13.21	16.97	18.78	---	14.24	13.08
31	12.74	---	---	15.52	---	16.78	---	16.63	---	---	14.14	---
MEAN	12.37	---	---	---	---	15.42	---	15.13	18.60	---	---	13.87
MAX	12.74	---	---	---	---	16.78	---	18.81	19.75	---	---	14.62
MIN	12.09	---	---	---	---	14.47	---	12.96	16.53	---	---	13.04

06330110 MISSOURI RIVER STAGE GAGE NO. 9 AT WILLISTON, ND

LOCATION.--Lat 48°08'13", long 103°36'16", in NE$^{1}/_{4}$NE$^{1}/_{4}$ sec.25, T.154 N., R.101 W., Williams County, Hydrologic Unit 10110101, on left bank levee at southeast edge of Williston, 0.5 mi upstream from Little Muddy Creek, and at mile 1,546.2.

DRAINAGE AREA.--164,500 mi, approximately.

GAGE-HEIGHT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,820.00 ft above National Geodetic Vertical Datum of 1929. Prior to May 13, 1969, at site 900 ft downstream. At datum 20.00 ft lower prior to Apr. 7, 1962.

REMARKS.--Stage regulated by upstream reservoirs and backwater from Lake Sakakawea.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 34.61 ft, July 6, 1997; minimum daily recorded, 5.44 ft, Aug. 20, 1961, present datum.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.04	22.59	22.78	23.43	23.61	23.88	25.58	22.57	24.57	26.32	22.98	22.61
2	22.01	22.53	22.73	23.39	23.53	23.64	25.53	22.56	24.77	26.21	23.02	22.54
3	22.02	22.55	22.70	23.32	23.50	23.51	25.30	22.54	25.53	26.02	23.00	22.56
4	22.02	22.51	22.84	23.45	23.48	23.44	25.07	22.50	26.37	25.88	22.88	22.70
5	22.03	22.50	23.05	23.43	23.49	23.43	24.94	22.49	26.77	25.63	22.88	22.81
6	22.02	22.61	23.16	23.41	23.58	23.39	24.79	22.49	27.11	25.41	22.90	22.78
7	22.01	22.66	23.22	23.41	23.77	23.40	24.73	22.50	27.14	25.19	22.85	22.74
8	22.03	22.65	23.30	23.51	23.99	23.45	24.84	22.54	26.86	24.96	22.85	22.66
9	22.02	22.58	23.34	23.74	24.17	23.49	25.06	22.62	26.56	24.93	22.96	22.67
10	22.02	22.54	23.38	24.00	24.30	23.62	25.23	22.77	26.41	24.74	23.04	22.70
11	22.09	22.51	23.43	24.22	24.37	23.61	25.28	22.88	26.57	24.62	23.06	22.77
12	22.06	22.51	23.54	24.43	24.42	23.57	25.22	22.88	26.61	24.53	23.01	22.79
13	22.07	22.50	23.55	24.67	24.45	23.56	24.86	22.78	26.52	24.30	23.04	22.82
14	22.03	22.57	23.50	24.75	24.44	23.57	24.55	22.81	26.28	24.11	23.06	22.83
15	21.99	22.54	23.46	24.69	24.45	23.62	23.58	22.75	26.06	23.97	22.99	22.89
16	22.16	22.48	23.39	24.58	24.43	23.75	23.15	22.92	25.85	23.76	23.00	22.88
17	22.14	22.47	23.39	24.55	24.39	24.11	23.02	23.33	25.76	23.58	22.89	22.85
18	22.09	22.40	23.48	24.43	24.39	24.57	22.91	23.38	25.69	23.47	22.86	22.64
19	22.07	22.43	23.58	24.23	24.39	24.83	22.85	23.14	25.63	23.56	22.80	22.39
20	22.09	22.35	23.73	24.12	24.39	24.90	22.81	23.36	25.66	23.51	22.74	22.27
21	22.13	22.39	23.69	24.05	24.42	24.78	22.95	23.90	25.94	23.39	22.72	22.22
22	22.13	22.41	23.67	23.89	24.47	24.56	23.04	24.03	26.27	23.39	22.70	22.16
23	22.15	22.34	23.57	23.76	24.52	24.33	23.06	24.05	26.61	23.44	22.64	22.15
24	22.32	22.33	23.38	23.75	24.64	24.05	22.83	24.59	26.74	23.45	22.73	22.27
25	22.35	22.36	23.21	23.83	24.64	23.85	22.63	25.57	26.57	23.45	22.78	22.21
26	22.43	22.40	23.10	23.92	24.64	23.75	22.65	25.99	26.45	23.41	22.69	22.17
27	22.50	---	23.03	23.81	24.58	23.84	22.66	25.96	26.36	23.30	22.89	22.24
28	22.56	---	22.93	23.68	24.26	24.42	22.58	25.79	26.34	23.23	22.93	22.19
29	22.54	22.71	22.95	23.68	---	25.05	22.52	25.52	26.36	23.21	22.87	22.16
30	22.60	22.75	23.00	23.75	---	25.49	22.61	25.06	26.34	23.14	22.80	22.12
31	22.60	---	23.25	23.71	---	25.62	---	24.73	---	23.08	22.70	---
MEAN	22.17	---	23.27	23.92	24.20	24.03	23.89	23.58	26.22	24.23	22.88	22.53
MAX	22.60	---	23.73	24.75	24.64	25.62	25.58	25.99	27.14	26.32	23.06	22.89
MIN	21.99	---	22.70	23.32	23.48	23.39	22.52	22.49	24.57	23.08	22.64	22.12

06331000 LITTLE MUDDY RIVER BELOW COW CREEK NEAR WILLISTON, ND

LOCATION.--Lat 48°17'04", long 103°34'21", in NE$^1/_4$NW$^1/_4$ sec.5, T.155 N., R.100 W., Williams County, Hydrologic Unit 10110102, on left bank 37 ft downstream from centerline of highway, 1 mi downstream from Cow Creek, 4 mi upstream from Camp Creek, 10 mi northeast of Williston, and 13 mi upstream from mouth.

DRAINAGE AREA.--875 mi^2, approximately, of which about 100 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1954 to current year (seasonal records only 1984 to 2001).

GAGE.--Water-stage recorder. Datum of gage is 1,863.18 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some small diversions for irrigation. Some regulation by Lake Zahl, Fish and Wildlife Service reservoir, 22 mi upstream and by Blacktail Dam about 15 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	8.7	e9.0	e9.0	e9.6	e9.8	e26	17	9.2	14	6.2	5.5
2	6.9	8.3	e9.6	e9.2	e9.7	e9.8	e20	17	13	14	6.4	5.2
3	6.4	9.5	e9.9	e9.5	e9.8	e9.8	e18	16	16	13	6.7	5.0
4	6.1	9.6	e9.8	e9.8	e10	e9.7	e16	15	17	12	6.7	5.0
5	6.7	9.3	e9.6	e10	e10	e9.7	e15	16	20	9.3	6.6	4.9
6	7.2	9.9	e9.5	e10	e11	e9.7	45	16	22	8.4	6.3	5.0
7	7.3	10	e9.8	e10	e10	e9.6	85	17	20	8.6	6.5	5.4
8	7.5	9.7	e9.8	e11	e11	e9.6	195	19	20	9.8	7.3	5.6
9	7.5	9.9	e9.9	e11	e11	e9.7	151	22	21	16	7.1	5.6
10	7.4	9.7	e10	e12	e11	e9.7	104	25	22	14	7.6	5.8
11	7.5	9.6	e9.8	e11	e12	e9.8	86	28	22	15	7.5	5.5
12	7.7	9.6	e9.6	e11	e12	e9.8	75	29	26	15	7.2	5.3
13	8.1	9.6	e9.5	e10	e11	e9.8	70	27	28	15	7.1	5.1
14	8.5	9.5	e9.3	e10	e11	e10	60	26	24	17	6.9	4.7
15	8.5	9.6	e9.5	e9.8	e12	e10	55	23	23	15	6.8	4.6
16	8.1	9.4	e9.8	e9.8	e12	e9.9	58	24	21	13	6.6	4.5
17	8.3	9.6	e10	e9.6	e13	e9.9	55	22	20	12	7.1	4.5
18	7.9	9.3	e10	e9.4	e13	e9.8	47	21	20	10	7.0	4.6
19	8.4	9.1	e11	e9.6	e13	e9.8	38	20	21	9.5	7.0	4.5
20	8.6	9.4	e11	e9.8	e14	e9.8	32	19	18	8.9	6.8	4.2
21	8.5	9.6	e10	e10	e13	e9.7	29	17	17	8.0	6.6	4.1
22	8.9	9.6	e9.6	e10	e13	e9.7	27	17	18	7.4	6.6	4.1
23	9.4	9.6	e9.3	e9.8	e13	e9.6	25	16	18	7.4	6.4	4.2
24	10	e9.5	e9.0	e10	e12	e9.8	24	14	27	7.4	6.1	4.4
25	9.6	e9.3	e8.9	e9.8	e12	e10	21	14	29	7.4	5.9	4.4
26	9.4	e9.0	e8.8	e9.7	e11	e10	20	14	23	7.0	5.7	4.4
27	9.8	e8.9	e8.7	e9.6	e10	e37	22	13	20	6.5	5.4	4.3
28	9.6	e8.9	e8.6	e9.6	e10	e90	20	13	20	6.2	5.4	4.0
29	9.1	e8.8	e8.5	e9.6	---	e75	18	11	19	6.4	5.4	4.1
30	8.9	e8.8	e8.4	e9.5	---	e52	17	11	16	6.2	5.4	4.2
31	8.8	---	e8.8	e9.5	---	e31	---	9.9	---	6.1	5.7	---
TOTAL	252.7	281.3	295.0	308.6	320.1	539.5	1474	568.9	610.2	325.5	202.0	142.7
MEAN	8.152	9.377	9.516	9.955	11.43	17.40	49.13	18.35	20.34	10.50	6.516	4.757
MAX	10	10	11	12	14	90	195	29	29	17	7.6	5.8
MIN	6.1	8.3	8.4	9.0	9.6	9.6	15	9.9	9.2	6.1	5.4	4.0
MED	8.3	9.5	9.6	9.8	11	9.8	30	17	20	9.5	6.6	4.6
AC-FT	501	558	585	612	635	1070	2920	1130	1210	646	401	283

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2002, BY WATER YEAR (WY)

MEAN	10.14	10.96	8.654	7.084	25.02	177.6	107.5	26.04	19.08	25.57	8.159	7.523
MAX	17.4	17.7	12.1	24.5	363	1018	996	114	91.6	170	49.1	18.9
(WY)	1973	1973	1955	1974	1996	1976	1979	1965	1994	1978	1972	1954
MIN	5.28	4.66	3.55	2.33	0.91	6.21	10.6	8.44	3.77	2.80	2.51	2.54
(WY)	1962	1961	1961	1962	1959	1965	1990	1958	1988	1988	1988	1990

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1954 - 2002	
ANNUAL TOTAL	5320.5			
ANNUAL MEAN	14.58		a38.01	
HIGHEST ANNUAL MEAN			a110	1976
LOWEST ANNUAL MEAN			a9.24	1961
HIGHEST DAILY MEAN	195	Apr 8	6610	Apr 18 1979
LOWEST DAILY MEAN	4.0	Sep 28	0.50	Feb 17 1959
ANNUAL SEVEN-DAY MINIMUM	4.3	Sep 20	0.50	Feb 17 1959
MAXIMUM PEAK FLOW	b243	Apr 8	9180	Apr 18 1979
MAXIMUM PEAK STAGE	c7.69	Mar 29	13.57	Mar 27 1960
ANNUAL RUNOFF (AC-FT)	10550		a27540	
10 PERCENT EXCEEDS	23		39	
50 PERCENT EXCEEDS	9.8		9.6	
90 PERCENT EXCEEDS	5.9		4.6	

a Based on complete water years only (1954-83, 2002)
b Gage height, 6.47 ft
c Backwater from ice
e Estimated

06331000 LITTLE MUDDY RIVER BELOW COW CREEK NEAR WILLISTON, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
01...	1615	5.8	--	--	--	2300	27.0	16.0	--	--	--	--	--
NOV													
19...	1440	9.0	--	--	--	2330	5.0	5.0	--	--	--	--	--
JAN													
08...	1250	11	--	--	--	2450	8.0	1.0	--	--	--	--	--
APR													
15...	1400	54	7.8	7.8	1090	1070	10.0	3.0	260	48.0	35.0	13.0	4
JUN													
04...	1655	18	--	--	--	2220	20.0	14.3	--	--	--	--	--
JUL													
09...	1620	15	--	--	--	2150	32.0	23.7	--	--	--	--	--
AUG													
19...	1640	6.9	7.9	8.3	2160	2210	23.0	19.7	400	49.0	67.0	13.0	8

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
15...	130	50	243	6.5	.10	320	108	747	699	3.0	280	1	40
JUN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	390	67	600	13.0	.40	670	28.8	1550	1560	7.0	50	1	80

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
01...	--	--	--	--	--
NOV					
19...	--	--	--	--	--
JAN					
08...	--	--	--	--	--
APR					
15...	120	<.10	<1	<1	500
JUN					
04...	--	--	--	--	--
JUL					
09...	--	--	--	--	--
AUG					
19...	20	.10	2	<1	740

< Less than

06332515 BEAR DEN CREEK NEAR MANDAREE, ND

LOCATION.--Lat 47°47'14", long 102°46'05", in NW$^1/_4$ sec.30, T.150 N., R.94 W., McKenzie County, Hydrologic Unit 10110101, on right bank 0.5 mi upstream from county highway culvert and 5.5 mi northwest of Mandaree.

DRAINAGE AREA.--74 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,947.58 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.13	0.19	e0.20	e0.19	e0.23	e0.23	4.4	1.5	0.34	e0.66	0.31	0.16
2	0.16	0.19	e0.20	e0.19	e0.23	e0.20	1.7	1.4	0.33	e0.52	0.31	0.17
3	0.15	0.19	e0.20	e0.19	e0.23	e0.18	1.8	1.2	0.34	e0.48	0.31	0.15
4	0.16	0.19	e0.20	e0.19	e0.23	e0.20	1.0	1.1	0.32	e0.47	0.30	0.11
5	0.16	0.19	e0.21	e0.19	e0.23	e0.23	1.2	1.1	0.30	e0.45	0.30	0.12
6	0.17	0.19	e0.20	e0.20	e0.23	e0.26	6.0	1.3	0.31	e0.47	0.29	0.15
7	0.17	0.19	e0.20	e0.20	e0.23	e0.27	9.9	1.3	0.31	e0.46	0.30	0.16
8	0.17	0.19	e0.20	e0.20	e0.23	e0.25	5.5	1.6	0.32	e0.47	0.29	0.20
9	0.17	0.19	e0.19	e0.20	e0.23	e0.30	5.4	3.1	3.4	e0.48	0.29	0.19
10	0.17	0.19	e0.20	e0.20	e0.23	e0.34	4.8	9.1	e47	e0.77	0.29	0.15
11	0.17	0.19	e0.19	e0.20	e0.23	e0.35	4.0	17	e38	e3.6	0.28	0.12
12	0.17	0.19	e0.20	e0.20	e0.23	e0.68	4.2	5.2	e27	e8.0	0.27	0.11
13	0.17	0.19	e0.19	e0.20	e0.23	e0.68	2.6	1.9	e19	e2.4	0.26	0.11
14	0.17	0.19	e0.20	e0.20	e0.22	e0.76	1.7	1.2	e11	e1.6	0.25	0.10
15	0.17	0.19	e0.20	e0.21	e0.22	e0.68	1.7	0.91	e6.0	e0.87	0.25	0.10
16	0.18	0.20	e0.19	e0.21	e0.22	e2.0	1.4	0.64	e5.0	e0.52	0.25	0.09
17	0.18	0.20	e0.19	e0.21	e0.22	e1.9	1.0	0.59	e2.6	e0.48	e0.26	0.09
18	0.18	0.20	e0.20	e0.21	e0.22	e1.3	0.93	0.54	e1.5	e0.47	0.24	0.21
19	0.18	0.19	e0.19	e0.21	e0.22	e0.30	1.9	0.49	e1.0	0.36	0.23	0.24
20	0.18	0.19	e0.20	e0.22	e0.22	e0.20	2.8	0.46	e0.78	0.35	0.22	0.23
21	0.18	0.20	e0.19	e0.22	e0.23	e0.18	2.5	0.41	e1.4	0.31	0.39	0.19
22	0.18	0.21	e0.18	e0.22	e0.23	e0.20	2.1	0.41	e1.6	0.26	0.31	0.17
23	0.19	0.20	e0.18	e0.22	e0.23	e0.20	2.3	0.46	e3.2	0.29	0.28	0.17
24	0.19	0.20	e0.17	e0.22	e0.23	e0.22	2.0	0.45	e22	0.32	0.24	0.17
25	0.19	0.19	e0.18	e0.22	e0.24	e0.23	1.6	0.44	e50	0.35	0.22	0.17
26	0.19	e0.20	e0.17	e0.23	e0.24	e0.20	1.8	0.40	e37	0.29	0.21	0.16
27	0.19	e0.20	e0.18	e0.23	e0.26	e40	1.8	0.38	e23	0.25	0.19	0.16
28	0.19	e0.19	e0.17	e0.23	e0.25	e110	1.8	0.38	e12	0.27	0.19	0.16
29	0.19	e0.18	e0.18	e0.23	---	e60	1.8	0.36	e4.2	0.28	0.17	0.18
30	0.19	e0.19	e0.17	e0.23	---	e30	1.6	0.34	e1.0	0.25	0.19	0.21
31	0.19	---	e0.17	e0.23	---	e10	---	0.34	---	0.30	0.19	---
TOTAL	5.43	5.79	5.89	6.50	6.44	262.54	83.23	56.00	320.25	27.05	8.08	4.70
MEAN	0.175	0.193	0.190	0.210	0.230	8.469	2.774	1.806	10.68	0.873	0.261	0.157
MAX	0.19	0.21	0.21	0.23	0.26	110	9.9	17	50	8.0	0.39	0.24
MIN	0.13	0.18	0.17	0.19	0.22	0.18	0.93	0.34	0.30	0.25	0.17	0.09
AC-FT	11	11	12	13	13	521	165	111	635	54	16	9.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

MEAN	1.398	0.316	0.139	0.146	6.459	35.53	19.60	3.822	2.826	3.293	0.304	0.619
MAX	23.0	1.45	0.33	1.51	41.7	217	243	42.0	21.0	40.5	1.52	5.12
(WY)	1983	2001	1974	1974	1983	1982	1975	1970	1994	1993	1974	1973
MIN	0.11	0.13	0.031	0.000	0.000	0.30	0.26	0.15	0.12	0.076	0.075	0.062
(WY)	2000	1968	1985	1967	1967	2000	2000	1981	1987	1968	1988	1999

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002	
ANNUAL TOTAL	1737.21		791.90			
ANNUAL MEAN	4.759		2.170		6.207	
HIGHEST ANNUAL MEAN					22.7	1982
LOWEST ANNUAL MEAN					0.21	2000
HIGHEST DAILY MEAN	227	Mar 13	110	Mar 28	1110	Mar 14 1972
LOWEST DAILY MEAN	0.00	Jan 4	0.09	Sep 16	0.00	Dec 10 1966
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 4	0.10	Sep 11	0.00	Dec 25 1966
MAXIMUM PEAK FLOW			a200	Mar 28	2840	Mar 13 1972
MAXIMUM PEAK STAGE			b6.19	Mar 3	10.03	Apr 6 1969
ANNUAL RUNOFF (AC-FT)	3450		1570		4500	
10 PERCENT EXCEEDS	3.4		2.6		4.0	
50 PERCENT EXCEEDS	0.19		0.23		0.22	
90 PERCENT EXCEEDS	0.01		0.17		0.02	

a About
b Backwater from ice
e Estimated

06332515 BEAR DEN CREEK NEAR MANDAREE, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1220	.16	--	--	--	2990	16.0	15.0	--	--	--	--	--
09...	1110	.23	--	--	--	2840	12.5	-6.0	--	--	--	--	--
NOV													
20...	1200	.19	--	--	--	2880	10.0	2.0	--	--	--	--	--
FEB													
06...	1600	.23	--	--	--	2960	10.0	.0	--	--	--	--	--
APR													
17...	1320	.97	8.1	8.0	1480	1470	15.0	5.0	150	31.0	17.0	11.0	10
JUN													
05...	1015	.30	--	--	--	2730	16.9	13.2	--	--	--	--	--
JUL													
18...	1120	.48	--	--	--	1850	23.0	24.5	--	--	--	--	--
AUG													
28...	1120	.19	8.4	8.6	2320	2430	18.2	20.2	150	25.0	21.0	12.0	18

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	280	79	362	4.2	.30	410	2.63	1010	971	2.0	330	<1	30
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
28...	520	87	654	7.6	.40	680	.86	1680	1660	3.0	70	1	50

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
03...	--	--	--	--	--
09...	--	--	--	--	--
NOV					
20...	--	--	--	--	--
FEB					
06...	--	--	--	--	--
APR					
17...	130	<.10	<1	<1	340
JUN					
05...	--	--	--	--	--
JUL					
18...	--	--	--	--	--
AUG					
28...	10	.10	3	<1	310

< Less than

06332523 EAST FORK SHELL CREEK NEAR PARSHALL, ND

LOCATION.--Lat 47°56'55", long 102°12'52", in NW$^1/_4$NW$^1/_4$NW$^1/_4$ sec.33, T.152 N., R.90 W., Mountrail County, Hydrologic Unit 10110101, on right bank 10 ft upstream from bridge on county road and 4 mi west of Parshall.

DRAINAGE AREA.--360 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,890 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor due to beaver activity.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.72	e1.3	e0.35	e0.15	e0.12	e20	4.6	1.1	1.2	0.36	e0.13
2	0.00	0.83	e1.3	e0.32	e0.13	e0.11	e15	4.1	1.3	1.1	0.32	e0.10
3	0.00	0.97	e1.3	e0.29	e0.13	e0.11	e11	4.0	2.4	0.94	0.21	e0.11
4	0.00	1.0	e1.5	e0.32	e0.10	e0.10	e10	3.1	2.1	0.93	0.19	e0.11
5	0.00	e1.5	e1.6	e0.39	e0.10	e0.10	e10	3.3	1.8	0.89	0.18	e0.12
6	0.00	e1.5	e1.6	e0.46	e0.12	e0.10	e11	4.0	1.8	0.78	e0.17	e0.13
7	0.00	e1.4	e1.6	e0.46	e0.14	e0.11	e12	4.6	1.7	0.78	e0.16	e0.15
8	0.00	e1.5	e1.6	e0.43	e0.17	e0.10	e12	6.3	1.8	0.79	e0.15	e0.17
9	0.02	e1.4	e1.6	e0.47	e0.19	e0.11	e12	10	7.1	2.6	e0.14	e0.15
10	0.02	e1.5	e1.6	e0.47	e0.20	e0.10	e13	11	64	3.2	e0.14	e0.16
11	0.00	e1.4	e1.6	e0.41	e0.20	e0.14	e14	9.8	37	2.4	e0.13	e0.14
12	0.00	e1.5	e1.6	e0.38	e0.21	e0.11	e15	7.9	20	1.8	e0.12	e0.15
13	0.07	2.3	e1.5	e0.37	e0.21	e0.11	e15	4.0	19	1.7	e0.11	e0.16
14	0.06	3.6	e1.5	e0.37	e0.21	e0.12	e14	3.8	14	1.4	e0.10	e0.17
15	0.04	2.9	e1.3	e0.37	e0.20	e0.12	e14	3.6	10	1.0	e0.10	e0.17
16	0.09	2.4	e1.1	e0.35	e0.20	e0.13	e13	3.9	7.1	1.1	e0.55	e0.18
17	0.10	1.8	e1.0	e0.35	e0.18	e0.13	e13	3.6	4.9	1.3	e0.85	e0.20
18	0.14	1.8	e1.0	e0.36	e0.17	e0.13	e12	3.3	4.0	1.3	e0.48	e0.23
19	0.18	1.7	e0.95	e0.36	e0.16	e0.13	e11	3.0	4.6	1.1	e0.25	e0.25
20	0.25	1.6	e0.92	e0.35	e0.18	e0.13	e10	2.7	4.6	1.1	e0.15	e0.28
21	0.28	1.6	e0.91	e0.34	e0.20	e0.13	e9.0	2.5	3.6	0.89	e0.10	e0.30
22	0.30	1.6	e0.85	e0.34	e0.20	e0.11	e8.0	2.2	4.0	0.79	e0.10	e0.33
23	0.50	1.6	e0.74	e0.31	e0.21	e0.10	e7.1	2.5	4.3	0.81	e0.11	e0.38
24	0.57	1.6	e0.68	e0.28	e0.18	e0.10	e6.5	2.5	4.1	0.76	e0.11	e0.40
25	0.47	e1.5	e0.61	e0.26	e0.14	e0.10	e6.1	2.4	4.3	0.73	e0.10	e0.45
26	0.48	e1.5	e0.59	e0.26	e0.14	e0.16	e5.8	2.2	3.3	0.66	e0.10	e0.48
27	0.52	e1.4	e0.56	e0.23	e0.13	e4.1	e5.6	1.9	2.8	0.60	e0.13	e0.53
28	0.51	e1.3	e0.54	e0.22	e0.13	e11	e5.2	1.6	2.2	0.53	e0.13	e0.55
29	0.51	e1.3	e0.51	e0.20	---	e43	e5.0	1.4	1.8	0.55	e0.10	e0.60
30	0.55	e1.3	e0.50	e0.18	---	e39	e4.8	1.2	1.4	0.52	e0.10	e0.65
31	0.67	---	e0.45	e0.16	---	e25	---	1.1	---	0.49	e0.12	---
TOTAL	6.33	48.02	34.41	10.41	4.68	125.11	320.1	122.1	242.1	34.74	6.06	7.93
MEAN	0.204	1.601	1.110	0.336	0.167	4.036	10.67	3.939	8.070	1.121	0.195	0.264
MAX	0.67	3.6	1.6	0.47	0.21	43	20	11	64	3.2	0.85	0.65
MIN	0.00	0.72	0.45	0.16	0.10	0.10	4.8	1.1	1.1	0.49	0.10	0.10
AC-FT	13	95	68	21	9.3	248	635	242	480	69	12	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)

MEAN	1.443	1.755	0.995	0.379	0.856	38.73	16.40	5.165	5.223	3.318	1.451	0.803
MAX	4.71	3.10	1.54	1.22	3.58	134	64.9	16.0	16.4	23.5	11.6	2.66
(WY)	1995	2000	2000	1995	1995	1999	1996	1999	1998	1993	1993	1991
MIN	0.18	0.74	0.015	0.000	0.000	4.04	2.97	1.64	0.66	0.011	0.003	0.000
(WY)	2001	2001	2001	2001	2001	2002	2000	1992	1992	2001	2001	2001

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1991 - 2002	
ANNUAL TOTAL	1359.92		961.99			
ANNUAL MEAN	3.726		2.636		6.437	
HIGHEST ANNUAL MEAN					15.1	1999
LOWEST ANNUAL MEAN					2.19	1992
HIGHEST DAILY MEAN	110	Mar 14	64	Jun 10	930	Mar 27 1999
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Sep 2 1991
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Sep 10 1998
MAXIMUM PEAK FLOW			a88	Jun 10	1170	Mar 27 1999
MAXIMUM PEAK STAGE			b5.59	Mar 28	6.46	Mar 27 1997
ANNUAL RUNOFF (AC-FT)	2700		1910		4660	
10 PERCENT EXCEEDS	11		7.4		9.0	
50 PERCENT EXCEEDS	0.07		0.59		1.1	
90 PERCENT EXCEEDS	0.00		0.11		0.10	

a Gage height, 4.86 ft
b Backwater from ice and/or beaver dams
e Estimated

06332523 EAST FORK SHELL CREEK NEAR PARSHALL, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1991 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
11...	1245	1.5	--	--	--	3470	5.0	4.0	--	--	--	--	--
APR													
11...	1300	14	7.9	7.7	1380	1360	10.0	3.0	230	39.0	31.0	12.0	6
MAY													
24...	1220	2.6	--	--	--	3930	5.0	12.0	--	--	--	--	--
JUL													
16...	1145	.95	8.8	8.9	3110	3210	23.0	23.5	420	40.0	78.0	15.0	14
AUG													
26...	1250	.10	--	--	--	3130	21.0	19.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	220	67	301	9.7	.20	420	35.8	948	913	2.0	210	<1	50
MAY													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
16...	650	76	600	23.0	.30	1200	6.16	2410	2370	7.0	100	<1	140
AUG													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
11...	--	--	--	--	--
APR					
11...	80	<.10	<1	<1	720
MAY					
24...	--	--	--	--	--
JUL					
16...	90	<.10	1	3	1000
AUG					
26...	--	--	--	--	--

< Less than

06332770 DEEPWATER CREEK AT MOUTH NEAR RAUB, ND

LOCATION.--Lat 47°44'16", long 102°06'26", in $NW^1/_4NW^1/_4SW^1/_4$ sec.8, T.149 N., R.89 W., McLean County, Hydrologic Unit 10110101, on right bank 20 ft upstream from Highway 1804 bridge, 0.6 mi south of junction of State Highway 37 and 1804, and 3 mi west and 0.6 mi south of Raub.

DRAINAGE AREA.--220 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,832 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.00	e0.00	e1.2	e0.68	e0.50	e0.51	e36	4.1	1.0	4.3	2.0	0.22
2	e0.00	e0.00	e1.3	e0.63	e0.52	e0.50	e25	4.0	0.96	3.4	1.7	0.18
3	e0.00	e0.00	e1.4	e0.56	e0.53	e0.49	e17	4.2	1.2	2.5	2.4	0.16
4	e0.00	e0.00	e1.3	e0.58	e0.54	e0.48	e11	4.1	1.5	2.5	2.3	0.17
5	e0.00	1.1	e1.4	e0.60	e0.55	e0.47	e13	3.2	2.0	2.2	1.9	0.17
6	e0.00	1.4	e1.5	e0.59	e0.54	e0.46	e14	3.2	1.7	2.1	1.4	0.18
7	e0.00	1.2	e1.6	e0.57	e0.52	e0.45	e14	3.3	1.6	2.1	0.96	0.22
8	e0.00	1.3	e1.6	e0.60	e0.54	e0.44	e13	4.2	1.9	1.8	0.71	0.24
9	e0.00	1.4	e1.6	e0.62	e0.55	e0.44	e13	4.7	25	2.6	0.54	0.19
10	e0.00	1.4	e1.6	e0.61	e0.56	e0.47	e14	9.3	52	3.3	0.45	0.17
11	e0.00	1.5	e1.6	e0.59	e0.57	e0.48	e15	13	45	8.0	0.38	0.15
12	e0.00	1.4	e1.7	e0.57	e0.57	e0.49	16	12	37	13	1.2	0.14
13	e0.00	1.2	e1.8	e0.54	e0.57	e0.50	20	9.0	26	8.0	1.2	0.13
14	e0.00	3.3	e1.8	e0.52	e0.56	e0.51	19	7.1	20	5.1	0.76	0.10
15	e0.00	2.0	e1.7	e0.50	e0.55	e0.50	19	6.0	11	3.6	0.55	0.09
16	e0.00	1.1	e1.7	e0.48	e0.54	e0.49	17	5.1	9.4	2.8	0.34	0.08
17	e0.00	0.66	e1.7	e0.46	e0.54	e0.47	15	3.9	6.7	2.5	0.30	0.06
18	e0.00	0.64	e1.7	e0.47	e0.52	e0.46	13	2.9	7.0	1.8	0.29	0.06
19	e0.00	0.83	e1.7	e0.49	e0.51	e0.45	12	2.5	6.6	1.7	0.24	0.06
20	e0.00	0.85	e1.6	e0.51	e0.54	e0.44	11	2.5	5.8	1.7	0.21	e0.05
21	e0.00	0.75	e1.5	e0.50	e0.58	e0.45	10	2.5	5.2	1.4	0.26	e0.03
22	e0.00	0.68	e1.4	e0.49	e0.62	e0.46	10	2.2	4.5	1.2	0.29	e0.01
23	e0.00	0.81	e1.4	e0.47	e0.60	e0.47	8.3	2.1	5.1	1.3	0.23	e0.00
24	e0.00	1.0	e1.3	e0.46	e0.59	e0.48	7.3	2.3	27	2.0	0.24	e0.00
25	e0.00	1.2	e1.2	e0.46	e0.57	e0.47	6.8	2.2	51	2.8	0.27	e0.00
26	e0.00	e1.3	e1.1	e0.45	e0.56	e0.80	6.5	2.1	40	2.2	0.31	e0.00
27	e0.00	e1.2	e1.0	e0.45	e0.54	e3.0	7.5	1.8	27	1.9	0.30	e0.00
28	e0.00	e1.2	e0.90	e0.44	e0.52	e11	7.1	1.7	16	1.2	0.27	e0.00
29	e0.00	e1.2	e0.83	e0.45	---	e50	6.1	1.6	9.9	2.7	0.25	e0.00
30	e0.00	e1.2	e0.77	e0.46	---	e48	4.6	1.5	6.5	2.3	0.27	e0.00
31	e0.00	---	e0.72	e0.47	---	e41	---	1.2	---	2.7	0.23	---
TOTAL	0.00	31.82	43.62	16.27	15.40	165.63	401.2	129.5	455.56	96.7	22.75	2.86
MEAN	0.000	1.061	1.407	0.525	0.550	5.343	13.37	4.177	15.19	3.119	0.734	0.095
MAX	0.00	3.3	1.8	0.68	0.62	50	36	13	52	13	2.4	0.24
MIN	0.00	0.00	0.72	0.44	0.50	0.44	4.6	1.2	0.96	1.2	0.21	0.00
AC-FT	0.00	63	87	32	31	329	796	257	904	192	45	5.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2002, BY WATER YEAR (WY)

MEAN	1.210	1.821	1.138	0.597	1.233	67.67	21.77	6.497	5.675	2.469	0.955	0.521
MAX	4.15	3.97	2.01	1.81	5.40	279	68.3	21.8	18.3	18.5	5.68	4.49
(WY)	1995	2001	1999	2000	1992	1999	1996	1999	1994	1993	1993	1991
MIN	0.000	0.16	0.051	0.000	0.000	5.34	4.09	0.80	0.040	0.009	0.000	0.000
(WY)	2002	1993	2001	1993	2001	2002	2000	1992	1992	1992	1994	1995

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1991 - 2002	
ANNUAL TOTAL	3368.43		1381.31			
ANNUAL MEAN	9.229		3.784		9.370	
HIGHEST ANNUAL MEAN					29.8	1999
LOWEST ANNUAL MEAN					2.04	1992
HIGHEST DAILY MEAN	310	Mar 17	52	Jun 10	1100	Mar 27 1997
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Jul 27 1991
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Jul 27 1991
MAXIMUM PEAK FLOW			94	Jun 10	a1300	Mar 27 1997
MAXIMUM PEAK STAGE			7.96	Jun 10	b13.26	Mar 13 1996
INSTANTANEOUS LOW FLOW			0.00	Oct 1		
ANNUAL RUNOFF (AC-FT)	6680		2740		6790	
10 PERCENT EXCEEDS	15		11		12	
50 PERCENT EXCEEDS	0.77		0.90		0.90	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a About
b Backwater from ice
e Estimated

06332770 DEEPWATER CREEK AT MOUTH NEAR RAUB, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1991 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
01...	1230	.0	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	1105	1.4	--	--	--	2150	3.0	4.2	--	--	--	--	--
FEB													
05...	1115	.55	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	1215	36	--	--	--	860	-3.0	1.0	--	--	--	--	--
11...	1100	14	7.8	7.8	941	920	5.0	3.0	210	38.0	29.0	15.0	4
MAY													
24...	1045	2.2	--	--	--	2250	1.0	12.5	--	--	--	--	--
JUL													
16...	1135	2.7	8.5	8.5	1820	1860	20.0	23.0	400	58.0	63.0	12.0	6
AUG													
26...	1140	.31	--	--	--	2260	23.0	19.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	120	53	241	7.6	.20	240	24.3	643	595	2.0	240	<1	30
MAY													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
16...	290	60	535	8.8	.40	530	9.91	1350	1280	13.0	60	<1	80
AUG													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
01...	--	--	--	--	--
NOV					
05...	--	--	--	--	--
FEB					
05...	--	--	--	--	--
APR					
01...	--	--	--	--	--
11...	80	<.10	<1	<1	530
MAY					
24...	--	--	--	--	--
JUL					
16...	30	.10	2	<1	950
AUG					
26...	--	--	--	--	--

< Less than

06335500 LITTLE MISSOURI RIVER AT MARMARTH, ND

LOCATION.--Lat 46°17'44", long 103°55'06", in SW$^{1}/_{4}$ sec.30, T.133 N., R.105 W., Slope County, Hydrologic Unit 10110203, on left bank 90 ft downstream from bridge on U.S. Highway 12 in Marmarth and 1.5 mi downstream from Little Beaver Creek.

DRAINAGE AREA.--4,640 mi^{2}, approximately.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS (WATER YEARS).--WSP 896: 1938-39. WSP 1086: 1943-44. WSP 1279: 1943(M), 1945-46, 1948. WSP 1439: 1950 (calendar year figures).

GAGE.--Water-stage recorder. Datum of gage is 2,686.32 ft above National Geodetic Vertical Datum of 1929. Prior to June 23, 1950, various nonrecording gages on former highway bridge at present site and datum. June 23, 1950, to Sept. 2, 1957, nonrecording gage at site 90 ft upstream at present datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Small diversions for irrigation upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to local residents, the greatest known flood prior to 1953 occurred in June 1907 (stage unknown). Other major floods reached stages of about 21.5 ft in March 1913, 19.7 ft in March 1920, and 20.2 ft in May 1929. These stages are not comparable to stages during period of record, owing to construction of levees.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e17	24	e29	e19	e14	e16	e42	35	14	3.9	26	7.1
2	e17	24	e31	e20	e14	e17	e38	34	14	0.21	18	4.8
3	e16	24	e34	e20	e15	e17	e49	34	17	e0.18	12	4.2
4	e15	25	e36	e21	e16	e18	e83	33	15	e0.27	6.6	1.9
5	17	24	e37	e21	e16	e18	e127	32	15	e0.27	4.0	1.6
6	18	24	e37	e22	e17	e17	e195	33	15	e0.19	3.2	0.89
7	19	24	e37	e22	e17	e17	e170	32	13	e0.15	2.0	0.88
8	19	25	e36	e21	e17	e17	e140	38	12	e0.20	1.9	0.72
9	20	24	e36	e21	e18	e16	113	49	52	e0.26	6.7	0.77
10	24	24	e35	e21	e18	e17	110	50	432	e0.27	4.6	0.64
11	25	24	e35	e20	e18	e18	93	52	670	e0.30	2.8	0.53
12	28	25	e34	e20	e19	e18	84	39	195	e0.26	3.2	0.80
13	27	25	e34	e20	e19	e19	79	34	83	e0.18	3.7	0.95
14	27	27	e33	e19	e18	e19	73	29	55	e0.16	1.3	0.98
15	26	28	e32	e18	e17	e19	66	25	41	e0.15	e1.8	1.2
16	26	28	e32	e18	e16	e19	60	25	33	e0.09	e2.5	1.4
17	25	28	e31	e17	e17	e18	58	27	30	e0.03	1.9	1.2
18	24	26	e30	e17	e17	e18	108	24	27	0.03	2.0	1.1
19	24	26	e29	e18	e18	e18	159	20	25	0.03	1.6	3.3
20	24	e24	e29	e18	e18	e17	254	19	57	0.03	1.5	2.8
21	23	e25	e28	e19	e18	e17	253	18	90	0.01	1.3	2.4
22	23	e26	e27	e19	e18	e16	175	15	46	0.00	e1.2	2.0
23	24	e31	e26	e19	e18	e18	154	13	34	0.00	e1.2	2.2
24	26	e30	e25	e18	e17	e20	113	17	35	0.00	e1.1	2.0
25	25	e29	e24	e17	e17	e23	80	15	36	0.00	e1.1	2.6
26	27	e28	e23	e17	e17	e26	64	17	27	0.00	e1.2	3.0
27	27	e26	e22	e16	e17	e33	55	18	18	0.00	e2.0	3.6
28	28	e25	e22	e16	e16	e40	49	17	15	23	e8.5	5.6
29	27	e26	e21	e15	---	e45	45	15	11	201	8.4	6.5
30	26	e27	e20	e14	---	e48	38	15	6.3	69	13	6.2
31	26	---	e19	e14	---	e46	---	15	---	48	7.9	---
TOTAL	720	776	924	577	477	685	3127	839	2133.3	348.17	154.2	73.86
MEAN	23.23	25.87	29.81	18.61	17.04	22.10	104.2	27.06	71.11	11.23	4.974	2.462
MAX	28	31	37	22	19	48	254	52	670	201	26	7.1
MIN	15	24	19	14	14	16	38	13	6.3	0.00	1.1	0.53
AC-FT	1430	1540	1830	1140	946	1360	6200	1660	4230	691	306	147

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	109.0	38.90	17.13	17.70	193.8	929.6	776.4	587.7	657.7	224.3	81.60	69.96
MAX	1489	250	107	260	2208	5079	6691	3840	4705	1917	400	526
(WY)	1972	1999	1952	1973	1943	1978	1952	1975	1944	1993	1993	1941
MIN	0.87	0.37	0.000	0.000	0.000	22.1	10.7	4.75	3.51	0.10	0.16	0.000
(WY)	1959	1956	1956	1939	1939	2002	1981	1980	1961	1980	1988	1955

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002	
ANNUAL TOTAL	123435		10834.53			
ANNUAL MEAN	338.2		29.68		310.3	
HIGHEST ANNUAL MEAN					986	1944
LOWEST ANNUAL MEAN					20.5	1988
HIGHEST DAILY MEAN	5000	Mar 10	670	Jun 11	28600	Apr 5 1944
LOWEST DAILY MEAN	15	Jan 1	0.00	Jul 22	0.00	Dec 18 1938
ANNUAL SEVEN-DAY MINIMUM	17	Sep 30	0.00	Jul 21	0.00	Dec 18 1938
MAXIMUM PEAK FLOW			948	Jun 11	45000	Mar 23 1947
MAXIMUM PEAK STAGE			a3.66	Mar 29	23.40	Mar 31 1952
INSTANTANEOUS LOW FLOW			0.00	Jul 21		
ANNUAL RUNOFF (AC-FT)	244800		21490		224800	
10 PERCENT EXCEEDS	978		49		638	
50 PERCENT EXCEEDS	34		19		33	
90 PERCENT EXCEEDS	20		1.1		1.0	

a Backwater from ice
e Estimated

06335500 LITTLE MISSOURI RIVER AT MARMARTH, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-51, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
04...	1150	15	--	--	--	2080	6.5	9.2	--	--	--	--	--
NOV													
06...	1240	22	--	--	--	2020	9.0	5.2	--	--	--	--	--
DEC													
13...	1335	34	--	--	--	2620	.5	.2	--	--	--	--	--
FEB													
05...	1425	16	--	--	--	2480	1.5	.1	--	--	--	--	--
APR													
09...	1310	112	8.0	8.2	1170	1170	15.5	6.2	160	33.0	19.0	4.60	6
MAY													
16...	1240	24	--	--	--	2000	7.0	9.1	--	--	--	--	--
JUN													
11...	1630	548	--	--	--	890	20.0	16.5	--	--	--	--	--
JUL													
17...	1435	.02	--	--	--	3530	31.0	25.7	--	--	--	--	--
31...	1220	49	8.6	--	1400	1430	25.5	25.2	76	17.0	8.00	9.30	14
AUG													
28...	1135	8.5	--	--	--	1410	23.0	20.3	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	190	71	238	8.7	.20	350	230	762	749	1.0	80	<1	50
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
31...	290	88	303	10.0	.50	420	127	965	937	6.0	170	1	50
AUG													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
04...	--	--	--	--	--
NOV					
06...	--	--	--	--	--
DEC					
13...	--	--	--	--	--
FEB					
05...	--	--	--	--	--
APR					
09...	30	<.10	2	<1	340
MAY					
16...	--	--	--	--	--
JUN					
11...	--	--	--	--	--
JUL					
17...	--	--	--	--	--
31...	40	<.10	8	1	260
AUG					
28...	--	--	--	--	--

< Less than

06336000 LITTLE MISSOURI RIVER AT MEDORA, ND

LOCATION.--Lat 46°55'10", long 103°31'40", in NE$^{1}/_{4}$ sec.27, T.140 N., R.102 W., Billings County, Hydrologic Unit 10110203, on left bank 50 ft upstream from bridge on county highway and 1 mi upstream from Andrews Creek and bridge on I-94.

DRAINAGE AREA.--6,190 mi^{2}, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1903 to October 1908, October to November 1921, March to June and November to December 1922, May 1923 to September 1924, September 1928 to September 1934, October 1945 to September 1975, March 2001 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder on upstream side of highway bridge. Datum of gage is 2,246.75 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 9, 1945, nonrecording gages at several sites within 0.2 mi upstream from present site at various datums. Oct. 9, 1945, to Aug. 22, 1951, nonrecording gage at current location at current datum. Sept. 1951 to Sept. 1975 recording gage 600 ft downstream at current datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

REVISIONS (WATER YEARS).--WSP 546: Drainage area. WSP 1279: 1903-7, 1923-24, 1930-31, 1934(M).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	34	e33	e23	e19	e26	e67	82	15	17	1.4	6.3
2	22	32	e37	e24	e20	e27	e75	75	14	16	6.4	15
3	20	35	e41	e24	e21	e28	e102	78	11	14	42	10
4	21	32	e43	e25	e22	e28	e118	55	14	11	24	7.3
5	21	31	e44	e25	e22	e27	e145	44	17	8.6	15	5.9
6	20	30	e44	e25	e23	e27	e171	40	10	6.3	10	4.7
7	20	30	e42	e25	e24	e27	e234	46	8.8	5.5	6.4	4.0
8	20	29	e41	e25	e24	e26	e336	61	13	6.3	5.6	5.6
9	20	30	e39	e25	e24	e26	e302	80	56	78	5.0	4.8
10	21	29	e38	e24	e25	e26	e243	112	709	85	3.6	3.8
11	20	25	e38	e24	e25	e26	e201	100	878	22	3.3	3.3
12	23	27	e37	e24	e26	e26	177	199	677	11	2.7	3.0
13	24	30	e37	e24	e26	e27	156	109	853	7.6	2.4	2.8
14	24	29	e38	e23	e26	e27	127	82	566	6.4	2.0	2.4
15	24	30	e38	e22	e25	e27	117	69	360	3.9	1.7	2.4
16	27	31	e38	e21	e25	e28	103	59	258	2.7	1.7	2.2
17	30	31	e38	e21	e25	e31	95	51	196	7.9	1.3	2.3
18	29	29	e38	e22	e26	e32	117	44	151	2.9	1.4	2.7
19	30	27	e37	e23	e27	e34	134	36	132	2.0	1.2	2.7
20	31	26	e36	e23	e28	e35	244	25	119	8.8	1.1	2.4
21	31	31	e34	e24	e28	e37	397	23	105	3.8	1.4	2.0
22	30	34	e33	e24	e27	e38	477	26	92	2.5	1.4	2.8
23	30	33	e31	e23	e28	e39	381	23	77	3.4	3.9	3.7
24	33	31	e30	e22	e28	e42	302	25	140	2.3	2.6	3.4
25	32	e32	e28	e22	e27	e46	226	21	139	1.9	2.0	2.5
26	32	e30	e28	e22	e28	e52	191	16	101	1.8	2.7	2.2
27	31	e29	e27	e21	e27	e57	166	12	66	2.0	2.1	1.8
28	31	e28	e26	e21	e26	e62	133	9.5	43	4.9	3.4	1.6
29	31	e30	e25	e20	---	e66	105	8.9	37	2.4	3.1	1.6
30	35	e31	e24	e20	---	e71	89	11	26	2.1	3.0	1.8
31	32	---	e23	e19	---	e69	---	11	---	2.4	1.9	---
TOTAL	818	906	1086	710	702	1140	5731	1633.4	5883.8	352.4	165.7	117.0
MEAN	26.39	30.20	35.03	22.90	25.07	36.77	191.0	52.69	196.1	11.37	5.345	3.900
MAX	35	35	44	25	28	71	477	199	878	85	42	15
MIN	20	25	23	19	19	26	67	8.9	8.8	1.8	1.1	1.6

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2002, BY WATER YEAR (WY)

MEAN	158.8	50.03	20.57	15.54	160.6	1246	1269	774.3	1113	441.4	237.8	148.3
MAX	2226	369	127	213	1075	6831	9847	4077	4692	3541	2521	1314
(WY)	1924	1947	1947	1974	1947	1972	1952	1975	1929	1905	1903	1903
MIN	1.67	1.97	0.023	0.000	0.000	32.8	8.12	3.94	53.5	11.4	0.75	0.29
(WY)	1959	1956	1956	1950	1950	1964	1905	1931	1961	2002	1934	1934

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1903 - 2002	
ANNUAL TOTAL	19245.3			
ANNUAL MEAN	52.73		461.7	
HIGHEST ANNUAL MEAN			1329	1929
LOWEST ANNUAL MEAN			52.7	2002
HIGHEST DAILY MEAN	878	Jun 11	39600	Apr 8 1952
LOWEST DAILY MEAN	1.1	Aug 20	0.00	Feb 1 1932
ANNUAL SEVEN-DAY MINIMUM	1.4	Aug 16	0.00	Jan 21 1933
MAXIMUM PEAK FLOW	1680	Jun 11		
MAXIMUM PEAK STAGE	4.78	Jun 11		
10 PERCENT EXCEEDS	117		1030	
50 PERCENT EXCEEDS	26		51	
90 PERCENT EXCEEDS	2.7		1.0	

e Estimated

06336000 LITTLE MISSOURI RIVER AT MEDORA, ND

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 2001 to present.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1110	21	--	--	--	2370	5.0	6.5	--	--	--	--	--
NOV													
07...	1200	28	--	--	--	2320	4.5	5.5	--	--	--	--	--
DEC													
11...	1220	37	--	--	--	2440	-4.0	.2	--	--	--	--	--
APR													
12...	1045	176	7.7	--	1380	1460	8.0	7.8	190	37.0	23.0	6.70	7
MAY													
17...	1410	54	--	--	--	2060	16.5	16.5	--	--	--	--	--
21...	1330	25	8.1	--	--	2560	19.0	13.5	--	--	--	--	--
JUN													
11...	1240	819	--	--	--	780	18.5	13.6	--	--	--	--	--
13...	1330	840	--	--	--	1050	20.5	17.5	--	--	--	--	--
JUL													
02...	1340	16	--	--	--	2650	28.0	26.5	--	--	--	--	--
25...	1420	1.9	8.2	--e	3210	3340	31.0	30.5	400	68.0	55.0	19.0	14
AUG													
22...	1430	1.5	8.0	--	--	3380	26.0	23.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	230	72	259	9.7	.30	420	430	905	883	1.0	100	<1	40
MAY													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	660	77	427	22.0	.40	1300	12.2	2440	2380	2.0	80	<1	90
AUG													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--

06336000 LITTLE MISSOURI RIVER AT MEDORA, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	HYDRO-CARBONS PET.WAT FREON CHR.IR. RECOV. (MG/L) (45501)
OCT						
11...	--	--	--	--	--	--
NOV						
07...	--	--	--	--	--	--
DEC						
11...	--	--	--	--	--	--
APR						
12...	10	<.10	4	<1	390	--
MAY						
17...	--	--	--	--	--	--
21...	--	--	--	--	--	2
JUN						
11...	--	--	--	--	--	--
13...	--	--	--	--	--	3
JUL						
02...	--	--	--	--	--	--
25...	40	<.10	1	1	970	2
AUG						
22...	--	--	--	--	--	<2

< Less than
e Required equipment not functional/available

06336600 BEAVER CREEK NEAR TROTTERS, ND

LOCATION.--Lat 47°09'47", long 103°59'32", in $SW^1/_4SW^1/_4NE^1/_4$ sec.33, T.143 N., R.105 W., Golden Valley County, Hydrologic Unit 10110204, on left bank 100 ft upstream from bridge on county road, 2.4 mi east of Montana-North Dakota State line, 13 mi southwest of Trotters, 17 mi north of Beach, 20 mi upstream from Elk Creek, and 27 mi above mouth.

DRAINAGE AREA.--616 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to current year (seasonal records only since 1984).

REVISED RECORDS.--1982: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,371.96 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,120 ft^3/s, June 9, gage height, 12.29 ft; minimum daily discharge, no flow, Sept. 24-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	e1.4	e2.3	e20	7.0	2.6	15	2.7	0.10
2	---	---	---	---	e1.5	e1.9	e12	6.7	2.5	14	1.9	0.10
3	---	---	---	---	e1.7	e1.9	e10	6.6	2.7	13	1.2	0.14
4	---	---	---	---	e1.7	e2.0	e13	6.5	2.7	12	1.1	0.15
5	---	---	---	---	e1.8	e2.0	e14	6.5	2.8	12	0.90	0.13
6	---	---	---	---	e1.7	e2.1	19	6.5	2.6	10	1.0	0.13
7	---	---	---	---	e1.6	e2.1	17	6.6	2.1	11	0.97	0.15
8	---	---	---	---	e1.7	e2.2	17	7.0	1.9	15	0.93	0.17
9	---	---	---	---	e1.8	e2.1	19	7.7	439	70	0.74	0.19
10	---	---	---	---	e1.6	e2.3	14	8.1	293	84	0.63	0.20
11	---	---	---	---	e1.5	e2.5	11	7.7	132	36	0.44	0.20
12	---	---	---	---	e1.7	e2.7	11	7.4	87	23	0.31	0.15
13	---	---	---	---	e1.5	e4.2	10	7.1	70	16	0.28	0.13
14	---	---	---	---	e1.6	e5.3	9.5	6.5	62	12	0.25	0.30
15	---	---	---	---	e1.5	e7.0	9.6	6.1	56	9.2	0.19	0.40
16	---	---	---	---	e1.5	e8.3	9.4	5.5	49	7.7	0.14	0.18
17	---	---	---	---	e1.6	e7.5	9.1	5.3	44	25	0.08	0.10
18	---	---	---	---	e1.6	e5.9	9.8	5.1	39	24	0.24	0.13
19	---	---	---	---	e1.5	e3.9	10	4.6	37	15	0.31	0.14
20	---	---	---	---	e1.6	e3.2	9.7	4.3	33	9.2	0.27	0.04
21	---	---	---	---	e1.7	e4.7	9.7	4.0	30	7.0	0.23	0.08
22	---	---	---	---	e1.9	e5.9	9.1	3.8	29	5.8	0.16	0.09
23	---	---	---	---	e2.2	e4.4	8.9	3.8	28	5.1	0.13	0.08
24	---	---	---	---	e2.7	e3.4	8.6	3.9	33	4.2	0.09	0.0
25	---	---	---	---	e3.0	e2.9	7.9	3.6	29	3.7	0.06	0.00
26	---	---	---	---	e3.0	e2.5	7.6	3.7	24	3.4	0.12	0.00
27	---	---	---	---	e2.8	e15	7.3	3.6	21	3.1	0.17	0.00
28	---	---	---	---	e2.5	e61	7.3	3.4	19	3.1	0.13	0.00
29	---	---	---	---	---	e50	7.3	3.0	17	2.6	0.11	0.0
30	---	---	---	---	---	e38	7.2	2.7	17	2.5	0.13	0.0
31	---	---	---	---	---	e27	---	2.7	---	2.6	0.11	---
TOTAL	---	---	---	---	51.9	286.2	335.0	167.0	1607.9	476.2	16.02	3.48
MEAN	---	---	---	---	1.854	9.232	11.17	5.387	53.60	15.36	0.517	0.116
MAX	---	---	---	---	3.0	61	20	8.1	439	84	2.7	0.40
MIN	---	---	---	---	1.4	1.9	7.2	2.7	1.9	2.5	0.06	0.00
AC-FT	---	---	---	---	103	568	664	331	3190	945	32	6.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002, BY WATER YEAR (WY)

MEAN	1.098	2.624	2.586	4.398	28.71	112.6	48.03	15.92	18.89	10.76	2.177	0.720
MAX	3.29	6.34	5.13	14.7	141	609	406	50.2	125	64.2	18.4	4.72
(WY)	1983	1983	1979	1983	1983	1978	1979	1999	1982	1997	1993	1986
MIN	0.006	0.010	0.032	0.000	0.000	1.21	1.11	1.05	0.12	0.000	0.000	0.000
(WY)	1982	1982	1982	1982	1989	1991	1991	1981	1992	1988	1985	1981

SUMMARY STATISTICS	WATER YEARS 1978 - 2002		
ANNUAL MEAN	a33.28		
HIGHEST ANNUAL MEAN	a79.7		1978
LOWEST ANNUAL MEAN	a2.77		1981
HIGHEST DAILY MEAN	2500	Mar 22	1978
LOWEST DAILY MEAN	0.00	Aug 1	1981
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 10	1981
MAXIMUM PEAK FLOW	2720	Mar 29	1978
MAXIMUM PEAK STAGE	b19.27	Mar 22	1978
ANNUAL RUNOFF (AC-FT)	a24110		
10 PERCENT EXCEEDS	51		
50 PERCENT EXCEEDS	2.8		
90 PERCENT EXCEEDS	0.03		

a Based on complete water years only (1978-83)
b Backwater from ice
e Estimated

06336600 BEAVER CREEK NEAR TROTTERS, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAR													
05...	1450	2.1	--	--	--	2890	-12.0	.2	--	--	--	--	--
APR													
10...	1130	15	7.8	7.8	1410	1420	4.5	.5	320	56.0	44.0	9.70	4
MAY													
17...	1120	5.4	--	--	--	2430	10.0	10.5	--	--	--	--	--
JUN													
11...	1240	133	--	--	--	--	16.5	14.5	--	--	--	--	--
JUL													
30...	1220	2.0	7.6	--e	1990	2050	26.0	23.2	490	69.0	78.0	15.0	6
AUG													
29...	1105	.15	--	--	--	2470	24.0	18.7	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAR													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	180	54	227	3.6	.20	510	38.4	968	941	<1.0	90	<1	30
MAY													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
30...	290	55	330	14.0	.30	810	8.18	1500	1470	1.0	90	1	50
AUG													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAR					
05...	--	--	--	--	--
APR					
10...	40	<.10	<1	<1	740
MAY					
17...	--	--	--	--	--
JUN					
11...	--	--	--	--	--
JUL					
30...	70	<.10	2	2	980
AUG					
29...	--	--	--	--	--

< Less than
e Required equipment not functional/available

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND

LOCATION.--Lat 47°35'45", long 103°15'45", in $SE^1/_4SE^1/_4NW^1/_4$ sec.35, T.148 N., R.99 W., McKenzie County, Hydrologic Unit 10110205, 0.8 mi upstream from U.S. Highway 85 crossing, 17 mi upstream from Cherry Creek, and 17.5 mi south of Watford City.

DRAINAGE AREA.--8,310 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1934 to current year.

REVISED RECORDS (WATER YEARS).--WSP 926: 1935. WSP 1270: 1943.

GAGE.--Water-stage recorder. Datum of gage is 1,929.03 ft above National Geodetic Vertical Datum of 1929. From Oct. 2, 1959, to June 17, 1963, and Nov. 28, 1964, to Sept. 30, 1990, water-stage recorder at site at U.S. Highway 85 crossing, 0.8 mi downstream. From June 18, 1963, to Nov. 28, 1964, at site 0.6 mi downstream at present datum. See WSP 1729 or 1917 for history of changes prior to Oct. 2, 1959.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	35	e32	e10	e1.2	e0.59	e530	159	30	95	39	15
2	38	34	e33	e8.1	e1.1	e0.43	e450	145	37	85	34	12
3	36	35	e36	e7.4	e1.00	e0.51	e410	128	40	78	29	8.2
4	36	35	e38	e4.6	e0.88	e0.74	e420	114	39	75	26	9.2
5	35	35	e38	e3.3	e0.57	e1.7	e380	102	34	69	27	8.9
6	36	35	e38	e2.5	e0.39	e1.7	e350	109	28	64	28	8.4
7	36	37	e38	e2.2	e0.76	e1.6	e360	110	25	61	27	8.0
8	35	38	e37	e2.1	e0.88	e1.6	e420	125	24	76	33	25
9	35	36	e37	e2.2	e1.1	e1.8	e450	204	165	279	64	23
10	35	36	e36	e2.3	e1.2	e2.0	e440	372	1040	177	50	20
11	35	35	e35	e2.1	e1.4	e4.5	e420	372	1530	92	40	27
12	36	33	e35	e2.0	e1.6	e9.7	e380	276	1340	90	41	16
13	35	33	e34	e2.3	e1.5	e25	e330	181	854	124	34	10
14	33	33	e34	e2.3	e1.7	e38	e310	180	643	108	30	4.9
15	32	35	e33	e2.2	e1.9	e67	e280	186	918	77	24	4.3
16	33	36	e33	e2.2	e1.2	e155	257	133	591	65	28	4.1
17	32	36	e32	e2.1	e1.4	e205	225	112	380	86	35	2.0
18	33	35	e31	e1.9	e1.8	e220	235	95	274	364	26	4.1
19	33	35	e30	e1.6	e2.0	e215	315	83	224	371	18	8.3
20	33	34	e28	e1.9	e2.3	e200	413	76	180	191	16	1.9
21	34	33	e27	e2.0	e2.0	e190	334	69	149	312	26	1.2
22	36	37	e25	e1.9	e1.9	e175	280	57	391	183	32	1.7
23	37	37	e24	e1.9	e1.6	e170	315	53	1490	83	19	1.6
24	38	37	e23	e2.0	e1.5	e165	401	91	520	123	24	1.7
25	38	36	e22	e2.3	e1.4	e175	368	89	249	377	17	1.8
26	39	33	e21	e2.2	e1.1	e250	356	73	179	139	10	1.6
27	38	e30	e19	e2.4	e1.1	e280	288	55	148	75	13	2.2
28	37	e29	e19	e2.3	e0.66	e330	244	52	155	52	12	2.3
29	38	e29	e16	e1.8	---	e410	208	43	133	42	13	2.5
30	37	e30	e13	e1.7	---	e490	180	36	110	45	17	1.4
31	37	---	e12	e1.4	---	e550	---	32	---	50	14	---
TOTAL	1106	1032	909	87.2	37.14	4336.87	10349	3912	11920	4108	846	238.3
MEAN	35.68	34.40	29.32	2.813	1.326	139.9	345.0	126.2	397.3	132.5	27.29	7.943
MAX	40	38	38	10	2.3	550	530	372	1530	377	64	27
MIN	32	29	12	1.4	0.39	0.43	180	32	24	42	10	1.2
AC-FT	2190	2050	1800	173	74	8600	20530	7760	23640	8150	1680	473

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2002, BY WATER YEAR (WY)

MEAN	162.6	64.13	18.01	11.77	263.0	1856	1449	744.8	1061	515.9	220.7	163.2
MAX	2364	509	138	121	3023	10220	12170	4302	5646	2759	1405	1174
(WY)	1972	2001	1947	1983	1943	1972	1952	1975	1944	1993	1937	1941
MIN	0.83	0.33	0.000	0.000	0.000	22.2	29.5	18.0	14.8	9.26	0.023	1.38
(WY)	1989	1989	1989	1935	1935	1964	1981	1981	1988	1980	1988	1936

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1935 - 2002	
ANNUAL TOTAL	263111		38881.51			
ANNUAL MEAN	720.9		106.5		544.8	
HIGHEST ANNUAL MEAN					1637	1971
LOWEST ANNUAL MEAN					38.0	1988
HIGHEST DAILY MEAN	11000	Mar 13	1530	Jun 11	55000	Mar 25 1947
LOWEST DAILY MEAN	12	Dec 31	0.39	Feb 6	0.00	Jan 1 1935
ANNUAL SEVEN-DAY MINIMUM	17	Dec 25	0.73	Feb 26	0.00	Jan 1 1935
MAXIMUM PEAK FLOW			a2360	Jun 23	110000	Mar 25 1947
MAXIMUM PEAK STAGE			b5.79	Mar 29	24.00	Mar 25 1947
ANNUAL RUNOFF (AC-FT)	521900		77120		394700	
10 PERCENT EXCEEDS	2260		332		1190	
50 PERCENT EXCEEDS	95		35		74	
90 PERCENT EXCEEDS	29		1.7		0.51	

a Gage height, 4.91 ft
b Backwater from ice
e Estimated

06337000 LITTLE MISSOURI RIVER NEAR WATFORD CITY, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1200	37	--	--	--	2050	10.5	11.5	--	--	--	--	--
NOV													
20...	1025	33	--	--	--	2390	-3.0	5.0	--	--	--	--	--
JAN													
09...	1050	2.3	--	--	--	3110	3.0	1.0	--	--	--	--	--
APR													
17...	1145	230	8.0	8.3	1500	1490	5.0	5.0	220	47.0	25.0	8.30	7
MAY													
21...	1115	69	8.4	--	--	2280	10.0	12.0	--	--	--	--	--
JUN													
18...	1530	262	7.8	--	--	1560	25.0	16.0	--	--	--	--	--
JUL													
23...	1130	83	7.9	--	1370	1330	20.0	23.0	180	45.0	17.0	12.0	7
AUG													
19...	1140	18	7.9	--	--	2210	20.0	16.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	250	70	272	8.7	.30	500	640	1030	1000	1.0	140	<1	40
MAY													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
23...	210	70	178	7.2	.40	510	210	939	909	2.0	80	1	30
AUG													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	HYDRO-CARBONS PET.WAT FREON CHR.IR. RECOV. (MG/L) (45501)
OCT						
03...	--	--	--	--	--	--
NOV						
20...	--	--	--	--	--	--
JAN						
09...	--	--	--	--	--	--
APR						
17...	20	<.10	2	<1	480	--
MAY						
21...	--	--	--	--	--	3
JUN						
18...	--	--	--	--	--	4
JUL						
23...	10	<.10	6	1	410	6
AUG						
19...	--	--	--	--	--	<2

< Less than

06338000 LAKE SAKAKAWEA NEAR RIVERDALE, ND

LOCATION.--Lat 47°30'10", long 101°25'50", in S$^{1}/_{2}$ sec.31, T.147 N., R.84 W., Mercer County, Hydrologic Unit 10110101, in control structure of Garrison Dam, 2.5 mi west of Riverdale, 14 mi upstream from Knife River, and at mile 1,389.9.

DRAINAGE AREA.--181,400 mi^{2}, approximately.

MONTHEND-ELEVATION AND CONTENTS RECORDS

PERIOD OF RECORD.--October 1953 to current year. Prior to October 1966, published as Garrison Reservoir near Riverdale.

REVISED RECORDS.--WSP 1559: 1957(M).

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

REMARKS.--Reservoir is formed by earth-fill dam; storage began in November 1953. Maximum capacity, 24,200,000 acre-ft below elevation 1,854.0 ft, top of 29-ft gates. Normal maximum, 22,700,000 acre-ft below elevation 1,850.0 ft, of which about 4,300,000 acre-ft is designated for flood control. Elevation of crest of spillway, 1,825.0 ft, surmounted by radial gates. Inactive storage, 5,000,000 acre-ft below elevation 1,775.0 ft. Dead storage, zero at elevation 1,672.0 ft. Snake Creek arm of the reservoir has connecting gate to main reservoir, with sill at elevation 1,810 ft. Figures herein represent total contents.

COOPERATION.--Records furnished by the U.S. Army Corps of Engineers. Elevations are observed elevations at midnight on the last day of each month. Contents are computed based on reservoir inflow, reservoir outflow, evaporation, and rainfall; and are adjusted for wind effect.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 24,368,000 acre-ft, July 25, 1975, elevation, 1,854.6 ft; minimum since first reaching normal maximum level in July of 1969, 12,155,000 acre-ft, May 10, 1991, adjusted for wind effect; minimum elevation, 1,815.0 ft, May 14, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,441,000 acre-ft, July 10, adjusted for wind effect, elevation, 1,831.9 ft, July 7; minimum contents, 15,075,000 acre-ft, Mar. 29, elevation, 1,826.9 ft, Mar. 31.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,831.8	16,409,000	--
Oct. 31	1,831.1	16,201,000	-208,000
Nov. 30	1,830.5	16,039,000	-162,000
Dec. 31	1,829.2	15,696,000	-343,000
CAL YR 2001	--	--	+53,000
Jan. 31	1,828.3	15,419,000	-277,000
Feb. 28	1,827.6	15,243,000	-176,000
Mar. 31	1,826.9	15,076,000	-167,000
Apr. 30	1,827.5	15,245,000	+169,000
May 31	1,828.3	15,450,000	+205,000
June 30	1,831.4	16,313,000	+863,000
July 31	1,831.4	16,236,000	-77,000
Aug. 31	1,829.2	15,681,000	-555,000
Sept. 30	1,827.5	15,239,000	-442,000
WTR YR 2002	--	--	-1,170,000

06338490 MISSOURI RIVER AT GARRISON DAM, ND

LOCATION.--Lat 47°30'08", long 101°25'50", in S$^{1}/_{2}$ sec.31, T.147 N., R.84 W., Mercer County, Hydrologic Unit 10130101, in control structure of Garrison Dam, 2.5 mi west of Riverdale, 14 mi upstream from Knife River, and at mile 1,389.9.

DRAINAGE AREA.--181,400 mi^{2}, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Flow meter and gate readings.

REMARKS.--Records good. Many diversions above station. Flow regulated by Garrison Dam. Prior to October 1969 records were obtained at a site 9.1 mi downstream. Discharges at the downstream site were generally about 7 percent greater than those furnished by the U.S. Army Corps of Engineers for the present site.

COOPERATION.--Records furnished by the U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10100	10000	13000	13000	13000	13400	11300	10900	21100	20800	21100	21400
2	10100	10000	13000	13000	13500	13000	11400	10800	21300	20500	20700	21300
3	10000	9900	12700	13000	13200	13000	11700	11200	21200	20900	21000	20700
4	10100	10200	12600	13000	12900	13500	11100	10700	20800	20800	20900	20900
5	10300	10300	12800	13100	13300	13700	11000	10700	21200	20700	21400	20800
6	10000	10200	12600	13100	13100	12900	11000	11200	21100	20600	21200	20900
7	10400	10200	13000	12900	13300	13200	11000	11600	20700	20900	21300	20900
8	10300	10100	12900	13300	13200	13300	10700	11200	21000	20900	21200	21300
9	10100	10200	13000	13400	13100	12900	10500	11500	20500	20400	21100	20900
10	10500	10100	13000	13000	13100	12900	10400	11700	20700	20500	20900	20700
11	10000	10000	13000	12900	13400	12900	10400	15900	20800	20600	21200	20400
12	10200	10000	12800	13100	13300	12600	10700	14700	20800	20800	21000	20900
13	10100	10200	12900	12500	12900	12700	10300	12000	20900	20800	21200	21000
14	10300	10200	12900	13000	12900	12300	10300	11300	20800	21000	21200	20600
15	10100	10100	13100	13200	13100	12300	10400	10500	20900	21100	21300	18700
16	10300	10400	13100	13000	13100	12200	10300	10500	20800	20900	21100	16500
17	10100	10300	12800	13400	13400	12100	10500	10400	20900	20800	21200	14000
18	10200	10200	12800	12700	13200	12200	10400	10200	21000	20900	21000	13900
19	10000	10500	12700	13000	13100	12400	10300	10100	20700	20900	20800	13800
20	10100	10200	12800	13300	13000	12100	10700	10400	20900	21200	21100	14100
21	10100	10100	12900	13100	13200	12900	10300	10300	21000	20300	21300	14100
22	10200	10700	13200	13100	13300	12200	10500	10300	21000	20800	20200	14200
23	10200	10100	13300	13000	13000	12200	10700	10100	20900	20500	21300	14000
24	10300	10400	12800	12900	13100	12200	10400	10100	21000	20900	21300	14500
25	10500	10600	13000	13200	13600	12500	11900	11700	20700	20900	20900	14200
26	10300	12200	13000	13100	13600	12200	11400	15000	21000	20900	21400	14400
27	10100	12400	13000	13200	13900	11900	11300	17800	20700	20900	21600	14000
28	10400	12500	12700	13000	13600	11500	11200	20600	20900	21000	21200	14100
29	10100	12800	12800	13300	---	11400	11000	21100	20700	21000	21600	14200
30	10800	12700	12700	13100	---	11400	10700	21000	20900	21100	21700	14200
31	9900	---	12900	13200	---	11200	---	21100	---	20600	21200	---
TOTAL	316200	317800	399800	405100	370400	387200	323800	396600	626900	644900	655600	525600
MEAN	10200	10590	12900	13070	13230	12490	10790	12790	20900	20800	21150	17520
MAX	10800	12800	13300	13400	13900	13700	11900	21100	21300	21200	21700	21400
MIN	9900	9900	12600	12500	12900	11200	10300	10100	20500	20300	20200	13800
AC-FT	627200	630400	793000	803500	734700	768000	642300	786700	1243000	1279000	1300000	1043000
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2002, BY WATER YEAR (WY)												
MEAN	19660	20840	20840	23540	24710	19990	19370	22010	24150	25480	24860	21110
MAX	49450	42350	29530	30500	31500	28210	37500	38490	42430	61800	54130	46570
(WY)	1998	1998	1970	1979	1976	1983	1972	1972	1997	1975	1975	1997
MIN	9945	10110	12900	13070	13230	10370	10280	10560	11080	13220	13960	10990
(WY)	1994	1993	2002	2002	2002	1993	1993	1986	1995	1995	2001	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1970 - 2002	
ANNUAL TOTAL	4863700		5369900			
ANNUAL MEAN	13330		14710		22200	
HIGHEST ANNUAL MEAN					33000	1975
LOWEST ANNUAL MEAN					13710	1993
HIGHEST DAILY MEAN	19400	Jan 24	21700	Aug 30	65200	Jul 25 1975
LOWEST DAILY MEAN	9900	Oct 31	9900	Oct 31	4100	Mar 25 1997
ANNUAL SEVEN-DAY MINIMUM	10100	Oct 31	10100	Oct 31	7960	Mar 22 1997
MAXIMUM PEAK FLOW			21700	Aug 30		
INSTANTANEOUS LOW FLOW			9900	Oct 31		
ANNUAL RUNOFF (AC-FT)	9647000		10650000		16090000	
10 PERCENT EXCEEDS	17300		21000		31900	
50 PERCENT EXCEEDS	13100		13000		20600	
90 PERCENT EXCEEDS	10200		10200		12800	

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued
(National Stream-Quality Accounting Network Station)

WATER-QUALITY RECORDS

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

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	UV ABSORB-ANCE 254 NM, WTR FLT (UNITS /CM) (50624)	UV ABSORB-ANCE 280 NM, WTR FLT (UNITS /CM) (61726)
NOV													
19...	1030	10000	720	108	11.9	7.3	--	627	652	4.0	8.4	.062	.039
FEB													
20...	1130	14000	--	--	8.8	8.1	8.2	651	670	5.0	.8	.070	.048
MAR													
27...	1030	12200	710	94	11.6	8.6	8.3	663	637	8.0	3.5	.072	.049
APR													
23...	1030	10200	713	109	14.0	8.1	8.3	630	678	9.5	2.3	.071	.048
MAY													
20...	1100	10000	722	112	13.8	7.8	8.2	621	665	12.0	4.3	.066	.043
AUG													
13...	1000	21000	722	87	8.4	8.0	8.2	638	678	20.1	14.2	.068	.046

Date	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ALKA-LINITY WAT.DIS FET LAB CACO3 (MG/L) (29801)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
NOV													
19...	210	51.0	20.9	3.85	2	53.2	35	175	172	210	0	8.91	.6
FEB													
20...	210	50.5	20.4	3.96	2	56.5	36	171	161	196	0	9.40	.6
MAR													
27...	210	49.5	20.2	3.88	2	55.9	36	170	165	201	0	9.05	.6
APR													
23...	210	49.3	20.4	3.78	2	58.2	37	171	166	203	0	8.20	.6
MAY													
20...	210	51.4	20.4	3.73	2	56.5	36	165	160	181	7	8.92	.6
AUG													
13...	200	49.5	19.6	4.20	2	57.8	37	168	157	190	0	9.30	.5

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)
NOV													
19...	6.35	153	.17	.18	E.013	<.002	--	.027	.21	.20	<.004	<.007	.005
FEB													
20...	6.29	159	.16	.18	E.010	.003	.03	.038	.22	.20	<.004	<.007	.005
MAR													
27...	6.39	160	.18	.22	E.010	E.002	--	.052	.28	.24	<.004	<.007	<.004
APR													
23...	6.29	161	.20	.18	<.015	E.002	--	.059	.24	.26	<.004	<.007	.005
MAY													
20...	6.41	158	.13	.18	<.015	<.002	--	.048	.23	.18	E.004	<.007	.005
AUG													
13...	5.68	161	.21	.20	<.015	E.002	--	.067	.27	.27	.005	<.007	.006

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued
(National Stream-Quality Accounting Network Station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC PARTIC-ULATE TOTAL (MG/L AS C) (00689)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV													
19...	3.0	.2	11100	410	402	5.0	1.2	1.7	99	E5	43.4	.6	467
FEB													
20...	3.3	<.1	15800	418	404	3.8	.7	1.9	113	<10	44.2	.5	483
MAR													
27...	3.7	.2	14000	425	406	5.9	.9	2.1	119	<10	44.3	1.1	469
APR													
23...	3.0	.2	11700	425	409	3.4	1.0	1.8	129	<10	44.8	<.3	481
MAY													
20...	3.1	.2	11500	424	403	1.1	1.6	2.0	121	<10	41.3	.9	481
AUG													
13...	2.9	.2	24100	425	403	3.4	1.3	2.1	120	<10	42.2	1.0	503

Date	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)
NOV													
19...	1.0	<.004	<.002	<.005	E.005	<.050	<.010	<.002	<.041	<.020	<.005	<.018	<.003
FEB													
20...	.9	<.006	<.004	<.005	E.005n	<.050	<.010	<.002	<.041	<.020	<.005	<.018	<.003
MAR													
27...	.9	<.006	<.004	<.005	E.006n	<.050	<.010	<.002	<.041	<.020	<.005	<.018	<.003
APR													
23...	1.7	<.006	<.004	<.005	E.007n	<.050	<.010	<.002	<.041	<.020	<.005	<.018	<.003
MAY													
20...	1.4	<.006	<.004	<.005	E.007n	<.050	<.010	<.002	<.041	<.020	<.005	<.018	<.003
AUG													
13...	2.1	<.006	<.004	<.005	.008	<.050	<.010	<.002	<.041	<.020	<.005	<.018	<.003

Date	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)
NOV													
19...	<.006	<.005	<.005	<.002	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
FEB													
20...	<.006	<.005	<.005	<.006	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
MAR													
27...	<.006	<.005	<.005	<.006	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
APR													
23...	<.006	<.005	<.005	<.006	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
MAY													
20...	E.002	<.005	<.005	<.006	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006
AUG													
13...	E.002	<.005	<.005	<.006	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006

Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)
NOV													
19...	E.001	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.004	<.010	<.011
FEB													
20...	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.004	<.010	<.011
MAR													
27...	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.004	<.010	<.011
APR													
23...	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.004	<.010	<.011
MAY													
20...	E.002n	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.004	<.010	<.011
AUG													
13...	<.013	<.006	<.002	<.007	<.003	<.010	<.004	<.022	<.006	<.011	<.004	<.010	<.011

06338490 MISSOURI RIVER AT GARRISON DAM, ND--Continued
(National Stream-Quality Accounting Network Station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	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)
NOV											
19...	<.02	<.011	<.02	<.034	<.02	<.005	<.002	<.009	2.0	54.0	96
FEB											
20...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	1.0	37.8	71
MAR											
27...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	1.0	32.9	100
APR											
23...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	.0	.0	100
MAY											
20...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	1.0	27.0	94
AUG											
13...	<.02	<.005	<.02	<.034	<.02	<.005	<.002	<.009	2.0	113	98

Date	Time	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)
NOV						
19...	1011	150	653	7.3	8.4	11.5
19...	1012	300	652	7.3	8.4	11.9
19...	1013	450	654	7.3	8.4	12.0
FEB						
20...	1142	150	669	8.1	.8	7.7
20...	1144	300	670	8.1	.9	8.8
20...	1146	450	671	8.1	.9	9.2
MAR						
27...	1041	150	639	8.4	3.0	11.6
27...	1042	300	637	8.6	4.0	--
27...	1043	450	634	8.4	3.0	--
APR						
23...	1041	150	673	8.1	2.3	14.0
23...	1042	300	677	7.8	2.3	14.0
23...	1043	450	678	8.1	2.3	14.0
MAY						
20...	1111	150	670	7.7	4.3	13.5
20...	1112	300	665	7.8	4.3	13.8
20...	1113	450	670	7.7	4.3	13.1
AUG						
13...	1011	150	678	8.0	14.2	8.4
13...	1012	300	678	8.0	14.3	8.7
13...	1013	450	678	8.0	14.2	8.6

< Less than
E Estimated value
n Below the non-detection value

06339010 MISSOURI RIVER ABOVE STANTON, ND

LOCATION.--Lat 47°21'45", long 101°21'25", SE$^1/_4$NE$^1/_4$SE$^1/_4$ sec.22, T.145 N., R.84 W., McLean County, Hydrologic Unit 10130101, on left bank 9 mi south of Riverdale and at mile 1,379.

DRAINAGE AREA.--181,400 mi^2, approximately.

GAGE-HEIGHT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated completely by releases from Garrison Dam (station 06338490) 13 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 73.34 ft, Jan. 13, 2000; backwater from ice, may have been higher during subsequent period of missing winter record; minimum daily recorded, 62.07 ft, Sept. 18, 1991.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63.27	---	63.72	---	---	63.88	63.36	---	---	---	65.29	65.30
2	63.30	---	63.75	---	---	63.86	63.40	---	---	---	65.16	65.24
3	63.30	---	63.75	---	---	63.89	63.50	---	---	---	65.26	65.23
4	63.26	---	63.94	---	---	63.98	63.35	---	---	65.39	65.21	65.27
5	63.29	---	63.80	---	---	63.94	63.33	---	---	65.36	65.33	65.23
6	63.34	---	63.86	---	---	---	63.49	---	---	65.30	65.24	65.22
7	63.28	---	63.91	---	---	64.04	63.39	---	---	65.41	65.39	65.27
8	63.44	---	63.84	---	---	63.99	63.40	---	---	65.37	65.36	65.40
9	63.28	---	63.91	---	63.90	63.98	64.35	---	---	65.35	65.34	65.30
10	63.27	---	63.94	---	63.71	64.07	64.13	---	---	65.32	65.33	65.29
11	---	---	63.94	---	63.76	64.03	63.67	---	---	65.23	65.25	65.29
12	---	---	63.81	63.87	63.80	64.04	63.59	---	---	65.40	65.19	65.23
13	---	---	63.88	63.79	64.01	63.99	63.38	---	---	65.30	65.28	65.36
14	---	---	---	63.74	63.82	63.98	63.39	---	---	65.28	65.23	65.29
15	---	63.21	---	63.74	63.89	63.91	63.39	---	---	65.37	65.32	65.04
16	---	63.24	---	63.85	63.91	63.90	63.30	---	---	65.25	65.27	64.57
17	---	63.29	---	63.92	63.87	63.97	63.36	---	---	65.42	65.28	63.95
18	---	63.23	---	63.86	64.00	64.00	63.29	---	---	65.35	65.28	64.08
19	---	63.30	---	63.94	63.99	63.85	63.34	---	---	65.41	65.18	63.85
20	---	63.22	---	63.81	63.91	63.91	63.25	---	---	65.42	65.28	63.98
21	---	63.22	---	63.89	63.85	64.00	---	---	---	65.37	65.46	64.05
22	---	63.33	---	63.98	63.92	63.82	---	---	---	65.23	65.12	63.99
23	---	63.16	---	63.97	63.86	63.88	---	---	---	65.27	65.33	63.91
24	---	63.24	---	63.86	63.90	---	---	---	---	65.27	65.47	64.04
25	---	63.30	---	63.81	63.90	63.59	---	---	---	65.23	65.37	63.96
26	---	63.49	---	---	63.89	63.42	---	---	---	65.25	65.50	64.04
27	---	63.66	---	---	63.99	63.29	---	---	---	65.36	65.43	63.97
28	---	63.69	---	---	63.81	63.53	---	---	---	65.21	65.16	63.99
29	---	63.73	---	---	---	63.34	---	---	---	65.26	65.48	64.07
30	---	63.87	---	---	---	63.53	---	---	---	65.26	65.38	63.96
31	---	---	---	---	---	63.49	---	---	---	65.29	65.36	---
MEAN	---	---	---	---	---	---	---	---	---	---	65.31	64.65
MAX	---	---	---	---	---	---	---	---	---	---	65.50	65.40
MIN	---	---	---	---	---	---	---	---	---	---	65.12	63.85

06339100 KNIFE RIVER AT MANNING, ND

LOCATION.--Lat 47°14'10", long 102°46'10", in $SE^{1}/_{4}NW^{1}/_{4}$ sec.6, T.143 N., R.95 W., Dunn County, Hydrologic Unit 10130201, on left bank 50 ft downstream from bridge on State Highway 22 and 0.4 mi north of Manning.

DRAINAGE AREA.--205 mi^2, approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 2,156.55 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.40	1.6	e1.8	e1.6	e1.3	e1.8	e30	3.7	1.3	3.6	2.6	1.1
2	e0.35	1.5	e1.8	e1.5	e1.3	e1.7	e25	3.4	1.7	2.8	2.3	1.0
3	e0.33	1.6	e1.9	e1.6	e1.5	e1.4	e15	3.3	1.8	2.3	2.1	0.87
4	0.75	1.5	e1.8	e1.5	e1.5	e1.5	e10	2.8	1.5	1.8	1.6	0.69
5	0.87	1.6	e1.7	e1.5	e1.6	e1.6	e9.0	2.5	1.5	1.4	1.4	0.66
6	0.72	1.5	e1.6	e1.4	e1.5	e1.5	e10	2.7	1.5	1.2	1.4	0.64
7	0.76	1.5	e1.7	e1.5	e1.3	e1.6	e11	3.5	1.3	1.2	1.2	0.66
8	0.89	1.5	e1.8	e1.5	e1.5	e1.7	e10	3.9	1.4	1.1	3.9	0.74
9	1.1	1.5	e1.9	e1.6	e1.6	e1.8	e9.0	4.4	14	2.1	17	0.75
10	0.95	1.8	e1.8	e1.7	e1.2	e1.9	9.5	7.6	344	2.1	4.3	0.66
11	1.3	1.7	e1.8	e1.6	e1.2	e2.0	8.0	12	540	1.8	2.7	0.63
12	1.2	1.8	e1.9	e1.8	e1.5	e2.2	8.6	15	107	1.7	2.0	0.62
13	1.1	1.8	e1.8	e1.7	e1.3	e2.5	8.8	15	42	1.6	1.4	0.69
14	1.0	1.8	e1.9	e1.6	e1.2	e3.5	8.8	10	26	1.3	1.0	0.66
15	1.0	1.8	e1.8	e1.7	e1.4	e6.1	7.8	7.3	18	1.0	0.81	0.61
16	1.0	1.8	e1.7	e1.7	e1.3	e8.5	6.8	5.5	13	0.92	0.73	0.59
17	1.1	1.8	e1.8	e1.6	e1.2	e9.3	6.2	4.3	10	1.4	0.67	0.52
18	1.0	1.8	e1.7	e1.5	e1.0	e7.7	7.5	3.7	12	198	0.56	0.47
19	1.0	1.7	e1.9	e1.4	e1.2	e5.0	8.4	3.1	8.7	82	0.57	0.52
20	1.1	1.7	e1.8	e1.5	e1.1	e4.8	9.6	2.6	6.2	34	0.55	0.59
21	1.2	1.6	e1.9	e1.6	e1.2	e4.5	11	2.1	4.8	68	1.5	0.57
22	1.4	1.7	e1.8	e1.6	e1.0	e4.7	13	2.0	4.2	40	15	0.70
23	1.5	1.8	e1.9	e1.7	e1.5	e4.4	10	2.0	4.0	21	27	0.60
24	1.5	e2.0	e1.8	e1.5	e2.0	e4.0	7.6	1.9	31	16	15	0.63
25	1.5	e1.9	e1.9	e1.6	e2.5	e3.5	6.2	2.0	41	11	7.6	0.63
26	1.7	e1.8	e2.0	e1.8	e2.7	e3.0	5.0	1.9	29	9.2	4.5	0.57
27	2.0	e1.8	e1.8	e1.6	e2.5	e5.0	4.3	1.9	16	8.5	2.9	0.52
28	2.1	e1.7	e1.9	e1.4	e2.3	e20	4.2	2.4	10	6.0	2.5	0.47
29	1.9	e1.6	e1.7	e1.3	---	e85	3.8	2.5	7.1	5.0	2.0	0.44
30	1.6	e1.7	e1.6	e1.3	---	e70	3.7	2.5	4.8	3.8	1.5	0.40
31	1.6	---	e1.7	e1.2	---	e40	---	2.1	---	3.2	1.3	---
TOTAL	35.92	50.9	55.9	48.1	42.4	312.2	287.8	139.6	1304.8	535.02	129.59	19.20
MEAN	1.159	1.697	1.803	1.552	1.514	10.07	9.593	4.503	43.49	17.26	4.180	0.640
MAX	2.1	2.0	2.0	1.8	2.7	85	30	15	540	198	27	1.1
MIN	0.33	1.5	1.6	1.2	1.0	1.4	3.7	1.9	1.3	0.92	0.55	0.40
AC-FT	71	101	111	95	84	619	571	277	2590	1060	257	38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002, BY WATER YEAR (WY)

MEAN	3.925	1.875	1.371	3.114	16.51	83.98	49.25	15.57	17.23	12.12	2.891	4.087
MAX	54.1	8.43	3.39	30.5	89.5	399	485	104	91.5	100	32.6	68.5
(WY)	1983	1999	1999	1974	1986	1972	1975	1970	1970	1997	1983	1978
MIN	0.000	0.057	0.066	0.000	0.20	1.37	1.32	0.45	0.077	0.018	0.000	0.000
(WY)	1991	1991	1991	1991	2001	1990	1990	1993	1992	1992	1988	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002	
ANNUAL TOTAL	7426.96		2961.43			
ANNUAL MEAN	20.35		8.114		17.68	
HIGHEST ANNUAL MEAN					48.1	1975
LOWEST ANNUAL MEAN					0.90	1990
HIGHEST DAILY MEAN	1020	Jun 15	540	Jun 11	3500	Mar 21 1997
LOWEST DAILY MEAN	0.10	Feb 27	0.33	Oct 3	0.00	Sep 18 1972
ANNUAL SEVEN-DAY MINIMUM	0.12	Feb 22	0.52	Sep 24	0.00	Aug 17 1973
MAXIMUM PEAK FLOW			798	Jun 11	a3600	Mar 21 1997
MAXIMUM PEAK STAGE			11.70	Jun 11	b17.05	Mar 21 1997
ANNUAL RUNOFF (AC-FT)	14730		5870		12810	
10 PERCENT EXCEEDS	30		11		20	
50 PERCENT EXCEEDS	1.7		1.8		1.5	
90 PERCENT EXCEEDS	0.36		0.75		0.14	

a About
b Backwater from ice
e Estimated

06339100 KNIFE RIVER AT MANNING, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
03...	1440	.33	--	--	--	2070	18.0	17.0	--	--	--	--	--
NOV													
06...	1215	1.5	--	--	--	2250	7.5	4.0	--	--	--	--	--
DEC													
12...	1135	1.9	--	--	--	2590	-10.0	.0	--	--	--	--	--
FEB													
07...	1100	1.3	--	--	--	2890	3.0	.0	--	--	--	--	--
APR													
09...	1135	9.0	--	--	--	750	10.0	3.0	--	--	--	--	--
MAY													
16...	0915	5.6	8.2	8.4	2070	2010	2.0	10.0	220	42.0	28.0	9.90	11
JUN													
11...	1545	717	--	--	--	763	25.0	13.8	--	--	--	--	--
JUL													
25...	1100	11	8.0	7.6	642	646	20.0	23.0	100	24.0	10.0	10.0	4
SEP													
05...	1120	.70	--	--	--	1460	20.0	19.6	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
16...	380	78	489	16.0	.50	600	21.4	1410	1370	1.0	170	<1	40
JUN													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
25...	99.0	65	180	12.0	.20	150	13.5	438	413	2.0	240	<1	20
SEP													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
03...	--	--	--	--	--
NOV					
06...	--	--	--	--	--
DEC					
12...	--	--	--	--	--
FEB					
07...	--	--	--	--	--
APR					
09...	--	--	--	--	--
MAY					
16...	10	<.10	2	<1	640
JUN					
11...	--	--	--	--	--
JUL					
25...	10	<.10	2	<1	220
SEP					
05...	--	--	--	--	--

< Less than

06339500 KNIFE RIVER NEAR GOLDEN VALLEY, ND

LOCATION.--Lat 47°09'40", long 102°03'39", in SE$^{1}/_{4}$ sec.34, T.143 N., R.90 W., Mercer County, Hydrologic Unit 10130201, on right bank 6 ft downstream from highway bridge, 4.5 mi downstream from Elm Creek, and 9 mi south of Golden Valley.

DRAINAGE AREA.--1,230 mi^{2}, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1903 to November 1906, April 1907 to November 1915, April 1916 to October 1919, and October 1921 to September 1924 (published as "at Broncho" or "near Broncho"), and April 1943 to current year. Monthly discharge only for some periods published in WSP 1309.

REVISED RECORDS (WATER YEARS).--WSP 1006:0 Drainage area. WSP 1279: 1904, 1914-19(M), 1922-24(M), 1944.

GAGE.--Water-stage recorder. Datum of gage is 1,847.13 ft above National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to May 1, 1946.

REMARKS.--Records good except for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	7.8	e8.6	e5.0	e6.1	e5.6	e65	30	3.7	36	27	22
2	5.0	8.9	e8.7	e5.1	e6.1	e5.4	e170	25	3.6	26	19	19
3	5.0	8.5	e8.7	e5.1	e6.2	e5.5	e130	23	4.0	20	15	14
4	4.7	7.8	e8.8	e5.1	e6.3	e5.5	e95	20	4.0	17	13	12
5	4.4	7.6	e8.9	e5.3	e6.4	e5.6	e75	19	3.6	14	12	11
6	4.4	7.5	e8.9	e5.5	e6.6	e5.8	e65	19	3.5	12	11	8.0
7	4.5	7.8	e8.8	e5.7	e6.9	e5.9	e55	19	3.4	11	9.2	6.6
8	4.7	9.0	e8.7	e5.9	e7.3	e6.1	e53	21	3.1	9.6	9.7	6.0
9	4.5	10	e8.7	e6.1	e7.5	e6.3	e50	25	22	12	9.5	5.3
10	4.5	11	e8.8	e6.5	e7.5	e6.3	e50	26	136	12	8.0	4.7
11	4.6	11	e9.0	e7.0	e7.5	e6.4	e50	26	498	11	6.5	4.2
12	5.0	11	e9.0	e7.3	e7.5	e6.6	e52	30	1210	10	5.5	3.7
13	5.2	9.9	e8.8	e7.5	e7.4	e6.9	e53	35	737	12	7.7	3.3
14	5.5	9.6	e8.7	e7.7	e7.3	e7.4	e52	37	373	12	23	3.1
15	5.5	9.4	e8.8	e7.7	e7.3	e7.7	e50	45	208	10	23	2.9
16	5.5	9.1	e8.8	e7.8	e7.3	e8.0	e45	45	148	8.3	16	2.7
17	5.2	8.9	e8.9	e7.8	e7.2	e8.6	e45	42	111	13	12	2.4
18	5.4	e8.7	e8.9	e7.8	e7.1	e7.5	e48	37	85	16	11	2.2
19	5.5	e8.6	e8.8	e7.7	e7.1	e8.0	e50	31	66	12	13	2.4
20	5.7	e8.8	e8.3	e7.7	e7.0	e9.1	e49	24	57	23	11	2.3
21	6.2	e9.1	e8.0	e7.8	e6.8	e9.9	50	18	45	62	8.6	2.2
22	6.4	e9.3	e7.9	e7.8	e6.6	e10	56	14	38	144	7.6	2.3
23	6.2	e9.6	e7.2	e7.8	e6.5	e9.4	60	13	34	95	6.2	2.5
24	6.5	e9.7	e6.3	e7.8	e6.1	e8.4	55	11	31	76	5.6	3.0
25	6.6	e9.6	e5.8	e7.7	e6.0	e8.8	55	9.2	31	84	5.4	3.0
26	6.5	e9.4	e5.4	e7.6	e5.9	e9.4	58	7.8	32	54	19	3.4
27	6.7	e8.6	e5.3	e7.6	e5.8	e17	50	7.0	37	38	33	3.1
28	7.0	e8.6	e5.2	e7.4	e5.7	e40	44	6.5	43	33	41	3.3
29	7.2	e8.6	e5.1	e7.0	---	e60	39	6.1	61	40	36	3.8
30	7.0	e8.6	e5.1	e6.8	---	e58	35	5.2	44	43	25	4.1
31	7.4	---	e5.0	e6.3	---	e55	---	4.6	---	34	24	---
TOTAL	173.9	272.0	241.9	212.9	189.0	420.1	1804	681.4	4075.9	999.9	473.5	168.5
MEAN	5.610	9.067	7.803	6.868	6.750	13.55	60.13	21.98	135.9	32.25	15.27	5.617
MAX	7.4	11	9.0	7.8	7.5	60	170	45	1210	144	41	22
MIN	4.4	7.5	5.0	5.0	5.7	5.4	35	4.6	3.1	8.3	5.4	2.2
AC-FT	345	540	480	422	375	833	3580	1350	8080	1980	939	334

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2002, BY WATER YEAR (WY)

MEAN	16.44	11.23	7.243	8.902	41.52	343.4	299.1	87.59	139.1	48.23	33.69	14.87
MAX	245	69.7	23.0	140	299	1729	2448	1031	1193	255	725	97.5
(WY)	1983	1983	1983	1974	1982	1972	1952	1970	1914	1969	1918	1978
MIN	0.46	1.93	0.52	0.026	0.000	2.30	6.98	1.42	1.03	1.91	0.28	0.12
(WY)	1993	1962	1962	1962	1959	1964	1981	1923	1961	1992	1959	1992

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1903 - 2002	
ANNUAL TOTAL	31858.3		9713.0			
ANNUAL MEAN	87.28		26.61		87.33	
HIGHEST ANNUAL MEAN					235	1982
LOWEST ANNUAL MEAN					5.38	1991
HIGHEST DAILY MEAN	1750	Mar 14	1210	Jun 12	10300	Apr 17 1950
LOWEST DAILY MEAN	1.6	Feb 26	2.2	Sep 18	0.00	Sep 6 1905
ANNUAL SEVEN-DAY MINIMUM	1.7	Feb 23	2.3	Sep 17	0.00	Jan 22 1959
MAXIMUM PEAK FLOW			1380	Jun 12	11200	May 9 1970
MAXIMUM PEAK STAGE			10.53	Jun 12	a26.70	Mar 26 1943
ANNUAL RUNOFF (AC-FT)	63190		19270		63270	
10 PERCENT EXCEEDS	189		52		118	
50 PERCENT EXCEEDS	8.5		8.6		10	
90 PERCENT EXCEEDS	2.5		4.7		2.1	

a From floodmark
e Estimated

06339500 KNIFE RIVER NEAR GOLDEN VALLEY, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1964-65, 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
25...	1305	6.8	--	--	--	2220	-3.0	1.0	--	--	--	--	--
DEC													
19...	1335	8.9	--	--	--	2730	-3.0	.0	--	--	--	--	--
FEB													
13...	1230	7.4	--	--	--	3640	5.0	.0	--	--	--	--	--
MAR													
27...	1220	17	--	--	--	1780	5.0	.0	--	--	--	--	--
APR													
09...	1410	50	--	--	--	1210	10.0	5.0	--	--	--	--	--
MAY													
20...	1230	25	8.2	8.3	2670	2660	15.0	12.5	390	65.0	55.0	13.0	11
JUN													
09...	1340	32	--	--	--	2280	15.0	15.3	--	--	--	--	--
12...	1330	1320	--	--	--	780	16.5	13.2	--	--	--	--	--
JUL													
25...	1400	81	8.2	7.9	1070	1080	25.0	24.0	140	28.0	16.0	12.0	7
SEP													
05...	1330	10	--	--	--	1440	23.0	22.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
20...	500	73	588	9.4	.60	930	127	1860	1930	1.0	50	<1	50
JUN													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
25...	190	73	238	8.2	.30	320	163	745	718	3.0	140	<1	20
SEP													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
25...	--	--	--	--	--
DEC					
19...	--	--	--	--	--
FEB					
13...	--	--	--	--	--
MAR					
27...	--	--	--	--	--
APR					
09...	--	--	--	--	--
MAY					
20...	10	<.10	3	<1	860
JUN					
09...	--	--	--	--	--
12...	--	--	--	--	--
JUL					
25...	10	.10	1	<1	330
SEP					
05...	--	--	--	--	--

< Less than

06340000 SPRING CREEK AT ZAP, ND

LOCATION.--Lat 47°17'10", long 101°55'31", in $SE^1/_4SE^1/_4SW^1/_4$ sec.14, T.144 N., R.89 W., Mercer County, Hydrologic Unit 10130201, on left bank 250 ft downstream from Burlington Northern Railway bridge in Zap and 9 mi upstream from mouth.

DRAINAGE AREA.--549 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to September 1924, October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,819.39 ft above National Geodetic Vertical Datum of 1929. Mar. 4 to Sept. 30, 1924, non-recording gage at site 250 ft upstream at different datum. Oct. 1, 1945, to Sept. 30, 1947, nonrecording gage 250 ft upstream at datum 1.12 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow slightly regulated by Lake Ilo, 56 mi upstream, capacity 7,130 acre-ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known occurred in about 1902, from ice jam. Floods of February 1913 and March 1943 reached a stage of about 20 ft and 19.5 ft, respectively, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	12	e9.6	e6.1	e7.2	e5.6	e70	16	7.6	16	20	12
2	9.2	11	e9.6	e6.2	e7.1	e5.6	e50	16	8.1	14	17	11
3	8.6	11	e9.7	e6.5	e7.1	e5.6	e40	16	9.2	11	16	9.6
4	8.3	11	e9.9	e6.7	e7.4	e5.6	e35	15	9.1	10	14	9.4
5	8.8	11	e9.8	e7.0	e7.5	e5.6	e32	15	8.7	9.1	12	8.9
6	8.3	11	e9.7	e7.2	e7.5	e5.8	e30	15	8.5	8.4	11	8.6
7	8.6	12	e9.7	e7.4	e7.6	e6.0	e28	16	8.1	8.0	11	8.4
8	8.8	15	e9.2	e7.5	e7.8	e6.2	e28	18	8.8	7.8	11	8.1
9	8.7	13	e9.2	e7.7	e8.0	e6.3	e28	23	18	9.4	12	7.9
10	8.9	12	e9.4	e7.9	e8.0	e6.4	e28	25	66	10	11	7.8
11	9.1	11	e9.3	e7.9	e8.0	e6.5	28	25	265	9.5	11	7.1
12	9.5	11	e9.3	e8.0	e8.0	e6.7	28	27	135	9.1	11	6.9
13	9.5	11	e9.3	e8.1	e8.0	e6.9	28	24	77	8.3	9.6	6.9
14	9.3	11	e9.2	e8.1	e7.9	e7.8	27	20	41	8.0	9.4	6.6
15	9.2	11	e9.1	e8.1	e7.8	e8.8	25	18	30	7.4	9.2	6.6
16	9.2	11	e9.0	e8.1	e7.8	e9.9	24	16	26	7.0	9.2	6.4
17	9.5	11	e9.0	e8.0	e7.8	e10	23	14	24	8.4	12	6.3
18	9.4	11	e8.7	e8.1	e7.6	e8.9	24	12	20	9.8	11	6.1
19	9.5	e11	e8.5	e8.0	e7.5	e9.9	25	11	17	9.1	12	6.1
20	9.3	e11	e8.2	e8.1	e7.5	e13	25	11	15	9.7	59	5.8
21	9.3	e11	e8.0	e8.1	e7.4	e15	28	9.7	13	9.8	67	5.7
22	9.3	e11	e7.9	e8.1	e7.2	e15	26	9.2	11	8.6	67	5.7
23	9.6	e11	e7.8	e8.1	e7.0	e14	24	9.5	11	8.5	50	5.8
24	10	e10	e7.6	e8.1	e6.6	e12	23	9.9	13	8.0	34	5.8
25	9.9	e10	e7.5	e8.1	e6.3	e8.4	19	9.6	20	30	25	5.8
26	9.8	e10	e7.1	e8.1	e6.0	e10	17	13	23	47	20	5.8
27	10	e10	e6.9	e8.1	e5.8	e31	17	14	20	39	17	6.3
28	12	e10	e6.7	e8.0	e5.7	e160	17	12	18	32	16	6.8
29	12	e10	e6.5	e7.9	---	e215	17	10	19	28	15	7.0
30	13	e9.6	e6.3	e7.6	---	e175	16	9.2	19	25	14	6.7
31	14	---	e6.1	e7.4	---	e110	---	8.2	---	23	13	---
TOTAL	299.2	331.6	263.8	238.3	205.1	912.5	830	467.3	969.1	448.9	626.4	217.9
MEAN	9.652	11.05	8.510	7.687	7.325	29.44	27.67	15.07	32.30	14.48	20.21	7.263
MAX	14	15	9.9	8.1	8.0	215	70	27	265	47	67	12
MIN	8.3	9.6	6.1	6.1	5.7	5.6	16	8.2	7.6	7.0	9.2	5.7
AC-FT	593	658	523	473	407	1810	1650	927	1920	890	1240	432

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2002, BY WATER YEAR (WY)

MEAN	10.66	9.810	6.734	5.810	27.03	159.3	136.3	36.23	42.27	25.44	11.07	7.796
MAX	74.4	51.9	21.2	30.6	183	933	1044	292	290	178	53.2	16.5
(WY)	1983	1983	1973	1973	1996	1972	1952	1970	1971	1962	1990	1986
MIN	1.76	2.88	0.80	0.000	0.000	3.39	9.41	5.77	3.10	1.84	0.96	1.10
(WY)	1959	1962	1962	1959	1949	1949	1992	1992	1961	1961	1961	1958

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1924 - 2002	
ANNUAL TOTAL	14370.3		5810.1			
ANNUAL MEAN	39.37		15.92		39.91	
HIGHEST ANNUAL MEAN					99.5	1972
LOWEST ANNUAL MEAN					6.95	1961
HIGHEST DAILY MEAN	1950	Mar 14	265	Jun 11	5640	Apr 7 1952
LOWEST DAILY MEAN	4.5	Jan 1	5.6	Mar 1	0.00	Jan 30 1946
ANNUAL SEVEN-DAY MINIMUM	5.4	Jan 1	5.6	Feb 27	0.00	Jan 30 1946
MAXIMUM PEAK FLOW			361	Jun 11	6130	Apr 7 1952
MAXIMUM PEAK STAGE			7.28	Jun 11	20.70	Mar 15 1972
INSTANTANEOUS LOW FLOW					0.00	Jan 30 1946
ANNUAL RUNOFF (AC-FT)	28500		11520		28910	
10 PERCENT EXCEEDS	67		27		51	
50 PERCENT EXCEEDS	11		9.6		9.0	
90 PERCENT EXCEEDS	6.5		6.7		3.0	

e Estimated

06340000 SPRING CREEK AT ZAP, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-70, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
22...	1050	9.3	--	--	--	1820	5.0	5.3	--	--	--	--	--
DEC													
12...	1115	9.5	--	--	--	2020	-3.0	.0	--	--	--	--	--
JAN													
24...	1045	8.1	--	--	--	2190	-2.0	.0	--	--	--	--	--
MAR													
26...	1145	10	--	--	--	860	-10.0	.0	--	--	--	--	--
28...	1500	142	--	--	--	680	21.0	2.0	--	--	--	--	--
APR													
23...	1130	24	7.9	8.1	1420	1440	20.0	13.0	360	70.0	45.0	11.0	4
JUN													
10...	1330	40	--	--	--	1620	16.0	14.3	--	--	--	--	--
JUL													
23...	1430	8.6	8.2	8.4	1390	1410	25.0	24.0	280	43.0	41.0	9.80	6
AUG													
22...	1115	68	--	--	--	1490	16.0	19.5	--	--	--	--	--
SEP													
24...	1105	5.8	--	--	--	1550	12.8	9.6	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
23...	180	51	320	8.5	.30	460	65.3	1000	967	1.0	90	<1	50
JUN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
23...	230	63	357	8.2	.40	430	22.8	982	977	3.0	100	<1	50
AUG													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
22...	--	--	--	--	--
DEC					
12...	--	--	--	--	--
JAN					
24...	--	--	--	--	--
MAR					
26...	--	--	--	--	--
28...	--	--	--	--	--
APR					
23...	40	<.10	<1	<1	1600
JUN					
10...	--	--	--	--	--
JUL					
23...	30	<.10	<1	<1	990
AUG					
22...	--	--	--	--	--
SEP					
24...	--	--	--	--	--

< Less than

06340500 KNIFE RIVER AT HAZEN, ND

LOCATION.--Lat 47°17'07", long 101°37'18", in $SW^1/_4SE^1/_4SE^1/_4$ sec.18, T.144 N., R.86 W., Mercer County, Hydrologic Unit 10130201, on left bank at downstream side of highway bridge, 0.5 mi south of Hazen, and 3 mi upstream from Antelope Creek.

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

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October to November 1928, March 1929 to September 1933, August 1937 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1146: 1943. WSP 1279: 1930-31, 1932-33(M). WSP 1917: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,712.35 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 25, 1947, nonrecording gages at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Slight regulation by Lake Ilo 81 mi upstream, capacity, 7,130 acre-ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to local residents, the floods of 1943 and 1950 were not exceeded during the period 1884 to 1942.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	38	e31	e20	e21	e20	e200	93	40	e85	56	118
2	29	36	e31	e20	e20	e20	e170	87	44	e68	49	68
3	31	36	e33	e20	e21	e20	227	79	46	52	43	53
4	30	36	e34	e21	e21	e19	236	75	45	45	38	44
5	28	37	e35	e21	e22	e19	193	71	45	41	35	37
6	29	37	e35	e22	e23	e19	173	72	45	38	32	35
7	30	36	e33	e24	e24	e20	176	73	44	36	31	33
8	29	36	e33	e25	e25	e20	170	77	44	33	30	30
9	30	38	e33	e26	e26	e21	139	84	206	37	35	29
10	30	38	e35	e26	e26	e21	141	94	368	38	29	28
11	31	38	e34	e26	e27	e22	137	99	563	36	28	26
12	31	38	e34	e26	e27	e22	138	95	998	34	26	25
13	31	39	e35	e26	e26	e23	138	92	1260	33	24	23
14	32	38	e35	e26	e26	e26	132	92	934	31	23	23
15	31	39	e35	e26	e25	e28	127	85	544	30	25	23
16	32	44	e34	e25	e26	e31	120	83	295	31	39	23
17	32	43	e34	e25	e26	e34	111	82	198	35	44	22
18	32	41	e34	e25	e25	e37	117	80	154	35	39	21
19	33	38	e34	e26	e25	e40	122	76	128	36	36	19
20	33	36	e34	e26	e25	e43	123	73	102	40	33	18
21	33	37	e34	e26	e25	e46	125	67	89	38	63	18
22	34	37	e33	e26	e24	e46	120	62	78	43	74	18
23	38	37	e32	e26	e24	e45	115	60	70	101	70	19
24	40	37	e30	e26	e24	e43	116	58	65	92	56	19
25	39	37	e28	e26	e23	e44	108	57	65	72	44	20
26	39	e36	e25	e25	e22	e45	102	55	67	93	38	22
27	39	e36	e23	e25	e22	e60	107	55	71	85	34	24
28	39	e36	e22	e24	e21	e140	103	57	68	68	43	26
29	39	e34	e21	e24	---	e230	99	52	e78	58	56	26
30	40	e32	e21	e23	---	e310	97	48	e95	54	146	26
31	38	---	e20	e22	---	e270	---	44	---	57	622	---
TOTAL	1032	1121	965	755	672	1784	4182	2277	6849	1575	1941	916
MEAN	33.29	37.37	31.13	24.35	24.00	57.55	139.4	73.45	228.3	50.81	62.61	30.53
MAX	40	44	35	26	27	310	236	99	1260	101	622	118
MIN	28	32	20	20	20	19	97	44	40	30	23	18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2002, BY WATER YEAR (WY)

MEAN	38.87	32.04	22.56	20.23	96.17	692.0	505.3	162.1	224.4	117.5	49.04	34.29
MAX	365	223	83.1	145	927	3228	4293	1530	1041	979	215	143
(WY)	1983	1983	1983	1974	1930	1943	1952	1970	1944	1938	1954	1978
MIN	6.39	7.71	3.79	0.70	0.000	11.6	26.3	17.0	8.70	10.5	2.00	0.50
(WY)	1962	1962	1962	1962	1962	1965	1981	1931	1961	1961	1933	1933

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1929 - 2002	
ANNUAL TOTAL	60713		24069			
ANNUAL MEAN	166.3		65.94		167.1	
HIGHEST ANNUAL MEAN					441	1943
LOWEST ANNUAL MEAN					21.7	1991
HIGHEST DAILY MEAN	4710	Mar 14	1260	Jun 13	22400	Mar 27 1943
LOWEST DAILY MEAN	17	Feb 8	18	Sep 20	0.00	Jan 21 1933
ANNUAL SEVEN-DAY MINIMUM	17	Feb 7	19	Sep 19	0.00	Jan 21 1933
MAXIMUM PEAK FLOW			1390	Jun 13	35300	Jun 24 1966
MAXIMUM PEAK STAGE			8.70	Jun 13	27.01	Jun 24 1966
10 PERCENT EXCEEDS	312		120		250	
50 PERCENT EXCEEDS	38		36		33	
90 PERCENT EXCEEDS	20		22		10	

e Estimated

06340500 KNIFE RIVER AT HAZEN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1951, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
22...	1315	33	--	--	--	1860	7.0	6.6	--	--	--	--	--
DEC													
10...	1330	35	--	--	--	2290	-3.0	.0	--	--	--	--	--
JAN													
24...	1225	26	--	--	--	2480	1.0	.0	--	--	--	--	--
APR													
02...	1645	162	--	--	--	1830	-10.0	1.0	--	--	--	--	--
12...	1145	141	--	--	--	1220	10.0	3.0	--	--	--	--	--
MAY													
09...	1130	83	8.3	8.3	1980	1950	3.0	10.0	440	81.0	57.0	11.0	6
JUN													
12...	1035	863	--	--	--	1870	14.5	15.4	--	--	--	--	--
JUL													
12...	1100	35	--	--	--	1650	25.0	22.7	--	--	--	--	--
AUG													
15...	1115	23	7.9	8.2	--	1170	21.0	19.0	270	53.0	33.0	12.0	6
SEP													
24...	1340	19	--	--	--	1710	11.5	9.9	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
09...	290	58	430	9.3	.30	670	312	1400	1380	<1.0	90	<1	50
JUN													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	210	62	403	10.0	.40	330	56.5	906	890	3.0	70	1	30
SEP													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
22...	--	--	--	--	--
DEC					
10...	--	--	--	--	--
JAN					
24...	--	--	--	--	--
APR					
02...	--	--	--	--	--
12...	--	--	--	--	--
MAY					
09...	40	<.10	2	<1	1500
JUN					
12...	--	--	--	--	--
JUL					
12...	--	--	--	--	--
AUG					
15...	10	<.10	3	<1	830
SEP					
24...	--	--	--	--	--

< Less than

06340700 MISSOURI RIVER NEAR STANTON, ND

LOCATION.--Lat 47°17'14", long 101°20'25", in SW$^{1}/_{4}$ sec.16, T.144 N., R.84 W., Mercer County, Hydrologic Unit 10130101, on right bank 3 mi southeast of Stanton, 0.1 mi below Ft. Clark irrigation pumping station, 0.4 mi above the United Power Association power plant, and at mile 1,372.

DRAINAGE AREA.--182,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,650.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 30, 1964, at datum 50.00 ft lower.

REMARKS.--Stage regulated completely by releases from Garrison Dam (station 06338490) 18 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 24.56 ft, Feb. 22, 1965; minimum daily recorded, 8.30 ft, Nov. 1, 2001.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.43	8.30	9.25	---	---	---	8.99	8.75	11.35	11.34	11.38	11.60
2	8.48	8.41	9.33	---	---	---	8.93	8.71	11.49	11.22	11.27	11.45
3	8.46	8.37	9.32	---	---	---	8.93	8.79	11.45	11.37	11.42	11.54
4	8.41	8.54	9.32	---	---	---	8.95	8.77	11.29	11.38	11.38	11.47
5	8.43	8.52	9.31	---	---	---	8.91	8.78	11.47	11.36	11.52	11.41
6	8.52	8.50	9.28	9.74	---	---	8.87	8.92	11.36	11.27	11.49	11.38
7	8.45	8.54	9.31	9.65	---	---	8.85	8.88	11.47	11.37	11.49	11.39
8	8.67	8.43	9.37	9.54	---	---	8.78	9.11	11.39	11.37	11.45	11.48
9	8.46	8.51	9.36	9.43	---	---	8.76	8.80	11.51	11.27	11.40	11.43
10	8.56	8.51	9.42	9.49	---	---	8.65	8.87	11.38	11.27	11.46	11.38
11	8.43	8.42	9.39	9.34	10.00	---	8.63	9.97	11.41	11.29	11.42	11.38
12	8.51	8.46	9.30	9.36	---	---	8.73	9.85	11.48	11.36	11.33	---
13	8.42	8.48	9.36	9.44	---	---	8.60	9.40	11.56	11.30	11.46	---
14	8.41	8.53	9.38	9.23	---	---	8.59	9.05	11.59	11.36	11.43	---
15	8.39	8.49	9.39	9.42	9.65	---	8.63	8.68	11.54	11.44	11.46	---
16	8.45	8.52	9.40	9.45	9.62	---	8.60	8.64	11.49	11.33	11.46	---
17	8.50	8.55	9.35	---	9.64	---	8.60	8.62	11.51	11.42	11.42	---
18	8.41	8.46	9.30	---	9.71	---	8.68	8.55	11.27	11.32	11.44	---
19	8.42	8.58	---	---	---	---	8.57	8.60	11.43	11.39	11.34	---
20	8.47	8.49	9.32	---	---	---	8.71	8.65	11.38	11.40	11.39	---
21	8.46	8.50	9.35	---	---	---	8.62	8.62	11.37	11.34	11.62	---
22	8.49	8.65	9.35	---	9.68	---	8.69	8.76	11.42	11.21	11.25	---
23	8.47	8.43	---	---	9.50	---	8.71	8.53	11.39	11.33	11.42	---
24	8.54	8.54	---	9.62	9.41	9.56	8.53	8.54	11.41	11.38	11.62	9.79
25	8.52	8.67	---	9.60	9.46	---	8.60	8.83	11.29	11.39	11.53	9.65
26	8.52	8.83	---	9.63	---	9.40	9.28	9.48	11.38	11.36	11.47	9.77
27	8.47	9.19	9.33	---	---	9.43	8.95	10.25	11.31	11.39	11.56	9.74
28	8.61	9.18	9.37	---	9.53	8.94	8.72	10.95	11.39	11.38	11.41	9.73
29	8.49	9.27	9.23	---	---	8.94	9.06	11.35	11.33	11.43	11.71	9.80
30	8.74	9.26	---	---	---	8.95	8.63	11.34	11.33	11.39	11.55	9.63
31	8.47	---	---	---	---	8.98	---	11.36	---	11.43	11.62	---
MEAN	8.49	8.60	---	---	---	---	8.76	9.24	11.41	11.35	11.46	---
MAX	8.74	9.27	---	---	---	---	9.28	11.36	11.59	11.44	11.71	---
MIN	8.39	8.30	---	---	---	---	8.53	8.53	11.27	11.21	11.25	---

06340900 MISSOURI RIVER NEAR HENSLER, ND

LOCATION.--Lat 47°16'45", long 101°11'03", in SW$^{1}/_{4}$ sec.22, T.144 N., R.83 W., McLean County, Hydrologic Unit 10130101, on left bank about 7.5 mi west of Washburn and at mile 1,362.

DRAINAGE AREA.--183,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 30, 1964, at datum 40 ft lower.

REMARKS.--Stage regulated by releases from Garrison Dam (station 06338490) 28 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 27.77 ft, Mar. 20, 1965; minimum daily recorded, 12.91 ft, Nov. 1, 2001.

GAGE HEIGHT, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	12.91	13.83	15.89	---	---	13.61	13.41	15.90	15.83	---	16.12
2	---	12.95	13.92	15.98	16.10	---	13.60	13.35	16.00	15.73	---	16.00
3	---	12.95	13.98	16.00	---	---	13.53	13.45	15.98	15.85	---	16.06
4	---	13.09	13.92	15.88	---	14.17	13.63	13.42	15.83	15.84	---	16.01
5	---	13.11	13.91	15.90	14.75	14.24	13.56	13.45	15.95	15.88	---	15.96
6	---	13.06	---	15.86	14.47	---	13.46	13.58	15.88	15.79	---	15.93
7	---	13.15	13.87	15.90	14.22	14.00	13.49	13.51	15.95	15.86	---	15.94
8	---	12.99	13.93	15.88	14.10	14.25	13.46	13.78	15.85	15.87	15.94	16.02
9	---	13.12	13.92	15.94	14.12	---	13.44	13.50	16.04	15.80	15.89	15.97
10	---	13.09	13.99	15.88	14.02	---	13.32	13.51	15.91	15.79	15.93	15.92
11	---	13.02	13.95	15.92	13.93	15.53	13.33	14.26	15.92	15.79	15.90	15.92
12	13.04	13.05	13.87	15.90	13.94	14.56	13.39	14.55	15.97	15.85	15.83	15.84
13	12.96	13.08	13.91	15.78	14.08	14.06	13.28	14.29	16.00	15.80	15.95	15.96
14	12.94	13.13	13.94	---	13.89	13.93	13.26	13.69	16.04	15.85	15.93	15.89
15	12.94	13.11	13.94	---	13.91	13.81	13.29	13.39	16.02	15.93	15.96	15.58
16	12.95	13.11	13.94	---	13.95	13.80	13.28	13.29	15.97	15.84	15.96	15.16
17	13.02	13.17	13.98	---	13.94	13.81	13.26	13.26	15.98	15.91	15.92	14.54
18	12.93	13.09	---	---	14.07	13.74	13.36	13.21	15.77	15.84	15.95	14.56
19	12.96	13.15	---	14.93	14.00	13.83	13.24	13.23	15.92	15.86	15.86	14.31
20	12.99	13.14	13.89	14.82	13.98	13.88	13.36	13.23	15.85	15.87	15.90	14.46
21	12.99	---	13.89	14.62	13.96	13.83	13.29	13.12	15.85	---	16.10	14.44
22	13.03	---	13.95	14.34	14.03	14.31	13.33	13.37	15.91	---	15.79	14.46
23	12.99	---	13.94	---	14.07	13.84	13.37	13.21	15.88	---	15.94	14.37
24	13.12	---	---	---	13.98	13.81	13.24	13.17	15.89	---	16.10	14.53
25	13.08	---	---	14.15	---	13.84	13.20	13.35	15.80	---	16.04	14.41
26	13.08	---	---	14.15	---	13.80	13.90	13.93	15.85	---	16.00	14.51
27	13.02	---	13.89	---	---	13.84	13.61	14.65	15.81	---	16.10	14.47
28	13.17	---	14.00	---	---	13.54	13.41	15.35	15.86	---	15.97	14.43
29	13.04	---	13.98	---	---	13.52	13.73	15.88	15.82	---	16.20	14.46
30	13.27	13.89	---	---	---	13.58	13.32	15.89	15.82	---	16.11	14.35
31	13.09	---	---	---	---	13.61	---	15.91	---	---	16.15	---
MEAN	---	---	---	---	---	---	13.42	13.84	15.91	---	---	15.22
MAX	---	---	---	---	---	---	13.90	15.91	16.04	---	---	16.12
MIN	---	---	---	---	---	---	13.20	13.12	15.77	---	---	14.31

06341000 MISSOURI RIVER AT WASHBURN, ND

LOCATION.--Lat 47°17'20", long 101°02'15", in $SE^1/_4SW^1/_4$ sec.14, T.144 N., R.82 W., McLean County, Hydrologic Unit 10130101, on left bank near municipal waterplant in Washburn and at mile 1,355.

DRAINAGE AREA.--184,000 mi^2, approximately.

GAGE-HEIGHT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,640.00 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 30, 1964, at datum 40 ft lower.

REMARKS.--Stage regulated by releases from Garrison Dam (station 06338490) 35 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 22.76 ft, Jan. 11, 1964; minimum daily recorded, 8.66 ft, Nov. 2, 2001.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.80	8.69	9.30	---	---	---	---	8.93	11.12	11.12	11.21	11.39
2	8.88	8.66	9.39	---	---	---	---	8.90	11.20	11.06	11.11	11.33
3	8.84	8.68	---	---	---	---	---	8.99	11.22	11.10	11.22	11.49
4	8.78	8.76	---	13.87	---	---	---	8.96	11.10	11.12	11.21	11.32
5	8.76	8.78	---	13.68	---	---	---	8.95	11.16	11.13	11.26	11.25
6	8.83	8.73	---	13.38	---	---	9.05	9.05	11.15	11.06	11.31	11.21
7	8.81	8.81	---	---	---	---	9.05	9.02	11.18	11.11	11.31	11.21
8	8.94	8.70	---	---	---	---	9.04	9.22	11.10	11.13	11.30	11.21
9	8.85	8.76	9.42	---	---	---	8.98	9.04	11.26	11.10	11.28	11.32
10	8.86	8.73	---	---	---	---	8.89	9.03	11.16	11.05	11.28	11.20
11	8.81	8.67	---	---	---	---	8.87	9.45	11.19	11.05	11.25	11.22
12	8.86	8.70	---	9.68	---	---	8.91	9.95	11.24	11.11	11.22	11.12
13	8.81	8.73	---	9.73	---	---	8.85	9.79	11.25	11.08	11.26	11.20
14	8.78	8.77	9.45	---	---	---	8.80	9.26	11.31	11.10	11.28	11.21
15	8.71	8.77	9.45	---	---	---	8.82	8.98	11.29	11.19	11.31	10.95
16	8.74	8.78	9.43	---	---	9.52	8.84	8.84	11.25	11.11	11.28	10.66
17	---	8.85	---	---	---	---	8.85	8.83	11.25	11.18	11.28	10.19
18	8.72	---	---	---	---	---	8.93	8.78	11.09	11.12	11.27	9.96
19	8.74	8.82	---	---	---	---	8.88	8.78	11.22	11.14	11.30	9.73
20	8.73	---	---	---	---	---	8.95	8.82	11.14	11.17	11.16	9.91
21	8.73	---	---	---	---	---	8.93	8.84	11.15	11.15	11.35	9.78
22	8.78	---	---	---	---	---	8.94	8.92	11.19	11.04	11.25	9.84
23	8.73	---	---	---	---	---	8.95	8.75	11.18	11.10	11.15	9.79
24	8.82	---	---	---	---	---	8.87	8.74	11.18	11.16	11.27	9.89
25	8.75	---	---	---	---	---	8.78	8.83	11.12	11.22	11.40	9.85
26	8.76	8.83	---	---	---	---	9.30	9.26	11.13	11.18	11.22	9.86
27	8.73	---	---	---	---	9.47	9.12	9.86	11.13	11.21	11.36	9.91
28	8.81	---	---	---	---	9.27	9.01	10.47	11.15	11.19	11.34	9.85
29	8.73	---	---	---	---	9.19	9.18	11.04	11.13	11.25	11.36	9.91
30	8.89	9.38	---	---	---	9.26	8.91	11.09	11.12	11.18	11.40	9.77
31	8.76	---	---	---	---	9.26	---	11.11	---	11.22	11.45	---
MEAN	---	---	---	---	---	---	---	9.31	11.18	11.13	11.28	10.58
MAX	---	---	---	---	---	---	---	11.11	11.31	11.25	11.45	11.49
MIN	---	---	---	---	---	---	---	8.74	11.09	11.04	11.11	9.73

06341410 TURTLE CREEK ABOVE WASHBURN, ND

LOCATION.--Lat 47°23'06", long 100°54'43", in NW$^1/_4$NE$^1/_4$NE$^1/_4$ sec.18, T.145 N., R.80 W., McLean County, Hydrologic Unit 10130101, on right bank 250 ft downstream from bridge on county highway, 8.5 mi northeast of Washburn, and 8.8 mi south of Turtle Lake.

DRAINAGE AREA.--350 mi^2, approximately, of which 195 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 1,780 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. Water from the McClusky Canal is sometimes diverted into the stream at a point upstream from the gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.4	2.7	e1.5	e0.52	e0.11	e0.08	e17	6.9	0.54	17	e12	16
2	e2.3	2.3	e1.4	e0.44	e0.09	e0.08	e15	5.4	1.2	17	e11	10
3	e2.7	3.2	e1.2	e0.37	e0.08	e0.08	e8.0	5.0	2.0	17	e11	7.9
4	e2.3	4.8	e1.2	e0.35	e0.08	e0.07	4.9	4.4	2.1	18	e10	7.0
5	e2.4	8.1	e1.2	e0.33	e0.08	e0.07	3.8	4.1	2.3	19	e11	5.6
6	e2.7	7.2	e1.2	e0.30	e0.08	e0.07	5.3	4.6	3.2	19	e13	5.0
7	e3.5	6.1	e1.1	e0.29	e0.09	e0.06	9.8	5.2	4.1	20	e15	5.2
8	e4.4	7.2	e1.1	e0.28	e0.07	e0.06	12	8.8	4.5	21	e15	4.9
9	e5.5	8.0	e1.1	e0.27	e0.05	e0.06	13	14	62	23	e14	4.8
10	e6.1	7.7	e1.0	e0.26	e0.04	e0.05	13	12	71	25	e15	4.5
11	e6.0	7.4	e1.0	e0.25	e0.03	e0.06	19	8.3	52	21	e15	4.0
12	e5.5	7.2	e1.0	e0.24	e0.03	e0.08	22	7.1	37	20	e14	3.7
13	4.8	6.2	e1.0	e0.22	e0.05	e0.07	18	5.8	35	e19	e13	3.5
14	7.1	4.6	e1.2	e0.18	e0.04	e0.06	15	5.1	33	e18	e12	2.9
15	9.9	2.8	e1.0	e0.16	e0.04	e0.06	14	4.3	32	e18	e11	2.9
16	10	1.4	e0.97	e0.14	e0.04	e0.07	11	4.1	29	e16	e10	2.6
17	11	1.3	e0.93	e0.12	e0.05	e0.07	9.9	3.4	27	e16	e10	2.3
18	11	0.91	e0.90	e0.11	e0.05	e0.07	15	3.0	26	e16	e9.7	2.4
19	11	0.74	e0.88	e0.18	e0.06	e0.06	17	2.7	26	e15	e9.2	3.1
20	12	1.00	e0.82	e0.21	e0.08	e0.06	12	2.4	26	e14	e8.8	3.0
21	13	3.7	e0.80	e0.17	e0.12	e0.07	12	1.8	25	e15	e8.2	2.7
22	15	2.7	e0.78	e0.17	e0.15	e0.08	12	1.6	23	e16	e7.6	2.8
23	e16	2.7	e0.74	e0.16	e0.21	e0.09	9.9	1.5	22	e15	e6.9	2.9
24	e12	3.7	e0.72	e0.14	e0.16	e0.10	12	1.6	23	e14	5.4	2.6
25	e8.0	e3.1	e0.70	e0.16	e0.12	e0.12	e9.8	1.4	22	e14	5.8	2.4
26	e6.0	e2.7	e0.67	e0.15	e0.09	e0.13	8.8	1.1	21	e15	6.6	2.1
27	e4.2	e2.3	e0.64	e0.14	e0.08	e0.25	8.7	1.0	20	e13	7.0	2.8
28	e3.0	e1.9	e0.61	e0.14	e0.08	e0.85	8.5	1.1	18	e13	11	4.1
29	2.2	e1.7	e0.59	e0.14	---	e2.4	9.4	1.0	17	e12	8.2	3.1
30	2.3	e1.6	e0.57	e0.20	---	e4.5	8.0	0.88	17	e12	7.1	2.5
31	2.9	---	e0.55	e0.12	---	e9.0	---	0.66	---	e14	22	---
TOTAL	207.2	116.95	29.07	6.91	2.25	18.93	353.8	130.24	683.94	522	335.5	129.3
MEAN	6.684	3.898	0.938	0.223	0.080	0.611	11.79	4.201	22.80	16.84	10.82	4.310
MAX	16	8.1	1.5	0.52	0.21	9.0	22	14	71	25	22	16
MIN	2.2	0.74	0.55	0.11	0.03	0.05	3.8	0.66	0.54	12	5.4	2.1
AC-FT	411	232	58	14	4.5	38	702	258	1360	1040	665	256

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 2002, BY WATER YEAR (WY)

MEAN	14.06	7.316	1.624	0.409	4.371	34.40	21.42	17.54	20.75	20.29	13.45	12.14
MAX	54.3	30.9	7.75	2.67	34.0	116	69.7	51.5	71.7	52.4	36.0	32.8
(WY)	1994	1993	2000	2000	1996	1987	1997	1996	2001	2001	2000	1993
MIN	0.092	0.043	0.000	0.000	0.000	0.22	0.28	0.069	0.009	0.000	0.033	2.31
(WY)	1990	1990	1990	1989	1989	1990	1990	1992	1989	1988	1991	1988

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1987 - 2002	
ANNUAL TOTAL	9245.27		2536.09			
ANNUAL MEAN	25.33		6.948		14.04	
HIGHEST ANNUAL MEAN					29.3	1996
LOWEST ANNUAL MEAN					1.10	1990
HIGHEST DAILY MEAN	362	Mar 15	71	Jun 10	767	Mar 21 1987
LOWEST DAILY MEAN	0.00	Mar 1	0.03	Feb 11	0.00	Jan 5 1988
ANNUAL SEVEN-DAY MINIMUM	0.01	Mar 1	0.04	Feb 10	0.00	Jan 5 1988
MAXIMUM PEAK FLOW			86	Jun 10	954	Mar 12 1996
MAXIMUM PEAK STAGE			3.0	Jun 10	7.28	Mar 12 1996
ANNUAL RUNOFF (AC-FT)	18340		5030		10170	
10 PERCENT EXCEEDS	60		17		36	
50 PERCENT EXCEEDS	6.0		3.4		4.0	
90 PERCENT EXCEEDS	0.21		0.08		0.00	

e Estimated

06341410 TURTLE CREEK ABOVE WASHBURN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1987 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT													
11...	1020	6.0	720	93	11.6	8.4	8.4	1720	1620	13.5	3.5	440	40.5
NOV													
29...	1155	1.7	695	--	11.8	8.5	8.3	2550	--e	-5.0	.0	660	65.8
FEB													
06...	1130	.08	--	--	--	--	--	--	--e	9.0	.5	--	--
APR													
01...	1205	17	701	107	14.2	8.8	--	1220	1270	1.0	.3	280	27.7
MAY													
21...	1050	1.8	704	101	9.4	8.6	8.6	1930	1920	20.0	14.5	420	44.3
JUL													
11...	1120	20	715	100	8.2	8.5	8.5	1720	1650	26.0	21.5	380	26.1
AUG													
23...	1110	6.9	710	115	9.9	8.4	8.6	1740	1680	25.0	18.8	430	27.5
SEP													
09...	1225	5.1	--	--	--	8.2	8.4	1850	1770	20.0	19.0	440	31.7

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
11...	81.8	17.1	5	228	52	587	16.4	.4	12.3	389	.15	.023	.14
NOV													
29...	120	22.2	6	358	53	938	19.0	.3	15.0	594	.05	.008	.09
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	50.1	17.5	5	176	56	360	10.2	.2	12.3	300	<.04	.010	--
MAY													
21...	74.6	13.9	7	313	61	750	11.9	.4	5.1	392	<.04	<.006	--
JUL													
11...	76.9	17.8	6	274	60	663	12.4	.2	9.4	328	<.04	<.008	--
AUG													
23...	88.5	24.3	5	259	55	668	12.5	.3	6.3	348	<.04	<.008	--
SEP													
09...	87.8	23.6	6	273	56	686	12.7	.3	12.0	381	<.04	<.008	--

Date	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT								
11...	.16	.05	18.5	--	1140	38	440	73
NOV								
29...	.10	.03	8.02	--	1760	27	670	27
FEB								
06...	--	--	--	--	--	--	--	--
APR								
01...	E.03	.30	37.6	--	810	7.8	330	90
MAY								
21...	<.05	.08	6.63	1360	1310	31	630	<50
JUL								
11...	<.05	.03	61.7	--	1140	24	720	30
AUG								
23...	<.05	E.01	21.8	--	1170	17	680	15
SEP								
09...	<.05	.07	17.0	--	1230	29	710	20

< Less than
E Estimated value
e Required equipment not functional/available

06341800 PAINTED WOODS CREEK NEAR WILTON, ND

LOCATION.--Lat 47°16'30", long 100°47'30", in $SW^1/_4SW^1/_4$ sec.23, T.144 N., R.80 W., McLean County, Hydrologic Unit 10130101, on right bank 600 ft upstream from county highway bridge, 7 mi upstream from Yanktonai Creek, and 8 mi north of Wilton.

DRAINAGE AREA.--427 mi^2, approximately, of which about 310 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1957 to September 1981, August 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,764.93 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Fish and Wildlife Service).

REMARKS.--Records fair except for estimated daily discharges, which are poor. Since the fall of 1982, Missouri River Basin water has been diverted into the stream at a point several miles upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	7.9	8.1	8.9	e12	e7.5	30	e20	9.8	13	11	15
2	5.3	8.0	8.1	8.8	e11	e7.6	24	e19	11	13	11	11
3	5.6	7.4	8.1	9.2	e11	e7.6	23	e19	12	12	9.8	11
4	5.0	7.9	8.2	9.2	e12	e7.8	22	e18	12	12	11	9.4
5	5.1	7.8	8.1	9.4	e12	e8.4	e20	e19	12	11	10	9.7
6	5.1	7.9	8.0	9.0	e11	e9.0	e20	e20	11	13	9.5	10
7	5.1	7.9	8.1	9.1	e12	e9.8	e20	e19	12	12	9.7	10
8	5.2	8.0	8.0	9.4	e11	e9.6	e20	e18	11	12	9.5	10
9	6.2	7.0	8.1	9.6	e11	e9.2	e21	e16	14	12	13	10
10	7.6	7.1	8.2	10	e11	e8.8	e23	e15	15	14	13	9.6
11	8.0	7.1	8.1	11	e11	e9.0	e25	e16	15	14	15	9.5
12	6.6	7.4	8.1	9.9	e11	e9.2	e26	e17	14	12	12	8.9
13	7.2	7.4	8.1	9.8	e11	e9.4	e27	e18	15	12	12	9.2
14	6.7	7.4	8.1	9.6	e11	e9.6	e27	e17	15	11	11	8.5
15	7.3	7.4	8.1	9.6	e11	e9.8	e26	e16	15	11	11	9.4
16	6.9	7.4	8.3	9.6	e11	e10	e25	e16	14	11	11	8.0
17	6.1	7.4	8.5	9.6	e12	e10	e24	e15	14	11	10	8.4
18	6.5	7.6	8.5	e9.5	e12	e11	e25	e15	13	11	11	7.9
19	6.7	8.0	8.2	e9.0	e12	e11	e25	e14	13	11	9.9	9.5
20	6.8	7.2	8.1	e9.5	e12	e10	e25	e13	13	11	9.7	7.7
21	6.8	7.5	8.1	e10	e12	e9.6	e25	e13	13	12	9.1	7.6
22	6.5	7.8	8.1	e11	e12	e9.8	e26	e13	13	11	9.9	7.8
23	6.8	8.1	8.4	e11	e11	e10	e25	e13	15	11	9.1	7.8
24	7.7	8.2	8.5	e11	e9.8	e11	e24	e12	90	11	8.7	8.5
25	8.7	8.5	8.7	e11	e8.4	e11	e22	e12	73	12	8.3	8.0
26	8.7	8.2	8.8	e10	e7.5	e11	e21	e12	43	11	8.1	8.1
27	7.7	7.7	8.8	e10	e7.9	e20	e20	e12	27	9.9	7.5	9.5
28	7.8	8.2	8.5	e9.7	e8.0	26	e22	e11	20	10	8.0	11
29	8.1	8.1	8.8	e10	---	25	e23	11	17	10	7.7	9.6
30	7.2	8.1	9.2	e9.8	---	19	e22	11	15	9.7	8.6	8.8
31	7.6	---	9.1	e10	---	23	---	10	---	11	18	---
TOTAL	208.2	231.6	258.1	303.2	304.6	359.7	708	470	586.8	357.6	323.1	279.4
MEAN	6.716	7.720	8.326	9.781	10.88	11.60	23.60	15.16	19.56	11.54	10.42	9.313
MAX	8.7	8.5	9.2	11	12	26	30	20	90	14	18	15
MIN	5.0	7.0	8.0	8.8	7.5	7.5	20	10	9.8	9.7	7.5	7.6
AC-FT	413	459	512	601	604	713	1400	932	1160	709	641	554

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2002, BY WATER YEAR (WY)

MEAN	20.17	20.06	17.27	15.53	22.73	88.02	69.03	38.95	28.04	34.20	27.75	17.90
MAX	38.4	33.3	33.9	30.5	50.4	188	454	117	96.9	281	138	43.2
(WY)	1987	1990	1987	1990	2000	1997	1997	1999	2000	1993	1999	1986
MIN	0.16	2.44	2.58	0.61	0.004	11.6	8.20	1.08	2.37	1.43	0.22	1.52
(WY)	1989	1999	1999	1999	1997	2002	1989	1990	1990	1990	1983	1998

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1983 - 2002	
ANNUAL TOTAL	13051.5		4390.3			
ANNUAL MEAN	35.76		12.03		33.38	
HIGHEST ANNUAL MEAN					68.0	1997
LOWEST ANNUAL MEAN					12.0	2002
HIGHEST DAILY MEAN	850	Mar 19	90	Jun 24	1350	Mar 29 1997
LOWEST DAILY MEAN	4.7	Sep 25	5.0	Oct 4	0.00	Feb 2 1997
ANNUAL SEVEN-DAY MINIMUM	5.2	Sep 24	5.2	Oct 2	0.00	Feb 2 1997
MAXIMUM PEAK FLOW			132	Jun 24	4050	Apr 19 1979
MAXIMUM PEAK STAGE			5.49	Jun 24	9.64	Apr 19 1979
ANNUAL RUNOFF (AC-FT)	25890		8710		24180	
10 PERCENT EXCEEDS	82		20		49	
50 PERCENT EXCEEDS	8.3		10		22	
90 PERCENT EXCEEDS	6.3		7.5		3.1	

e Estimated

06341800 PAINTED WOODS CREEK NEAR WILTON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959-64, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT													
12...	0935	6.5	700	93	10.4	7.9	8.2	2000	1970	9.0	6.5	670	85.6
NOV													
29...	1010	8.3	695	--	12.4	8.1	8.2	2180	--e	-5.0	.2	770	112
FEB													
06...	1355	11	--	--	--	--	--	--	2020	9.5	.5	--	--
APR													
01...	1415	30	--	--	14.6	--e	7.7	1180	1220	4.0	1.0	450	76.5
MAY													
21...	1420	13	704	101	9.1	8.5	8.4	2320	2250	24.0	16.0	850	118
JUL													
11...	1330	14	713	105	8.7	7.8	--	1840	1780	28.0	21.0	620	69.5
AUG													
23...	1325	9.0	710	93	7.9	7.9	8.2	1860	1760	25.5	19.3	630	76.0
SEP													
09...	1540	10	--	--	7.2	8.3	7.9	1800	1680	20.0	19.0	590	71.6

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
OCT													
12...	111	21.1	3	201	39	269	19.3	.2	11.4	842	<.04	<.008	--
NOV													
29...	120	21.2	3	213	37	327	18.6	.2	11.2	918	<.04	<.008	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	61.7	20.9	2	88.8	29	162	11.5	.1	9.3	460	.18	.044	1.05
MAY													
21...	134	17.4	4	243	38	389	19.7	.3	7.7	971	<.04	<.008	--
JUL													
11...	108	12.9	3	196	40	230	15.0	.2	9.0	796	<.04	<.008	--
AUG													
23...	107	19.9	3	191	39	223	19.6	.2	6.8	809	<.04	<.008	--
SEP													
09...	99.7	19.9	3	183	39	218	16.6	.2	9.0	754	E.04	<.008	--

Date	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT								
12...	<.05	<.02	25.7	--	1450	11	400	<30
NOV								
29...	<.05	<.02	36.1	--	1610	5.1	420	E6
FEB								
06...	--	--	--	--	--	--	--	--
APR								
01...	1.09	.25	66.7	--	832	7.0	180	108
MAY								
21...	<.05	.02	63.5	1840	1750	21	430	<50
JUL								
11...	<.05	.03	49.7	--	1340	15	460	12
AUG								
23...	E.03	<.02	33.3	--	1360	12	420	<10
SEP								
09...	<.05	.02	35.0	--	1280	13	400	E8

< Less than
E Estimated value
e Required equipment not functional/available

06342020 MISSOURI RIVER AT PRICE, ND

LOCATION.--Lat 47°04'47", long 100°55'55", in NW$^{1}/_{4}$ sec.34, T.142 N., R.81 W., Oliver County, Hydrologic Unit 10130101, on right bank 0.5 mi south of Price and at mile 1,338.

DRAINAGE AREA.--185,000 mi^{2}, approximately.

GAGE-HEIGHT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,620.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 30, 1964, at datum 20 ft lower.

REMARKS.--Stage regulated by releases from Garrison Dam (station 06338490) 52 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 30.12 ft, Jan. 22, 1967; minimum daily recorded, 16.84 ft, Nov. 2, 2001.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.95	16.90	17.62	21.33	20.00	21.07	17.46	17.03	19.71	19.56	19.64	19.80
2	16.95	16.84	17.69	21.69	20.07	20.69	17.43	17.04	19.76	19.52	19.58	19.78
3	16.96	16.88	17.75	21.84	20.17	20.25	17.37	17.06	19.79	19.51	19.59	19.84
4	16.93	16.91	17.69	22.24	20.05	20.50	17.42	17.12	19.71	19.56	19.65	19.73
5	16.92	17.00	17.68	22.25	20.01	20.69	17.37	17.10	19.67	19.59	19.67	19.67
6	16.99	16.96	17.64	22.03	20.17	20.54	17.30	17.13	19.72	19.54	19.75	19.62
7	16.99	17.00	17.66	21.82	20.20	20.12	17.29	17.20	19.69	19.53	19.74	19.62
8	17.07	16.94	17.71	21.70	20.11	19.90	17.25	17.31	19.62	19.59	19.73	19.60
9	17.10	16.96	17.75	21.57	19.96	20.04	17.19	17.32	19.76	19.60	19.75	19.75
10	17.02	16.96	17.80	21.32	19.76	20.02	17.13	17.19	19.70	19.50	19.69	19.62
11	17.04	16.93	17.76	20.99	20.08	20.54	17.09	17.35	19.69	19.49	19.65	19.65
12	17.00	16.91	17.74	20.57	20.23	20.84	17.12	18.34	19.71	19.54	19.64	19.56
13	16.99	16.94	17.74	20.51	20.27	20.77	17.12	18.24	19.73	19.55	19.62	19.61
14	16.94	16.97	17.77	20.34	19.77	20.34	17.03	17.63	19.80	19.56	19.68	19.68
15	16.93	16.99	17.80	19.44	19.09	19.35	17.01	17.29	19.79	19.64	19.70	19.47
16	16.93	16.97	17.79	19.80	18.63	18.35	17.00	16.98	19.73	19.60	19.67	19.16
17	16.98	17.03	17.85	19.72	18.19	17.86	17.00	16.96	19.71	19.60	19.68	18.72
18	16.96	16.96	17.75	19.40	18.05	17.70	17.07	16.94	19.60	19.62	19.66	18.16
19	16.94	16.96	17.73	19.92	17.98	17.68	17.03	16.89	19.64	19.59	19.70	18.07
20	16.94	17.04	17.75	20.01	17.91	17.71	17.01	16.92	19.59	19.63	19.55	18.08
21	16.96	16.97	17.74	20.22	17.89	17.85	17.06	16.97	19.57	19.63	19.69	18.06
22	16.98	17.01	17.77	20.21	17.90	18.45	17.01	17.05	19.60	19.52	19.72	18.13
23	16.96	17.06	18.03	19.96	18.00	19.22	17.06	17.02	19.65	19.52	19.51	18.13
24	17.00	16.95	18.86	19.74	17.89	18.54	17.02	16.88	19.62	19.57	19.65	18.15
25	16.99	17.04	19.46	20.02	17.94	17.90	16.89	16.92	19.60	19.67	19.80	18.24
26	17.01	17.03	19.87	19.99	18.27	17.75	17.30	17.38	19.56	19.61	19.65	18.19
27	16.97	17.43	19.61	19.40	18.78	17.69	17.37	18.12	19.60	19.64	19.73	18.28
28	17.00	17.57	19.66	19.09	20.09	17.61	17.22	18.82	19.57	19.63	19.78	18.17
29	17.00	17.58	19.85	19.21	---	17.37	17.25	19.47	19.59	19.68	19.71	18.24
30	17.04	17.67	21.30	19.67	---	17.48	17.18	19.65	19.54	19.62	19.84	18.16
31	17.08	---	21.46	19.96	---	17.47	---	19.69	---	19.66	19.91	---
MEAN	16.98	17.05	18.33	20.51	19.20	19.11	17.17	17.52	19.67	19.58	19.69	18.96
MAX	17.10	17.67	21.46	22.25	20.27	21.07	17.46	19.69	19.80	19.68	19.91	19.84
MIN	16.92	16.84	17.62	19.09	17.89	17.37	16.89	16.88	19.54	19.49	19.51	18.06

06342260 SQUARE BUTTE CREEK BELOW CENTER, ND

LOCATION.--Lat 47°03'25", long 101°11'35", in SE$^1/_4$ sec.4, T.141 N., R.83 W., Oliver County, Hydrologic Unit 10130101, on right bank at southeast corner of farmyard and 6 mi southeast of Center.

DRAINAGE AREA.--146 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 1,865 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by Nelson Lake 1.5 mi upstream beginning Aug. 24, 1967, capacity 5,000 acre-ft. The capacity of Nelson Lake was increased to 10,000 acre-ft in Aug. 1975.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.1	2.3	1.5	e1.5	e1.1	e1.2	1.4	1.7	1.8	1.7	2.0	1.9
2	e1.1	2.5	1.5	e1.5	e1.1	e1.2	1.4	1.7	2.1	1.7	1.7	1.9
3	e1.1	2.7	1.5	e1.5	e1.2	e1.2	1.5	1.9	2.0	1.7	1.8	1.9
4	e1.1	2.8	1.5	e1.5	e1.2	e1.2	1.4	1.9	2.0	1.7	1.7	2.0
5	e1.1	2.7	1.5	e1.6	e1.2	e1.2	1.3	1.9	1.9	1.7	1.7	2.0
6	e1.1	2.7	1.5	e1.5	e1.2	e1.2	1.4	2.0	1.9	1.7	1.7	2.1
7	e1.0	2.9	1.6	e1.6	e1.2	e1.2	1.5	1.9	1.9	1.7	1.7	2.0
8	e1.0	2.5	1.5	e1.7	e1.2	e1.2	1.4	1.9	1.7	1.7	1.7	2.3
9	e1.1	2.4	1.6	e1.6	e1.2	e1.2	1.4	1.7	1.7	1.7	1.8	2.1
10	e1.5	2.5	1.6	e1.5	e1.2	e1.2	1.4	1.7	1.7	1.7	1.7	1.9
11	2.2	2.4	1.5	e1.6	e1.2	e1.2	1.4	1.7	1.7	1.7	1.7	2.0
12	3.0	2.6	1.5	e1.5	e1.2	e1.3	1.5	2.3	1.7	1.7	1.7	2.1
13	3.2	2.3	1.5	e1.4	e1.2	e1.2	1.5	2.2	1.7	1.7	1.7	2.1
14	3.4	1.8	1.6	e1.4	e1.2	e1.2	1.5	1.8	1.7	1.7	1.7	2.1
15	3.4	1.7	1.6	e1.3	e1.2	e1.2	1.5	1.8	1.7	1.7	1.7	2.1
16	3.5	1.5	1.7	e1.3	e1.3	e1.3	1.5	1.7	1.7	e1.7	1.7	2.1
17	3.4	1.4	1.6	e1.2	e1.3	e1.3	1.5	1.7	1.7	e1.7	1.7	2.0
18	3.5	1.4	1.7	e1.2	e1.3	e1.3	1.5	1.9	1.7	e1.7	1.7	2.1
19	3.5	1.4	1.6	e1.2	e1.3	e1.2	1.5	1.7	1.7	1.7	1.7	2.1
20	2.5	1.5	e1.6	e1.3	e1.3	e1.2	1.5	1.7	1.7	1.9	1.7	2.1
21	1.5	1.6	e1.6	e1.3	e1.3	e1.2	1.5	1.7	1.7	1.7	1.7	2.1
22	1.4	1.5	e1.6	e1.2	e1.3	e1.2	1.5	1.7	1.7	1.7	1.8	2.1
23	1.4	1.5	e1.6	e1.2	e1.3	e1.2	1.7	1.7	1.7	1.8	1.9	2.1
24	1.6	1.7	e1.6	e1.3	e1.2	e1.3	1.9	1.7	1.7	1.8	1.9	2.1
25	1.3	1.6	e1.5	e1.3	e1.2	e1.5	1.7	1.7	1.7	1.7	1.9	2.1
26	1.5	1.7	e1.5	e1.3	e1.2	e1.9	1.7	1.7	1.7	1.7	1.9	2.3
27	1.4	1.6	e1.5	e1.2	e1.2	e4.0	2.1	1.7	1.7	1.7	1.9	2.7
28	1.9	1.6	e1.5	e1.2	e1.2	e2.5	1.9	1.7	1.7	1.7	1.9	2.6
29	2.1	1.5	e1.5	e1.1	---	e1.6	1.9	1.7	1.7	1.7	1.9	2.1
30	2.2	1.7	e1.5	e1.1	---	1.4	1.8	1.7	1.7	1.7	1.9	2.1
31	2.1	---	e1.5	e1.1	---	1.4	---	1.7	---	1.9	1.9	---
TOTAL	61.2	60.0	48.1	42.2	34.2	43.6	46.7	55.5	52.7	53.3	55.1	63.2
MEAN	1.974	2.000	1.552	1.361	1.221	1.406	1.557	1.790	1.757	1.719	1.777	2.107
MAX	3.5	2.9	1.7	1.7	1.3	4.0	2.1	2.3	2.1	1.9	2.0	2.7
MIN	1.0	1.4	1.5	1.1	1.1	1.2	1.3	1.7	1.7	1.7	1.7	1.9
AC-FT	121	119	95	84	68	86	93	110	105	106	109	125

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

MEAN	1.562	1.466	1.401	1.360	7.219	55.14	36.24	9.396	6.806	10.15	2.995	1.633
MAX	2.98	2.99	3.35	2.10	109	216	223	47.8	65.0	175	34.5	3.64
(WY)	1981	1983	1978	2001	1996	1987	1969	1995	1966	1993	1993	1980
MIN	0.24	0.19	0.21	0.20	0.089	1.24	1.00	0.79	0.57	0.71	0.83	0.35
(WY)	1968	1968	1968	1968	1966	1998	1998	1989	1989	1989	1982	1967

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1965 - 2002	
ANNUAL TOTAL	6738.8		615.8			
ANNUAL MEAN	18.46		1.687		11.33	
HIGHEST ANNUAL MEAN					30.0	1969
LOWEST ANNUAL MEAN					0.86	1968
HIGHEST DAILY MEAN	480	Mar 19	e4.0	Mar 27	2670	Jul 18 1969
LOWEST DAILY MEAN	1.0	Oct 7	1.0	Oct 7	0.00	Feb 14 1966
ANNUAL SEVEN-DAY MINIMUM	1.1	Oct 2	1.1	Oct 2	0.00	Feb 14 1966
MAXIMUM PEAK FLOW			e4.0	Mar 27	9700	Jun 24 1966
MAXIMUM PEAK STAGE			b2.20	Mar 27	14.35	Jun 24 1966
INSTANTANEOUS LOW FLOW			1.0	Oct 7	0.00	Feb 14 1966
ANNUAL RUNOFF (AC-FT)	13370		1220		8210	
10 PERCENT EXCEEDS	50		2.1		7.2	
50 PERCENT EXCEEDS	2.1		1.7		1.5	
90 PERCENT EXCEEDS	1.3		1.2		0.90	

b Backwater from ice
e Estimated

06342260 SQUARE BUTTE CREEK BELOW CENTER, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
10...	1135	1.2	--	--	--	1380	10.0	12.0	--	--	--	--	--
DEC													
12...	1500	1.6	--	--	--	1510	-10.0	.0	--	--	--	--	--
FEB													
13...	1415	1.4	--	--	--	1470	8.0	.0	--	--	--	--	--
MAR													
25...	1140	1.5	--	--	--	1470	-10.0	.0	--	--	--	--	--
APR													
08...	1450	1.5	--	--	--	1470	5.0	.0	--	--	--	--	--
MAY													
07...	1415	1.8	8.1	8.2	1520	1500	5.0	10.0	360	78.0	39.0	9.70	5
JUL													
01...	1600	1.7	--	--	--	1520	30.0	21.0	--	--	--	--	--
AUG													
09...	1105	1.6	--	--	--	1510	20.0	24.0	--	--	--	--	--
SEP													
30...	1530	2.1	--	--	--	1560	18.0	13.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
07...	210	55	412	11.0	.40	410	5.01	1030	1010	1.0	60	<1	40
JUL													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
10...	--	--	--	--	--
DEC					
12...	--	--	--	--	--
FEB					
13...	--	--	--	--	--
MAR					
25...	--	--	--	--	--
APR					
08...	--	--	--	--	--
MAY					
07...	300	<.10	3	<1	1100
JUL					
01...	--	--	--	--	--
AUG					
09...	--	--	--	--	--
SEP					
30...	--	--	--	--	--

< Less than

06342450 BURNT CREEK NEAR BISMARCK, ND

LOCATION.--Lat 46°54'54", long 100°48'48", in $SW^1/_4NW^1/_4SW^1/_4$ sec.29, T.140 N., R.80 W., Burleigh County, Hydrologic Unit 10130101, on right bank, upstream of county highway bridge, and 7 mi northwest of Bismarck.

DRAINAGE AREA.--108 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year (seasonal records only since 1982).

GAGE.--Water-stage recorder. Elevation of gage is 1,690 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 250 ft^3/s, Mar. 28, gage height, 7.21 ft, backwater from ice; minimum daily discharge, no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	e0.00	e1.4	35	7.3	5.0	e0.47	e0.00	0.00
2	---	---	---	---	e0.00	e1.3	e25	6.6	4.6	e0.42	e0.00	0.00
3	---	---	---	---	e0.00	e1.4	e17	5.9	4.5	e0.40	e0.00	0.00
4	---	---	---	---	e0.00	e1.5	e15	5.8	4.8	e0.49	e0.00	0.00
5	---	---	---	---	e0.00	e1.6	e14	5.7	5.7	e0.45	e0.00	0.00
6	---	---	---	---	e0.00	e1.7	14	5.7	5.4	e0.41	e0.00	0.00
7	---	---	---	---	e0.00	e1.7	e200	6.0	5.1	e0.39	e0.00	0.00
8	---	---	---	---	e0.00	e1.6	e16	6.8	5.3	e0.49	e0.00	0.00
9	---	---	---	---	e0.00	e1.5	e12	7.7	5.4	e0.50	0.00	0.00
10	---	---	---	---	e0.00	e1.4	12	8.3	5.5	e0.47	0.00	0.00
11	---	---	---	---	e0.00	e1.5	14	7.8	5.3	e0.35	0.00	0.00
12	---	---	---	---	e0.00	e1.6	e14	7.0	5.5	e0.26	0.00	0.00
13	---	---	---	---	e0.00	e1.8	14	6.8	5.1	e0.18	0.00	0.00
14	---	---	---	---	e0.02	e1.9	14	6.2	4.5	e0.15	0.00	0.00
15	---	---	---	---	e0.03	e2.0	13	5.5	5.0	e0.10	0.00	0.00
16	---	---	---	---	e0.05	e2.0	12	5.2	4.5	e0.08	0.00	0.00
17	---	---	---	---	e0.08	e1.8	e10	5.2	4.4	e0.06	0.00	0.00
18	---	---	---	---	e0.10	e1.7	e9.9	5.7	5.1	e0.03	0.00	0.00
19	---	---	---	---	e0.20	e1.6	e12	5.5	5.4	e0.02	0.00	0.00
20	---	---	---	---	e0.30	e1.7	e11	5.0	5.3	e0.02	0.00	0.00
21	---	---	---	---	e0.50	e1.8	e11	4.6	5.4	e0.00	0.00	0.00
22	---	---	---	---	e0.80	e1.9	e9.3	4.4	5.7	e0.00	0.00	0.00
23	---	---	---	---	e1.0	e2.0	e8.7	6.0	4.8	e0.00	0.00	0.00
24	---	---	---	---	e2.0	e6.0	e8.4	6.3	5.1	e0.00	0.00	0.00
25	---	---	---	---	e1.8	e20	e7.6	6.2	13	e0.00	0.00	0.00
26	---	---	---	---	e1.6	e40	7.0	6.2	6.7	e0.00	0.00	0.00
27	---	---	---	---	e1.5	e95	6.8	6.0	4.1	e0.00	0.00	0.00
28	---	---	---	---	e1.5	e191	7.1	5.7	2.6	e0.00	0.00	0.00
29	---	---	---	---	---	e107	8.4	5.8	1.7	e0.00	0.00	0.00
30	---	---	---	---	---	e61	8.3	5.2	1.1	e0.00	0.00	0.00
31	---	---	---	---	---	e46	---	5.3	---	e0.00	0.00	---
TOTAL	---	---	---	---	11.48	604.4	566.5	187.4	151.6	5.74	0.00	0.00
MEAN	---	---	---	---	0.410	19.50	18.88	6.045	5.053	0.185	0.000	0.000
MAX	---	---	---	---	2.0	191	200	8.3	13	0.50	0.00	0.00
MIN	---	---	---	---	0.00	1.3	6.8	4.4	1.1	0.00	0.00	0.00
AC-FT	---	---	---	---	23	1200	1120	372	301	11	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

MEAN	0.306	0.259	0.105	0.054	12.89	45.39	31.49	4.822	3.036	3.788	1.274	0.403
MAX	1.97	1.19	0.66	0.45	87.2	170	256	15.0	17.2	72.0	18.1	4.80
(WY)	1981	1981	1978	1979	2000	1987	1969	1995	2000	1993	1999	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1968	1968	1968	1968	1968	1990	1990	1990	1977	1973	1972	1970

SUMMARY STATISTICS WATER YEARS 1968 - 2002

ANNUAL MEAN	a7.573		
HIGHEST ANNUAL MEAN	a22.2		1969
LOWEST ANNUAL MEAN	a0.55		1977
HIGHEST DAILY MEAN	3900	Apr 18	1979
LOWEST DAILY MEAN	0.00	Oct 1	1967
ANNUAL SEVEN-DAY MINIMUM	0.00	Oct 1	1967
MAXIMUM PEAK FLOW	b10000	Apr 18	1979
MAXIMUM PEAK STAGE	16.93	Apr 18	1979
ANNUAL RUNOFF (AC-FT)	a5490		
10 PERCENT EXCEEDS	6.0		
50 PERCENT EXCEEDS	0.03		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1968-81)
b From rating curve extended above 2,200 ft^3/s on basis of culvert and flow over road indirect measurement of peak flow at U.S. Highway 83
e Estimated

06342450 BURNT CREEK NEAR BISMARCK, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
09...	1035	.25	--	--	--	1700	9.5	9.5	--	--	--	--	--
MAR													
28...	1615	191	--	--	--	458	8.5	.5	--	--	--	--	--
APR													
24...	1535	8.4	8.5	--	988	1060	10.5	10.0	370	66.0	51.0	8.30	2
JUL													
01...	1505	.49	7.8	--	1410	1320	--	27.5	420	54.0	70.0	7.60	3

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	99.0	36	312	9.3	.20	280	16.4	724	702	<1.0	70	<1	70
JUL													
01...	160	45	454	9.1	.30	350	1.28	961	923	3.0	20	1	110

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
09...	--	--	--	--	--
MAR					
28...	--	--	--	--	--
APR					
24...	30	<.10	<1	<1	640
JUL					
01...	100	<.10	1	1	660

< Less than

06342500 MISSOURI RIVER AT BISMARCK, ND

LOCATION.--Lat 46°48'51", long 100°49'12", in $SE^1/_4NW^1/_4SE^1/_4$ sec.31, T.139 N., R.80 W., Burleigh County, Hydrologic Unit 10130101, on left bank 40 ft upstream from Bismarck City waterplant, 2,100 ft downstream from Burlington Northern Railway bridge, 1.6 mi northwest of Bismarck Post Office, 3.5 mi upstream from Heart River, and at mile 1,314.5.

DRAINAGE AREA.--186,400 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October to November 1927, April 1928 to current year. See WSP 1729 or 1917 for history of data prior to April 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,618.28 ft above National Geodetic Vertical Datum of 1929, revised. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1937.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Lake Sakakawea (station 06338000), 75.4 mi upstream, since November 1953.

EXTREMES PRIOR TO COMPLETION OF GARRISON DAM.--Maximum discharge, 500,000 ft^3/s, Apr. 6, 1952, gage height, 27.90 ft.

EXTREMES SINCE COMPLETION OF GARRISON DAM.--Since completion of Garrison Dam in 1953, maximum discharge, 68,900 ft^3/s, July 13, 1975, gage height, 14.24 ft; maximum gage height, 14.58 ft, Dec. 18, 1979, backwater from ice.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 31.6 ft, Mar. 31, 1881, present site and datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10100	10300	13100	e13100	e13500	e14200	13100	11200	21800	21600	22200	23300
2	9830	9950	13000	e13200	e13500	e13900	12900	11200	21900	21600	22000	23000
3	9950	9850	13300	e13300	e13500	e13600	12800	11100	22300	21200	21600	22700
4	9970	9790	13400	e13300	e13700	e13400	12600	11400	22300	21500	22000	22900
5	9890	10200	13200	e13300	e13500	e13500	12600	11300	21600	21700	21900	22600
6	9980	10200	13200	e13300	e13400	e13900	12300	11300	22000	21700	22200	22300
7	10200	10100	13000	e13400	e13500	e13800	12300	11700	21900	21400	22400	22100
8	10100	10400	13100	e13400	e13500	e13400	12100	e11700	22000	21400	22500	22100
9	10600	10100	13300	e13400	e13600	e13500	12000	e12300	22000	22000	22700	22300
10	10300	10300	13400	e13600	e13500	e13500	11900	e12400	22400	21700	22400	22400
11	10300	10200	13400	e13600	e13400	e13200	11500	e12600	e22200	21400	22300	22000
12	10100	10000	13400	e13300	e13500	e13200	11500	e14100	22000	21400	22100	22000
13	10300	10100	13200	e13300	e13700	e13100	11600	15500	22200	21700	21900	21600
14	10100	10200	13300	e13200	e13500	e12900	11300	e14500	22400	21600	22100	22000
15	10100	10300	13400	e13000	e13200	e12800	11100	e12500	22600	21800	22200	21900
16	9960	10200	13400	e13300	e13300	e12600	11100	e11200	22400	22100	22300	20500
17	10000	10300	13400	e13400	e13400	e12500	11100	10700	22300	21800	22200	18600
18	10200	10400	13400	e13500	e13500	e12400	11300	10600	22200	22000	22200	15800
19	9980	10200	13200	e13500	e13700	e12400	11400	10400	21700	21800	22100	15100
20	9970	10500	13200	e13200	e13500	e12500	11100	10300	22100	22000	22000	14000
21	10000	10400	13200	e13400	e13400	e12500	11400	10300	21800	22100	21800	14600
22	10000	10300	13200	e13500	e13400	e12600	11200	10500	21800	21900	22600	14400
23	10100	10600	13100	e13400	e13500	e12900	11300	10900	22000	21400	21800	14500
24	10200	10200	e13500	e13400	e13500	e12500	11400	10300	22100	21700	21800	14200
25	10500	10300	e13500	e13300	e13400	e12400	11100	10200	22100	22200	22500	14700
26	10400	10600	e13200	e13300	e13600	e12500	11000	10900	21800	22100	22700	14400
27	10300	11000	e13300	e13500	e13900	e12600	12700	12800	21900	22000	22200	14700
28	10200	12600	e13300	e13500	e14100	e12700	12200	15700	21700	22100	22700	14700
29	10400	12800	e13200	e13500	---	e12800	11800	18900	21800	22000	22500	14500
30	10100	13000	e13000	e13400	---	e12900	12300	e21400	21700	22200	22900	14700
31	10800	---	e13000	e13500	---	e13200	---	21700	---	22100	23300	---
TOTAL	314930	315390	410800	414300	378700	403900	354000	391600	661000	675200	690100	564600
MEAN	10160	10510	13250	13360	13520	13030	11800	12630	22030	21780	22260	18820
MAX	10800	13000	13500	13600	14100	14200	13100	21700	22600	22200	23300	23300
MIN	9830	9790	13000	13000	12400	11000	10200	21600	21200	21600	14000	
AC-FT	624700	625600	814800	821800	751200	801100	702200	776700	1311000	1339000	1369000	1120000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2002, BY WATER YEAR (WY)

MEAN	21280	21280	20690	22770	24840	22500	21280	22760	24360	25310	25110	22210
MAX	48180	43240	31690	32350	34840	34370	40370	42030	43540	64610	57010	45060
(WY)	1998	1998	1970	1969	1969	1972	1972	1972	1975	1975	1975	1997
MIN	8399	8155	7890	6519	5883	6317	10420	9234	8445	10840	9271	8121
(WY)	1963	1963	1955	1955	1956	1955	1993	1963	1960	1960	1962	1962

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		[a]WATER YEARS 1954 - 2002	
ANNUAL TOTAL	5101070		5574520			
ANNUAL MEAN	13980		15270		22860	
HIGHEST ANNUAL MEAN					35630	1975
LOWEST ANNUAL MEAN					14320	1960
HIGHEST DAILY MEAN	20200	Jan 26	23300	Aug 31	68800	Jul 13 1975
LOWEST DAILY MEAN	9580	Sep 23	9790	Nov 4	4000	Mar 25 1955
ANNUAL SEVEN-DAY MINIMUM	9760	Sep 21	9990	Oct 1	4860	Mar 21 1955
MAXIMUM PEAK FLOW			24800	Aug 31	68900	Jul 13 1975
MAXIMUM PEAK STAGE			b10.25	Dec 27	b14.80	Jan 13 1983
ANNUAL RUNOFF (AC-FT)	10120000		11060000		16560000	
10 PERCENT EXCEEDS	18400		22200		34000	
50 PERCENT EXCEEDS	13900		13400		21900	
90 PERCENT EXCEEDS	10200		10200		11900	

a Since completion of Garrison Dam
b Backwater from ice
e Estimated

06342500 MISSOURI RIVER AT BISMARCK, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)
MAY													
13...	1325	16100	714	8.4	8.3	685	638	19.5	15.0	210	49.0	21.0	3.80
SEP													
04...	1225	23200	--	7.9	--e	683	630	28.0	20.5	210	50.0	21.0	4.10

Date	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
MAY													
13...	2	61.0	38	174	14.0	.60	170	19200	442	423	2.0	70	1
SEP													
04...	2	60.0	38	164	14.0	.60	170	26300	419	419	1.0	10	1

Date	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAY						
13...	40	10	<.10	3	1	520
SEP						
04...	40	10	.10	2	1	460

< Less than
e Required equipment not functional/available

06343500 E.A. PATTERSON LAKE NEAR DICKINSON, ND

LOCATION.--Lat 46°52'11", long 102°49'37", in NE¼NW¼SW¼ sec.8, T.139 N., R.96 W., Stark County, Hydrologic Unit 10130202, at left edge of spillway and 2 mi southwest of Dickinson.

DRAINAGE AREA.--400 mi^2, approximately.

MONTHEND-ELEVATION AND CONTENTS RECORDS

PERIOD OF RECORD.--May 1950 to current year. Prior to October 1958, published as Dickinson Reservoir near Dickinson.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Jan. 4, 1961, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth-fill dam; storage began May 23, 1950; dam completed Aug. 9, 1950. Total capacity is 24,600 acre-ft at maximum pool, elevation, 2,428.9 ft. Dead storage is 1,000 acre-ft below lowest point of outlet, elevation, 2,404.0 ft. Conservation storage is 9,100 acre-ft between elevations 2,404.0 ft and 2,420.0 ft, crest of spillway. The crest of the spillway was raised 3.5 ft in 1981 from 2,416.5 ft. Figures given herein represent total contents based on capacity table dated 1991. The reservoir is for flood control, irrigation, and municipal supply.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation. Extremes are those observed.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 11,590 acre-ft, June 9, 1982, elevation, 2,421.13 ft; minimum since initial filling of reservoir, 2,080 acre-ft, Feb. 8, 1993, elevation, 2,408.08 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents 9,340 acre-ft, June 10, elevation, 2,420.59 ft; minimum, 6,440 acre-ft, Sept. 30, elevation, 2,418.00 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,419.22	7,710	--
Oct. 31	2,419.01	7,480	-230
Nov 30	2,419.00	7,470	-10
Dec. 31	2,419.08	7,560	+90
CAL YR 2001	--	--	+2,470
Jan. 31	2,419.16	7,650	+90
Feb. 28	2,419.23	7,720	+70
Mar. 31	2,419.47	7,990	+270
Apr. 30	2,419.92	8.520	+530
May 31	2,419.85	8,430	-90
June 30	2,419.90	8,490	+60
July 31	2,419.16	7,650	-840
Aug. 31	2,418.66	7,110	-540
Sept. 30	2,418.00	6,440	-670
WTR YR 2002	--	--	-1,270

06343500 E.A. PATTERSON LAKE NEAR DICKINSON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971, 1975, 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	COLOR (PLATINUM-COBALT UNITS) (00080)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT													
16...	1055	1.0	1.5	1280	8.2	20	220	42.7	28.0	9.91	6	196	64
FEB													
07...	1105	.50	1.0	1580	8.4	50	280	54.1	34.8	11.9	6	247	65
MAY													
09...	1035	1.0	1.5	--	8.4	20	330	59.4	43.7	10.5	4	168	52
AUG													
01...	1045	.90	1.4	1380	8.4	52	230	45.7	28.0	10.9	6	216	66

Date	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
OCT													
16...	212	7.80	.3	12.2	437	.30	.029	.27	.30	.15	.12	868	864
FEB													
07...	283	9.44	.3	3.1	533	.10	<.008	--	.08	.07	.04	1110	1060
MAY													
09...	252	8.71	.2	1.8	460	<.04	<.008	--	E.04	<.06	<.02	934	903
AUG													
01...	233	7.53	.3	6.8	470	<.04	<.008	--	.05	E.04	.03	961	926

Date	BORON, DISSOLVED (UG/L AS B) (01020)
OCT	
16...	310
FEB	
07...	370
MAY	
09...	280
AUG	
01...	290

06343500 E.A. PATTERSON LAKE NEAR DICKINSON, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	RESER-VOIR DEPTH (FEET) (72025)	SAM-PLING DEPTH (M) (00098)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS METERS (82131)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	TEMPER-ATURE AIR (DEG C) (00020)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)
OCT													
16...	1045	20.3	.0	1330	7.6	8.3	9.8	90	707	--	22.0	10.0	--
16...	1046	--	1.0	1330	7.8	8.2	9.5	--	--	--	--	--	--
16...	1047	--	2.0	1330	7.9	8.2	9.2	--	--	--	--	--	--
16...	1048	--	3.0	1330	7.9	8.2	9.1	--	--	--	--	--	--
16...	1049	--	4.0	1330	7.9	8.1	9.2	--	--	--	--	--	--
16...	1050	--	5.0	1330	8.0	7.9	9.0	--	--	--	--	--	--
16...	1051	--	6.2	1330	8.0	7.6	9.0	--	--	--	--	--	--
FEB													
07...	1050	21.6	.50	1630	8.4	1.8	8.7	68	700	.40	20.0	4.0	225
07...	1052	--	1.0	1620	8.4	2.2	8.5	--	--	--	--	--	--
07...	1054	--	2.0	1610	8.4	2.6	8.5	--	--	--	--	--	--
07...	1056	--	4.0	1650	8.3	3.4	6.0	--	--	--	--	--	--
07...	1058	--	6.0	1770	8.1	4.0	4.1	--	--	--	--	--	--
07...	1100	--	6.6	1780	8.1	4.2	4.1	--	--	--	--	--	--
MAY													
09...	1025	18.7	.0	1500	8.2	6.3	12.0	106	700	--	14.4	3.0	270
09...	1026	--	.50	1500	8.2	6.3	11.7	--	--	--	--	--	--
09...	1027	--	1.0	1500	8.2	6.3	11.6	--	--	--	--	--	--
09...	1028	--	2.0	1500	8.2	6.3	11.5	--	--	--	--	--	--
09...	1029	--	4.0	1510	8.2	6.2	11.5	--	--	--	--	--	--
09...	1030	--	5.7	1510	8.2	6.2	11.4	--	--	--	--	--	--
AUG													
01...	1035	20.7	.0	1440	8.7	22.8	8.3	106	704	--	15.6	16.0	320
01...	1036	--	.50	1440	8.7	22.8	8.2	--	--	--	--	--	--
01...	1037	--	1.0	1440	8.7	22.8	8.1	--	--	--	--	--	--
01...	1038	--	2.0	1440	8.7	22.8	8.0	--	--	--	--	--	--
01...	1039	--	3.0	1440	8.7	22.8	8.0	--	--	--	--	--	--
01...	1040	--	4.0	1440	8.7	22.8	8.0	--	--	--	--	--	--
01...	1041	--	5.0	1440	8.7	22.8	7.9	--	--	--	--	--	--
01...	1042	--	6.0	1440	8.7	22.8	7.8	--	--	--	--	--	--
01...	1043	--	6.3	1440	8.7	22.8	7.7	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
16...	<5.0
16...	--
16...	--
16...	--
16...	--
16...	--
16...	--
FEB	
07...	9.0
07...	--
07...	--
07...	--
07...	--
07...	--
MAY	
09...	20
09...	--
09...	--
09...	--
09...	--
09...	--
AUG	
01...	14
01...	--
01...	--
01...	--
01...	--
01...	--
01...	--
01...	--
01...	--

< Less than
E Estimated value

06344600 GREEN RIVER NEAR NEW HRADEC, ND

LOCATION.--Lat 47°01'40", long 103°03'10", on line between secs.13 and 14, T.141 N., R.98 W., Billings County, Hydrologic Unit 10130202, on left bank above county highway bridge and 8 mi west of New Hradec.

DRAINAGE AREA.--152 mi^2, approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 2,510 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS--Records good except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.15	0.63	1.1	e0.63	0.65	e0.73	e16	2.5	0.62	0.43	0.74	0.87
2	0.19	0.87	1.2	e0.62	e0.65	e0.70	e12	2.1	0.87	0.37	0.56	0.84
3	0.14	1.1	1.2	e0.62	e0.72	e0.57	e6.9	1.7	1.2	0.34	0.49	0.70
4	0.20	1.2	1.2	e0.62	e0.75	0.72	e5.8	1.8	1.7	0.34	0.40	0.51
5	0.35	1.0	1.3	e0.63	e0.70	0.87	e5.6	2.8	1.8	0.42	0.31	0.40
6	0.29	0.95	1.2	e0.69	e0.68	0.89	e6.1	2.0	1.7	0.38	0.33	0.34
7	0.68	1.1	1.2	e0.83	e0.61	0.88	7.5	1.5	1.5	0.34	0.39	0.37
8	0.37	1.4	1.1	e0.93	e0.64	e0.73	7.5	2.0	1.5	0.36	0.48	0.51
9	0.23	1.7	1.1	e0.98	e0.72	e0.67	8.5	2.3	1.7	0.57	0.48	0.71
10	0.22	1.7	1.2	e1.0	e0.64	e0.35	8.5	3.5	307	0.59	0.45	1.0
11	0.23	1.6	1.2	e1.1	e0.65	e0.44	7.7	5.7	297	0.61	0.57	1.2
12	0.26	1.6	1.2	e1.1	e0.81	e0.49	7.4	6.3	84	0.60	0.68	1.2
13	0.26	1.5	e1.1	e1.1	e0.70	e0.93	7.8	7.7	42	0.55	0.61	1.2
14	0.30	1.5	e1.1	e1.1	e0.62	e1.3	7.4	6.6	26	0.47	0.57	1.1
15	0.29	1.5	e1.1	e1.1	e0.84	e1.9	7.1	5.4	18	0.39	0.62	1.1
16	0.28	1.5	e1.2	e1.0	e0.82	e2.7	6.6	4.7	13	0.33	0.49	1.0
17	0.30	1.5	e1.2	e0.98	e0.72	e2.8	5.8	3.7	10	0.36	0.42	0.98
18	0.29	1.4	e1.2	e0.95	e0.66	e2.2	6.5	3.3	8.1	0.35	0.38	1.0
19	0.29	1.3	e1.1	e0.92	e0.78	e1.9	7.8	2.8	6.1	0.35	0.38	1.0
20	0.32	1.3	1.1	e0.98	e0.72	e1.6	9.1	2.1	3.8	0.46	0.40	1.1
21	0.38	1.3	0.98	e1.0	e0.94	e1.7	10	1.6	3.1	0.47	6.1	1.1
22	0.41	1.3	e0.90	e1.0	e0.82	e1.7	8.4	1.3	2.8	0.41	13	0.98
23	0.39	1.3	e0.78	e1.00	e1.1	1.6	7.4	1.4	2.7	0.39	7.6	0.94
24	0.46	1.4	e0.75	e0.98	e1.3	1.4	7.3	1.3	2.2	0.41	6.7	0.98
25	0.45	1.5	e0.74	e1.00	e1.2	e1.2	6.5	1.0	1.8	0.52	5.9	1.0
26	0.43	1.3	e0.71	e1.0	e1.2	e1.0	5.1	1.0	1.2	0.50	3.9	0.77
27	0.46	1.2	e0.70	e0.97	e1.1	e3.7	4.3	0.98	1.1	0.52	2.4	0.60
28	0.47	1.2	e0.70	e0.88	e0.94	21	3.5	1.0	0.89	0.65	1.8	0.54
29	0.47	1.1	e0.69	e0.81	---	e44	3.3	0.92	0.62	0.77	1.3	0.47
30	0.48	1.1	e0.67	e0.74	---	e33	2.8	0.77	0.56	0.76	0.94	0.41
31	0.47	---	e0.65	0.71	---	e22	---	0.71	---	0.82	0.80	---
TOTAL	10.51	39.05	31.57	27.97	22.68	155.67	216.2	82.48	844.56	14.83	60.19	24.92
MEAN	0.339	1.302	1.018	0.902	0.810	5.022	7.207	2.661	28.15	0.478	1.942	0.831
MAX	0.68	1.7	1.3	1.1	1.3	44	16	7.7	307	0.82	13	1.2
MIN	0.14	0.63	0.65	0.62	0.61	0.35	2.8	0.71	0.56	0.33	0.31	0.34
AC-FT	21	77	63	55	45	309	429	164	1680	29	119	49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)

MEAN	3.107	1.726	1.000	1.321	8.652	60.68	39.77	17.18	19.78	12.18	3.579	1.687
MAX	47.7	10.6	3.40	14.3	67.4	323	314	141	101	123	29.5	21.1
(WY)	1983	1999	1999	1974	1983	1972	1975	1970	1970	1964	1981	1986
MIN	0.076	0.31	0.13	0.000	0.000	0.33	0.71	0.60	0.067	0.000	0.000	0.000
(WY)	1993	1993	1993	1993	1993	1964	1990	1992	1988	1988	1988	1994

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 2002	
ANNUAL TOTAL	7710.56		1530.63			
ANNUAL MEAN	21.12		4.194		14.18	
HIGHEST ANNUAL MEAN					35.9	1972
LOWEST ANNUAL MEAN					0.74	1992
HIGHEST DAILY MEAN	850	Mar 14	307	Jun 10	2700	Mar 13 1972
LOWEST DAILY MEAN	0.08	Sep 28	0.14	Oct 3	0.00	May 25 1964
ANNUAL SEVEN-DAY MINIMUM	0.12	Sep 25	0.26	Oct 9	0.00	May 31 1964
MAXIMUM PEAK FLOW			750	Jun 10	4120	May 9 1970
MAXIMUM PEAK STAGE			11.03	Jun 10	a19.58	Mar 21 1997
INSTANTANEOUS LOW FLOW					0.00	May 25 1964
ANNUAL RUNOFF (AC-FT)	15290		3040		10270	
10 PERCENT EXCEEDS	20		6.6		14	
50 PERCENT EXCEEDS	1.1		1.0		1.1	
90 PERCENT EXCEEDS	0.32		0.38		0.20	

a Backwater from ice
e Estimated

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
05...	1035	.30	--	--	--	1170	1.5	9.0	--	--	--	--	--
NOV													
07...	1550	1.1	--	--	--	1100	3.0	5.0	--	--	--	--	--
DEC													
11...	1415	1.2	--	--	--	1220	-3.0	1.3	--	--	--	--	--
FEB													
06...	1455	.69	--	--	--	1220	8.5	1.0	--	--	--	--	--
MAR													
26...	1010	1.1	--	--	--	1800	.0	.5	--	--	--	--	--
APR													
10...	1705	8.6	7.9	7.7	655	653	5.0	.5	120	24.0	14.0	9.40	3
MAY													
10...	1040	3.1	--	--	--	1150	14.0	6.2	--	--	--	--	--
JUN													
10...	1800	716	--	--	--	430	19.5	13.5	--	--	--	--	--
JUL													
30...	1630	.76	7.6	--e	1030	1060	31.0	27.3	200	35.0	28.0	8.80	5
AUG													
29...	1425	1.1	--	--	--	935	25.5	22.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	86.0	59	150	6.0	.20	170	10.2	441	400	1.0	340	<1	20
MAY													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
30...	160	62	299	9.2	.40	260	1.46	710	681	1.0	50	1	20
AUG													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--

06344600 GREEN RIVER NEAR NEW HRADEC, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
05...	--	--	--	--	--
NOV					
07...	--	--	--	--	--
DEC					
11...	--	--	--	--	--
FEB					
06...	--	--	--	--	--
MAR					
26...	--	--	--	--	--
APR					
10...	70	<.10	1	<1	240
MAY					
10...	--	--	--	--	--
JUN					
10...	--	--	--	--	--
JUL					
30...	20	<.10	6	<1	300
AUG					
29...	--	--	--	--	--

< Less than
e Required equipment not functional/available

06345500 HEART RIVER NEAR RICHARDTON, ND

LOCATION.--Lat 46°44'46", long 102°18'27", in NE$^{1}/_{4}$NW$^{1}/_{4}$ sec.29, T.138 N., R.92 W., Stark County, Hydrologic Unit 10130202, on right bank 50 ft upstream from bridge on State Highway 8, 0.5 mi downstream from Plum Creek, and 9.5 mi south of Richardton.

DRAINAGE AREA.--1,240 mi^{2}, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1903 to September 1922, April 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS (WATER YEARS).--WSP 1209: Drainage area. WSP 1239: 1906, 1918(M), 1947(M).

GAGE.--Water-stage recorder. Datum of gage is 2,153.67 ft above National Geodetic Vertical Datum of 1929. May 18, 1903, to Sept. 30, 1922, nonrecording gage at 3 sites in 1 mi reach below present site at different datums. Apr. 14, 1943, to July 7, 1947, nonrecording gage at present site and datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow is regulated by E.A. Patterson Lake (station 06343500), 85 river miles upstream, since 1950. Some diversions for irrigation and water supply at low flow.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 5, 1938, reached a stage of about 26 ft, from information by local residents, discharge, 16,000 ft^{3}/s; flood of Mar. 25, 1943, reached a stage of 24.2 ft from floodmarks, discharge, 11,700 ft^{3}/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	17	e16	e6.7	e14	e17	e32	28	6.0	22	21	23
2	12	16	e16	e6.7	e14	e16	e31	26	6.0	20	16	e21
3	12	16	e16	e6.8	e14	e16	e29	23	6.1	18	20	19
4	12	15	e16	e6.9	e14	e15	e31	21	6.5	16	18	17
5	12	15	e16	e7.0	e13	e15	e35	19	7.6	16	15	16
6	11	16	e16	e7.2	e13	e15	e40	19	8.2	15	12	14
7	11	16	e16	e7.3	e13	e15	e43	19	7.3	14	12	14
8	11	17	e16	e7.6	e14	e14	e41	22	6.4	14	13	14
9	11	17	e17	e7.9	e14	e14	e38	25	7.9	15	12	14
10	13	17	e17	e8.6	e15	e13	e39	28	530	15	16	14
11	13	17	e16	e9.3	e15	e13	e38	31	2260	20	22	15
12	15	17	e16	e9.5	e16	e14	37	28	1290	24	16	13
13	15	17	e15	e10	e16	e14	36	24	900	18	14	11
14	15	17	e15	e11	e17	e14	36	20	387	17	e10	10
15	15	17	e15	e13	e17	e15	35	17	249	16	e7.5	10
16	17	17	e15	e13	e17	e15	33	15	181	15	e6.4	9.9
17	17	18	e14	e14	e18	e16	30	15	136	14	e5.8	9.4
18	17	18	e14	e15	e19	e16	32	14	105	15	e5.2	9.4
19	15	18	e13	e15	e19	e16	37	13	86	15	e5.0	9.1
20	15	18	e13	e16	e19	e16	40	13	69	18	e5.3	8.7
21	19	18	e13	e16	e19	e16	43	11	58	19	e5.8	8.5
22	22	18	e11	e16	e19	e16	43	9.8	53	28	e6.6	8.8
23	23	18	e11	e16	e19	e16	39	10	43	28	16	9.2
24	25	19	e10	e16	e19	e16	38	9.4	37	23	32	9.5
25	24	19	e9.2	e16	e18	e16	34	17	43	24	71	9.7
26	31	18	e8.9	e16	e18	e16	32	16	34	29	47	10
27	25	17	e8.2	e15	e18	e16	34	11	29	41	34	9.9
28	24	e17	e7.7	e15	e17	e17	35	9.2	32	29	32	10
29	23	e16	e7.3	e15	---	e20	32	8.1	29	25	27	11
30	21	e16	e7.0	e14	---	e24	31	7.1	24	24	31	11
31	18	---	e6.9	e14	---	e29	---	6.4	---	22	28	---
TOTAL	526	512	408.2	367.5	458	501	1074	535.0	6637.0	629	582.6	369.1
MEAN	16.97	17.07	13.17	11.85	16.36	16.16	35.80	17.26	221.2	20.29	18.79	12.30
MAX	31	19	17	16	19	29	43	31	2260	41	71	23
MIN	11	15	6.9	6.7	13	13	29	6.4	6.0	14	5.0	8.5
AC-FT	1040	1020	810	729	908	994	2130	1060	13160	1250	1160	732

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2002, BY WATER YEAR (WY)

MEAN	16.99	13.83	9.090	8.885	45.20	373.6	320.2	101.6	165.2	68.98	29.97	11.91
MAX	240	114	52.5	112	643	2125	2160	1318	1225	584	401	86.4
(WY)	1983	1983	1983	1973	1982	1945	1950	1970	1906	1969	1909	1986
MIN	0.10	1.93	1.00	0.000	0.000	1.66	5.77	2.78	0.37	0.40	0.000	0.000
(WY)	1961	1961	1920	1962	1950	1964	1905	1992	1961	1919	1991	1958

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1903 - 2002	
ANNUAL TOTAL	53089.2		12599.4			
ANNUAL MEAN	145.4		34.52		97.88	
HIGHEST ANNUAL MEAN					316	1982
LOWEST ANNUAL MEAN					5.18	1961
HIGHEST DAILY MEAN	2800	Mar 14	2260	Jun 11	17000	Apr 17 1950
LOWEST DAILY MEAN	5.5	Mar 1	a5.0	Aug 19	0.00	Jul 26 1903
ANNUAL SEVEN-DAY MINIMUM	5.9	Feb 24	5.7	Aug 16	0.00	Jul 26 1903
MAXIMUM PEAK FLOW			3750	Jun 11	23400	Apr 16 1950
MAXIMUM PEAK STAGE			15.02	Jun 11	28.05	Apr 16 1950
INSTANTANEOUS LOW FLOW			5.0	Aug 19	0.00	Jul 26 1903
ANNUAL RUNOFF (AC-FT)	105300		24990		70910	
10 PERCENT EXCEEDS	306		35		127	
50 PERCENT EXCEEDS	19		16		12	
90 PERCENT EXCEEDS	8.0		8.7		2.0	

a About
e Estimated

06345500 HEART RIVER NEAR RICHARDTON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
10...	1150	13	--	--	--	1740	9.5	8.5	--	--	--	--	--
NOV													
05...	1540	16	--	--	--	1770	20.5	7.0	--	--	--	--	--
DEC													
10...	1515	17	--	--	--	2270	2.2	.2	--	--	--	--	--
FEB													
07...	1025	13	--	--	--	2330	7.0	.1	--	--	--	--	--
MAR													
26...	1240	16	--	--	--	1880	4.0	.3	--	--	--	--	--
APR													
12...	1550	38	7.8	8.0	1180	1200	21.7	8.7	300	60.0	37.0	9.30	4
JUN													
10...	1400	642	--	--	--	840	18.0	15.0	--	--	--	--	--
AUG													
01...	1020	20	8.3	--e	1430	1460	16.0	21.0	270	37.0	43.0	14.0	6
30...	1400	36	--	--	--	1370	27.5	23.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	150	87	215	10.0	.20	400	83.1	810	797	1.0	110	<1	30
JUN													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
01...	220	62	210	34.0	.50	510	55.0	993	986	2.0	100	<1	40
30...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
10...	--	--	--	--	--
NOV					
05...	--	--	--	--	--
DEC					
10...	--	--	--	--	--
FEB					
07...	--	--	--	--	--
MAR					
26...	--	--	--	--	--
APR					
12...	60	<.10	<1	<1	900
JUN					
10...	--	--	--	--	--
AUG					
01...	20	<.10	5	<1	700
30...	--	--	--	--	--

< Less than
e Required equipment not functional/available

06345780 HEART RIVER ABOVE LAKE TSCHIDA NEAR GLEN ULLIN, ND

LOCATION.--Lat 46°39'24", Long 102°04'40", in SW$^1/_4$NE$^1/_4$NE$^1/_4$ sec.30, T.137 N., R.90 W., Grant County, Hydrologic Unit 10130202, on right bank 100 ft downstream from bridge on county road and 16 mi south and 1 mi west of Hebron.

DRAINAGE AREA.--1,530 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,090 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. Flow is regulated by E.A. Patterson Lake (station 06343500) about 90 river mi upstream from station, and some diversions for irrigation and water supply at low flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	32	e20	e7.6	e17	e18	e78	54	14	33	26	37
2	19	28	e21	e7.5	e16	e17	e68	50	14	28	21	29
3	15	27	e21	e7.5	e16	e17	e60	46	15	24	19	24
4	14	26	e20	e7.6	e16	e17	e86	42	14	21	17	23
5	15	25	e20	e7.9	e16	e16	91	38	14	18	19	20
6	15	25	e20	e8.3	e16	e16	88	37	16	15	16	18
7	14	27	e20	e8.7	e17	e16	83	36	20	13	11	16
8	14	25	e20	e9.1	e18	e16	84	39	18	11	10	15
9	15	26	e20	e9.9	e19	e15	66	42	18	12	13	14
10	17	28	e21	e11	e20	e15	78	46	163	12	9.9	14
11	17	27	e21	e11	e21	e15	74	50	1210	12	7.0	12
12	20	26	e21	e13	e21	e16	72	57	1750	14	20	12
13	21	27	21	e14	e22	e16	69	56	1080	26	16	12
14	23	27	21	e16	e22	e17	66	50	668	18	11	13
15	22	27	21	e17	e23	e18	66	44	469	12	8.3	12
16	22	27	e20	e18	e23	e19	64	38	375	12	6.0	11
17	26	27	e20	e18	e23	e20	60	35	304	11	5.5	9.8
18	28	27	e20	e19	e23	e21	62	32	240	10	3.9	10
19	28	27	e19	e19	e23	e22	65	31	197	9.7	4.0	8.9
20	27	27	e19	e20	e23	e22	69	28	153	11	4.0	8.9
21	24	27	e18	e20	e23	e23	74	27	119	13	4.9	7.8
22	28	27	e17	e20	e23	e23	78	26	95	19	6.4	7.2
23	37	28	e15	e20	e23	e24	79	24	87	28	8.2	7.1
24	40	28	e13	e20	e22	e25	73	23	67	38	9.8	8.0
25	41	28	e12	e20	e21	e25	67	22	58	29	28	8.5
26	40	21	e11	e20	e20	e26	61	31	64	28	100	8.9
27	48	21	e9.4	e20	e19	e28	61	39	52	37	63	9.4
28	43	21	e8.4	e19	e19	e45	62	30	43	53	48	12
29	40	21	e8.0	e19	---	e58	63	24	45	39	40	12
30	39	20	e7.8	e18	---	e70	59	20	40	30	34	13
31	37	---	e7.7	e18	---	e85	---	17	---	29	37	---
TOTAL	813	780	533.3	464.1	565	781	2126	1134	7422	665.7	626.9	413.5
MEAN	26.23	26.00	17.20	14.97	20.18	25.19	70.87	36.58	247.4	21.47	20.22	13.78
MAX	48	32	21	20	23	85	91	57	1750	53	100	37
MIN	14	20	7.7	7.5	16	15	59	17	14	9.7	3.9	7.1
AC-FT	1610	1550	1060	921	1120	1550	4220	2250	14720	1320	1240	820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2002, BY WATER YEAR (WY)

MEAN	22.57	22.46	14.60	10.43	41.60	350.2	137.8	83.13	120.6	78.10	50.80	13.56
MAX	104	95.3	57.7	25.2	205	1587	582	391	394	265	252	44.2
(WY)	1999	1999	1999	1996	1996	1997	1997	1995	2001	1993	1995	1995
MIN	2.23	6.52	4.14	0.32	3.41	18.5	9.90	6.20	7.21	3.16	0.050	0.10
(WY)	1992	1991	1993	1991	1989	1990	1992	1992	1992	1989	1991	1991

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1988 - 2002	
ANNUAL TOTAL	64557.8		16324.5			
ANNUAL MEAN	176.9		44.72		79.99	
HIGHEST ANNUAL MEAN					229	1997
LOWEST ANNUAL MEAN					9.17	1992
HIGHEST DAILY MEAN	3780	Mar 15	1750	Jun 12	11000	Mar 22 1997
LOWEST DAILY MEAN	7.0	Feb 25	3.9	Aug 18	0.00	Sep 1 1991
ANNUAL SEVEN-DAY MINIMUM	7.1	Feb 24	5.0	Aug 16	0.00	Aug 30 1991
MAXIMUM PEAK FLOW			2860	Jun 11	a11500	Mar 22 1997
MAXIMUM PEAK STAGE			12.47	Jun 11	b26.74	Mar 21 1997
ANNUAL RUNOFF (AC-FT)	128100		32380		57950	
10 PERCENT EXCEEDS	388		66		122	
50 PERCENT EXCEEDS	28		21		19	
90 PERCENT EXCEEDS	10		9.9		3.4	

a About
b Backwater from ice
e Estimated

06345780 HEART RIVER ABOVE LAKE TSCHIDA NEAR GLEN ULLIN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1635	16	--	--	--	1670	10.5	9.2	--	--	--	--	--
NOV													
05...	1310	25	--	--	--	1780	9.5	4.5	--	--	--	--	--
DEC													
10...	1305	20	--	--	--	2320	-1.2	.2	--	--	--	--	--
FEB													
07...	1400	17	--	--	--	2370	11.0	.4	--	--	--	--	--
MAR													
25...	1430	25	--	--	--	1950	-1.0	.4	--	--	--	--	--
APR													
08...	1415	80	7.6	--e	1400	1410	3.0	.7	320	61.0	42.0	7.70	4
MAY													
20...	1415	28	--	--	--	2230	19.0	14.5	--	--	--	--	--
JUN													
12...	1300	1570	--	--	--	1080	17.0	14.5	--	--	--	--	--
AUG													
01...	1645	22	7.9	8.1	1570	1610	23.0	22.3	300	53.0	42.0	15.0	6
27...	1220	59	--	--	--	1760	29.0	22.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
08...	180	54	274	11.0	.30	460	208	960	927	1.0	70	<1	30
MAY													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
01...	240	62	251	37.0	.50	560	65.9	1120	1100	1.0	200	1	40
27...	--	--	--	--	--	--	--	--	--	--	--	--	--

06345780 HEART RIVER ABOVE LAKE TSCHIDA NEAR GLEN ULLIN, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
11...	--	--	--	--	--
NOV					
05...	--	--	--	--	--
DEC					
10...	--	--	--	--	--
FEB					
07...	--	--	--	--	--
MAR					
25...	--	--	--	--	--
APR					
08...	40	<.10	1	<1	870
MAY					
20...	--	--	--	--	--
JUN					
12...	--	--	--	--	--
AUG					
01...	30	<.10	5	2	730
27...	--	--	--	--	--

< Less than
e Required equipment not functional/available

06346000 LAKE TSCHIDA NEAR GLEN ULLIN, ND

LOCATION.--Lat 46°35'43", long 101°48'34", in SW$^{1}/_{4}$ NE$^{1}/_{4}$ sec.13, T.136 N., R.89 W., Grant County, Hydrologic Unit 10130202, 10 mi upstream from Heart Butte Creek and 14 mi north of Elgin.

DRAINAGE AREA.--1,710 mi^{2}, approximately.

MONTHEND-ELEVATION AND CONTENTS RECORDS

PERIOD OF RECORD.--August 1949 to current year. Prior to October 1957, published as Heart Butte Reservoir near Glen Ullin.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by earth-fill dam; storage began Sept. 29, 1949; dam completed Dec. 9, 1949. Total capacity is 430,000 acre-ft at maximum pool, elevation, 2,118.2 ft. Dead storage is 6,750 acre-ft below lowest point of outlet, elevation, 2,030.0 ft. Active conservation storage is 69,030 acre-ft between elevations 2,030.0 ft and 2,064.5 ft, crest of spillway. Figures given herein represent total contents based on capacity table dated August 1992.

Controlled releases are through 4 by 5 ft slide gate. The spillway is uncontrolled "glory hole" type and discharges through a conduit 14 ft in diameter. The reservoir is for flood control, irrigation, and incidental water supply.

COOPERATION.--Records furnished by U.S. Bureau of Reclamation. Extremes are those observed.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 174,000 acre-ft, Apr. 9, 1952, elevation, 2,086.23 ft; minimum since first reaching spillway level, 32,820 acre-ft, Oct. 25, 1991, elevation, 2,049.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 65,020 acre-ft, June 19, elevation, 2,063.85 ft; minimum, 52,040 acre-ft, Sept. 27, elevation, 2,059.61 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,061.58	57,880	--
Oct. 31	2,061.12	56,490	-1,390
Nov. 30	2,061.02	56,180	-310
Dec. 31	2,060.61	54,960	-1,220
CAL YR 2001	--	--	+410
Jan. 31	2,060.26	53,930	-1,030
Feb. 28	2,060.00	53,170	-760
Mar. 31	2,060.01	53,200	+30
Apr. 30	2,061.52	57,700	+4,500
May 31	2,061.34	57,150	-550
June 30	2,063.32	63,310	+6,160
July 31	2,061.49	57,600	-5,710
Aug. 31	2,060.17	53,670	-3,930
Sept. 30	2,059.66	52,190	-1,480
WTR YR 2002	--	--	-5,690

06346000 LAKE TSCHIDA NEAR GLEN ULLIN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971, 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTERVAL(IN METERS) (82047)	DEPTH TO BOTTOM OF SAMPLE INTERVAL(IN METERS) (82048)	SPECIFIC CONDUCTANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STANDARD UNITS) (00403)	COLOR (PLATINUM-COBALT UNITS) (00080)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)
OCT													
16...	1230	1.0	1.5	1210	8.6	8	290	52.7	39.2	9.97	4	155	52
FEB													
07...	1255	.50	1.0	1370	8.4	15	320	56.9	42.7	10.1	4	174	53
MAY													
09...	1230	1.0	1.5	1460	8.3	52	250	49.3	31.5	9.91	6	214	64
AUG													
01...	1255	.90	1.1	--	8.6	18	330	60.9	43.3	10.9	5	190	55

Date	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	ORTHOPHOSPHATE, DISSOLVED (MG/L AS P) (00671)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	BORON, DISSOLVED (UG/L AS B) (01020)
OCT													
16...	218	8.22	.2	<.2	422	<.04	<.008	<.05	E.03	<.02	836	818	260
FEB													
07...	244	9.04	.3	.4	462	.05	<.008	.05	E.03	<.02	944	902	300
MAY													
09...	263	7.43	.2	.5	482	<.04	<.008	<.05	<.06	<.02	1010	953	310
AUG													
01...	255	9.84	.3	2.8	484	<.04	<.008	E.04	<.06	<.02	995	955	300

06346000 LAKE TSCHIDA NEAR GLEN ULLIN, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	RESER-VOIR DEPTH (FEET) (72025)	SAM-PLING DEPTH (M) (00098)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS METERS (82131)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	TEMPER-ATURE AIR (DEG C) (00020)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)
OCT													
16...	1220	44.6	.0	1250	8.9	10.9	10.4	101	715	--	37.2	15.5	175
16...	1221	--	1.0	1250	8.5	10.9	10.1	--	--	--	--	--	--
16...	1222	--	2.0	1250	8.5	10.9	10.0	--	--	--	--	--	--
16...	1223	--	4.0	1250	8.5	10.8	9.9	--	--	--	--	--	--
16...	1224	--	6.0	1250	8.5	10.8	9.9	--	--	--	--	--	--
16...	1225	--	8.0	1250	8.5	10.8	9.8	--	--	--	--	--	--
16...	1226	--	10.0	1250	8.6	10.8	9.8	--	--	--	--	--	--
16...	1227	--	13.0	1250	8.5	10.7	9.5	--	--	--	--	--	--
FEB													
07...	1245	43.3	.50	1380	8.4	1.6	11.9	92	705	.46	229	13.0	225
07...	1246	--	1.0	1360	8.4	1.8	12.0	--	--	--	--	--	--
07...	1247	--	2.0	1360	8.4	2.2	11.9	--	--	--	--	--	--
07...	1248	--	4.0	1360	8.4	2.5	12.0	--	--	--	--	--	--
07...	1249	--	6.0	1370	8.4	2.9	11.3	--	--	--	--	--	--
07...	1250	--	8.0	1380	8.3	3.2	10.6	--	--	--	--	--	--
07...	1251	--	10.0	1470	8.1	3.7	6.9	--	--	--	--	--	--
07...	1252	--	12.0	1700	7.8	4.4	4.4	--	--	--	--	--	--
07...	1253	--	13.2	1710	7.8	4.3	4.3	--	--	--	--	--	--
MAY													
09...	1220	43.3	.0	1400	8.3	6.6	13.3	117	710	--	97.2	7.0	270
09...	1221	--	.50	1400	8.3	6.5	12.4	--	--	--	--	--	--
09...	1222	--	1.0	1400	8.3	6.6	12.2	--	--	--	--	--	--
09...	1223	--	2.0	1400	8.3	6.6	12.1	--	--	--	--	--	--
09...	1224	--	4.0	1400	8.3	6.6	12.0	--	--	--	--	--	--
09...	1225	--	6.0	1410	8.3	6.5	12.0	--	--	--	--	--	--
09...	1226	--	8.0	1410	8.3	6.5	12.0	--	--	--	--	--	--
09...	1227	--	10.0	1410	8.3	6.5	11.9	--	--	--	--	--	--
09...	1228	--	12.0	1410	8.3	6.5	11.9	--	--	--	--	--	--
09...	1229	--	13.2	1410	8.3	6.5	11.9	--	--	--	--	--	--
AUG													
01...	1245	44.3	.0	1460	8.5	23.2	8.3	105	713	--	43.2	17.0	300
01...	1246	--	.50	1460	8.5	23.2	8.3	--	--	--	--	--	--
01...	1247	--	1.0	1460	8.5	23.2	8.2	--	--	--	--	--	--
01...	1248	--	2.0	1460	8.5	23.2	8.2	--	--	--	--	--	--
01...	1249	--	4.0	1460	8.5	23.2	8.1	--	--	--	--	--	--
01...	1250	--	6.0	1460	8.5	23.2	8.1	--	--	--	--	--	--
01...	1251	--	8.0	1460	8.5	23.2	8.1	--	--	--	--	--	--
01...	1252	--	10.0	1460	8.5	23.2	8.0	--	--	--	--	--	--
01...	1253	--	12.0	1460	8.5	23.1	7.8	--	--	--	--	--	--
01...	1254	--	13.5	1460	7.8	17.7	.3	--	--	--	--	--	--

06346000 LAKE TSCHIDA NEAR GLEN ULLIN, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
16...	7.0
16...	--
16...	--
16...	--
16...	--
16...	--
16...	--
16...	--
FEB	
07...	7.0
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
MAY	
09...	10
09...	--
09...	--
09...	--
09...	--
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AUG	
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< Less than
E Estimated value

06347000 ANTELOPE CREEK NEAR CARSON, ND

LOCATION.--Lat 46°32'43", long 101°38'42", in NE$^1/_4$NE$^1/_4$NW$^1/_4$ sec.5, T.135 N., R.87 W., Grant County, Hydrologic Unit 10130203, on right bank 90 ft upstream from bridge on county road and 9 mi northwest of Carson.

DRAINAGE AREA.--221 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1948 to October 1975, February 1999 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,960 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 23, 1958, wire weight gage at site 1 mile upstream and June 24, 1958, to Sept. 30, 1975, 1.15 miles upstream at datum 14 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, about 236 ft^3/s, July 5, gage height, 7.22 ft; minimum daily discharge, 0.04 ft^3/s, Aug. 14-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	e4.4	e4.0	e19	11	2.3	0.56	0.82	1.4
2	---	---	---	---	e4.5	e4.1	e16	11	2.8	0.35	0.65	1.1
3	---	---	---	---	e4.5	e4.2	e14	9.9	3.0	0.31	0.58	0.89
4	---	---	---	---	e4.5	e4.2	e14	9.9	2.8	30	0.44	0.77
5	---	---	---	---	e4.5	e4.2	e14	9.1	2.7	136	0.32	0.58
6	---	---	---	---	e4.6	e4.2	e14	9.8	2.7	55	0.24	0.91
7	---	---	---	---	e4.6	e4.1	e15	9.6	2.7	28	0.38	1.3
8	---	---	---	---	e4.7	e4.0	e15	9.3	2.9	15	0.24	1.7
9	---	---	---	---	e4.7	e3.8	e16	9.9	3.0	10	0.27	1.0
10	---	---	---	---	e4.7	e3.8	16	8.5	2.8	12	0.20	1.4
11	---	---	---	---	e4.7	e4.0	17	9.1	2.9	9.1	0.13	1.7
12	---	---	---	---	e4.8	e4.8	17	8.6	2.3	3.7	0.08	1.4
13	---	---	---	---	e4.7	e7.6	16	7.5	2.1	3.1	e0.06	3.2
14	---	---	---	---	e4.8	e7.4	15	7.1	2.0	2.3	0.04	3.2
15	---	---	---	---	e4.8	e8.0	14	6.4	2.3	1.7	e0.04	2.6
16	---	---	---	---	e4.7	e9.2	13	5.7	2.0	1.2	e0.16	2.4
17	---	---	---	---	e4.7	e9.5	12	5.1	1.9	0.95	0.28	2.0
18	---	---	---	---	e4.6	e8.6	14	4.8	1.6	0.88	0.18	2.0
19	---	---	---	---	e4.4	e7.9	18	4.2	2.0	0.88	0.25	1.3
20	---	---	---	---	e4.5	e7.2	16	3.9	1.9	1.0	0.21	0.96
21	---	---	---	---	e4.6	e6.6	17	3.7	1.8	0.87	0.63	0.66
22	---	---	---	---	e4.7	e6.8	17	3.5	2.3	0.69	0.82	0.79
23	---	---	---	---	e4.7	e7.0	16	3.7	e3.6	0.81	0.79	0.59
24	---	---	---	---	e4.6	e6.7	18	4.2	2.0	1.0	0.55	0.20
25	---	---	---	---	e4.5	e7.0	17	4.3	1.1	4.9	0.40	0.29
26	---	---	---	---	e4.4	e9.0	16	4.4	0.95	2.0	0.41	0.31
27	---	---	---	---	e4.2	e16	15	e4.6	1.0	1.3	0.42	0.32
28	---	---	---	---	e4.0	e22	14	e4.3	0.86	1.4	1.3	0.43
29	---	---	---	---	---	e24	13	e4.0	0.76	1.6	1.1	0.55
30	---	---	---	---	---	e23	12	e3.4	0.56	1.4	1.8	0.58
31	---	---	---	---	---	e21	---	e2.3	---	1.0	1.8	---
TOTAL	---	---	---	---	128.1	263.9	460	202.8	63.63	329.00	15.59	36.53
MEAN	---	---	---	---	4.575	8.513	15.33	6.542	2.121	10.61	0.503	1.218
MAX	---	---	---	---	4.8	24	19	11	3.6	136	1.8	3.2
MIN	---	---	---	---	4.0	3.8	12	2.3	0.56	0.31	0.04	0.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2002, BY WATER YEAR (WY)

MEAN	1.360	2.102	1.452	2.111	7.227	50.85	57.97	23.71	22.80	12.89	3.899	1.184
MAX	6.44	9.41	5.79	32.6	65.1	183	422	208	96.3	155	52.2	6.40
(WY)	1973	1973	2000	1973	1999	1951	1950	1970	1971	1969	1952	1955
MIN	0.000	0.32	0.15	0.000	0.000	1.48	2.00	1.56	1.84	0.003	0.000	0.000
(WY)	1960	1960	1962	1950	1949	1965	1961	1961	1959	1961	1958	1948

SUMMARY STATISTICS WATER YEARS 1948 - 2002

ANNUAL MEAN	a15.61		
HIGHEST ANNUAL MEAN	a47.1		1952
LOWEST ANNUAL MEAN	a2.78		1961
HIGHEST DAILY MEAN	4400	Apr 17	1950
LOWEST DAILY MEAN	0.00	Aug 24	1948
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 24	1948
MAXIMUM PEAK FLOW	b11100	Apr 16	1950
MAXIMUM PEAK STAGE	c17.95	Apr 16	1950
10 PERCENT EXCEEDS	18		
50 PERCENT EXCEEDS	1.5		
90 PERCENT EXCEEDS	0.00		

a Based on complete water years only (1949-75, 2000)
b From rating curve extended above 1,100 ft^3/s on basis of slope-area measurement of peak flow at former site, 1 mi upstream
c From floodmark at former site, 1 mi upstream
e Estimated

06347000 ANTELOPE CREEK NEAR CARSON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAR													
12...	1600	4.8	--	--	--	1210	8.0	.1	--	--	--	--	--
28...	1710	22	--	--	--	790	2.5	.2	--	--	--	--	--
APR													
17...	1220	12	8.5	8.3	797	782	17.5	9.5	290	54.0	38.0	6.40	2
MAY													
24...	1345	4.1	--	--	--	1230	16.0	10.7	--	--	--	--	--
JUL													
16...	1450	1.1	--	--	--	1140	36.0	29.5	--	--	--	--	--
AUG													
15...	1415	.04	8.0	--e	909	925	23.0	17.5	300	38.0	50.0	10.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	66.0	32	264	9.4	.30	170	15.3	492	503	1.0	80	<1	40
MAY													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	92.0	39	270	9.8	.40	210	.06	608	572	1.0	70	1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAR					
12...	--	--	--	--	--
28...	--	--	--	--	--
APR					
17...	50	<.10	<1	<1	640
MAY					
24...	--	--	--	--	--
JUL					
16...	--	--	--	--	--
AUG					
15...	10	<.10	1	1	510

< Less than
e Required equipment not functional/available

06347500 BIG MUDDY CREEK NEAR ALMONT, ND

LOCATION.--Lat 46°41'40", long 101°28'01", in NE$^1/_4$NE$^1/_4$SE$^1/_4$ sec.12, T.137 N., R.86 W., Morton County, Hydrologic Unit 10130203, on left bank 50 ft downstream from county highway bridge, 2 mi downstream from Hailstone Creek, 3 mi southeast of Almont, and 12 mi upstream from mouth.

DRAINAGE AREA.--456 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to September 1970, October 1970 to September 1973 (annual maximum discharge), February 1991 to current year (seasonal records only since February 1991).

GAGE.--Water-stage recorder. Elevation of gage is 1,864 ft above National Geodetic Vertical Datum of 1929, by barometer. Prior to Sept. 5, 1952, nonrecording gage at same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 141 ft^3/s, Sept. 1, gage height, 5.80 ft; maximum gage height, 5.9 ft, Mar. 29, affected by backwater from ice; minimum daily discharge recorded, 1.3 ft^3/s, July 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	e4.9	e4.7	e34	16	2.8	1.7	1.8	71
2	---	---	---	---	e5.0	e4.7	e28	16	3.1	1.5	1.8	18
3	---	---	---	---	e5.1	e4.8	e25	14	3.3	1.5	1.8	9.4
4	---	---	---	---	e5.2	e4.8	e23	14	3.4	1.7	1.6	5.3
5	---	---	---	---	e5.2	e4.8	e20	13	3.3	1.7	1.5	3.7
6	---	---	---	---	e5.2	e4.7	e20	12	3.0	1.5	1.8	3.0
7	---	---	---	---	e5.3	e4.7	e23	12	2.9	1.4	1.7	2.6
8	---	---	---	---	e5.3	e4.7	e25	12	3.0	1.5	1.5	2.5
9	---	---	---	---	e5.4	e4.8	e28	12	3.1	2.0	1.7	2.5
10	---	---	---	---	e5.4	e5.1	e29	12	2.9	2.1	1.8	2.4
11	---	---	---	---	e5.4	e7.0	e30	12	2.9	2.0	1.7	2.2
12	---	---	---	---	e5.4	e9.0	e29	14	2.8	1.9	1.7	2.1
13	---	---	---	---	e5.4	e9.9	e29	14	2.6	1.8	1.7	2.1
14	---	---	---	---	e5.3	e10	e27	14	2.6	1.7	2.1	2.0
15	---	---	---	---	e5.2	e11	e27	13	3.2	1.4	2.0	2.0
16	---	---	---	---	e5.2	e12	e26	12	3.6	1.3	2.1	1.9
17	---	---	---	---	e5.1	e13	e25	10	3.0	1.3	2.4	1.8
18	---	---	---	---	e5.2	e12	24	8.8	2.7	1.6	2.4	1.8
19	---	---	---	---	e5.2	e11	25	7.8	3.2	1.6	2.2	1.7
20	---	---	---	---	e5.2	e10	27	7.0	3.4	1.6	2.1	1.7
21	---	---	---	---	e5.3	e9.1	27	6.2	3.6	1.5	2.1	1.7
22	---	---	---	---	e5.2	e8.5	26	5.7	3.4	1.3	2.1	1.7
23	---	---	---	---	e5.2	e8.0	26	5.4	3.7	1.6	2.0	1.7
24	---	---	---	---	e5.1	e8.0	25	5.0	3.4	1.8	2.0	1.7
25	---	---	---	---	e5.1	e10	22	4.7	3.6	2.2	2.0	1.6
26	---	---	---	---	e5.0	e21	21	4.5	3.4	1.9	2.0	1.6
27	---	---	---	---	e4.9	e52	20	3.8	3.0	2.0	2.0	1.5
28	---	---	---	---	e4.8	e73	19	3.9	2.7	2.0	2.5	1.5
29	---	---	---	---	---	e67	17	3.6	2.4	1.8	2.4	1.5
30	---	---	---	---	---	e56	15	3.3	1.8	1.9	2.5	1.6
31	---	---	---	---	---	e41	---	3.0	---	1.9	2.5	---
TOTAL	---	---	---	---	145.2	506.3	742	294.7	91.8	52.7	61.5	155.8
MEAN	---	---	---	---	5.186	16.33	24.73	9.506	3.060	1.700	1.984	5.193
MAX	---	---	---	---	5.4	73	34	16	3.7	2.2	2.5	71
MIN	---	---	---	---	4.8	4.7	15	3.0	1.8	1.3	1.5	1.5
AC-FT	---	---	---	---	288	1000	1470	585	182	105	122	309

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	1.197	1.601	1.329	1.080	20.20	147.8	148.2	46.34	39.69	43.00	8.560	3.036
MAX	2.61	3.19	2.48	4.59	220	909	1160	540	405	1042	75.4	15.2
(WY)	1952	1952	1952	1947	1995	1997	1950	1970	1966	1993	1998	1953
MIN	0.39	0.58	0.35	0.065	0.000	0.73	1.48	1.01	0.43	0.042	0.12	0.35
(WY)	1962	1961	1949	1949	1966	1965	1992	1961	1961	1961	1961	1991

SUMMARY STATISTICS WATER YEARS 1946 - 2002

ANNUAL MEAN	a36.98		
HIGHEST ANNUAL MEAN	a112		1950
LOWEST ANNUAL MEAN	a1.41		1961
HIGHEST DAILY MEAN	15000	Apr 17	1950
LOWEST DAILY MEAN	0.00	Jan 28	1946
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 28	1946
MAXIMUM PEAK FLOW	20200	Apr 17	1950
MAXIMUM PEAK STAGE	30.99	Jul 23	1993
ANNUAL RUNOFF (AC-FT)	a26790		
10 PERCENT EXCEEDS	31		
50 PERCENT EXCEEDS	1.7		
90 PERCENT EXCEEDS	0.40		

a Based on complete water years only (1946-70)
e Estimated

06347500 BIG MUDDY CREEK NEAR ALMONT, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1991 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAR													
28...	1440	70	--	--	--	--	9.0	.5	--	--	--	--	--
APR													
17...	1550	25	8.5	8.1	1680	1650	21.0	12.2	260	45.0	36.0	11.0	8
MAY													
24...	1130	4.9	--	--	--	2830	14.0	9.8	--	--	--	--	--
JUL													
18...	1120	1.5	--	--	--	2440	24.5	23.5	--	--	--	--	--
AUG													
15...	1145	2.0	8.4	8.7	2380	2430	19.5	18.5	230	30.0	37.0	11.0	15

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAR													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	280	69	353	7.3	.40	560	77.0	1160	1150	2.0	160	<1	40
MAY													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	520	82	817	8.3	1.10	580	9.16	1680	1680	9.0	80	1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAR					
28...	--	--	--	--	--
APR					
17...	50	<.10	<1	<1	660
MAY					
24...	--	--	--	--	--
JUL					
18...	--	--	--	--	--
AUG					
15...	20	<.10	4	<1	580

< Less than

06348300 HEART RIVER AT STARK BRIDGE NEAR JUDSON, ND

LOCATION.--Lat 46°42'11", long 101°12'37", in $SE^1/_4SW^1/_4SW^1/_4$ sec.6, T.137 N., R.83 W., Morton County, Hydrologic Unit 10130203, on right bank 50 ft upstream from county bridge and 9.5 mi southeast of Judson.

DRAINAGE AREA.--2,930 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1986 to September 1988 (annual maximum discharges only), October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,720 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by Lake Tschida (06346000) since 1949.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	58	e76	e57	e52	e43	e48	60	55	57	63	45
2	89	45	e75	e56	e52	e42	e46	54	49	39	67	68
3	89	36	e72	e55	e52	e42	e44	49	56	31	60	94
4	88	32	e71	e55	e52	e42	e42	49	56	50	54	63
5	89	29	e70	e54	e52	e42	e40	44	71	96	41	57
6	91	28	e70	e54	e52	e42	e41	45	74	167	38	61
7	89	27	e70	e54	e52	e42	e43	45	75	139	41	63
8	91	28	e70	e53	e52	e42	e51	47	74	89	36	63
9	93	26	e69	e53	e52	e42	e65	50	79	76	43	62
10	99	26	e69	e53	e52	e42	e90	48	81	76	55	67
11	96	25	e68	e53	e52	e42	e107	46	79	67	65	65
12	76	25	e68	e52	e52	e42	111	47	68	66	71	62
13	67	25	e67	e52	e52	e43	103	44	43	53	72	61
14	66	24	e67	e52	e52	e43	93	44	37	37	81	58
15	62	24	e67	e52	e51	e43	e87	38	41	39	80	47
16	60	24	e66	e52	e50	e43	84	33	57	53	88	41
17	59	24	e65	e52	e49	e42	77	32	58	73	94	40
18	59	49	e64	e52	e49	e42	77	29	59	72	96	40
19	58	59	e63	e51	e48	e42	79	26	59	76	81	43
20	58	59	e62	e51	e48	e42	79	23	59	79	63	42
21	58	58	e62	e51	e48	e42	85	21	64	65	63	43
22	59	59	e61	e51	e47	e42	83	19	63	63	62	39
23	61	60	e60	e52	e47	e42	78	35	72	77	62	32
24	66	61	e60	e52	e47	e43	83	83	75	89	58	29
25	64	61	e60	e51	e46	e45	74	88	77	90	49	25
26	91	80	e59	e51	e46	e47	70	87	72	83	44	23
27	65	e76	e59	e51	e45	e49	69	89	71	63	43	19
28	60	e79	e58	e51	e44	e52	72	84	63	46	50	20
29	60	e79	e58	e51	---	e53	67	80	63	60	58	19
30	59	e77	e58	e51	---	e51	64	79	65	55	44	20
31	58	---	e57	e51	---	e50	---	77	---	56	35	---
TOTAL	2271	1363	2021	1626	1393	1361	2152	1595	1915	2182	1857	1411
MEAN	73.26	45.43	65.19	52.45	49.75	43.90	71.73	51.45	63.83	70.39	59.90	47.03
MAX	99	80	76	57	52	53	111	89	81	167	96	94
MIN	58	24	57	51	44	42	40	19	37	31	35	19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)

MEAN	65.67	46.45	34.24	26.14	101.6	656.0	386.2	201.4	150.6	245.5	150.0	68.72
MAX	254	131	94.9	59.0	578	3050	2468	800	484	1479	674	192
(WY)	1995	1999	1999	1996	1995	1997	1997	1995	2001	1993	1998	1995
MIN	12.3	14.1	7.07	0.34	4.19	37.1	15.0	16.3	14.5	28.8	19.7	11.7
(WY)	1993	1989	1991	1991	1993	1990	1990	1992	1990	1990	1992	1992

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	106860		21147			
ANNUAL MEAN	292.8		57.94		178.5	
HIGHEST ANNUAL MEAN					569	1997
LOWEST ANNUAL MEAN					22.3	1990
HIGHEST DAILY MEAN	5470	Jul 27	167	Jul 6	15000	Mar 23 1997
LOWEST DAILY MEAN	24	Nov 14	19	May 22	0.21	Jan 1 1991
ANNUAL SEVEN-DAY MINIMUM	24	Nov 11	22	Sep 24	0.22	Dec 31 1990
MAXIMUM PEAK FLOW			212	Jul 6	a18000	Mar 23 1997
MAXIMUM PEAK STAGE			b5.09	Mar 29	b,c21.90	Mar 23 1997
INSTANTANEOUS LOW FLOW			19	May 22		
10 PERCENT EXCEEDS	903		83		340	
50 PERCENT EXCEEDS	95		56		50	
90 PERCENT EXCEEDS	38		38		12	

a About
b Backwater from ice
c Maximum recorded
e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
30...	1155	59	--	--	--	1450	4.5	4.0	--	--	--	--	--
DEC													
04...	1300	71	--	--	--	1600	3.2	.2	--	--	--	--	--
FEB													
13...	1240	52	--	--	--	1480	9.0	.2	--	--	--	--	--
APR													
15...	1305	86	7.8	--	1210	1240	18.3	14.5	270	50.0	34.0	8.90	4
MAY													
22...	1520	19	--	--	--	1900	24.5	21.0	--	--	--	--	--
JUL													
15...	1255	42	--	--	--	1430	40.5	25.5	--	--	--	--	--
AUG													
26...	1135	48	7.9	8.3	1510	1570	29.0	22.0	350	63.0	47.0	13.0	5

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
15...	170	57	301	8.1	.30	360	190	820	813	1.0	110	<1	50
MAY													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
26...	230	58	332	14.0	.40	520	139	1080	1090	1.0	60	<1	50

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
30...	--	--	--	--	--
DEC					
04...	--	--	--	--	--
FEB					
13...	--	--	--	--	--
APR					
15...	40	<.10	<1	<1	630
MAY					
22...	--	--	--	--	--
JUL					
15...	--	--	--	--	--
AUG					
26...	10	<.10	2	<1	870

< Less than

06348500 SWEETBRIAR CREEK NEAR JUDSON, ND

LOCATION.--Lat 46°51'06", long 101°15'10", in SW$^{1}/_{4}$ sec.14, T.139 N., R.84 W., Morton County, Hydrologic Unit 10130203, on right bank 40 ft downstream from bridge on county highway, 2 mi northeast of Judson, and 16 mi upstream from mouth.

DRAINAGE AREA.--157 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1951 to September 1979, June 2002 to September 2002.

REVISED RECORDS.--WSP 1439: 1955(M).

GAGE.--Water-stage recorder. Datum of gage is 1,886.42 ft above National Geodetic Vertical Datum of 1929. Prior to July 20, 1955, nonrecording gage 80 ft upstream at same datum.

REMARKS.--Records fair. Flow regulated by Sweetbriar Reservoir (station 06348490) 2 mi upstream since April 1964.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,200 ft^3/s, Apr. 7, 1969, gage height, 11.28 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 12.5 ft, Apr. 17, 1950, from floodmarks at present site, discharge, 5,910 ft^3/s from rating curve extended above 2,000 ft^3/s on basis of contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4.2 ft^3/s, June 9, gage height, 1.69 ft; minimum daily, 0.51 ft^3/s, Aug. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	0.63	1.00	0.72	1.1
2	---	---	---	---	---	---	---	---	0.81	0.94	0.77	1.0
3	---	---	---	---	---	---	---	---	0.76	0.98	0.74	0.95
4	---	---	---	---	---	---	---	---	0.77	1.1	0.67	1.0
5	---	---	---	---	---	---	---	---	0.75	1.2	0.51	1.1
6	---	---	---	---	---	---	---	---	0.69	1.2	0.64	1.2
7	---	---	---	---	---	---	---	---	1.1	0.94	0.71	1.2
8	---	---	---	---	---	---	---	---	1.1	0.81	0.68	1.3
9	---	---	---	---	---	---	---	---	1.8	1.1	0.81	1.2
10	---	---	---	---	---	---	---	---	1.2	1.1	0.79	1.3
11	---	---	---	---	---	---	---	---	1.1	1.2	0.78	1.3
12	---	---	---	---	---	---	---	---	1.0	1.2	0.62	1.3
13	---	---	---	---	---	---	---	---	1.3	1.1	0.52	1.2
14	---	---	---	---	---	---	---	---	1.1	1.1	0.55	1.1
15	---	---	---	---	---	---	---	---	0.99	1.1	0.65	1.1
16	---	---	---	---	---	---	---	---	0.91	1.1	0.81	1.1
17	---	---	---	---	---	---	---	---	0.93	1.0	0.83	1.2
18	---	---	---	---	---	---	---	---	1.0	0.88	0.83	1.3
19	---	---	---	---	---	---	---	---	1.6	0.76	0.77	1.3
20	---	---	---	---	---	---	---	---	1.7	0.84	0.88	1.1
21	---	---	---	---	---	---	---	---	1.3	0.82	1.1	1.0
22	---	---	---	---	---	---	---	---	1.4	0.77	1.1	1.1
23	---	---	---	---	---	---	---	---	1.6	0.90	1.1	1.1
24	---	---	---	---	---	---	---	---	1.6	0.91	1.2	1.1
25	---	---	---	---	---	---	---	---	1.6	0.93	1.2	1.2
26	---	---	---	---	---	---	---	---	1.6	0.89	1.1	1.1
27	---	---	---	---	---	---	---	---	1.5	0.75	0.80	1.1
28	---	---	---	---	---	---	---	---	1.5	0.73	1.0	1.2
29	---	---	---	---	---	---	---	---	1.4	0.77	1.1	1.2
30	---	---	---	---	---	---	---	---	1.2	0.74	0.97	1.2
31	---	---	---	---	---	---	---	---	---	0.80	1.1	---
TOTAL	---	---	---	---	---	---	---	---	35.94	29.66	26.05	34.65
MEAN	---	---	---	---	---	---	---	---	1.198	0.957	0.840	1.155
MAX	---	---	---	---	---	---	---	---	1.8	1.2	1.2	1.3
MIN	---	---	---	---	---	---	---	---	0.63	0.73	0.51	0.95

06348500 SWEETBRIAR CREEK NEAR JUDSON, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 2002 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR													
15...	1545	17	8.0	8.0	1180	1160	16.7	11.5	240	42.0	33.0	12.0	4
MAY													
21...	1250	2.0	--	--	--	1830	22.5	14.0	--	--	--	--	--
JUL													
15...	1445	1.1	--	--	--	1900	42.0	26.5	--	--	--	--	--
AUG													
09...	1220	.74	8.1	8.3	1930	1980	25.0	23.4	320	39.0	55.0	13.0	8
SEP													
19...	1450	1.3	--	--	--	2000	22.0	17.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR													
15...	160	58	228	10.0	.20	380	36.5	809	775	2.0	100	<1	30
MAY													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
09...	350	69	488	5.3	.50	590	2.77	1380	1350	4.0	40	<1	60
SEP													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR					
15...	80	<.10	<1	<1	590
MAY					
21...	--	--	--	--	--
JUL					
15...	--	--	--	--	--
AUG					
09...	50	.20	1	1	660
SEP					
19...	--	--	--	--	--

< Less than

06349000 HEART RIVER NEAR MANDAN, ND

LOCATION.--Lat 46°50'02", long 100°58'27", in NW$^1/_4$NE$^1/_4$ sec.25, T.139 N., R.82 W., Morton County, Hydrologic Unit 10130203, on left bank near downstream wingwall of bridge on county highway, 3 mi west of Mandan, and 4 mi downstream from Sweetbriar Creek.

DRAINAGE AREA.--3,310 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to September 1924, March 1928 to June 1933, August 1937 to current year. Published as "at Sunny" 1924, 1928-33.

REVISED RECORDS.--WSP 926: 1938. WSP 1209: Drainage area. WSP 1239: 1924, 1928-29, 1948.

GAGE.--Water-stage recorder. Datum of gage is 1,638.70 ft above National Geodetic Vertical Datum of 1929 and 1,623.03 ft above Burlington Northern Railway datum. See WSP 1729 or 1917 for history of changes prior to June 30, 1958.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow regulated by Lake Tschida (station 06346000), 105 mi upstream, since 1949. Some diversions above station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	77	e86	e64	e59	e50	e51	106	118	65	62	57
2	105	75	e86	e63	e59	e49	e50	96	100	64	61	47
3	103	66	e86	e62	e58	e48	e48	88	74	45	69	46
4	103	54	e85	e62	e58	e47	e47	77	78	38	57	110
5	103	48	e84	e61	e58	e47	e44	74	76	36	56	72
6	103	43	e83	e60	e58	e47	e42	73	100	97	44	45
7	108	40	e82	e60	e58	e46	e42	71	117	189	42	44
8	109	38	e81	e60	e58	e46	e43	76	120	174	43	59
9	114	36	e80	e60	e58	e46	e50	79	119	132	44	62
10	127	36	e79	e60	e58	e46	e60	82	129	101	45	56
11	130	35	e78	e60	e58	e46	e71	87	127	98	51	63
12	128	34	e78	e60	e58	e46	e84	79	123	81	56	66
13	98	35	e77	e60	e58	e46	e121	76	107	69	70	65
14	83	35	e76	e60	e58	e46	e180	74	61	49	72	64
15	75	34	e75	e60	e57	e46	e164	68	42	36	74	62
16	71	33	e74	e60	e57	e47	154	61	42	31	76	52
17	69	34	e73	e59	e56	e47	139	55	63	36	97	42
18	66	33	e72	e59	e56	e47	133	48	77	69	102	37
19	65	47	e72	e59	e56	e47	131	42	87	64	104	39
20	65	75	e72	e59	e55	e46	130	39	84	80	100	42
21	65	82	e71	e59	e55	e46	126	39	85	69	68	43
22	65	82	e71	e59	e54	e46	127	38	97	63	62	41
23	68	86	e70	e59	e54	e46	125	33	98	71	58	34
24	74	87	e69	e59	e53	e46	123	28	110	86	62	33
25	74	88	e67	e59	e53	e45	124	108	114	130	62	27
26	59	e87	e67	e59	e53	e44	116	138	111	116	49	25
27	84	e86	e66	e59	e52	e47	114	142	103	101	43	26
28	87	e86	e65	e59	e51	e49	110	148	89	70	47	26
29	74	e86	e64	e59	---	e51	113	132	84	53	39	22
30	75	e86	e64	e59	---	e52	111	120	77	56	57	22
31	72	---	e64	e59	---	e53	---	113	---	62	62	---
TOTAL	2726	1764	2317	1857	1576	1461	2973	2490	2812	2431	1934	1429
MEAN	87.94	58.80	74.74	59.90	56.29	47.13	99.10	80.32	93.73	78.42	62.39	47.63
MAX	130	88	86	64	59	53	180	148	129	189	104	110
MIN	59	33	64	59	51	44	42	28	42	31	39	22
AC-FT	5410	3500	4600	3680	3130	2900	5900	4940	5580	4820	3840	2830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 2002, BY WATER YEAR (WY)

MEAN	57.67	44.28	26.73	18.05	109.0	948.5	878.8	329.5	336.8	238.3	99.26	65.35
MAX	337	383	155	145	1046	4029	5885	3610	1925	2433	763	231
(WY)	1995	1983	1983	1983	1930	1997	1950	1970	1941	1993	1998	1995
MIN	5.41	6.95	0.21	0.000	0.000	0.28	25.2	18.5	23.4	11.3	3.65	1.43
(WY)	1940	1938	1938	1938	1940	1965	1990	1992	1961	1990	1932	1932

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1924 - 2002	
ANNUAL TOTAL	143194		25770			
ANNUAL MEAN	392.3		70.60		264.6	
HIGHEST ANNUAL MEAN					898	1982
LOWEST ANNUAL MEAN					19.2	1990
HIGHEST DAILY MEAN	5610	Jul 28	189	Jul 7	28400	Apr 18 1950
LOWEST DAILY MEAN	33	Nov 16	22	Sep 29	0.00	Aug 20 1929
ANNUAL SEVEN-DAY MINIMUM	34	Nov 12	26	Sep 24	0.00	Feb 1 1930
MAXIMUM PEAK FLOW			a241	Jul 7	c30500	Apr 19 1950
MAXIMUM PEAK STAGE			b3.79	Mar 31	25.75	Apr 4 1952
ANNUAL RUNOFF (AC-FT)	284000		51110		191700	
10 PERCENT EXCEEDS	1120		114		420	
50 PERCENT EXCEEDS	128		63		51	
90 PERCENT EXCEEDS	43		42		6.0	

a Gage height, 1.17 ft
b Backwater from ice
c About
e Estimated

06349000 HEART RIVER NEAR MANDAN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-50, 1971-76, 1978 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
30...	1455	73	--	--	--	1510	7.5	5.7	--	--	--	--	--
DEC													
03...	1545	86	--	--	--	1740	11.0	.2	--	--	--	--	--
MAR													
11...	1350	46	--	--	--	1690	-3.0	.1	--	--	--	--	--
APR													
22...	1545	129	8.5	8.2	1370	1350	20.5	13.0	300	57.0	39.0	8.90	5
MAY													
22...	1050	39	--	--	--	1880	19.0	15.5	--	--	--	--	--
JUL													
03...	1140	44	--	--	--	1600	28.5	24.0	--	--	--	--	--
AUG													
07...	1500	42	8.1	8.4	1450	--e	37.0	29.5	340	55.0	49.0	13.0	6
SEP													
19...	1235	38	--	--	--	1650	18.5	16.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
22...	200	58	344	9.8	.30	420	328	942	942	1.0	70	<1	50
MAY													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07...	240	60	309	17.0	.40	530	126	1110	1090	<1.0	100	1	50
SEP													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
30...	--	--	--	--	--
DEC					
03...	--	--	--	--	--
MAR					
11...	--	--	--	--	--
APR					
22...	30	<.10	1	<1	750
MAY					
22...	--	--	--	--	--
JUL					
03...	--	--	--	--	--
AUG					
07...	60	.10	2	1	790
SEP					
19...	--	--	--	--	--

< Less than
e Required equipment not functional/available

06349215 LONG LAKE CREEK ABOVE LONG LAKE NEAR MOFFIT, ND

LOCATION.--Lat 46°37'59", long 100°14'29", in NE$^1/_4$NE$^1/_4$NW$^1/_4$ sec.4, T.136 N., R.76 W., Emmons County, Hydrologic Unit 10130103, on left bank 2.5 mi upstream from Long Lake and 4.5 mi southeast of Moffit.

DRAINAGE AREA.--280 mi^2 approximately, revised (based on information provided by U.S. Fish and Wildlife Service).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,720 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	6.5	8.7	e4.9	e5.7	e8.2	37	21	4.6	1.8	1.6	2.1
2	5.8	7.5	8.5	e4.9	e5.8	e7.7	26	18	4.7	1.7	1.7	2.0
3	5.9	7.2	8.0	e4.8	e5.8	e7.3	23	18	4.9	1.6	1.5	2.0
4	6.2	7.6	7.9	e4.4	e5.9	e7.3	24	16	5.0	1.5	1.4	2.1
5	5.7	7.3	8.0	e4.5	e5.9	e7.5	24	15	4.8	1.4	1.5	2.0
6	5.1	7.7	7.9	e4.8	e6.0	e7.7	25	15	4.6	1.3	1.5	1.9
7	4.9	7.8	7.8	e5.0	e6.1	e8.0	26	14	5.1	1.2	1.6	1.8
8	5.6	7.8	7.6	e5.1	e6.4	e8.2	28	16	5.4	1.2	1.6	1.9
9	5.6	8.0	7.5	e5.4	e6.8	e8.1	28	19	5.4	1.3	1.9	2.0
10	4.7	7.6	7.6	e5.8	e7.1	e8.0	29	14	4.9	1.4	1.8	2.1
11	4.1	7.4	7.1	e6.1	e7.0	e8.4	30	14	4.5	1.5	1.8	2.4
12	4.1	8.3	7.1	e6.2	e7.2	e8.9	29	15	4.4	1.7	1.7	2.3
13	4.4	7.7	7.0	e6.1	e7.5	e9.0	29	13	4.1	1.9	1.8	2.2
14	4.4	7.4	7.1	e6.0	e7.8	e9.3	29	13	4.1	2.1	2.1	2.1
15	4.8	7.7	6.9	e5.9	e8.0	e9.3	29	13	4.0	2.3	2.2	2.0
16	5.4	8.1	e7.0	e5.9	e8.3	e8.7	30	12	4.0	2.5	2.1	1.9
17	5.6	9.2	e6.9	e5.8	e8.6	e8.6	28	10	3.6	2.9	2.0	1.9
18	5.1	9.2	e6.8	e5.7	e8.8	e8.4	28	9.5	3.4	3.2	1.9	1.9
19	4.7	9.0	e6.6	e6.0	e9.0	e8.3	28	9.1	3.2	3.4	1.9	1.9
20	4.7	9.9	e6.2	e6.2	e9.3	e8.2	28	8.4	3.1	3.9	1.8	1.8
21	4.7	10	e6.0	e6.2	e9.6	e8.0	28	7.3	3.0	8.1	1.8	1.8
22	4.9	9.9	e6.0	e6.1	e9.7	e7.9	28	6.3	e2.9	7.5	1.7	1.7
23	5.2	9.9	e5.9	e6.0	e10	e7.8	e27	7.0	e2.8	3.3	2.1	1.7
24	6.3	9.9	e5.8	e6.0	e10	e7.8	e26	6.8	e2.9	1.8	2.4	1.7
25	6.4	9.9	e5.6	e6.1	e9.6	e8.0	e26	6.4	3.2	2.4	2.3	1.7
26	6.7	9.2	e5.4	e6.0	e9.3	8.4	24	5.8	3.2	2.8	2.4	1.7
27	6.8	9.1	e5.2	e6.0	e8.8	9.3	23	5.8	2.7	1.9	2.4	1.7
28	7.3	9.2	e5.1	e5.9	e8.7	30	24	5.7	2.3	2.0	2.3	1.7
29	7.1	8.7	e5.1	e5.8	---	53	24	5.3	2.0	2.3	2.2	1.7
30	7.1	8.7	e5.0	e5.7	---	41	21	5.6	1.9	2.1	2.0	1.9
31	7.4	---	e5.0	e5.6	---	37	---	5.0	---	1.8	2.0	---
TOTAL	172.7	253.4	208.3	174.9	218.7	383.3	809	350.0	114.7	75.8	59.0	57.6
MEAN	5.571	8.447	6.719	5.642	7.811	12.36	26.97	11.29	3.823	2.445	1.903	1.920
MAX	7.4	10	8.7	6.2	10	53	37	21	5.4	8.1	2.4	2.4
MIN	4.1	6.5	5.0	4.4	5.7	7.3	21	5.0	1.9	1.2	1.4	1.7
AC-FT	343	503	413	347	434	760	1600	694	228	150	117	114

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2002, BY WATER YEAR (WY)

MEAN	6.076	6.848	5.496	3.827	9.048	114.5	93.03	40.46	23.46	39.45	13.10	5.538
MAX	15.2	15.7	14.4	8.48	42.0	367	730	179	90.3	220	39.4	14.2
(WY)	1999	1999	1999	2001	1996	1997	1997	1999	2001	1993	1993	1999
MIN	0.24	0.34	0.22	0.053	0.000	3.67	5.74	2.19	0.63	0.32	0.12	0.15
(WY)	1993	1991	1991	1991	1997	1991	1990	1992	1992	1989	1990	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1989 - 2002	
ANNUAL TOTAL	13214.6		2877.4			
ANNUAL MEAN	36.20		7.883		30.20	
HIGHEST ANNUAL MEAN					112	1997
LOWEST ANNUAL MEAN					3.06	1992
HIGHEST DAILY MEAN	600	Mar 23	53	Mar 29	3200	Mar 29 1997
LOWEST DAILY MEAN	4.1	Oct 11	1.2	Jul 7	0.00	Dec 30 1990
ANNUAL SEVEN-DAY MINIMUM	4.6	Oct 10	1.3	Jul 4	0.00	Jan 11 1997
MAXIMUM PEAK FLOW			58	Mar 29	3200	Mar 29 1997
MAXIMUM PEAK STAGE			1.92	Mar 29	12.99	Mar 29 1997
INSTANTANEOUS LOW FLOW			1.2	Jul 7	0.00	Dec 30 1990
ANNUAL RUNOFF (AC-FT)	26210		5710		21880	
10 PERCENT EXCEEDS	98		18		52	
50 PERCENT EXCEEDS	9.6		6.0		7.0	
90 PERCENT EXCEEDS	6.0		1.8		0.37	

e Estimated

06349215 LONG LAKE CREEK ABOVE LONG LAKE NEAR MOFFIT, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1988 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
28...	1330	9.7	--	--	--	1430	-5.0	.0	--	--	--	--	--
MAR													
14...	1100	9.2	--	--	--	1260	-2.0	.0	--	--	--	--	--
APR													
29...	1255	26	--e	8.1	1100	1110	11.0	8.5	290	55.0	38.0	16.0	4
JUL													
08...	1200	1.2	7.8	8.2	1370	1290	28.0	25.5	320	58.0	42.0	19.0	5
AUG													
06...	1250	1.5	--	--	--	1400	25.0	21.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
29...	140	49	367	11.0	.40	240	54.0	758	721	4.0	120	<1	170
JUL													
08...	200	56	494	13.0	.50	290	1.33	410	920	12.0	60	<1	270
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
28...	--	--	--	--	--
MAR					
14...	--	--	--	--	--
APR					
29...	140	<.10	<1	<1	400
JUL					
08...	280	.10	2	1	410
AUG					
06...	--	--	--	--	--

< Less than
e Required equipment not functional/available

06349500 APPLE CREEK NEAR MENOKEN, ND

LOCATION.--Lat 46°47'40", long 100°39'25", in NW$^1/_4$NE$^1/_4$ sec.9, T.138 N., R.79 W., Burleigh County, Hydrologic Unit 10130103, on left bank 75 ft downstream from bridge on county highway, 4 mi upstream from Hay Creek, 6.3 mi west of Menoken, and 6.4 mi east of Bismarck.

DRAINAGE AREA.--1,680 mi^2, approximately, of which about 500 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March to June 1905, October 1945 to current year. Published as "near Bismarck" 1905.

REVISED RECORDS.--WSP 1209: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,638.61 ft above National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Sept. 30, 1953.

REMARKS.--Records good except for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	11	e8.9	e5.4	e6.2	e6.5	e42	31	12	2.1	2.2	0.91
2	7.5	12	e9.1	e5.3	e6.1	e6.5	e38	29	12	2.1	2.2	0.76
3	5.8	12	e9.4	e5.1	e6.2	e6.4	e49	27	12	2.4	2.2	0.63
4	5.5	11	e9.7	e5.2	e6.3	e6.6	52	31	13	7.0	2.2	0.58
5	5.7	10	e9.8	e5.7	e6.2	e6.7	63	30	12	6.5	2.0	0.52
6	6.2	10	e9.8	e6.1	e6.1	e6.8	57	28	10	4.8	2.0	0.51
7	6.2	11	e9.8	e6.1	e6.0	e6.7	47	28	9.9	4.2	2.1	0.52
8	6.5	11	e9.9	e6.5	e6.2	e6.9	44	30	10	4.0	1.4	0.54
9	7.9	11	e9.9	e6.9	e6.3	e7.0	34	34	9.3	6.8	1.7	0.66
10	10	11	e10	e7.1	e6.4	e7.2	35	21	9.9	10	2.3	1.3
11	9.0	11	e10	e7.3	e6.6	e7.3	36	22	9.6	8.8	2.5	1.5
12	8.5	10	e10	e7.5	e6.5	e7.4	40	40	7.4	8.8	2.7	1.6
13	9.9	10	e9.9	e7.6	e6.6	e7.6	40	40	7.1	6.6	2.7	2.3
14	9.7	10	e9.8	e7.5	e6.7	e7.8	40	37	7.2	4.9	3.0	3.7
15	9.1	10	e9.7	e7.4	e6.7	e7.8	38	40	7.7	3.8	2.5	1.5
16	8.3	e10	e9.5	e7.3	e6.8	e7.9	37	37	7.0	2.8	1.3	1.3
17	7.6	e9.9	e9.2	e7.2	e6.9	e8.0	36	29	6.4	2.6	1.2	1.1
18	7.7	e9.9	e9.0	e7.0	e6.9	e8.1	38	32	6.0	2.8	1.2	1.0
19	18	e9.8	e9.0	e6.8	e7.0	e7.9	41	31	8.3	2.7	1.2	1.2
20	20	e9.7	e9.0	e6.9	e7.0	e7.7	39	28	8.3	2.6	1.1	1.2
21	12	e9.5	e8.9	e7.0	e6.9	e8.0	41	26	7.8	2.4	1.2	1.5
22	9.7	e9.3	e8.8	e7.0	e6.8	e8.3	39	29	6.3	2.3	0.97	1.3
23	9.6	e9.0	e8.4	e7.0	e6.8	e8.7	40	29	6.7	2.4	0.72	1.1
24	10	e8.6	e8.3	e6.9	e6.7	e9.1	42	20	6.3	2.7	0.68	1.2
25	9.9	e8.7	e7.5	e6.7	e6.7	e9.5	38	15	5.2	3.0	0.63	1.4
26	9.6	e8.7	e6.7	e6.8	e6.6	e9.8	31	18	4.3	2.9	0.56	1.2
27	9.3	e8.8	e6.7	e6.9	e6.5	e10	34	17	3.7	2.4	0.56	1.1
28	9.0	e8.7	e6.7	e6.8	e6.5	e12	38	17	3.2	2.2	0.60	1.3
29	8.8	e8.8	e6.4	e6.6	---	e17	36	18	2.6	2.1	0.61	1.4
30	9.3	e8.7	e6.1	e6.5	---	e25	35	16	2.3	2.1	0.61	1.4
31	10	---	e5.7	e6.4	---	e37	---	14	---	2.2	0.69	---
TOTAL	285.1	299.1	271.6	206.5	183.2	299.2	1220	844	233.5	123.0	47.53	36.23
MEAN	9.197	9.970	8.761	6.661	6.543	9.652	40.67	27.23	7.783	3.968	1.533	1.208
MAX	20	12	10	7.6	7.0	37	63	40	13	10	3.0	3.7
MIN	5.5	8.6	5.7	5.1	6.0	6.4	31	14	2.3	2.1	0.56	0.51
AC-FT	565	593	539	410	363	593	2420	1670	463	244	94	72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	6.510	5.265	3.784	2.338	12.99	117.4	206.5	81.13	44.43	29.98	17.63	9.169
MAX	67.6	40.1	30.8	15.2	316	557	1606	1038	346	372	292	130
(WY)	2000	2000	1998	2000	2000	1987	1997	1950	1953	1993	1999	1999
MIN	0.047	0.062	0.057	0.040	0.095	0.99	0.53	0.23	0.066	0.025	0.030	0.030
(WY)	1991	1990	1992	1977	1975	1977	1990	1977	1977	1977	1991	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1946 - 2002	
ANNUAL TOTAL	36260.8		4048.96			
ANNUAL MEAN	99.34		11.09		44.76	
HIGHEST ANNUAL MEAN					268	1997
LOWEST ANNUAL MEAN					0.31	1990
HIGHEST DAILY MEAN	1140	Mar 22	63	Apr 5	5590	Apr 18 1950
LOWEST DAILY MEAN	5.2	Jan 1	0.51	Sep 6	0.00	Aug 25 1946
ANNUAL SEVEN-DAY MINIMUM	5.8	Jan 1	0.57	Sep 3	0.00	Aug 25 1946
MAXIMUM PEAK FLOW			72	Apr 6	6750	Apr 18 1950
MAXIMUM PEAK STAGE			a6.15	Apr 1	17.46	Apr 19 1979
ANNUAL RUNOFF (AC-FT)	71920		8030		32430	
10 PERCENT EXCEEDS	310		33		79	
50 PERCENT EXCEEDS	16		7.4		2.4	
90 PERCENT EXCEEDS	7.5		1.3		0.14	

a Backwater from ice
e Estimated

06349500 APPLE CREEK NEAR MENOKEN, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
30...	1140	8.7	--	--	--	1640	.0	.5	--	--	--	--	--
FEB													
07...	0945	6.0	--	--	--	1990	.0	.0	--	--	--	--	--
APR													
25...	1330	37	8.6	--	1580	1730	4.5	8.0	370	61.0	53.0	17.0	6
JUL													
15...	1055	4.0	8.2	8.5	1960	1880	32.0	26.0	360	52.0	57.0	20.0	8
AUG													
06...	1100	1.9	--	--	--	1770	23.0	21.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
25...	250	58	386	20.0	.20	560	123	1220	1190	4.0	60	<1	150
JUL													
15...	350	66	597	33.0	.40	520	15.6	1430	1390	21.0	50	<1	190
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
30...	--	--	--	--	--
FEB					
07...	--	--	--	--	--
APR					
25...	50	<.10	<1	<1	560
JUL					
15...	10	<.10	4	<1	560
AUG					
06...	--	--	--	--	--

< Less than

06349700 MISSOURI RIVER NEAR SCHMIDT, ND

LOCATION.--Lat 46°39'22", long 100°44'18", in SW$^1/_4$NE$^1/_4$ sec.26, T.137 N., R.80 W., Morton County, Hydrologic Unit 10130102, on right bank 2 mi southeast of abandoned townsite of Schmidt, 13 mi southeast of Mandan, and at mile 1,298.

DRAINAGE AREA.--191,700 mi^2, approximately.

GAGE-HEIGHT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,600.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Stage regulated by releases from Garrison Dam (station 06338490) 91.1 mi upstream and by backwater from Lake Oahe.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily gage height recorded, 23.56 ft, Dec. 9, 1976; minimum daily recorded, 7.92 ft, May 30, 1967.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.71	11.48	12.66	16.48	---	---	12.91	12.21	15.25	15.27	15.40	15.72
2	11.64	11.41	12.61	16.56	15.63	---	12.82	12.09	15.34	15.29	15.38	15.57
3	11.63	11.36	12.69	16.90	15.74	---	12.74	12.05	15.43	15.22	15.28	15.54
4	11.65	11.38	12.76	17.27	15.82	16.40	12.64	12.10	15.48	15.26	15.31	15.59
5	11.63	11.46	12.72	17.75	15.70	16.57	12.65	12.13	15.36	15.26	15.33	15.47
6	11.64	11.54	12.72	18.05	15.68	16.91	12.55	12.14	15.32	15.33	15.37	15.37
7	11.71	11.49	12.66	17.99	15.83	16.83	12.51	12.23	15.35	15.27	15.42	15.30
8	11.66	11.55	12.67	17.78	15.86	16.45	12.49	12.29	15.36	15.30	15.43	15.29
9	11.75	11.51	12.72	17.65	15.76	---	12.43	12.42	15.35	15.44	15.51	15.31
10	11.75	11.55	12.73	17.54	15.59	---	12.41	12.35	15.46	15.42	15.47	15.43
11	11.68	11.54	12.77	17.31	15.42	---	12.28	12.25	15.41	15.28	15.43	15.31
12	11.65	11.50	12.75	17.00	15.63	16.53	12.23	12.60	15.39	15.25	15.38	15.28
13	11.63	11.50	12.73	16.60	15.68	16.96	12.24	13.36	15.46	15.29	15.37	15.17
14	11.57	11.54	12.73	16.46	15.75	17.06	12.17	13.30	15.50	15.28	15.36	15.22
15	11.56	11.58	12.73	16.17	15.80	16.78	12.11	12.70	15.52	15.26	15.39	15.27
16	11.55	11.59	12.73	15.36	15.85	16.34	12.08	12.27	15.51	15.36	15.43	15.01
17	11.55	11.58	12.75	15.43	16.00	16.09	12.06	11.97	15.45	15.31	15.43	14.55
18	11.55	11.65	12.79	15.33	16.14	16.01	12.15	11.91	15.44	15.33	15.45	13.95
19	11.49	11.60	12.73	15.11	16.40	15.79	12.20	11.88	15.33	15.34	15.42	13.57
20	11.50	11.66	12.70	15.51	16.47	15.61	12.12	11.81	15.38	15.33	15.40	13.31
21	11.51	11.72	12.78	15.72	16.48	14.71	12.16	11.77	15.35	15.36	15.27	13.42
22	11.47	11.65	12.76	15.94	16.16	14.32	12.14	11.83	15.30	15.36	15.42	13.37
23	11.50	11.72	12.97	15.95	14.78	14.87	12.14	11.97	15.36	15.26	15.40	13.41
24	11.49	11.73	15.38	15.66	13.78	15.59	12.12	11.88	15.42	15.27	15.23	13.37
25	11.54	11.71	16.77	15.46	13.51	15.83	12.11	11.80	15.40	15.36	15.37	13.40
26	11.56	11.85	17.20	15.69	15.18	15.77	12.02	11.91	15.34	15.39	15.51	13.41
27	11.54	11.87	17.54	15.68	15.59	15.65	12.51	12.36	15.31	15.32	15.35	13.42
28	11.48	12.34	17.75	14.98	16.26	15.70	12.50	13.14	15.32	15.37	15.45	13.48
29	11.50	12.67	17.36	14.56	---	14.88	12.34	14.06	15.29	15.34	15.47	13.37
30	11.44	12.67	16.72	14.70	---	13.36	12.40	14.86	15.29	15.39	15.46	13.44
31	11.58	---	16.41	15.22	---	13.01	---	15.17	---	15.36	15.61	---
MEAN	11.58	11.68	13.81	16.25	---	---	12.34	12.48	15.38	15.32	15.40	14.51
MAX	11.75	12.67	17.75	18.05	---	---	12.91	15.17	15.52	15.44	15.61	15.72
MIN	11.44	11.36	12.61	14.56	---	---	12.02	11.77	15.25	15.22	15.23	13.31

06350000 CANNONBALL RIVER AT REGENT, ND

LOCATION.--Lat 46°25'36", long 102°33'05", in $NE^1/_4NE^1/_4$ sec.13, T.134 N., R.95 W., Hettinger County, Hydrologic Unit 10130204, on right bank 400 ft from bridge on county highway and 0.3 mi north of Regent.

DRAINAGE AREA.--580 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,422.90 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1914, 26.1 ft, Apr. 16, 1950, from floodmarks, discharge, 20,300 ft^3/s, on basis of slope-area measurement at site 4 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	4.7	e4.2	e2.8	e3.8	e4.2	e7.5	13	2.6	1.6	0.84	2.3
2	3.4	4.6	e4.3	e2.7	e4.0	e4.2	e7.3	11	2.8	1.3	0.77	2.1
3	3.3	4.6	e4.3	e2.5	e3.9	e4.0	e7.1	11	2.9	1.1	0.79	2.0
4	3.3	4.5	e4.4	e2.6	e4.0	e4.1	e7.3	9.9	3.1	1.1	0.73	1.9
5	3.3	4.6	e4.4	e3.0	e4.0	e4.1	e7.8	9.2	3.1	1.1	0.79	2.0
6	3.4	4.5	e4.5	e3.2	e4.0	e4.1	e9.1	9.1	3.0	0.86	0.82	2.2
7	3.6	4.6	e4.5	e3.2	e4.2	e4.2	e9.9	8.7	2.8	0.79	0.86	2.0
8	3.8	4.6	e4.6	e3.6	e4.3	e4.3	e11	10	2.7	0.74	0.81	2.1
9	4.0	4.6	e4.6	e4.1	4.6	e4.3	e12	11	3.3	1.0	0.73	2.1
10	4.5	4.6	e4.6	e4.2	4.5	4.3	e13	11	4.2	1.0	0.72	2.1
11	4.4	4.6	e4.6	e4.3	4.7	e4.5	e14	10	5.5	0.92	0.72	1.9
12	4.4	4.6	e4.5	e4.4	4.8	e4.6	16	11	5.0	0.83	0.75	1.8
13	4.3	4.7	e4.4	e4.4	4.7	e4.9	16	10	4.7	0.76	0.67	1.7
14	4.1	4.6	e4.4	e4.4	4.8	e5.2	16	9.2	5.7	0.63	0.65	1.7
15	3.9	4.6	e4.3	e4.5	4.9	e5.5	17	8.3	5.1	0.48	0.65	1.7
16	3.8	4.6	e4.3	e4.4	5.0	e5.6	17	6.8	4.6	0.40	0.63	1.7
17	3.8	4.6	e4.2	e4.4	5.1	e5.8	17	6.6	6.9	e0.35	0.74	1.6
18	4.0	4.6	e4.1	e4.4	5.2	e5.8	18	5.7	8.1	e0.31	0.76	1.7
19	3.9	4.6	e4.1	e4.4	5.3	e5.6	19	5.3	7.0	e0.31	0.79	1.7
20	4.0	4.5	e4.1	e4.4	5.4	e5.5	19	4.8	5.8	e0.27	0.79	1.7
21	3.9	4.8	e4.1	e4.4	e5.3	e5.1	19	4.2	5.2	e0.28	1.2	1.6
22	3.9	4.8	e4.0	e4.4	e5.3	e5.1	20	4.1	4.6	e0.27	2.0	1.6
23	4.1	4.8	e3.8	e4.4	e5.1	5.2	20	4.5	4.4	e0.25	3.3	1.6
24	4.5	e4.6	e3.3	e4.4	e5.0	e5.1	19	4.6	3.8	e0.26	2.7	1.7
25	4.5	e4.5	e3.0	e4.3	e4.8	e5.2	17	4.3	3.3	e0.24	2.1	1.7
26	4.6	4.3	e3.0	e4.3	e4.6	e5.2	16	4.2	3.0	e0.23	1.8	2.0
27	4.5	4.1	e3.2	e4.3	e4.5	6.1	17	3.7	2.6	e0.25	1.7	2.0
28	4.6	e4.1	e3.4	e4.3	e4.3	6.8	17	3.4	2.4	e0.73	1.9	2.2
29	4.6	e4.1	e3.2	e4.3	---	7.5	11	3.6	2.1	e1.1	2.0	2.6
30	4.5	e4.1	e3.1	e4.1	---	e7.7	13	3.4	1.8	e1.0	2.0	2.8
31	4.7	---	e3.0	e3.9	---	7.7	---	2.8	---	0.91	2.1	---
TOTAL	124.9	136.1	124.5	123.0	130.1	161.5	430.0	224.4	122.1	21.37	37.81	57.8
MEAN	4.029	4.537	4.016	3.968	4.646	5.210	14.33	7.239	4.070	0.689	1.220	1.927
MAX	4.7	4.8	4.6	4.5	5.4	7.7	20	13	8.1	1.6	3.3	2.8
MIN	3.3	4.1	3.0	2.5	3.8	4.0	7.1	2.8	1.8	0.23	0.63	1.6
AC-FT	248	270	247	244	258	320	853	445	242	42	75	115

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2002, BY WATER YEAR (WY)

MEAN	8.794	5.943	4.175	4.958	22.91	138.4	117.2	62.00	77.59	26.40	17.10	5.012
MAX	124	51.6	15.7	63.2	393	963	1128	523	512	331	299	20.4
(WY)	1983	1983	1983	1973	1982	1978	1952	1972	1957	1969	1981	1986
MIN	1.25	1.87	0.52	0.000	0.000	3.23	3.80	2.94	1.57	0.69	0.67	0.70
(WY)	1961	1961	1951	1952	1959	1964	1961	1992	1990	2002	1959	1960

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 2002	
ANNUAL TOTAL	14879.1		1693.58			
ANNUAL MEAN	40.76		4.640		40.90	
HIGHEST ANNUAL MEAN					168	1982
LOWEST ANNUAL MEAN					3.11	1992
HIGHEST DAILY MEAN	1120	Mar 18	20	Apr 22	7880	Mar 27 1978
LOWEST DAILY MEAN	2.0	Jan 1	0.23	Jul 26	0.00	Dec 5 1950
ANNUAL SEVEN-DAY MINIMUM	2.1	Feb 12	0.25	Jul 21	0.00	Dec 5 1950
MAXIMUM PEAK FLOW			23	Apr 23	10000	Mar 27 1978
MAXIMUM PEAK STAGE			a5.43	Jun 17	b21.01	Mar 21 1997
ANNUAL RUNOFF (AC-FT)	29510		3360		29630	
10 PERCENT EXCEEDS	68		9.1		45	
50 PERCENT EXCEEDS	4.6		4.3		5.0	
90 PERCENT EXCEEDS	2.5		0.83		1.5	

a Backwater from debris
b Backwater from ice
e Estimated

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-66, 1971 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1350	4.5	--	--	--	2110	9.0	9.5	--	--	--	--	--
NOV													
06...	1625	4.4	--	--	--	1880	11.5	5.4	--	--	--	--	--
DEC													
12...	1230	4.5	--	--	--	2150	-4.5	.5	--	--	--	--	--
FEB													
06...	1130	4.0	--	--	--	2180	4.0	.4	--	--	--	--	--
MAR													
26...	1620	5.1	--	--	--	2050	5.0	1.9	--	--	--	--	--
APR													
11...	1125	14	7.7	--	1550	1600	10.6	3.3	340	62.0	44.0	6.40	5
MAY													
16...	1710	6.7	--	--	--	2380	15.5	14.7	--	--	--	--	--
JUN													
14...	1330	6.1	--	--	--	2150	26.0	17.0	--	--	--	--	--
JUL													
29...	1250	1.1	7.8	--e	2670	2730	29.0	24.5	460	56.0	77.0	14.0	10
AUG													
30...	1130	2.0	--	--	--	2380	28.0	21.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	220	58	289	7.3	.30	560	40.8	1080	1070	1.0	110	<1	30
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
29...	480	69	403	16.0	.50	1100	5.78	2020	1970	2.0	90	1	60
AUG													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--

06350000 CANNONBALL RIVER AT REGENT, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)
OCT					
11...	--	--	--	--	--
NOV					
06...	--	--	--	--	--
DEC					
12...	--	--	--	--	--
FEB					
06...	--	--	--	--	--
MAR					
26...	--	--	--	--	--
APR					
11...	80	<.10	<1	<1	1100
MAY					
16...	--	--	--	--	--
JUN					
14...	--	--	--	--	--
JUL					
29...	70	<.10	3	2	1200
AUG					
30...	--	--	--	--	--

< Less than
e Required equipment not functional/available

06351200 CANNONBALL RIVER NEAR RALEIGH, ND

LOCATION.--Lat 46°07'37", long 101°19'58", in $SW^1/_4SW^1/_4NW^1/_4$ sec.33, T.131 N., R.85 W., Grant County, Hydrologic Unit 10130204, on left bank at upstream side of bridge on State Highway 31 and 20 miles south of Raleigh.

DRAINAGE AREA.--1,640 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,890 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge about 15,000 ft^3/sec, Mar. 20, 1997, gage height, 16 ft, from high-water mark, was probably higher in 1950.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	13	e13	e11	e12	e12	e32	35	7.8	5.9	13	0.43
2	11	13	e14	e11	e12	e12	e31	38	8.5	5.9	11	0.48
3	10	14	e14	e11	e12	e12	e31	36	7.7	6.1	10	0.44
4	9.1	13	e14	e11	e12	e12	e31	35	7.0	5.4	8.1	0.18
5	8.6	14	e15	e11	e12	e12	e32	33	7.0	4.3	6.4	0.04
6	8.3	15	e15	e12	e12	e13	e33	32	7.1	4.3	5.3	0.00
7	8.4	14	e15	e12	e12	e14	e33	32	6.2	39	4.4	0.00
8	8.4	13	e15	e12	e12	e16	e33	31	7.6	58	3.4	0.00
9	8.8	13	e15	e12	e12	e17	e33	30	7.2	37	3.9	1.6
10	19	14	e14	e13	e12	e18	e33	30	6.7	24	5.3	4.9
11	11	13	e14	e14	e12	e20	e32	30	5.2	17	5.0	1.7
12	10	14	e15	e14	e12	e22	e34	29	5.4	13	3.1	0.98
13	9.8	13	e14	e13	e12	e24	38	27	5.2	12	2.4	0.76
14	9.3	14	e15	e13	e13	e26	44	26	5.0	10	2.2	0.53
15	9.5	14	e14	e13	e13	e27	48	24	4.9	7.5	1.7	0.43
16	14	14	e14	e13	e13	e28	49	24	4.7	6.3	1.5	0.42
17	29	14	e13	e12	e13	e29	46	22	4.6	5.3	1.2	0.25
18	25	14	e13	e12	e13	e30	46	21	4.3	4.4	1.2	0.14
19	21	14	e13	e12	e13	e30	46	20	4.9	3.9	0.96	0.00
20	17	15	e13	e12	e13	e31	45	18	5.3	12	0.79	0.00
21	15	15	e12	e12	e13	e30	46	17	5.0	16	0.82	0.00
22	14	15	e12	e12	e13	e30	43	15	4.9	5.5	1.0	0.00
23	14	15	e12	e12	e12	e30	41	14	4.8	13	1.6	0.00
24	14	15	e12	e12	e12	e30	39	14	4.1	12	0.96	0.00
25	16	e15	e12	e12	e12	e30	38	13	4.4	76	0.56	0.01
26	15	e14	e11	e12	e11	e30	38	12	4.8	13	0.38	0.00
27	14	e14	e11	e12	e12	e32	38	12	4.5	12	0.28	0.00
28	15	e14	e11	e12	e12	e33	36	11	4.0	26	0.18	0.00
29	14	e14	e11	e12	---	e33	34	11	3.5	14	0.70	0.00
30	14	e13	e11	e12	---	e33	34	10	3.2	14	0.59	0.00
31	15	---	e11	e12	---	e32	---	8.8	---	16	0.33	---
MEAN	13.49	13.97	13.16	12.13	12.29	24.13	37.90	22.93	5.517	16.09	3.169	0.443
MAX	29	15	15	14	13	33	49	38	8.5	76	13	4.9
MIN	8.3	13	11	11	11	12	31	8.8	3.2	3.9	0.18	0.00
AC-FT	829	831	809	746	682	1480	2260	1410	328	989	195	26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

MEAN	13.49	13.97	13.16	12.13	12.29	438.6	145.8	28.87	46.21	84.96	48.33	5.620
MAX	13.5	14.0	13.2	12.1	12.3	853	254	34.8	86.9	154	93.5	10.8
(WY)	2002	2002	2002	2002	2002	2001	2001	2001	2001	2001	2001	2001
MIN	13.5	14.0	13.2	12.1	12.3	24.1	37.9	22.9	5.52	16.1	3.17	0.44
(WY)	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002	2002

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
ANNUAL MEAN	14.62		14.62	
HIGHEST ANNUAL MEAN			14.6	2002
LOWEST ANNUAL MEAN			14.6	2002
HIGHEST DAILY MEAN	76	Jul 25	2600	Mar 13 2001
LOWEST DAILY MEAN	0.00	Sep 6	0.00	Sep 6 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 19	0.00	Sep 19 2002
MAXIMUM PEAK FLOW	309	Jul 25	a3000	Mar 13 2001
MAXIMUM PEAK STAGE	4.55	Jul 25	b12.45	Mar 12 2001
ANNUAL RUNOFF (AC-FT)	10590		10590	
10 PERCENT EXCEEDS	32		32	
50 PERCENT EXCEEDS	12		12	
90 PERCENT EXCEEDS	0.96		0.96	

a About
b Backwater from ice
e Estimated

06351200 CANNONBALL RIVER NEAR RALEIGH, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 2001 to August 2001.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
08...	1620	12	--	--	--	1940	5.5	5.5	--	--	--	--	--
DEC													
19...	1530	13	--	--	--	2630	2.0	.2	--	--	--	--	--
MAR													
12...	1250	21	--	--	--	2150	2.0	.1	--	--	--	--	--
APR													
01...	1245	32	--	--	--	1450	1.5	.3	--	--	--	--	--
23...	1230	41	8.6	8.3	1270	1240	23.0	12.5	320	59.0	42.0	6.90	4
JUN													
05...	1225	6.7	--	--	--	1920	22.5	17.5	--	--	--	--	--
JUL													
22...	1535	4.6	7.4	--	--	873	27.0	26.0	--	--	--	--	--
AUG													
26...	1440	.41	8.5	8.6	1810	1860	23.0	23.5	310	46.0	47.0	14.0	8

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	160	51	249	8.2	.30	430	95.8	861	857	1.0	50	<1	40
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
26...	310	67	264	7.9	.50	720	1.44	1310	1300	2.0	50	<1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
08...	--	--	--	--	--
DEC					
19...	--	--	--	--	--
MAR					
12...	--	--	--	--	--
APR					
01...	--	--	--	--	--
23...	20	<.10	1	<1	900
JUN					
05...	--	--	--	--	--
JUL					
22...	--	--	--	--	--
AUG					
26...	20	.10	5	<1	860

< Less than

06352000 CEDAR CREEK NEAR HAYNES, ND

LOCATION.--Lat 46°09'15", long 102°28'25", in W1/2 sec.20, T.131 N., R.94 W., Adams County, Hydrologic Unit 10130205, on left bank 30 ft downstream from bridge on State Highway 8 and 12.5 mi north of Haynes.

DRAINAGE AREA.--553 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,472.90 ft above National Geodetic Vertical Datum of 1929 (North Dakota Highway Department benchmark). Prior to May 20, 1951, nonrecording gage on former bridge 400 ft upstream at same datum.

REMARKS.--Records good.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 17, 1950, reached a stage of about 23 ft; discharge, 26,900 ft^3/s, by slope-area measurement at site 9 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	3.5	3.8	e3.9	e3.6	e3.4	e8.7	8.5	2.0	3.4	1.6	1.0
2	2.1	3.5	3.9	e3.9	e3.6	e3.3	e8.7	8.3	2.0	3.1	1.1	1.0
3	2.1	3.1	4.0	e3.9	e3.6	e3.3	e8.4	7.9	2.1	2.9	0.80	0.88
4	2.3	3.0	3.9	e3.9	e3.6	e3.4	e8.2	7.9	2.3	2.7	0.66	0.87
5	2.3	3.1	3.8	e3.9	e3.6	e3.4	e7.9	8.4	2.4	12	0.60	0.87
6	2.1	3.1	3.8	e3.9	e3.5	e3.5	e7.5	8.3	2.5	15	0.57	0.87
7	2.1	3.3	3.8	e3.9	e3.5	e3.5	e7.2	7.7	2.3	10	0.54	0.76
8	2.1	3.4	3.8	e3.9	e3.5	e3.6	6.7	7.6	2.3	5.8	0.50	0.76
9	2.2	3.3	3.8	e3.8	e3.5	e3.7	6.3	7.9	2.3	3.4	0.50	0.66
10	2.6	3.1	3.8	e3.8	e3.5	e3.8	6.0	7.9	2.4	2.5	0.76	0.66
11	2.8	3.1	3.8	e3.8	e3.5	e4.0	5.8	7.8	2.5	2.0	0.87	0.66
12	2.9	3.3	3.8	e3.8	e3.5	e4.3	5.8	7.6	2.5	1.7	0.87	0.66
13	2.9	3.5	3.9	e3.7	e3.5	e4.8	5.8	7.3	2.3	1.3	0.87	0.70
14	3.2	3.6	3.9	e3.7	e3.4	e5.1	5.5	7.0	2.3	1.0	0.87	0.76
15	3.5	3.4	4.0	e3.7	e3.4	e5.5	5.5	6.7	2.3	0.76	0.76	0.76
16	3.1	3.5	4.0	e3.7	e3.4	e5.9	5.3	6.6	2.3	0.66	0.66	0.85
17	3.1	3.6	4.0	e3.7	e3.4	e6.0	5.2	6.6	2.1	0.62	0.50	0.92
18	3.2	3.6	4.0	e3.6	e3.4	e5.9	5.3	6.3	2.0	0.57	0.43	1.1
19	3.4	3.6	4.0	e3.6	e3.3	e5.8	6.4	5.8	2.1	0.52	0.50	1.3
20	3.1	3.4	4.0	e3.6	e3.3	e5.6	7.9	5.1	2.1	0.50	0.43	1.3
21	2.9	3.4	e4.0	e3.6	e3.3	e5.5	8.2	4.5	2.1	0.50	0.43	1.3
22	3.1	3.5	e4.0	e3.6	e3.4	e5.3	8.4	4.0	2.2	0.45	0.66	1.3
23	3.0	3.6	e4.0	e3.6	e3.5	e5.2	8.5	3.6	2.5	0.43	0.87	1.3
24	3.7	3.6	e4.0	e3.6	e3.7	e5.1	9.1	3.2	2.7	0.43	0.87	1.1
25	3.9	3.7	e4.0	e3.6	e3.8	e5.0	10	2.9	2.7	0.43	0.87	1.1
26	3.3	3.5	e4.0	e3.6	e3.7	e4.9	9.8	2.8	2.9	0.39	1.0	1.1
27	3.5	3.6	e4.0	e3.6	e3.5	e4.8	9.6	2.6	3.8	0.36	1.0	1.1
28	3.5	3.7	e3.9	e3.6	e3.4	e4.9	9.6	2.5	4.2	0.36	1.0	1.1
29	3.6	3.7	e3.9	e3.6	---	e5.6	9.3	2.4	e4.0	0.63	1.0	1.1
30	3.6	3.8	e3.9	e3.6	---	e7.1	9.1	2.3	e3.7	0.84	1.0	1.1
31	3.5	---	e3.9	e3.6	---	e8.2	---	2.1	---	1.2	1.0	---
TOTAL	90.8	103.1	121.4	115.3	97.9	149.4	225.7	180.1	75.9	76.45	24.09	28.94
MEAN	2.929	3.437	3.916	3.719	3.496	4.819	7.523	5.810	2.530	2.466	0.777	0.965
MAX	3.9	3.8	4.0	3.9	3.8	8.2	10	8.5	4.2	15	1.6	1.3
MIN	2.1	3.0	3.8	3.6	3.3	3.3	5.2	2.1	2.0	0.36	0.43	0.66
AC-FT	180	204	241	229	194	296	448	357	151	152	48	57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2002, BY WATER YEAR (WY)

MEAN	4.691	5.133	3.660	4.332	14.81	122.0	111.1	54.90	53.70	17.68	10.65	3.549
MAX	43.2	54.4	20.4	59.4	242	837	1159	522	339	177	94.1	21.7
(WY)	1983	1983	1983	1973	1982	1978	1952	1975	1964	1969	1981	1995
MIN	0.25	0.60	0.22	0.000	0.000	1.05	1.58	1.66	0.77	0.000	0.000	0.000
(WY)	1961	1962	1962	1962	1962	1964	1961	1961	1956	1961	1959	1960

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 2002	
ANNUAL TOTAL	20394.4		1289.08			
ANNUAL MEAN	55.88		3.532		33.89	
HIGHEST ANNUAL MEAN					122	1972
LOWEST ANNUAL MEAN					1.04	1961
HIGHEST DAILY MEAN	1500	Mar 16	15	Jul 6	7060	Apr 8 1952
LOWEST DAILY MEAN	1.4	Jan 1	0.36	Jul 27	0.00	Jan 29 1957
ANNUAL SEVEN-DAY MINIMUM	1.5	Jan 1	0.41	Jul 22	0.00	Jul 26 1959
MAXIMUM PEAK FLOW			16	Jul 6	7870	Apr 7 1952
MAXIMUM PEAK STAGE			3.56	Jul 6	b22.05	Mar 28 1978
ANNUAL RUNOFF (AC-FT)	40450		2560		24550	
10 PERCENT EXCEEDS	113		7.0		41	
50 PERCENT EXCEEDS	4.0		3.5		3.6	
90 PERCENT EXCEEDS	1.8		0.76		0.70	

b Backwater from ice
e Estimated

06352000 CEDAR CREEK NEAR HAYNES, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
10...	1540	2.7	--	--	--	1740	8.5	10.5	--	--	--	--	--
NOV													
08...	1130	3.5	--	--	--	2020	2.5	2.8	--	--	--	--	--
DEC													
12...	1515	3.9	--	--	--	2810	-1.0	.2	--	--	--	--	--
FEB													
04...	1645	3.6	--	--	--	2750	-1.0	.1	--	--	--	--	--
MAR													
27...	1200	4.8	--	--	--	1100	9.0	.7	--	--	--	--	--
APR													
11...	1415	5.7	7.3	--e	1500	1490	17.8	8.9	420	71.0	58.0	6.30	4
MAY													
09...	1445	8.1	--	--	--	2230	13.0	7.2	--	--	--	--	--
JUN													
14...	1530	2.3	--	--	--	2470	28.0	20.9	--	--	--	--	--
JUL													
31...	1605	1.8	9.2	9.4	1460	1510	32.5	28.6	260	23.0	49.0	14.0	7
AUG													
28...	1545	.98	--	--	--	1520	28.0	23.5	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	180	48	288	9.5	.30	530	16.0	1040	1030	1.0	60	<1	40
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
31...	250	66	295	11.0	.40	510	5.17	1040	1030	6.0	140	1	50
AUG													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--

06352000 CEDAR CREEK NEAR HAYNES, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
10...	--	--	--	--	--
NOV					
08...	--	--	--	--	--
DEC					
12...	--	--	--	--	--
FEB					
04...	--	--	--	--	--
MAR					
27...	--	--	--	--	--
APR					
11...	50	<.10	1	<1	1100
MAY					
09...	--	--	--	--	--
JUN					
14...	--	--	--	--	--
JUL					
31...	50	<.10	2	1	510
AUG					
28...	--	--	--	--	--

< Less than
e Required equipment not functional/available

06353000 CEDAR CREEK NEAR RALEIGH, ND

LOCATION.--Lat 46°05'30", long 101°20'00", in NE$^1/_4$SE$^1/_4$ sec.8, T.130 N., R.85 W., Grant County, Hydrologic Unit 10130205, on left bank at upstream side of bridge on N.D. Highway 31, 6 mi upstream from mouth, and 19 mi south of Raleigh.

DRAINAGE AREA.--1,750 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to September 1939, March 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,881.23 ft above National Geodetic Vertical Datum of 1929. Prior to June 6, 1962, nonrecording gage at same site and datum, and June 6, 1962, to Sept. 7, 1972, at site 1 mi upstream at datum 9.58 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1950, about 18 ft, Apr. 18, 1950; discharge 45,000 ft^3/s, on basis of slope-area measurement 5 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	4.5	e6.4	e6.5	e8.0	e7.2	e17	19	4.1	0.18	e1.1	0.03
2	2.0	5.4	e6.4	e6.5	e8.2	e7.3	e18	19	4.4	0.11	e0.88	0.01
3	1.9	6.1	e6.5	e6.6	e8.5	e7.4	e18	18	4.7	0.07	e0.64	0.0
4	1.8	6.3	e6.5	e6.5	e8.6	e7.6	19	18	4.2	0.05	e0.46	0.00
5	2.0	6.4	e6.4	e6.5	e8.8	e7.7	21	20	4.0	0.03	e0.32	0.00
6	2.2	6.6	e6.4	e6.5	e8.7	e8.0	22	19	3.4	0.0	0.31	0.00
7	2.3	e6.7	e6.4	e6.5	e8.7	e8.1	21	19	3.0	0.00	0.27	0.00
8	2.3	e6.7	e6.4	e6.5	e8.7	e8.5	21	19	3.0	0.00	0.19	0.00
9	2.8	e6.7	e6.4	e6.5	e8.6	e8.9	23	18	2.7	0.02	0.18	0.00
10	5.6	e6.7	e6.5	e6.6	e8.6	e9.3	25	18	2.2	0.02	0.15	0.06
11	5.1	6.7	e6.5	e6.6	e8.6	e11	25	17	1.9	0.00	0.13	0.11
12	4.4	6.4	e6.6	e6.5	e8.5	e12	23	16	1.5	0.00	0.09	0.09
13	4.5	6.0	e6.7	e6.5	e8.5	e14	20	16	1.4	0.00	0.08	0.09
14	4.1	5.8	e6.9	e6.5	e8.5	e15	23	15	1.3	0.00	0.07	0.08
15	4.3	5.8	e6.9	e6.5	e8.5	e17	22	14	1.1	0.00	0.05	0.07
16	4.3	6.1	e7.0	e6.5	e8.5	e18	21	14	1.1	0.00	0.04	0.06
17	4.6	6.0	e7.0	e6.5	e8.4	e19	20	15	1.0	0.00	0.03	0.04
18	4.6	6.1	e6.9	e6.5	e8.5	e20	20	16	0.90	0.00	0.02	0.03
19	4.4	e6.2	e6.9	e6.5	e8.4	e20	21	16	0.96	0.00	0.0	0.02
20	4.6	e6.2	e6.9	e6.5	e8.3	e20	21	15	0.93	6.8	0.00	0.01
21	3.9	e6.2	e6.8	e6.5	e8.2	e19	21	15	0.98	12	0.00	0.00
22	3.7	e6.2	e6.8	e6.6	e8.2	e19	20	13	0.83	6.1	0.02	0.00
23	4.7	e6.2	e6.7	e6.5	e8.0	e19	19	11	1.0	1.9	0.06	0.00
24	5.2	e6.2	e6.7	e6.5	e7.8	e18	17	11	1.1	1.8	0.08	0.00
25	4.4	e6.2	e6.7	e6.5	e7.5	e18	17	11	0.68	26	0.07	0.00
26	3.3	6.2	e6.7	e6.6	e7.5	e18	18	11	0.56	6.3	0.05	0.00
27	3.2	e6.2	e6.6	e6.6	e7.3	e17	19	10	0.53	2.0	0.05	0.00
28	3.4	e6.2	e6.6	e6.7	e7.3	e17	20	9.8	0.44	6.8	0.04	0.00
29	3.8	e6.3	e6.6	e6.9	---	e17	20	9.1	0.39	5.4	0.04	0.00
30	4.0	e6.3	e6.6	e7.1	---	e17	20	7.7	0.27	1.4	0.04	0.00
31	4.5	---	e6.6	e7.5	---	e17	---	5.0	---	1.2	0.04	---
TOTAL	114.1	185.6	206.0	204.3	231.9	442.0	612	454.6	54.57	78.18	5.50	0.70
MEAN	3.681	6.187	6.645	6.590	8.282	14.26	20.40	14.66	1.819	2.522	0.177	0.023
MAX	5.6	6.7	7.0	7.5	8.8	20	25	20	4.7	26	1.1	0.11
MIN	1.8	4.5	6.4	6.5	7.3	7.2	17	5.0	0.27	0.00	0.00	0.00
AC-FT	226	368	409	405	460	877	1210	902	108	155	11	1.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

MEAN	10.88	9.742	7.199	11.02	43.51	385.4	256.6	167.5	95.73	70.71	21.63	8.445
MAX	66.4	48.8	31.3	217	664	2368	1526	1043	605	545	96.9	76.5
(WY)	1978	1983	1983	1973	1982	1997	1997	1975	1964	1993	1984	1995
MIN	0.000	0.000	0.000	0.000	0.000	0.25	0.35	0.89	1.82	0.25	0.000	0.000
(WY)	1965	1964	1964	1964	1964	1964	1991	1992	2002	1990	1974	1939

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1939 - 2002	
ANNUAL TOTAL	42477.0		2589.45			
ANNUAL MEAN	116.4		7.094		92.52	
HIGHEST ANNUAL MEAN					369	1997
LOWEST ANNUAL MEAN					1.91	1991
HIGHEST DAILY MEAN	2450	Mar 14	26	Jul 25	11900	Mar 24 1997
LOWEST DAILY MEAN	1.3	Sep 28	0.00	Jul 6	0.00	Aug 1 1939
ANNUAL SEVEN-DAY MINIMUM	1.7	Sep 26	0.00	Jul 11	0.00	Aug 20 1939
MAXIMUM PEAK FLOW			a61	Jul 25	14600	Mar 24 1997
MAXIMUM PEAK STAGE			b1.97	Mar 13	b17.05	Mar 24 1997
ANNUAL RUNOFF (AC-FT)	84250		5140		67030	
10 PERCENT EXCEEDS	305		19		156	
50 PERCENT EXCEEDS	11		6.5		10	
90 PERCENT EXCEEDS	3.9		0.02		0.00	

a Gage height, 1.68 ft
b Backwater from ice
e Estimated

06353000 CEDAR CREEK NEAR RALEIGH, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
08...	1445	6.7	--	--	--	1940	8.0	5.0	--	--	--	--	--
DEC													
19...	1340	6.9	--	--	--	2650	-1.5	.4	--	--	--	--	--
FEB													
04...	1305	8.6	--	--	--	3710	-2.0	.1	--	--	--	--	--
MAR													
27...	1625	17	--	--	--	2240	15.5	.4	--	--	--	--	--
APR													
23...	1520	19	8.5	8.2	1620	1580	28.0	15.0	360	56.0	54.0	8.60	5
JUN													
05...	1500	3.9	--	--	--	2180	27.0	19.5	--	--	--	--	--
JUL													
22...	1240	4.9	7.8	7.6	1240	1250	25.0	23.5	190	33.0	25.0	11.0	7

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
23...	230	57	285	9.8	.40	590	58.6	1130	1120	1.0	50	<1	60
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
22...	210	70	176	8.8	.40	460	11.6	880	853	2.0	100	<1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
08...	--	--	--	--	--
DEC					
19...	--	--	--	--	--
FEB					
04...	--	--	--	--	--
MAR					
27...	--	--	--	--	--
APR					
23...	60	<.10	1	<1	990
JUN					
05...	--	--	--	--	--
JUL					
22...	10	.10	1	<1	550

< Less than

06354000 CANNONBALL RIVER AT BREIEN, ND

LOCATION.--Lat 46°22'33", long 100°56'03", in sec.36, T.134 N., R.82 W., Morton County, Hydrologic Unit 10130206, on left bank at downstream side of bridge on State Highway 6, 1,100 ft downstream from Dogtooth Creek, and 0.6 mi southeast of Breien.

DRAINAGE AREA.--4,100 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1934 to current year.

REVISED RECORDS.--WSP 786: 1934. WSP 1146: 1943. WSP 1279: 1936-37(M), 1947(M). WSP 1509: 1955(M).

GAGE.--Water-stage recorder. Datum of gage is 1,673.54 ft above National Geodetic Vertical Datum of 1929. From June 12, 1973, to July 1, 1985, at site 450 ft downstream. Prior to June 12, 1973, at site 50 ft upstream at datum 3.00 ft higher. June 13, 1973, to April 8, 1980, at datum 2.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Some storage in several small lakes above station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	25	e29	e23	e27	e22	e168	70	18	2.5	21	e0.90
2	19	26	e29	e23	e27	e23	e144	68	18	2.4	22	e0.88
3	18	26	e29	e24	e27	e24	e129	65	18	2.4	19	e0.87
4	18	25	e29	e25	e26	e24	e111	62	17	2.5	15	e0.85
5	18	26	e28	e26	e26	e24	e98	58	15	347	13	0.50
6	18	26	e27	e27	e26	e25	e90	56	14	198	12	0.18
7	18	26	e27	e27	e27	e26	e82	56	13	70	12	0.15
8	18	26	e26	e28	e26	e28	e80	e57	14	41	10	0.07
9	18	27	e25	e29	e27	e29	e76	e56	13	43	14	0.60
10	24	26	e25	e29	e26	e31	e77	55	11	68	54	1.1
11	22	26	e25	e30	e26	e33	e77	54	10	51	51	1.4
12	27	26	e24	e30	e26	e35	84	54	9.5	38	29	1.2
13	25	27	e24	e31	e25	e37	85	51	8.3	29	17	0.92
14	21	27	e23	e32	e25	e39	80	49	8.0	22	12	1.0
15	20	27	e22	e32	e25	e42	77	46	8.7	17	10	1.4
16	20	27	e22	e32	e25	e46	78	43	9.3	14	8.9	1.5
17	20	27	e22	e32	e25	e50	76	43	8.4	12	12	1.3
18	20	e27	e21	e31	e24	e52	76	41	7.1	11	7.8	0.93
19	36	e27	e21	e31	e24	e54	79	39	7.7	9.8	5.9	1.0
20	36	e27	e21	e30	e23	e55	78	38	8.4	13	4.7	0.88
21	33	e27	e21	e30	e22	e56	80	36	7.5	43	4.0	0.68
22	29	e27	e21	e30	e22	e58	83	33	7.1	131	3.8	0.66
23	27	e27	e21	e30	e22	e59	84	30	6.9	45	3.6	0.57
24	27	e28	e21	e29	e22	e59	79	30	6.6	27	3.2	0.71
25	28	e29	e21	e29	e22	e59	76	28	6.0	22	2.3	0.67
26	29	e29	e22	e29	e22	e61	74	25	5.2	87	e1.6	0.67
27	26	e29	e22	e29	e22	e65	74	26	4.4	56	e1.4	0.95
28	26	e29	e22	e29	e22	e72	74	25	3.5	41	e1.2	1.2
29	26	e29	e23	e28	---	e90	74	24	3.3	37	e1.1	1.3
30	25	e29	e22	e29	---	e119	74	20	2.7	43	e1.0	1.8
31	27	---	e23	e28	---	e140	---	18	---	31	e0.95	---
TOTAL	738	810	738	892	689	1537	2617	1356	289.6	1556.6	374.45	26.84
MEAN	23.81	27.00	23.81	28.77	24.61	49.58	87.23	43.74	9.653	50.21	12.08	0.895
MAX	36	29	29	32	27	140	168	70	18	347	54	1.8
MIN	18	25	21	23	22	22	74	18	2.7	2.4	0.95	0.07
AC-FT	1460	1610	1460	1770	1370	3050	5190	2690	574	3090	743	53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2002, BY WATER YEAR (WY)

MEAN	35.06	28.92	17.53	16.01	76.53	895.0	851.9	345.1	370.9	199.2	68.19	33.19
MAX	281	238	98.8	342	1058	5428	10070	2399	2384	1409	459	267
(WY)	1978	1983	1999	1973	1982	1997	1950	1975	1937	1969	1999	1977
MIN	0.21	0.63	0.38	0.000	0.000	3.29	17.1	6.48	3.10	0.17	0.12	0.010
(WY)	1961	1961	1935	1941	1935	1965	1961	1992	1936	1936	1974	1974

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1934 - 2002	
ANNUAL TOTAL	107652		11624.49			
ANNUAL MEAN	294.9		31.85		245.3	
HIGHEST ANNUAL MEAN					994	1950
LOWEST ANNUAL MEAN					9.90	1961
HIGHEST DAILY MEAN	5800	Mar 14	347	Jul 5	63100	Apr 19 1950
LOWEST DAILY MEAN	13	Sep 10	0.07	Sep 8	0.00	Jan 11 1935
ANNUAL SEVEN-DAY MINIMUM	14	Sep 7	0.46	Sep 3	0.00	Jan 11 1935
MAXIMUM PEAK FLOW			484	Jul 5	a94800	Apr 19 1950
MAXIMUM PEAK STAGE			4.36	Jul 5	b22.30	Apr 19 1950
ANNUAL RUNOFF (AC-FT)	213500		23060		177700	
10 PERCENT EXCEEDS	748		74		410	
50 PERCENT EXCEEDS	32		26		29	
90 PERCENT EXCEEDS	21		2.1		0.82	

a From rating extended above 16,000 ft^3/s on basis of indirect measurement of peak flow
b From floodmark
e Estimated

06354000 CANNONBALL RIVER AT BREIEN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-50, 1970-72, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
29...	1245	26	--	--	--	1710	4.0	4.8	--	--	--	--	--
DEC													
03...	1200	29	--	--	--	2210	3.0	.2	--	--	--	--	--
JAN													
18...	1440	31	--	--	--	--	-8.0	.2	--	--	--	--	--
APR													
01...	1530	162	--	--	--	970	1.0	.3	--	--	--	--	--
22...	1210	82	8.7	8.4	1380	1360	11.5	8.5	350	61.0	48.0	8.00	4
MAY													
28...	1210	26	--	--	--	1900	28.5	20.7	--	--	--	--	--
JUL													
05...	1220	484	--	--	--	672	36.5	24.2	--	--	--	--	--
AUG													
07...	1210	13	8.3	8.2	1400	1420	32.0	25.8	230	40.0	32.0	11.0	7
SEP													
04...	1250	.84	--	--	--	1770	27.0	22.0	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	180	52	300	9.8	.30	470	212	951	958	1.0	60	<1	50
MAY													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07...	240	68	281	5.4	.4	460	33.9	997	957	3	40	<1	60
SEP													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
29...	--	--	--	--	--
DEC					
03...	--	--	--	--	--
JAN					
18...	--	--	--	--	--
APR					
01...	--	--	--	--	--
22...	30	<.10	1	1	850
MAY					
28...	--	--	--	--	--
JUL					
05...	--	--	--	--	--
AUG					
07...	20	.1	5	1	580
SEP					
04...	--	--	--	--	--

< Less than

06354580 BEAVER CREEK BELOW LINTON, ND

LOCATION.--Lat 46°16'07", long 100°15'05", in NW$^1/_4$NW$^1/_4$SW$^1/_4$ sec.7, T.132 N., R.76 W., Emmons County, Hydrologic Unit 10130104, on left bank 25 ft upstream from bridge on county road, 0.7 mi west of Linton, and 0.5 mi downstream from Spring Creek.

DRAINAGE AREA.--765 mi^2, of which about 100 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to current year. Records for August 1949 to September 1989 at site 1.5 mi upstream published as "at Linton, ND" (station 06354500) are not equivalent because of difference in drainage area.

GAGE.--Water-stage recorder and artificial control. Elevation of gage is 1,690 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	e8.8	e5.9	e7.1	e10	144	63	9.9	2.1	2.5	e0.60
2	12	11	e8.6	e5.9	e7.2	e10	146	61	10	1.7	2.4	e0.81
3	11	10	e8.2	e5.8	e7.3	e10	131	59	11	e1.6	2.1	e0.35
4	11	11	e8.1	e5.6	e7.2	e9.8	116	56	10	e1.6	1.8	e0.30
5	10	11	e8.2	e5.7	e7.4	e9.8	105	52	10	e1.5	5.6	e0.26
6	11	11	e8.1	e5.9	e7.8	e9.8	99	51	9.7	e1.4	7.6	e0.29
7	11	11	e8.0	e6.0	e8.2	e9.7	103	48	9.3	e1.3	6.5	e0.36
8	11	10	e7.8	e6.1	e8.8	e9.6	100	48	9.3	e1.3	2.1	e0.47
9	11	11	e7.7	e6.4	e9.2	e9.5	97	46	8.9	e1.4	1.1	e0.56
10	10	11	e7.8	e6.8	e9.0	e9.5	109	44	8.1	e1.6	0.67	e0.73
11	9.9	11	e7.3	e7.1	e9.5	e9.8	101	46	7.4	e2.1	0.75	e1.1
12	9.4	10	e7.3	e7.2	e10	e11	91	49	6.6	e2.4	0.42	e0.57
13	9.1	11	e7.2	e7.1	e11	e13	92	47	5.1	e2.4	0.85	e0.24
14	9.2	10	e7.3	e7.1	e11	e15	92	46	4.1	e2.3	e0.60	e0.82
15	8.3	10	e7.2	e7.5	e12	e19	88	43	5.1	e2.2	e0.41	e0.77
16	12	10	e7.4	e7.3	e13	e21	83	38	4.9	e2.1	e0.42	e0.41
17	12	10	e7.3	e7.0	e13	e22	81	35	4.0	e2.0	e0.43	e0.83
18	11	10	e7.4	e7.0	e14	e21	80	33	3.5	e1.9	e0.44	e0.85
19	10	10	e7.0	e7.5	e14	e20	79	31	5.4	e1.9	e0.45	e0.20
20	9.6	11	e6.6	e7.3	e14	e18	77	28	10	e1.8	e0.38	e0.27
21	9.5	12	e6.4	e7.5	e15	e17	80	25	4.8	1.8	e0.34	e0.33
22	9.3	12	e6.5	e7.3	e15	e17	82	23	2.2	1.8	e0.29	e0.65
23	9.3	11	e6.6	e7.3	e16	e16	81	21	2.2	2.0	e0.77	e0.67
24	9.6	11	e6.3	e7.6	e15	e16	77	17	2.2	2.6	e0.66	e0.37
25	9.9	e10	e6.3	e7.8	e14	e15	72	13	2.3	3.0	e0.55	e0.14
26	9.7	e9.6	e6.2	e7.8	e13	e15	69	12	2.4	2.8	e0.51	e0.58
27	12	e9.2	e6.1	e7.6	e12	e25	68	12	2.4	2.6	e0.48	e0.28
28	13	e8.8	e6.3	e7.5	e11	e42	65	12	2.3	2.8	e0.44	e0.82
29	12	e8.8	e6.3	e7.2	---	e70	67	12	2.0	2.6	e0.35	e0.80
30	11	e8.8	e6.4	e7.1	---	107	65	11	2.0	2.6	e0.21	e0.51
31	11	---	e6.1	e7.0	---	140	---	10	---	2.5	e0.88	---
TOTAL	325.8	312.2	222.8	213.9	311.7	747.5	2740	1092	177.1	63.7	43.00	15.94
MEAN	10.51	10.41	7.187	6.900	11.13	24.11	91.33	35.23	5.903	2.055	1.387	0.531
MAX	13	12	8.8	7.8	16	140	146	63	11	3.0	7.6	1.1
MIN	8.3	8.8	6.1	5.6	7.1	9.5	65	10	2.0	1.3	0.21	0.14
AC-FT	646	619	442	424	618	1480	5430	2170	351	126	85	32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2002, BY WATER YEAR (WY)

MEAN	13.03	13.72	10.84	7.331	40.01	239.3	259.4	74.89	52.63	71.02	32.53	16.62
MAX	26.5	35.3	34.6	15.9	206	693	1840	231	194	330	174	73.8
(WY)	2000	1999	1999	2000	1996	1997	1997	1999	1996	1993	1993	1999
MIN	0.16	0.31	0.36	0.30	1.32	5.05	6.32	2.76	1.25	0.80	0.12	0.063
(WY)	1991	1991	1991	1991	1991	1991	1991	1992	1992	1992	1990	1991

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1990 - 2002	
ANNUAL TOTAL	19937.8		6265.64			
ANNUAL MEAN	54.62		17.17		69.32	
HIGHEST ANNUAL MEAN					237	1997
LOWEST ANNUAL MEAN					4.76	1990
HIGHEST DAILY MEAN	757	Apr 9	146	Apr 2	6080	Apr 2 1997
LOWEST DAILY MEAN	4.8	Feb 11	0.14	Sep 25	0.00	Aug 12 1990
ANNUAL SEVEN-DAY MINIMUM	4.9	Feb 8	0.37	Sep 3	0.00	Aug 12 1990
MAXIMUM PEAK FLOW			156	Mar 31	6780	Mar 31 1997
MAXIMUM PEAK STAGE			5.65	Mar 28	15.34	Mar 31 1997
ANNUAL RUNOFF (AC-FT)	39550		12430		50220	
10 PERCENT EXCEEDS	134		57		125	
50 PERCENT EXCEEDS	17		8.8		14	
90 PERCENT EXCEEDS	5.6		0.66		0.93	

e Estimated

06354580 BEAVER CREEK BELOW LINTON, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
10...	1125	9.4	--	--	--	1120	13.0	12.0	--	--	--	--	--
NOV													
28...	1145	8.8	--	--	--	1260	<-5.0	.0	--	--	--	--	--
FEB													
07...	1430	8.2	--	--	--	1500	9.0	.5	--	--	--	--	--
APR													
08...	1210	91	7.4	7.5	572	572	2.5	3.0	170	36.0	20.0	13.0	2
AUG													
05...	1435	1.9	--	--	--	1200	27.5	23.5	--	--	--	--	--
SEP													
03...	1315	.35	7.7	--	1460	1480	25.0	21.0	420	93.0	46.0	15.0	4

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
08...	46.0	35	177	7.9	.10	110	92.1	375	340	2.0	140	<1	60
AUG													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
03...	180	47	431	55.0	.20	340	.95	1000	989	7.0	50	1	210

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
10...	--	--	--	--	--
NOV					
28...	--	--	--	--	--
FEB					
07...	--	--	--	--	--
APR					
08...	150	<.10	<1	<1	260
AUG					
05...	--	--	--	--	--
SEP					
03...	470	.10	2	<1	630

< Less than

06439980 LAKE OAHE NEAR PIERRE, SD

LOCATION.--Lat 44°27'30", long 100°23'29", in NE$^{1}/_{4}$ 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 northwest of Pierre, 7.1 mi upstream from Bad River, and at mile 1,072.3.

DRAINAGE AREA.--243,500 mi^2, approximately.

MONTHEND-ELEVATION AND CONTENTS RECORDS

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 above National Geodetic Vertical Datum of 1929. Prior to Jan. 14, 1958, 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.

REVISED RECORDS.--WDR SD-88-1: September monthend elevation.

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,338,000 acre-ft below elevation 1,620.0 ft (top of spillway gates). Normal maximum, 22,240,000 acre-ft below 1,617.0 ft, of which about 2,390,000 acre-ft is designated for flood control. Inactive storage, 5,451,000 acre-ft below elevation 1,540.0 ft. Dead storage, 1,970 acre-ft below elevation 1,425.0 ft (invert of lowest outlet tunnel). Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.

The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft, 8 gates, 50 by 23.5 ft each; design capacity, 300,000 ft^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.--Records of elevation and contents provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 22,764,000 acre-ft, May 14, 1986, affected by wind; maximum elevation, 1,618.71 ft, June 25, 1995; minimum since initial filling, 12,071,000 acre-ft, Oct. 30, 1989, Nov. 1, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 17,441,000 acre-ft, Oct. 1; minimum contents, 13,112,000 acre-ft, Sept. 30.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,602.95	17,465,000	--
Oct. 31	1,601.20	16,978,000	-487,000
Nov. 30	1,599.39	16,453,000	-525,000
Dec. 31	1,598.51	16,215,000	-238,000
CAL YR 2001	--	--	+414,000
Jan. 31	1,598.60	16,242,000	+27,000
Feb. 28	1,598.89	16,312,000	+70,000
Mar. 31	1,598.19	16,113,000	-199,000
Apr. 30	1,596.18	15,576,000	-537,000
May 31	1,595.31	15,368,000	-208,000
June 30	1,592.70	14,665,000	-703,000
July 31	1,590.75	14,191,000	-474,000
Aug. 31	1,588.09	13,597,000	-594,000
Sept. 30	1,586.39	13,112,000	-485,000
WTR YR 2002	--	--	-4,353,000

NOTE.--Lake frozen over Mar. 11 to Apr. 16.

06468170 JAMES RIVER NEAR GRACE CITY, ND

LOCATION.--Lat 47°33'29", long 98°51'45", in $NW^1/_4NW^1/_4NW^1/_4$ sec.17, T.147 N., R.64 W., Foster County, Hydrologic Unit 10160001, on left bank on upstream side of county highway bridge and 2.5 mi northwest of Grace City.

DRAINAGE AREA.--1,060 mi^2, approximately, of which about 650 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,457.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	13	e6.9	e1.7	e1.5	e2.9	6.5	45	8.8	4.4	2.5	7.0
2	5.7	13	e6.5	e2.0	e1.5	e3.1	6.0	43	8.8	4.0	2.4	3.2
3	5.1	13	e6.3	e2.1	e1.5	e3.1	5.7	42	8.1	3.7	2.0	2.0
4	4.4	15	e6.0	e2.3	e1.6	e2.8	5.0	37	7.5	5.0	1.6	1.8
5	4.2	17	e5.9	e2.3	e1.8	e2.6	4.5	38	7.1	4.9	1.4	1.3
6	4.3	18	e5.9	e2.2	e2.0	e2.7	6.6	38	6.4	3.5	1.4	1.2
7	4.5	19	e5.4	e2.3	e2.6	e2.6	10	38	5.8	3.2	1.4	0.98
8	4.4	19	e5.6	e2.4	e2.7	e3.0	9.2	45	6.5	2.8	1.1	0.77
9	4.7	18	e5.2	e2.5	e2.8	e3.2	8.3	43	20	6.2	1.1	0.83
10	6.9	17	e5.0	e2.5	e3.6	e4.0	8.5	50	12	48	0.88	0.78
11	7.6	17	e4.7	e2.4	e4.3	e4.6	9.2	53	23	22	1.3	0.62
12	6.4	16	e4.6	e2.3	e4.1	e5.7	9.5	51	61	12	1.8	0.54
13	6.2	16	e3.6	e2.2	e4.2	e5.9	11	47	55	9.1	1.9	0.65
14	5.3	15	e3.3	e2.2	e4.4	e6.3	14	47	42	8.4	1.7	0.81
15	5.2	15	e3.3	e2.1	e4.1	6.5	27	40	30	7.3	1.4	1.1
16	5.7	15	e3.9	e2.1	e4.6	5.7	37	40	22	5.5	1.5	1.1
17	6.0	14	e4.2	e2.1	e4.5	6.3	42	36	18	5.3	0.87	1.0
18	5.1	12	e4.4	e2.1	e4.7	6.0	53	33	14	5.5	0.96	0.87
19	5.4	13	e4.2	e2.0	e4.3	5.1	57	31	12	5.8	1.00	0.66
20	6.6	13	e4.1	e1.9	e4.1	4.6	54	29	9.3	5.7	0.99	0.55
21	7.6	12	e3.7	e1.9	e4.1	4.5	52	30	9.5	6.4	0.90	0.30
22	11	12	e3.5	e1.9	e4.3	4.3	54	24	8.4	9.3	0.85	0.18
23	13	11	e3.1	e1.8	e4.2	3.9	53	20	8.0	13	0.77	0.31
24	16	11	e2.8	e2.0	e4.1	3.8	49	20	9.2	11	0.70	0.39
25	16	11	e2.6	e1.9	e3.4	3.7	50	17	8.4	8.8	0.63	0.30
26	14	e9.6	e2.3	e2.0	e3.1	3.3	54	17	7.1	8.0	0.54	0.24
27	15	e9.0	e2.2	e1.7	e2.9	4.6	54	17	6.0	6.1	0.55	0.27
28	13	e8.4	e2.1	e1.6	e3.0	8.0	47	16	5.6	5.2	0.62	0.46
29	13	e7.8	e2.1	e1.5	---	7.9	45	14	5.1	4.4	0.66	0.53
30	13	e7.2	e2.1	e1.5	---	7.6	48	11	4.4	3.6	1.3	0.46
31	13	---	e1.8	e1.5	---	8.0	---	9.8	---	3.2	11	---
TOTAL	254.2	407.0	127.3	63.0	94.0	146.3	890.0	1021.8	449.0	251.3	47.72	31.20
MEAN	8.200	13.57	4.106	2.032	3.357	4.719	29.67	32.96	14.97	8.106	1.539	1.040
MAX	16	19	6.9	2.5	4.7	8.0	57	53	61	48	11	7.0
MIN	4.2	7.2	1.8	1.5	1.5	2.6	4.5	9.8	4.4	2.8	0.54	0.18
AC-FT	504	807	252	125	186	290	1770	2030	891	498	95	62

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

MEAN	6.795	9.777	2.418	0.678	3.175	134.9	287.1	88.35	37.93	55.78	30.90	11.06
MAX	70.7	130	21.0	4.22	49.9	724	1854	446	335	750	498	156
(WY)	2001	2001	2001	1994	1981	1995	1997	1997	2000	2000	1993	2000
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.29	0.18	0.11	0.022	0.000	0.000
(WY)	1977	1977	1977	1969	1969	1969	1977	1991	1973	1973	1988	1976

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1968 - 2002	
ANNUAL TOTAL	61321.3		3782.82			
ANNUAL MEAN	168.0		10.36		56.13	
HIGHEST ANNUAL MEAN					200	1997
LOWEST ANNUAL MEAN					0.21	1977
HIGHEST DAILY MEAN	1800	Mar 28	61	Jun 12	3600	Apr 3 1997
LOWEST DAILY MEAN	1.8	Dec 31	0.18	Sep 22	0.00	Jan 1 1969
ANNUAL SEVEN-DAY MINIMUM	2.0	Jan 1	0.28	Sep 21	0.00	Jan 1 1969
MAXIMUM PEAK FLOW			64	Jun 12	4000	Apr 3 1997
MAXIMUM PEAK STAGE			5.28	Jun 12	a16.18	Mar 21 1996
ANNUAL RUNOFF (AC-FT)	121600		7500		40660	
10 PERCENT EXCEEDS	440		34		95	
50 PERCENT EXCEEDS	17		5.1		1.2	
90 PERCENT EXCEEDS	2.6		1.1		0.00	

a About
e Estimated

06468170 JAMES RIVER NEAR GRACE CITY, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
15...	1340	14	--	--	--	1420	18.0	9.0	--	--	--	--	--
JAN													
18...	1215	2.1	--	--	--	2000	-5.0	.0	--	--	--	--	--
APR													
09...	1340	7.4	--	--	--	632	4.0	2.0	--	--	--	--	--
MAY													
22...	1245	28	8.4	8.4	1440	1450	18.0	14.6	570	88.0	84.0	18.0	2
JUL													
17...	1500	5.0	8.6	--e	1220	1320	25.0	24.0	420	65.0	63.0	16.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
22...	120	31	369	21.0	.20	470	78.2	1050	1020	3.0	30	<1	80
JUL													
17...	120	37	321	18.0	.20	360	11.9	885	835	8.0	30	<1	70

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
NOV					
15...	--	--	--	--	--
JAN					
18...	--	--	--	--	--
APR					
09...	--	--	--	--	--
MAY					
22...	140	<.10	2	<1	430
JUL					
17...	200	.20	2	<1	350

< Less than
e Required equipment not functional/available

06468250 JAMES RIVER ABOVE ARROWWOOD LAKE NEAR KENSAL, ND

LOCATION.--Lat 47°23'59", long 98°47'50", in $SW^1/_4SW^1/_4SW^1/_4$ sec.2, T.145 N., R.64 W., Foster County, Hydrologic Unit 10160001, on right bank 20 ft upstream from bridge.

DRAINAGE AREA.--1,200 mi^2, approximately, of which about 750 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 1,440 ft above National Geodetic Vertical Datum of 1929, from topographc map.

REMARKS.--Records good except for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	20	e8.8	e3.6	e3.1	e5.3	e10	66	21	8.8	11	3.3
2	8.9	18	e9.2	e3.7	e3.0	e5.5	e9.7	65	21	8.1	8.5	5.9
3	9.1	20	e8.8	e3.9	e3.0	e5.4	e9.4	58	19	e6.7	7.2	7.2
4	7.2	20	e8.5	e4.0	e3.0	e5.2	e9.5	61	17	8.5	6.2	7.6
5	6.3	18	e8.2	e3.9	e3.3	e5.0	e9.6	62	16	8.6	5.6	6.6
6	6.0	19	e7.9	e3.7	e3.7	e4.9	e12	66	13	7.0	4.5	5.9
7	5.7	21	e7.5	e3.9	e4.3	e4.8	e13	57	12	8.3	4.1	5.1
8	6.0	20	e7.7	e4.2	e4.5	e4.7	e15	63	13	8.8	3.6	4.6
9	6.8	19	e7.9	e4.1	e5.0	e4.7	e17	69	22	8.7	4.1	4.7
10	12	21	e7.2	e4.0	e5.6	e5.6	e16	71	46	e16	3.5	4.6
11	11	24	e6.8	e3.9	e6.1	e5.7	e15	73	39	e46	3.2	3.9
12	10	20	e6.4	e3.8	e6.3	e7.1	14	74	29	e26	3.5	3.7
13	10	20	e5.9	e3.6	e6.2	e8.0	16	76	54	e16	3.2	3.2
14	10	19	e6.0	e3.5	e6.3	e9.0	18	69	69	e14	3.0	3.2
15	9.8	18	e6.2	e3.4	e6.4	e8.7	22	66	61	e13	e2.9	2.4
16	9.4	18	e6.2	e3.3	e6.5	e8.3	29	69	49	e12	3.1	2.2
17	8.4	18	e6.3	e3.3	e6.4	e8.7	36	61	41	e14	e4.1	1.8
18	7.7	20	e6.2	e3.2	e6.2	e8.4	62	56	31	15	e3.4	1.7
19	7.4	18	e6.1	e3.4	e6.0	e8.2	67	54	31	12	3.2	1.8
20	7.0	16	e6.0	e3.5	e5.9	e7.8	68	51	26	9.8	2.8	1.7
21	7.3	15	e5.7	e3.6	e6.1	e7.6	68	41	23	9.1	2.8	1.7
22	7.0	e15	e5.4	e3.5	e6.2	e7.4	66	36	20	9.2	2.6	1.6
23	e7.3	e15	e5.1	e3.6	e5.9	e7.3	66	49	22	e8.8	3.0	1.9
24	e15	e14	e4.8	e3.7	e5.7	e7.3	73	43	24	e14	2.8	1.9
25	17	e13	e4.6	e3.7	e5.5	e6.7	72	37	17	e19	2.3	1.9
26	16	e12	e4.3	e3.6	e5.3	e6.5	69	34	19	e20	2.0	1.9
27	20	e11	e4.1	e3.4	e5.0	e9.3	72	32	18	e17	2.0	e1.9
28	21	e10	e4.0	e3.3	e5.1	e12	69	30	13	e14	2.9	e2.0
29	20	e9.5	e3.8	e3.2	---	e11	65	30	9.2	e12	2.8	2.2
30	20	e9.0	e3.7	e3.2	---	e11	67	26	e9.8	e9.6	2.0	2.6
31	20	---	e3.6	e3.1	---	e10	---	e22	---	9.0	2.8	---
TOTAL	338.3	510.5	192.9	111.8	145.6	227.1	1155.2	1667	805.0	409.0	118.7	100.7
MEAN	10.91	17.02	6.223	3.606	5.200	7.326	38.51	53.77	26.83	13.19	3.829	3.357
MAX	21	24	9.2	4.2	6.5	12	73	76	69	46	11	7.6
MIN	5.7	9.0	3.6	3.1	3.0	4.7	9.4	22	9.2	6.7	2.0	1.6
AC-FT	671	1010	383	222	289	450	2290	3310	1600	811	235	200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

MEAN	13.26	21.60	7.271	2.173	3.130	221.6	450.5	135.7	57.06	100.6	79.24	25.80
MAX	77.3	157	47.5	10.6	19.4	781	2188	625	305	814	688	175
(WY)	2001	2001	1995	1995	1998	1995	1997	1997	2000	2000	1993	2000
MIN	0.000	0.000	0.000	0.000	0.000	0.21	2.59	2.24	0.077	0.000	0.000	0.000
(WY)	1989	1989	1989	1989	1989	1990	1991	1991	1991	1991	1988	1988

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1986 - 2002		
ANNUAL TOTAL	69537.0		5781.8				
ANNUAL MEAN	190.5		15.84		93.34		
HIGHEST ANNUAL MEAN					245		1997
LOWEST ANNUAL MEAN					0.52		1991
HIGHEST DAILY MEAN	2300	Mar 27	76	May 13	4400	Apr 5	1997
LOWEST DAILY MEAN	3.2	Mar 3	1.6	Sep 22	0.00	Oct 1	1985
ANNUAL SEVEN-DAY MINIMUM	3.3	Feb 28	1.7	Sep 17	0.00	Oct 1	1985
MAXIMUM PEAK FLOW			78	May 13	a4700	Apr 5	1997
MAXIMUM PEAK STAGE			3.22	May 13	a,b13.00	Apr 5	1997
ANNUAL RUNOFF (AC-FT)	137900		11470		67620		
10 PERCENT EXCEEDS	571		50		215		
50 PERCENT EXCEEDS	24		8.3		5.1		
90 PERCENT EXCEEDS	4.6		3.2		0.00		

a About
b Backwater from ice
e Estimated

06468250 JAMES RIVER ABOVE ARROWWOOD LAKE NEAR KENSAL, ND--Continued

WATER-QUALITY RECORDS

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

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT													
24...	1305	13	--	--	13.1	8.2	--	1080	1110	-.5	1.0	380	61.8
NOV													
15...	1100	18	716	98	12.3	8.7	8.5	1230	1290	17.0	3.0	450	79.9
MAR													
19...	1250	8.2	726	111	15.4	8.1	8.0	1000	1040	-5.0	.0	380	71.6
APR													
09...	1515	17	720	124	14.2	--e	8.1	754	708	9.5	7.0	240	47.2
30...	1115	68	715	--	11.5	8.5	8.1	1060	----ee	8.5	7.5	390	70.0
JUN													
27...	1000	19	--	--	3.9	8.4	8.3	1390	1400	36.5	25.8	520	82.9
JUL													
17...	1330	14	--	--	14.3	8.4	8.2	1230	--e	25.0	24.1	420	55.4
30...	1500	9.2	--	--	7.0	--e	8.2	1100	1200	27.0	26.2	370	45.9
AUG													
20...	1540	2.4	--	--	7.7	--e	8.6	925	964	30.0	20.7	280	32.0

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT													
24...	54.6	12.1	2	94.6	34	337	15.3	.2	8.3	277	1.1	--	<.04
NOV													
15...	61.2	10.6	2	113	35	408	24.6	.2	13.3	307	1.1	--	<.04
MAR													
19...	48.6	10.4	2	99.5	36	325	27.3	.2	7.8	232	.97	--	E.02
APR													
09...	30.8	9.64	2	64.0	35	224	18.3	.2	7.7	148	.92	1.5	<.04
30...	52.9	10.9	2	78.2	30	277	18.1	.1	7.8	300	1.1	1.6	<.04
JUN													
27...	75.8	17.7	2	118	32	358	22.5	.3	19.7	408	1.5	--	<.04
JUL													
17...	69.0	17.4	3	126	38	314	23.9	.1	21.9	369	1.9	3.8	E.04
30...	61.1	15.8	3	123	41	281	23.6	.2	4.5	348	1.7	--	<.04
AUG													
20...	48.9	13.9	3	98.6	42	265	20.9	.2	9.4	246	1.6	--	E.02

Date	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT													
24...	<.008	<.05	.11	.08	--	26.7	744	726	4	--	110	<10	22.8
NOV													
15...	<.008	<.05	.06	.03	--	41.8	860	855	E3	--	140	E6	25.8
MAR													
19...	<.008	E.04	.07	.05	--	16.0	728	693	E1	--	150	27	117
APR													
09...	E.005	E.03	.10	.08	.20	21.5	479	460	E2	3	100	31	108
30...	<.008	<.05	<.06	E.01	.12	136	737	704	2	2	90	<10	12.1
JUN													
27...	<.008	<.05	.15	.12	--	51.3	1010	961	8	--	160	E7	60.7
JUL													
17...	<.008	<.05	.17	.12	.48	33.5	913	871	10	9	200	E7	50.0
30...	<.008	E.03	E.05	<.02	--	21.4	856	791	7	--	190	<10	8.9
AUG													
20...	<.008	<.05	.06	<.02	--	4.41	674	629	7	--	160	E6	5.1

06468250 JAMES RIVER ABOVE ARROWWOOD LAKE NEAR KENSAL, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	TRIAZIN SCREEN (ELISA) WAT,WH REC,AS ATRAZIN (UG/L) (34757)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BENOMYL WATER FLTRD REC (UG/L) (50300)	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)
OCT													
24...	.02	<2	--	--	--	--	--	--	.1	--	--	--	--
NOV													
15...	.01	<4	--	--	--	--	--	--	.2	--	--	--	--
MAR													
19...	E.01n	<2	--	--	--	--	--	--	.1	--	--	--	--
APR													
09...	<.01	<2	<2	--	--	--	--	--	<.1	--	--	--	--
30...	.02	<2	E1	<.007	<.02	<.008	<.04	E.004	<.1	<.03	<.004	<.02	E.06
JUN													
27...	.14	<2	--	--	--	--	--	--	.1	--	--	--	--
JUL													
17...	.16	<2	<2	<.007	<.02	<.008	<.04	E.007	.2	<.03	<.004	<.02	M
30...	.04	<2	--	--	--	--	--	--	.3	--	--	--	--
AUG													
20...	.08	<2	--	--	--	--	--	--	.1	--	--	--	--

Date	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.010	<.03	<.006	<.006	<2	<.02	<.010	<.04	<.01	<.01	<.01	<.03	<.01
JUN													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	<.010	<.03	<.006	<.006	<2	<.02	<.010	<.04	<.01	<.01	<.01	E.01	<.01
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHEN-AMID, WATER, DISS, REC (UG/L) (04033)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMET-SULAM WATER FLTRD REC (UG/L) (61694)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)	IMAZ-AQUIN WATER FLTRD REC (UG/L) (50356)	IMAZE-THAPYR WATER FLTRD REC (UG/L) (50407)	IMID-ACLOP-RID WATER FLTRD REC (UG/L) (61695)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.04	<.01	<.01	<.01	E.03	<.01	<.03	<.01	<.03	<.008	<.02	<.02	<.007
JUN													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	<.04	<.01	<.01	<.01	<.03	E.01	<.03	<.01	<.03	<.008	<.02	<.02	<.007
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

06468250 JAMES RIVER ABOVE ARROWWOOD LAKE NEAR KENSAL, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METAL-AXYL WATER FLTRD REC (UG/L) (50359)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	MET-SUL-FURON METHYL WAT FLT REC (UG/L) (61697)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSUL FURON WATER FLTRD REC (UG/L) (50364)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.01	<.02	<.01	<.02	<.008	<.004	<.03	<.01	<.01	<.02	<.02	<.01	<.02
JUN													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	<.01	.02	<.01	<.02	<.008	<.004	<.03	<.01	<.01	<.02	<.02	<.01	<.02
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP-ICONA-ZOLE , WATER FLTRD REC (UG/L) (50471)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SIDURON WATER FLTRD REC (UG/L) (38548)	SULFO-MET-RURON METHYL WTR FLT REC (UG/L) (50337)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL, WATER, DISS, REC (UG/L) (04032)	TRI-BENURON METHYL WATER FLTRD (UG/L) (61159)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	UREA 3(4-CHLOR OPHENYL METHYL WAT FLT REC (UG/L) (61692)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-D SCREEN TOTAL (UG/L) (99906)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	<.700
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	<.700
MAR													
19...	--	--	--	--	--	--	--	--	--	--	--	--	<.700
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	<.700
30...	<.010	<.02	<.008	<.02	<.009	<.006	<.010	--u	<.02	<.02	<.009	.10	<.700
JUN													
27...	--	--	--	--	--	--	--	--	--	--	--	--	<.700
JUL													
17...	<.010	<.02	<.008	<.02	<.009	<.006	<.010	--u	<.02	<.02	<.009	.03	<.700
30...	--	--	--	--	--	--	--	--	--	--	--	--	<.700
AUG													
20...	--	--	--	--	--	--	--	--	--	--	--	--	1.54

Date	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT				
24...	--	64	2.3	91
NOV				
15...	--	44	2.1	92
MAR				
19...	--	9.0	.20	95
APR				
09...	--	12	.56	99
30...	<.02	20	3.7	89
JUN				
27...	--	58	2.9	90
JUL				
17...	<.02	86	3.2	97
30...	--	66	1.6	0c
AUG				
20...	--	54	.35	0c

< Less than
E Estimated value
M Presence verified, not quantified
c See laboratory comment
n Below the non-detection value
e Required equipment not functional/available
u Unable to determine-matrix interference

06468500 JAMES RIVER NEAR PINGREE, ND

LOCATION.--Lat 47°08'30", long 98°47'00", in $SW^1/_4SW^1/_4$ sec.3, T.142 N., R.64 W., Stutsman County, Hydrologic Unit 10160001, on right bank 500 ft upstream from dam at outlet of DePuy Marsh, 6.5 mi southeast of Pingree, and 6.25 mi northeast of Buchanan.

DRAINAGE AREA.--1,670 mi^2, approximately, of which about 900 mi^2 is probably noncontributing.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959-60, 1962, 1965, 1979-89, 1993 to current year.

REMARKS.--Quality assurance sample also collected at this location.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT													
24...	0930	700	103	13.6	8.3	8.4	1190	1070	2.0	.5	450	80.7	59.5
NOV													
15...	0830	716	102	12.8	8.9	8.6	1110	1070	10.0	3.2	390	61.9	57.8
APR													
09...	1645	--	--	14.2	8.0	8.1	1200	1100	13.0	7.6	410	68.2	58.8
30...	1400	715	--	11.4	--e	8.0	872	--e	11.0	9.7	290	50.3	38.9
JUN													
20...	1330	--	--	10.6	8.6	8.4	1110	1150	25.1	22.5	390	67.3	54.9
JUL													
30...	1200	--	--	17.6	--e	8.7	812	853	27.0	25.7	170	33.2	21.3
AUG													
19...	1600	--	--	7.8	--e	8.0	961	997	29.8	22.2	250	42.3	34.9

Date	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
OCT													
24...	11.7	2	101	32	390	19.1	.2	18.1	284	1.1	--	<.04	<.008
NOV													
15...	10.9	2	103	35	330	16.7	.2	9.0	304	1.2	--	<.04	<.008
APR													
09...	12.2	2	109	36	316	24.9	.2	7.3	320	1.1	1.5	<.04	E.004
30...	9.19	2	77.7	36	238	17.9	.2	6.8	222	.81	1.3	<.04	<.008
JUN													
20...	14.8	2	99.6	34	320	22.0	.2	10.5	299	1.2	--	<.04	<.008
JUL													
30...	12.3	3	105	55	160	21.3	.1	8.6	242	2.5	12	E.02	<.008
AUG													
19...	12.8	3	108	47	221	24.8	.2	27.6	293	2.7	--	.57	.092

Date	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, DIS-SOLVED (UG/L AS B) (01020)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT													
24...	--	<.05	--	--	.12	.10	--	788	809	4	--	130	E8
NOV													
15...	--	<.05	--	--	E.06	.04	--	784	762	<4	--	110	<10
APR													
09...	--	E.03	--	--	E.04	.03	.12	832	790	2	2	100	E9
30...	--	<.05	--	--	<.06	E.01	.17	595	566	E1	E2	90	E7
JUN													
20...	--	<.05	--	--	.08	.06	--	816	760	4	--	150	<10
JUL													
30...	--	E.03	--	--	.12	.08	1.12	602	540	4	5	60	<10
AUG													
19...	.05	.14	2.1	2.8	.49	.48	--	715	680	10	--	120	14

06468500 JAMES RIVER NEAR PINGREE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ACIFLUORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALDICARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICARB SULFOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDICARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	TRIAZIN SCREEN (ELISA) WAT,WH REC,AS ATRAZIN (UG/L) (34757)	BENDIOCARB, WATER FLTRD REC (UG/L) (50299)	BENOMYL WATER FLTRD REC (UG/L) (50300)	BENSULFURON METHYL WAT FLT REC (UG/L) (61693)
OCT													
24...	49.5	.02	<2	--	--	--	--	--	--	.1	--	--	--
NOV													
15...	40.5	.01	<4	--	--	--	--	--	--	--	--	--	--
APR													
09...	172	<.01	<2	<2	--	--	--	--	--	.1	--	--	--
30...	39.9	E.01n	<2	E1	<.007	<.02	<.008	<.04	E.005	<.1	<.03	<.004	<.02
JUN													
20...	39.5	2.18	<2	--	<.007	<.02	<.008	<.04	E.010	<.1	<.03	<.004	<.02
JUL													
30...	3.7	.16	<2	U	--	--	--	--	--	.4	--	--	--
AUG													
19...	22.1	.35	E1	--	--	--	--	--	--	<.1	--	--	--

Date	BENTAZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	CAFFEINE, WATER FLTRD REC (UG/L) (50305)	CARBARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CARBOFURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	3HYDRXY CARBOFURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBOFURAN WATER FLTRD REC (UG/L) (50295)	CHLORAMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORIMURON, WATER FLTRD REC (UG/L) (50306)	CHLOROTHALONIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CLOPYRALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYCLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONOACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	E.04	<.010	<.03	<.006	<.006	<2	<.02	<.010	<.04	<.01	<.01	<.01	<.03
JUN													
20...	E.06	<.010	<.03	<.006	<.006	<2	<.02	<.010	<.04	<.01	<.01	<.01	<.03
JUL													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	DEETHYL DEISOPROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISOPROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLORPROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHENAMID, WATER, DISS, REC (UG/L) (04033)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	FENURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMETSULAM WATER FLTRD REC (UG/L) (61694)	FLUOMETURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	HYDROXYATRAZINE WATER FLTRD REC (UG/L) (50355)	IMAZAQUIN WATER FLTRD REC (UG/L) (50356)	IMAZETHAPYR WATER FLTRD REC (UG/L) (50407)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.01	<.04	<.01	<.01	<.01	<.03	<.01	<.03	<.01	<.03	<.008	<.02	<.02
JUN													
20...	<.01	<.04	<.01	<.01	<.01	<.03	<.01	<.03	<.01	<.03	<.008	<.02	<.02
JUL													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	IMIDACLOPRID WATER FLTRD REC (UG/L) (61695)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METALAXYL WATER FLTRD REC (UG/L) (50359)	METHIOCARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METHOMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METSULFURON METHYL WAT FLT REC (UG/L) (61697)	NEBURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSULFURON WATER FLTRD REC (UG/L) (50364)	NORFLURAZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORYZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.007	<.01	<.02	<.01	<.02	<.008	<.004	<.03	<.01	<.01	<.02	<.02	<.01
JUN													
20...	<.007	<.01	E.05	<.01	<.02	<.008	<.004	<.03	<.01	<.01	<.02	<.02	<.01
JUL													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

06468500 JAMES RIVER NEAR PINGREE, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP-ICONA-ZOLE , WATER FLTRD REC (UG/L) (50471)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SIDURON WATER FLTRD REC (UG/L) (38548)	SULFO-MET-RURON METHYL WTR FLT REC (UG/L) (50337)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL, WATER, DISS, REC (UG/L) (04032)	TRI-BENURON METHYL WATER FLTRD (UG/L) (61159)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	UREA 3(4-CHLOR OPHENYL METHYL WAT FLT REC (UG/L) (61692)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DIS-SOLVED (UG/L) (39732)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	<.02	<.010	<.02	<.008	<.02	<.009	<.006	<.010	--u	<.02	<.02	<.009	.06
JUN													
20...	<.02	<.010	<.02	<.008	<.02	<.009	<.006	<.010	--u	<.02	<.02	<.009	.03
JUL													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	2,4-D SCREEN TOTAL (UG/L) (99906)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT				
24...	<.700	--	220	87
NOV				
15...	--	--	11	91
APR				
09...	<.700	--	17	97
30...	<.700	<.02	85	98
JUN				
20...	<.700	<.02	61	85
JUL				
30...	<.700	--	45	0c
AUG				
19...	<.700	--	148	0c

< Less than
E Estimated value
U Analyzed for, not detected
c See laboratory comment
n Below the non-detection value
e Required equipment not functional/available
u Unable to determine-matrix interference

06469000 JAMESTOWN RESERVOIR NEAR JAMESTOWN, ND

LOCATION.--Lat 46°55'50", long 98°42'23", in SE$^{1}/_{4}$NW$^{1}/_{4}$ sec.24, T.140 N., R.64 W., Stutsman County, Hydrologic Unit 10160001, on left bank in control house below Jamestown Dam on James River, 1.7 mi north of Jamestown Post Office, and 3.3 mi upstream from Pipestem Creek.

DRAINAGE AREA.--1,760 mi^{2}, approximately, of which about 1,010 mi^{2} is probably noncontributing.

MONTHEND-ELEVATION AND CONTENTS RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,400.00 ft above sea level; gage readings have been converted to sea level. From June 22, 1959, to June 3, 1971, site was located 0.2 mi upstream at same datum. Prior to June 22, 1959, nonrecording gages at different locations. Water-stage recorder discontinued July 15, 1999. Data provided from the Bureau of Reclamation will be published in 2000 data report.

REMARKS.--Reservoir is formed by earth-fill dam, completed Oct. 1, 1953. Closure made May 7, 1953, and filling of dead storage started. Gates initially closed Feb. 8, 1954. Usable capacity, 229,470 acre-ft between elevations 1,400 ft, sill of outlet, and 1,454 ft, crest of spillway. Dead storage below elevation 1,400 ft, 820 acre-ft. Maximum design pool, 389,000 acre-ft, elevation, 1,464.6 ft. Figures given herein represent total contents based on capacity table dated Oct. 1, 1965. Reservoir is used for flood control and municipal supply. Elevations are adjusted for wind effect.

COOPERATION.--Records furnished by the U.S. Bureau of Reclamation. Elevations affected by wind.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 124,900 acre-ft, May 2, 1997, elevation, 1,445.80 ft; minimum since initial filling of reservoir, 14,420 acre-ft, Mar. 1, 1993, elevation, 1,420.90 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 33,640 acre-ft, Apr. 24, elevation, 1,431.91 ft; minimum, 25,400 acre-ft, Oct. 8, elevation, 1,428.02 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,428.16	25,660	--
Oct. 31	1,428.32	25,970	+310
Nov. 30	1,428.95	27,180	+1,210
Dec. 31	1,429.61	28,520	+1,340
CAL YR 2001	--	--	+7,150
Jan. 31	1,430.14	29,630	+1,110
Feb. 28	1,430.65	30,740	+1,110
Mar. 31	1,431.25	32,100	+1,360
Apr. 30	1,431.56	32,820	+720
May 31	1,431.04	31,600	-1,220
June 30	1,430.83	31,140	-460
July 31	1,430.87	31,220	+80
Aug. 31	1,430.85	31,180	-40
Sept. 30	1,430.21	29,780	-1,400
WTR YR 2002	--	--	+4,120

06469400 PIPESTEM CREEK NEAR PINGREE, ND

LOCATION.--Lat 47°10'03", long 98°58'07", in NE$^1/_4$NE$^1/_4$NW$^1/_4$ sec.31, T.143 N., R.65 W., Stutsman County, Hydrologic Unit 10160002, on right bank on downstream side of State Highway 36 bridge and 3 mi west of Pingree.

DRAINAGE AREA.--700 mi^2, of which about 440 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,500.63 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	23	8.7	e2.5	e1.9	e2.0	44	62	11	2.6	0.23	0.21
2	7.9	22	8.8	e2.4	e1.9	e2.1	40	61	9.3	2.2	0.20	0.18
3	6.7	24	9.2	e2.3	e2.0	e2.1	48	60	8.6	1.8	0.20	0.13
4	7.0	24	9.6	e2.3	e2.1	e2.0	38	59	8.1	3.8	0.19	0.10
5	6.5	24	9.9	e2.2	e2.0	e2.0	41	58	7.5	5.0	0.18	0.08
6	6.1	24	9.6	e2.3	e2.1	e2.1	47	55	6.8	4.5	0.18	0.07
7	6.0	25	8.6	e2.4	e2.3	e2.1	67	55	6.7	3.7	0.18	0.05
8	6.1	19	8.1	e2.9	e2.3	e2.2	79	59	6.1	3.3	0.16	0.04
9	6.3	21	7.8	e2.70	e2.3	e2.2	71	68	5.7	2.6	0.22	0.07
10	11	19	8.3	e2.6	e2.4	e2.4	81	70	5.9	2.8	0.21	0.13
11	9.6	17	8.3	e2.4	e2.4	e2.8	86	70	5.8	2.5	0.20	0.12
12	11	17	8.1	e2.3	e2.1	e3.2	86	72	5.4	2.5	0.21	0.12
13	10	16	7.4	e2.2	e2.1	e4.1	86	72	6.1	2.8	0.18	0.11
14	12	15	6.8	e2.1	e2.2	e4.3	87	69	5.5	2.4	0.21	0.11
15	13	15	6.4	e2.1	e2.3	e3.9	88	67	4.4	1.8	0.22	0.10
16	12	14	6.5	e2.0	e2.3	e4.2	88	61	4.1	1.6	0.22	0.10
17	13	14	6.7	e2.0	e2.3	e5.2	85	58	5.2	1.3	0.27	0.08
18	14	14	6.8	e2.2	e2.2	e5.5	87	54	7.7	0.94	0.24	0.08
19	13	10	6.6	e2.2	e2.1	e4.8	89	49	10	0.83	0.22	0.09
20	11	9.7	6.1	e2.4	e2.1	e4.4	87	44	9.5	0.76	0.20	0.08
21	10	11	5.8	e2.3	e2.1	e4.1	83	36	7.9	0.75	0.20	0.07
22	9.9	11	4.9	e2.3	e2.1	4.0	80	37	7.1	0.69	0.18	0.06
23	11	11	e4.0	e2.3	e2.1	4.1	79	35	7.2	0.56	0.20	0.08
24	21	12	e3.7	e2.4	e2.1	4.1	76	28	7.5	0.55	0.21	0.08
25	8.3	9.5	e3.4	e2.4	e2.0	4.2	72	29	7.5	0.53	0.20	0.10
26	7.2	e7.5	e3.1	e2.3	e1.9	4.3	67	25	6.4	0.42	0.17	0.10
27	14	6.0	e3.0	e2.3	e1.8	5.6	68	23	5.2	0.37	0.16	0.11
28	24	6.4	e3.0	e2.2	e2.0	27	66	22	4.4	0.37	0.18	0.13
29	23	7.8	e3.0	e2.1	---	43	66	21	4.1	0.35	0.22	0.14
30	19	8.6	e3.0	e2.1	---	49	63	18	3.3	0.30	0.22	0.19
31	20	---	e2.8	e2.0	---	44	---	13	---	0.26	0.22	---
TOTAL	357.4	457.5	198.0	71.20	59.5	257.0	2145	1510	200.0	54.88	6.28	3.11
MEAN	11.53	15.25	6.387	2.297	2.125	8.290	71.50	48.71	6.667	1.770	0.203	0.104
MAX	24	25	9.9	2.9	2.4	49	89	72	11	5.0	0.27	0.21
MIN	6.0	6.0	2.8	2.0	1.8	2.0	38	13	3.3	0.26	0.16	0.04
AC-FT	709	907	393	141	118	510	4250	3000	397	109	12	6.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2002, BY WATER YEAR (WY)

MEAN	9.476	9.682	4.403	1.136	5.871	139.8	189.2	60.08	33.41	51.01	24.45	15.05
MAX	133	86.9	29.1	9.72	45.9	572	1300	414	252	389	190	153
(WY)	1995	2001	1995	2000	1998	1995	1997	1999	2001	1993	1999	1994
MIN	0.000	0.000	0.000	0.000	0.000	0.003	0.096	0.038	0.017	0.000	0.000	0.000
(WY)	1974	1977	1977	1974	1974	1991	1991	1977	1977	1985	1976	1976

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1974 - 2002	
ANNUAL TOTAL	42080.8		5319.87			
ANNUAL MEAN	115.3		14.57		45.41	
HIGHEST ANNUAL MEAN					149	1997
LOWEST ANNUAL MEAN					0.035	1977
HIGHEST DAILY MEAN	940	Mar 23	89	Apr 19	2760	Apr 19 1997
LOWEST DAILY MEAN	2.8	Dec 31	0.04	Sep 8	0.00	Oct 1 1973
ANNUAL SEVEN-DAY MINIMUM	3.0	Dec 25	0.08	Sep 3	0.00	Oct 1 1973
MAXIMUM PEAK FLOW					3400	Apr 19 1997
MAXIMUM PEAK STAGE					11.70	Mar 17 1995
ANNUAL RUNOFF (AC-FT)	83470		10550		32900	
10 PERCENT EXCEEDS	432		59		90	
50 PERCENT EXCEEDS	23		4.3		2.3	
90 PERCENT EXCEEDS	5.0		0.18		0.00	

e Estimated

06469400 PIPESTEM CREEK NEAR PINGREE, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
DEC													
13...	1255	7.2	--	--	--	1710	1.5	.5	--	--	--	--	--
FEB													
05...	1340	2.2	--	--	--	1960	2.0	--	--	--	--	--	--
APR													
10...	0915	78	7.7	7.6	791	767	2.0	1.0	270	51.0	35.0	16.0	1
JUN													
20...	1120	9.3	--	--	--	1590	27.0	21.8	--	--	--	--	--
JUL													
30...	1115	.33	8.4	8.0	1500	1520	27.5	24.7	540	92.0	76.0	18.0	3
AUG													
21...	1015	.21	--	--	--	--	30.0	19.9	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	50.0	27	170	11.0	.10	220	114	539	486	3.0	130	2	50
JUN													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
30...	150	37	402	24.0	.20	470	.99	1110	1070	9.0	30	<1	100
AUG													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
DEC					
13...	--	--	--	--	--
FEB					
05...	--	--	--	--	--
APR					
10...	310	<.10	<1	<1	270
JUN					
20...	--	--	--	--	--
JUL					
30...	400	.10	2	<1	460
AUG					
21...	--	--	--	--	--

< Less than

06469820 PIPESTEM RESERVOIR NEAR JAMESTOWN, ND

LOCATION.--Lat 46°57'44", long 98°45'11", in NW¼NW¼ sec.10, T.140 N., R.64 W., Stutsman County, Hydrologic Unit 10160002, on left bank in control house above Pipestem Dam, 2.5 mi northwest of Jamestown Post Office, and 3.5 mi upstream from James River.

DRAINAGE AREA.--1,010 mi^2, approximately, of which about 610 mi^2 is probably noncontributing.

MONTHEND-ELEVATION AND CONTENTS RECORDS

PERIOD OF RECORD.--March 1974 to current year. Prior to October 1991, records are available from the U.S. Army Corps of Engineers.

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

REMARKS.--Reservoir is formed by earth-fill dam; storage began in July 1973; dam completed in 1973. Total capacity is 147,000 acre-ft at maximum pool, elevation 1,496.3 ft. Figures given herein represent total contents based on capacity table for the 1990 survey. The reservoir is used for flood control, fish and wildlife, and recreation.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers, capacity table dated January 1993. Elevations affected by wind.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 103,820 acre-ft, May 10, 1997, elevation, 1,487.01 ft; minimum contents, 6,730 acre-ft, Feb. 17, 1993, elevation, 1,439.65 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,480 acre-ft, May 16, elevation, 1,445.26 ft; minimum contents, 8,460 acre-ft, Sept. 10, elevation, 1,441.91 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,442.12	8,630	--
Oct. 31	1,442.66	9,080	+450
Nov. 30	1,442.79	9,190	+110
Dec. 31	1,442.68	9,100	-90
CAL YR 2001	--	--	-1,240
Jan. 31	1,442.69	9,100	0
Feb. 28	1,442.74	9,150	+50
Mar. 31	1,442.89	9,270	+120
Apr. 30	1,444.99	11,210	+1,940
May 31	1,444.58	10,810	-400
June 30	1,443.66	9,950	-860
July 31	1,443.26	9,600	-350
Aug. 31	1,442.50	8,940	-660
Sept. 30	1,442.46	8,910	-30
WTR YR 2002	--	--	+280

06470000 JAMES RIVER AT JAMESTOWN, ND

LOCATION.--Lat 46°53'22", long 98°40'58", in NW$^1/_4$NE$^1/_4$ sec.6, T.139 N., R.63 W., Stutsman County, Hydrologic Unit 10160003, on left bank 200 ft upstream from Interstate 94 bridge at southeast corner of Jamestown and 3 mi downstream from Pipestem Creek.

DRAINAGE AREA.--2,820 mi^2, approximately, of which about 1,650 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1928 to September 1933, March to May 1935, August 1937 to September 1939, April 1943 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1239: 1938(M). WSP 1917: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,373.27 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1949, to Sept. 30, 1965, at former bridge 0.5 mi upstream at datum 2.00 ft higher. See WSP 1729 or 1917 for history of changes prior to Oct. 1, 1949.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Arrowwood, Jim, and Pipestem Lakes, and Jamestown Reservoir, combined capacity, 393,000 acre-ft. Regulation by Jamestown Reservoir (station 06469000) 6 mi upstream since 1953 and by Pipestem Lake, capacity 147,000 acre-ft, since 1973.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	186	8.7	18	e10	e9.0	e13	31	140	79	e36	26	28
2	122	12	18	e9.5	e8.7	e13	e38	140	80	e33	22	38
3	56	13	20	e9.0	e8.5	e12	e39	141	79	e29	23	15
4	50	14	20	e8.0	e8.4	e12	e41	141	79	32	24	7.5
5	50	15	19	e7.5	e8.3	e12	42	141	75	30	24	5.4
6	50	17	18	e7.0	e8.2	e12	46	141	80	26	24	4.9
7	50	20	18	e7.0	e8.4	e13	49	141	79	40	25	4.4
8	51	22	18	e7.5	e8.3	e14	51	154	78	34	22	4.0
9	56	21	18	e8.0	e8.2	e14	61	143	78	32	21	11
10	88	22	18	e7.7	e8.0	e13	63	142	71	33	20	31
11	55	22	18	e7.5	e8.2	e13	61	143	54	27	23	31
12	52	22	17	e8.0	e8.5	e14	63	143	53	26	24	31
13	44	22	17	e8.4	e8.5	e15	63	140	54	26	23	32
14	39	22	16	e8.8	e8.5	e14	62	140	54	26	19	32
15	39	19	16	e9.4	e8.7	e13	76	141	53	28	14	32
16	44	20	16	e9.5	e9.0	e13	99	141	53	38	22	32
17	46	20	13	e9.6	e9.5	e14	98	140	53	40	23	32
18	46	21	e14	e9.6	e10	e15	111	140	54	50	14	32
19	46	22	e14	e9.6	e10	e16	100	139	57	42	13	32
20	46	21	e14	e9.6	e10	e17	99	137	53	42	12	32
21	46	21	e14	e9.6	e11	e16	99	140	54	76	12	31
22	46	20	e14	e9.5	e11	e17	98	141	54	47	10	32
23	47	20	e14	e9.5	e11	e17	99	123	107	43	9.8	32
24	26	e19	e13	e9.5	e13	17	98	105	57	42	8.2	32
25	12	e19	e14	e9.3	e16	17	118	106	e51	40	7.1	32
26	8.7	19	e14	e8.8	e15	16	140	106	e48	27	6.5	32
27	8.0	18	e13	e8.8	e14	19	144	107	e46	27	6.2	32
28	7.6	19	e12	e9.0	e14	25	142	104	e44	27	6.3	32
29	7.3	18	e11	e9.5	---	24	141	81	e43	28	6.5	33
30	8.5	18	e11	e9.2	---	22	140	80	e40	24	9.1	34
31	11	---	e11	e9.0	---	22	---	79	---	25	12	---
TOTAL	1444.1	566.7	481	272.9	279.9	484	2512	4000	1860	1076	511.7	789.2
MEAN	46.58	18.89	15.52	8.803	9.996	15.61	83.73	129.0	62.00	34.71	16.51	26.31
MAX	186	22	20	10	16	25	144	154	107	76	26	38
MIN	7.3	8.7	11	7.0	8.0	12	31	79	40	24	6.2	4.0
AC-FT	2860	1120	954	541	555	960	4980	7930	3690	2130	1010	1570

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2002, BY WATER YEAR (WY)

MEAN	69.37	36.77	11.71	5.715	11.77	84.33	276.7	236.6	176.8	119.6	96.95	79.97
MAX	946	568	144	47.9	111	731	2434	2559	1266	1024	761	908
(WY)	1994	2001	2001	1995	1930	1966	1950	1950	1997	1995	1995	1993
MIN	0.29	0.35	0.66	0.29	0.60	1.74	1.00	1.06	1.27	0.67	0.23	0.20
(WY)	1990	1939	1939	1991	1939	1944	1939	1939	1931	1933	1933	1933

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1928 - 2002	
ANNUAL TOTAL	141640.8		14277.5			
ANNUAL MEAN	388.1		39.12		100.6	
HIGHEST ANNUAL MEAN					521	1997
LOWEST ANNUAL MEAN					2.38	1938
HIGHEST DAILY MEAN	1320	May 6	186	Oct 1	6170	May 13 1950
LOWEST DAILY MEAN	7.3	Oct 29	4.0	Sep 8	0.00	Jun 28 1933
ANNUAL SEVEN-DAY MINIMUM	8.5	Oct 26	7.1	Aug 24	0.00	Oct 26 1989
MAXIMUM PEAK FLOW			234	Jun 23	6390	May 13 1950
MAXIMUM PEAK STAGE			5.10	Jun 23	a15.82	May 13 1950
INSTANTANEOUS LOW FLOW			4.0	Sep 8	0.00	Jun 28 1933
ANNUAL RUNOFF (AC-FT)	280900		28320		72910	
10 PERCENT EXCEEDS	1210		105		307	
50 PERCENT EXCEEDS	105		22		8.8	
90 PERCENT EXCEEDS	18		8.5		1.3	

a Site and datum then in use
e Estimated

06470000 JAMES RIVER AT JAMESTOWN, ND--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-51, 1958 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
18...	1320	44	--	--	--	1090	14.5	11.0	--	--	--	--	--
DEC													
13...	1010	17	--	--	--	1430	-2.5	.5	--	--	--	--	--
FEB													
05...	1100	8.1	--	--	--	1530	-5.0	.5	--	--	--	--	--
APR													
11...	0940	65	--	--	--	1350	5.0	4.5	--	--	--	--	--
MAY													
22...	1000	141	8.5	8.5	1140	1220	16.0	14.0	450	77.0	62.0	15.0	2
JUL													
19...	1000	42	8.1	7.9	1210	1230	26.5	25.0	440	78.0	59.0	15.0	2
AUG													
01...	1030	22	--	--	--	--	12.0	8.5	--	--	--	--	--
22...	1430	9.2	--	--	--	--	22.0	18.6	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
OCT													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
22...	110	34	339	19.0	.20	350	332	874	838	4.0	100	<1	80
JUL													
19...	110	34	326	24.0	.20	350	96.8	852	833	7.0	50	<1	70
AUG													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT					
18...	--	--	--	--	--
DEC					
13...	--	--	--	--	--
FEB					
05...	--	--	--	--	--
APR					
11...	--	--	--	--	--
MAY					
22...	570	<.10	2	<1	430
JUL					
19...	1200	.30	2	<1	440
AUG					
01...	--	--	--	--	--
22...	--	--	--	--	--

< Less than

06470500 JAMES RIVER AT LAMOURE, ND

LOCATION.--Lat 46°21'20", long 98°18'15", in $NE^{1}/_{4}NE^{1}/_{4}$ sec.11, T.133 N., R.61 W., LaMoure County, Hydrologic Unit 10160003, on left bank 80 ft downstream from bridge on State Highway 13, 0.5 mi west of LaMoure, and 12 mi upstream from Cottonwood Creek.

DRAINAGE AREA.--4,390 mi^2, approximately, of which about 2,600 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April to July 1903 (gage-height record only), April 1950 to current year. Gage-height records for 1902-11 are contained in reports of the National Oceanic and Atmospheric Administration.

REVISED RECORDS.--WSP 1917: Drainage area.

GAGE.--Water-stage recorder and rubble-masonry control. Datum of gage is 1,290.00 ft above National Geodetic Vertical Datum of 1929. See WSP 1729 or 1917 for history of changes prior to Apr. 19, 1950.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow regulated by Arrowwood, Jim, and Pipestem Lakes and Jamestown Reservoir, combined capacity, 393,000 acre-ft. Regulation by Jamestown Reservoir (station 06469000) 85 mi upstream since 1953 and by Pipestem Lake, capacity 147,000 acre-ft, since 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Prior to flood of Apr. 14, 1969, a long-time resident said that the flood of May 16, 1950, was the highest since 1881, with stage in either 1942 or 1943 being almost as high owing to large ice jam.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	248	21	34	e13	e11	e19	e41	211	105	51	112	45
2	253	17	33	e12	e11	e18	e40	202	97	45	92	45
3	234	18	29	e12	e11	e17	e38	187	96	38	90	43
4	160	18	29	e11	e11	e17	e41	217	95	29	84	54
5	100	17	29	e10	e11	e17	e50	206	94	26	74	69
6	54	19	27	e9.5	e11	e17	e57	202	93	34	67	59
7	46	23	27	e9.8	e11	e17	e65	202	92	39	65	43
8	47	13	26	e10	e11	e16	e72	216	81	49	64	45
9	51	22	23	e11	e12	e16	e80	230	98	56	69	39
10	59	23	23	e11	e12	e16	e90	222	114	108	71	36
11	61	22	22	e10	e13	e17	100	235	93	67	63	37
12	97	25	e22	e10	e13	e18	110	230	90	49	63	38
13	87	24	e22	e11	e14	e20	113	234	82	44	58	44
14	76	25	e22	e12	e14	e21	116	217	61	37	55	64
15	63	28	e22	e12	e15	e23	117	235	59	32	59	59
16	50	26	e21	e13	e15	e25	112	e225	58	31	54	66
17	49	26	e22	e13	e16	e27	111	e220	55	29	66	60
18	50	30	e22	e13	e16	e28	153	e215	56	105	57	69
19	50	24	e22	e13	e17	e29	158	e210	59	163	56	67
20	52	27	e22	e13	e18	e30	172	e205	53	100	62	64
21	49	29	e21	e13	e18	e30	172	e200	53	366	61	65
22	48	29	e21	e12	e18	e29	155	207	58	368	57	60
23	51	31	e20	e12	e19	e28	166	219	58	273	55	e60
24	61	39	e19	e12	e20	e27	163	204	68	276	52	e60
25	44	23	e18	e12	e21	e27	146	206	97	234	48	e60
26	40	35	e17	e11	e21	e27	138	166	119	194	46	e60
27	31	e25	e16	e11	e20	e30	148	154	75	177	42	e60
28	27	e20	e16	e12	e19	e37	194	150	54	163	44	e60
29	17	e22	e15	e12	---	e45	220	149	51	152	44	e60
30	17	25	e15	e12	---	e43	214	153	60	136	40	e60
31	21	---	e14	e12	---	e42	---	121	---	123	40	---
TOTAL	2293	726	691	360.3	419	773	3552	6250	2324	3594	1910	1651
MEAN	73.97	24.20	22.29	11.62	14.96	24.94	118.4	201.6	77.47	115.9	61.61	55.03
MAX	253	39	34	13	21	45	220	235	119	368	112	69
MIN	17	13	14	9.5	11	16	38	121	51	26	40	36
AC-FT	4550	1440	1370	715	831	1530	7050	12400	4610	7130	3790	3270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	110.8	68.09	27.54	16.26	21.47	194.1	444.6	353.4	268.5	216.3	146.5	121.4
MAX	1008	574	168	75.1	135	1202	3209	3114	1399	1165	894	939
(WY)	1994	2001	2001	1995	2000	1966	1997	1950	2001	1995	1995	1993
MIN	5.32	8.42	6.83	3.69	1.90	4.57	18.0	12.4	8.10	1.93	3.20	2.56
(WY)	1991	1962	1989	1959	1959	1969	1991	1977	1973	1973	1961	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1950 - 2002	
ANNUAL TOTAL	186991		24543.3			
ANNUAL MEAN	512.3		67.24		161.6	
HIGHEST ANNUAL MEAN					786	1997
LOWEST ANNUAL MEAN					11.7	1990
HIGHEST DAILY MEAN	2610	Apr 10	368	Jul 22	6420	Apr 14 1969
LOWEST DAILY MEAN	13	Nov 8	9.5	Jan 6	0.00	Jul 15 1973
ANNUAL SEVEN-DAY MINIMUM	16	Dec 25	10	Jan 5	0.01	Jul 17 1973
MAXIMUM PEAK FLOW			457	Jul 21	6800	Apr 14 1969
MAXIMUM PEAK STAGE			7.36	Jul 21	16.17	Apr 14 1969
INSTANTANEOUS LOW FLOW					0.00	Jul 15 1973
ANNUAL RUNOFF (AC-FT)	370900		48680		117100	
10 PERCENT EXCEEDS	1390		190		474	
50 PERCENT EXCEEDS	165		44		31	
90 PERCENT EXCEEDS	23		13		7.3	

e Estimated

06470500 JAMES RIVER AT LAMOURE, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAY													
01...	1105	218	8.8	--	1160	1190	5.0	9.0	460	87.0	60.0	16.0	2
JUN													
14...	1545	63	--	--	--	1250	--	--	--	--	--	--	--
JUL													
31...	1700	125	8.6	--e	849	840	28.0	24.9	290	60.0	35.0	19.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAY													
01...	100	31	358	26.0	.10	340	517	879	845	4.0	50	<1	80
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
31...	65.0	31	250	26.0	.20	180	19.3	571	536	7.0	50	1	40

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAY					
01...	530	<.10	<1	<1	460
JUN					
14...	--	--	--	--	--
JUL					
31...	610	.1	1	<1	290

< Less than
e Required equipment not functional/available

06470800 BEAR CREEK NEAR OAKES, ND

LOCATION.--Lat 46°13'31", long 98°04'17", in $NE^1/_4NE^1/_4$ sec.28, T.132 N., R.59 W., Dickey County, Hydrologic Unit 10160003, on right bank 80 ft downstream from bridge on ND Highway 13, 6 mi north, and 1 mi east of Oakes.

DRAINAGE AREA.--357 mi^2, of which about 255 mi^2 is noncontributing, revised.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,291.30 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1, 1975, reached a stage of 15.00 ft present datum, from floodmark, discharge 4,590 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.35	0.40	0.75	e0.19	e0.17	e0.49	1.7	10	2.0	0.38	1.4	0.53
2	0.35	0.39	0.78	e0.19	e0.17	e0.38	1.5	9.5	1.8	0.32	1.3	0.38
3	0.33	0.40	0.78	e0.20	e0.19	e0.34	1.3	8.1	1.6	0.45	1.2	0.28
4	0.33	0.40	0.84	e0.19	e0.19	e0.33	e1.1	7.8	1.5	0.72	1.0	0.27
5	0.32	0.41	0.91	e0.20	e0.17	e0.31	e1.2	7.2	1.4	0.89	0.76	0.23
6	0.30	0.42	0.91	e0.21	e0.17	e0.32	e1.7	7.0	1.2	1.2	0.65	0.24
7	0.30	0.45	0.88	e0.21	e0.20	e0.30	e2.7	6.6	1.2	1.8	0.56	0.21
8	0.30	0.42	0.84	e0.21	e0.21	e0.29	e3.3	9.4	0.96	3.0	0.46	0.16
9	0.31	0.42	0.82	e0.27	e0.24	e0.30	3.3	12	0.87	4.9	0.43	0.16
10	0.50	0.43	0.82	e0.29	e0.24	e0.27	3.4	9.7	0.90	40	0.43	0.21
11	0.88	0.43	e0.80	e0.29	e0.27	e0.32	3.2	11	0.87	31	0.40	0.19
12	0.89	0.45	e0.80	e0.29	e0.28	e0.45	2.9	14	0.74	20	0.41	0.17
13	0.69	0.46	e0.74	e0.43	e0.26	e0.53	2.9	15	0.73	15	0.38	0.17
14	0.59	0.46	e0.69	e0.47	e0.27	e0.53	3.0	14	0.65	11	0.34	0.17
15	0.45	0.48	e0.67	e0.38	e0.28	e0.75	3.5	13	0.59	7.7	0.25	0.11
16	0.34	0.50	e0.65	e0.33	e0.30	e1.0	3.9	11	0.52	5.3	0.19	0.08
17	0.32	0.51	e0.63	e0.28	e0.38	e1.0	3.5	8.8	0.49	4.0	0.30	0.06
18	0.33	0.62	e0.61	e0.22	e0.60	e1.2	3.9	7.4	0.46	47	0.28	0.07
19	0.31	0.54	e0.59	e0.20	e0.74	e1.2	3.8	6.3	0.49	53	0.24	0.16
20	0.32	0.53	e0.57	e0.19	e0.80	e1.2	3.6	5.2	0.43	27	0.22	0.07
21	0.32	0.55	e0.49	e0.20	e0.78	e0.94	3.4	4.9	0.39	18	0.21	0.05
22	0.33	0.57	e0.49	e0.20	e0.76	e0.74	3.1	6.2	0.40	11	0.25	0.03
23	0.33	0.57	e0.42	e0.19	e0.94	e0.73	3.1	6.9	1.5	5.4	0.28	0.07
24	0.41	0.72	e0.33	e0.18	e1.2	e0.73	3.0	5.9	1.6	2.7	0.22	0.05
25	0.39	0.62	e0.30	e0.18	e1.1	e0.75	2.4	5.3	1.3	2.5	0.21	0.04
26	0.35	0.58	e0.26	e0.21	e0.92	e0.81	2.2	4.6	1.0	2.3	0.22	0.05
27	0.35	0.65	e0.25	e0.20	e0.67	1.1	2.5	4.0	0.82	2.0	0.21	0.06
28	0.37	0.60	e0.25	e0.18	e0.57	1.5	3.0	3.5	0.64	1.8	0.21	0.08
29	0.37	0.63	e0.25	e0.16	---	1.8	3.3	3.2	0.53	1.6	0.19	0.07
30	0.38	0.70	e0.23	e0.16	---	2.1	6.1	2.8	0.46	1.4	0.20	0.07
31	0.38	---	e0.22	e0.17	---	2.0	---	2.2	---	1.2	0.32	---
TOTAL	12.49	15.31	18.57	7.27	13.07	24.71	87.5	242.5	28.04	324.56	13.72	4.49
MEAN	0.403	0.510	0.599	0.235	0.467	0.797	2.917	7.823	0.935	10.47	0.443	0.150
MAX	0.89	0.72	0.91	0.47	1.2	2.1	6.1	15	2.0	53	1.4	0.53
MIN	0.30	0.39	0.22	0.16	0.17	0.27	1.1	2.2	0.39	0.32	0.19	0.03
AC-FT	25	30	37	14	26	49	174	481	56	644	27	8.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2002, BY WATER YEAR (WY)

MEAN	2.299	2.413	3.026	0.554	1.013	41.10	86.78	24.53	12.12	19.11	4.834	3.533
MAX	32.9	45.1	66.7	10.7	11.3	142	679	168	142	179	60.7	32.8
(WY)	1999	1999	1999	1999	1998	1987	1997	1999	1998	1993	1993	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.032	0.11	0.000	0.005	0.000	0.000	0.000
(WY)	1977	1977	1977	1977	1977	1981	1985	1981	1977	1977	1977	1977

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1977 - 2002	
ANNUAL TOTAL	7023.12		792.23			
ANNUAL MEAN	19.24		2.170		16.79	
HIGHEST ANNUAL MEAN					74.3	1997
LOWEST ANNUAL MEAN					0.042	1977
HIGHEST DAILY MEAN	385	Apr 8	53	Jul 19	1490	Jun 28 1998
LOWEST DAILY MEAN	0.15	Aug 23	0.03	Sep 22	0.00	Oct 1 1976
ANNUAL SEVEN-DAY MINIMUM	0.17	Aug 18	0.05	Sep 21	0.00	Oct 1 1976
MAXIMUM PEAK FLOW			120	Jul 18	1730	Jun 28 1998
MAXIMUM PEAK STAGE			7.90	Jul 18	a13.24	Apr 3 1997
ANNUAL RUNOFF (AC-FT)	13930		1570		12160	
10 PERCENT EXCEEDS	85		5.3		35	
50 PERCENT EXCEEDS	0.65		0.53		0.25	
90 PERCENT EXCEEDS	0.30		0.19		0.00	

a Backwater from ice
e Estimated

06470800 BEAR CREEK NEAR OAKES, ND--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
APR													
10...	1425	3.4	--	--	--	866	5.5	3.0	--	--	--	--	--
MAY													
01...	1400	11	8.4	8.1	1600	1540	9.0	10.0	560	97.0	78.0	12.0	2
JUN													
26...	1515	1.0	--	--	--	1980	35.0	30.9	--	--	--	--	--
AUG													
21...	1650	.23	8.2	--e	1400	1420	20.0	19.7	520	84.0	75.0	17.0	2

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
APR													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
01...	130	33	316	68.0	.30	490	33.6	1140	1070	2.0	90	<1	90
JUN													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
21...	120	33	319	73.0	.30	410	.62	987	972	6.0	40	1	80

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
APR					
10...	--	--	--	--	--
MAY					
01...	330	<.10	<1	<1	450
JUN					
26...	--	--	--	--	--
AUG					
21...	790	.20	1	1	600

< Less than
e Required equipment not functional/available

06470830 JAMES RIVER AT OAKES, ND

LOCATION.--Lat 46°08'20", long 98°06'55", in NW$^1/_4$NE$^1/_4$NE$^1/_4$ sec.30, T.131 N., R.59 W., Dickey County, Hydrologic Unit 10160003, on left bank 10 ft downstream from bridge 1.0 mi west of Oakes.

DRAINAGE AREA.--5,320 mi^2, of which about 3,300 mi^2 is probably noncontributing.

GAGE-HEIGHT RECORDS

PERIOD OF RECORD.--October 1982 to current year.

REMARKS.--Records fair.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft above National Geodetic Vertical Datum of 1929. Flow regulated by Jamestown Reservoir (station 06469000).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 98.77 ft, Apr. 4, 1997; minimum, 88.11 ft, Sept. 4, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height recorded, 91.44 ft, May 22; minimum recorded, 89.29 ft, Nov. 26.

GAGE HEIGHT DATALOGGER, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	89.85	90.15	90.39	90.15	90.08	90.23	90.11	---	90.19	90.06
2	---	---	89.90	90.17	90.41	90.15	90.05	90.30	89.92	---	90.23	89.98
3	---	---	89.95	90.20	90.42	90.14	90.03	90.71	89.90	89.89	90.15	89.99
4	---	---	89.99	90.23	---	90.14	90.00	90.49	89.97	89.88	89.94	---
5	---	---	90.01	90.25	---	90.13	90.01	90.56	90.01	90.11	89.91	---
6	---	---	90.01	90.25	---	90.14	90.17	90.19	---	89.81	89.94	---
7	---	---	90.00	90.25	---	90.14	90.06	90.25	89.91	89.74	90.12	90.16
8	---	---	89.99	90.27	90.46	---	90.02	90.34	89.94	89.66	90.25	90.16
9	---	---	89.99	90.27	90.46	90.17	90.17	90.46	90.26	89.78	90.05	89.85
10	---	---	89.99	90.27	90.45	90.16	89.99	90.54	90.33	89.84	90.08	89.90
11	---	---	89.98	90.27	90.46	90.18	90.09	90.47	90.11	90.05	89.99	89.91
12	---	---	89.99	90.27	90.46	90.19	90.23	90.55	90.15	90.23	89.91	89.91
13	---	---	89.99	90.26	90.44	90.20	90.29	90.53	89.99	90.26	89.89	89.93
14	---	---	89.99	90.27	90.44	90.21	90.26	90.67	89.93	90.26	89.95	89.77
15	---	89.99	90.00	90.27	90.42	90.20	90.11	90.56	89.89	90.34	---	89.93
16	---	90.01	90.00	90.27	90.41	90.20	90.31	90.24	89.95	90.27	---	89.95
17	---	90.18	---	90.27	90.39	---	90.31	90.30	89.94	90.00	---	90.15
18	---	89.88	---	90.27	90.38	---	89.79	90.29	89.96	89.98	---	90.10
19	---	89.89	90.00	90.29	90.35	90.25	89.89	90.25	89.89	90.24	89.86	89.82
20	---	90.01	90.01	90.29	90.33	90.27	90.05	90.36	89.93	90.39	89.87	89.92
21	---	89.96	90.01	90.29	90.31	90.28	90.10	90.78	89.88	90.39	89.73	89.88
22	---	89.85	90.02	90.30	90.29	90.26	90.30	91.10	90.07	90.47	89.73	89.85
23	---	89.85	90.02	90.30	90.27	90.25	90.42	90.67	90.91	90.69	89.79	89.73
24	---	89.50	90.02	90.31	90.24	90.22	90.13	90.54	90.83	---	---	89.93
25	---	89.36	90.03	90.32	90.24	90.19	90.08	90.52	90.58	---	---	89.73
26	---	89.34	90.05	90.32	90.20	90.17	90.08	90.43	90.32	---	---	89.85
27	---	89.52	90.06	90.32	90.18	90.16	90.00	90.37	90.25	90.76	89.84	89.83
28	---	89.64	90.07	90.33	90.17	90.20	90.23	90.39	90.36	90.64	89.89	89.66
29	---	89.74	90.09	90.35	---	90.25	90.34	90.36	90.45	90.58	89.85	89.88
30	---	89.81	90.12	90.36	---	90.25	90.27	90.35	90.31	90.44	89.94	89.85
31	---	---	90.13	90.37	---	90.18	---	90.25	---	90.40	90.13	---
MEAN	---	---	---	90.28	---	---	90.13	90.45	---	---	---	---
MAX	---	---	---	90.37	---	---	90.42	91.10	---	---	---	---
MIN	---	---	---	90.15	---	---	89.79	90.19	---	---	---	---

06470875 DAKOTA LAKE NEAR LUDDEN, ND

LOCATION.--Lat 45°56'52", long 98°10'29", in $SE^1/_4NE^1/_4NE^1/_4$ sec.34, T.129 N., R.60 W., Dickey County, Hydrologic Unit 10160003, on left bank, 10 ft upstream from dam, 4.5 mi southwest of Ludden and 0.8 mi upstream from North Dakota-South Dakota state line.

DRAINAGE AREA.--5,480 mi^2, of which about 3,300 mi^2 are probably noncontributing.

GAGE HEIGHT RECORDS

PERIOD OF RECORD.--August to September 2002. (Formerly published as streamflow gage James River at Dakota Lake Dam near Ludden, ND)

GAGE.--Water-stage recorder. Datum of gage is 1,280.00 ft above National Geodetic Vertical Datum of 1929.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum gage height, 17.86 ft, Apr. 6, 1997.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 9.96 ft, Sept. 23 (affected by wind).

GAGE HEIGHT (FROM DATALOGGER), in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	9.79
2	---	---	---	---	---	---	---	---	---	---	---	9.79
3	---	---	---	---	---	---	---	---	---	---	---	9.60
4	---	---	---	---	---	---	---	---	---	---	---	9.41
5	---	---	---	---	---	---	---	---	---	---	---	9.50
6	---	---	---	---	---	---	---	---	---	---	---	9.58
7	---	---	---	---	---	---	---	---	---	---	---	9.30
8	---	---	---	---	---	---	---	---	---	---	---	9.38
9	---	---	---	---	---	---	---	---	---	---	9.73	9.74
10	---	---	---	---	---	---	---	---	---	---	9.67	9.61
11	---	---	---	---	---	---	---	---	---	---	9.66	9.55
12	---	---	---	---	---	---	---	---	---	---	9.71	9.51
13	---	---	---	---	---	---	---	---	---	---	9.66	9.48
14	---	---	---	---	---	---	---	---	---	---	9.53	9.63
15	---	---	---	---	---	---	---	---	---	---	9.66	9.36
16	---	---	---	---	---	---	---	---	---	---	9.58	9.40
17	---	---	---	---	---	---	---	---	---	---	9.65	9.15
18	---	---	---	---	---	---	---	---	---	---	9.58	9.36
19	---	---	---	---	---	---	---	---	---	---	9.44	9.77
20	---	---	---	---	---	---	---	---	---	---	9.41	9.59
21	---	---	---	---	---	---	---	---	---	---	9.57	9.60
22	---	---	---	---	---	---	---	---	---	---	9.57	9.57
23	---	---	---	---	---	---	---	---	---	---	9.56	9.66
24	---	---	---	---	---	---	---	---	---	---	9.52	9.28
25	---	---	---	---	---	---	---	---	---	---	9.50	9.57
26	---	---	---	---	---	---	---	---	---	---	9.51	9.46
27	---	---	---	---	---	---	---	---	---	---	9.47	9.50
28	---	---	---	---	---	---	---	---	---	---	9.45	9.65
29	---	---	---	---	---	---	---	---	---	---	9.52	9.42
30	---	---	---	---	---	---	---	---	---	---	9.38	9.52
31	---	---	---	---	---	---	---	---	---	---	9.19	---

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'10", long 98°10'26", in $SE^1/_4SE^1/_4$ sec. 34, T.129 N., R.60 W., Dickey County, Hydrologic Unit 10160003, at bridge on North Dakota-South Dakota state line road 6.5 mi south and 1 mi west from Ludden.

DRAINAGE AREA.--5,480 mi^2, approximately, revised, of which about 3,300 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2001 to September 2002. October 1981 to September 2001 equivalent discharge site formerly published as James River at Dakota Lake Dam near Ludden. October 1981 to Septebmer 1999 (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 1,200 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e240	e54	e70	e41	e38	e88	e112	e303	e220	e110	e170	121
2	e220	e55	e73	e41	e37	e84	e108	e295	e205	e88	e160	124
3	e190	e56	e74	e43	e37	e79	e105	e288	e195	e80	e145	58
4	e160	e57	e76	e45	e37	e75	e103	e290	e185	e70	e135	27
5	e130	e56	e75	e46	e37	e72	e111	e300	e175	e60	e120	37
6	e110	e55	e73	e48	e38	e70	e120	e299	e165	e58	e112	55
7	e90	e56	e71	e50	e39	e68	e125	e293	e155	e75	e106	20
8	e80	e57	e72	e51	e40	e67	e133	e295	e148	e88	e100	29
9	e90	e58	e70	e53	e43	e66	e142	e303	e155	e105	96	100
10	e100	e60	e68	e51	e46	e68	e150	e310	e170	e125	78	58
11	e120	e61	e67	e49	e49	e71	e160	e312	e175	e110	77	45
12	e140	e63	e65	e48	e51	e77	e170	e315	e168	e85	91	37
13	e160	e64	e64	e46	e53	e84	e180	e318	e140	e70	72	31
14	e165	e65	e62	e45	e55	e91	e190	e315	e125	e55	44	69
15	e130	e67	e61	e44	e54	e100	e200	e312	e110	e46	73	16
16	e92	e68	e59	e43	e52	e105	e210	e305	e100	e40	52	18
17	e84	e70	e58	e41	e55	e113	e218	e297	e94	e70	72	2.2
18	e81	e71	e57	e40	e60	e112	e225	e290	e90	e111	51	21
19	e80	e73	e56	e41	e62	e110	e230	e282	e85	e180	26	120
20	e81	e75	e54	e42	e57	e108	e230	e278	e87	e290	20	60
21	e83	e77	e53	e43	e61	e106	e225	e273	e93	e400	50	59
22	e90	e79	e51	e45	e68	e102	e220	e275	e110	e425	50	50
23	e100	e82	e50	e46	e73	e100	e215	e278	e130	e400	47	81
24	e108	e84	e49	e46	e80	e98	e212	e280	e160	e350	40	15
25	e95	e87	e48	e45	e87	e102	e220	e278	e200	e320	36	53
26	e83	e88	e47	e44	e92	e108	e232	e272	e244	e285	38	28
27	e74	e85	e46	e42	e94	e115	e250	e260	e255	e260	31	37
28	e67	e80	e45	e41	e91	e123	e265	e250	e195	e240	27	72
29	e60	e75	e44	e40	---	e120	e280	e245	e130	e220	39	23
30	e57	e69	e43	e39	---	e116	e300	e238	e115	e205	18	39
31	e54	---	e42	e38	---	e114	---	e230	---	e185	4.5	---
TOTAL	3414	2047	1843	1377	1586	2912	5641	8879	4579	5206	2180.5	1505.2
MEAN	110.1	68.23	59.45	44.42	56.64	93.94	188.0	286.4	152.6	167.9	70.34	50.17
MAX	240	88	76	53	94	123	300	318	255	425	170	124
MIN	54	54	42	38	37	66	103	230	85	40	4.5	2.2
AC-FT	6770	4060	3660	2730	3150	5780	11190	17610	9080	10330	4330	2990

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2002, BY WATER YEAR (WY)

MEAN	205.4	145.1	66.82	28.79	30.90	341.2	847.8	614.7	463.5	392.5	313.0	250.1
MAX	867	613	239	77.1	88.1	853	4617	2316	1447	1181	1143	1003
(WY)	1994	2001	2001	1995	2000	1995	1997	1997	1997	1995	1993	1999
MIN	1.86	0.20	0.28	0.056	0.62	26.0	33.4	9.92	2.12	0.015	0.000	0.011
(WY)	1989	1991	1991	1991	1989	1990	1990	1990	1988	1988	1988	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1982 - 2002[a]		
ANNUAL TOTAL	204598		41169.7				
ANNUAL MEAN	560.5		112.8		309.1		
HIGHEST ANNUAL MEAN					969		1997
LOWEST ANNUAL MEAN					10.3		1990
HIGHEST DAILY MEAN	2740	Apr 11	425	Jul 22	7500	Apr 6	1997
LOWEST DAILY MEAN	28	Feb 26	2.2	Sep 17	0.00	Oct 8	1981
ANNUAL SEVEN-DAY MINIMUM	28	Feb 26	28	Aug 25	0.00	Jul 10	1985
MAXIMUM PEAK FLOW			b450	Jul 22	7500	Apr 6	1997
MAXIMUM PEAK STAGE			(c)		d98.04	Apr 6	1997
INSTANTANEOUS LOW FLOW					0.00	Oct 2	1981
ANNUAL RUNOFF (AC-FT)	405800		81660		223900		
10 PERCENT EXCEEDS	1490		262		975		
50 PERCENT EXCEEDS	163		80		92		
90 PERCENT EXCEEDS	34		40		0.47		

a Historic discharge data, water years 1982-2001, from equivalent station, James River at Dakota Lake Dam near Ludden, ND (06470875)
b About
c Not determined
d From high-water mark at current gage location
e Estimated

06470878 JAMES RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 2002 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAY													
21...	1230	--	8.7	8.4	1370	1360	20.0	14.9	480	85.0	66.0	19.0	3
JUN													
26...	1330	244	--	--	--	888	27.0	28.1	--	--	--	--	--

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	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)
MAY													
21...	130	36	359	40.0	.20	390	937	947	4.0	160	<1	90	1100
JUN													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAY				
21...	<.10	3	<1	420
JUN				
26...	--	--	--	--

< Less than

06471200 MAPLE RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'20", long 98°27'08", in SW¼ SE¼ sec.33, T.129 N., R.62 W., Dickey County, ND, Hydrologic Unit 10160004, on left bank 0.4 mi upstream from State line, 7.8 mi northeast of Frederick, SD, and 15.7 mi upstream from mouth.

DRAINAGE AREA.--716 mi^2, of which about 332 mi^2 is probably noncontributing.

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

REVISED RECORDS.--WDR SD-86-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,365 ft above National Vertical Datum of 1929, from topographic map. Prior to June 14, 1962, nonrecording gage at site 0.4 mi downstream at datum 0.94 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Satellite data-collection platform at station. Water temperature and specific conductance measured during the year are compiled in the Miscellaneous Temperature Measurements and Field Determinations section.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.94	e0.90	e1.9	3.4	9.0	1.3	0.93	0.31	0.26
2	0.00	0.00	0.00	0.88	e0.90	e1.8	3.7	7.8	1.2	0.76	0.12	0.23
3	0.00	0.00	0.00	0.84	e0.90	e1.7	3.4	6.1	1.0	0.61	0.09	0.10
4	0.00	0.00	0.00	0.80	e0.90	e1.6	3.4	7.6	0.86	0.39	0.08	0.05
5	0.00	0.00	0.00	0.83	e0.90	e1.6	3.2	7.0	0.66	0.25	0.04	0.03
6	0.00	0.00	0.00	0.85	e0.90	e1.6	2.8	7.4	0.52	0.20	0.01	0.02
7	0.00	0.00	0.00	0.81	e0.95	e1.5	3.7	7.1	0.48	0.22	0.00	0.00
8	0.00	0.00	0.00	0.86	e1.0	e1.5	3.2	9.1	0.33	0.20	0.00	0.00
9	0.00	0.00	0.18	1.1	e1.2	e1.4	2.9	9.5	0.25	0.13	0.00	0.00
10	0.00	0.00	2.3	1.1	1.4	e1.4	3.5	9.1	0.27	0.19	0.00	0.00
11	0.00	0.00	2.5	1.2	1.8	e1.5	3.1	9.6	0.27	0.10	0.00	0.00
12	0.00	0.00	2.2	1.3	1.8	e1.7	3.3	9.7	0.21	0.07	0.00	0.00
13	0.00	0.00	2.0	1.5	1.9	e2.0	3.4	10	0.23	0.04	0.00	0.00
14	0.00	0.00	1.8	1.7	1.9	e2.0	4.4	9.3	0.19	0.00	0.00	0.00
15	0.00	0.00	1.6	1.7	1.9	2.1	6.4	10	0.15	0.00	0.00	0.00
16	0.00	0.00	1.6	e1.7	1.9	2.5	5.9	10	0.11	0.00	0.00	0.00
17	0.00	0.00	1.5	e1.7	2.1	2.7	5.7	9.8	0.09	0.00	0.00	0.00
18	0.00	0.00	1.6	e1.6	2.5	3.1	7.8	9.5	0.07	0.00	0.00	0.00
19	0.00	0.00	1.4	e1.6	2.8	3.5	6.6	8.6	0.31	0.00	0.00	0.00
20	0.00	0.00	1.3	e1.6	3.0	4.2	6.7	7.4	0.46	0.00	0.00	0.00
21	0.00	0.00	1.2	1.6	2.9	4.3	7.0	5.1	0.36	0.00	0.00	0.00
22	0.00	0.00	e1.2	1.6	2.7	4.2	6.5	5.2	0.31	0.00	0.00	0.00
23	0.00	0.00	e1.1	1.5	2.9	4.5	7.2	6.3	0.45	0.00	0.00	0.00
24	0.00	0.00	e1.1	1.5	2.7	4.5	8.0	5.3	7.5	0.00	0.00	0.00
25	0.00	0.00	e1.1	1.5	2.5	4.1	7.3	5.2	18	0.00	0.00	0.00
26	0.00	0.00	1.1	e1.5	2.3	3.9	7.1	4.5	12	0.00	0.00	0.00
27	0.00	0.00	1.1	e1.4	2.1	3.9	9.4	3.8	6.9	0.00	0.00	0.00
28	0.00	0.00	1.1	e1.3	e2.0	4.3	9.4	3.2	3.3	0.00	0.00	0.00
29	0.00	0.00	1.0	e1.1	---	4.3	9.7	2.8	2.0	0.00	0.00	0.00
30	0.00	0.00	1.0	e1.0	---	4.3	9.4	2.2	1.4	0.00	0.00	0.00
31	0.00	---	0.99	e0.95	---	3.8	---	1.5	---	0.38	0.00	---
TOTAL	0.00	0.00	31.97	39.56	51.65	87.4	167.5	218.7	61.18	4.47	0.65	0.69
MEAN	0.000	0.000	1.03	1.28	1.84	2.82	5.58	7.05	2.04	0.14	0.021	0.023
MAX	0.00	0.00	2.5	1.7	3.0	4.5	9.7	10	18	0.93	0.31	0.26
MIN	0.00	0.00	0.00	0.80	0.90	1.4	2.8	1.5	0.07	0.00	0.00	0.00
AC-FT	0.00	0.00	63	78	102	173	332	434	121	8.9	1.3	1.4

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2002, BY WATER YEAR (WY)

MEAN	3.09	2.12	2.08	0.39	1.01	87.5	115	40.2	17.7	30.1	6.34	3.64
MAX	68.8	50.1	68.1	6.61	12.0	419	840	418	131	446	142	91.1
(WY)	1999	1999	1999	1999	1998	1966	1997	1999	1964	1962	1966	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1957	1957	1957	1957	1957	1957	1959	1959	1959	1959	1959	1958

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1957 - 2002	
ANNUAL TOTAL	16657.11		663.77			
ANNUAL MEAN	45.6		1.82		a25.8	
HIGHEST ANNUAL MEAN					116	1997
LOWEST ANNUAL MEAN					0.000	b1959
HIGHEST DAILY MEAN	1370	Apr 10	18	Jun 25	5500	Apr 11 1969
LOWEST DAILY MEAN	0.00	Sep 6	0.00	Oct 1	c0.00	Oct 1 1956
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 6	0.00	Oct 1	0.00	Oct 1 1956
MAXIMUM PEAK FLOW			22	Jun 25	d5930	Apr 11 1969
MAXIMUM PEAK STAGE			3.94	Jun 25	f16.19	Mar 29 1997
ANNUAL RUNOFF (AC-FT)	33040		1320		18720	
10 PERCENT EXCEEDS	138		6.4		35	
50 PERCENT EXCEEDS	1.0		0.83		0.10	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Median of annual mean discharges, 16 ft^3/s
b Also 1988 and 1990
c No flow for long periods in most years
d Gage height, 16.05 ft, backwater from ice
e Estimated
f Backwater from ice

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 U.S. Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in a table of annual maximum discharge and stage. Discharge measurements made at miscellaneous sites for both low flows and high flows are given in a second table.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage stations

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Water year 2002 maximum			Period of record maximum		
					Date	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
				RED RIVER OF THE NORTH BASIN						
05052500	Antelope Creek at Dwight, ND	Lat 46°18'41", long 96°44'03", in NW1/4 sec.8, T.133 N., R.48 W., Richland County, Hydrologic Unit 09020105, at bridge on county road, about 0.4 mi north and 0.1 mi east of Dwight.	293	1944-49# 1950-73 1975 1995-2002	07-10-02	[1]927.54	[2]360	04-10-69	943.90	9,000
05056017	Mauvais Coulee tributary above Brumba pool near Rock Lake, ND	Lat 48°43'29", Long 99°15'47", in NE1/4NE1/4SE1/4 sec.36, T.161 N., R.67 W., Towner County, Hydrologic Unit 09020201, on State Highway 281, 1 mi west and 4.8 mi south of Rock Lake.	7.1	1998-2002	06-09-02	43.07	[3]90	05-12-99 04-05-01	44.44 [4]45.69	210 --
05056900	Sheyenne River tributary near Cooperstown, ND	Lat 47°27'25", long 98°00'25", in NW1/4NW1/4NW1/4 sec.24, T.146 N., R.58 W., Griggs County, Hydrologic Unit 09020203, on county highway, 1.4 mi north of State Highway 200 and 5 mi east of Cooperstown.	15.2	1959-73 1995-2002	[5]03-31-02	[6]0.91	[3]20	04-01-69	9.80	1,000
05057100	Baldhill Creek near Binford, ND	Lat 47°33'56", long 98°22'56", in SE1/4SW1/4SE1/4 sec.12, T.147 N., R.61 W., Griggs County, Hydrologic Unit 09020203, approximately 1.5 mi west of Binford on State Highway 65.	--	1996-2002	[5]05-10-02	16.96	[3]20	03-29-99	18.58	140

Annual maximum discharge at crest-stage stations--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Water year 2002 maximum			Period of record maximum		
					Date	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
				RED RIVER OF THE NORTH BASIN--Continued						
05059678	Unnamed tributary south of Tower City, ND	Lat 46°53'28", long 97°41'40", in $SE^1/_4SW^1/_4$ sec.36, T.140 N., R.56 W., Barnes County, Hydrologic Unit 09020205, 2 mi southwest of Tower City.	--	2000-02	[5]07-09-02	40.29	[3]40	[5]04-08-01	43.88	[3]400
05060470	Rush River near Hunter, ND	Lat 47°09'07", long 97°20'22", in $SE^1/_4SW^1/_4SW^1/_4$ sec.36, T.143 N., R.53 W., Cass County, Hydrologic Unit 09020204, on county highway, 2 mi south and 5.75 mi west of Hunter.	22.1	1996-2002	07-09-02	15.83	[3]20	04-07-01	18.73	[3]250
05065810	Middle Branch Goose River tributary near Pickert, ND	Lat 47°25'03", long 97°42'30", in $SE^1/_4SE^1/_4$ sec.36, T.146 N., R.56 W., Steele County, Hydrologic Unit 09020109, on county highway 11, 5 mi southeast of Pickert.	--	1996-2002	07-11-02	35.81	[3]140	[8]06-20-00	37.10	310
05082500	Red River of the North at Grand Forks, ND	Lat 47°56'34", long 97°03'10", in $SW^1/_4NE^1/_4$ sec.33, T.152 N., R.50 W., Grand Forks County, Hydrologic Unit 09020301, on left bank 2.3 mi downstream from Red Lake River (previous site of Red River at Grand Forks.	30,100	1882-1983# 1987-2002	07-13-02 07-14-02	([7]) 38.57	38,000 ([9])	04-18-97	([8])	137,000
05083580	Middle Branch Forest River tributary near Adams, ND	Lat 48°22'10", long 98°09'00", in $NW^1/_4NW^1/_4NE^1/_4$ sec.6, T.156 N., R.58 W., Walsh County, Hydrologic Unit 09020308, approximately 3 mi south and 3.4 mi west of Adams.	--	1999-2002	08-29-02	41.85	66	04-08-99 04-06-01	42.52 43.04	[3]100 ([4])

Annual maximum discharge at crest-stage stations--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Water year 2002 maximum			Period of record maximum		
					Date	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
				RED RIVER OF THE NORTH BASIN--Continued						
05090025	Willow Creek near Hensel, ND	Lat 48°39'50", long 97°38'39", in $SE^1/_4NE^1/_4SE^1/_4$ sec.19, T.160 N., R.54 W., Pembina County, Hydrologic Unit 09020310, approximately 1.8 mi south and 1 mi east of Hensel.	--	1999-2002	[5]06-10-02	16.11	[3]100	03-29-99 06-10-02	15.85 16.11	[10]80 [3]100
05099340	Unnamed tributary near Langdon, ND	Lat 48°41'43", long 98°27'30", in $NW^1/_4SW^1/_4NW^1/_4$ sec.12, T.160 N., R.61 W., Cavalier County, Hydrologic Unit 09020313, on county road, 4.25 mi south and 5 mi west of Langdon.	--	1996-2002	[5]06-09-02	19.39	[3]100	04-97	--	[3]370
05100450	Tongue River near Osnabrock, ND	Lat 48°43'25", long 98°09'19", in $SE^1/_4NE^1/_4SE^1/_4$ sec.33, T.161 N., R.58 W., Cavalier County, Hydrologic Unit 09020313, approximately 3.5 mi north of Osnabrock.	--	1996-2002	[5]07-09-02	17.17	[3]200	[5]04-08-01	[4]18.51	([9])
05102490	Red River of the North at Pembina, ND	Lat 48°58'17", long 97°14'16", in $NE^1/_4$ sec.4, T.163 N., R.51 W., Pembina County, Hydrologic Unit 09020311, on bridge crossing the Red River 0.2 mi north of Pembina.	40,200	1985-2002	06-18-02	[11]781.63	[3]35,500	04-26-97	794.39	141,000
05113520	Long Creek tributary near Crosby, ND	Lat 48°50'11", long 103°19'19", on north line sec.30, T.162 N., R.97 W., Divide County, Hydrologic Unit 09010001, 0.5 mi west of State Highway 42 and 5 mi south of Crosby.	0.40	1960-73 1995-2002	03-27-02	3.86	6.30	06-69	7.15	65
05116100	Souris River tributary near Burlington, ND	Lat 48°18'04", long 101°25'13", in $SW^1/_4$ sec.25, T.156 N., R.84 W., Ward County, Hydrologic Unit 09010001, at culvert on county highway, 1.8 mi north of Burlington.	0.13	1959-73 1995-2002	03-28-02	3.40	[3]0.50	03-25-97	8.22	[3]67

Annual maximum discharge at crest-stage stations--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Water year 2002 maximum			Period of record maximum		
					Date	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
				RED RIVER OF THE NORTH BASIN--Continued						
05116135	Tasker Coulee tributary near Kenaston, ND	Lat 46°38'00", long 102°07'30", in $NE^1/_4NE^1/_4$ sec.2, T.159 N., R.89 W., Ward County, Hydrologic Unit 09010002, at culvert on gravel road 1.5 mi northwest of Kenaston.	4.62	1996-2002	03-27-02	[3]1,291.36	[3]2	04-10-96	1,295.70	450
05119410	Bonnes Coulee near Velva, ND	Lat 48°03'30", long 100°57'00", in $NE^1/_4SW^1/_4$ sec.21, T.153 N., R.80 W., McHenry County, Hydrologic Unit 09010001, at culvert on U.S. Highway 52, 0.5 mi west of Velva.	53.0	1962 1965 1971-73 1976-77 1987-2002	06-09-02	2.69	[3]220	07-27-93	6.71	[12]1,000
05120180	Wintering River tributary near Kongsberg, ND	Lat 47°51'45", long 100°45'33", in $NE^1/_4NE^1/_4NE^1/_4$ sec.34, T.151 N., R.79 W., McHenry County, Hydrologic Unit 09010003, at culvert on gravel road 1 mi north and 1.9 mi east of Kongsberg.	1.54	1998-2002	06-09-02	9.48	[3]25	06-14-99	11.18	[3]100
05123300	Oak Creek tributary near Bottineau, ND	Lat 48°49'14", long 100°24'38", in $SW^1/_4SW^1/_4SE^1/_4$ sec.29, T.162 N., R.75 W., Bottineau County, Hydrologic Unit 09010004, on State Highway 5, 1.5 mi east of Bottineau.	3.10	1955 1959-73 1995-2002	06-09-02	10.77	190	07-06-55	16.52	851
				MISSOURI RIVER BASIN						
06332150	White Earth River tributary near White Earth, ND	Lat 48°19'55", long 102°45'10", in $S^1/_2$ sec.15, T.156 N., R.94 W., Mountrail County, Hydrologic Unit 10110101, at culvert on U.S. Highway 2, 3 mi south of White Earth.	0.32	1960-73 1995-2002	06-22-02	7.03	[3]60	06-05-63	8.40	107

Annual maximum discharge at crest-stage stations--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Water year 2002 maximum			Period of record maximum		
					Date	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
				MISSOURI RIVER BASIN--Continued						
06336300	Little Missouri River tributary near Medora, ND	Lat 46°57'05", long 103°30'20", in SE$^1/_4$ sec.11, T.140 N., R.102 W., Billings County, Hydrologic Unit 10110203, at Culvert on Theodore Roosevelt National Park highway, 3 mi north of Medora.	0.32	1955-73 1995-2002	03-27-02	3.00	[3]0.30	06-20-60	10.90	200
06337080	Cherry Creek tributary near Arnegard, ND	Lat 47°47'49", long 103°22'08", in SE$^1/_4$SE$^1/_4$NE$^1/_4$ sec.20, T.150 N., R.99 W., McKenzie County, Hydrologic Unit 10110205, at culverts 4 mi west and 0.5 mi south of Watford City.	10.41	1999-2002	04-13-02	996.48	[3]60	03-15-99	999.62	[3]285
06337900	Snake Creek tributary near Garrison, ND	Lat 47°37'55", long 101°21'00", on south line sec.14, T.148 N., R.84 W., McLean County, Hydrologic Unit 10110101, at culvert on county highway, 1 mi south of State Highway 37 and 3 mi southeast of Garrison.	1.22	1959-73 1995-2002	--	--	0	06-07-99	7.32	[3]150
06339890	North Creek near Werner, ND	Lat 47°24'37", long 102°30'10", in NE$^1/_4$SE$^1/_4$NE$^1/_4$ sec.3, T.145 N., R.93 W., Dunn County, Hydrologic Unit 10130201, at box culverts 3.5 mi north and 5.5 mi east of Dunn Center.	17.6	1998-2002	03-27-02	994.56	57	03-16-99	995.56	620
06343000	Heart River near South Heart, ND	Lat 46°51'56", long 102°56'53", in NE$^1/_4$SE$^1/_4$SW$^1/_4$ sec.8, T.139 N., R.97 W., Stark County, Hydrologic Unit 10130202, on left bank 1.7 mi downstream from North Creek, 2 mi east of South Heart, and 5.5 mi upstream from Edward Arthur Patterson Lake.	311	1965-84# 1985-2002	06-10-02	7.68	[3]390	05-09-70	22.77	8,080

Annual maximum discharge at crest-stage stations--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Water year 2002 maximum			Period of record maximum		
					Date	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
				MISSOURI RIVER BASIN--Continued						
06347090	Tavis Creek near Glen Ullin, ND	Lat 46°47'57", long 101°51'26", in NW¼SE¼NW¼ sec.1, T.138 N., R.89 W., Morton County, Hydrologic Unit 10130203, on State Highway 49, 1.5 mi southwest of Glen Ullin.	--	2000-02	[5]03-28-02	([7])	[3]15	07-27-01	8.26	[3]70
06349083	Southeast Branch Little Heart River at St. Anthony, ND	Lat 46°37'12", long 100°54'12", in SW¼SW¼ sec.5, T.136 N., R.81 W., Morton County, Hydrologic Unit 10130102, at culvert on State Highway 6, 0.75 mi northwest of St. Anthony.	[3]40.2	1996-2002	[5]03-28-02	1,691.94	[3]50	08-22-98	1,692.69	[3]480
06351630	Middle Fork Cedar Creek tributary near Amidon, ND	Lat 46°20'17", long 103°17'35", in SW¼SE¼SW¼ sec.7, T.133 N., R.100 W., Slope County, Hydrologic Unit 10130205, at culvert 1 mi east and 10 mi south of Amidon.	1.70	1998-2002	03-27-02	10.68	[3]3.7	08-12-99	13.03	70
06352380	Timber Creek tributary near New Leipzig, ND	Lat 46°12'36", long 101°57'36", in NW¼SW¼ sec.33 T.132 N., R.90 W., Grant County, Hydrologic Unit 10130205, at culvert on State Highway 49, 11.75 mi south of New Leipzig.	[3]2.8	1996-2002	[5]03-28-02	1,593.03	[3]70	07-01-97	1,597.02	740
06354450	Beaver Creek tributary near Linton, ND	Lat 46°14'48", long 100°04'47", in SW¼SE¼SW¼ sec.16, T.132 N., R.75 W., Emmons County, Hydrologic Unit 10130104, at culverts on State Highway 13, 7.25 mi east of Linton.	4.07	1998-2002	06-26-98 03-08-00 06-10-01 [5]03-28-02	5.47 5.40 5.66 5.25	[13]220 [13]210 [13]240 [3]190	07-04-99	6.44	[13]330

Annual maximum discharge at crest-stage stations--Continued

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Water year 2002 maximum			Period of record maximum		
					Date	Gage height (feet)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
				MISSOURI RIVER BASIN--Continued						
06469100	Pipestem Creek tributary near Heaton, ND	Lat 47°27'27", long 99°34'58", in NE¼NW¼NW¼ sec.22, T.146 N., R.70 W., Wells County, Hydrologic Unit 10160002, at culverts on State Highway 52, 1.5 mi south and 1.8 mi west of Heaton.	3.59	1998-2002	04-07-02 04-12-02	[4]7.01 6.46	-- 22	06-14-00	12.05	780
06470200	Beaver Creek tributary near Eldridge, ND	Lat 46°52'15", long 98°55'30", on east line sec.7, T.139 N., R. 65 W., Stutsman County, Hydrologic Unit 10160003, at culvert on county highway, 4 mi southwest of Eldridge.	0.19	1955-73 1995-2002	04-10-02	([7])	[3]6	1973	5.88	49
06471100	Maple Creek tributary near Edgeley, ND	Lat 46°25'00", long 98°49'42", in NE¼SE¼SE¼ sec.15, T.134 N., R.65 W., LaMoure County, Hydrologic Unit 10160004, at culvert on gravel road 10.25 mi northwest of Edgeley.	[3]5.25	1996-2002	04-06-02	1,097.59	6.2	03-25-97	1,100.73	[3]400
06471150	South Fork Maple River tributary near Merricourt, ND	Lat 46°14'54", long 98°42'48", in NE¼NE¼SW¼ sec.17, T.132 N., R.64 W., Dickey County, Hydrologic Unit 10160004, at culvert on gravel road 5.5 mi northeast of Merricourt.	[3]5.5	1996-2002	04-06-02	1,193.48	[3]3	03-25-97	1,199.71	[3]160

[#]Operated as a continuous-record gaging station.
[1]Observed, may have been higher, but did not exceed 928.84 ft.
[2]From measurement of discharge on July 10.
[3]Approximately.
[4]Backwater from ice and snow.
[5]On or about.
[6]From floodmark.
[7]Unknown.
[8]Maximum gage height from high-water mark, 52.43 ft, probably occurred on April 22, 1997. Gage height at time of maximum discharge not known.
[9]Not determined.
[10]Discharge for 1999 water year, based on new information, previously shown as unknown.
[11]Observed.
[12]Estimated.
[13]Based on theoretical rating developed in 2002 water year.

Miscellaneous discharge measurement sites

Measurements of streamflow at points other than gaging stations are given in the following table.

Discharge measurements made at miscellaneous sites during water year 2002

Station number	Station name	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		RED RIVER OF THE NORTH BASIN				
--	Wintering River at mouth near Karlsruhe, ND	Lat 48°11'30", long 100°34'36", in $NW^1/_4$ sec.4, T.154 N., R.77 W., McHenry County, Hydrologic Unit 09010003, at bridge about 7 mi north, northeast of Karlsruhe.	--	--	05-02-02 05-16-02 05-23-02 07-16-02 08-20-02 09-18-02	21.8 27.2 22.6 8.60 2.39 1.85
--	Souris River above Wintering River near Karlsruhe, ND	Lat 48°12'14", long 100°34'57", in $NW^1/_4$ sec.33, T.155 N., R.77 W., McHenry County, Hydrologic Unit 09010003, at bridge about 7.5 mi north, northwest of Karlsruhe.	--	--	05-02-02 05-16-02 05-23-02 07-16-02 08-20-02 09-18-02	140 66.0 36.0 28.4 15.8 15.6
--	Souris River near Wintering River School	Lat 48°13'31", long 100°32'12", in $SW^1/_4SW^1/_4SW^1/_4$ sec.23, T.155 N., R.77 W., McHenry County, Hydrologic Unit 09010003, at bridge 9 mi southwest of Towner.	--	1997	05-02-02 05-16-02 05-23-02 07-16-02 08-20-02 09-18-02	165 102 92.0 -- 14.2 --
--	Souris River at Rosencrans Forde	Lat 48°16'57", long 100°28'57", in $NW^1/_4NW^1/_4NE^1/_4$ sec.6, T.155 N., R.76 W., McHenry County, Hydrologic Unit 09010003, at riffle about 4.5 mi southwest of Towner.	--	--	05-02-02 05-16-02 05-23-02 07-17-02 08-20-02 09-19-02	0.21 0.15 177 38.7 23.2 19.3
05121500	Souris River near Towner, ND	Lat 48°18", long 100°27', in $NE^1/_4$ sec.29, T.156 N., R.76 W., McHenry County, Hydrologic Unit 09010003, at old gaging staion site, about 4 mi southwest of Towner.	13,090	1935-40	05-02-02 05-16-02 05-23-02 05-24-02 07-17-02 08-20-02 08-21-02 09-19-02	1.09 0.86 304 255 40.1 24.0 18.5 19.5
--	Souris River at Towner, ND	Lat 48°21'06", long 100°26'13", in $SW^1/_4NW^1/_4NE^1/_4$ sec.10, T.156 N., R.76 W., McHenry County, Hydrologic Unit 09010003, at bridge on northwest edge of Towner.	--	1997	05-02-02 05-16-02 05-24-02 07-17-02 08-21-02 09-19-02	11.2 16.9 401 44.8 22.2 23.2
--	Souris River at Cliff Hanretty farm near Towner, ND	Lat 48°23'27", long 100°23'45", in $NW^1/_4NW^1/_4SE^1/_4$ sec.19, T.157 N., R.75 W., McHenry County, Hydrologic Unit 09010003, at bridge about 3.5 mi north of Towner.	--	--	05-02-02 05-03-02 05-16-02 05-24-02 07-17-02 08-21-02 09-19-02	11.8 11.1 20.2 427 44.8 17.9 20.6

Water-quality partial-record stations are particular sites where chemical-quality, biological and/or sediment data are collected systematically over a period of years for use in hydrologic analyses. These data are collected usually less than quarterly. Samples collected at sites other than gaging stations and partial-record stations to give better areal coverage in a river basin are referred to as miscellaneous sites.

05119410 BONNES COULEE NEAR VELVA, ND (LAT 48 03 30N LONG 100 57 00W)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
MAY													
17...	1550	2.4	8.3	8.3	2880	2860	11.0	16.0	720	140	90.0	14.0	8

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
MAY													
17...	460	58	516	18.0	.20	1200	14.0	2180	2230	2.0	60	<1	180

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
MAY					
17...	170	<.10	2	<1	1100

< Less than

06343000 HEART RIVER NEAR SOUTH HEART, ND (LAT 46 51 56N LONG 102 56 53W)

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)
AUG													
27...	1445	.16	8.1	8.4	4270	4410	28.0	24.0	550	80.0	85.0	17.0	17

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)
AUG													
27...	910	78	738	29.0	.60	1700	1.45	3290	3260	7.0	50	1	60

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
AUG					
27...	90	.10	5	4	1300

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY LAKE SITES

480552098145300 McHUGH SLOUGH NEAR LAKOTA, ND

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTER-VAL(IN METERS) (82047)	DEPTH TO BOT-TOM OF SAMPLE INTER-VAL(IN METERS) (82048)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
02...	0840	.0	2.1	1470	8.4	360	41.0	62.0	34.0	4	190	51	438
FEB													
05...	0905	.70	1.9	2240	8.1	570	70.0	96.0	46.0	5	290	50	682
MAY													
07...	0805	.0	2.1	1550	--	370	44.0	62.0	31.0	4	190	51	429
JUL													
30...	0850	.0	1.7	1560	8.5	370	34.0	69.0	41.0	5	220	53	461

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT													
02...	50.0	.20	330	3.3	<.04	<.008	E.03	--	--	E.01	.18	1030	970
FEB													
05...	97.0	.20	530	5.4	.25	E.005	.08	5.2	5.5	.08	.33	1660	1540
MAY													
07...	51.0	.20	330	3.8	<.04	E.005	E.05n	--	--	<.02	.22	1070	966
JUL													
30...	64.0	.20	360	4.0	<.04	<.008	E.04	--	--	.03	.21	1120	1070

Date	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT											
02...	43.4	E.7	6.0	50	2	120	10	<.10	2	3	330
FEB											
05...	41.2	4.7	6.0	90	<1	200	630	<.10	1	<1	550
MAY											
07...	E28.0	E3.5	3.0	110	<1	120	20	<.10	<1	<1	370
JUL											
30...	E39.4	<.1	7.0	130	1	140	30	<.10	<1	1	380

480552098145300 McHUGH SLOUGH NEAR LAKOTA, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
02...	0835	2.1	.0	1500	8.3	13.7	7.4	76	717	--	12.0	13.0	60
02...	0836	--	.50	1500	8.3	13.7	7.0	--	--	--	--	--	--
02...	0837	--	1.1	1500	8.3	13.7	6.9	--	--	--	--	--	--
02...	0838	--	1.5	1500	8.4	13.7	6.8	--	--	--	--	--	--
02...	0839	--	2.1	1490	8.4	13.7	6.4	--	--	--	--	--	--
FEB													
05...	0900	1.9	.70	2270	7.9	1.4	8.8	66	733	.55	12.0	-3.0	--
05...	0902	--	1.4	2250	7.9	1.4	9.4	--	--	--	--	--	--
05...	0904	--	1.9	2250	8.0	1.6	9.9	--	--	--	--	--	--
MAY													
07...	0800	2.1	.0	1540	8.4	4.3	11.3	91	734	--	6.00	2.0	45
07...	0801	--	.70	1540	8.4	4.3	11.2	--	--	--	--	--	--
07...	0802	--	1.4	1540	8.4	4.3	11.0	--	--	--	--	--	--
07...	0803	--	2.1	1530	8.4	4.3	10.9	--	--	--	--	--	--
JUL													
30...	0845	1.7	.0	1630	8.6	23.4	8.3	104	722	--	4.80	20.0	330
30...	0846	--	.50	1630	8.6	23.4	8.2	--	--	--	--	--	--
30...	0847	--	1.0	1630	8.6	23.4	8.2	--	--	--	--	--	--
30...	0848	--	1.5	1630	8.6	23.4	7.9	--	--	--	--	--	--
30...	0849	--	1.7	1630	8.6	23.4	7.9	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
02...	9.0
02...	--
02...	--
02...	--
02...	--
FEB	
05...	--
05...	--
05...	--
MAY	
07...	7.0
07...	--
07...	--
07...	--
JUL	
30...	11
30...	--
30...	--
30...	--
30...	--

< Less than
E Estimated value
n Below the non-detection value

ANALYSES OF SAMPLES COLLECTED AT MISCELLANEOUS WATER-QUALITY LAKE SITES

480339098101300 LAKE LORETTA NEAR MICHIGAN, ND

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTER-VAL(IN METERS) (82047)	DEPTH TO BOT-TOM OF SAMPLE INTER-VAL(IN METERS) (82048)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
OCT													
02...	1005	.0	6.5	2360	8.7	610	87.0	96.0	42.0	6	330	52	402
FEB													
05...	1030	.70	5.6	2650	8.3	640	75.0	110	44.0	6	370	54	452
MAY													
07...	0910	.0	6.7	2510	8.4	570	67.0	97.0	41.0	6	330	54	386
JUL													
30...	0955	.0	6.1	2370	8.6	560	68.0	95.0	45.0	6	340	54	398

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT													
02...	140	.20	770	1.9	<.04	<.008	E.03	--	--	.11	.20	1680	1710
FEB													
05...	150	.40	890	2.1	.07	E.004	.07	2.1	2.2	.09	.14	1940	1910
MAY													
07...	140	.20	800	2.1	<.04	<.008	<.09	--	--	.07	.17	1740	1710
JUL													
30...	130	.20	790	1.9	<.04	<.008	E.04	--	--	.18	.24	1750	1710

Date	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT											
02...	9.6	<.1	10.0	40	2	150	10	<.10	2	4	490
FEB											
05...	5.0	1.1	8.0	70	<1	180	60	<.10	2	<1	590
MAY											
07...	E6.0	E.7	6.0	100	<1	150	20	<.10	3	<1	530
JUL											
30...	E6.0	E.4	10.0	80	<1	150	40	<.10	1	1	520

480339098101300 LAKE LORETTA NEAR MICHIGAN, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
OCT													
02...	0955	6.5	.0	2480	8.4	14.0	7.8	81	718	--	36.0	11.5	90
02...	0956	--	1.0	2440	8.4	14.0	7.9	--	--	--	--	--	--
02...	0957	--	2.0	2440	8.4	14.0	7.8	--	--	--	--	--	--
02...	0958	--	3.0	2450	8.4	14.0	7.8	--	--	--	--	--	--
02...	0959	--	4.0	2440	8.4	14.0	7.7	--	--	--	--	--	--
02...	1000	--	5.0	2450	8.4	14.0	7.8	--	--	--	--	--	--
02...	1001	--	6.0	2440	8.4	14.0	7.7	--	--	--	--	--	--
02...	1002	--	6.5	2450	8.4	14.0	7.7	--	--	--	--	--	--
FEB													
05...	1015	5.6	.70	2730	8.3	.6	11.2	82	733	.60	48.0	-4.0	--
05...	1017	--	1.7	2720	8.3	.5	11.5	--	--	--	--	--	--
05...	1019	--	2.7	2720	8.4	.5	11.4	--	--	--	--	--	--
05...	1021	--	3.7	2700	8.4	1.0	11.2	--	--	--	--	--	--
05...	1023	--	4.7	2680	8.4	1.7	10.5	--	--	--	--	--	--
05...	1025	--	5.6	2700	8.4	1.2	10.6	--	--	--	--	--	--
MAY													
07...	0900	6.7	.0	2510	8.5	5.1	11.7	96	734	--	22.8	4.0	30
07...	0901	--	1.0	2510	8.5	5.1	11.6	--	--	--	--	--	--
07...	0902	--	2.0	2510	8.5	5.1	11.5	--	--	--	--	--	--
07...	0903	--	3.0	2520	8.5	5.1	11.5	--	--	--	--	--	--
07...	0904	--	4.0	2510	8.5	5.1	11.4	--	--	--	--	--	--
07...	0905	--	5.0	2520	8.5	5.1	11.4	--	--	--	--	--	--
07...	0906	--	6.0	2520	8.5	5.1	11.3	--	--	--	--	--	--
07...	0907	--	6.7	2520	8.5	5.1	11.2	--	--	--	--	--	--
JUL													
30...	0945	6.1	.0	2490	8.3	23.3	7.8	98	723	--	33.6	22.0	330
30...	0946	--	1.0	2490	8.3	23.3	7.8	--	--	--	--	--	--
30...	0947	--	2.0	2490	8.3	23.3	7.8	--	--	--	--	--	--
30...	0948	--	3.0	2490	8.3	23.3	7.6	--	--	--	--	--	--
30...	0949	--	4.0	2500	8.3	23.1	7.3	--	--	--	--	--	--
30...	0950	--	5.0	2490	8.3	22.8	6.5	--	--	--	--	--	--
30...	0951	--	6.1	2500	8.3	22.6	4.9	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
OCT	
02...	10
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
FEB	
05...	7.0
05...	--
05...	--
05...	--
05...	--
05...	--
MAY	
07...	8.0
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
07...	--
JUL	
30...	9.0
30...	--
30...	--
30...	--
30...	--
30...	--
30...	--

< Less than
E Estimated value

05055500 SHEYENNE RIVER AT SHEYENNE, ND

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT													
29...	0900	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	1400	8.3	1270	340	53.3	50.2	14.0	4	173	51	485	11.5	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	29.3	263	2.5	.28	.102	.33	.43	2.2	3.0	.02	.65	942	888

Date	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT				
29...	<.1	<.1	--	--
JUL				
09...	E3.1	E.3	19	211

< Less than
E Estimated value

475001098560300 SHEYENNE RIVER NO. 2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT													
29...	1000	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	1300	8.2	1200	330	54.6	47.5	13.1	4	157	50	441	11.9	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	31.2	252	2.3	.12	.081	.56	.64	2.2	2.9	.03	.59	890	836

Date	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT				
29...	.3	<.1	--	--
JUL				
09...	E1.7	<.1	16	179

< Less than
E Estimated value

474740098351500 SHEYENNE RIVER NO. 3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
OCT													
29...	1030	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	1215	8.2	1110	310	53.3	42.9	13.1	3	140	48	405	11.3	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
09...	33.8	231	2.3	.12	.046	.47	.52	2.1	2.8	.03	.61	815	771

Date	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
OCT				
29...	<.1	<.1	--	--
JUL				
09...	E4.5	E.7	17	437

< Less than
E Estimated value

480022098551400 DEVILS LAKE, CASINO MARINA

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)
DEC 18...	1345	<.004	<.002	<.005	.012	<.050	<.010	<.002	<.041	<.020	<.005	<.018	<.003

Date	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)
DEC 18...	E.004	<.005	<.005	<.002	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	<.006

Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)
DEC 18...	<.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.004	<.010	<.011

Date	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
DEC 18...	<.02	<.011	<.02	<.034	<.02	<.005	<.002	<.009

< Less than
E Estimated value

474856098465200 Wetland 11

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 25...	1150	8.8	2430	450	28.6	90.8	56.6	8	370	61	E834	98.9	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 25...	25.0	465	2.8	.04	E.004	<.05	2.7	<.02	.12	1760	14.6	<.1	21

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 25...	4.5

< Less than
E Estimated value

474953098470600 Wetland 14

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 13...	1451	8.9	3880	360	27.9	69.6	76.7	18	772	79	648	384	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 13...	.7	967	2.6	<.04	<.008	<.05	<.02	.10	2820	2690	10.7	<.1	E7

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 13...	E3.0b

< Less than
E Estimated value
b Value was extrapolated below

475159098455900 Wetland 16

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
DEC 17...	1455	--	--	--	--	--	--	--	--	--	--	--	--
SEP 13...	1218	9.0	2790	200	24.2	33.4	53.2	18	575	82	800	192	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 13...	33.4	481	2.8	<.04	<.008	<.05	.03	E.18	2010	1870	8.9	<.1	95

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENOMYL WATER FLTRD REC (UG/L) (50300)
DEC 17...	--	<.004	<.007	<.002	<.02	<.008	<.04	<.005	.008	<.050	<.03	<.010	<.004
SEP 13...	12.3	--	--	--	--	--	--	--	--	--	--	--	--

Date	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)
DEC 17...	<.02	<.01	<.002	<.010	<.03	<.041	<.006	<.020	<.006	<2	<.02	<.010	<.04
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
DEC 17...	<.005	.04	<.018	<.01	<.01	<.003	E.004	<.01	<.04	<.005	<.01	<.01	<.005
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHEN-AMID, WATER, DISS, REC (UG/L) (04033)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMET-SULAM WATER FLTRD REC (UG/L) (61694)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)
DEC 17...	<.002	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	<.03	<.003	<.008
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

475159098455900 Wetland 16--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	IMAZAQUIN WATER FLTRD REC (UG/L) (50356)	IMAZETHAPYR WATER FLTRD REC (UG/L) (50407)	IMIDACLOPRID WATER FLTRD REC (UG/L) (61695)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DISSOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METALAXYL WATER FLTRD REC (UG/L) (50359)	METHIOCARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METHOMYL OXIME WATER FLTRD REC (UG/L) (61696)	METHOMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)
DEC													
17...	<.02	<.02	<.007	<.004	<.01	<.035	<.027	E.01	<.01	<.02	<.008	--q	<.004
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)	METSULFURON METHYL WAT FLT REC (UG/L) (61697)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEBURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSULFURON WATER FLTRD REC (UG/L) (50364)	NORFLURAZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORYZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL OXIME WATER FLTRD REC (UG/L) (50410)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)
DEC													
17...	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02	<.02	--q	<.01	<.003
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	PARATHION, DISSOLVED (UG/L) (39542)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PERMETHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PICLORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRONAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPACHLOR, WATER, DISS, REC (UG/L) (04024)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PROPHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROPICONAZOLE , WATER FLTRD REC (UG/L) (50471)	PROPOXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)
DEC													
17...	<.007	<.002	<.010	<.006	<.011	<.02	<.004	<.010	<.011	<.02	<.010	<.02	<.008
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	SIDURON WATER FLTRD REC (UG/L) (38548)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)	SULFOMETRURON METHYL WTR FLT REC (UG/L) (50337)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TERBACIL, WATER, DISS, REC (UG/L) (04032)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIOBENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIALLATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRIBENURON METHYL WATER FLTRD (UG/L) (61159)	TRICLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRIFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UREA 3(4-CHLOROPHENYL METHYL WAT FLT REC (UG/L) (61692)
DEC													
17...	<.02	<.011	<.009	<.02	<.010	<.034	<.02	<.005	<.002	--u	<.02	<.009	<.02
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DISSOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)
DEC			
17...	<.009	<.02	<.02
SEP			
13...	--	--	--

< Less than
E Estimated value
q Sample discarded: holding time exceeded
u Unable to determine-matrix interference

475234098414300 Wetland 18

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1445	7.6	838	300	36.7	50.0	15.6	2	84.0	37	470	16.9	.4

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 11...	24.9	.9	3.9	.04	<.008	<.05	3.8	E.01	.20	573	512	32.0	3.6

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	95	367

< Less than
E Estimated value

475303098401600 Wetland 20

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1520	7.9	712	340	53.3	50.0	7.29	1	45.7	22	431	4.79	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 11...	31.1	1.4	2.4	E.03	<.008	<.05	<.02	E.06	505	453	8.6	E1.1	79

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	317

< Less than
E Estimated value

475237098374300 Wetland 21

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1550	7.8	719	270	54.9	32.6	9.60	2	65.7	34	422	4.12	.4

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 11...	41.1	5.0	2.7	.34	<.008	<.05	2.4	.15	.22	532	468	3.6	1.4

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	86	723

< Less than

475325098341600 Wetland 22

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1625	8.3	726	370	34.2	68.8	16.6	.7	29.7	14	387	7.89	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 11...	33.8	51.2	3.6	<.04	<.008	<.05	<.02	.18	550	474	20.8	5.0	E6

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	19.0

< Less than
E Estimated value

475127098444200 Wetland 24

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
DEC 17...	1445	--	--	--	--	--	--	--	--	--	--	--	--
SEP 13...	1242	8.2	565	260	37.9	39.3	11.8	.8	31.2	20	342	6.11	.4

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 13...	35.6	2.4	1.9	.24	<.008	<.05	1.6	.10	.13	405	370	1.7	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)
DEC 17...	--	--	<.004	<.007	<.002	<.02	<.008	<.04	<.005	E.003	<.050	<.03	<.010
SEP 13...	33	104	--	--	--	--	--	--	--	--	--	--	--

Date	BENOMYL WATER FLTRD REC (UG/L) (50300)	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD REC (UG/L) (61188)	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)
DEC 17...	<.004	<.02	M	<.002	<.010	<.03	<.041	<.006	<.020	<.006	<2	<.02	<.010
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)
DEC 17...	<.04	<.005	<.01	<.018	<.01	<.01	<.003	E.002	<.01	<.04	<.005	<.01	<.01
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHEN-AMID, WATER, DISS, REC (UG/L) (04033)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMET-SULAM WATER FLTRD REC (UG/L) (61694)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)
DEC 17...	<.005	<.002	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	E.01	<.003
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

475127098444200 Wetland 24--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)	IMAZ-AQUIN WATER FLTRD REC (UG/L) (50356)	IMAZE-THAPYR WATER FLTRD REC (UG/L) (50407)	IMID-ACLOP-RID WATER FLTRD REC (UG/L) (61695)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METAL-AXYL WATER FLTRD REC (UG/L) (50359)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL OXIME WATER FLTRD REC (UG/L) (61696)
DEC													
17...	<.008	E.01	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008	--q
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MET-SUL-FURON METHYL WAT FLT REC (UG/L) (61697)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSUL FURON WATER FLTRD REC (UG/L) (50364)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL OXIME WATER FLTRD REC (UG/L) (50410)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)
DEC													
17...	<.004	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02	<.02	--q	<.01
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP-ICONA-ZOLE , WATER FLTRD REC (UG/L) (50471)
DEC													
17...	<.003	<.007	<.002	<.010	<.006	<.011	<.02	<.004	<.010	<.011	<.02	<.010	<.02
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SIDURON WATER FLTRD REC (UG/L) (38548)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	SULFO-MET-RURON METHYL WTR FLT REC (UG/L) (50337)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL, WATER, DISS, REC (UG/L) (04032)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-BENURON METHYL WATER FLTRD (UG/L) (61159)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
DEC													
17...	<.008	<.02	<.011	<.009	<.02	<.010	<.034	<.02	<.005	<.002	--u	<.02	<.009
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	UREA 3(4-CHLOR OPHENYL METHYL WAT FLT REC (UG/L) (61692)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)
DEC				
17...	<.02	<.009	.04	<.02
SEP				
13...	--	--	--	--

< Less than
E Estimated value
M Presence verified, not quantified
q Sample discarded: holding time exceeded
u Unable to determine-matrix interference

475031098440500 Wetland 25

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 13...	1332	8.0	348	170	35.2	19.4	5.97	.3	9.54	11	194	2.79	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 13...	26.3	1.1	2.3	.99	E.004	<.05	1.3	.15	.25	244	219	1.0	.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 13...	85	417

< Less than
E Estimated value

475055098424500 Wetland 26

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1057	8.5	509	230	22.0	43.1	17.7	.7	24.5	17	267	19.3	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 11...	22.1	1.6	3.6	<.04	<.008	<.05	<.02	.33	360	311	31.1	<.1	23

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	5.8

< Less than

475001098450600 Wetland 27

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 13...	1403	8.3	1060	400	39.0	73.9	27.3	2	96.6	32	659	12.7	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 13...	43.1	3.3	2.6	.42	<.008	<.05	2.2	.20	.22	766	693	.7	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 13...	27	683

< Less than

474956098390500 Wetland 28

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1140	8.4	729	400	33.7	76.4	12.5	.5	22.8	11	460	5.39	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 11...	29.3	.5	3.3	.14	.012	E.03	3.2	<.02	.13	520	457	22.6	4.9

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	<10	E2.5b

< Less than
E Estimated value
b Value was extrapolated below

475007098513900 WL506404

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 20...	1010	7.0	8.1	794	809	370	31.5	69.7	10.5	1	42.6	20	E489

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)
SEP 20...	7.32	.3	38.0	7.0	4.8	.49	.019	E.04	4.3	.06	.33	541	E36.2a

Date	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 20...	E23.9	E5	13.0

E Estimated value
a Value was extrapolated above

475034098505700 WL506404A

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 19...	1320	8.2	8.5	1060	1070	470	34.8	92.3	23.2	1	66.1	22	E672

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)
SEP 19...	6.93	.3	42.4	3.8	3.6	.19	.012	E.03	3.4	<.02	.20	724	33.5

Date	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 19...	<.1	<10	E2.4b

< Less than
E Estimated value
b Value was extrapolated below

474916098493100 WL506410

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 25...	1245	8.9	4340	530	26.8	112	60.1	14	727	72	E693	767	E.1n

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 25...	4.2	521	2.9	E.02	E.007	<.05	.03	.19	2790	<.1	<.1	E25n	E3.9n

< Less than
E Estimated value
n Below the non-detection value

474849098482000 WL506414

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 25...	1215	8.6	4720	630	37.1	129	55.1	14	822	72	E768	577	E.1n

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)
SEP 25...	34.0	1010	3.6	.54	.230	.26	.49	3.0	4.1	.09	.19	3320	2.3

Date	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 25...	<.1	E18n	E3.6n

< Less than
E Estimated value
n Below the non-detection value

475600098454800 WL516306

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 25...	1115	8.3	8630	1800	102	379	86.3	15	1510	63	E393	548	.1

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)
SEP 25...	12.9	4160	2.8	.51	.347	.07	.41	2.3	3.2	.11	.17	7500	1.4

Date	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 25...	<.1	E34n	220

< Less than
E Estimated value
n Below the non-detection value

475303098463200 WL516319B

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENOMYL WATER FLTRD REC (UG/L) (50300)
DEC 17...	1430	<.004	<.007	<.002	<.02	<.008	<.04	<.005	E.005	<.050	<.03	<.010	<.004

Date	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)
DEC 17...	<.02	E.01	<.002	E.072	<.03	<.041	<.006	<.020	<.006	<2	<.02	<.010	<.04

Date	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
DEC 17...	<.005	<.01	<.018	<.01	<.01	<.003	E.002	<.01	<.04	<.005	<.01	<.01	<.005

Date	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHEN-AMID, WATER, DISS, REC (UG/L) (04033)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMET-SULAM WATER FLTRD REC (UG/L) (61694)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)
DEC 17...	<.002	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	<.03	<.003	<.008

Date	IMAZ-AQUIN WATER FLTRD REC (UG/L) (50356)	IMAZE-THAPYR WATER FLTRD REC (UG/L) (50407)	IMID-ACLOP-RID WATER FLTRD REC (UG/L) (61695)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METAL-AXYL WATER FLTRD REC (UG/L) (50359)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL OXIME WATER FLTRD REC (UG/L) (61696)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)
DEC 17...	E.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008	--q	<.004

Date	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MET-SUL-FURON METHYL WAT FLT REC (UG/L) (61697)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSUL FURON WATER FLTRD REC (UG/L) (50364)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL OXIME WATER FLTRD REC (UG/L) (50410)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)
DEC 17...	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02	<.02	--q	<.01	<.003

Date	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP-ICONA-ZOLE , WATER FLTRD REC (UG/L) (50471)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)
DEC 17...	<.007	<.002	<.010	<.006	<.011	<.02	<.004	<.010	<.011	<.02	<.010	<.02	<.008

475303098463200 WL516319B--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	SIDURON WATER FLTRD REC (UG/L) (38548)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	SULFO-MET-RURON METHYL WTR FLT REC (UG/L) (50337)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL, WATER, DISS, REC (UG/L) (04032)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-BENURON METHYL WATER FLTRD (61159)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UREA 3(4-CHLOR OPHENYL METHYL WAT FLT REC (UG/L) (61692)
DEC 17...	<.02	<.011	<.009	<.02	<.010	<.034	<.02	<.005	<.002	--u	<.02	<.009	<.02

Date	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)
DEC 17...	<.009	<.02	<.02

< Less than
E Estimated value
q Sample discarded: holding time exceeded
u Unable to determine-matrix interference

475155098451400 WL516329C

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 19...	1400	9.2	2920	190	12.1	38.8	70.3	19	591	82	E1090	140	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 19...	24.1	344	3.4	E.03	E.005	<.05	<.02	.21	2020	37.6	3.3	157	11.6

< Less than
E Estimated value

475225098453600 WL516330

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 19...	1450	9.6	8.9	1830	1820	200	12.5	41.1	41.7	10	326	74	E682

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)
SEP 19...	73.9	.2	17.4	226	2.1	.10	E.004	<.05	2.1	.02	.09	1230	2.0

Date	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 19...	<.1	16	24.4

< Less than
E Estimated value

475503098530200 WL516408

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 20...	1210	9.3	500	240	10.4	52.4	30.4	.5	16.2	11	E309	7.05	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 20...	18.9	3.5	2.9	<.04	<.008	<.05	<.02	.11	369	24.8	<.1	<10	E1.7b

< Less than
E Estimated value
b Value was extrapolated below

475505098513800 WL516409

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 25...	1400	8.6	428	200	26.4	31.8	25.6	.3	10.3	9	E238	5.88	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 25...	31.2	1.8	3.8	.05	E.006	.05	3.7	3.8	<.02	.14	319	14.7	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 25...	E6	E1.6b

< Less than
E Estimated value
b Value was extrapolated below

475501098491600 WL516411B

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 20...	0935	7.7	652	300	63.0	35.8	6.66	.8	30.1	17	E367	2.43	.4

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 20...	45.2	4.2	1.5	.04	<.008	<.05	1.4	.02	.08	443	5.1	<.1	192

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 20...	659

< Less than
E Estimated value

475401098474400 WL516413B

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 20...	1130	8.5	664	270	24.9	50.3	16.6	1	44.2	25	E394	6.50	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 20...	27.4	6.4	2.0	<.04	<.008	<.05	<.02	.11	437	38.1	<.1	<10	<2.0

< Less than
E Estimated value

475325098483800 WL516423A

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 19...	1515	7.7	653	370	90.5	34.6	5.01	.2	10.5	6	E356	1.21	.4

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 19...	37.9	.9	1.2	<.04	E.004	<.05	<.02	E.04	456	.5	<.1	105	149

< Less than
E Estimated value

475303098465700 WL516424

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 25...	1315	8.8	622	200	17.1	38.2	12.3	2	68.1	41	E320	9.23	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 25...	27.4	41.9	1.6	<.04	<.008	<.05	<.02	.06	422	9.3	<.1	<10	E1.3n

< Less than
E Estimated value
n Below the non-detection value

475547099063700 WL516604

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 10...	1305	7.5	8.9	1730	1770	480	36.0	93.6	24.6	4	219	48	287

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)
SEP 10...	64.7	.2	25.2	578	3.5	<.040	<.008	<.050	<.020	.125	1310	1210	41.8

Date	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 10...	<.1	<10	E1.0n

< Less than
E Estimated value
n Below the non-detection value

475751098513400 WL526421

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 12...	1400	8.9	3270	850	22.2	194	63.3	7	485	53	729	87.7	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 12...	22.5	1190	3.6	<.04	<.008	<.05	<.02	<.60	2660	2500	4.0	<.1	E5

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 12...	E2.9b

< Less than
E Estimated value
b Value was extrapolated below

475824098502500 WL526422

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 12...	1455	8.8	7730	1800	96.2	384	128	15	1460	62	558	553	.1

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 12...	8.0	3730	3.1	<.04	<.008	<.05	.18	.33	7040	6700	<.1	<.1	11

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 12...	15.3

< Less than

475817098480800 WL526423

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 16...	1255	8.5	7830	1600	138	316	109	16	1520	65	516	526	.1

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 16...	21.1	3530	4.1	.798	.013	E.025	3.3	.243	.350	7080	6470	E24.9	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 16...	20	822

< Less than
E Estimated value

475635098523600 WL526432

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 12...	1530	9.0	2020	250	18.8	48.7	80.1	10	356	69	765	78.5	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 12...	22.8	290	3.7	<.04	<.008	<.05	<.02	<.30	1460	1350	12.2	<.1	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 12...	E2.3b

< Less than
E Estimated value
b Value was extrapolated below

480022099004500 WL5264508

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 25...	1005	8.4	2590	670	86.5	111	30.2	6	338	51	E407	110	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 25...	23.2	892	3.0	E.02	.015	E.04	<.02	.19	1960	3.4	<.1	<30	10.0

< Less than
E Estimated value

475928099004400 WL5264517

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 10...	1505	8.4	1500	550	71.7	89.4	14.0	3	139	35	287	39.8	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 10...	23.0	523	2.2	<.04	<.008	<.05	<.02	.13	1170	1070	33.3	E1.0	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 10...	E1.0n

< Less than
E Estimated value
n Below the non-detection value

475824099102200 WL526619

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 10...	1135	8.5	7210	2100	165	410	90.4	11	1160	53	390	342	.1

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 10...	E1.7	3770	2.9	.15	<.008	<.05	2.8	.13	.24	6830	6170	4.0	.5

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 10...	<50	105

< Less than
E Estimated value

475655099063500 WL526633

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 10...	1335	6.5	8.2	1320	1340	450	55.8	76.0	14.6	3	131	38	243

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)
SEP 10...	33.1	.2	43.3	428	2.3	<.040	<.008	<.050	<.020	.128	1010	928	22.1

Date	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 10...	E1.5	<10	E.9n

< Less than
E Estimated value
n Below the non-detection value

475756099092800 WL526724

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 10...	1020	8.3	1660	600	73.0	101	26.9	3	145	33	204	33.7	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 10...	26.3	680	2.7	<.04	<.008	<.05	E.01	.10	1350	1210	34.5	<.1	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 10...	28.8

< Less than
E Estimated value

474844098363800 BATTLE LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1216	9.0	324	170	13.6	33.4	9.18	.4	11.8	12	202	5.22	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 11...	21.7	5.7	2.0	<.04	<.008	<.05	<.02	.07	245	222	1.1	<.1	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	<2.0

< Less than

475406098442900 ELBOW LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
DEC 17...	1400	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	1330	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	0930	8.9	1450	260	13.6	56.1	33.3	7	254	64	741	44.4	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	16.2	63.8	2.6	<.04	<.008	<.05	<.02	.06	999	926	11.3	<.1	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENOMYL WATER FLTRD REC (UG/L) (50300)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	--	<.006	<.130	<.004	<.02	<.008	<.04	<.005	.015	<.050	<.03	<.010	<.004
SEP 11...	<2.0	--	--	--	--	--	--	--	--	--	--	--	--

Date	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<.02	<.01	<.002	E.452	<.03	<.041	<.006	<.020	<.006	<2	<.02	<.010	<.04
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<.005	<.01	<.018	<.01	<.01	<.003	<.006	<.01	<.04	<.005	<.01	<.01	<.005
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

475406098442900 ELBOW LAKE--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHEN-AMID, WATER, DISS, REC (UG/L) (04033)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMET-SULAM WATER FLTRD REC (UG/L) (61694)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<.006	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	<.03	<.003	<.008
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	IMAZ-AQUIN WATER FLTRD REC (UG/L) (50356)	IMAZE-THAPYR WATER FLTRD REC (UG/L) (50407)	IMID-ACLOP-RID WATER FLTRD REC (UG/L) (61695)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METAL-AXYL WATER FLTRD REC (UG/L) (50359)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.11	<.01	<.02	<.008	<.004	<.006
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MET-SUL-FURON METHYL WAT FLT REC (UG/L) (61697)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSUL FURON WATER FLTRD REC (UG/L) (50364)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02	<.02	<.01	<.003	<.010	<.004
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP-ICONA-ZOLE , WATER FLTRD REC (UG/L) (50471)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SIDURON WATER FLTRD REC (UG/L) (38548)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<.022	<.006	<.011	<.02	<.004	<.010	<.011	<.02	<.010	<.02	<.008	<.02	<.005
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	SULFO-MET-RURON METHYL WTR FLT REC (UG/L) (50337)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL, WATER, DISS, REC (UG/L) (04032)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-BENURON METHYL WATER FLTRD (UG/L) (61159)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UREA 3(4-CHLOR OPHENYL METHYL WAT FLT REC (UG/L) (61692)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DIS-SOLVED (UG/L) (39732)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 06...	<.009	<.02	<.010	--u	<.02	<.005	<.002	--u	<.02	<.009	<.02	<.009	.06
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

475406098442900 ELBOW LAKE--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)
DEC 17...	--
MAR 06...	<.02
SEP 11...	--

< Less than
E Estimated value
u Unable to determine-matrix interference

475410098442400 FREE PEOPLES LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
DEC 17...	1410	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	1030	9.0	7520	350	16.6	75.0	106	39	1680	88	1150	560	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11...	8.5	2250	3.7	.04	<.008	<.05	3.7	E.01	.10	5630	5390	1.7	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)
DEC 17...	--	--	<.004	<.002	<.005	.012	<.050	<.010	<.002	<.041	<.020	<.005	<.018
SEP 11...	<50	<8.0	--	--	--	--	--	--	--	--	--	--	--

Date	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)
DEC 17...	<.003	E.006	<.005	<.005	<.002	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

475410098442400 FREE PEOPLES LAKE--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)
DEC 17...	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002	<.010	<.006	<.011	<.004	<.010
SEP 11...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
DEC 17...	<.011	<.02	<.011	<.02	<.034	<.02	<.005	<.002	<.009
SEP 11...	--	--	--	--	--	--	--	--	--

< Less than
E Estimated value

475502098473300 GRAVES LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 13...	1045	8.8	1080	340	18.7	71.2	28.8	3	133	43	639	19.6	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 13...	27.4	50.3	2.0	<.04	<.008	<.05	<.02	.11	772	732	17.1	<.1	430

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 13...	4.0

< Less than

475012098475200 HORSESHOE LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 16...	1445	9.0	4860	190	23.9	31.0	83.9	35	1110	89	885	376	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 16...	15.8	1280	2.7	<.04	<.008	<.05	<.02	.09	3610	3460	21.7	<.1	29

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 16...	9.4

< Less than

480349099111300 MINNEWAUKEN FLATS

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 30...	1225	7.0	8.6	2040	2020	510	79.7	75.3	38.0	5	252	50	E370

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 30...	112	.2	10.1	596	1.7	<.04	<.008	<.05	.28	.35	1460	4.9	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 30...	<10	E1.8b

< Less than
E Estimated value
b Value was extrapolated below

475450099054800 PLAINVIEW LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 10...	1220	8.6	1750	480	44.7	90.2	32.9	4	216	47	319	67.6	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 10...	41.3	572	3.6	<.040	<.008	<.050	<.020	E.190	1350	1260	45.2	E3.6	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 10...	E2.4b

< Less than
E Estimated value
b Value was extrapolated below

480134099134001 ROUND LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 10...	0935	8.3	1950	670	102	102	26.9	3	203	38	306	47.0	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 10...	25.9	740	2.6	.063	<.008	<.050	2.6	.098	.229	1570	1430	11.1	E1.0

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 10...	<30	<2.0

< Less than
E Estimated value

475159098415900 SHIN BONE LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1357	9.1	2060	180	11.7	36.7	58.0	13	387	77	909	158	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 11...	24.9	30.8	3.7	<.04	<.008	<.05	<.02	.12	1370	1250	15.8	1.9	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	<2.0

< Less than

475645098473000 SPRING LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 13...	1000	8.6	2650	600	55.6	113	55.0	7	386	56	502	158	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 13...	26.9	825	2.4	<.04	<.008	<.05	.06	E.18	2040	1920	19.9	<.1	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 13...	E2.3b

< Less than
E Estimated value
b Value was extrapolated below

475423098481400 SQUARE LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 20...	1100	8.1	435	180	31.2	25.8	6.06	.8	25.3	22	E230	4.09	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 20...	29.8	19.9	1.7	E.04	<.008	<.05	<.02	.15	301	44.3	<.1	<10	<2.0

< Less than
E Estimated value

475804099045900 TWIN LAKES, SITE 2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 10...	1420	7.5	8.7	1520	1560	510	58.6	88.0	25.0	3	166	40	396

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)
SEP 10...	47.1	.2	39.3	414	3.9	<.040	<.008	<.050	<.020	.312	1160	1080	116

Date	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 10...	<.1	<10	<2.0

< Less than

480028099074500 WEST BAY

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 30...	1300	7.9	8.7	2040	2030	510	77.9	75.4	38.1	5	265	51	E370

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 30...	113	.2	12.5	599	1.4	<.04	<.008	<.05	.28	.37	1470	E8.0	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 30...	<10	E1.4n

< Less than
E Estimated value
n Below the non-detection value

480112098545200 WEST BAY-CASINO

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 30...	1430	8.9	8.8	2140	2120	510	77.1	77.9	38.8	5	272	51	E369

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 30...	123	.2	6.3	637	1.3	<.04	<.008	<.05	.30	.34	1530	6.2	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 30...	<10	E1.5n

< Less than
E Estimated value
n Below the non-detection value

480106098595500 WEST BAY-FORT TOTTEN

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
SEP 30...	1400	8.8	8.8	2140	2130	520	77.5	78.4	39.5	5	274	51	E366

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)
SEP 30...	120	.2	3.4	640	1.3	<.04	<.008	<.05	.29	.35	1520	E9.6	<.1

Date	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 30...	<10	E1.6n

< Less than
E Estimated value
n Below the non-detection value

475147098374900 WETLAND B1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 11...	1305	9.1	2430	190	17.4	34.8	58.2	17	522	81	1080	36.7	.1

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 11...	28.2	289	4.7	<.04	<.008	<.05	.34	.61	1760	1630	46.9	7.2	E10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 11...	5.5

< Less than
E Estimated value

475258098454700 WETLAND B2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
DEC 17...	1420	--	--	--	--	--	--	--	--	--	--	--	--
SEP 13...	1137	E7.5	41	250	20.7	48.0	18.1	2	87.3	41	446	12.3	.3

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC 17...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 13...	30.6	20.9	2.1	<.04	<.008	<.05	<.02	.09	534	506	13.7	<.1	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENOMYL WATER FLTRD REC (UG/L) (50300)
DEC 17...	--	<.004	<.007	<.002	<.02	<.008	<.04	<.005	E.007	<.050	<.03	<.010	<.004
SEP 13...	E1.2n	--	--	--	--	--	--	--	--	--	--	--	--

Date	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)
DEC 17...	<.02	<.01	<.002	E.036	<.03	<.041	<.006	<.020	<.006	<2	<.02	<.010	<.04
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)
DEC 17...	<.005	<.01	<.018	<.01	<.01	<.003	E.004	<.01	<.04	<.005	<.01	<.01	<.005
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHEN-AMID, WATER, DISS, REC (UG/L) (04033)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMET-SULAM WATER FLTRD REC (UG/L) (61694)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)
DEC 17...	<.002	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	<.03	<.003	<.008
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

475258098454700 WETLAND B2--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	IMAZAQUIN WATER FLTRD REC (UG/L) (50356)	IMAZETHAPYR WATER FLTRD REC (UG/L) (50407)	IMIDACLOPRID WATER FLTRD REC (UG/L) (61695)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DISSOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METALAXYL WATER FLTRD REC (UG/L) (50359)	METHIOCARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METHOMYL OXIME WATER FLTRD REC (UG/L) (61696)	METHOMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)
DEC 17...	M	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008	--q	<.004
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)	METSULFURON METHYL WAT FLT REC (UG/L) (61697)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEBURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSULFURON WATER FLTRD REC (UG/L) (50364)	NORFLURAZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORYZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL OXIME WATER FLTRD REC (UG/L) (50410)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)
DEC 17...	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02	<.02	--q	<.01	<.003
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	PARATHION, DISSOLVED (UG/L) (39542)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PERMETHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PICLORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRONAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPACHLOR, WATER, DISS, REC (UG/L) (04024)	PROPANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PROPARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PROPHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROPICONAZOLE , WATER FLTRD REC (UG/L) (50471)	PROPOXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)
DEC 17...	<.007	<.002	<.010	<.006	<.011	<.02	<.004	<.010	<.011	<.02	<.010	<.02	<.008
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	SIDURON WATER FLTRD REC (UG/L) (38548)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)	SULFOMETRURON METHYL WTR FLT REC (UG/L) (50337)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TERBACIL, WATER, DISS, REC (UG/L) (04032)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIOBENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIALLATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRIBENURON METHYL WATER FLTRD (UG/L) (61159)	TRICLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRIFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UREA 3(4-CHLOROPHENYL METHYL WAT FLT REC (UG/L) (61692)
DEC 17...	<.02	<.011	<.009	<.02	<.010	<.034	<.02	<.005	<.002	--u	<.02	<.009	<.02
SEP 13...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DISSOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)
DEC 17...	<.009	E.02	<.02
SEP 13...	--	--	--

< Less than
E Estimated value
M Presence verified, not quantified
n Below the non-detection value
q Sample discarded: holding time exceeded
u Unable to determine-matrix interference

475350098501300 WOOD LAKE

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
SEP 16...	1405	8.4	362	170	26.2	26.3	8.41	.4	11.9	12	196	4.28	.2

Date	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
SEP 16...	27.5	17.3	.88	<.04	<.008	<.05	<.02	<.06	252	239	7.0	<.1	<10

Date	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
SEP 16...	E1.5n

< Less than
E Estimated value
n Below the non-detection value

480345103493500 LAKE TRENTON NO. 1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTER-VAL(IN METERS) (82047)	DEPTH TO BOT-TOM OF SAMPLE INTER-VAL(IN METERS) (82048)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
FEB													
06...	1020	.50	1.5	1220	7.8	330	72.7	35.2	5.34	3	144	48	302
JUN													
18...	0815	.0	1.9	620	8.3	190	46.0	18.6	4.34	2	61.9	41	165
AUG													
20...	0905	.0	1.0	655	8.5	220	53.1	21.6	4.78	2	63.1	38	183

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
FEB													
06...	13.3	.9	10.0	337	.96	.11	<.008	.07	.85	1.0	<.02	E.04	832
JUN													
18...	7.67	.6	8.2	150	.56	<.04	<.008	E.03	--	--	<.02	E.04	406
AUG													
20...	9.44	.9	6.9	157	.54	<.04	<.008	<.05	--	--	<.02	E.05	436

Date	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
FEB													
06...	799	<2	<2	16.3	1.2	--	--	--	--	--	--	--	--
JUN													
18...	396	--	--	5.6	.3	--	--	--	--	--	--	--	--
AUG													
20...	427	E2k	E10k	12.3	1.4	5	.73	2	59	<.06	E.02	.9	.17

Date	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	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)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
FEB									
06...	--	<10	--	E.9	--	--	--	--	--
JUN									
18...	--	E7	--	E.9n	--	--	--	--	--
AUG									
20...	2.4	<10	E.06	.8	3.6	1.69	E1	<1	3

480345103493500 LAKE TRENTON NO. 1--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAM-PLING DEPTH (M) (00098)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS METERS (82131)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	TEMPER-ATURE AIR (DEG C) (00020)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)
FEB													
06...	1015	1.5	.50	1240	7.5	1.6	10.4	80	712	.50	36.0	3.0	270
06...	1016	--	1.0	1210	7.4	3.4	9.8	--	--	--	--	--	--
06...	1017	--	1.5	1220	7.4	4.0	7.8	--	--	--	--	--	--
JUN													
18...	0810	1.9	.0	627	8.3	20.5	10.1	122	702	--	18.0	21.0	210
18...	0811	--	.50	636	8.3	20.5	10.0	--	--	--	--	--	--
18...	0812	--	1.0	635	8.3	20.1	9.6	--	--	--	--	--	--
18...	0813	--	1.9	632	8.2	19.3	8.1	--	--	--	--	--	--
AUG													
20...	0900	1.0	.0	687	8.2	18.1	9.5	108	711	--	7.00	18.0	130
20...	0901	--	1.0	700	8.2	17.8	7.4	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
FEB	
06...	15
06...	--
06...	--
JUN	
18...	<5.0
18...	--
18...	--
18...	--
AUG	
20...	<5.0
20...	--

< Less than
E Estimated value
k Counts outside acceptable range
n Below the non-detection value

ANALYSES OF SAMPLES COLLECTED AT TURTLE MOUNTAIN RESERVATION WATER-QUALITY SITES

480354103502800 LAKE TRENTON NO. 2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTER-VAL(IN METERS) (82047)	DEPTH TO BOT-TOM OF SAMPLE INTER-VAL(IN METERS) (82048)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
FEB													
06...	1055	.50	1.6	1240	7.8	330	73.2	35.5	5.39	4	147	49	306
JUN													
18...	0835	.0	1.9	607	8.3	190	45.7	18.2	4.32	2	60.6	40	161
AUG													
20...	0855	.0	1.0	638	8.5	220	52.4	21.4	4.47	2	60.2	37	184

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
FEB													
06...	13.2	.8	9.8	347	.81	.10	<.008	.09	.71	.89	<.02	E.03	848
JUN													
18...	7.56	.6	8.0	147	.67	<.04	<.008	<.05	--	--	<.02	E.04	397
AUG													
20...	9.45	.9	6.8	154	.53	<.04	<.008	<.05	--	--	<.02	E.05	437

Date	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
FEB													
06...	815	<2	<2	6.0	.5	--	--	--	--	--	--	--	--
JUN													
18...	388	--	--	5.4	.3	--	--	--	--	--	--	--	--
AUG													
20...	420	E10k	E30k	8.6	.6	4	.73	2	60	<.06	E.02	E.6	.19

Date	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	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)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)
FEB													
06...	--	<10	--	E1.3	--	--	--	--	--	--	--	--	--
JUN													
18...	--	E5	--	E.9n	--	--	--	--	--	<.006	<.007	<.004	<.02
AUG													
20...	2.1	<10	<.08	.4	3.6	1.98	E1	<1	<1	<.006	<.007	<.004	<.02

Date	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BENOMYL WATER FLTRD REC (UG/L) (50300)	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
18...	<.008	<.04	<.005	.013	<.050	<.03	<.010	<.004	<.02	<.01	<.002	.035	<.03
AUG													
20...	<.008	<.04	<.005	<.007	<.050	<.03	<.010	<.004	<.02	<.01	<.002	E.031	<.03

480354103502800 LAKE TRENTON NO. 2--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBOFURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBOFURAN WATER FLTRD REC (UG/L) (50295)	CHLORAMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORIMURON, WATER FLTRD REC (UG/L) (50306)	CHLOROTHALONIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	CLOPYRALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	CYCLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONOACID, WAT,FLT GF 0.7U REC (UG/L) (49304)
FEB 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	<.041	<.006	<.020	<.006	<2	<.02	<.010	<.04	<.005	<.01	<.018	E.01	<.01
AUG 20...	<.041	<.006	<.020	<.006	<2	<.02	<.010	<.04	<.005	<.01	<.018	<.01	<.01

Date	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISOPROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISOPROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DIAZINON, DISSOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLORPROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)	DIELDRIN DISSOLVED (UG/L) (39381)	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHENAMID, WATER, DISS, REC (UG/L) (04033)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)
FEB 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	<.003	E.005	<.01	<.04	<.005	<.01	<.01	<.005	<.006	<.01	<.03	<.02	<.01
AUG 20...	<.003	<.006	<.01	<.04	<.005	<.01	<.01	<.005	<.006	<.01	<.03	<.02	<.01

Date	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FENURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMETSULAM WATER FLTRD REC (UG/L) (61694)	FLUOMETURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)	HYDROXYATRAZINE WATER FLTRD REC (UG/L) (50355)	IMAZAQUIN WATER FLTRD REC (UG/L) (50356)	IMAZETHAPYR WATER FLTRD REC (UG/L) (50407)	IMIDACLOPRID WATER FLTRD REC (UG/L) (61695)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)
FEB 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	<.002	<.009	<.005	<.03	<.01	<.03	<.003	<.008	<.02	<.02	<.007	<.004	<.01
AUG 20...	<.002	<.009	<.005	<.03	<.01	<.03	<.003	<.008	<.02	<.02	<.007	<.004	<.01

Date	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DISSOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METALAXYL WATER FLTRD REC (UG/L) (50359)	METHIOCARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METHOMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)	METSULFURON METHYL WAT FLT REC (UG/L) (61697)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)
FEB 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	<.035	<.027	.02	<.01	<.02	<.008	<.004	<.006	<.013	<.006	<.03	<.002	<.007
AUG 20...	<.035	<.027	<.02	<.01	<.02	<.008	<.004	<.006	<.013	<.006	<.03	<.002	<.007

Date	NEBURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSULFURON WATER FLTRD REC (UG/L) (50364)	NORFLURAZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORYZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)	PARATHION, DISSOLVED (UG/L) (39542)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PERMETHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PICLORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRONAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)
FEB 06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN 18...	<.01	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	<.004
AUG 20...	<.01	<.01	<.02	<.02	<.01	<.003	<.010	<.004	<.022	<.006	<.011	<.02	<.004

480354103502800 LAKE TRENTON NO. 2--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PROPACHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP-ICONAZOLE , WATER FLTRD REC (UG/L) (50471)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SIDURON WATER FLTRD REC (UG/L) (38548)	SIMAZINE, WATER, DISS, REC (UG/L) (04035)	SULFOMETURON METHYL WTR FLT REC (UG/L) (50337)	TEBUTHIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TERBACIL, WATER, DISS, REC (UG/L) (04032)	TERBACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TERBUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
18...	<.010	<.011	<.02	<.010	<.02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02
AUG													
20...	<.010	<.011	<.02	<.010	<.02	<.008	<.02	<.005	<.009	<.02	<.010	<.034	<.02

Date	THIOBENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIALLATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRIBENURON METHYL WATER FLTRD (UG/L) (61159)	TRICLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRIFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UREA 3(4-CHLOROPHENYL METHYL WAT FLT REC (UG/L) (61692)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)	2,4-D, DISSOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)
FEB									
06...	--	--	--	--	--	--	--	--	--
JUN									
18...	<.005	.004	--u	<.02	<.009	<.02	<.009	.06	<.02
AUG									
20...	<.005	<.002	--u	<.02	<.009	<.02	<.009	.03	<.02

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
FEB													
06...	1050	1.6	.50	1250	7.5	1.8	10.7	82	714	.40	43.2	5.0	270
06...	1051	--	1.0	1240	7.5	3.2	10.0	--	--	--	--	--	--
06...	1052	--	1.6	1250	7.4	3.9	7.6	--	--	--	--	--	--
JUN													
18...	0830	1.9	.0	616	8.4	20.5	9.9	120	704	--	18.0	21.0	180
18...	0831	--	.50	618	8.4	20.5	9.8	--	--	--	--	--	--
18...	0832	--	1.0	618	8.3	20.0	9.5	--	--	--	--	--	--
18...	0833	--	1.5	616	8.1	17.4	7.7	--	--	--	--	--	--
18...	0834	--	1.9	608	8.0	16.7	6.8	--	--	--	--	--	--
AUG													
20...	0850	1.0	.0	674	8.3	18.1	9.8	112	711	--	9.00	16.0	60
20...	0851	--	1.0	683	8.2	17.5	7.7	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
FEB	
06...	15
06...	--
06...	--
JUN	
18...	<5.0
18...	--
18...	--
18...	--
18...	--
AUG	
20...	<5.0
20...	--

< Less than
E Estimated value
k Counts outside acceptable range
n Below the NDV
u Unable to determine-matrix interference

480318103503100 LAKE TRENTON NO. 3

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTER-VAL(IN METERS) (82047)	DEPTH TO BOT-TOM OF SAMPLE INTER-VAL(IN METERS) (82048)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
FEB 06...	1120	.50	1.0	1390	8.0	360	80.3	39.2	5.90	4	163	49	345
JUN a18...	0850	.0	1.9	586	8.4	180	43.6	17.8	3.94	2	55.1	39	157
AUG 20...	0835	.0	1.0	629	8.5	220	53.2	21.0	4.51	2	56.5	35	179

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
FEB 06...	15.2	1.1	10.2	387	.90	<.04	<.008	<.05	<.02	E.05	944	909	<2
JUN a18...	7.58	.7	8.0	142	.50	<.04	<.008	<.05	<.02	E.04	391	373	--
AUG 20...	9.30	.9	6.8	147	.44	<.04	<.008	<.05	<.02	.06	420	407	E8k

Date	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
FEB 06...	<2	7.2	1.5	--	--	--	--	--	--	--	--	--	<10
JUN a18...	--	5.1	.4	--	--	--	--	--	--	--	--	--	<10
AUG 20...	60	10.5	.5	15	.67	2	56	<.06	<.04	.9	.16	2.2	12

Date	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	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)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
FEB 06...	--	E1.3	--	--	--	--	--
JUN a18...	--	E.8n	--	--	--	--	--
AUG 20...	<.08	1.3	3.5	1.69	<2	<1	1

480318103503100 LAKE TRENTON NO. 3--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAMPLING DEPTH (M) (00098)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	BAROMETRIC PRESSURE (MM OF HG) (00025)	ICE THICKNESS METERS (82131)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	TEMPERATURE AIR (DEG C) (00020)	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)
FEB													
06...	1117	1.0	.50	1390	7.9	.3	10.1	75	714	.50	26.4	5.0	270
06...	1118	--	1.0	1370	7.9	.8	10.0	--	--	--	--	--	--
JUN													
18...	0845	1.9	.0	614	8.3	20.3	9.7	116	708	--	18.0	22.0	180
18...	0846	--	.50	613	8.4	20.2	9.7	--	--	--	--	--	--
18...	0847	--	1.0	607	8.3	19.0	9.0	--	--	--	--	--	--
18...	0848	--	1.5	597	8.2	17.8	7.6	--	--	--	--	--	--
18...	0849	--	1.9	599	8.1	17.0	6.8	--	--	--	--	--	--
AUG													
20...	0830	1.0	.0	658	8.1	17.5	9.2	103	711	--	6.00	16.0	100
20...	0831	--	1.0	657	8.2	17.4	9.0	--	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
FEB	
06...	15
06...	--
JUN	
18...	<5.0
18...	--
18...	--
18...	--
18...	--
AUG	
20...	<5.0
20...	--

a Quality assurance samples collected with this sample
< Less than
E Estimated value
k Counts outside acceptable range
n Below the non-detection value

480220103500800 LAKE TRENTON INFLOW DITCH

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE AIR (DEG C) (00020)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
JUN 18...	1100	.0	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	1035	23	711	99	8.9	8.0	8.3	596	623	17.0	16.8	220	54.8

Date	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)	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)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	20.0	4.61	1	47.7	32	173	9.22	.9	6.9	132	.38	<.04	<.008

Date	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	.12	.50	E.02	.09	24.0	392	381	>148	>4500	5.6	.5	3	.60

Date	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	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)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	2	49	<.06	E.02	E.6	.20	2.4	<10	<.08	31.1	3.4	1.63	E1

Date	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ACIFL-UORFEN WATER, FLTRD, GF 0.7U REC (UG/L) (49315)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALDI-CARB SULFONE WAT,FLT GF 0.7U REC (UG/L) (49313)	ALDICA-RB SUL-FOXIDE, WAT,FLT GF 0.7U REC (UG/L) (49314)	ALDI-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (49312)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENDIO-CARB, WATER FLTRD REC (UG/L) (50299)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	<1	1	<.006	<.007	<.004	<.02	<.008	<.04	<.005	<.007	<.050	<.03	<.010

Date	BENOMYL WATER FLTRD REC (UG/L) (50300)	BEN-SUL-FURON METHYL WAT FLT REC (UG/L) (61693)	BENTA-ZON, WATER, FLTRD, GF 0.7U REC (UG/L) (38711)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAF-FEINE, WATER FLTRD REC (UG/L) (50305)	CAR-BARYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49310)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN, WATER, FLTRD, GF 0.7U REC (UG/L) (49309)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	3HYDRXY CARBO-FURAN WAT,FLT GF 0.7U REC (UG/L) (49308)	3-KETO CARBO-FURAN WATER FLTRD REC (UG/L) (50295)	CHLOR-AMBEN, METHYL ESTER WATER FLTRD (UG/L) (61188)	CHLORI-MURON, WATER FLTRD REC (UG/L) (50306)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	<.004	<.02	<.01	<.002	<.010	<.03	<.041	<.006	<.020	<.006	<2	<.02	<.010

480220103500800 LAKE TRENTON INFLOW DITCH--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLORO-THALO-NIL, WAT,FLT GF 0.7U REC (UG/L) (49306)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	CLOPYR-ALID, WATER, FLTRD, GF 0.7U REC (UG/L) (49305)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	CY-CLOATE, WATER, DISS, REC (UG/L) (04031)	DACTHAL MONO-ACID, WAT,FLT GF 0.7U REC (UG/L) (49304)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DEETHYL DEISO-PROPYL ATRAZIN DISS, REC (UG/L) (04039)	DEISO-PROPYL ATRAZIN WATER, DISS, REC (UG/L) (04038)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DICAMBA WATER, FLTRD, GF 0.7U REC (UG/L) (38442)	DICHLOR PROP, WATER, FLTRD, GF 0.7U REC (UG/L) (49302)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	<.04	<.005	.11	<.018	<.01	<.01	<.003	<.006	<.01	<.04	<.005	<.01	<.01

Date	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	DINOSEB WATER, FLTRD, GF 0.7U REC (UG/L) (49301)	DIPHEN-AMID, WATER, DISS, REC (UG/L) (04033)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	DIURON, WATER, FLTRD, GF 0.7U REC (UG/L) (49300)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FEN-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49297)	FLUMET-SULAM WATER FLTRD REC (UG/L) (61694)	FLUO-METURON WATER, FLTRD, GF 0.7U REC (UG/L) (38811)	FONOFOS WATER DISS REC (UG/L) (04095)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	<.005	<.006	<.01	<.03	<.02	<.01	<.002	<.009	<.005	<.03	<.01	<.03	<.003

Date	HYDROXY ATRA-ZINE WATER FLTRD REC (UG/L) (50355)	IMAZ-AQUIN WATER FLTRD REC (UG/L) (50356)	IMAZE-THAPYR WATER FLTRD REC (UG/L) (50407)	IMID-ACLOP-RID WATER FLTRD REC (UG/L) (61695)	LINDANE DIS-SOLVED (UG/L) (39341)	LINURON WATER, FLTRD, GF 0.7U REC (UG/L) (38478)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	MCPA, WATER, FLTRD, GF 0.7U REC (UG/L) (38482)	MCPB, WATER, FLTRD, GF 0.7U REC (UG/L) (38487)	METAL-AXYL WATER FLTRD REC (UG/L) (50359)	METHIO-CARB, WATER, FLTRD, GF 0.7U REC (UG/L) (38501)	METH-OMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (49296)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	<.008	<.02	<.02	<.007	<.004	<.01	<.035	<.027	<.02	<.01	<.02	<.008	<.004

Date	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MET-SUL-FURON METHYL WAT FLT REC (UG/L) (61697)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	NEB-URON, WATER, FLTRD, GF 0.7U REC (UG/L) (49294)	NICOSUL FURON WATER FLTRD REC (UG/L) (50364)	NORFLUR AZON, WATER, FLTRD, GF 0.7U REC (UG/L) (49293)	ORY-ZALIN, WATER, FLTRD, GF 0.7U REC (UG/L) (49292)	OXAMYL, WATER, FLTRD, GF 0.7U REC (UG/L) (38866)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	<.006	<.013	<.006	<.03	<.002	<.007	<.01	<.01	<.02	<.02	<.01	<.003	<.010

Date	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PIC-LORAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49291)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRO-PHAM, WATER, FLTRD, GF 0.7U REC (UG/L) (49236)	PROP-ICONA-ZOLE , WATER FLTRD REC (UG/L) (50471)	PRO-POXUR, WATER, FLTRD, GF 0.7U REC (UG/L) (38538)	SIDURON WATER FLTRD REC (UG/L) (38548)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	<.004	<.022	<.006	<.011	<.02	<.004	<.010	<.011	<.02	<.010	<.02	<.008	<.02

Date	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	SULFO-MET-RURON METHYL WTR FLT REC (UG/L) (50337)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL, WATER, DISS, REC (UG/L) (04032)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-BENURON METHYL WATER FLTRD (UG/L) (61159)	TRI-CLOPYR, WATER, FLTRD, GF 0.7U REC (UG/L) (49235)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	UREA 3(4-CHLOR OPHENYL METHYL WAT FLT REC (UG/L) (61692)	2,4-D METHYL ESTER, WATER FLTRD REC (UG/L) (50470)
JUN 18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG a20...	<.005	<.009	<.02	<.010	<.034	<.02	<.005	<.002	--u	<.02	<.009	<.02	<.009

480220103500800 LAKE TRENTON INFLOW DITCH--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	2,4-D, DIS-SOLVED (UG/L) (39732)	2,4-DB WATER, FLTRD, GF 0.7U REC (UG/L) (38746)
JUN		
18...	--	--
AUG		
a0...	E.01	<.02

a Quality assurance samples collected with this sample
< Less than
> Greater than
E Estimated value
u Unable to determine-matrix interference

ANALYSES OF SAMPLES COLLECTED AT LAKE SAKAKAWEA WATER-QUALITY SITES

473633101161400 LAKE SAKAKAWEA NEAR LAKE AUDUBON

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTER-VAL(IN METERS) (82047)	DEPTH TO BOT-TOM OF SAMPLE INTER-VAL(IN METERS) (82048)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
NOV													
02...	1125	.0	.50	666	8.5	210	49.6	21.5	4.06	2	59.4	37	175
02...	1130	12.5	13.0	691	8.4	220	49.8	22.5	4.18	2	63.6	38	180
02...	1135	.0	1.0	--	--	--	--	--	--	--	--	--	--
20...	1010	.0	.30	635	8.4	210	51.0	20.9	3.94	2	54.2	35	180
20...	1015	17.0	17.3	642	8.4	220	51.7	21.4	3.98	2	54.7	35	180
20...	1020	.0	3.0	--	--	--	--	--	--	--	--	--	--
FEB													
08...	1130	.70	1.7	659	8.3	210	50.7	20.7	3.85	2	56.9	36	173
08...	1135	16.0	17.0	1050	7.9	310	75.7	28.8	4.49	3	108	43	250
08...	1140	8.0	9.0	--	--	--	--	--	--	--	--	--	--
28...	1150	.50	1.0	666	8.3	210	49.7	20.4	3.90	2	56.2	36	172
28...	1155	12.5	13.0	--	--	--	--	--	--	--	--	--	--
28...	1200	8.0	9.0	671	8.3	210	50.5	20.5	3.92	2	57.9	37	173
MAR													
26...	1015	.60	1.1	672	8.3	220	53.4	21.2	3.96	2	59.1	36	172
26...	1020	11.0	11.5	671	8.3	210	51.4	20.4	3.77	2	58.8	37	174
26...	1025	14.0	14.5	989	7.8	310	75.7	28.2	4.57	2	98.8	41	237
26...	1030	16.2	16.7	1380	7.6	400	100	35.7	5.24	3	155	45	316
26...	1035	.0	2.5	--	--	--	--	--	--	--	--	--	--
APR													
26...	0945	.0	.30	609	8.4	200	48.6	19.7	3.51	2	54.8	37	159
26...	0950	14.7	15.0	616	8.4	200	48.8	19.8	3.74	2	54.7	36	159
26...	0955	.0	1.5	--	--	--	--	--	--	--	--	--	--
MAY													
13...	1140	.0	.50	560	8.3	210	49.3	19.9	3.81	2	54.5	36	164
13...	1145	16.0	16.5	623	8.4	200	49.4	19.7	3.76	2	53.3	36	164
13...	1150	.0	2.5	--	--	--	--	--	--	--	--	--	--
JUL													
02...	1115	.0	.50	646	8.3	210	49.0	20.6	4.07	2	58.3	37	165
02...	1120	16.5	17.0	--	--	--	--	--	--	--	--	--	--
02...	1125	.0	1.6	660	8.1	210	50.5	20.7	4.19	2	60.8	38	170
24...	1130	.0	.50	635	8.4	220	52.4	21.0	4.12	2	61.5	38	167
24...	1135	12.5	13.0	638	8.3	220	52.9	20.8	4.24	2	61.3	37	168
24...	1140	.0	2.5	--	--	--	--	--	--	--	--	--	--

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV													
02...	9.37	.6	6.3	161	.25	<.04	<.008	E.03	--	--	<.02	<.06	4.9
02...	9.55	.6	6.2	169	.27	<.04	<.008	E.03	--	--	<.02	<.06	4.3
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	9.06	.6	6.6	155	.21	<.04	<.008	E.03	--	--	<.02	<.06	4.8
20...	9.21	.6	6.6	157	.22	<.04	<.008	E.03	--	--	<.02	<.06	6.3
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
08...	8.66	.6	6.8	160	.28	E.03	<.008	.05	--	.33	<.02	<.06	3.1
08...	9.76	.6	9.2	302	.42	.12	<.008	.08	.29	.49	<.02	<.06	4.5
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	9.29	.6	6.4	163	.24	<.04	<.008	E.04	--	--	<.02	<.06	3.6
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	9.43	.6	6.4	165	.30	<.04	<.008	E.04	--	--	<.02	<.06	3.9
MAR													
26...	8.79	.6	6.5	162	.22	<.04	<.008	E.04	--	--	<.02	<.06	3.5
26...	8.66	.6	6.4	163	.24	<.04	<.008	E.05	--	--	<.02	<.06	3.4
26...	9.58	.6	8.0	281	.27	E.02	<.008	.09	--	.36	<.02	<.06	4.6
26...	11.2	.6	10.9	422	.36	.06	<.008	.27	.31	.64	<.02	<.06	5.6
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
26...	7.48	.4	5.9	149	.23	<.04	<.008	E.04	--	--	<.02	<.06	3.0
26...	7.51	.5	5.9	150	.21	<.04	<.008	E.04	--	--	<.02	<.06	2.9
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
13...	8.88	.5	6.0	158	.24	<.04	<.008	E.04	--	--	<.02	<.06	3.1
13...	8.70	.6	5.9	157	.19	<.04	<.008	E.04	--	--	<.02	<.06	3.0
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
02...	9.17	.5	5.8	160	.18	<.04	<.008	<.05	--	--	<.02	<.06	3.9
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
02...	9.17	.6	6.3	163	.21	<.04	<.008	.06	--	.27	<.02	<.06	3.5
24...	9.65	.6	5.6	160	.21	.07	<.008	E.03	.13	--	<.02	<.06	4.2
24...	9.63	.6	5.8	161	.24	<.04	<.008	.05	--	.29	<.02	<.06	3.4
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

473633101161400 LAKE SAKAKAWEA NEAR LAKE AUDUBON--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAM-PLING DEPTH (M) (00098)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY FIELD WATER UNFLTRD (NTU) (61028)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	ICE THICK-NESS METERS (82131)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	TEMPER-ATURE AIR (DEG C) (00020)
NOV													
02...	1115	13	.0	684	8.1	7.2	11	12.5	110	717	--	20.4	13.0
02...	1116	--	1.0	690	8.2	7.2	14	11.0	--	--	--	--	--
02...	1117	--	2.0	690	8.2	7.2	12	10.9	--	--	--	--	--
02...	1118	--	4.0	694	8.2	7.1	12	10.8	--	--	--	--	--
02...	1119	--	6.0	698	8.2	7.0	14	10.8	--	--	--	--	--
02...	1120	--	8.0	705	8.2	6.8	15	10.8	--	--	--	--	--
02...	1121	--	10.0	707	8.2	6.6	16	10.8	--	--	--	--	--
02...	1122	--	12.0	713	8.1	6.5	17	10.7	--	--	--	--	--
02...	1123	--	13.0	714	8.1	6.5	19	10.7	--	--	--	--	--
20...	1000	17	.0	667	8.1	6.4	.0	11.5	100	711	--	58.8	7.5
20...	1001	--	2.0	670	8.2	6.4	2.0	11.4	--	--	--	--	--
20...	1002	--	4.0	668	8.2	6.6	2.0	11.0	--	--	--	--	--
20...	1003	--	6.0	669	8.2	6.6	1.0	10.9	--	--	--	--	--
20...	1004	--	8.1	669	8.2	6.5	2.0	10.7	--	--	--	--	--
20...	1005	--	10.1	669	8.2	6.5	4.0	10.8	--	--	--	--	--
20...	1006	--	12.1	669	8.2	6.5	6.0	10.7	--	--	--	--	--
20...	1007	--	15.0	675	8.2	6.3	2.0	10.7	--	--	--	--	--
20...	1008	--	17.3	676	8.2	6.3	1.0	10.8	--	--	--	--	--
FEB													
08...	1150	17	.70	693	7.9	.2	.0	15.2	112	712	.70	163	3.5
08...	1152	--	2.2	683	8.0	.5	.0	13.5	--	--	--	--	--
08...	1154	--	4.2	683	8.1	.5	.0	13.1	--	--	--	--	--
08...	1156	--	6.0	686	8.1	.5	.0	13.1	--	--	--	--	--
08...	1158	--	8.3	687	8.1	.5	.0	13.1	--	--	--	--	--
08...	1200	--	10.6	694	8.1	.5	.0	13.1	--	--	--	--	--
08...	1202	--	12.5	697	8.1	.7	.0	12.9	--	--	--	--	--
08...	1204	--	14.8	1250	7.5	1.8	.0	10.2	--	--	--	--	--
08...	1206	--	16.6	1510	7.2	2.7	.0	7.3	--	--	--	--	--
08...	1208	--	16.8	1600	7.1	2.9	.0	4.5	--	--	--	--	--
28...	1135	13	.0	693	7.6	1.6	.0	12.6	96	718	.55	184	--
28...	1136	--	1.2	681	7.9	1.8	.0	12.7	--	--	--	--	--
28...	1137	--	2.8	682	8.0	1.8	.0	13.1	--	--	--	--	--
28...	1138	--	4.1	680	8.1	1.8	.0	13.4	--	--	--	--	--
28...	1139	--	6.1	682	8.1	1.7	.0	13.6	--	--	--	--	--
28...	1140	--	8.2	689	8.1	1.6	.0	13.9	--	--	--	--	--
28...	1141	--	10.4	699	8.1	1.5	.0	13.4	--	--	--	--	--
28...	1142	--	12.5	705	8.1	1.5	.0	13.0	--	--	--	--	--
28...	1143	--	13.3	712	8.1	1.6	.0	13.1	--	--	--	--	--
MAR													
26...	1005	17	.60	701	8.2	.7	33	13.2	98	719	.60	12.4	-3.0
26...	1006	--	1.9	684	8.1	1.8	6.0	12.8	--	--	--	--	--
26...	1007	--	3.9	685	8.1	1.8	15	12.9	--	--	--	--	--
26...	1008	--	6.1	686	8.2	1.9	3.0	13.2	--	--	--	--	--
26...	1009	--	8.7	696	8.1	1.9	2.0	13.2	--	--	--	--	--
26...	1010	--	11.2	706	8.1	1.9	2.0	13.1	--	--	--	--	--
26...	1011	--	14.2	1390	7.4	2.9	3.0	6.6	--	--	--	--	--
26...	1012	--	16.2	1900	7.2	4.2	4.0	.8	--	--	--	--	--
26...	1013	--	16.7	2030	7.1	4.4	--	.3	--	--	--	--	--
APR													
26...	0930	15	.0	636	8.0	2.0	4.0	13.1	98	735	--	28.8	2.0
26...	0931	--	1.5	636	8.1	2.0	10	12.9	--	--	--	--	--
26...	0932	--	3.0	636	8.1	1.9	9.0	12.9	--	--	--	--	--
26...	0933	--	4.5	636	8.1	2.0	9.0	12.8	--	--	--	--	--
26...	0934	--	6.0	636	8.1	1.9	8.0	12.8	--	--	--	--	--
26...	0935	--	7.5	636	8.1	7.1	9.0	12.8	--	--	--	--	--
26...	0936	--	9.0	639	8.1	2.4	8.0	12.7	--	--	--	--	--
26...	0937	--	10.5	639	8.1	2.4	9.0	12.7	--	--	--	--	--
26...	0938	--	12.0	640	8.1	2.5	9.0	12.7	--	--	--	--	--
26...	0939	--	13.5	641	8.1	2.6	9.0	12.7	--	--	--	--	--
26...	0940	--	15.0	642	8.1	2.7	10	12.6	--	--	--	--	--
MAY													
13...	1116	17	.0	656	8.0	6.2	.0	11.6	99	725	--	46.8	11.0
13...	1118	--	2.0	655	8.0	6.1	2.0	11.2	--	--	--	--	--
13...	1120	--	4.0	658	8.1	6.0	2.0	11.2	--	--	--	--	--
13...	1122	--	6.0	659	8.1	6.0	2.0	10.9	--	--	--	--	--
13...	1124	--	8.0	659	8.1	5.9	2.0	11.2	--	--	--	--	--
13...	1126	--	10.0	660	8.1	5.8	1.0	10.9	--	--	--	--	--
13...	1128	--	12.0	659	8.1	5.8	1.0	11.2	--	--	--	--	--
13...	1130	--	14.0	655	8.1	5.7	1.0	11.0	--	--	--	--	--
13...	1132	--	16.0	654	8.1	5.6	1.0	11.1	--	--	--	--	--
13...	1134	--	16.7	654	8.2	5.6	--	11.0	--	--	--	--	--

473633101161400 LAKE SAKAKAWEA NEAR LAKE AUDUBON--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	WIND DIRECTION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)
NOV		
02...	240	6.0
02...	--	--
02...	--	--
02...	--	--
02...	--	--
02...	--	--
02...	--	--
02...	--	--
02...	--	--
20...	220	7.0
20...	--	--
20...	--	--
20...	--	--
20...	--	--
20...	--	--
20...	--	--
20...	--	--
20...	--	--
FEB		
08...	60	6.0
08...	--	--
08...	--	--
08...	--	--
08...	--	--
08...	--	--
08...	--	--
08...	--	--
08...	--	--
08...	--	--
28...	0	12
28...	--	--
28...	--	--
28...	--	--
28...	--	--
28...	--	--
28...	--	--
28...	--	--
28...	--	--
MAR		
26...	170	9.0
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
APR		
26...	70	<5.0
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
26...	--	--
MAY		
13...	330	<5.0
13...	--	--
13...	--	--
13...	--	--
13...	--	--
13...	--	--
13...	--	--
13...	--	--
13...	--	--
13...	--	--

473633101161400 LAKE SAKAKAWEA NEAR LAKE AUDUBON--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAM-PLING DEPTH (M) (00098)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY FIELD WATER UNFLTRD (NTU) (61028)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	TEMPER-ATURE AIR (DEG C) (00020)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)	WIND SPEED (MILES PER HOUR) (00035)
JUL														
02...	1100	18	.0	661	8.2	21.0	--	8.4	100	717	32.0	22.0	220	7.0
02...	1101	--	1.0	661	8.2	21.0	--	8.3	--	--	--	--	--	--
02...	1102	--	2.1	662	8.2	20.9	--	8.3	--	--	--	--	--	--
02...	1103	--	3.5	662	8.2	20.8	--	8.3	--	--	--	--	--	--
02...	1104	--	5.1	663	8.2	20.8	--	8.3	--	--	--	--	--	--
02...	1105	--	7.0	663	8.2	20.7	--	8.3	--	--	--	--	--	--
02...	1106	--	9.2	665	8.2	19.2	--	8.4	--	--	--	--	--	--
02...	1107	--	11.2	665	8.1	16.5	--	8.7	--	--	--	--	--	--
02...	1108	--	13.2	670	7.9	13.1	--	8.4	--	--	--	--	--	--
02...	1109	--	16.0	672	7.8	12.2	--	8.1	--	--	--	--	--	--
02...	1110	--	17.6	674	7.8	12.1	--	7.9	--	--	--	--	--	--
24...	1100	13	.0	626	8.2	21.2	48	8.4	101	715	48.0	24.0	30	<5.0
24...	1102	--	1.0	627	8.2	21.2	44	8.7	--	--	--	--	--	--
24...	1104	--	2.0	627	8.2	21.2	39	8.7	--	--	--	--	--	--
24...	1106	--	3.0	627	8.2	21.1	32	8.7	--	--	--	--	--	--
24...	1108	--	4.0	628	8.2	21.1	29	8.6	--	--	--	--	--	--
24...	1110	--	5.0	627	8.2	21.1	25	8.3	--	--	--	--	--	--
24...	1112	--	6.0	627	8.2	21.0	20	8.3	--	--	--	--	--	--
24...	1114	--	7.0	629	8.2	20.9	18	8.1	--	--	--	--	--	--
24...	1116	--	8.0	627	8.2	20.6	15	8.0	--	--	--	--	--	--
24...	1118	--	10.0	629	8.1	19.7	15	8.0	--	--	--	--	--	--
24...	1120	--	12.0	631	8.1	18.9	16	7.9	--	--	--	--	--	--
24...	1122	--	13.1	637	8.0	18.3	--	7.5	--	--	--	--	--	--

< Less than
E Estimated value
b Value was extrapolated below
n Below the non-detection value

473629101154100 LAKE AUDUBON NEAR SNAKE CREEK PUMP PLANT

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH TO TOP OF SAMPLE INTER-VAL(IN METERS) (82047)	DEPTH TO BOT-TOM OF SAMPLE INTER-VAL(IN METERS) (82048)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ANC UNFLTRD TIT 4.5 LAB (MG/L AS CACO3) (90410)
NOV													
02...	1220	.0	--	959	8.5	260	41.2	37.2	6.37	3	113	48	243
02...	1225	16.0	--	960	8.6	260	41.1	37.2	6.44	3	113	48	231
02...	1230	.0	4.0	--	--	--	--	--	--	--	--	--	--
20...	1125	.0	.50	938	8.6	250	39.3	36.0	6.14	3	108	48	243
20...	1130	15.6	15.9	939	8.6	250	39.3	36.1	6.34	3	109	48	243
20...	1135	.0	8.5	--	--	--	--	--	--	--	--	--	--
JAN													
09...	1030	.0	.50	1010	8.5	260	41.1	38.5	6.31	3	115	48	238
09...	1035	10.3	10.8	1010	8.5	260	41.2	38.5	6.50	3	113	48	235
09...	1040	.0	10.8	--	--	--	--	--	--	--	--	--	--

Date	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
NOV													
02...	13.9	.5	3.1	260	.53	<.04	<.008	E.02	<.02	<.06	6.3	644	621
02...	13.4	.6	3.2	262	.51	<.04	<.008	<.05	<.02	<.06	7.5	644	615
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	12.9	.7	3.3	262	.48	E.03	<.008	<.05	<.02	<.06	7.6	632	614
20...	13.0	.6	3.4	264	.52	E.03	<.008	<.05	<.02	<.06	6.0	648	617
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	14.1	.6	2.9	291	.48	E.03	<.008	E.03	<.02	<.06	6.0	656	652
09...	14.1	.7	2.8	289	.50	E.03	<.008	E.03	.06	.07	5.9	678	647
09...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
NOV				
02...	--	--	<10	E1.4
02...	--	--	<10	E1.1
02...	E1.1	<.1	--	--
20...	--	--	<10	E1.7
20...	--	--	<10	E2.6
20...	.7	.2	--	--
JAN				
09...	--	--	<10	E1.9
09...	--	--	<10	E3.1
09...	E.3	<.1	--	--

ANALYSES OF SAMPLES COLLECTED AT LAKE SAKAKAWEA WATER-QUALITY SITES

473629101154100 LAKE AUDUBON NEAR SNAKE CREEK PUMP PLANT--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	DEPTH OF LAKE MAX. METERS (85310)	SAM-PLING DEPTH (M) (00098)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY FIELD WATER UNFLTRD (NTU) (61028)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	TEMPER-ATURE AIR (DEG C) (00020)	WIND DIREC-TION (DEG. FROM TRUE NORTH) (00036)
NOV													
02...	1210	16	.0	988	8.3	5.0	.0	11.6	97	716	84.0	13.0	180
02...	1211	--	1.0	988	8.3	4.9	.0	11.1	--	--	--	--	--
02...	1212	--	2.0	988	8.3	4.9	.0	11.1	--	--	--	--	--
02...	1213	--	4.0	989	8.3	4.9	.0	10.6	--	--	--	--	--
02...	1214	--	6.0	988	8.3	4.9	.0	10.9	--	--	--	--	--
02...	1215	--	8.0	988	8.3	4.9	.0	11.0	--	--	--	--	--
02...	1216	--	10.0	989	8.3	4.9	.0	11.0	--	--	--	--	--
02...	1217	--	12.0	990	8.3	4.9	.0	11.0	--	--	--	--	--
02...	1218	--	14.0	990	8.3	4.9	.0	11.0	--	--	--	--	--
02...	1219	--	16.1	990	8.3	4.8	.0	10.9	--	--	--	--	--
20...	1110	16	.0	995	8.4	4.2	.0	11.7	96	712	169	8.5	225
20...	1111	--	1.5	995	8.4	4.2	.0	11.7	--	--	--	--	--
20...	1112	--	3.0	996	8.4	4.2	.0	11.6	--	--	--	--	--
20...	1113	--	4.5	996	8.4	4.2	.0	11.6	--	--	--	--	--
20...	1114	--	6.0	996	8.4	4.2	.0	11.6	--	--	--	--	--
20...	1115	--	7.5	995	8.4	4.2	.0	11.4	--	--	--	--	--
20...	1116	--	9.0	997	8.4	4.2	.0	11.4	--	--	--	--	--
20...	1117	--	10.5	995	8.4	4.2	.0	11.5	--	--	--	--	--
20...	1118	--	12.0	995	8.4	4.2	.0	11.4	--	--	--	--	--
20...	1119	--	13.6	996	8.4	4.2	.0	11.5	--	--	--	--	--
20...	1120	--	15.0	995	8.4	4.2	.0	11.4	--	--	--	--	--
20...	1121	--	15.9	996	8.4	4.2	.0	11.2	--	--	--	--	--
JAN													
09...	1015	11	.0	1160	7.6	1.2	.0	16.0	122	710	425	3.0	255
09...	1016	--	1.1	1070	7.9	1.5	.0	14.3	--	--	--	--	--
09...	1017	--	2.7	1060	8.0	1.5	.0	14.8	--	--	--	--	--
09...	1018	--	3.8	1060	8.0	1.5	.0	14.9	--	--	--	--	--
09...	1019	--	4.9	1050	8.0	1.6	.0	14.9	--	--	--	--	--
09...	1020	--	6.0	1050	8.0	1.6	.0	15.2	--	--	--	--	--
09...	1021	--	7.6	1050	8.0	1.8	.0	14.7	--	--	--	--	--
09...	1022	--	8.9	1050	8.0	1.8	.0	15.5	--	--	--	--	--
09...	1023	--	10.1	1050	8.0	1.9	.0	16.2	--	--	--	--	--
09...	1024	--	10.8	1050	8.0	1.9	.0	16.2	--	--	--	--	--

Date	WIND SPEED (MILES PER HOUR) (00035)
NOV	
02...	<5.0
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
02...	--
20...	7.0
20...	--
20...	--
20...	--
20...	--
20...	--
20...	--
20...	--
20...	--
20...	--
20...	--
20...	--
20...	--
JAN	
09...	<5.0
09...	--
09...	--
09...	--
09...	--
09...	--
09...	--
09...	--
09...	--
09...	--
09...	--

< Less than
E Estimated value

RED RIVER OF THE NORTH BASIN

484714097442301 ICELANDIC STATE PARK, ND
(National Trends Network precipitation-quality station)

LOCATION.--Lat 48°47'14", long 97°44'23", in $SW^1/_4NW^1/_4SW^1/_4$ sec. 10, T.161 N., R.55 W., Pembina County, Hydrologic Unit 09020313, at Icelandic State Park 5.6 mi west of Cavalier.

PERIOD OF RECORD.--October 1983 to current year (weekly composite).

INSTRUMENTATION.--The composite sample collector is an Aerochem Metrics[1] model 301 wet/dry precipitation collector mounted on ground surface. Precipitation quantity is determined by a Belfort[1] model 5-780 recording rain gage equipped with an event recorder and an Alter-type wind screen. The recording rain gage is installed 20 ft east of the sample collector with gage mouth and collector bucket elevations of 50.75 in above land surface.

REMARKS.--Data presented are provisional analyses by the Central Analytical Laboratory of the Illinois State Water Survey and have not completed quality-assurance review by the National Atmospheric Deposition Program. Analyses are determined from water taken from the sample collector.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PERIOD OF COLLECTION	PRECIP-ITATION TOTAL INCHES/ WEEK (00046)	COL-LECTOR EFFI-CIENCY WET DEPOS. PERCENT (82284)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
09/25 to 10/02	b.00	--	--	--	--	--	--	--
10/02 to 10/09	.04	125	--	36	--	6.7	2.11	.202
10/09 to 10/16	.79	99	5	4	5.1	5.9	.064	.013
10/16 to 10/23	.15	73	16	15	6.2	6.6	.501	.112
10/23 to 10/30	--	--	4	4	5.5	6.0	.126	.036
10/30 to 11/06	.05	40	--	a16	--	a5.8	a.425	a.043
11/06 to 11/13	.06	133	--	10	--	5.4	.184	.031
11/13 to 11/20	b.00	--	--	--	--	--	--	--
11/20 to 11/26	.10	40	--	9	--	5.7	.183	.036
11/26 to 12/04	.10	20	--	--	--	--	--	--
12/04 to 12/11	.52	37	--	4	5.6	5.6	.037	.009
12/11 to 12/18	.10	10	--	a17	--	a5.4	a.136	a<.013
12/18 to 12/25	.25	20	--	15	--	6.0	.463	.058
12/25 to 01/01	<.01	--	--	--	--	--	--	--
01/01 to 01/08	b.00	--	--	--	--	--	--	--
01/08 to 01/15	.05	--	--	--	--	--	--	--
01/15 to 01/22	b<.01	100	--	6	--	5.5	--	--
01/22 to 01/29	<.01	>100	--	a9	--	a5.0	a.151	a.024
01/29 to 02/05	b.00	--	--	--	--	--	--	--
02/05 to 02/12	b<.01	100	--	--	--	--	--	--
02/12 to 02/19	.00	--	--	--	--	--	--	--
02/19 to 02/26	.00	--	--	--	--	--	--	--
02/26 to 03/05	b.05	<20	--	--	--	--	--	--
03/05 to 03/12	.38	8	--	4	--	5.9	.240	.032
03/12 to 03/19	.19	53	20	21	5.1	6.2	.660	.091
03/19 to 03/26	b<.01	100	--	--	--	--	--	--
03/26 to 04/02	.00	--	--	--	--	--	--	--
04/02 to 04/09	<.01	>200	--	a50	--	a7.2	a4.82	a.581
04/09 to 04/16	b<.01	100	--	19	--	6.6	--	--
04/16 to 04/23	.10	90	--	10	--	6.4	.463	.037
04/23 to 04/30	.45	93	9	9	5.6	6.5	.293	.064
04/30 to 05/07	.30	87	--	11	--	6.4	.284	.047
05/07 to 05/14	1.41	81	5	4	--	5.9	.083	.014
05/14 to 05/21	b.00	--	--	--	--	--	--	--
05/21 to 05/28	.25	92	13	13	--	6.6	.516	.083
05/28 to 06/03	.05	80	--	43	--	7.0	2.19	.460
06/03 to 06/11	6.2	97	7	6	5.4	6.1	.211	.016
06/11 to 06/18	.43	93	5	5	5.8	6.2	.054	.016
06/18 to 06/25	1.94	101	7	7	5.5	6.1	.193	.023
06/25 to 07/02	b<.01	100	--	--	--	--	--	--
07/02 to 07/09	.45	104	13	13	--	6.1	.440	.074
07/09 to 07/16	.05	140	--	10	--	5.1	.235	.051
07/16 to 07/23	.09	100	21	22	--	6.6	.662	.169
07/23 to 07/30	.37	92	--	9	--	5.9	.281	.072
07/30 to 08/06	.14	100	11	11	6.0	6.1	.426	.088
08/06 to 08/13	1.8	98	8	8	5.5	5.9	.216	.049
08/13 to 08/20	.75	97	5	5	5.8	5.8	.109	.019
08/20 to 08/27	.70	91	7	7	6.2	6.1	.198	.050
08/27 to 09/03	3.13	99	6	7	5.8	5.9	.117	.020
09/03 to 09/10	.05	120	--	27	--	6.4	1.39	.132
09/10 to 09/17	b.00	--	--	--	--	--	--	--
09/17 to 09/24	2.8	102	6	7	5.8	6.0	.189	.027

RED RIVER OF THE NORTH BASIN

484714097442301 ICELANDIC STATE PARK, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PERIOD OF COLLECTION	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
09/25 to 10/02	--	--	--	--	--	--	--
10/02 to 10/09	.116	.201	3.5	.13	1.18	1.82	<.003
10/09 to 10/16	.007	<.003	.32	.02	.069	.170	<.003
10/16 to 10/23	.030	.070	1.6	.10	.312	.940	<.003
10/23 to 10/30	.005	.012	.26	.02	.085	.190	<.003
10/30 to 11/06	a.066	a .034	a1.9	a.15	a.741	a1.03	a<.009
11/06 to 11/13	.021	.022	1.5	.08	.354	.590	<.003
11/13 to 11/20	--	--	--	--	--	--	--
11/20 to 11/26	.038	.022	.96	.06	.304	.390	<.003
11/26 to 12/04	--	--	--	--	--	--	--
12/04 to 12/11	.007	.006	.27	.03	.147	.170	<.003
12/11 to 12/18	a.013	a<.013	a1.4	a.07	a1.10	a1.26	a<.013
12/18 to 12/25	.028	.020	1.2	.05	.879	.900	<.003
12/25 to 01/01	--	--	--	--	--	--	--
01/01 to 01/08	--	--	--	--	--	--	--
01/08 to 01/15	--	--	--	--	--	--	--
01/15 to 01/22	--	--	--	--	--	--	--
01/22 to 01/29	a<.018	a<.018	a<.06	a.09	a.377	a<.090	a<.018
01/29 to 02/05	--	--	--	--	--	--	--
02/05 to 02/12	--	--	--	--	--	--	--
02/12 to 02/19	--	--	--	--	--	--	--
02/19 to 02/26	--	--	--	--	--	--	--
02/26 to 03/05	--	--	--	--	--	--	--
03/05 to 03/12	.016	.011	.25	.04	.082	.090	<.003
03/12 to 03/19	.042	.020	2.1	.12	.940	1.18	<.003
03/19 to 03/26	--	--	--	--	--	--	--
03/26 to 04/02	--	--	--	--	--	--	--
04/02 to 04/09	a1.09	a.440	a5.3	a.32	a.826	a1.37	a<.011
04/09 to 04/16	--	--	--	--	--	--	--
04/16 to 04/23	.032	.101	.31	.05	.165	.300	<.003
04/23 to 04/30	.022	.025	.72	.04	.226	.690	<.003
04/30 to 05/07	.078	.013	.94	.04	.232	.780	<.003
05/07 to 05/14	.015	.010	.36	.02	.121	.230	<.003
05/14 to 05/21	--	--	--	--	--	--	--
05/21 to 05/28	.025	.042	.78	.04	.362	.900	<.003
05/28 to 06/03	.485	.267	3.9	.21	1.39	2.10	<.003
06/03 to 06/11	.018	.029	.60	.03	.154	.370	<.003
06/11 to 06/18	<.003	.006	.38	<.005	.104	.410	<.003
06/18 to 06/25	.027	.024	.52	.04	.273	.470	<.003
06/25 to 07/02	--	--	--	--	--	--	--
07/02 to 07/09	.051	.063	.86	.09	.415	.830	<.003
07/09 to 07/16	.030	.038	.59	.25	.379	.360	<.003
07/16 to 07/23	.039	.059	1.9	.12	.711	1.39	<.003
07/23 to 07/30	.014	.020	1.1	.03	.220	.490	<.003
07/30 to 08/06	.023	.064	.93	.08	.410	.610	<.003
08/06 to 08/13	.013	.035	.91	.04	.286	.470	<.003
08/13 to 08/20	.010	.019	.40	.02	.163	.260	<.003
08/20 to 08/27	.010	.034	.48	.04	.286	.430	<.003
08/27 to 09/03	.008	.018	.69	.03	.244	.440	<.003
09/03 to 09/10	.072	.230	3.8	.17	.897	1.25	<.003
09/10 to 09/17	--	--	--	--	--	--	--
09/17 to 09/24	.007	.015	.81	.02	.193	.430	<.003

1 The use of brand names in this report is for identification purposes only and does not imply endorsement by the U.S. Geological Survey.

a To provide for an adequate sample, 50 milliliters of dilution water was added.

b Trace of water collected in field sampler.

< Less than.

JAMES RIVER BASIN

470732099140204 WOODWORTH, ND
(National Trends Network precipitation-quality station)

LOCATION.--Lat 47°14'32", long 99°14'02", in SE$^{1}/_{4}$SW$^{1}/_{4}$SW$^{1}/_{4}$ sec.12, T.142 N., R.68 W., Stutsman County, Hydrologic Unit 10160002, at U.S. Fish and Wildlife Service Northern Prairie Wildlife Research Center, at Woodworth Experiment Station 2.8 mi east and 1 mi south of Woodworth.

PERIOD OF RECORD.--November 1983 to current year (weekly composite).

INSTRUMENTATION.--The composite sample collector is an Aerochem Metrics[1] model 301 wet/dry precipitation collector mounted on ground surface. Precipitation quantity is determined by a Belfort[1] model 5-780 recording rain gage equipped with an event recorder and an Alter-type wind screen. The recording rain gage is installed 17 ft east of the sample collector with gage mouth and collector bucket elevations of 50.75 in above land surface.

REMARKS.--The station is located 300 ft west of an event sample-collection station which was operated by the North Dakota State Health Department (station discontinued 1987). Continuously recording meteorological instrumentation for air temperature, wind speed, and wind direction were installed 9.8 ft above land surface at the event station. Data presented are provisional analyses by the Central Analytical Laboratory of the Illinois State Water Survey and have not completed quality-assurance review by the National Atmospheric Deposition Program. Analyses are determined from water taken from the sample collector.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PERIOD OF COLLECTION	PRECIP-ITATION TOTAL INCHES/ WEEK (00046)	COL-LECTOR EFFI-CIENCY WET DEPOS. PERCENT (82284)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	SPE-CIFIC CON-DUCT-ANCE LAB (US/CM) (90095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	PH WATER WHOLE LAB (STAND-ARD UNITS) (00403)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
09/25 to 10/02	.00	--	--	--	--	--	--	--
10/02 to 10/09	.05	60	--	38	--	6.6	1.75	.169
10/09 to 10/16	1.08	84	4	5	5.3	5.6	.135	.023
10/16 to 10/23	b.00	--	--	--	--	--	--	--
10/23 to 10/30	--	--	7	8	6.2	6.5	.487	.105
10/30 to 11/06	b.01	<100	--	20	--	6.2	--	--
11/06 to 11/13	.05	100	34	33	4.8	5.0	.900	.137
11/13 to 11/20	.00	--	--	--	--	--	--	--
11/20 to 11/27	b.00	--	--	--	--	--	--	--
11/27 to 12/04	b.03	<33	--	--	--	--	--	--
12/04 to 12/11	.04	100	--	21	--	5.0	.146	.013
12/11 to 12/18	b.02	<50	--	45	--	6.4	--	--
12/18 to 12/25	.10	30	--	--	--	--	--	--
12/25 to 01/01	b.00	--	--	--	--	--	--	--
01/01 to 01/08	b.00	--	--	--	--	--	--	--
01/08 to 01/15	.05	40	--	a10	--	a5.3	a.176	a.019
01/15 to 01/22	b.00	--	--	--	--	--	--	--
01/22 to 01/29	.02	100	--	a3	--	a5.4	a.046	a<.012
01/29 to 02/05	b.01	<100	--	--	--	--	--	--
02/05 to 02/12	b.01	<100	--	--	--	--	--	--
02/12 to 02/19	b.00	--	--	--	--	--	--	--
02/19 to 02/26	b.02	<50	--	--	--	--	--	--
02/26 to 03/05	b.03	<33	--	--	--	--	--	--
03/05 to 03/12	b.06	<17	--	--	--	--	--	--
03/12 to 03/19	b.09	<11	--	28	--	6.2	--	--
03/19 to 03/26	b.00	--	--	--	--	--	--	--
03/26 to 04/02	.18	78	5	5	5.9	6.0	.095	.010
04/02 to 04/09	.05	20	--	a13	--	a6.1	a.303	a.034
04/09 to 04/16	.18	83	14	13	5.9	6.5	.371	.043
04/16 to 04/23	.76	86	8	9	5.8	6.6	.308	.036
04/23 to 04/30	.16	69	13	14	5.4	6.4	.307	.051
04/30 to 05/07	.04	200	15	9	6.0	6.5	.336	.064
05/07 to 05/14	.34	97	13	12	6.4	6.7	.765	.086
05/14 to 05/21	b.01	<100	--	--	--	--	--	--
05/21 to 05/28	.24	83	25	24	6.4	6.9	1.02	.180
05/28 to 06/04	.10	100	27	26	6.3	6.7	1.20	.166
06/04 to 06/11	.25	104	21	22	6.4	6.6	.686	.087
06/11 to 06/18	.04	75	--	12	--	6.2	.279	.061
06/18 to 06/25	.80	105	12	12	6.2	6.2	.347	.035
06/25 to 07/02	b.01	<100	--	43	--	6.4	--	--
07/02 to 07/09	1.7	101	8	8	6.5	6.2	.246	.033
07/09 to 07/16	.75	88	7	5	6.6	5.9	.060	.013
07/16 to 07/23	.23	100	15	15	6.4	6.4	.555	.105
07/23 to 07/30	.41	102	12	10	6.5	6.3	.309	.069
07/30 to 08/06	.17	124	13	11	6.7	6.4	.328	.051
08/06 to 08/13	.77	84	13	12	6.9	6.3	.431	.076
08/13 to 08/20	.23	91	12	10	7.2	6.5	.418	.081
08/20 to 08/27	.02	100	--	a27	--	a6.4	a.553	a.133
08/27 to 09/03	.55	91	11	10	6.4	5.8	.240	.033
09/03 to 09/10	.31	106	4	3	6.4	5.5	.019	<.003
09/10 to 09/17	.00	--	--	--	--	--	--	--
09/17 to 09/24	.10	90	18	17	6.4	6.5	.718	.098

JAMES RIVER BASIN

470732099140204 WOODWORTH, ND--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

PERIOD OF COLLECTION	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
09/25 to 10/02	--	--	--	--	--	--	--
10/02 to 10/09	.180	.370	4.1	.25	1.44	1.27	.006
10/09 to 10/16	.032	.013	.54	.02	.100	.180	<.003
10/16 to 10/23	--	--	--	--	--	--	--
10/23 to 10/30	.046	.092	.65	.08	.167	.360	<.003
10/30 to 11/06	--	--	--	--	--	--	--
11/06 to 11/13	.147	.080	5.1	.22	1.18	1.47	<.003
11/13 to 11/20	--	--	--	--	--	--	--
11/20 to 11/27	--	--	--	--	--	--	--
11/27 to 12/04	--	--	--	--	--	--	--
12/04 to 12/11	.019	.031	1.9	.06	1.18	1.35	<.003
12/11 to 12/18	--	--	--	--	--	--	--
12/18 to 12/25	--	--	--	--	--	--	--
12/25 to 01/01	--	--	--	--	--	--	--
01/01 to 01/08	--	--	--	--	--	--	--
01/08 to 01/15	a.035	a.013	a.99	a.08	a.409	a.480	a<.009
01/15 to 01/22	--	--	--	--	--	--	--
01/22 to 01/29	a<.012	a<.012	a.13	a.06	a.106	a<.060	a<.012
01/29 to 02/05	--	--	--	--	--	--	--
02/05 to 02/12	--	--	--	--	--	--	--
02/12 to 02/19	--	--	--	--	--	--	--
02/19 to 02/26	--	--	--	--	--	--	--
02/26 to 03/05	--	--	--	--	--	--	--
03/05 to 03/12	--	--	--	--	--	--	--
03/12 to 03/19	--	--	--	--	--	--	--
03/19 to 03/26	--	--	--	--	--	--	--
03/26 to 04/02	.022	.009	.52	.03	.148	.310	<.003
04/02 to 04/09	a.082	a.058	a1.2	a.16	a.587	a.780	a<.014
04/09 to 04/16	.061	.026	.97	.07	.395	.880	<.003
04/16 to 04/23	.042	.024	.49	.05	.211	.600	<.003
04/23 to 04/30	.047	.032	1.7	.05	.502	1.01	<.003
04/30 to 05/07	.111	.032	.86	.05	.219	.580	<.003
05/07 to 05/14	.083	.049	.95	.08	.450	.570	<.003
05/14 to 05/21	--	--	--	--	--	--	--
05/21 to 05/28	.046	.125	1.3	.08	.649	1.47	<.003
05/28 to 06/04	.204	.109	2.0	.23	.924	1.51	<.003
06/04 to 06/11	.081	.077	2.0	.12	.663	1.53	<.003
06/11 to 06/18	.022	.090	1.0	1.7	.465	.840	<.003
06/18 to 06/25	.060	.080	.73	.09	.384	.570	<.003
06/25 to 07/02	--	--	--	--	--	--	--
07/02 to 07/09	.031	.035	.54	.06	.275	.430	<.003
07/09 to 07/16	.010	.011	.35	.03	.127	.330	<.003
07/16 to 07/23	.028	.059	1.4	.07	.591	.920	<.003
07/23 to 07/30	.023	.029	.64	.04	.326	.640	<.003
07/30 to 08/06	.029	.056	.78	.06	.415	.780	<.003
08/06 to 08/13	.063	.071	1.2	.05	.384	.690	<.003
08/13 to 08/20	.026	.058	.76	.06	.335	.540	<.003
08/20 to 08/27	a.063	a.081	a2.4	a.16	a.768	a1.94	a<.011
08/27 to 09/03	.020	.033	1.2	.06	.419	.610	<.003
09/03 to 09/10	<.003	<.003	.06	.02	.058	.070	<.003
09/10 to 09/17	--	--	--	--	--	--	--
09/17 to 09/24	.068	.100	1.9	.09	.578	.970	<.003

1 The use of brand names in this report is for identification purposes only and does not imply endorsement by the U.S. Geological Survey.

a To provide for an adequate sample, 50 milliliters of dilution water was added.

b Trace of water collected in field sampler.

< Less than.

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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton