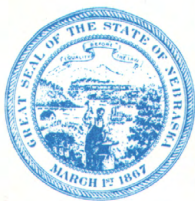
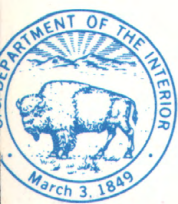
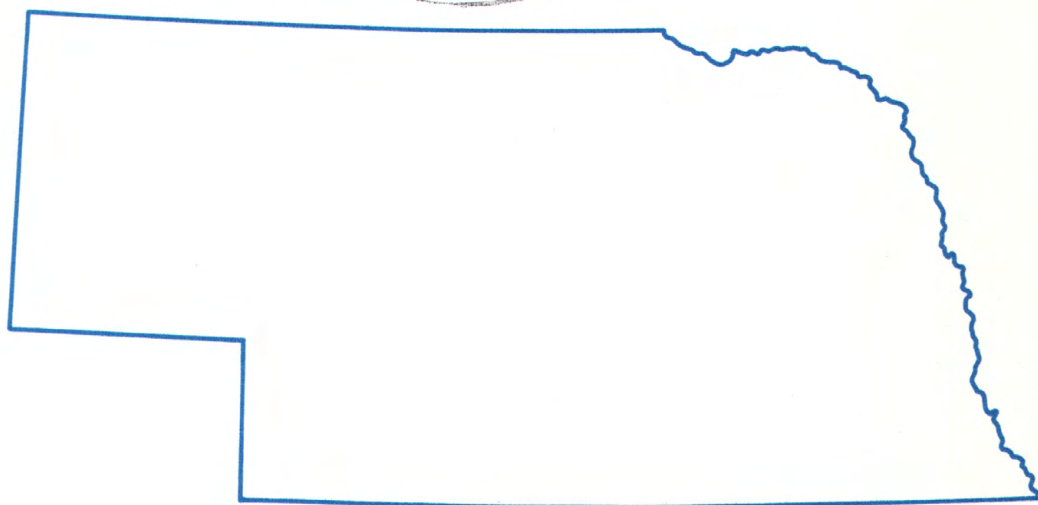
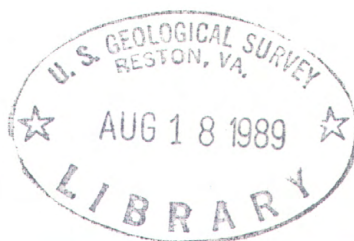


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Water Resources Data Nebraska Water Year 1988



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NE-88-1

Prepared in cooperation with the Nebraska Department of
Water Resources, the Conservation and Survey Division of
the University of Nebraska, the Nebraska Department of
Environmental Control and with other
State and Federal agencies

CALENDAR FOR WATER YEAR 1988

1987

OCTOBER

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1988

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SEPTEMBER

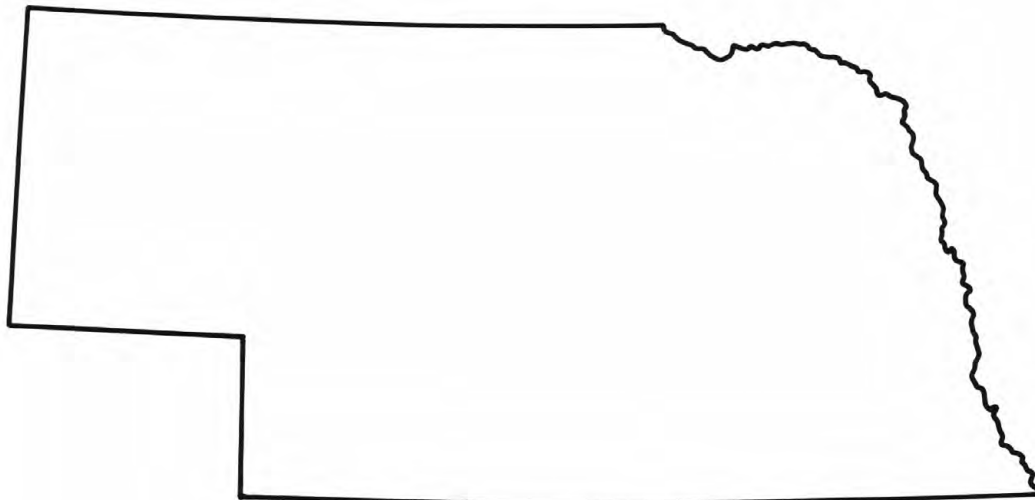
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Water Resources Data Nebraska

Water Year 1988

by J.A. Boohar, C.G. Hoy and M.J. Ellis



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NE-88-1

Prepared in cooperation with the Nebraska Department of Water Resources, the Conservation and Survey Division of the University of Nebraska, the Nebraska Department of Environmental Control, and with other State and Federal agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water programs in Nebraska, write to:

District Chief
U.S. Geological Survey
406 Federal Building
100 Centennial Mall, North
Lincoln, Nebraska 68508

PREFACE

This annual hydrologic data report of Nebraska is one of a series of annual reports that documents hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-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 State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by 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 primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

G.B. Engel, N.R. Harmon, L.C. Blackburn, D.E. Schild, J.C. Beard, and J.E. McKinney of the District Office.

M. Kubicek, S.H. Hull, D.M. Schwartz, G.V. Steele, V.C. Walczyk, and M.T. Thompson of the Lincoln field office.

F.J. Jelinek, R.B. Swanson, R.A. Drudik, and V.A. John of the Ord field office.

This report was prepared in cooperation with the State of Nebraska and with other agencies under the general supervision of M.V. Shulters, District Chief, Nebraska.

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			14.
15. Supplementary Notes Prepared in cooperation with the State of Nebraska and other agencies			
16. Abstract (Limit: 200 words) Water resources data for the 1988 water year for Nebraska consist of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and water levels and water quality in wells. This report contains discharge records for 158 streamflow gaging stations, 10 partial-record or miscellaneous streamflow stations, and 5 crest-stage, partial-record streamflow stations; stage and contents records for 11 lakes and reservoirs; water-quality records for 37 streamflow stations, 6 ungaged stream-sites, and 84 wells; and water-level records for 56 observation wells. These data represent that part of the National Water-Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Nebraska.			
17. Document Analysis. a. Descriptors *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses b. Identifiers/Open-Ended Terms *Nebraska c. COSATI Field/Group			
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WATER RESOURCES DATA - NEBRASKA, 1988

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Nebraska 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 Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Nebraska."

This report includes records on both surface and ground water in the State. Specifically, it contains: (1) Discharge records for 158 streamflow-gaging stations, for 10 partial-record or miscellaneous streamflow stations, and for 5 crest-stage, partial-record streamflow stations; (2) stage and contents for 11 lakes and reservoirs; (3) water-quality records for 37 streamflow-gaging stations, for 6 ungaged streamsites, and for 84 wells; and (4) water-level records for 56 observation wells. Records included for stream stages and for ground-water levels are only a small fraction of those obtained during the water year. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Nebraska.

This series of annual reports for Nebraska 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. Beginning with the 1975 water year, 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.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Nebraska 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 6A and 6B." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 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, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425, Denver, CO 80225.

Publications similar to this report are published annually by the 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 NE-88-1." For archiving and general distribution, the reports for 1971-74 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 Office Chief at the address given on the back of the title page or by telephone (402) 437-5082.

COOPERATION

The U.S. Geological Survey and agencies of the State of Nebraska have had cooperative agreements for the collection of water-resource records since 1930. Organizations that assisted in collecting the data in this report through cooperative agreement with the Survey are: Nebraska Department of Water Resources, J. Michael Jess, Director; Conservation and Survey Division, University of Nebraska-Lincoln, Perry B. Wigley, Director; Nebraska Department of Environmental Control, Dennis Grams, Director; Big Blue River Compact Administration; Central Platte Natural Resources District; Little Blue Natural Resources District; and City of Lincoln.

Nebraska Department of Water Resources (NDWR) personnel in Bridgeport, Cambridge, Lincoln, Norfolk and Ord contributed significantly in the collection and computation of records under a USGS-NDWR cooperative agreement.

Assistance with funds or services was given by the U.S. Army Corps of Engineers in collecting records for 23 streamflow-gaging stations and 5 crest-stage gages, and by the U.S. Bureau of Reclamation in collecting records for 3 streamflow-gaging stations, 4 partial-record stations, 2 lake stations, in providing elevations or capacity tables for 8 reservoir stations, and providing funds for collecting water-quality samples at numerous sites.

The following organizations aided in collecting records: Central Nebraska Public Power and Irrigation District, Nebraska Public Power District, and Loup River Public Power District.

OVERVIEW OF WATER YEAR 1988

Precipitation data from published reports of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, for the eight National Weather Service Divisions in Nebraska are listed in table 1. Location of the divisions is shown in figure 1. Precipitation and departures from normal are shown for each quarter in order to emphasize the precipitation distribution during water year 1988.

Precipitation was greater than normal in all divisions, except the three divisions in the eastern part of the State, during the first quarter of the water year. During the second quarter, only two divisions (the Panhandle and North Central) had greater than normal precipitation. These same two divisions, plus the Southwest Division, had greater than normal precipitation during the third quarter. During the final quarter of the water year, the Panhandle division had a normal amount of precipitation, whereas the other divisions, except two (East Central and Southeast), had greater than normal precipitation. The East Central and Southeast Divisions had less than normal precipitation during all four quarters of the water year.

A comparison of the precipitation for water years 1988 and 1987 with the normal precipitation in the eight divisions is shown in figure 2. Compared to water year 1987, the East Central and Southeast Divisions were deficient by 4 to 7 inches; and the differences in the remaining divisions ranged from 0 to plus 2 inches.

Table 1.--Precipitation and departures from normal, in inches
[Period of record for normal, 1951-80]

National Weather Service Division	Precipitation											
	First quarter (October-December)			Second quarter (January-March)			Third quarter (April-June)			Fourth quarter (July-September)		
	Water year			Water year			Water year			Water year		
	Normal	1988	Departure	Normal	1988	Departure	Normal	1988	Departure	Normal	1988	Departure
Panhandle	1.71	2.19	0.48	1.71	1.82	0.11	7.91	9.33	1.42	5.28	5.28	0.00
North Central	2.24	3.05	.81	2.17	2.35	.18	9.16	10.29	1.13	7.25	9.73	2.48
Northeast	3.08	2.45	-.63	3.01	1.42	-1.59	10.53	7.27	-3.26	8.69	10.28	1.59
Central	2.54	3.15	.61	2.57	1.59	-.98	9.89	9.70	-.19	8.08	9.85	1.77
East Central	3.76	2.98	-.78	3.43	.79	-2.64	11.11	7.79	-3.32	9.94	9.19	-.75
Southwest	1.95	3.68	1.73	1.95	1.60	-.35	8.28	8.55	.27	6.69	9.35	2.66
South Central	2.63	3.39	.76	2.60	1.31	-1.29	9.85	6.92	-2.93	8.55	11.45	2.90
Southeast	4.22	3.85	-.37	3.75	.99	-2.76	11.15	6.91	-4.24	11.18	8.65	-2.53

Streamflow

Monthly mean discharges during water year 1988 and long-term monthly mean discharges at representative stations are plotted in figure 1. The period of record used for the long-term mean at some stations is from the completion of the last known storage structure or from the latest change in streamflow regulation upstream from the gage to water year 1987. The individual graphs demonstrate the varied conditions in the State during the year.

Four stations, 06686000, North Platte River at Lisco; 06454500, Niobrara River above Box Butte Reservoir; 06461500, Niobrara River near Sparks; and 06785000, Middle Loup River at St. Paul, generally had the normal pattern of discharge during water year 1988, although not always normal quantity. The graph for station 06686000 indicates that the discharge for water year 1988 was less than the long-term mean during most of the year. The discharge at this station is determined more by reservoir releases than by precipitation patterns. Snowmelt runoff from the Rocky Mountains was less than normal, so releases from upstream reservoirs also were less. The graph for station 06454500 indicates that discharge for water year 1988 also was less than the long-term mean. Precipitation was slightly greater than normal in the Panhandle for the year, but discharge only reached near-normal amounts during March-June. The plots for stations 06461500 and 06785000 generally show normal discharge during the water year. Two distinct high-flow periods occurred at station 06461500, one in March from snowmelt runoff and one in May from runoff due to greater than normal rainfall. Ground water provides a major contribution to the discharge at these two sites, because much of their drainage areas include sandhills. This ground-water contribution sustains the late summer streamflow, although the discharge at station 06461500 was less than the long-term mean during July-September.

Graphs for stations 06841000, Medicine Creek above Harry Strunk Lake; 06800500, Elkhorn River at Waterloo; and 06815000, Big Nemaha River at Falls City, illustrate the dry conditions in these areas of Nebraska during the latter half of water year 1988. The graph for station 06841000 indicates the low discharge during March through July. Snowfall was less than normal, so there was not much runoff in early spring. Snowmelt runoff occurred in February. Although precipitation

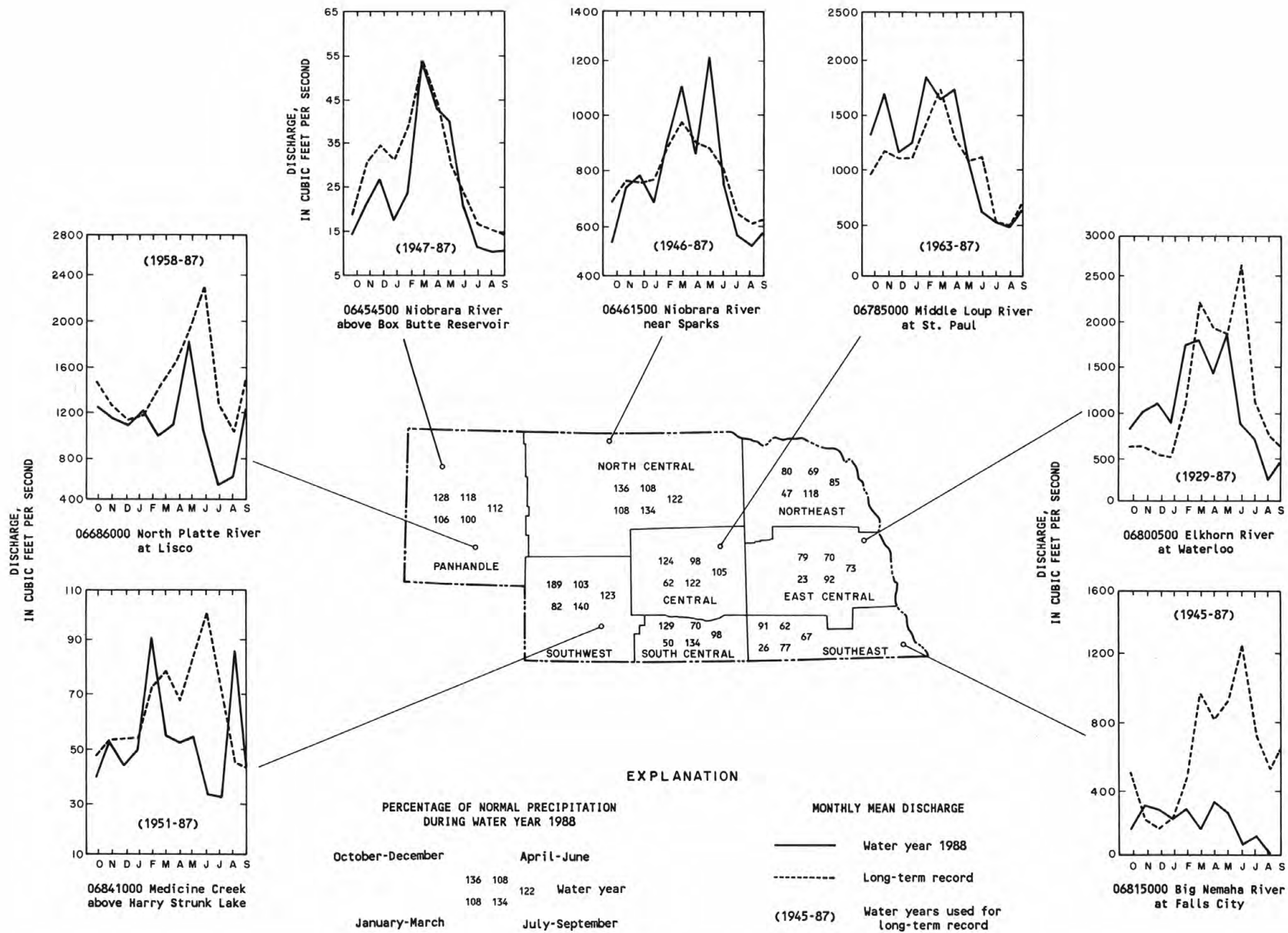


Figure 1.--Comparison of precipitation and streamflow during water year 1988 to long-term means.

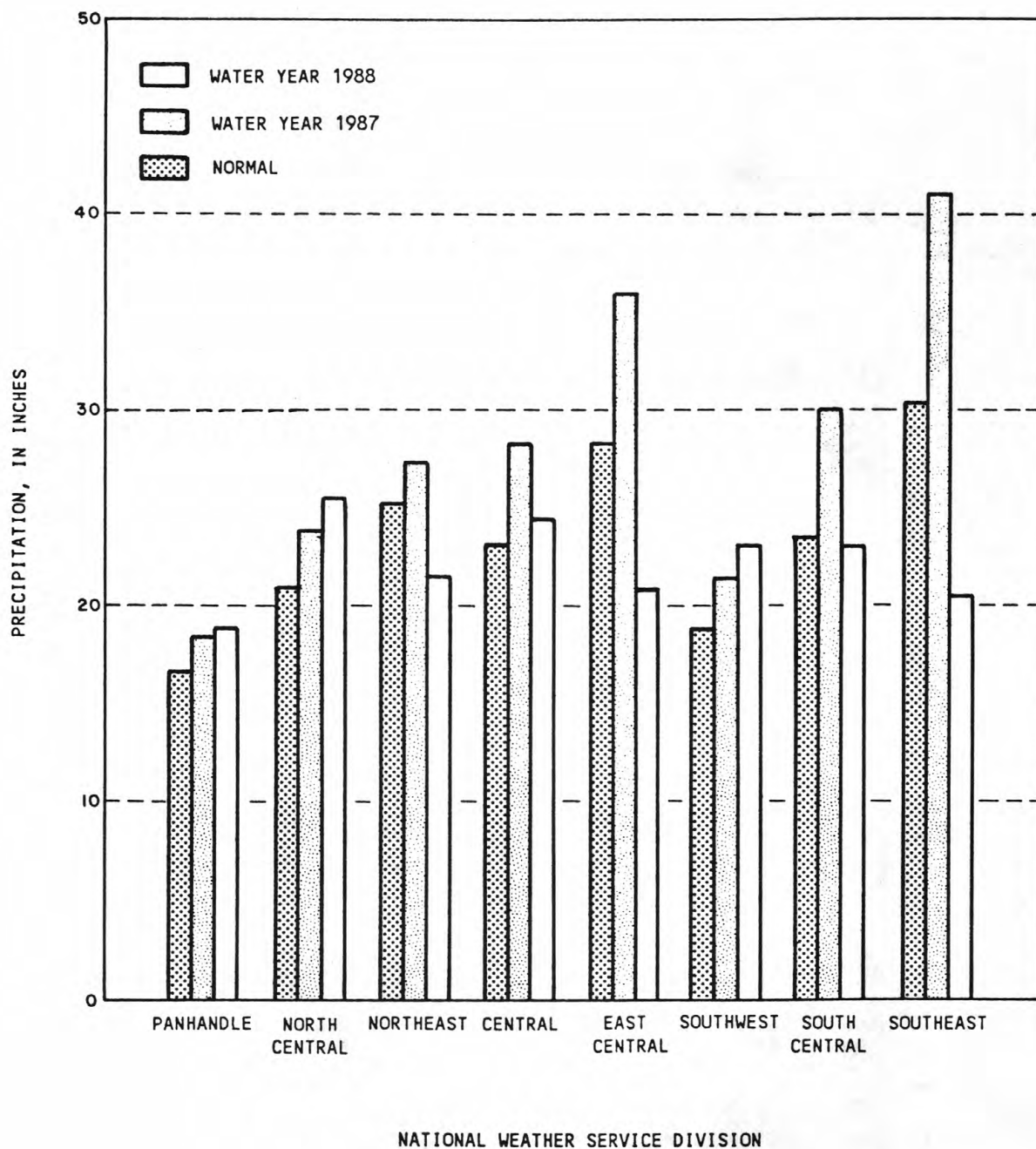


Figure 2.--Comparison of precipitation for water years 1988 and 1987 with normal precipitation for the eight National Weather Service Divisions in Nebraska.

for the Southwest Division averaged near normal during April-June, only May had greater than normal precipitation and very little runoff was produced. June had less than normal precipitation, and there was a complete lack of the typical high-flow period in June. Precipitation was greater than normal during July-September, with much of it occurring in August, which did produce runoff at the Medicine Creek station. The graph for station 06800500 also shows the effect of the very dry June. There is no typical high flow during June, and discharge was less than normal for the remainder of the water year. The most dramatic indication of dry conditions is shown by the graph for station 06815000. Precipitation was less than normal during all quarters of water year 1988 in the southeast part of the State, and precipitation during the year was only 67 percent of normal. Discharge was less than normal during all months except November and December and was near normal during January. There was no typical high-flow period during the period March through June.

Due to the dry conditions during water year 1988, new minimum daily discharges were recorded at six gaging stations. These stations are listed in table 2.

Other streams in southeastern Nebraska had very low discharges in water year 1988, although they did not have record lows. There generally was a large difference in discharge between water year 1987 and 1988; 1987 was a high-runoff year. A comparison of minimum discharges during water years 1988 and 1987 and during the period of record for selected gaging stations in southeastern Nebraska is shown in table 3.

Table 2.--Minimum daily discharge during water year 1988 and period of record

Station number	Station name	Water year 1988 minimum discharge		Previous minimum discharge		Number of years of record
		Discharge (cubic feet per second)	Date	Discharge (cubic feet per second)	Date	
06459175	Snake River near Doughboy	79	3/12	111	2/11/86	7
06770200	Platte River near Kearney	14	6/27,29	61	7/25/82, 9/11/82	6
06837300	Red Willow Creek above Hugh Butler Lake	3.2	6/28	4.0	7/04/63	28
06842500	Medicine Creek below Harry Strunk Lake	.06	9/24-26	.07	11/13/52, 9/19/63, 9/27-29/64	39
06883000	Little Blue River near Deweese	3.2	8/11	6.3	9/07/78	33
06884025	Little Blue R. at Hollenberg, Kansas	39	6/28	40	12/17/75	14

Table 3.--Comparison of minimum daily discharge for water years 1988, 1987, and period of record for selected stations in southeastern Nebraska

Station number	Station name	Minimum daily discharge (cubic feet per second)		
		1988	1987	Period of record (Year of occurrence)
06811500	Little Nemaha River at Auburn	24	128	0.87 (1977)
06814500	North Fork Big Nemaha River at Humboldt	12	56	.07 (1977)
06815000	Big Nemaha River at Falls City	24	151	3.0 (1977)
06853020	Republican River at Guide Rock	2.8	16	.1 (1964)
06879900	Big Blue River at Surprise	.50	3.3	No flow most years
06880800	West Fork Big Blue River near Dorchester	31	79	12 (1977)
06881000	Big Blue River near Crete	57	150	6.0 (1980)
06881200	Turkey Creek near Wilber	.25	21	No flow (1976)
06881500	Big Blue River at Beatrice	51	275	20 (1976)
06883000	Little Blue River near Deweese	3.2	43	6.3 (1978)
06883570	Little Blue River near Alexandria	11	62	2.9 (1980)
06884000	Little Blue River at Fairbury	38	120	14 (1929)
06884025	Little Blue River at Hollenberg, Kansas	39	186	40 (1975)

Chemical Quality of Streamflow

To determine whether significant changes are occurring in the chemical quality of streamflow leaving Nebraska, an analysis was made of specific-conductance records at sampling stations on five streams. Each station is located at or near the point at which the stream leaves Nebraska.

Specific conductance can be used to approximate the dissolved-solids concentration in water because it is related to the concentration and type of ions in water. To determine whether significant differences in specific conductance occurred between water year 1988 and the period of record, a ranked statistical technique called the Mann-Whitney test was used, which does not require that the data be normally distributed.

The Mann-Whitney test is similar to the t-test and is used to prove or disprove, statistically, the hypothesis that the mean specific conductance for water year 1988 was equal to the mean for the period of record. The Mann-Whitney technique is simpler to use, requiring fewer steps in the procedure than the t-test. Results are in terms of a "W" value. If the absolute value of the computed "W" value (W_c) is less than the tabular value (W_{tab}), the hypothesis that the means are equal is accepted; if not (W_c is greater than W_{tab}), the hypothesis is rejected.

Results of the Mann-Whitney test are shown in table 4. Comparison of the mean specific conductance for water year 1988 with the mean for the period of record shows that the means are not statistically different (null hypotheses are accepted) for three of five stations tested.

The mean specific conductance for station 06853020 (Republican River at Guide Rock) during water year 1988 was statistically different from that for the period of record (null hypothesis is rejected). This statistical difference has been observed since water 1982. Regression relations between specific conductance and water discharge given in U.S. Geological Survey Water-Supply Paper 2179, "A statistical analysis of the quality of surface water in Nebraska," by R. A. Engberg, indicate that specific conductance tends to increase with decreasing streamflow. Ground water from the Republican River drainage area upstream from the Guide Rock station generally is more mineralized than water derived from overland runoff. The decrease in overland runoff during water year 1988 (as a result of less than normal precipitation during the water year) would account for a larger mean specific conductance than in past years when precipitation was nearer to normal. The drainage area above this station lies in the Southwest and South Central Division of the National Weather Service. The mean flow for water year 1988 for the Guide Rock station was 121 ft³/s, compared to the mean for the period of record of 319 ft³/s.

The mean specific conductance for station 06884025 (Little Blue River at Hollenberg, Kansas) during water year 1988 also was statistically different from that for the period of record. This station is located in the Southeast Division, which is the National Weather Service division showing the greatest deficit in precipitation for the water year. The mean discharge for water year 1988 at the Hollenberg station was the smallest in 14 years of record. Because ground water was a greater component of the annual flow, it is expected that the mean specific conductance would be larger during water year 1988.

Table 4.--Results of ranked Mann-Whitney test comparing mean specific conductance for water year 1988 with the mean for the period of record for streamflow leaving Nebraska
[Specific conductance, in microsiemens per centimeter at 25 degrees Celsius; A = accepted;
R = rejected]

Station identification	Specific conductance				Mann-Whitney test			
	Water year 1988		Period of record		Period used (water years)	W_{tab}	W_c	Hypothesis
	Number of values	Mean	Number of values	Mean				
06465500 Niobrara River near Verdel-----	12	296	171	271	1973-87	1395.8	1392.0	A
06805500 Platte River at Louisville-----	12	674	149	699	1972-87	1227.6	991.0	A
06815000 Big Nemaha River at Falls City-----	11	599	176	625	1973-87	1320.5	918.5	A
06853020 Republican River at Guide Rock-----	12	711	336	597	1962-87	2657.3	3286.0	R
06884025 Little Blue River at Hollenberg, Kansas-----	12	587	192	471	1973-87	1556.3	1668.5	R

Ground-Water Levels

Water-level changes during water year 1988 were determined from a statewide network of observation wells measured by 38 Federal, State, and local agencies. The network consists of more than 3,600 wells measured annually, semiannually, or monthly and 89 wells equipped with continuous recorders. Because of the importance of ground water as a source for irrigation and municipal supplies, most observation wells in Nebraska are located in those areas where large quantities of ground water are pumped. Water-level fluctuations in representative observation wells located in various parts of the State are shown in figure 3.

Probably the most significant changes in ground-water levels during water year 1988 were the large water-level declines that occurred throughout most of the southeastern, east-central, and northeastern parts of the State. These water-level declines, which averaged about 2.5 feet, probably are the result of the drought conditions that occurred throughout most of the water year in these parts of Nebraska. At the end of water year 1988, water levels measured in more than 90 percent of the 1,501 observation wells in these parts of Nebraska were lower than they were at the end of water year 1987. The hydrograph for an observation well in Seward County is representative of water-level fluctuations that have occurred in this part of the State during water years 1987 and 1988. The water level in the Seward County well was higher at the end of water year 1987 than at the end of any of the previous 29 water years. However, at the end of water year 1988, the water level in the Seward County well was 1.61 feet lower than at the end of water year 1987.

Throughout much of the central and south-central parts of Nebraska, precipitation generally was near normal or slightly less than normal, and water levels measured in 1,072 observation wells in these parts of Nebraska averaged about 1.1 feet lower at the end of water year 1988 than they were at the end of water year 1987. As is shown on the hydrograph for the Buffalo County well, water levels in these parts of Nebraska generally did not rise as much during the 1987-88 dormant season as they did during the 1986-87 dormant season, and declines during the 1988 growing season were greater than they were during the 1987 growing season. At the end of water year 1988, the water level in the Buffalo County well was 2.59 feet lower than at the end of water year 1987.

In the southwestern part of the State where precipitation during most of the water year was slightly above normal, water levels measured in 50 percent of the 275 observation wells were higher at the end of water year 1988 than they were at the end of water year 1987. Most of the water-level declines occurred in the areas where large amounts of ground water used for irrigation usually exceed the amounts of water the aquifer receives from recharge. Water levels in these areas generally do not rise as high as the previous year, and declines during the irrigation season generally are greater than those during the previous year. Water-level fluctuations shown for an observation well in Chase County are representative of those that occurred in irrigated areas during water years 1987 and 1988. The hydrograph shows that the water level at the end of water year 1988 was 1.01 feet lower than at the end of water year 1987.

Precipitation in north-central Nebraska generally ranged from slightly less than normal in the eastern part of the area to slightly more than normal in the western part of the area during water year 1988. Most water levels rose slightly in the western part of the area and declined slightly in the eastern part, especially in areas where large amounts of ground water were used for irrigation during the 1988 growing season. The hydrograph for an observation well in Holt County is representative of water-level fluctuations that occurred in the eastern part of the area during water years 1987 and 1988. The water level in the well at the end of water year 1988 was 1.70 feet lower than at the end of water year 1987.

In those parts of Nebraska where ground water is used only for domestic and stock supplies, most water-level fluctuations are caused by variations in natural recharge to and discharge from the aquifers. Commonly, water levels rise during the fall and winter months when recharge from precipitation exceeds discharge by seepage to streams and by evapotranspiration; they decline during the spring and summer months when discharge by seepage to streams and by evapotranspiration is greater than recharge from precipitation. The hydrograph for the observation well in Blaine County shows these annual fluctuations.

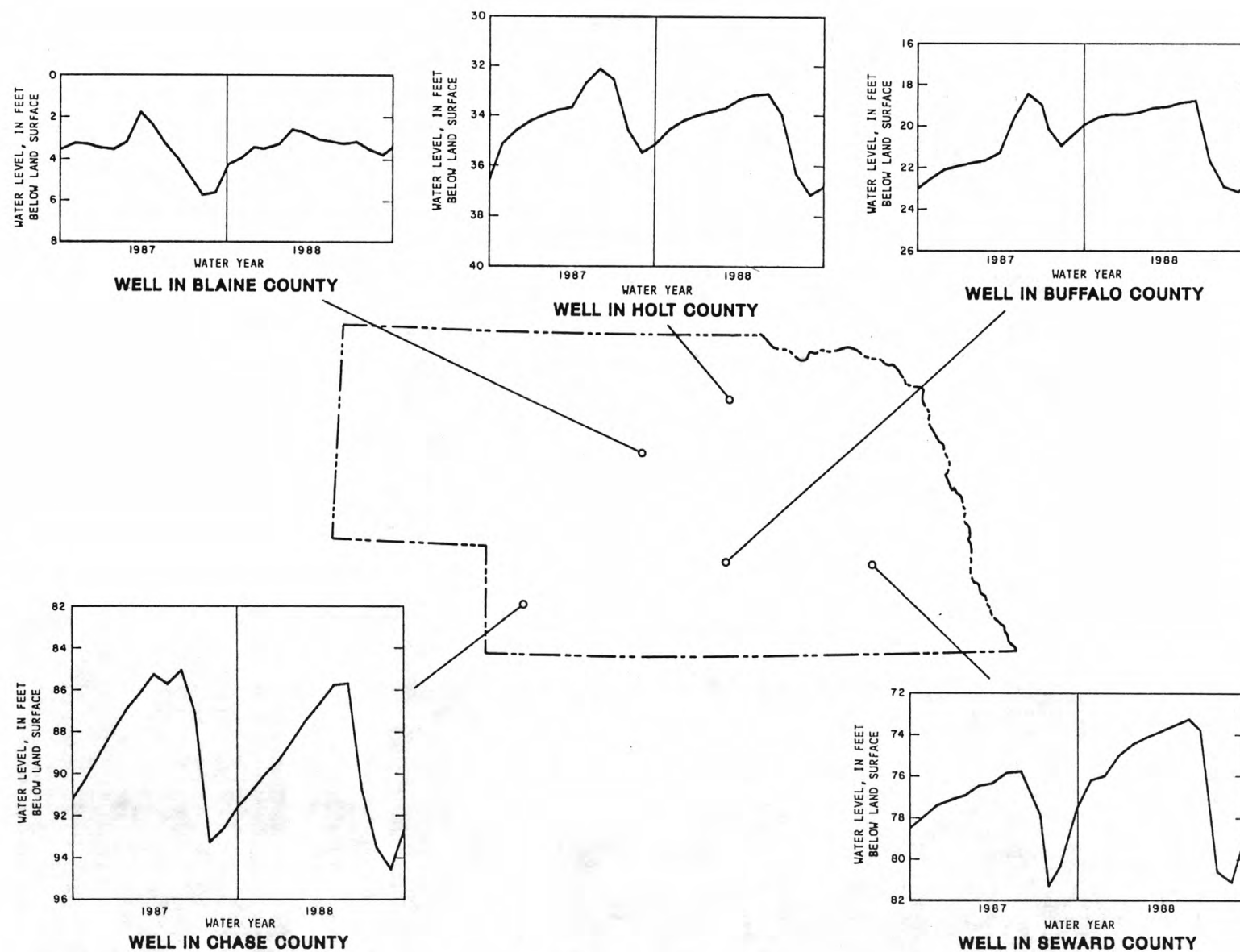


Figure 3.--Water levels in representative observation wells, water years 1987 and 1988.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream-Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

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

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1988 water year that began October 1, 1987, and ended September 30, 1988. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 4, 5, and 6. 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, whether streamsite or well, in this report is assigned a unique identification number. This number is unique in that it 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 and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for surface-water stations and the "latitude-longitude" system is used for wells.

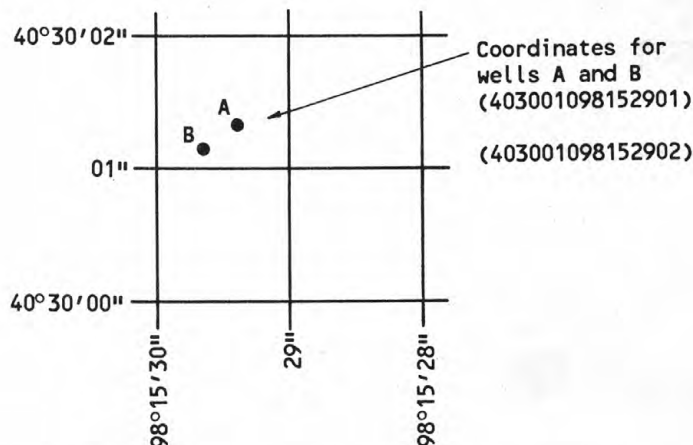
Downstream Order System

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 indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation 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 06797000, which appears just to the left of the station name, includes the two-digit Part number "06" plus the six-digit downstream-order number "797000." The Part number designates the major river basin; for example, Part "06" is the Missouri River basin.

Latitude-Longitude System

The identification numbers for wells 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 wells or other 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. (See figure below.)



System for numbering wells (latitude and longitude)

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 "Discharge measurements at miscellaneous sites." Records of discharge measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately if made during the year. Location of all complete-record and crest-stage partial-record stations for which data are given in this report are shown in figure 4.

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 analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adopted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

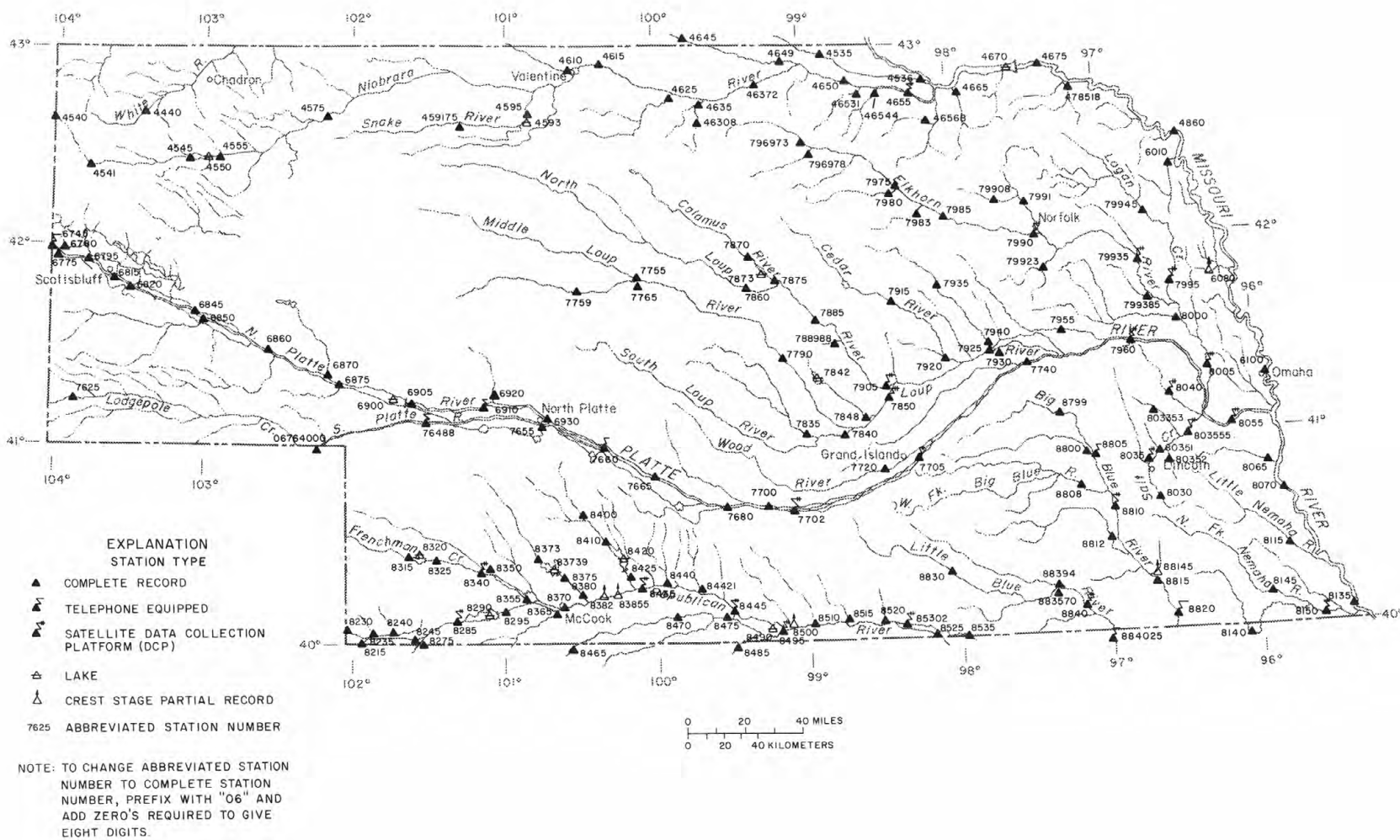


Figure 4.--Location of active surface-water gaging stations.

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 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

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; 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 gage 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, given for only a few stations, 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 there are published records 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 records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, 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 National Geodetic Vertical Datum of 1929 (see glossary), 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 record 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 statement 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, to conditions that affect natural flow at the station 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 Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

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.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and equal to or greater than a selected base discharge are presented under this heading. The peaks equal to or greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

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 offices whose addresses are 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 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.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually expressed in acre-feet (line headed "AC-FT"). In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years.

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 miscellaneous partial-record stations. The tables of partial-record stations may be 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. They also may be made in project areas to help define ground-water/surface-water relationships.

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 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/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.

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

Other 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 Nebraska 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 District office.

Records of daily diversions of water from streams by canals are collected by and published in Hydrographic Reports of the Nebraska Department of Water Resources. Included are discharge records for streams and storage records for reservoirs not published in reports of the Geological Survey. Copies of the Hydrographic Reports may be obtained from the Nebraska Department of Water Resources, 301 Centennial Mall, South, P.O. Box 94676, Lincoln, NE 68509 (telephone number: 402-471-2363).

Records of discharge, not published by the Geological Survey, are collected in Nebraska at several sites by the U.S. Army Corps of Engineers. The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 22092, maintains an index of these sites as well as sites where other agencies have collected water data.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

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 limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the 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 or a series of discrete values punched at short intervals on a paper tape. 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 5.

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. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-site 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, 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, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" which appears at the end of the introductory text. Detailed information on collecting, treating, and shipping samples may be obtained from the Nebraska District office.

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 definitions) 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.

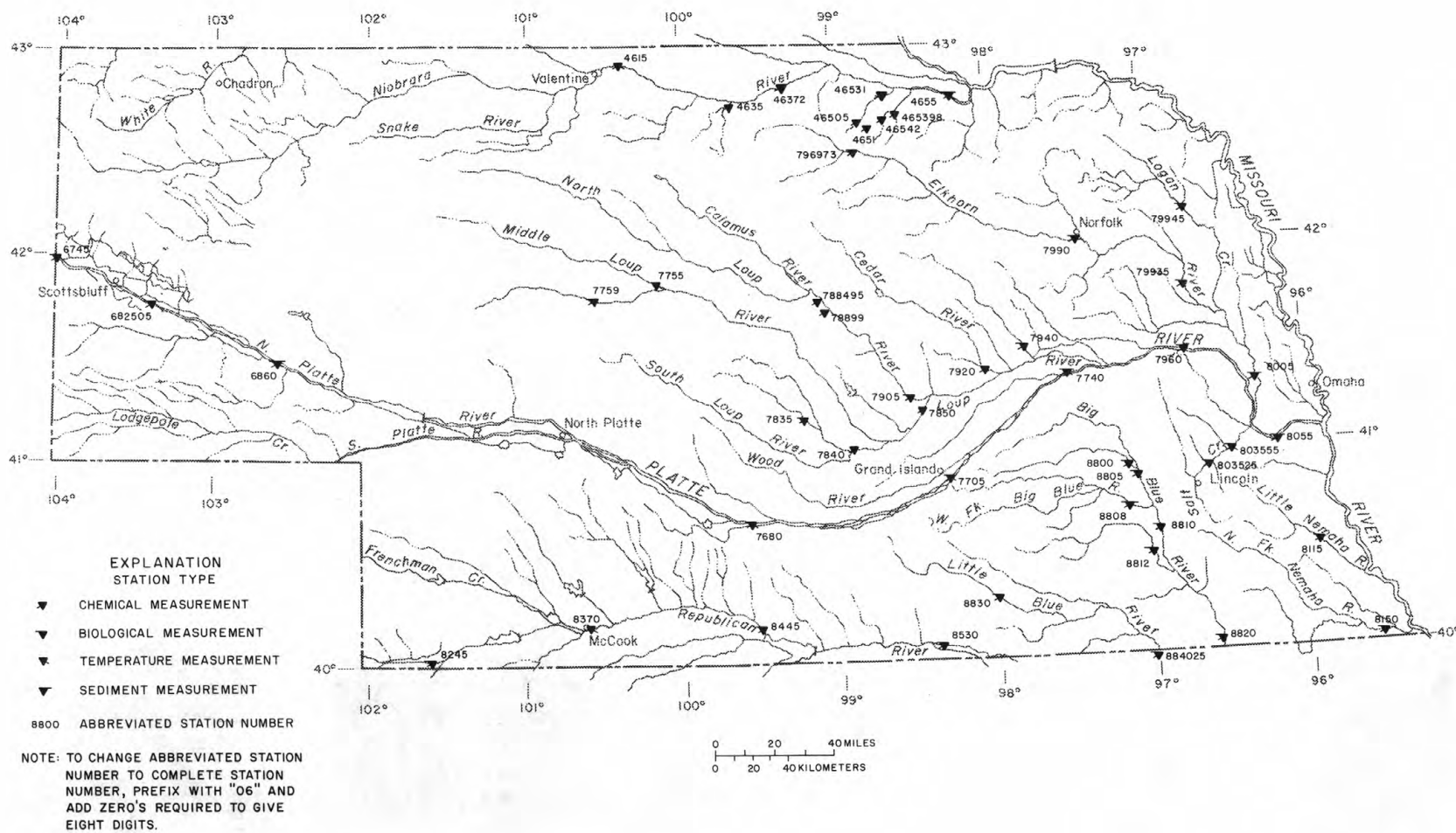


Figure 5.--Location of active surface-water-quality stations.

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.

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. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small 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 and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the Nebraska District office.

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.

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

Laboratory Measurements

Sediment samples are analyzed in Iowa City, Iowa; samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally; and all other samples are analyzed in the Geological Survey laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the 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, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily, are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge 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 record, sediment 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 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 computerized data system, WATSTORE, 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.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

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

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

Records of Ground-Water Levels

Only water-level data from a network of selected observation wells are given in this report. These data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers. Locations of the observation wells in this network in Nebraska are shown in figure 6.

Although, in this report, records of water levels are presented for only selected wells, records are obtained through cooperative efforts of many Federal, State, and local agencies for several thousand observation wells throughout Nebraska and are placed in computer storage. Each spring, the Nebraska District and the Conservation and Survey Division of the University of Nebraska publish a report for the previous calendar year entitled "Groundwater Levels in Nebraska, 19_." This report contains hydrographs of recorder wells, detailed maps showing changes in water levels from the previous year, and other useful items. Information about the availability of the data in the water-level file may be obtained from the District Chief, Nebraska District. (see address on back of front page.)

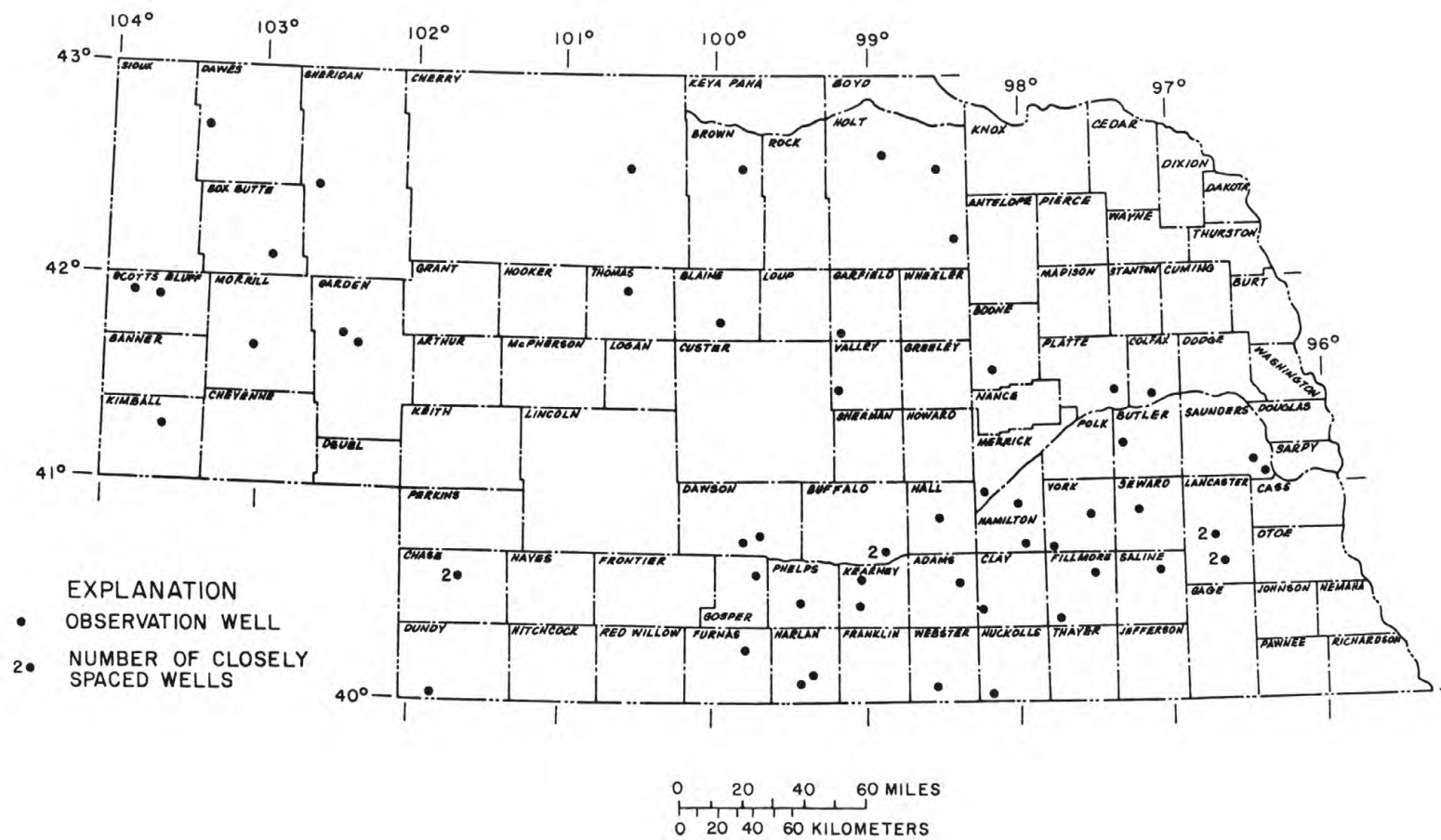


Figure 6.--Location of selected observation wells.

Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears in the upper left corner of the table. The secondary identification number is the local well number, an alphanumeric number, derived from the township-range location of the well.

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

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

Data Presentation

Each well record consists of two parts, the station description and the data table of water levels observed during the water year. Hydrographs also are presented for some wells. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); a landline location designation; the hydrologic-unit number; the distance and direction from a geographic point of reference; and the owner's name.

AQUIFER.--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) National Geodetic Vertical Datum of 1929 (NGVD of 1929); it is reported with a precision depending on the method of determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that also are water-quality observation wells, and may be used to acknowledge the assistance of local (non-Survey) observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum and all taped measurements of water level are listed. For wells equipped with recorders, only abbreviated tables are published; generally, only water-level lows are listed for every fifth day and at the end of the month (eom). The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the abbreviated table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level.

Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that, for most sampling sites, they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general purposes, one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed at the end of the introductory text. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

ACCESS TO WATSTORE DATA

The National Water Data STorage and Retrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from the office whose address is given on the back of the title page.

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

DEFINITION OF TERMS

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

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

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

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

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

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

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

Fecal coliform bacteria are bacteria that are present in the 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 also 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 which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C 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.

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 micro-organisms, such as bacteria.

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

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

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

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

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

Bottom material: See Bed material.

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

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

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

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

Cubic foot per second (ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic-foot-per-second day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

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

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

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

Dissolved refers to that material in a representative water sample which passes through a 0.45 μ m 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-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 the 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 0.492 to reflect the change.

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

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

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO₃).

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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

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

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram ($\mu\text{g/g}$) 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 ($\mu\text{g/L}$, $\mu\text{g/L}$) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

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

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

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

Organism is any living entity.

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

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

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

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

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

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

Particle-size classification used in this report agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

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

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic 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 is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

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

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

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

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

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

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

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

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

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

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

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

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

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

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

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

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).

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

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft³/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either 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, as measured by dry mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

7-day 10-year low flow ($7 Q_{10}$) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

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 about 65 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-discharge relation is the relation between gage height (stage) and volume of water, per unit of time, flowing in a channel.

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45 μ m filter.

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

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

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

Kingdom.....	Animal
Phylum.....	Arthropoda
Class.....	Insecta
Order.....	Ephemeroptera
Family.....	Ephemeridae
Genus.....	<u>Hexagenia</u>
Species.....	<u>Hexagenia limbata</u>

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

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

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1988, is called the "1988 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.

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. Water temperature--influential factors, field measurement, and data presentation, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. Guidelines for collection and field analysis of ground-water samples for selected unstable constituents, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. Application of surface geophysics to ground-water investigations, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. Application of borehole geophysics to water-resources investigations, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. General field and office procedures for indirect discharge measurements, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. Measurement of peak discharge by the slope-area method, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
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- 3-A9. Measurement of time of travel and dispersion in streams by dye tracing, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 pages.
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- 3-A11. Measurement of discharge by moving-boat method, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
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- 3-A13. Computation of continuous records of streamflow, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. Use of flumes in measuring discharge, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. Computation of water-surface profiles in open channels, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. Measurement of discharge using tracers, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. Acoustic velocity meter systems, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-B1. Aquifer-test design, observation, and data analysis, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

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- 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, Chapter B6. 1987. 28 pages.
- 3-C1. Fluvial sediment concepts, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. Field methods for measurement of fluvial sediment, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. Computation of fluvial-sediment discharge, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. Some statistical tools in hydrology, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. Frequency curves, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
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- 4-B2. Storage analyses for water supply, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. Regional analyses of streamflow characteristics, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. Computation of rate and volume of stream depletion by wells, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. Methods for determination of inorganic substances in water and fluvial sediments, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. Determination of minor elements in water by emission spectroscopy, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. Methods for analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
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- 6-A1. A modular three-dimensional finite-difference ground-water flow model, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.
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- 7-C2. Computer model of two-dimensional solute transport and dispersion in ground water, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 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, Chapter C3. 1981. 110 pages.
- 8-A1. Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
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STATION RECORDS, SURFACE WATER

31

WHITE RIVER BASIN

06444000 WHITE RIVER AT CRAWFORD, NE

LOCATION.--Lat 42°41'33", long 103°25'03", in W1/2 sec.3, T.31 N., R.52 W., Dawes County, Hydrologic Unit 10140201, on right bank 15 ft downstream from bridge in city park at Crawford.

DRAINAGE AREA.--313 mi².

PERIOD OF RECORD.--February 1931 to September 1943, October 1947 to current year.

REVISED RECORDS.--WSP 1309: 1931(M), 1942(M). WSP 1729: 1958-59(M). WSP 1917: 1958-59.

GAGE.--Water-stage recorder. Datum of gage is 3,659.85 ft above National Geodetic Vertical Datum of 1929. Feb. 25, 1931, to Oct. 2, 1933, nonrecording gage at old highway bridge 0.5 mi upstream at different datum and Oct. 3, 1933, to Sept. 30, 1943, 1 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Nov. 29 to Dec. 1, Dec. 14 to Jan. 25, Jan. 31 to Feb. 8, Feb. 10-12, and Mar. 13-18. Records good except for periods of estimated record, which are fair. Some regulation at low flows by pumps for irrigation and diversion for water supply for town of Crawford.

AVERAGE DISCHARGE.--53 years, 20.2 ft³/s, 14,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,580 ft³/s Mar. 15, 1948, gage height, 6.88 ft; maximum gage height, 7.7 ft July 10, 1958, from floodmarks; minimum daily discharge, 2.7 ft³/s Aug. 13, 31, Sept. 1, 1960.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 20	1515	(a)	*3.19	Aug. 20	0530	*156	3.10
June 16	1000	138	2.92				

a Backwater from ice.

Minimum daily discharge, 6.6 ft³/s Aug. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	19	19	20	25	27	27	23	25	19	8.5	8.6
2	14	19	20	19	25	26	27	33	24	17	8.1	8.9
3	14	20	20	19	25	25	26	29	23	15	8.8	8.7
4	14	20	20	20	25	26	25	26	21	14	13	9.0
5	14	20	20	20	25	26	25	27	20	15	13	9.2
6	15	20	20	19	26	26	24	28	20	14	11	9.0
7	15	20	20	18	26	26	24	25	19	13	10	9.0
8	15	20	21	18	28	25	23	26	18	14	9.6	9.0
9	16	20	20	17	25	25	23	28	18	14	10	9.6
10	16	20	20	15	26	25	22	26	19	14	9.7	9.6
11	17	20	20	15	27	18	22	29	19	15	8.6	9.3
12	17	19	19	15	28	19	22	25	19	14	8.2	12
13	17	19	19	16	29	20	21	23	25	13	9.2	13
14	17	20	17	16	29	33	21	23	26	12	8.3	13
15	19	20	19	17	27	29	21	23	29	12	7.3	14
16	18	20	18	17	29	24	21	23	49	11	6.6	13
17	18	20	19	18	27	24	21	23	23	11	7.6	11
18	18	20	19	18	27	24	21	24	20	14	10	11
19	18	20	19	19	27	23	21	33	17	16	10	12
20	19	20	17	20	27	30	21	52	17	15	34	12
21	18	20	16	21	28	31	21	41	16	14	12	12
22	18	21	17	22	28	31	27	33	15	13	11	12
23	19	20	18	22	25	31	28	31	16	12	10	12
24	18	20	19	23	25	30	29	29	15	12	9.9	12
25	19	20	19	23	26	29	28	27	14	11	9.7	11
26	19	20	19	23	27	28	28	27	14	11	9.3	11
27	18	21	19	24	28	28	27	26	13	11	8.5	11
28	19	20	20	26	28	28	27	24	13	9.7	9.1	13
29	18	19	20	27	27	27	22	23	13	9.3	9.4	16
30	19	19	20	28	---	26	22	22	17	9.3	9.0	15
31	19	---	20	29	---	26	---	23	---	9.0	8.7	---
TOTAL	529	596	593	624	775	816	717	855	597	403.3	318.1	335.9
MEAN	17.1	19.9	19.1	20.1	26.7	26.3	23.9	27.6	19.9	13.0	10.3	11.2
MAX	19	21	21	29	29	33	29	52	49	19	34	16
MIN	14	19	16	15	25	18	21	22	13	9.0	6.6	8.6
AC-FT	1050	1180	1180	1240	1540	1620	1420	1700	1180	800	631	666

CAL YR 1987 TOTAL 7231.6 MEAN 19.8 MAX 98 MIN 9.7 AC-FT 14340
WTR YR 1988 TOTAL 7159.3 MEAN 19.6 MAX 52 MIN 6.6 AC-FT 14200

PONCA CREEK BASIN

06453500 PONCA CREEK AT ANOKA, NE

LOCATION.--Lat 42°56'34", long 98°50'25", in NE1/4 sec.9, T.34 N., R.13 W., Boyd County, Hydrologic Unit 10150001, on left downstream bank near left abutment of bridge on State Highway 11, 0.5 mi southwest of Anoka and 0.5 mi upstream from Dry Creek.

DRAINAGE AREA.--505 mi².

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

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,630 above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 13, 1950, nonrecording gage and Sept. 13, 1950, to Oct. 8, 1984, water-stage recorder for stages above 0.4 ft and nonrecording gage read daily at same site and datum.

REMARKS.--Estimated daily discharges: Nov. 15-19, Dec. 11 to Mar. 25, June 3-30 and July 1. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--39 years, 47.9 ft³/s, 34,700 acre-ft/yr; median of yearly mean discharge, 35 ft³/s, 25,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,810 ft³/s, Mar. 27, 1960, gage height, 16.86 ft; no flow at times in 1949-50, 1955-62, 1965-71, 1974-76, 1978-82.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 9	0950	439	*a5.50	May 25	1100	*849	5.37
May 4	1700	645	4.85				

a Maximum gage height observed, but most probably higher during no gage height period Feb. 1 to Mar. 8.

Minimum daily discharge, .82 ft³/s Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	14	28	3.8	4.5	780	95	184	101	21	2.9	1.3
2	6.7	15	25	3.5	4.8	1000	99	154	95	21	2.5	1.3
3	6.7	13	31	3.2	5.2	1500	123	333	88	22	4.7	.97
4	6.8	11	32	3.0	5.8	1200	131	564	78	19	6.7	.98
5	6.8	10	30	2.8	6.2	940	141	530	68	15	4.8	.93
6	7.1	9.6	29	2.5	7.0	700	156	447	62	13	38	.95
7	7.4	9.4	28	2.3	7.6	580	130	354	56	11	44	.96
8	8.1	11	29	2.2	8.4	500	121	261	52	19	26	.97
9	7.4	12	28	2.1	9.0	440	106	205	49	14	14	.98
10	7.4	14	27	2.0	11	400	92	174	46	12	10	.98
11	7.5	17	28	1.9	11	420	83	153	43	19	7.5	.82
12	7.9	15	26	1.9	12	350	78	135	41	19	6.2	1.8
13	7.8	16	22	1.9	13	280	77	118	39	15	6.0	1.6
14	8.9	19	19	1.8	13	250	73	108	38	13	5.2	1.7
15	10	25	16	1.8	15	250	70	96	39	11	4.3	3.0
16	9.9	27	12	1.8	16	260	70	86	39	10	3.5	2.4
17	11	29	9.8	1.9	18	350	66	78	36	13	2.8	2.4
18	11	31	9.2	1.9	19	190	62	73	36	9.5	2.6	2.8
19	11	34	8.6	2.0	22	150	61	70	33	8.6	2.8	24
20	11	38	8.2	2.1	28	160	62	73	30	8.1	2.8	13
21	10	37	7.8	2.2	33	250	59	80	25	7.3	2.6	16
22	11	38	7.6	2.4	52	300	62	208	24	6.8	2.8	9.2
23	10	37	7.2	2.6	86	400	76	655	23	6.0	2.1	5.5
24	10	37	6.8	2.7	106	350	107	808	22	5.3	1.7	4.3
25	12	35	6.4	2.9	200	250	118	817	20	4.6	1.4	3.6
26	13	34	6.0	3.1	350	217	120	622	19	4.5	1.2	3.2
27	13	33	5.6	3.2	480	171	170	346	18	4.2	1.2	2.9
28	13	32	5.3	3.4	600	144	199	219	18	4.1	1.2	3.6
29	13	31	4.9	3.6	700	126	200	164	19	3.8	1.2	12
30	13	28	4.6	3.9	---	112	207	134	19	3.6	1.3	29
31	13	---	4.1	4.2	---	102	---	114	---	3.4	1.4	---
TOTAL	298.9	712.0	512.1	80.6	2843.5	13122	3214	8363	1276	346.8	215.4	153.14
MEAN	9.64	23.7	16.5	2.60	98.1	423	107	270	42.5	11.2	6.95	5.10
MAX	13	38	32	4.2	700	1500	207	817	101	22	44	29
MIN	6.7	9.4	4.1	1.8	4.5	102	59	70	18	3.4	1.2	.82
AC-FT	593	1410	1020	160	5640	26030	6370	16590	2530	688	427	304

CAL YR 1987 TOTAL 25418.3 MEAN 69.6 MAX 1130 MIN 3.1 AC-FT 50420
WTR YR 1988 TOTAL 31137.44 MEAN 85.1 MAX 1500 MIN .82 AC-FT 61760

PONCA CREEK BASIN

33

06453600 PONCA CREEK AT VERDEL, NE

LOCATION.--Lat 42°48'40", long 98°10'35", in NE1/4NE1/4 sec.30, T.33 N., R.7 W., Knox County, Hydrologic Unit 10150001, near left bank at left downstream end of bridge on State Highway 12, 0.6 mi east of Verdel and 3.1 mi upstream from mouth.

DRAINAGE AREA.--812 mi².

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

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder and nonrecording gage read once daily. Datum of gage 1,232.9 ft above National Geodetic Vertical Datum of 1929 (Nebraska Department of Roads reference marks). See WSP 1917 for history of changes prior to Nov. 15, 1962.

REMARKS.--Estimated daily discharges: Dec. 14 to Mar. 6 and Mar. 14-18. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--31 years, 81 ft³/s, 58,680 acre-ft/yr; median of yearly mean discharges, 64 ft³/s, 46,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Mar. 27, 1960, gage height, 15.10 ft, site and datum then in use; no flow for many days in 1957-60, 1965-72, 1974-77, 1979-81.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	0900	*2000	*a11.27	May 24	0530	934	6.36

a Ice jam.

Minimum daily discharge, 1.1 ft³/s Sept. 3, 5, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	32	43	11	14	660	135	216	158	37	5.5	1.5
2	18	32	41	14	15	820	145	195	198	34	4.1	1.3
3	18	33	44	12	15	1000	179	195	140	31	16	1.1
4	19	32	44	10	16	1700	186	448	114	29	63	1.2
5	19	30	44	8.6	16	1600	193	636	97	26	39	1.1
6	18	31	43	7.2	16	1200	199	559	85	22	25	1.3
7	18	30	42	7.2	16	857	209	487	75	20	17	1.2
8	19	30	41	7.4	16	729	174	388	68	20	38	1.2
9	18	29	40	7.6	17	646	151	300	62	22	37	1.2
10	18	29	40	7.8	18	594	131	238	58	26	28	1.4
11	20	32	42	8.0	18	668	113	202	54	28	22	1.1
12	21	34	40	8.1	18	553	102	178	49	32	17	8.0
13	21	34	39	8.4	19	316	95	152	48	28	16	6.8
14	21	34	39	8.7	19	280	91	133	44	24	14	6.1
15	23	37	37	8.7	20	280	89	117	43	21	11	9.5
16	25	48	32	9.0	20	320	87	104	43	20	5.7	11
17	25	50	30	9.2	21	410	83	95	45	20	4.0	9.3
18	25	54	30	9.6	22	280	77	84	42	18	3.7	7.9
19	25	53	31	10	22	231	75	81	39	19	4.3	25
20	25	47	32	10	22	249	73	84	39	19	4.1	19
21	25	48	33	10	24	316	70	135	36	16	4.5	24
22	28	46	33	11	25	386	79	240	33	15	9.9	14
23	28	46	34	11	28	453	110	466	30	14	7.9	13
24	27	46	34	12	35	464	131	897	28	13	5.3	10
25	32	46	34	12	110	452	143	903	25	12	3.9	7.8
26	36	46	34	12	260	368	176	861	24	10	3.1	7.1
27	31	45	33	12	400	275	207	655	23	9.1	2.8	6.1
28	31	46	32	13	540	227	249	442	22	6.5	2.5	10
29	31	47	30	14	600	189	253	304	22	37	2.5	45
30	31	44	25	14	---	166	221	235	26	14	2.1	34
31	30	---	20	14	---	148	---	182	---	8.6	2.0	---
TOTAL	747	1191	1116	317.5	2383	16837	4226	10212	1770	651.2	420.9	287.2
MEAN	24.1	39.7	36.0	10.2	82.2	543	141	329	59.0	21.0	13.6	9.57
MAX	36	54	44	14	600	1700	253	903	198	37	63	45
MIN	18	29	20	7.2	14	148	70	81	22	6.5	2.0	1.1
AC-FT	1480	2360	2210	630	4730	33400	8380	20260	3510	1290	835	570

CAL YR 1987 TOTAL 54618 MEAN 150 MAX 1490 MIN 13 AC-FT 108300
WTR YR 1988 TOTAL 40158.8 MEAN 110 MAX 1700 MIN 1.1 AC-FT 79650

NIOBRARA RIVER BASIN

06454000 NIOBRARA RIVER AT WYOMING-NEBRASKA STATE LINE

LOCATION.--Lat 42°39'33", long 104°03'54", in SE1/4SW1/4 sec.15, T.31 N., R.60 W., Niobrara County, Wyoming, Hydrologic Unit 10150002, on left bank 0.2 mi downstream from Van Tassel Creek, 0.3 mi upstream from Wyoming-Nebraska State line, and 3 mi east of Van Tassel, WY.

DRAINAGE AREA.--450 mi², approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 4,687.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Jan 12, 19, 21-25, Mar. 10-17. Records fair. Diversions for irrigation of about 4,700 acres above station.

AVERAGE DISCHARGE.--33 years, 3.76 ft³/s, 2,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,120 ft³/s Aug. 16, 1977, gage height, 8.28 ft in gage well, from rating curve extended above 800 ft³/s on basis of computation of peak flow from slope-area measurement; minimum daily, 0.54 ft³/s Aug. 9, 10, 12, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 12	0900	(a)	*4.92	No peaks greater than base discharge.			
Apr. 1	1317	*19	2.10				

a Backwater from ice.

Minimum daily discharge, 0.66 ft³/s July 16, 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	2.6	2.5	2.6	2.7	4.1	9.5	3.0	4.2	2.2	2.4	1.5
2	2.4	2.7	2.7	2.6	2.6	3.8	6.8	3.5	4.4	2.3	2.4	1.5
3	2.4	2.7	2.8	2.5	2.6	3.5	6.1	3.4	4.4	2.0	5.6	1.3
4	2.5	2.5	3.0	2.6	2.6	3.6	5.6	3.4	4.2	1.8	4.6	1.5
5	2.5	2.5	3.1	2.5	2.6	3.5	5.4	3.3	4.0	1.6	3.4	1.6
6	2.5	2.5	3.1	2.4	2.5	3.6	5.2	3.2	3.8	1.4	2.7	1.6
7	2.5	3.0	3.2	2.3	2.4	3.4	5.0	3.0	3.8	1.4	2.5	1.6
8	2.6	2.7	3.2	2.2	2.3	3.1	4.8	3.0	3.7	1.6	2.4	1.6
9	2.6	2.7	3.3	2.2	2.3	3.6	4.5	2.8	3.7	1.5	2.4	1.6
10	2.7	2.6	3.4	2.2	2.2	3.0	4.3	2.7	3.5	1.3	2.4	1.6
11	2.6	2.6	3.3	2.4	2.2	2.5	4.0	2.7	3.4	1.4	2.2	1.7
12	2.6	2.6	3.1	2.4	2.3	2.0	3.4	2.7	3.7	1.2	2.1	1.9
13	2.5	2.7	3.0	2.4	2.5	4.0	3.0	2.7	3.0	1.0	2.1	1.7
14	2.6	2.7	2.8	2.4	2.5	5.0	2.9	2.5	3.1	.86	2.1	1.9
15	2.6	2.9	2.6	2.3	2.6	3.2	2.8	2.5	2.5	.86	2.0	1.9
16	2.5	2.7	2.6	2.4	2.9	3.2	3.0	2.4	2.9	.66	2.0	1.8
17	2.5	2.7	2.6	2.4	2.8	3.0	3.2	2.4	2.4	.66	2.1	1.7
18	2.4	2.7	2.6	2.4	3.0	3.0	3.1	2.7	2.3	1.7	2.1	1.7
19	2.5	2.8	2.7	2.4	3.0	3.4	2.9	4.9	2.2	4.3	2.0	1.7
20	2.5	2.8	2.7	2.5	3.2	4.1	2.9	7.0	2.2	3.0	2.0	1.7
21	2.5	2.6	2.6	1.0	3.1	4.4	2.8	7.9	2.2	2.6	2.0	1.7
22	2.6	2.6	2.7	2.4	2.6	4.6	3.1	5.6	2.2	2.2	1.9	1.7
23	2.6	2.6	2.7	2.8	2.4	7.2	3.4	4.4	2.1	1.8	1.9	1.7
24	2.6	3.1	2.7	3.0	2.5	5.6	3.7	4.2	2.0	1.5	1.9	1.7
25	2.6	3.2	2.7	2.4	2.5	5.5	3.6	4.4	1.9	1.3	1.9	1.7
26	2.6	2.6	2.6	2.4	2.7	5.7	3.4	4.4	1.9	1.3	1.9	1.7
27	2.5	2.6	2.7	2.4	2.6	8.3	3.0	4.2	1.8	1.5	1.8	1.7
28	2.5	2.6	2.6	2.4	3.5	12	3.0	4.2	1.6	1.8	1.8	2.0
29	2.5	2.6	2.6	2.4	4.3	10	2.9	4.2	2.0	1.9	1.8	2.0
30	2.5	2.5	3.5	2.6	---	8.2	3.0	4.2	2.4	2.0	1.8	1.7
31	2.6	---	2.7	2.6	---	7.3	---	4.6	---	2.2	1.7	---
TOTAL	78.5	80.7	88.4	74.5	78.0	147.4	120.3	116.1	87.5	52.84	71.9	50.7
MEAN	2.53	2.69	2.85	2.40	2.69	4.75	4.01	3.75	2.92	1.70	2.32	1.69
MAX	2.7	3.2	3.5	3.0	4.3	12	9.5	7.9	4.4	4.3	5.6	2.0
MIN	2.4	2.5	2.5	1.0	2.2	2.0	2.8	2.4	1.6	.66	1.7	1.3
AC-FT	156	160	175	148	155	292	239	230	174	105	143	101

CAL YR 1987 TOTAL 1160.7 MEAN 3.18 MAX 32 MIN 1.1 AC-FT 2300
WTR YR 1988 TOTAL 1046.84 MEAN 2.86 MAX 12 MIN .66 AC-FT 2080

NIOBRARA RIVER BASIN

35

06454100 NIOBRARA RIVER AT AGATE, NE

LOCATION.--Lat 42°25'22", long 103°47'28", in SW1/4 sec.6, T.28 N., R.55 W., Sioux County, Hydrologic Unit 10150002, on right bank 10 ft upstream from 54-in culvert, 300 ft upstream from bridge on State Highway 29, 0.2 mi northwest of Agate, and 14.5 mi upstream from Whistle Creek.

DRAINAGE AREA.--840 mi², approximately.

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

GAGE.--Water-stage recorder. Elevation of gage is 4,405 ft, from topographic map. Prior to 1982 water year, elevation published as 4,440 ft. Prior to Nov. 3, 1960, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Mar. 1, 11-20 and Sept. 20. Records good except for periods of estimated record, which are fair. Diversions for irrigation of about 6,700 acres above station.

AVERAGE DISCHARGE.--31 years, 13.9 ft³/s, 10,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 181 ft³/s June 23, 1959, gage height, 5.00 ft, from floodmark; maximum gage height 5.55 ft Mar. 24, 1988; minimum daily discharge, 1.0 ft³/s Mar. 29, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 35 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 24	1404	*74	*5.55	No other peak greater than base discharge.			
Minimum daily discharge, 4.0 ft ³ /s Oct. 1.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	9.1	12	8.1	12	28	28	17	12	7.9	6.1	6.2
2	4.2	9.1	14	6.2	12	27	27	19	12	8.2	5.6	6.3
3	4.2	8.9	14	6.4	12	25	27	19	12	7.9	6.0	6.2
4	5.0	8.7	14	6.8	12	26	26	18	11	7.9	6.7	6.3
5	6.7	9.5	14	7.4	12	26	27	18	10	7.9	6.6	6.3
6	7.0	11	14	7.9	12	29	25	17	9.7	7.3	6.2	6.0
7	7.3	12	14	8.2	12	30	25	16	9.4	7.3	5.7	6.1
8	7.1	12	14	8.6	12	24	23	16	8.9	12	6.1	6.0
9	7.0	11	14	8.9	12	25	21	16	9.2	11	5.6	6.0
10	6.7	12	14	9.1	12	27	20	16	9.8	11	5.4	6.0
11	6.6	12	14	9.4	13	28	19	15	10	11	5.0	6.2
12	6.7	12	12	9.5	13	35	18	15	11	11	5.4	7.3
13	7.1	11	10	9.5	13	36	18	15	15	9.7	6.1	7.3
14	7.0	10	13	9.5	13	37	18	15	14	8.5	5.5	7.5
15	7.3	8.8	12	9.8	14	38	17	14	11	6.9	4.9	8.0
16	7.5	8.7	11	10	14	39	17	14	12	7.1	4.8	7.5
17	7.7	7.8	11	10	14	40	17	14	11	7.0	4.6	7.3
18	7.0	7.2	11	10	14	41	17	15	9.5	7.0	5.4	7.4
19	7.3	7.3	12	10	14	42	17	19	8.9	8.9	5.0	7.5
20	7.1	7.5	14	10	15	43	16	24	8.1	8.1	5.1	7.4
21	7.3	7.8	13	10	16	43	16	23	7.0	7.5	5.4	7.4
22	7.3	11	13	11	17	42	18	23	5.9	7.3	6.1	7.7
23	7.5	13	13	10	18	42	19	22	5.5	7.3	5.5	7.7
24	7.7	13	9.3	9.1	17	57	20	20	5.0	6.9	5.6	7.7
25	7.7	13	8.6	10	19	46	22	18	4.5	6.7	5.7	7.5
26	8.4	13	9.3	9.7	20	38	21	18	6.5	7.1	6.0	6.0
27	10	13	8.8	10	22	35	21	16	7.1	6.7	6.0	7.0
28	9.2	13	9.0	11	24	31	19	12	7.4	6.6	5.9	7.8
29	9.1	12	7.2	11	24	29	18	9.7	7.8	6.5	6.2	8.8
30	8.9	11	6.7	12	---	29	17	9.1	8.6	6.3	6.4	8.5
31	8.9	---	8.1	12	---	27	---	12	---	6.2	6.3	---
TOTAL	222.5	315.4	364.0	291.1	434	1065	614	514.8	279.8	248.7	176.9	210.9
MEAN	7.18	10.5	11.7	9.39	15.0	34.4	20.5	16.6	9.33	8.02	5.71	7.03
MAX	10	13	14	12	24	57	28	24	15	12	6.7	8.8
MIN	4.0	7.2	6.7	6.2	12	24	16	9.1	4.5	6.2	4.6	6.0
AC-FT	441	626	722	577	861	2110	1220	1020	555	493	351	418

CAL YR 1987 TOTAL 4478.5 MEAN 12.3 MAX 26 MIN 3.7 AC-FT 8880
WTR YR 1988 TOTAL 4737.1 MEAN 12.9 MAX 57 MIN 4.0 AC-FT 9400

NIOBRARA RIVER BASIN

06454500 NIOBRARA RIVER ABOVE BOX BUTTE RESERVOIR, NE

LOCATION.--Lat 42°27'35", long 103°10'15", in NE1/4 sec.27, T.29 N., R.50 W., Dawes County, Hydrologic Unit 10150002, on right bank 1 mi upstream from high-water line of Box Butte Reservoir and 6 mi east of Marsland.

DRAINAGE AREA.--1,400 mi², approximately.

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

REVISED RECORDS.--WSP 1917: 1951, 1952(P), 1957(M).

GAGE.--Water-stage recorder. Concrete control since Oct. 12, 1953. Datum of gage is 4,012.47 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1949, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Oct. 2-25, Nov. 20-22, Dec. 14 to Jan. 13, Jan. 17-29, Feb. 1-6, 10, 11, and Mar. 11-21. Records good except for periods of estimated record, which are poor. Diversions for irrigation of about 12,800 acres above station.

AVERAGE DISCHARGE.--42 years, 29.4 ft³/s, 21,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,950 ft³/s July 28, 1951, gage height, 10.30 ft, from rating curve extended above 230 ft³/s on basis of step-backwater analysis and slope-area measurement at gage height 9.22 ft; minimum daily, 1.6 ft³/s Sept. 26, 1953.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*).

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
(a)	unknown	(b)	*6.47				
Mar. 26	0030	*89	4.12	No peak greater than base discharge.			

a Sometime during period Mar. 12-20.

b Backwater from ice.

Minimum daily discharge, 7.0 ft³/s Aug. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	16	24	22	20	44	56	38	32	13	8.9	12
2	14	16	27	23	18	48	54	44	32	12	8.9	12
3	14	16	23	24	18	45	52	46	31	11	9.9	12
4	14	16	31	25	17	48	49	48	30	10	12	9.9
5	14	16	32	23	17	48	48	48	27	10	12	7.9
6	14	16	31	20	16	48	48	45	23	10	11	9.9
7	14	16	31	18	16	52	46	43	15	10	10	10
8	14	16	32	18	18	48	46	42	18	13	9.9	9.9
9	14	16	32	17	18	50	46	42	18	13	9.9	9.9
10	14	16	32	17	18	50	45	38	17	12	9.4	12
11	14	16	32	19	18	50	45	41	16	12	9.4	9.4
12	14	16	29	18	18	45	45	38	16	12	8.9	9.9
13	14	16	25	17	20	45	44	36	27	11	8.9	10
14	14	17	25	17	21	45	40	36	25	9.9	8.4	12
15	14	18	25	16	22	45	38	34	29	9.9	7.5	10
16	14	20	25	17	22	45	36	31	27	9.9	7.0	10
17	14	23	24	16	22	50	36	29	25	9.4	7.9	10
18	14	23	24	16	22	50	28	30	24	13	8.9	10
19	14	24	24	14	23	50	32	35	23	13	8.9	10
20	14	24	25	16	25	45	37	52	22	13	9.8	11
21	14	25	25	16	28	40	35	54	20	13	14	11
22	14	27	25	15	32	72	37	55	15	13	13	11
23	14	28	25	12	27	68	36	52	14	13	12	11
24	14	28	26	10	31	67	40	45	13	13	12	12
25	14	28	28	8.0	35	76	47	39	13	12	12	12
26	14	27	30	12	37	84	48	38	13	12	12	12
27	15	28	25	15	38	72	49	36	13	11	12	11
28	15	27	28	18	40	64	47	34	13	10	12	12
29	15	27	26	20	41	60	43	32	12	9.9	13	12
30	15	25	23	20	---	60	40	30	12	9.4	12	13
31	16	---	23	20	---	58	---	31	---	8.9	12	---
TOTAL	440	627	837	539.0	698	1672	1293	1242	615	352.3	323.5	324.8
MEAN	14.2	20.9	27.0	17.4	24.1	53.9	43.1	40.1	20.5	11.4	10.4	10.8
MAX	16	28	32	25	41	84	56	55	32	13	14	13
MIN	14	16	23	8.0	16	40	28	29	12	8.9	7.0	7.9
AC-FT	873	1240	1660	1070	1380	3320	2560	2460	1220	699	642	644

CAL YR 1987 TOTAL 9168 MEAN 25.1 MAX 57 MIN 10 AC-FT 18180
WTR YR 1988 TOTAL 8963.6 MEAN 24.5 MAX 84 MIN 7.0 AC-FT 17780

06455000 BOX BUTTE RESERVOIR NEAR HEMINGFORD, NE

LOCATION.--Lat 42°27'30", long 103°04'03", in sec.28, T.29 N., R.49 W., Dawes County, Hydrologic Unit 10150002, in control tower on dam near left bank on Niobrara River, 9 mi north of Hemingford.

DRAINAGE AREA.--1,460 mi², approximately.

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

GAGE.--Electric tape gage read three or more times a month. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam; outlet gate first closed Oct. 3, 1945. Usable capacity, 30,420 acre-ft between elevations 3,969.00 ft, sill of outlet gate, and 4,007.00 ft, crest of spillway. Dead storage, 640 acre-ft. Figures given herein represent total contents. Water is used for irrigation of Mirage Flats project of Bureau of Reclamation.

COOPERATION.--Records of elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,210 acre-ft Mar. 26, 1948, elevation, 4,007.70 ft; minimum observed since operation of reservoir began, 640 acre-ft Aug. 26, 1985, elevation, 3,969.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 16,310 acre-ft June 21, elevation, 3,996.10 ft; minimum observed, 1,380 acre-ft Aug. 30, elevation, 3,973.01 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

	Date	Elevation (feet) ^{a/}	Contents (acre-feet)	Change in contents (acre-feet)
Sept.	30	3,977.71	2,720	-
Oct.	31	3,979.68	3,560	+840
Nov.	30	3,983.08	5,340	+1,780
Dec.	31	3,985.05	6,520	+1,180
CAL YR 1987		-	-	-3,740
Jan.	31	3,986.85	7,750	+1,230
Feb.	29	3,988.42	8,940	+1,190
Mar.	31	3,991.76	11,870	+2,930
Apr.	30	3,993.94	14,010	+2,140
May	31	3,995.72	15,890	+1,880
June	30	3,993.65	13,720	-2,170
July	31	3,984.94	6,450	-7,270
Aug.	31	3,973.01	1,380	-5,070
Sept.	30	3,976.78	2,380	+1,000
WTR YR 1988		-	-	-340

^a Elevations read on or near last day of month.

NIOBRARA RIVER BASIN

06455500 NIOBRARA RIVER BELOW BOX BUTTE RESERVOIR, NE

LOCATION.--Lat 42°27'25", long 103°04'05", in SE1/4 sec.28, T.29 N., R.49 W., Dawes County, Hydrologic Unit 10150003, on left bank 0.2 mi downstream from Box Butte Reservoir and 9 mi north of Hemingford.

DRAINAGE AREA.--1,460 mi², approximately.

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

GAGE.--Water-stage recorder. Concrete control since Apr. 11, 1953. Datum of gage is 3,950.08 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Feb. 23, May 12-24, and Sept. 12-15. Records good except for periods of estimated record, which are fair. Flow completely regulated by Box Butte Reservoir (station 06455000).

AVERAGE DISCHARGE.--42 years, 25.3 ft³/s, 18,300 acre-ft/yr. Unadjusted for storage or diversions since October 1947.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 616 ft³/s July 2, 1968, gage height, 5.04 ft; minimum daily, 0.10 ft³/s for many days in 1947, 1951.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 169 ft³/s July 26, gage height, 4.32 ft; minimum daily, 0.54 ft³/s Mar. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.74	.77	.77	.74	.74	.80	.83	1.1	.95	118	134	.83
2	.74	.80	.80	.74	.74	.80	.83	1.2	.95	112	134	.77
3	.74	.80	.80	.74	.74	.80	.83	1.1	.92	110	129	.77
4	.74	.83	.80	.74	.71	.80	.86	1.1	.95	116	112	.77
5	.74	.83	.80	.71	.71	.83	.83	1.0	.95	136	101	.83
6	.74	.83	.80	.71	.71	.92	.86	1.0	.95	156	97	.83
7	.74	.89	.80	.71	.71	.83	.86	1.0	.92	156	106	.80
8	.77	.86	.83	.71	.71	.77	.86	1.0	.92	125	120	.80
9	.77	.86	.80	.71	.77	.77	.89	1.0	.92	103	120	.77
10	.80	.86	.83	.74	.77	.80	.89	1.0	.92	103	120	.77
11	.80	.86	.80	.74	.77	.54	.89	1.0	.92	99	129	.77
12	.80	.86	.80	.74	.80	.86	.92	1.0	.98	92	134	.74
13	.80	.86	.80	.71	.80	.92	.89	1.0	1.2	95	129	.77
14	.83	.86	.80	.71	.77	.86	.92	1.0	1.1	114	129	.77
15	.86	.86	.80	.71	.83	.83	.92	.98	1.0	129	131	.89
16	.83	.86	.80	.71	.83	.83	.92	.98	1.0	129	125	.86
17	.83	.86	.80	.71	.83	.83	.95	.98	1.0	131	114	.80
18	.86	.86	.80	.71	.83	.86	.98	.98	1.0	98	108	.80
19	.89	.86	.74	.71	.80	.86	.98	.98	1.0	1.2	106	.80
20	.89	.86	.74	.71	.80	.86	.98	.95	1.0	1.0	101	.80
21	.86	.86	.74	.71	.83	.92	1.0	.95	1.3	1.0	99	.80
22	.86	.89	.74	.71	.80	.89	1.0	.95	1.0	1.0	90	.80
23	.86	.86	.77	.71	.80	.89	1.1	.95	1.0	.98	81	.80
24	.86	.86	.77	.71	.80	.89	1.1	.95	1.0	64	78	.77
25	.86	.86	.77	.74	.77	.86	1.2	.95	.98	126	76	.77
26	.83	.86	.77	.74	.77	.86	1.1	.92	.98	158	69	.71
27	.80	.86	.80	.74	.80	.86	1.1	.92	66	163	59	.71
28	.80	.83	.77	.71	.80	.83	1.0	.89	146	163	53	.71
29	.77	.80	.77	.71	.80	.83	1.1	.89	146	156	46	.74
30	.77	.77	.77	.74	---	.80	1.1	1.1	136	141	25	.71
31	.74	---	.74	.74	---	.83	---	1.0	---	138	.89	---
TOTAL	24.92	25.38	24.32	22.37	22.54	25.83	28.69	30.82	519.81	3236.18	3055.89	23.46
MEAN	.80	.85	.78	.72	.78	.83	.96	.99	17.3	104	98.6	.78
MAX	.89	.89	.83	.74	.83	.92	1.2	1.2	146	163	134	.89
MIN	.74	.77	.74	.71	.71	.54	.83	.89	.92	.98	.89	.71
AC-FT	49	50	48	44	45	51	57	61	1030	6420	6060	47

CAL YR 1987 TOTAL 8671.69 MEAN 23.8 MAX 201 MIN .71 AC-FT 17200
WTR YR 1988 TOTAL 7040.21 MEAN 19.2 MAX 163 MIN .54 AC-FT 13960

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LOCATION.--Lat 42°38'00", long 102°12'40", in NE1/4 sec.26, T.31 N., R.42 W., Sheridan County, Hydrologic Unit 10150003, on left bank 250 ft upstream from bridge on State Highway 27, 4 mi downstream from Rush Creek, and 11 mi south of Gordon.

PERIOD OF RECORD.--August 1928 to September 1932, October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,432.49 ft above National Geodetic Vertical Datum of 1929. Aug. 24, 1928, to June 30, 1932, nonrecording gage at bridge 4 mi downstream at different datum. Dec. 3, 1945, to Mar. 24, 1970, water-stage recorder at datum 2.0 ft higher, Mar. 25, 1970, to July 28, 1982, at datum 1.0 ft higher.

AVERAGE DISCHARGE.--42 years, (water years 1947-88) 116 ft³/s, 84,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,130 ft³/s May 21, 1962, gage height, 5.25 ft; minimum daily, 16 ft³/s Dec. 20, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 380 ft³/s May 2, gage height, 1.92 ft; maximum recorded gage height, 3.09 ft on Dec. 27, backwater from ice; minimum daily discharge, 35 ft³/s July 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	99	89	92	88	167	127	153	155	90	40	45
2	78	97	102	96	88	184	140	332	154	78	37	43
3	80	101	92	98	88	184	135	250	146	64	45	44
4	81	95	98	98	86	187	133	192	134	48	82	48
5	78	93	97	98	84	206	123	227	123	40	78	50
6	81	92	93	98	84	205	119	206	113	39	62	51
7	102	118	95	96	86	225	113	189	106	35	54	59
8	99	108	97	94	90	221	105	155	87	62	48	61
9	96	100	104	94	92	227	103	159	81	76	64	62
10	105	92	100	96	94	254	106	142	78	62	67	59
11	107	91	96	98	96	200	112	125	71	83	58	53
12	112	94	92	100	102	195	111	116	75	79	57	58
13	103	93	85	110	110	195	107	109	174	56	59	80
14	103	90	122	110	120	190	114	108	271	53	51	85
15	117	84	105	100	125	190	112	104	153	44	48	94
16	109	84	93	96	135	185	111	93	119	46	41	88
17	106	82	115	94	140	180	103	86	121	110	50	83
18	101	89	110	98	165	175	108	83	198	150	70	79
19	109	91	110	100	170	192	112	135	186	140	61	89
20	115	94	110	100	181	192	116	278	163	120	62	88
21	113	92	106	110	171	210	111	328	140	100	82	83
22	109	90	100	110	147	192	153	226	104	100	76	83
23	106	94	98	100	117	173	175	194	91	110	65	78
24	99	93	98	100	93	155	197	239	81	100	59	73
25	104	95	96	98	112	150	211	237	68	90	54	71
26	99	95	96	98	117	152	227	198	59	80	54	70
27	97	90	80	98	143	162	232	174	57	71	50	73
28	100	89	84	98	159	142	189	162	54	60	59	82
29	98	89	86	94	152	137	168	141	48	58	60	109
30	96	88	88	92	---	135	156	125	89	52	58	109
31	96	---	90	90	---	129	---	125	---	42	51	---
TOTAL	3078	2802	3027	3054	3435	5691	4129	5391	3499	2338	1802	2150
MEAN	99.3	93.4	97.6	98.5	118	184	138	174	117	75.4	58.1	71.7
MAX	117	118	122	110	181	254	232	332	271	150	82	109
MIN	78	82	80	90	84	129	103	83	48	35	37	43
AC-FT	6110	5560	6000	6060	6810	11290	8190	10690	6940	4640	3570	4260
CAL YR 1987	TOTAL 35264	MEAN 96.6	MAX 270	MIN 38	AC-FT 69950							
WTR YR 1988	TOTAL 40396	MEAN 110	MAX 332	MIN 35	AC-FT 80130							

LOCATION.--Lat 42°36'51", long 101°16'38", in NE1/4NW1/4, sec.2, T.30 N., R.34 W., Cherry County, Hydrologic Unit 10150005, on left bank 21 ft downstream from centerline of Doughboy bridge, 24 mi southwest of Nenzel.

PERIOD OF RECORD.--October 1981 to current year. Discharge measurements only, July 1963, April 1980, May-September 1981.

REMARKS.--Estimated daily discharges Dec. 27, 29, 30, Jan. 3-22, 25, 26, 30, 31, Feb. 2-4, 8, 9, and Mar. 12-14.
Records good, except for periods of estimated discharge, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 358 ft³/s Aug. 18, 1982, gage height, 1.84 ft; maximum gage height, 2.90 ft Jan. 7, 1982, backwater from ice; minimum daily discharge, 79 ft³/s Mar. 12, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 306 ft³/s May 22, gage height, 1.01 ft; maximum gage height, 1.28 ft Jan. 10, backwater from ice; minimum daily discharge, 79 ft³/s Mar. 12.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	161	176	145	175	221	179	177	173	180	172	155
2	150	164	179	164	170	218	185	233	181	178	170	153
3	157	167	184	160	160	206	183	245	183	177	181	148
4	157	156	189	150	156	197	188	270	180	173	167	148
5	150	149	192	147	140	187	186	259	174	168	157	150
6	156	151	196	145	151	195	182	238	169	166	158	151
7	153	165	201	145	152	191	183	205	169	163	154	151
8	156	177	199	145	150	184	178	176	165	167	147	149
9	152	155	183	150	145	192	163	169	166	170	149	152
10	152	154	177	155	126	194	171	173	167	175	146	156
11	155	157	184	160	142	179	176	171	166	199	143	152
12	161	156	175	160	170	79	182	174	165	191	146	151
13	164	151	170	160	185	175	175	165	177	180	154	152
14	160	149	170	165	177	180	172	163	193	176	151	156
15	168	145	166	165	168	182	178	157	177	174	145	175
16	161	144	174	170	189	182	177	154	170	172	142	168
17	163	140	166	170	189	186	175	155	173	185	142	159
18	154	147	165	170	190	179	173	159	171	239	144	158
19	155	154	169	170	195	206	175	183	169	202	149	162
20	150	160	172	170	202	236	176	244	168	192	146	164
21	149	165	161	170	207	270	176	279	166	186	148	161
22	155	168	168	170	202	273	170	289	164	182	151	161
23	154	169	176	174	187	255	182	269	166	180	149	161
24	152	165	176	176	161	240	197	254	164	178	146	164
25	158	163	180	175	176	212	193	236	159	179	146	160
26	155	169	177	175	200	192	192	209	160	178	144	164
27	152	171	175	177	227	195	207	193	161	177	143	160
28	155	172	178	182	239	177	213	185	164	175	144	164
29	159	166	175	192	239	171	203	177	163	174	147	183
30	155	169	170	190	---	176	191	171	188	175	150	198
31	158	---	151	180	---	176	---	169	---	174	155	---
TOTAL	4831	4779	5474	5127	5170	6106	5481	6301	5111	5585	4686	4786
MEAN	156	159	177	165	178	197	183	203	170	180	151	160
MAX	168	177	201	192	239	273	213	289	193	239	181	198
MIN	149	140	151	145	126	79	163	154	159	163	142	148
AC-FT	9580	9480	10860	10170	10250	12110	10870	12500	10140	11080	9290	9490
CAL YR 1987	TOTAL	59884	MEAN	164	MAX	233	MIN	130	AC-FT	118800		
WTR YR 1988	TOTAL	63437	MEAN	173	MAX	289	MIN	79	AC-FT	125800		

NIOBRARA RIVER BASIN

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06459300 MERRITT RESERVOIR NEAR BURGE, NE

LOCATION.--Lat 42°38'06", long 100°52'18", in SW1/4NW1/4 sec.29, T.31 N., R.30 W., Cherry County, Hydrologic Unit 10150005, in control house of outlet works of Merritt Dam, 8.1 mi southwest of Burge and 23 mi southwest of Valentine.

DRAINAGE AREA.--640 mi², approximately, of which about 44 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WDR NE-67: Drainage area.

GAGE.--Direct reading, single vertical column, mercury-well type manometer read once daily. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam; storage began Feb. 19, 1964. Usable capacity, 72,872 acre-ft between elevations 2,875.0 ft, sill of canal outlet works, and 2,946.0 ft, crest of spillway. Dead and inactive storage, 1,614 acre-ft below elevation 2,875.0 ft. Figures given herein represent total contents. Water is used for irrigation of Ainsworth Unit of Bureau of Reclamation.

COOPERATION.--Records of elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 78,040 acre-ft May 21, 1982, elevation 2,947.2 ft; minimum since appreciable storage was attained, 20,060 acre-ft Oct. 1, 1968, elevation, 2,916.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 75,370 acre-ft May 24, elevation, 2,946.3 ft; minimum observed, 44,450 acre-ft Aug. 31, elevation, 2,933.6 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,935.8	48,870	-
Oct. 31	2,941.9	63,220	+14,350
Nov. 30	2,944.0	68,830	+5,610
Dec. 31	2,944.0	68,830	0
CAL YR 1987	-	-	0
Jan. 31	2,944.0	68,830	0
Feb. 29	2,944.1	69,110	+280
Mar. 31	2,944.0	68,830	-280
Apr. 30	2,945.7	73,630	+4,800
May 31	2,945.8	73,910	+280
June 30	2,944.1	69,110	-4,800
July 31	2,939.6	57,450	-11,660
Aug. 31	2,933.6	44,450	-13,000
Sept. 30	2,934.8	46,810	+2,360
WTR YR 1988	-	-	-2,060

06459500 SNAKE RIVER NEAR BURGE. NE

LOCATION.--Lat 42°39'15", long 100°51'28", in NE1/4 sec.20, T.31 N., R.30 W., Cherry County, Hydrologic Unit 10150005, on right bank 150 ft downstream from Nebraska National Forest boundary, 2.1 mi downstream from Merritt Dam, 6.5 mi southwest of Burge, and 22 mi southwest of Valentine.

DRAINAGE AREA.--660 mi², approximately, of which about 44 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--June 1947 to current year.

REVISED RECORDS.--WSP 1279: 1950(M), 1951(P). WDR NE-67,72: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,805.36 ft above National Geodetic Vertical Datum of 1929, (levels by Bureau of Reclamation).

REMARKS.--No estimated daily discharges. Records good. Natural flow affected since February 1964 by storage in Merritt Reservoir (station 06459300) 2.1 mi upstream.

AVERAGE DISCHARGE.--25 years (1963-88), 155 ft³/s, 112,300 acre-ft/yr, since storage and diversion began.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,170 ft³/s Feb. 7, 1963, gage height, 6.96 ft, release of storage behind temporary construction dike, from rating curve extended above 520 ft³/s on basis of slope-area measurement at gage height, 5.39 ft; minimum daily, 5.8 ft³/s May 24-27, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 429 ft³/s May 25, gage height, 2.52 ft; minimum daily discharge, 13 ft³/s Oct. 11, 13, 15-31, Nov. 1-9, and Apr. 19-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	254	244	258	358	301	312	92	46	45	45
2	14	13	229	235	258	356	302	310	93	46	45	45
3	14	13	209	236	245	359	301	350	126	46	48	45
4	14	13	209	237	234	361	301	373	146	46	46	46
5	15	13	209	220	234	359	301	379	151	46	46	45
6	15	13	209	206	231	358	271	390	148	46	46	45
7	15	13	225	222	231	361	258	390	142	46	46	45
8	15	13	235	235	264	362	256	390	134	45	46	45
9	15	13	235	235	305	362	254	391	108	45	45	58
10	14	18	235	236	281	326	239	393	90	45	45	97
11	13	50	235	238	253	304	231	393	74	46	45	98
12	14	51	235	238	231	286	249	393	70	46	45	107
13	13	71	235	238	231	219	262	312	70	46	46	136
14	14	84	235	238	278	199	227	269	78	46	46	134
15	13	85	235	238	305	199	210	182	95	46	46	151
16	13	159	235	251	305	234	230	76	99	45	45	180
17	13	328	235	277	305	287	241	32	97	45	45	179
18	13	383	235	316	305	305	103	33	95	45	44	181
19	13	383	235	318	305	276	13	33	93	45	44	212
20	13	382	240	296	303	258	13	34	80	45	44	230
21	13	382	254	257	305	289	13	186	50	45	44	234
22	13	382	254	254	335	307	15	329	55	45	44	238
23	13	358	254	254	323	308	14	372	50	45	44	229
24	13	279	254	291	309	310	14	405	40	45	44	165
25	13	279	254	278	306	310	28	419	40	45	44	113
26	13	265	254	258	308	310	37	402	40	45	44	52
27	13	254	256	258	308	277	161	357	39	45	45	30
28	13	254	254	258	307	258	291	386	38	45	45	30
29	13	254	254	258	340	258	310	271	40	45	45	32
30	13	254	255	258	---	157	309	212	46	45	45	30
31	13	---	258	258	---	127	---	133	---	45	45	---
TOTAL	420	5072	7405	7836	8203	9040	5755	8907	2519	1407	1397	3277
MEAN	13.5	169	239	253	283	292	192	287	84.0	45.4	45.1	109
MAX	15	383	258	318	340	362	310	419	151	46	48	238
MIN	13	13	209	206	231	127	13	32	38	45	44	30
AC-FT	833	10060	14690	15540	16270	17930	11420	17670	5000	2790	2770	6500
CAL YR 1987	TOTAL 60088											
WTR YR 1988	TOTAL 61238											
	MEAN 167	MEAN 167	MEAN 165	MAX 450	MIN 12	AC-FT 1192						
				MAX 419	MIN 13	AC-FT 121500						

06461000 MINNECHADUZA CREEK AT VALENTINE, NE

LOCATION.--Lat 42°53'10", long 100°33'10", in SW1/4 sec.30, T.34 N., R.27 W., Cherry County, Hydrologic Unit 10150004, on right bank 500 ft downstream from powerplant in city park at north edge of Valentine and 4 mi upstream from mouth.

DRAINAGE AREA.--390 mi², approximately, of which about 200 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--December 1947 to current year.

REVISED RECORDS.--WDR NE-67: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,470 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges Dec. 17-24, Dec. 26 to Jan. 19, Jan. 22 to Feb. 10, and Mar. 14-17. Records good except for periods of estimated record, which are poor. Flow regulated by powerplant 500 ft above station.

AVERAGE DISCHARGE.--40 years (1948-88), 34.3 ft³/s, 24,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,100 ft³/s Mar. 22, 1960, gage height, 8.0 ft; minimum daily, 2.3 ft³/s July 13, 14, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 145 ft³/s May 5, gage height, 2.67 ft; minimum daily, 3.4 ft³/s Aug. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	29	31	23	31	96	37	50	39	36	19	15
2	27	43	31	23	30	104	43	65	39	59	16	16
3	4.1	38	31	23	31	100	47	82	35	48	14	3.7
4	13	35	31	23	32	87	43	90	29	12	37	5.5
5	37	33	32	24	31	76	53	109	34	39	51	11
6	17	41	31	24	31	71	32	108	43	33	23	24
7	23	24	32	24	31	68	43	104	36	27	3.4	20
8	23	36	32	24	31	67	40	94	33	26	25	17
9	23	46	32	24	32	65	35	73	32	5.7	16	19
10	7.6	40	32	24	31	66	36	59	8.7	17	18	3.9
11	23	25	32	24	31	66	38	58	31	47	19	8.7
12	33	41	31	24	31	38	31	48	10	41	8.5	24
13	27	40	31	24	35	33	33	36	36	41	17	22
14	27	24	28	24	38	37	34	47	25	26	14	25
15	30	35	28	25	39	41	38	36	35	42	30	22
16	29	48	22	25	43	45	31	39	32	16	21	20
17	24	40	24	25	50	48	33	37	33	25	19	5.7
18	29	30	25	25	54	48	37	35	17	41	17	15
19	38	45	26	24	58	50	28	36	31	32	3.5	37
20	28	38	24	23	64	56	28	61	41	25	5.3	31
21	28	34	23	24	78	74	30	53	31	25	12	21
22	21	33	24	25	83	61	38	78	23	26	29	25
23	27	33	22	26	75	84	35	88	19	4.7	18	24
24	28	32	21	27	64	82	43	97	18	5.9	14	7.4
25	29	32	19	28	78	72	43	103	5.7	29	13	20
26	35	31	20	27	81	63	61	98	9.7	23	11	33
27	34	31	21	28	83	57	49	88	30	20	3.6	23
28	20	31	20	29	87	41	67	65	22	19	4.2	30
29	39	31	21	30	91	49	55	48	15	11	19	29
30	30	31	23	31	---	42	65	45	24	4.1	14	28
31	15	---	23	32	---	39	---	39	---	5.6	13	---
TOTAL	797.7	1050	823	786	1474	1926	1226	2069	817.1	812.0	527.5	585.9
MEAN	25.7	35.0	26.5	25.4	50.8	62.1	40.9	66.7	27.2	26.2	17.0	19.5
MAX	39	48	32	32	91	104	67	109	43	59	51	37
MIN	4.1	24	19	23	30	33	28	35	5.7	4.1	3.4	3.7
AC-FT	1580	2080	1630	1560	2920	3820	2430	4100	1620	1610	1050	1160

CAL YR 1987 TOTAL 13222.4 MEAN 36.2 MAX 156 MIN 2.4 AC-FT 26230
WTR YR 1988 TOTAL 12894.2 MEAN 35.2 MAX 109 MIN 3.4 AC-FT 25580

NIOBRARA RIVER BASIN

06461500 NIOBRARA RIVER NEAR SPARKS, NE

LOCATION.--Lat 42°54'10", long 100°21'40", in SE1/4 sec.22, T.34 N., R.26 W., Cherry County, Hydrologic Unit 10150004, on left bank 18 ft downstream from highway bridge, 2.2 mi downstream from Big Beaver Creek, 5.5 mi downstream from Minnehaduzza Creek, and 6.5 mi southwest of Sparks.

DRAINAGE AREA.--8,090 mi², approximately.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1209: 1947(M), 1948-50(P). WDR NE-67: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,287.57 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 15-18, 24-27 and Nov. 29 to Feb. 25. Records good except for for periods of estimated record, which are fair. Natural flow of stream affected by irrigation and power developments, storage in Box Butte Reservoir (station 06455000), and since May 1964 by storage in Merritt Reservoir (station 06459300).

AVERAGE DISCHARGE.--43 years, 774 ft³/s, 560,800 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,200 ft³/s Mar. 5, 1949, gage height, 6.73 ft, from rating curve extended above 3,800 ft³/s; maximum gage height recorded, 10.06 ft Feb. 7, 1973, ice jam; minimum daily discharge, 100 ft³/s Jan. 10, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,830 ft³/s May 26, gage height, 3.75 ft; maximum gage height, 5.53 ft Jan. 7, backwater from ice; minimum daily discharge, 457 ft³/s Aug. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	530	573	802	540	830	1270	940	1040	967	806	461	531
2	521	602	820	540	810	1350	1060	1200	945	644	457	520
3	490	691	764	560	770	1310	1050	1530	955	615	553	487
4	500	598	782	580	750	1320	982	1450	970	552	633	475
5	530	587	775	600	800	1350	1020	1340	958	556	540	476
6	496	588	775	615	840	1330	992	1350	939	526	544	504
7	503	577	785	640	900	1310	905	1410	898	506	490	498
8	510	648	809	650	890	1300	927	1380	862	519	507	503
9	517	631	809	700	880	1220	940	1290	829	493	490	504
10	517	602	816	730	880	1190	900	1210	750	503	495	512
11	529	582	809	800	860	1170	853	1190	731	720	484	555
12	551	622	821	800	730	988	837	1190	686	720	491	579
13	536	624	806	750	740	686	871	1160	739	606	603	588
14	556	635	794	700	780	849	878	1080	811	570	507	605
15	577	676	790	600	800	840	800	1050	911	580	536	625
16	556	737	780	600	800	936	807	900	851	526	501	656
17	543	786	800	640	840	991	831	802	840	561	482	635
18	553	935	820	640	900	1030	838	759	717	589	495	637
19	571	922	830	660	940	1020	632	810	696	676	499	737
20	553	938	843	660	1000	1020	624	954	698	617	513	748
21	549	933	871	700	1000	1090	613	1240	669	562	529	722
22	545	934	884	700	1000	1120	639	1400	614	554	570	721
23	556	922	810	700	1070	1170	688	1450	610	514	558	718
24	562	890	770	700	1060	1160	731	1350	587	497	558	666
25	560	857	740	720	1030	1150	724	1410	568	525	555	613
26	570	848	780	740	1100	1110	796	1460	549	511	543	591
27	562	825	780	760	1130	1070	814	1330	562	500	522	533
28	548	820	770	780	1190	1050	979	1320	544	490	515	537
29	567	818	700	800	1220	1040	1050	1280	531	482	537	553
30	564	814	600	820	---	1020	1030	1110	679	473	535	559
31	551	---	600	840	---	756	---	1080	---	459	539	---
TOTAL	16773	22215	24335	21265	26540	34216	25751	37525	22666	17452	16242	17588
MEAN	541	740	785	686	915	1104	858	1210	756	563	524	586
MAX	577	938	884	840	1220	1350	1060	1530	970	806	633	748
MIN	490	573	600	540	730	686	613	759	531	459	457	475
AC-FT	33270	44060	48270	42180	52640	67870	51080	74430	44960	34620	32220	34890

CAL YR 1987 TOTAL 282430 MEAN 774 MAX 1470 MIN 446 AC-FT 560200
WTR YR 1988 TOTAL 282568 MEAN 772 MAX 1530 MIN 457 AC-FT 560500

NIOBRARA RIVER BASIN

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06461500 NIOBRARA RIVER NEAR SPARKS, NE--Continued

WATER QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1982 to current year.

WATER TEMPERATURES: October 1982 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 354 microsiemens Dec. 3, 1983; minimum daily, 185 microsiemens Aug. 21, 1985.

WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 30, 1988; minimum daily, 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 300 microsiemens May 9, 26, and June 24; minimum daily, 208 microsiemens Jan. 31.

WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 30; minimum daily, 0.0°C Dec. 31, and Jan. 4, 5, 7, and 9.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT									
15...	1010	566	218	8.33	7.0	2	94	--	31
NOV									
13...	0850	604	223	8.38	8.0	2	95	0	31
DEC									
09...	1530	817	213	8.55	4.0	4	90	0	29
JAN									
06...	0950	614	--	8.25	0.5	5	100	0	33
FEB									
04...	1620	749	252	7.92	0.5	4	95	0	31
MAR									
02...	1620	1350	244	7.87	5.5	8	94	0	30
APR									
28...	1000	1030	249	8.38	10.5	9	99	0	31
MAY									
25...	1015	1460	269	8.45	18.0	25	100	0	32
JUN									
22...	0915	577	244	8.66	25.0	17	98	0	31
JUL									
20...	1250	605	225	8.59	23.0	25	90	0	29
AUG									
17...	0855	467	--	8.77	23.0	3	89	0	29
SEP									
14...	1050	585	222	8.33	13.5	5	85	0	27

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT									
15...	4.1	9.1	0.4	5.8	--	--	--	0.30	53
NOV									
13...	4.3	9.3	0.4	6.6	111	8.0	1.9	0.30	53
DEC									
09...	4.2	8.9	0.4	6.1	105	9.0	1.3	0.40	53
JAN									
06...	4.7	10	0.5	7.5	121	9.7	1.5	0.40	61
FEB									
04...	4.3	9.1	0.4	6.9	109	8.8	1.3	0.40	57
MAR									
02...	4.6	10	0.5	7.0	115	10	1.7	0.40	48
APR									
28...	5.3	11	0.5	7.4	120	16	5.0	0.40	49
MAY									
25...	5.3	12	0.5	8.6	126	12	2.3	0.50	45
JUN									
22...	5.1	12	0.5	7.4	119	11	1.9	0.30	56
JUL									
20...	4.3	9.2	0.4	6.4	107	7.6	1.3	0.30	52
AUG									
17...	4.1	8.9	0.4	6.8	109	6.2	1.1	0.30	57
SEP									
14...	4.2	8.6	0.4	6.1	102	7.1	1.1	0.30	52

NIOBRARA RIVER BASIN

06461500 NIOBRARA RIVER NEAR SPARKS, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	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 15...	--	--	--	0.530	0.090	--	30	14	<1
NOV 13...	183	0.25	299	0.510	0.090	0.050	30	13	3
DEC 09...	177	0.24	391	0.500	0.120	0.070	30	15	<1
JAN 06...	203	0.28	337	0.670	--	--	30	18	4
FEB 04...	187	0.25	378	0.590	--	--	30	17	3
MAR 02...	183	0.25	666	0.440	--	--	20	32	9
APR 28...	200	0.27	557	0.710	0.100	--	30	14	2
MAY 25...	193	0.26	762	<0.100	0.130	0.070	30	26	2
JUN 22...	196	0.27	305	<0.100	0.250	0.030	30	9	<1
JUL 20...	175	0.24	286	0.150	0.670	0.060	30	9	3
AUG 17...	179	0.24	225	<0.100	0.100	0.020	30	9	2
SEP 14...	168	0.23	266	0.130	0.180	--	30	13	2

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	250	235	---	220	238	290	250	290	251	233	235
2	235	232	235	245	226	248	260	240	290	255	228	237
3	231	233	235	238	223	245	---	---	280	---	222	238
4	231	235	238	238	229	248	260	260	270	254	220	239
5	233	243	236	252	233	243	260	270	270	258	232	---
6	233	238	235	250	239	246	260	280	260	249	242	238
7	232	240	233	242	236	247	250	270	280	251	231	236
8	235	238	232	245	232	244	260	290	---	235	233	235
9	236	246	228	233	218	245	260	300	260	240	231	235
10	236	250	230	241	231	247	260	280	260	233	229	235
11	235	---	231	247	225	283	260	270	270	223	229	229
12	238	238	231	222	233	234	250	270	---	244	231	222
13	235	244	230	232	220	233	250	260	260	226	228	228
14	235	247	238	241	215	246	240	260	250	235	231	225
15	---	---	235	220	214	247	250	260	270	237	231	220
16	235	245	218	219	215	246	250	270	250	234	225	229
17	240	247	238	217	214	254	240	280	250	228	225	224
18	236	235	238	224	216	244	250	280	230	234	228	220
19	237	236	226	---	217	244	250	280	250	232	226	217
20	236	230	232	221	218	248	270	280	240	229	226	222
21	236	230	230	215	215	241	270	260	250	228	231	234
22	239	225	234	222	212	238	260	260	260	232	226	221
23	242	228	230	220	228	238	250	250	290	229	224	218
24	238	232	221	211	232	247	260	270	300	235	224	227
25	241	233	232	---	228	251	260	270	290	234	223	223
26	241	233	237	215	236	252	260	300	290	241	226	239
27	236	229	---	225	237	251	260	270	280	234	227	228
28	238	232	---	217	237	258	260	280	270	248	227	230
29	240	---	---	218	236	253	250	290	260	233	230	229
30	243	230	---	210	---	259	250	290	250	236	223	230
31	239	---	228	208	---	262	---	290	---	227	224	---
MEAN	---	---	---	---	225	248	---	---	---	---	228	---

NIOBRARA RIVER BASIN

47

06461500 NIOBRARA RIVER NEAR SPARKS, NE--Continued

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.0	15.0	2.0	---	1.0	10.0	7.0	18.0	21.0	20.0	24.0	26.0
2	13.0	12.0	2.0	1.0	1.0	7.0	9.0	15.0	21.0	25.0	30.0	25.0
3	15.0	14.0	3.0	3.0	2.0	5.0	---	---	21.0	---	27.0	22.0
4	14.0	9.0	3.0	.0	2.0	5.0	12.0	14.0	23.0	26.0	21.0	19.0
5	14.0	8.0	5.0	.0	2.0	6.0	15.0	18.0	31.0	29.0	20.0	---
6	12.0	7.0	6.0	1.0	2.0	7.0	16.0	21.0	22.0	30.0	24.0	22.0
7	12.0	9.0	4.0	.0	1.0	9.0	10.0	16.0	24.0	25.0	26.0	22.0
8	14.0	7.0	6.0	2.0	3.0	6.0	14.0	14.0	---	25.0	27.0	20.0
9	8.0	3.0	2.0	.0	2.0	5.0	10.0	12.0	29.0	24.0	28.0	21.0
10	9.0	7.0	2.0	2.0	3.0	9.0	15.0	15.0	29.0	26.0	29.0	22.0
11	7.0	---	4.0	1.0	1.0	6.0	9.0	17.0	29.0	22.0	30.0	21.0
12	12.0	9.0	2.0	4.0	4.0	3.0	12.0	20.0	---	22.0	25.0	16.0
13	10.0	12.0	2.0	4.0	4.0	3.0	12.0	18.0	22.0	25.0	24.0	15.0
14	11.0	10.0	1.0	4.0	5.0	5.0	10.0	19.0	22.0	25.0	23.0	17.0
15	---	---	2.0	4.0	2.0	3.0	10.0	20.0	20.0	26.0	30.0	17.0
16	9.0	6.0	1.0	3.0	4.0	2.0	11.0	17.0	26.0	24.0	29.0	24.0
17	10.0	6.0	1.0	2.0	4.0	4.0	15.0	19.0	29.0	23.0	28.0	18.0
18	9.0	5.0	1.0	4.0	3.0	5.0	10.0	21.0	29.0	24.0	26.0	22.0
19	10.0	6.0	3.0	---	4.0	7.0	12.0	18.0	30.0	21.0	28.0	15.0
20	7.0	6.0	1.0	4.0	3.0	8.0	14.0	15.0	25.0	21.0	28.0	14.0
21	6.0	6.0	1.0	5.0	3.0	9.0	12.0	14.0	31.0	21.0	27.0	17.0
22	8.0	6.0	4.0	3.0	3.0	10.0	8.0	13.0	31.0	22.0	26.0	17.0
23	8.0	7.0	2.0	5.0	4.0	10.0	7.0	15.0	26.0	28.0	25.0	15.0
24	4.0	7.0	1.0	4.0	3.0	11.0	9.0	17.0	27.0	25.0	26.0	15.0
25	10.0	7.0	1.0	---	3.0	9.0	15.0	20.0	26.0	22.0	25.0	22.0
26	8.0	6.0	1.0	3.0	5.0	8.0	11.0	21.0	29.0	23.0	22.0	12.0
27	8.0	5.0	---	4.0	7.0	13.0	10.0	22.0	24.0	25.0	22.0	16.0
28	6.0	4.0	---	4.0	8.0	10.0	15.0	24.0	32.0	25.0	25.0	15.0
29	7.0	---	---	3.0	6.0	6.0	20.0	25.0	27.0	27.0	23.0	12.0
30	10.0	5.0	---	4.0	---	8.0	16.0	27.0	23.0	26.0	33.0	15.0
31	6.0	---	.0	2.0	---	7.0	---	22.0	---	25.0	25.0	---
MEAN	---	---	---	---	3.3	7.0	---	---	---	---	26.0	---

NIOBRARA RIVER BASIN

06462500 PLUM CREEK AT MEADVILLE, NE

LOCATION.--Lat 42°45'05", long 99°52'05", in NE1/4NW1/4 sec.14, T.32 N., R.22 W., Brown County, Hydrologic Unit 10150004, on left bank 0.4 mi upstream from county road bridge, 1 mi upstream from mouth, 1 mi southwest of Meadville, and 17 mi north of Ainsworth.

DRAINAGE AREA.--600 mi², approximately, of which about 340 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--December 1947 to September 1975, October 1976 to current year. Prior to October 1962, published as "near Meadville."

REVISED RECORDS.--WSP 1729: 1953. WSP 1917: 1953.

GAGE.--Water-stage recorder. Elevation of gage is 2,032 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 25, 1962, at site 6.5 mi upstream at different datum. Nov. 25, 1962, to Nov. 14, 1966, at present site at datum 3.0 ft higher. Nov. 15, 1966 to Oct. 2, 1979, at present site at datum 2.0 ft higher. Oct. 3, 1979 to June 3, 1982, at present site at datum 1.0 ft higher.

REMARKS.--Estimated daily discharges: Dec. 23 to Feb. 24. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--39 years (1948-75, 1976-88), 118 ft³/s, 85,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,070 ft³/s Sept. 18, 1967, gage height, 6.98 ft present datum; maximum gage height observed, 8.54 ft Dec. 6, 1964, backwater from ice, present datum; minimum daily discharge, 15 ft³/s Feb. 19, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 26	1600	(a)	*6.43	Apr. 28	1745	438	3.57
Mar. 4	1330	709	5.51	May 5	1200	611	4.29
Mar. 22	1700	569	4.58	May 24	1500	*882	4.51
Apr. 7	1030	354	3.61				

a Backwater from ice.

Minimum daily discharge, 100 ft³/s Jan. 3-9.

CORRECTIONS.--Gage height for maximum discharge for period of record was corrected to read 6.98 ft, present datum (rather than 5.98 ft previously published in WRD NE 1980-87).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	113	131	110	135	399	219	379	223	211	124	114
2	144	131	130	105	140	451	231	356	200	164	132	112
3	147	131	132	100	140	540	261	393	191	137	139	111
4	145	130	133	100	135	633	306	509	180	143	147	113
5	143	128	136	100	140	578	328	638	171	145	128	115
6	138	129	132	100	145	568	335	578	163	138	104	114
7	135	128	132	100	150	552	329	484	157	134	106	117
8	137	133	133	100	155	554	306	445	158	125	103	116
9	129	128	134	100	160	501	287	421	153	131	104	114
10	126	125	136	105	170	515	257	392	150	131	107	117
11	124	123	140	110	185	494	249	362	138	168	112	118
12	125	124	137	110	210	399	252	326	137	163	114	120
13	125	124	138	115	220	268	241	293	140	137	134	123
14	127	124	140	120	215	256	235	275	141	131	128	130
15	132	122	146	120	205	272	234	260	132	142	122	135
16	128	130	157	120	195	268	240	245	133	140	122	134
17	129	124	158	120	200	268	241	248	133	148	120	124
18	128	124	129	120	205	279	236	246	132	132	109	122
19	132	123	136	120	215	294	243	257	132	135	107	138
20	125	151	134	120	230	326	249	264	132	120	104	128
21	127	175	135	120	240	400	251	305	127	113	114	120
22	128	126	136	125	265	528	259	413	124	112	125	119
23	126	125	135	125	290	473	262	740	130	106	113	115
24	112	128	135	125	305	412	283	915	125	102	107	116
25	115	127	130	125	324	382	319	837	121	106	107	116
26	115	131	130	130	330	341	347	657	120	111	105	116
27	124	132	125	130	335	304	367	521	122	115	109	122
28	128	135	125	130	357	278	411	436	128	123	108	138
29	137	135	125	135	381	256	431	405	127	130	106	150
30	119	133	120	135	---	234	420	327	165	125	108	137
31	120	---	115	135	---	220	---	267	---	131	116	---
TOTAL	4025	3892	4155	3610	6377	12243	8629	13194	4385	4149	3584	3664
MEAN	130	130	134	116	220	395	288	426	146	134	116	122
MAX	155	175	158	135	381	633	431	915	223	211	147	150
MIN	112	113	115	100	135	220	219	245	120	102	103	111
AC-FT	7980	7720	8240	7160	12650	24280	17120	26170	8700	8230	7110	7270

CAL YR 1987 TOTAL 67377 MEAN 185 MAX 1050 MIN 92 AC-FT 133600
WTR YR 1988 TOTAL 71907 MEAN 196 MAX 915 MIN 100 AC-FT 142600

NIOBRARA RIVER BASIN

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06463080 LONG PINE CREEK NEAR LONG PINE, NE

LOCATION.--Lat 42°37'55", long 99°40'46", in SE1/4NE1/4 sec.29, T.31 N., R.20 W., Brown County, Hydrologic Unit 10150004, on right bank 4.9 mi upstream from Bone Creek and 7 mi north of Long Pine.

DRAINAGE AREA.--246 mi²

PERIOD OF RECORD.--October 1979 to current year.

REVISED RECORDS.--WRD NE-81-1: 1980(M).

GAGE.--Water-stage recorder. Elevation of gage is 2,080 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Sept. 19-22. Records good except for period of estimated record, which are fair. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--9 years, 102 ft³/s, 73,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 507 ft³/s July 16, 1983, gage height, 5.27 ft; minimum daily, 77 ft³/s Sept. 5, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 2	0645	313	3.18	May 22	1530	375	3.37
Mar. 7	1515	216	2.21	Sept. 19	0045	265	2.44
May 3	1730	*395	*3.57				

Minimum daily discharge, 89 ft³/s June 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	93	102	100	106	194	106	105	110	121	96	103
2	96	94	102	101	107	263	118	124	109	111	95	103
3	97	93	103	102	107	201	155	341	107	105	107	101
4	97	93	103	101	106	162	149	299	106	102	121	102
5	96	92	103	101	104	140	153	195	104	98	105	102
6	96	94	103	102	105	141	153	148	103	95	104	102
7	95	95	104	104	106	193	130	136	102	95	103	102
8	96	96	104	103	107	177	121	127	99	96	101	102
9	96	94	104	102	106	191	114	122	98	99	99	102
10	96	94	105	102	105	201	110	115	97	102	99	103
11	96	95	105	105	105	170	109	113	97	125	101	103
12	96	95	104	102	107	125	109	111	97	110	104	100
13	96	95	102	102	107	114	106	108	97	106	141	103
14	94	96	101	102	107	112	102	106	97	102	111	104
15	96	98	102	104	107	110	102	104	95	101	102	108
16	95	104	101	106	109	108	102	102	93	98	99	108
17	94	100	102	104	107	109	102	102	96	99	95	105
18	93	98	102	105	108	109	101	101	93	98	96	113
19	92	97	103	112	108	113	101	105	92	99	96	162
20	92	99	102	106	110	122	100	103	92	101	99	116
21	91	100	102	105	111	134	99	182	95	99	100	105
22	92	102	103	105	111	127	104	350	93	98	102	103
23	91	102	104	106	109	120	105	322	93	98	101	102
24	90	101	103	107	111	116	113	237	93	100	100	103
25	91	100	102	105	114	113	107	169	92	100	98	104
26	91	101	102	107	114	110	114	138	89	99	95	104
27	90	101	107	106	117	109	155	125	90	99	97	103
28	90	101	104	107	132	107	155	119	91	99	96	110
29	90	101	103	108	160	106	127	115	90	99	99	137
30	90	102	104	108	---	105	113	114	118	98	98	125
31	92	---	100	106	---	106	---	111	---	97	99	---
TOTAL	2905	2926	3191	3236	3213	4308	3535	4749	2928	3149	3159	3240
MEAN	93.7	97.5	103	104	111	139	118	153	97.6	102	102	108
MAX	98	104	107	112	160	263	155	350	118	125	141	162
MIN	90	92	100	100	104	105	99	101	89	95	95	100
AC-FT	5760	5800	6330	6420	6370	8540	7010	9420	5810	6250	6270	6430
CAL YR 1987	TOTAL 39283	MEAN 108	MAX 314	MIN 90	AC-FT 77920							
WTR YR 1988	TOTAL 40539	MEAN 111	MAX 350	MIN 89	AC-FT 80410							

NIOBRARA RIVER BASIN

06463500 LONG PINE CREEK NEAR RIVERVIEW, NE

LOCATION.--Lat 42°41'21", long 99°40'43", in SE1/4NE1/4 sec.5, T.31 N., R.20 W., Brown County, Hydrologic Unit 10150004, on right bank 10 ft downstream from county road bridge, 1 mi downstream from Bone Creek, and 5.5 mi southwest of Riverview.

DRAINAGE AREA.--460 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1948 to January 1954, September 1954 to current year.

REVISED RECORDS.--WSP 1729: 1952(M).

GAGE.--Water-stage recorder. Datum of gage is 1,983.34 ft above National Geodetic Vertical Datum of 1929, (levels by Bureau of Reclamation). Prior to Dec. 7, 1962, at site 100 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 10, 20, Jan. 1, 5, 6, 9, 10, 19, 25, and Feb. 10. 11. Records good, except for periods of estimated record, which are poor. Flow includes return water from Ainsworth Irrigation District since 1965.

AVERAGE DISCHARGE.--39 years (1948-53, 1954-88), 146 ft³/s, 105,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,650 ft³/s July 1, 1962, gage height, 15.68 ft, backwater from fallen bridge, from rating curve extended above 3,600 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 44 ft³/s Jan. 10, 1963.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 2	1200	709	4.77	July 1	0400	407	4.00
Mar. 7	2000	410	4.01	Aug. 12	----	unknown	unknown
May 4	0130	756	4.88	Sept. 19	----	720	a4.95
May 22	1800	*996	*5.40				

a Observer's reading.

Minimum daily discharge, 145 ft³/s Feb. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	164	159	150	159	420	172	198	200	341	188	188
2	167	162	168	153	164	557	190	218	200	281	184	181
3	166	162	166	166	153	390	266	519	194	207	196	184
4	169	161	165	164	155	278	277	600	205	192	245	188
5	164	160	165	160	164	224	245	331	212	180	230	186
6	162	161	163	160	184	231	253	249	200	176	218	186
7	163	163	163	159	159	337	215	227	199	173	218	186
8	162	169	164	157	157	348	193	214	199	185	214	184
9	158	163	162	150	154	336	177	208	188	192	195	181
10	157	150	164	150	145	368	168	200	186	190	195	184
11	157	163	164	170	150	317	166	195	186	297	250	184
12	157	161	161	159	158	203	168	195	187	274	425	184
13	155	161	160	148	156	186	168	190	190	228	443	193
14	152	159	165	161	154	188	168	190	185	209	267	188
15	154	162	159	166	152	182	168	184	191	203	224	195
16	151	172	158	168	158	177	170	183	185	208	215	191
17	151	166	160	164	156	178	168	182	186	217	205	192
18	153	162	163	164	156	179	168	190	189	224	186	203
19	156	160	164	161	156	189	170	230	186	215	184	468
20	153	161	165	159	160	212	170	229	178	214	184	238
21	155	163	164	151	162	256	175	361	178	205	188	186
22	162	165	165	159	169	225	177	803	171	198	186	172
23	162	165	167	164	168	202	186	792	171	189	184	177
24	162	161	166	157	173	188	205	523	181	194	177	175
25	164	159	159	155	179	177	220	377	181	202	181	170
26	165	157	166	157	181	174	232	293	170	199	179	170
27	164	156	169	157	202	174	301	259	172	197	188	171
28	165	156	169	157	267	174	330	230	168	195	186	166
29	166	155	168	166	333	171	248	222	166	194	184	264
30	163	154	168	166	---	170	214	214	240	195	184	212
31	165	---	157	164	---	171	---	209	---	195	181	---
TOTAL	4974	4833	5076	4942	4984	7582	6128	9215	5644	6569	6684	5947
MEAN	160	161	164	159	172	245	204	297	188	212	216	198
MAX	174	172	169	170	333	557	330	803	240	341	443	468
MIN	151	150	157	148	145	170	166	182	166	173	177	166
AC-FT	9870	9590	10070	9800	9890	15040	12150	18280	11190	13030	13260	11800
CAL YR 1987	TOTAL 68473	MEAN 188	MAX 969	MIN 146	AC-FT 135800							
WTR YR 1988	TOTAL 72578	MEAN 198	MAX 803	MIN 145	AC-FT 144000							

NIOBRARA RIVER BASIN
06463500 LONG PINE CREEK NEAR RIVERVIEW, NE--Continued
WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1977 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	
OCT 15...	1345	154	193	8.41	11.5	1	77	0	25	
NOV 13...	1310	164	187	8.74	11.5	3	74	0	24	
DEC 10...	1055	163	189	8.22	6.0	5	75	0	24	
JAN 06...	1350	170	181	8.08	0.5	4	72	0	23	
FEB 05...	1100	159	187	8.10	0.5	2	74	0	24	
MAR 02...	1130	70	185	8.00	2.5	120	67	0	21	
APR 28...	1510	324	224	8.25	16.5	69	79	0	25	
MAY 26...	1120	297	226	8.23	18.5	55	85	0	27	
JUN 23...	1205	172	190	8.12	22.5	11	75	0	24	
JUL 21...	1030	197	198	8.31	17.0	7	75	0	24	
AUG 18...	1055	176	--	8.38	19.5	3	75	0	24	
SEP 15...	1100	201	194	8.10	14.5	4	76	0	24	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT 15...	3.6	8.1	0.4	6.0	87	6.1	2.8	0.30	54	
NOV 13...	3.5	7.8	0.4	6.0	84	5.8	3.0	0.20	54	
DEC 10...	3.6	7.8	0.4	5.6	83	6.5	2.3	0.30	54	
JAN 06...	3.6	7.6	0.4	6.0	83	5.4	2.6	0.20	54	
FEB 05...	3.4	7.4	0.4	5.7	83	6.3	2.1	0.30	55	
MAR 02...	3.5	12	0.7	6.5	91	13	4.6	0.30	27	
APR 28...	4.1	15	0.8	5.9	101	9.7	1.9	0.40	41	
MAY 26...	4.2	10	0.5	7.1	99	11	3.9	0.40	46	
JUN 23...	3.6	7.6	0.4	5.2	86	6.9	2.0	0.20	57	
JUL 21...	3.7	7.7	0.4	5.7	85	6.1	2.4	0.30	52	
AUG 18...	3.7	7.7	0.4	6.2	86	5.9	2.6	0.30	53	
SEP 15...	3.9	8.1	0.4	6.4	85	6.6	2.7	0.20	50	

NIOBRARA RIVER BASIN

06463500 LONG PINE CREEK NEAR RIVERVIEW, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	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 15...	166	0.23	69.2	1.90	--	0.150	30	14	<1
NOV 13...	163	0.22	72.2	1.90	0.170	0.140	20	9	2
DEC 10...	163	0.22	71.8	2.10	--	0.140	30	13	<1
JAN 06...	161	0.22	74.1	2.10	--	--	20	23	4
FEB 05...	162	0.22	69.7	1.90	--	0.630	20	21	3
MAR 02...	145	0.20	27.4	0.480	--	--	20	180	2
APR 28...	165	0.22	144	0.250	0.210	0.040	20	100	6
MAY 26...	173	0.24	139	0.940	0.340	0.200	20	72	2
JUN 23...	165	0.22	76.5	1.50	0.250	0.150	20	16	<1
JUL 21...	160	0.22	85.1	1.60	0.260	0.220	20	33	4
AUG 18...	161	0.22	76.4	1.30	0.250	0.180	20	17	4
SEP 15...	159	0.22	86.3	1.40	--	--	20	29	2

NIOBRARA RIVER BASIN
06463720 NIOBRARA RIVER AT MARIAVILLE, NE--Continued
WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1985 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)
OCT 05...	1450	1020	240	8.49	14.5	9.6	95	0	31	4.2	8.6	0.4
MAR 07...	1225	4120	248	7.75	1.5	12.6	100	0	33	4.8	11	0.5
JUN 20...	1430	1070	226	--	33.0	8.4	90	0	29	4.3	10	0.5
JUL 21...	1230	1220	224	8.78	23.5	9.2	93	0	30	4.4	8.5	0.4
AUG 15...	1435	994	217	8.91	33.0	9.2	86	0	28	3.9	8.7	0.4
SEP 12...	1150	976	214	8.51	12.0	10.1	91	0	29	4.6	8.5	0.4

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
OCT 05...	3.3	111	7.1	1.4	0.17	336	0.600	0.020	0.38	0.40	1.0	0.130
MAR 07...	2.1	118	11	1.9	0.18	1500	0.400	0.040	1.4	1.4	1.8	0.160
JUN 20...	7.8	110	8.6	1.9	0.17	369	<0.100	0.030	1.4	1.4	--	0.260
JUL 21...	6.7	109	7.7	1.6	0.17	409	0.300	0.080	1.0	1.1	1.4	0.220
AUG 15...	6.9	102	7.3	2.2	0.16	317	<0.100	0.020	0.28	0.30	--	0.210
SEP 12...	5.5	105	6.5	1.3	0.16	312	0.500	<0.010	--	0.20	0.70	0.160

DATE	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)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
OCT 05...	6	200	<10	<1	10	6	<5	4	<0.10	<1	20	2.1
MAR 07...	<1	500	<10	<1	19	17	12	15	<0.10	2	80	7.3
JUN 20...	6	<100	<10	<1	8	8	<5	13	<0.10	<1	30	4.2
JUL 21...	6	200	<10	<1	2	5	<5	3	<0.10	1	20	3.0
AUG 15...	6	<100	<10	<1	4	6	<5	4	<0.10	<1	20	3.1
SEP 12...	7	<100	<10	1	4	10	6	6	0.20	<1	20	1.7

NIOBRARA RIVER BASIN

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06463720 NIOBRARA RIVER AT MARIAVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	PRO-PAZINE TOTAL (UG/L) (39024)	TRI-FLURA-LIN TOTAL RECOVER (UG/L) (39030)	PER-THANE TOTAL (UG/L) (39034)	METHO-MYL TOTAL (UG/L) (39051)	PROPHAM TOTAL (UG/L) (39052)	SIME-TRYNE TOTAL (UG/L) (39054)	SIMA-ZINE TOTAL (UG/L) (39055)	PROME-TONE TOTAL (UG/L) (39056)	PROME-TRYNE TOTAL (UG/L) (39057)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)
OCT 05...	1450	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
MAR 07...	1225	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
JUN 20...	1430	<0.10	<0.10	<0.1	<0.5	<0.5	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
JUL 21...	1230	<0.10	<0.10	<0.1	<0.5	<0.5	<0.1	0.20	<0.1	<0.1	<0.10	<0.010
AUG 15...	1435	<0.10	<0.10	<0.1	<0.5	<0.5	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
SEP 12...	1150	<0.10	<0.10	<0.1	<0.5	<0.5	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010

DATE	LINDANE TOTAL (UG/L) (39340)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	TOX-APHENE, TOTAL (UG/L) (39400)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR- EPOXIDE TOTAL (UG/L) (39420)
OCT 05...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
MAR 07...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
JUN 20...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
JUL 21...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
AUG 15...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
SEP 12...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010

DATE	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	PCB, TOTAL (UG/L) (39516)	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	DI-AZINON, TOTAL (UG/L) (39570)	METHYL PARA-THION, TOTAL (UG/L) (39600)	ATRA-ZINE, TOTAL (UG/L) (39630)	PICLO-RAM (TOR-DON) TOTAL (UG/L) (39720)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SEVIN, TOTAL (UG/L) (39750)
OCT 05...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	0.03	<2.0
MAR 07...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	0.01	<0.01	0.03	<2.0
JUN 20...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01	<0.50
JUL 21...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	0.10	<0.01	0.01	<0.01	<0.50
AUG 15...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	0.10	<0.01	0.01	0.08	<0.50
SEP 12...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	0.01	<0.50

DATE	MIREX, TOTAL (UG/L) (39755)	SILVEX, TOTAL (UG/L) (39760)	TOTAL TRI-THION (UG/L) (39786)	METHYL TRI-THION, TOTAL (UG/L) (39790)	ALA-CHLOR TOTAL RECOVER (UG/L) (77825)	CYAN-AZINE TOTAL (UG/L) (81757)	DICAMBA (MED-IBEN) (BAN-VEL D) TOTAL (UG/L) (82052)	2,4-DP TOTAL (UG/L) (82183)	AME-TRYNE TOTAL (UG/L) (82184)	METRI-BUZIN WATER WHOLE TOT. REC (UG/L) (82611)	METOLA-CHLOR WATER WHOLE TOT. REC (UG/L) (82612)
OCT 05...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
MAR 07...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	0.01	<0.01	<0.10	<0.1	<0.1
JUN 20...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
JUL 21...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
AUG 15...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
SEP 12...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1

NIOBRARA RIVER BASIN

06463720 NIOBRARA RIVER AT MARIAVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT 05...	1450	1020	14.5	764	2100	13	35	87	100	--
MAR 07...	1225	4120	1.5	6620	73600	11	24	78	99	100
JUN 20...	1430	1070	33.0	475	1370	25	40	87	100	--
JUL 21...	1230	1220	23.5	352	1160	26	52	98	100	--
AUG 15...	1435	994	33.0	249	668	33	45	77	99	100
SEP 12...	1150	976	12.0	291	767	28	52	91	100	--

DATE	BED MAT. SIEVE DIAM. % FINER THAN .062 MM (80164)	BED MAT. SIEVE DIAM. % FINER THAN .125 MM (80165)	BED MAT. SIEVE DIAM. % FINER THAN .250 MM (80166)	BED MAT. SIEVE DIAM. % FINER THAN .500 MM (80167)	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM (80168)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)
OCT 05...	--	2	44	97	100	--	--	--	--
MAR 07...	--	2	30	86	93	95	96	96	100
JUN 20...	--	1	44	97	100	--	--	--	--
JUL 21...	--	2	42	95	99	100	--	--	--
AUG 15...	--	1	25	87	98	99	100	--	--
SEP 12...	--	2	28	88	98	99	100	--	--

NIOBRARA RIVER BASIN

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06464500 KEYA PAHA RIVER AT WEWELA, SD

LOCATION.--Lat 43°01'44", long 99°46'49", in SE1/4 sec.24, T.95 N., R.76 W., Tripp County, Hydrologic Unit 10150006, on right bank at downstream side of bridge on U.S. Highway 183, 1.0 mi north of Wewela, 4.5 mi upstream from Holt Creek, and 11.5 mi downstream from Lost Creek.

DRAINAGE AREA.--1,070 mi², approximately.

PERIOD OF RECORD.--November 1937 to September 1940, October 1947 to current year. Monthly discharge only for October 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,049.78 ft above National Geodetic Vertical Datum of 1929. Prior to June 21, 1957, nonrecording gage at site 13 ft upstream at same datum. Prior to Aug. 23, 1984, recording gage on left bank 13 ft downstream from bridge at same datum.

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

AVERAGE DISCHARGE.--43 years (water years 1939-40, 1948-88), 72.3 ft³/s, 52,380 acre-ft/yr; median of yearly mean discharges, 60 ft³/s, 43,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft³/s, Mar. 31, 1952, gage height, 13.08 ft; maximum gage height, 13.5 ft, Mar. 25, 1950, from floodmark, backwater from ice; no flow Jan. 10 to Feb. 15, 1949, Aug. 19 to Sept. 14, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 2	0315	ice jam	*7.12	Apr. 29	0815	425	3.14
Mar. 23	0545	1,040	4.88	May 4	0915	727	4.05
Apr. 3	1700	457	3.35	May 23	1645	*1,150	5.13

Minimum daily discharge, 14 ft³/s, Jan. 6, 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	41	67	e26	e20	e1000	172	238	134	105	32	25
2	30	41	65	e27	e19	e950	149	229	122	107	31	24
3	30	43	73	e28	e18	e900	285	556	114	98	43	23
4	30	45	73	e23	e17	e800	307	633	106	77	68	23
5	33	50	73	e17	e16	e700	263	546	94	66	91	24
6	32	52	73	e14	e15	e640	203	474	85	61	90	24
7	32	53	74	e14	e16	e600	167	387	79	56	62	24
8	33	61	73	e15	e17	e520	147	319	75	53	47	25
9	33	61	70	e16	e18	450	127	279	71	52	41	25
10	33	59	68	e17	e17	430	110	249	66	53	36	24
11	34	56	72	e18	e16	452	106	224	59	59	34	23
12	35	54	70	e19	e15	146	103	203	58	69	32	24
13	35	52	66	e18	e16	86	105	175	62	68	36	26
14	39	51	57	e20	e17	86	95	157	69	63	36	28
15	45	54	e44	e23	e18	e70	91	142	71	57	46	31
16	47	66	e35	e22	e20	e70	88	129	72	51	43	33
17	46	69	e37	e21	e22	e70	107	120	70	64	31	32
18	45	67	e40	e20	e24	e70	113	114	67	61	29	32
19	46	67	e42	e19	e26	90	84	129	64	56	31	41
20	45	70	e42	e18	e28	172	83	142	60	52	30	43
21	42	71	e43	e18	e65	411	80	375	57	50	30	40
22	42	70	e43	e18	e100	650	86	857	55	47	30	39
23	41	72	e39	e19	e90	878	99	1070	55	45	28	37
24	40	72	e36	e17	e100	727	149	881	52	44	27	35
25	39	73	e34	e15	e150	469	179	630	48	43	27	34
26	40	75	e35	e16	e300	364	184	461	46	41	25	34
27	38	75	e35	e18	e450	301	256	350	46	39	25	34
28	38	74	e36	e19	e600	286	354	278	46	37	25	37
29	39	71	e37	e21	e700	317	343	226	44	35	26	51
30	39	69	e38	e23	---	242	293	182	62	37	26	57
31	40	---	e33	e21	---	158	---	154	---	34	26	---
TOTAL	1171	1834	1623	600	2930	13105	4928	10909	2109	1780	1184	952
MEAN	37.8	61.1	52.4	19.4	101	423	164	352	70.3	57.4	38.2	31.7
MAX	47	75	74	28	700	1000	354	1070	134	107	91	57
MIN	30	41	33	14	15	70	80	114	44	34	25	23
AC-FT	2320	3640	3220	1190	5810	25990	9770	21640	4180	3530	2350	1890

CAL YR 1987 TOTAL 39811 MEAN 109 MAX 1170 MIN 30 AC-FT 78970
WTR YR 1988 TOTAL 43125 MEAN 118 MAX 1070 MIN 14 AC-FT 85540

e Estimated

NIOBRARA RIVER BASIN

06464900 KEYA PAHA RIVER NEAR NAPER, NE

LOCATION.--Lat 42°55'00", long 99°05'50", in SE1/4SE1/4 sec.17, T.34 N., R.15 W., Boyd County, Hydrologic Unit 10150006, on left bank 70 ft upstream from highway bridge, 3.3 mi south of Naper, and 8.6 mi upstream from mouth.

DRAINAGE AREA.--1,630 mi², approximately.

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

REVISED RECORDS.--WSP 1709: 1959(M).

GAGE.--Water-stage recorder. Elevation of gage is 1,680 ft, from topographic map. Prior to May 2, 1958, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 16 to Mar. 8 and Mar. 10 to Apr. 4. Records good, except for periods of estimated record, which are poor. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--31 years, 142 ft³/s, 102,880 acre-ft/yr; median of yearly mean discharges, 122 ft³/s, 88,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,280 ft³/s July 1, 1962, gage height, 10.91 ft; maximum gage height, 13.34 ft Mar. 23, 1960, backwater from ice; no flow July 22-30, Aug. 10, 11, 1976, Aug. 3, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 2	unknown	a2300	*b8.67	May 3	1800	1820	7.89
Mar. 24	unknown	1560	b7.62	May 23	1530	*2850	8.42

a Backwater from ice.

b From floodmark.

Minimum daily discharge, 36 ft³/s Aug. 28, 29, Sept. 2, 4, 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	97	122	60	50	1700	380	546	297	144	48	37
2	58	104	120	40	47	1900	380	503	274	233	45	36
3	60	102	125	42	47	1700	560	1330	240	198	49	37
4	60	96	133	42	50	1400	680	1470	221	174	63	36
5	60	94	138	42	54	1250	611	964	204	137	139	36
6	58	95	138	37	60	1150	516	606	181	108	125	38
7	61	99	137	37	64	1000	436	449	167	91	116	37
8	61	108	139	40	68	940	424	365	159	90	95	40
9	58	111	141	45	74	880	394	317	146	85	79	40
10	59	116	145	50	78	800	425	310	133	82	68	41
11	63	120	137	52	84	600	377	279	123	111	59	41
12	63	122	136	54	70	350	352	273	119	137	52	43
13	63	119	133	56	70	200	336	263	116	148	54	45
14	64	113	139	52	74	170	335	280	115	147	58	48
15	71	116	92	54	76	160	331	285	107	116	54	58
16	72	144	66	60	80	150	318	253	107	106	52	59
17	75	145	52	58	85	140	323	233	118	111	52	55
18	75	138	54	56	90	140	321	218	115	106	52	73
19	77	141	58	52	105	150	296	233	109	106	51	146
20	77	150	58	50	110	180	283	260	95	100	51	127
21	77	151	60	52	120	340	284	552	90	88	48	92
22	78	152	62	56	130	560	319	2110	82	79	47	82
23	78	145	64	60	140	1200	369	2470	78	73	45	79
24	79	151	64	62	140	1400	419	1720	75	70	41	72
25	78	153	54	65	170	1200	534	1010	69	67	39	66
26	80	151	56	60	210	900	595	602	67	64	38	63
27	78	143	56	56	250	740	494	452	64	61	36	64
28	81	139	56	60	500	680	646	585	64	58	36	76
29	84	135	58	72	1000	720	558	553	58	55	38	127
30	85	129	58	72	---	600	544	426	84	55	37	144
31	88	---	60	56	---	450	---	345	---	51	37	---
TOTAL	2182	3779	2911	1650	4096	23750	12840	20262	3877	3251	1804	1938
MEAN	70.4	126	93.9	53.2	141	766	428	654	129	105	58.2	64.6
MAX	88	153	145	72	1000	1900	680	2470	297	233	139	146
MIN	58	94	52	37	47	140	283	218	58	51	36	36
AC-FT	4330	7500	5770	3270	8120	47110	25470	40190	7690	6450	3580	3840
CAL YR 1987	TOTAL 69614	MEAN 191	MAX 2650	MIN 50	AC-FT 138100							
WTR YR 1988	TOTAL 82340	MEAN 225	MAX 2470	MIN 36	AC-FT 163300							

NIOBRARA RIVER BASIN

59

06465000 NIOBRARA RIVER NEAR SPENCER, NE

LOCATION.--Lat 42°48'33", long 98°39'22", in SE1/4NW1/4 sec.30, T.33 N., R.11 W., Boyd County, Hydrologic Unit 10150007, at Spencer powerplant dam 5 mi southeast of Spencer.

DRAINAGE AREA.--12,100 mi², approximately.

PERIOD OF RECORD.--May to December 1908 (gage heights only); August 1913 to September 1914; October to December 1914, April to September 1915 (gage heights only); August 1927 to September 1936, June 1940 to current year. Published as "near Lynch" 1913-15. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WDR NE-67: Drainage area.

GAGE.--Water-stage recorder and hourly log and powerplant operation. Datum of gage is 1,473.67 ft above National Geodetic Vertical Datum of 1929. Elevation of taintor gate sill, 1,491.12 ft above National Geodetic Vertical Datum of 1929. Prior to December 1908, nonrecording gage on former highway bridge 275 ft downstream and Aug. 1, 1913, to Sept. 30, 1915, nonrecording gage at highway bridge 10 mi downstream at different datums. Aug. 1, 1927, to Sept. 30, 1936, and June 14, 1940, to Sept. 30, 1944, discharge computed as flow through powerhouse and over dam. Oct. 1, 1944, to Nov. 10, 1954, water-stage recorder at site 275 ft downstream at datum 4.98 ft higher, and Nov. 11, 1954, to Sept. 30, 1957, at site 0.3 mi downstream at datum 9.78 ft lower. Oct. 1, 1957 to Oct. 21, 1958, discharge computed as flow through powerhouse and over dam. Oct. 28, 1958, to Aug. 13, 1963, water-stage recorder at site 225 ft downstream at present datum. Aug. 14, 1963, gage moved to present site with discharge computed as flow through powerhouse and over dam.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by irrigation and power developments. Daily discharge determined from flow through turbines and taintor gates, computed from relation between head, and gage openings.

COOPERATION.--Powerplant log furnished by Nebraska Public Power District.

AVERAGE DISCHARGE.--58 years (1913-14, 1927-36, 1940-88), 1,432 ft³/s, 1,037,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft³/s Mar. 12, 1955, gage height, 12.16 ft, site and datum then in use; minimum daily, 5 ft³/s Nov. 14, Dec. 18, 19, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 6,470 ft³/s Mar. 10; minimum daily, 533 ft³/s Dec. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	1290	1930	1000	1860	3570	2300	2540	2370	2490	771	846
2	1050	1660	1730	1100	1790	3960	2920	2790	2190	1960	735	883
3	1090	1970	1830	1080	1650	4180	3140	5200	1940	1630	872	901
4	1060	1710	1830	1020	1480	4440	3620	5800	1830	1290	1850	909
5	1040	1790	1290	1030	1420	4670	2860	4460	1850	1160	1710	880
6	1090	1190	1660	934	1450	4570	1890	3610	1740	1020	1300	885
7	1100	1260	1690	933	1410	5470	1940	3360	1660	957	1110	898
8	1090	1390	1650	899	1400	4930	2170	3220	1430	1210	1170	930
9	1120	1470	1700	956	1490	6090	2130	3010	1480	1070	1010	953
10	1200	1460	1660	1020	1540	6470	2010	2860	1440	1020	944	908
11	1180	1430	1690	1070	1530	5890	1940	2550	1340	1430	899	873
12	1130	1370	1640	1070	1510	5860	1850	2470	1210	2280	854	1050
13	1150	1330	1620	1140	1470	5970	1760	2410	1230	1590	950	1130
14	1250	1400	1390	1340	1510	2140	1810	2310	1330	1380	1120	1100
15	1320	1450	1120	1460	1720	1760	1770	2110	1330	1160	1080	1450
16	1280	1840	1120	1500	1960	2060	1700	2010	1310	1130	956	1340
17	1370	1950	890	1550	2020	2310	1630	1800	1460	1210	856	1230
18	1230	1660	1080	1630	2030	2200	1670	1670	1300	1170	874	1230
19	1260	1820	1360	1540	2160	2140	1680	1880	1280	1240	894	3390
20	1250	1830	1480	1400	2240	2270	1550	2050	1120	1370	919	2850
21	1270	1910	1530	1200	2200	2530	1470	2730	1090	1230	948	2010
22	1250	2020	1440	1270	2300	3110	1710	5100	1070	1070	994	2250
23	1230	1910	1490	1440	2370	3410	1950	5300	1080	995	977	1820
24	1220	1890	1330	1550	2260	3290	1840	4830	990	934	955	1350
25	1280	1880	901	1640	2190	2930	1830	4080	886	957	914	1300
26	1290	1810	785	1680	2290	2650	2300	3370	936	907	855	1280
27	1200	1790	699	1660	2520	2400	2630	3140	924	899	875	1220
28	1210	1790	638	1670	2850	2260	2830	2970	858	880	873	1440
29	1240	1750	533	1710	3150	2210	2790	2730	788	854	871	1900
30	1220	1670	762	1790	---	2120	2660	2630	1130	848	844	1910
31	1250	---	938	1860	---	2110	---	2440	---	841	838	---
TOTAL	36960	49690	41406	41142	55770	109970	64350	97430	40592	38182	30818	41116
MEAN	1192	1656	1336	1327	1923	3547	2145	3143	1353	1232	994	1371
MAX	1370	2020	1930	1860	3150	6470	3620	5800	2370	2490	1850	3390
MIN	1040	1190	533	899	1400	1760	1470	1670	788	841	735	846
AC-FT	73310	98560	82130	81610	110600	218100	127600	193300	80510	75730	61130	81550

CAL YR 1987 TOTAL 630916 MEAN 1729 MAX 6560 MIN 533 AC-FT 1251000
WTR YR 1988 TOTAL 647426 MEAN 1769 MAX 6470 MIN 533 AC-FT 1284000

LOCATION.--Lat 42°45'51", long 98°34'13" in SE1/4NW1/4 sec.11, T.32 N., R.11 W., Holt County, Hydrologic Unit 10150007, on left bank 12 ft downstream from bridge on the county road, 7 mi west of Redbird.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 1.463.90 ft above National Geodetic Vertical Datum of 1929.

AVERAGE DISCHARGE.--10 years, 54.6 ft³/s, 39,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,330 ft³/s Aug. 5, 1981, gage height, 8.55 ft; maximum gage height, 9.22 ft Sept. 16, 1986; minimum daily, 1.9 ft³/s Aug. 7, 8, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 234 ft³/s May 22, gage height, 4.35 ft; maximum gage height, 4.94 ft Feb. 15, backwater from ice, or may have been higher during period of no gage-height record Jan. 5-21; minimum daily discharge, 13 ft³/s Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	59	58	35	57	85	62	65	75	61	19	23
2	52	60	56	36	57	100	94	71	73	46	20	23
3	51	60	62	37	56	131	99	110	61	37	34	22
4	55	60	61	37	56	113	79	86	57	33	104	24
5	55	57	60	38	56	94	91	73	52	24	54	25
6	52	56	61	39	55	102	74	70	47	21	43	25
7	51	57	62	40	55	118	70	72	45	20	40	23
8	51	61	62	41	55	107	70	65	44	23	37	22
9	51	59	62	42	55	91	65	64	41	26	30	23
10	51	58	60	43	55	97	65	60	40	27	26	24
11	50	60	65	45	55	88	63	59	36	45	23	25
12	49	59	64	46	55	63	63	60	38	51	21	46
13	49	60	62	47	55	45	62	58	39	40	24	34
14	50	64	54	49	55	60	62	58	41	29	27	36
15	54	68	56	51	55	56	61	56	39	26	20	41
16	55	98	53	52	54	59	61	55	41	29	15	37
17	52	78	53	54	54	59	61	54	41	33	13	34
18	51	65	63	56	54	63	60	53	35	33	15	39
19	53	67	62	57	54	68	60	54	32	30	18	77
20	53	69	63	59	54	83	59	65	31	31	18	54
21	50	70	58	60	55	80	57	152	28	28	26	42
22	49	64	63	62	56	67	74	218	24	27	37	38
23	49	64	63	63	57	65	91	166	23	26	32	36
24	47	64	59	64	58	67	103	102	22	28	27	36
25	54	65	41	64	59	61	87	80	19	27	26	35
26	58	65	39	63	61	58	113	73	17	21	22	37
27	53	65	37	63	64	63	134	66	18	19	23	37
28	51	65	36	62	67	61	94	63	16	23	22	53
29	52	64	35	61	70	59	76	58	17	25	27	109
30	54	60	35	60	---	59	69	56	32	20	26	62
31	56	---	35	59	---	60	---	55	---	24	26	---
TOTAL	1613	1921	1700	1585	1649	2382	2279	2397	1124	933	895	1142
MEAN	52.0	64.0	54.8	51.1	56.9	76.8	76.0	77.3	37.5	30.1	28.9	38.1
MAX	58	98	65	64	70	131	134	218	75	61	104	109
MIN	47	56	35	35	54	45	57	53	16	19	13	22
AC-FT	3200	3810	3370	3140	3270	4720	4520	4750	2230	1850	1780	2270
CAL YR 1987	TOTAL 24751		MEAN 67.8	MAX 390	MIN 23	AC-FT 49090						
WTR YR 1988	TOTAL 19620		MEAN 53.6	MAX 218	MIN 13	AC-FT 38920						

NIOBRARA RIVER BASIN
06465310 EAGLE CREEK NR REDBIRD, NE--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

		STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	
OCT 21...	1745	49	--	7.71	9.0	4	140	27	46	
NOV 17...	1015	74	354	7.80	2.0	15	150	28	47	
DEC 15...	1310	51	340	7.56	0.5	4	150	36	48	
JAN 12...	1635	46	345	7.35	0.5	13	150	34	48	
FEB 10...	1535	55	349	7.44	0.5	5	150	36	49	
MAR 08...	1455	109	330	7.93	5.5	49	140	37	45	
APR 06...	1700	71	366	8.18	19.5	18	150	34	49	
MAY 03...	1230	117	356	8.22	11.0	26	150	37	48	
JUN 02...	1820	67	367	8.35	27.5	18	160	32	50	
JUL 27...	1810	18	324	8.40	31.0	8	140	21	45	
AUG 23...	1620	33	320	8.35	30.0	10	130	12	41	
SEP 20...	1720	50	318	8.16	21.5	25	130	13	41	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT 21...	6.7	9.3	0.4	6.1	116	26	3.8	0.30	42	
NOV 17...	7.1	9.9	0.4	7.0	119	32	5.2	0.20	7.2	
DEC 15...	6.9	9.2	0.3	5.3	113	33	5.0	0.30	42	
JAN 12...	7.1	9.8	0.4	5.6	115	29	5.2	0.30	44	
FEB 10...	7.2	9.6	0.4	5.9	116	33	4.2	0.30	42	
MAR 08...	7.4	8.4	0.3	3.0	106	43	3.5	0.30	33	
APR 06...	7.9	10	0.4	6.2	121	40	4.8	0.30	37	
MAY 03...	8.2	9.5	0.3	5.5	117	50	3.8	0.30	34	
JUN 02...	8.1	9.8	0.4	6.0	126	43	3.9	0.40	41	
JUL 27...	6.5	11	0.4	6.0	118	30	3.4	0.30	46	
AUG 23...	6.3	10	0.4	5.8	117	22	4.0	0.30	46	
SEP 20...	6.2	9.9	0.4	7.2	115	28	5.4	0.20	43	

NIOBRARA RIVER BASIN
06465310 EAGLE CREEK NR REDBIRD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	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 21...	231	0.31	30.6	4.80	0.220	0.070	40	13	8
NOV 17...	208	0.28	41.6	4.80	0.130	0.110	30	100	30
DEC 15...	241	0.33	33.2	5.40	--	--	30	7	12
JAN 12...	249	0.34	30.9	7.00	--	0.020	20	20	19
FEB 10...	249	0.34	37.0	6.40	--	--	20	<3	15
MAR 08...	224	0.31	66.0	3.90	--	--	30	32	12
APR 06...	229	0.31	44.0	0.360	--	--	30	13	10
MAY 03...	246	0.33	77.6	3.70	0.250	0.090	30	25	5
JUN 02...	253	0.34	45.8	3.50	0.150	0.140	30	12	6
JUL 27...	231	0.31	11.2	2.70	0.120	0.080	30	11	13
AUG 23...	222	0.30	19.8	3.70	0.140	0.110	40	8	8
SEP 20...	227	0.31	30.7	3.90	0.230	0.120	40	17	8

NIOBRARA RIVER BASIN

63

06465440 REDBIRD CREEK AT REDBIRD, NE

LOCATION.--Lat 42°45'43", long 98°26'32", in NE1/4 sec.11, T.32 N., R.10 W., Holt County, Hydrologic Unit 10150007, on right bank 10 ft downstream from county road bridge at Redbird, 0.9 mi upstream from mouth and 4.6 mi south-southeast of Lynch.

DRAINAGE AREA.--157 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,411.75 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1982 at datum 1.00 ft higher.

REMARKS.--Estimated daily discharges: Dec. 25 to Mar. 3. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--8 YEARS, 43.7 ft³/s, 31,660 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,120 ft³/s May 11, 1985 on basis of slope-area measurement of peak flow, gage height, 6.49 ft, from floodmark; minimum daily, 3.8 ft³/s July 14, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 285 ft³/s May 22, gage height, 1.82 ft; maximum gage height, 3.98 ft Feb. 28, backwater from ice, or may have been higher during no gage height period Jan. 5-28; minimum daily discharge, 7.1 ft³/s July 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	44	43	24	51	60	48	58	47	45	24	10
2	36	46	43	24	50	75	70	57	60	44	21	9.8
3	37	47	45	25	49	100	102	65	49	38	21	9.5
4	40	43	43	25	48	91	76	65	43	34	40	10
5	38	39	42	25	47	77	70	63	39	29	43	10
6	36	39	42	26	46	82	66	60	35	27	33	12
7	36	40	41	27	45	95	61	58	34	27	29	10
8	38	40	43	27	44	117	57	55	33	26	25	12
9	35	37	41	28	43	94	52	56	31	29	21	12
10	36	36	42	29	42	93	51	54	30	28	19	14
11	37	38	44	29	42	91	51	53	31	34	15	14
12	40	38	41	30	42	77	53	53	29	37	13	27
13	41	40	38	31	42	47	52	51	31	38	13	32
14	40	39	36	32	41	50	50	50	30	34	13	33
15	42	41	38	34	41	51	50	49	26	30	13	39
16	42	57	36	35	41	50	52	48	28	30	10	41
17	40	62	38	36	40	52	51	49	31	29	9.0	41
18	40	52	42	38	40	55	48	49	29	28	11	42
19	39	47	39	39	40	62	50	48	27	28	15	53
20	38	43	36	41	41	71	51	50	28	28	15	57
21	37	44	37	43	41	72	49	93	23	25	16	54
22	40	45	39	45	42	70	51	251	23	22	26	51
23	41	44	36	47	43	63	62	184	22	20	25	50
24	40	43	33	48	44	63	78	91	22	20	23	49
25	43	42	26	49	45	62	69	61	19	14	19	49
26	50	42	24	50	46	56	72	51	19	9.5	15	50
27	46	44	24	51	48	57	105	47	21	9.8	14	50
28	43	44	24	51	50	53	81	45	22	7.1	13	55
29	43	44	23	52	52	49	67	41	19	20	11	91
30	42	44	23	52	---	49	63	41	25	50	10	82
31	41	---	23	51	---	47	---	38	---	27	11	---
TOTAL	1238	1304	1125	1144	1286	2131	1858	2034	906	867.4	586.0	1069.3
MEAN	39.9	43.5	36.3	36.9	44.3	68.7	61.9	65.6	30.2	28.0	18.9	35.6
MAX	50	62	45	52	52	117	105	251	60	50	43	91
MIN	35	36	23	24	40	47	48	38	19	7.1	9.0	9.5
AC-FT	2460	2590	2230	2270	2550	4230	3690	4030	1800	1720	1160	2120

CAL YR 1987 TOTAL 18424 MEAN 50.5 MAX 412 MIN 11 AC-FT 36540
WTR YR 1988 TOTAL 15548.7 MEAN 42.5 MAX 251 MIN 7.1 AC-FT 30840

NIOBRARA RIVER BASIN

06465500 NIOBRARA RIVER NEAR VERDEL, NE
National stream-quality accounting network station

LOCATION.--Lat 42°44'23", long 98°13'26", in NW1/4NW1/4 sec.23, T.32 N., R.8 W., Knox County, Hydrologic Unit 10150007, on right bank at downstream side of county road bridge, 6.6 mi south of Verdel, and 7.5 mi upstream from Verdigre Creek.

DRAINAGE AREA.--12,600 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1938 to May 1940, June 1958 to current year.

REVISED RECORDS.--WDR NE-67: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,312.12 ft above National Geodetic Vertical Datum of 1929. Apr. 25, 1938, to June 16, 1939, nonrecording gage at site 2600 ft downstream; June 17, 1939, to June 13, 1940, nonrecording gage 2850 ft downstream; and June 14, 1940 to July 24, 1985, water-stage recorder at site 2600 ft downstream, all at datum 4.00 ft lower.

REMARKS.--No estimated daily discharges. Records fair. Natural flow of stream affected by irrigation and power developments.

AVERAGE DISCHARGE.--31 years, 1,590 ft³/s, 1,152,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,000 ft³/s Mar. 27, 1960, gage height, 10.10 ft; maximum gage height, 10.62 ft Mar. 12, 1966, backwater from ice; minimum daily discharge, 104 ft³/s Nov. 30, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 6,730 ft³/s Mar. 10; maximum gage height, 6.04 ft sometime during period Feb. 10 to Mar. 7, backwater from ice; minimum daily discharge, 611 ft³/s Dec. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1170	1440	1860	1060	2010	3600	2510	2760	2500	2300	859	885
2	1150	1560	2190	1160	1970	4110	2820	3100	2520	2400	796	922
3	1220	2200	1770	1190	1850	4390	3380	3990	2150	1840	782	929
4	1200	1960	1980	1130	1660	4640	3580	6200	2050	1440	1920	961
5	1180	1860	1540	1130	1560	4970	3470	5280	1940	1260	1880	928
6	1200	1440	1790	1040	1590	4660	2330	3960	1900	1110	1520	936
7	1200	1370	1810	1030	1580	5540	1850	3580	1800	1020	1210	934
8	1240	1500	1800	1010	1520	5450	2500	3460	1610	1150	1280	966
9	1200	1590	1820	1030	1610	5760	2340	3250	1560	1260	1110	996
10	1280	1590	1810	1090	1650	6730	2180	3050	1540	1110	1030	997
11	1320	1590	1840	1170	1690	6510	2110	2800	1460	1230	967	907
12	1280	1510	1790	1160	1630	5990	2080	2650	1340	2430	906	1080
13	1270	1490	1800	1230	1610	6130	1940	2570	1280	1880	945	1240
14	1310	1510	1560	1380	1620	3550	1960	2540	1420	1510	1160	1160
15	1430	1580	1340	1550	1750	1880	1940	2330	1410	1230	1140	1440
16	1420	1880	1270	1600	2030	2130	1890	2160	1410	1240	1030	1540
17	1480	2210	1020	1660	2140	2440	1790	2040	1530	1250	893	1340
18	1410	1890	1100	1730	2150	2420	1790	1820	1440	1300	906	1340
19	1390	1880	1430	1740	2250	2320	1830	1910	1380	1220	942	2890
20	1380	2030	1600	1580	2370	2450	1790	2160	1220	1490	959	3240
21	1390	1990	1690	1400	2320	2590	1610	2650	1160	1320	975	2330
22	1350	2170	1570	1360	2390	3130	1730	4910	1120	1210	1100	2470
23	1360	2110	1650	1550	2550	3550	2170	6020	1140	1070	1060	2070
24	1370	2030	1520	1660	2410	3530	2100	5330	1110	1020	1030	1510
25	1350	2030	1150	1770	2350	3230	2050	4480	985	1010	1010	1430
26	1480	1990	880	1840	2350	2890	2330	3780	947	957	903	1420
27	1350	1940	805	1830	2610	2640	2900	3320	982	948	925	1300
28	1320	1850	772	1820	2870	2450	3010	3180	934	943	905	1490
29	1360	1910	611	1860	3220	2390	3010	2930	858	925	937	2010
30	1350	1810	733	1910	---	2290	2900	2810	942	945	905	2190
31	1350	---	996	2000	---	2260	---	2670	---	912	893	---
TOTAL	40760	54010	45497	44670	59310	116620	69890	103690	43638	40930	32878	43851
MEAN	1315	1800	1468	1441	2045	3762	2330	3345	1455	1320	1061	1462
MAX	1480	2210	2190	2000	3220	6730	3580	6200	2520	2430	1920	3240
MIN	1150	1370	611	1010	1520	1880	1610	1820	858	912	782	885
AC-FT	80850	107100	90240	88600	117600	231300	138600	205700	86560	81180	65210	86980

CAL YR 1987 TOTAL 690607 MEAN 1892 MAX 7040 MIN 611 AC-FT 1370000
WTR YR 1988 TOTAL 695744 MEAN 1901 MAX 6730 MIN 611 AC-FT 1380000

NIOBRARA RIVER BASIN

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06465500 NIOBRARA RIVER NEAR VERDEL, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-65, 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1975 to September 1980.

WATER TEMPERATURES: June 1958 to September 1965, October 1966 to September 1984.

SUSPENDED-SEDIMENT DISCHARGE: October 1971 to September 1981.

INSTRUMENTATION.--Temperature recorder June 14, 1958 to September 30, 1984.

REMARKS.--Prior to July 1, 1971, sediment records were obtained by U.S. Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 470 microsiemens Dec. 22, 1976; minimum daily, 110 microsiemens Nov. 22, 1976.

WATER TEMPERATURES: Maximum, 38.0°C July 22, 1964, July 20, 1974; minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 12,000 mg/L June 8, 1975; minimum daily, 50 mg/L Dec. 31, Jan. 1, 3, 5, 6, 1978.

SEDIMENT LOADS: Maximum daily, 423,000 tons Mar. 19, 1979; minimum daily, 60 tons Dec. 7, 1972.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT										
20...	1340	1420	268	7.58	5.0	731	--	13.5	6	160
NOV										
17...	1350	2430	267	7.88	4.0	725	65	12.2	--	150
17...	1355	--	--	--	--	--	--	--	60	--
DEC										
15...	0940	1750	292	7.66	0.5	723	--	13.9	19	K51
JAN										
13...	1135	2350	296	7.48	0.5	732	--	13.2	8	K15
FEB										
09...	1245	2500	309	7.41	0.5	722	13	14.1	--	43
09...	1250	--	--	--	--	--	--	--	8	--
MAR										
24...	1135	4360	349	8.31	6.5	716	--	11.5	73	100
APR										
06...	1130	3540	360	8.11	11.5	727	--	10.9	44	330
MAY										
04...	1210	7070	372	8.25	14.5	728	180	9.6	--	4200
04...	1215	--	--	--	--	--	--	--	110	--
JUN										
01...	1530	3020	326	8.65	23.5	721	--	9.2	51	310
JUL										
29...	1040	1580	217	8.31	23.5	723	--	8.6	87	--
AUG										
24...	1045	1130	239	8.89	28.0	725	35	8.7	--	380
24...	1050	--	--	--	--	--	--	--	32	--
SEP										
21...	1200	2000	253	8.25	21.0	719	--	8.5	41	K8800

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

NIOBRARA RIVER BASIN

06465500 NIOBRARA RIVER NEAR VERDEL, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)
OCT 20...	920	110	--	36	5.0	10	0.4	--	--
NOV 17...	2000	110	--	34	5.2	9.1	0.4	5.8	--
DEC 17...	--	100	--	34	4.8	9.5	0.4	--	--
JAN 15...	170	120	--	38	5.3	10	0.4	--	--
FEB 13...	K18	160	--	52	7.2	13	0.5	--	--
MAR 09...	50	130	9	42	5.9	11	0.4	7.2	124
APR 09...	--	120	--	40	5.4	10	0.4	--	--
MAY 24...	1000	140	--	43	7.0	15	0.6	--	--
JUN 06...	1900	130	--	42	7.0	14	0.5	--	--
JUL 04...	9400	150	16	46	8.2	14	0.5	8.3	139
AUG 04...	--	150	--	45	8.0	14	0.5	--	--
SEP 01...	780	130	--	40	6.5	15	0.6	--	--
OCT 29...	K21000	93	--	30	4.3	6.0	0.3	--	--
NOV 24...	100	100	0	33	5.0	9.9	0.4	6.8	107
DEC 24...	--	95	--	32	3.7	11	0.5	--	--
JAN 21...	1800	100	--	33	4.2	8.1	0.4	--	--

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)
OCT 20...	15	2.0	--	--	--	68	0.09	261	149
NOV 17...	16	2.1	0.30	43	189	190	0.26	1240	--
DEC 17...	16	1.9	--	--	--	--	--	--	358
JAN 15...	18	2.7	--	--	--	74	0.10	350	173
FEB 13...	23	2.5	--	--	--	98	0.13	620	18
MAR 09...	20	2.2	0.40	49	220	217	0.30	1480	--
APR 09...	22	1.8	--	--	--	--	--	--	14
MAY 24...	38	3.4	--	--	--	106	0.14	1250	844
JUN 06...	34	2.5	--	--	--	99	0.14	951	708
JUL 04...	55	3.3	0.40	36	254	254	0.35	4850	--
AUG 04...	44	3.0	--	--	--	--	--	--	1050
SEP 01...	22	2.8	--	--	--	86	0.12	704	170
OCT 29...	19	2.1	--	--	--	61	0.08	262	463
NOV 24...	15	1.9	0.30	52	179	189	0.24	546	--
DEC 24...	12	1.7	--	--	--	--	--	--	90
JAN 21...	16	4.6	--	--	--	66	0.09	356	423

NIOBRARA RIVER BASIN

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06465500 NIOBRARA RIVER NEAR VERDEL, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

		NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	
	OCT 20...	1.20	--	0.070	1.0	1.1	2.3	0.210	--	--	
	NOV 17...	--	0.950	0.020	1.1	1.1	--	0.120	0.070	0.060	
	17...	1.20	--	0.110	1.3	1.4	2.6	0.440	--	--	
	DEC 15...	1.30	--	0.070	0.49	0.56	1.9	0.370	--	--	
	JAN 13...	1.90	--	0.040	0.34	0.38	2.3	0.150	--	--	
	FEB 09...	--	1.40	0.030	0.27	0.30	--	0.110	0.090	0.070	
	09...	1.30	--	0.040	0.30	0.34	1.6	0.140	--	--	
	MAR 24...	0.880	--	0.130	2.5	2.6	3.5	0.230	--	--	
	APR 06...	0.830	--	0.090	4.0	4.1	4.9	0.540	--	--	
	MAY 04...	--	0.540	0.050	--	<0.20	--	0.120	0.070	0.060	
	04...	0.550	--	0.090	3.1	3.2	3.7	0.240	--	--	
	JUN 01...	0.160	--	0.050	1.2	1.3	1.5	0.290	--	--	
	JUL 29...	0.280	--	0.050	2.1	2.2	2.5	0.270	--	--	
	AUG 24...	--	<0.100	<0.010	--	1.2	--	0.180	<0.010	0.010	
	24...	<0.020	--	<0.020	--	1.1	--	0.190	--	--	
	SEP 21...	0.780	--	0.160	1.7	1.9	2.7	0.830	--	--	
DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)
NOV											
17...	1350	30	--	4	96	<0.5	--	<1	--	<1	<3
17...	1355	--	15	--	--	--	<15	--	<10	--	--
FEB											
09...	1245	<10	--	4	110	<0.5	--	2	--	<1	<3
09...	1250	--	5	--	--	--	<15	--	<10	--	--
MAY											
04...	1210	30	--	4	130	<0.5	--	<1	--	1	<3
04...	1215	--	15	--	--	--	<15	--	30	--	--
AUG											
24...	1045	10	--	6	77	<0.5	--	1	--	<1	<3
24...	1050	--	24	--	--	--	<15	--	<10	--	--
DATE		COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
NOV											
17...		--	2	22	--	<5	14	9	--	<0.1	<10
17...		10	--	--	<20	--	--	--	<0.10	--	--
FEB											
09...		--	<1	15	--	<5	11	17	--	<0.1	<10
09...		<10	--	--	<20	--	--	--	<0.10	--	--
MAY											
04...		--	2	41	--	<5	19	16	--	0.2	<10
04...		30	--	--	<20	--	--	--	0.10	--	--
AUG											
24...		--	2	20	--	<5	14	2	--	<0.1	<10
24...		15	--	--	<20	--	--	--	0.50	--	--

NIOBRARA RIVER BASIN

06465500 NIOBRARA RIVER NEAR VERDEL, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 17...	1350	2430	4.0	1450	9510	28
MAR 24...	1135	4360	6.5	2650	31200	38
MAY 04...	1210	7070	14.5	3010	57500	46
AUG 24...	1045	1130	28.0	341	1040	32

NIOBRARA RIVER BASIN

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06465680 NORTH BRANCH VERDIGRE CREEK NEAR VERDIGRE, NE

LOCATION.--Lat 42°35'51", long 98°08'03", in SE1/4SE1/4 sec.4, T.30 N., R.7 W., Knox County, Hydrologic Unit 10150007, on right bank 15 ft downstream from bridge on paved county road 5 mi west of Verdigre.

DRAINAGE AREA.--137 mi².

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,466.06 ft above National Geodetic Vertical Datum of 1929 (levels by Nebraska Natural Resources Commission).

REMARKS.--Estimated daily discharges: Dec. 16-19, 21, and Dec. 25 to Mar. 1. Records good except for periods of estimated record, which are poor. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--9 years, 26.2 ft³/s, 18,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 315 ft³/s July 10, 1987, gage height, 4.93 ft, maximum gage height, 5.54 ft, June 14, 1981, from floodmark; minimum daily discharge, 2.5 ft³/s Jan. 6, 7, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 70 ft³/s May 22, gage height, 2.00 ft; maximum gage height, 5.27 ft Feb. 26, backwater from ice; minimum daily discharge, 10 ft³/s June 28, Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	28	27	24	17	50	29	32	34	31	21	14
2	24	27	26	23	18	48	39	32	35	25	17	14
3	24	27	27	21	19	42	37	34	33	23	10	16
4	24	26	28	20	20	38	33	32	32	22	24	18
5	24	26	27	19	18	38	35	31	30	17	25	19
6	23	26	26	17	18	40	33	31	29	11	23	19
7	24	26	27	16	20	39	32	31	29	11	19	19
8	24	29	28	16	23	37	31	29	29	17	18	19
9	24	27	28	16	23	35	31	30	28	20	16	19
10	24	26	27	17	22	36	30	28	27	15	11	20
11	25	26	28	17	21	35	31	27	25	20	12	19
12	25	26	26	18	20	32	31	27	25	24	12	24
13	25	26	26	18	20	32	30	26	26	21	15	23
14	26	26	26	18	20	34	30	26	25	18	15	23
15	26	28	26	17	20	32	30	25	21	13	16	25
16	26	34	35	16	20	30	30	25	17	13	14	25
17	26	29	50	16	21	30	30	23	22	14	11	23
18	25	27	30	15	22	30	30	23	23	20	14	22
19	26	26	28	14	23	30	30	25	21	17	20	31
20	25	26	27	14	23	30	31	27	19	21	18	29
21	25	27	31	14	24	30	30	55	16	20	14	25
22	25	27	26	15	24	30	34	61	15	13	32	24
23	25	26	26	16	25	30	39	47	12	12	24	23
24	25	26	26	15	25	31	39	39	14	12	21	23
25	27	26	26	14	29	30	34	35	12	17	20	22
26	28	26	25	13	35	29	39	34	15	17	20	23
27	25	26	24	15	41	30	42	32	15	14	20	23
28	25	27	24	17	60	29	37	31	10	13	19	28
29	26	28	23	19	55	29	34	30	11	25	19	40
30	26	27	23	21	---	29	33	33	24	31	19	32
31	27	---	24	20	---	29	---	31	---	24	17	---
TOTAL	778	808	851	531	726	1044	994	992	674	571	556	684
MEAN	25.1	26.9	27.5	17.1	25.0	33.7	33.1	32.0	22.5	18.4	17.9	22.8
MAX	28	34	50	24	60	50	42	61	35	31	32	40
MIN	23	26	23	13	17	29	29	23	10	11	10	14
AC-FT	1540	1600	1690	1050	1440	2070	1970	1970	1340	1130	1100	1360
CAL YR 1987	TOTAL	11447	MEAN	31.4	MAX	159	MIN	12	AC-FT	22710		
WTR YR 1988	TOTAL	9209	MEAN	25.2	MAX	61	MIN	10	AC-FT	18270		

BAZILE CREEK BASIN

06466500 BAZILE CREEK NEAR NIOBRARA, NE

LOCATION.--Lat 42°45'26", long 97°56'50", in SW1/4 sec.7, T.32 N., R.5 W., Knox County, Hydrologic Unit 10170101, on left bank 60 ft shoreward and 20 ft downstream from centerline of bridge on State Highway 12, 2.5 mi upstream from mouth and 4.5 mi east of Niobrara.

DRAINAGE AREA.--440 mi², approximately.

PERIOD OF RECORD.--May 1952 to current year. Records for October 1931 to September 1932, published in WSP 731, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1279: 1952. WSP 1729: 1958(M). WDR NE-81-1: 1977,1979-80. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,210.81 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 16, 1952, nonrecording gage only, and Dec. 16, 1952, to June 16, 1957, water-stage recorder at downstream end of right pier, above 4.2 ft, at present site at datum 4 ft higher. June 17, 1957, to Sept. 14, 1958, water-stage recorder above 8.2 ft at present datum. Sept. 15, 1958, to Oct. 17, 1978, water-stage recorder at downstream end of left pier, above 4.3 ft, at present site and datum.

REMARKS.--Estimated daily discharges.--Dec. 14 to Mar. 6. Records fair except for period of estimated record, which is poor. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--36 years, 84.2 ft³/s, 61,000 acre-ft/yr; median of yearly mean discharges, 75.4 ft³/s, 54,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,600 ft³/s June 16, 1957, gage height, 19.96 ft, present datum, from high point on surge, from rating curve extended above 6,500 ft³/s on basis of contracted-opening measurements at gage heights 15.36 ft and 19.96 ft, present datum; maximum gage height, 20.25 ft Feb. 19, 1971, backwater from ice; no flow July 24, 25, Aug. 30, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 19, 1951, reached a stage of 15.36 ft, present datum, from floodmarks, discharge, 24,400 ft³/s on basis of contracted-opening measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 23	1300	(a)	*17.17	No peaks greater than base discharge.			
Mar. 6	----	*480	ice jam				

a Backwater from ice.

Minimum daily discharge, 11 ft³/s July 7, Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	63	69	27	33	275	89	95	66	27	14	19
2	45	65	71	25	30	270	121	85	67	26	12	19
3	44	68	73	23	28	260	140	89	63	22	16	18
4	44	66	72	21	28	250	146	84	60	21	39	19
5	46	62	71	20	29	240	130	83	57	16	35	20
6	46	60	71	21	30	310	123	77	54	13	25	22
7	46	62	69	23	32	143	110	75	53	11	20	21
8	48	64	67	25	34	154	92	77	51	14	29	22
9	48	67	74	29	35	146	87	82	50	19	27	25
10	48	66	76	32	34	153	76	76	44	20	22	25
11	48	68	79	34	25	153	59	71	37	30	20	21
12	50	69	81	34	33	140	68	67	36	44	18	26
13	51	72	76	34	46	116	62	61	40	40	18	28
14	51	71	64	35	54	126	67	58	39	29	18	29
15	53	69	35	42	59	85	58	57	31	22	17	38
16	53	87	40	45	66	87	64	55	30	22	15	38
17	54	90	50	45	74	91	65	57	34	25	11	34
18	51	83	60	43	80	87	54	54	31	23	49	30
19	51	78	66	40	94	91	47	54	28	23	101	41
20	51	72	74	39	110	97	47	65	26	26	42	50
21	50	68	74	41	130	102	52	124	23	22	30	43
22	50	67	72	41	145	101	57	222	22	20	106	39
23	53	66	64	40	170	90	78	236	19	18	93	37
24	56	66	52	37	200	90	77	234	19	16	46	36
25	86	66	47	34	230	87	82	172	17	16	34	33
26	88	65	45	38	260	91	102	110	16	15	31	32
27	66	64	41	43	290	105	129	94	15	15	28	32
28	63	64	38	46	300	97	138	88	16	14	28	41
29	61	74	36	46	280	93	134	76	15	15	26	70
30	60	78	34	46	---	89	112	74	20	18	25	67
31	59	---	30	41	---	90	---	67	---	17	21	---
TOTAL	1666	2080	1871	1090	2959	4309	2666	2919	1079	659	1016	975
MEAN	53.7	69.3	60.4	35.2	102	139	88.9	94.2	36.0	21.3	32.8	32.5
MAX	88	90	81	46	300	310	146	236	67	44	106	70
MIN	44	60	30	20	25	85	47	54	15	11	11	18
AC-FT	3300	4130	3710	2160	5870	8550	5290	5790	2140	1310	2020	1930

CAL YR 1987 TOTAL 34912 MEAN 95.6 MAX 982 MIN 20 AC-FT 69250
WTR YR 1988 TOTAL 23289 MEAN 63.6 MAX 310 MIN 11 AC-FT 46190

MISSOURI RIVER MAIN STEM

71

06467000 LEWIS AND CLARK LAKE NEAR YANKTON, SD

LOCATION.--Lat 42°50'56", long 97°28'54", in SW1/4 sec.7, T.33 N., R.1 W., Cedar County, NE, Hydrologic Unit 10170101, in powerhouse of Gavins Point Dam on Missouri River, 3.75 mi southwest of Yankton, 13.6 mi upstream from James River, 32.5 mi downstream from Niobrara River, and at mile 811.0.

DRAINAGE AREA.--279,500 mi², approximately.

PERIOD OF RECORD.--July 1955 to current year (monthend contents only). Prior to October 1955, published as Gavins Point Reservoir near Yankton.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Dec. 9, 1955, recorder at temporary location on wall of intake structure unit 3.

REMARKS.--Reservoir is formed by earthfill dam; storage began in July 1955. Maximum capacity, 504,000 acre-ft below elevation 1,210.0 ft (top of spillway gates). Normal maximum, 442,600 acre-ft below elevation 1,208.0 ft. Inactive storage, 157,000 acre-ft below elevation 1,195.0 ft. Dead storage, 23,000 acre-ft below elevation 1,180.0 ft (crest of spillway). From capacity table put into use Nov. 1, 1986; maximum capacity, 491,700 acre-ft. Normal maximum, 432,000 acre-ft. Inactive storage, 149,400 acre-ft. Dead storage, 17,700 acre-ft. Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of 14 taintor gates, each 40 ft wide by 30 ft high; spillway capacity, 280,000 ft³/s at pool elevation 1,210.0 ft. Crest of spillway is at elevation 1,180.0 ft. Normal releases are through 3 power units, installation completed in January 1957; maximum release through power units is 35,000 ft³/s at pool elevation, 1,210.0 ft. 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, 565,000 acre-ft, Apr. 1, 1960, affected by wind; minimum since initial filling, 61,950 acre-ft, Apr. 23, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 447,000 acre-ft, Sept. 23; minimum, 306,000 acre-ft, Mar. 15.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,208.06	435,000	-
Oct. 31	1,207.93	430,000	-5,000
Nov. 30	1,207.95	430,000	0
Dec. 31	1,207.74	424,000	-6,000
CAL YR 1987	-	-	-12,000
Jan. 31	1,207.78	425,000	+1,000
Feb. 29	1,205.81	374,000	-51,000
Mar. 31	1,204.36	337,000	-37,000
Apr. 30	1,205.02	352,000	+15,000
May 31	1,205.54	366,000	+14,000
June 30	1,206.60	394,000	+28,000
July 31	1,208.03	432,000	+38,000
Aug. 31	1,207.56	419,000	-13,000
Sept. 30	1,208.29	440,000	+21,000
WTR YR 1988	-	-	+5,000

NOTE.--Lake frozen over Dec. 30 to Mar. 25.

MISSOURI RIVER MAIN STEM

06467500 MISSOURI RIVER AT YANKTON, SD

LOCATION.--Lat 42°51'58", long 97°23'37", in SW1/4SW1/4 sec.18, T.93 N., R.55 W., Yankton County, Hydrologic Unit 10170101, near left bank in downstream end of left pier of Meridian Highway Bridge on U.S. Highway 81, 5.2 mi downstream from Gavins Point Dam, 6.0 mi upstream from James River, and at mile 805.8.

DRAINAGE AREA.--279,500 mi², approximately.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at same site March 1873 to November 1886, March 1905 to May 1908 (fragmentary), August 1921 to September 1950 (except winter months prior to 1932), are contained in reports of the National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 1,139.68 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1932, nonrecording gage, and Sept. 20, 1932, to Mar. 9, 1967, water-stage recorder at present site and at datum 20.0 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow completely regulated by Gavins Point Dam 5.2 mi upstream since July 1955. Many diversions for irrigation and water supply above station. U.S. Army Corps of Engineers gage-height telemeter and satellite data-collection platform at station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--58 years, 26,670 ft³/s, 19,320,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480,000 ft³/s, Apr. 13, 1952; maximum gage height, 35.5 ft, Apr. 13, 14, 1952 (present datum); minimum daily discharge, 2,700 ft³/s, Nov. 15, 16, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 50.5 ft, Apr. 5, 1881, ice jam, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39,700 ft³/s at 2245 hours, Aug. 31, gage height, 17.24 ft; maximum gage height, 18.20 ft, Feb. 6, backwater from ice; minimum daily discharge, 17,000 ft³/s, Mar. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30700	34300	18600	19900	e18500	18200	29700	30400	30700	30900	31900	38500
2	30700	34200	18700	19200	e18500	18300	29800	30200	30600	31300	31800	38200
3	30700	34300	18600	18800	e18500	18300	29600	30100	30700	31300	31800	38100
4	30800	34200	18800	e18500	e18500	18400	29600	30000	30600	31500	31500	37800
5	30400	34400	18700	e18500	e18500	18200	29700	30900	30700	31500	31600	37600
6	30700	34400	18600	e18500	e18000	18100	29500	32200	30500	31500	31700	37700
7	31200	34300	18700	e18500	e18000	18100	29300	32100	30700	31500	31700	37900
8	31100	34100	18700	e18500	e18000	18000	29500	31800	30700	31600	31700	37800
9	31100	34300	18500	e18500	e18000	18200	29700	31600	31100	31500	31600	38100
10	31600	34400	18900	e18500	e18000	18200	29800	31800	30900	31600	31500	38500
11	31500	34200	18600	e18500	e18000	18300	30300	31700	31000	31600	31500	38400
12	31600	34300	18600	e18500	e18000	17700	30800	31500	30900	31700	31600	38200
13	31600	34300	18600	e18500	e18000	17900	30900	31700	31400	31600	31500	38100
14	31700	34300	18700	e18500	e18000	17900	30800	31400	31500	31700	31600	38200
15	31600	34300	18600	e18500	e18000	17200	30800	31100	31500	31600	31600	37600
16	31500	34100	18700	e18500	e18000	17000	30700	31200	31600	31800	31500	35000
17	31600	33900	18800	e18500	e18000	18000	30400	31400	31700	31800	31600	32500
18	31600	34100	18700	e18500	e18000	20400	30800	31200	31500	31800	31600	33600
19	31500	34100	18700	e18500	e18000	23100	31200	30900	31700	31600	31400	32700
20	31400	34200	18700	e18500	e18000	25800	31100	31000	31900	31700	31500	32500
21	31600	34100	18700	e18500	e18000	26700	31400	31300	31800	31800	31400	33100
22	31500	34100	18700	e18500	e18000	27300	31200	31000	32000	31900	31400	33600
23	31600	34100	18900	e18500	e18000	29600	30800	30700	32000	31900	31300	33500
24	32100	31200	18700	e18500	e18000	32500	31100	32600	31700	31800	31600	33400
25	32200	28100	18700	e18500	e18000	32600	31100	30900	31700	31800	32400	33500
26	32600	25400	18900	e18500	e18000	32500	30700	30600	31600	31800	32500	33700
27	33500	22400	18800	e18500	e18000	32900	30200	30700	31700	31800	32200	34200
28	34400	19800	18600	e18500	18300	32600	30000	30700	31800	31800	32200	32900
29	34400	18700	18700	e18500	18300	32100	30000	30700	31700	31900	32300	30600
30	34400	18600	18600	e18500	---	31500	30000	30800	31100	31900	35200	30100
31	34400	---	19500	e18500	---	30700	---	30800	---	31800	38900	---
TOTAL	987300	951200	580300	575900	525100	716300	910500	965000	939000	981300	993600	1065600
MEAN	31850	31710	18720	18580	18110	23110	30350	31130	31300	31650	32050	35520
MAX	34400	34400	19500	19900	18500	32900	31400	32600	32000	31900	38900	38500
MIN	30400	18600	18500	18500	18000	17000	29300	30000	30500	30900	31300	30100
AC-FT 1958000	1887000	1151000	1142000	1042000	1421000	1806000	1914000	1863000	1946000	1971000	2114000	
CAL YR 1987	TOTAL 10042400	MEAN 27510	MAX 34400	MIN 17300	AC-FT 19920000							
WTR YR 1988	TOTAL 10191100	MEAN 27840	MAX 38900	MIN 17000	AC-FT 20210000							

e Estimated

BOW CREEK BASIN

73

06478518 BOW CREEK NEAR ST. JAMES, NE

LOCATION.--Lat 42°43'48", long 97°08'53", in SE1/4SW1/4 sec.24, T.32 N., R.2 E., Cedar County, Hydrologic Unit 10170101, on right downstream end of bridge on State Highway 12, 0.25 mi west of intersection of St. James road and State Highway 12, 0.7 mi south of St. James.

DRAINAGE AREA.--304 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,180.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 28 to Dec. 2, Dec. 8, 9, Dec. 14 to Mar. 1, and Mar. 13-16. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--10 years, 80.2 ft³/s, 58,100 acre-ft/yr; median of yearly mean discharges, 72 ft³/s 52,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s June 21, 1984, gage height, 13.23 ft, from high-water mark; minimum daily, 7.4 ft³/s Jan. 15, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,000 ft³/s Feb. 19, gage height, 9.13 ft, backwater from ice; minimum daily, 8.1 ft³/s Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	36	72	30	45	300	56	54	96	35	20	13
2	55	39	86	31	22	185	70	59	96	27	24	13
3	50	46	81	32	35	126	91	65	113	18	27	15
4	43	47	75	28	36	110	77	67	85	16	44	18
5	45	40	65	26	31	129	81	67	59	18	33	17
6	47	42	66	25	34	90	86	54	47	14	20	16
7	56	47	63	32	33	65	70	59	49	24	16	17
8	62	45	80	30	32	74	53	60	59	52	26	19
9	53	48	100	31	31	89	52	63	50	27	23	18
10	49	56	77	31	29	92	50	57	50	21	21	20
11	41	55	69	32	35	84	51	54	66	31	17	16
12	38	52	48	30	40	82	59	53	70	46	12	14
13	35	55	46	35	49	60	55	51	64	41	11	19
14	29	58	46	48	45	50	57	44	54	41	13	18
15	29	62	45	58	50	41	64	37	46	35	9.6	77
16	30	71	50	50	54	35	64	32	51	33	9.2	63
17	30	54	52	49	55	30	59	30	57	33	8.1	29
18	27	53	54	56	80	22	57	30	67	25	20	24
19	27	54	56	42	700	27	54	30	71	24	20	45
20	25	47	56	35	900	26	54	196	55	31	13	53
21	22	45	58	40	500	21	49	427	40	25	8.3	43
22	26	48	56	45	300	27	54	216	28	22	32	38
23	28	56	49	44	200	28	60	206	34	22	30	36
24	32	61	40	35	190	37	42	103	30	19	17	34
25	35	68	38	33	210	47	37	64	24	21	11	32
26	40	80	36	35	250	37	71	62	18	21	14	31
27	37	77	38	40	300	49	78	56	16	20	23	31
28	38	78	39	50	350	51	72	53	17	17	20	64
29	44	76	39	60	500	41	66	96	21	18	16	56
30	40	74	37	70	---	40	58	50	34	19	16	39
31	39	---	33	62	---	55	---	54	---	19	13	---
TOTAL	1207	1670	1750	1245	5136	2150	1847	2549	1567	815	587.2	928
MEAN	38.9	55.7	56.5	40.2	177	69.4	61.6	82.2	52.2	26.3	18.9	30.9
MAX	62	80	100	70	900	300	91	427	113	52	44	77
MIN	22	36	33	25	22	21	37	30	16	14	8.1	13
AC-FT	2390	3310	3470	2470	10190	4260	3660	5060	3110	1620	1160	1840
CAL YR 1987	TOTAL	28682	MEAN 78.6	MAX 547	MIN 22	AC-FT 56890						
WTR YR 1988	TOTAL	21451.2	MEAN 58.6	MAX 900	MIN 8.1	AC-FT 42550						

LOCATION.--Lat 42°29'09", long 96°24'49", in NW1/4SE1/4 sec.16, T.29 N., R.9 E., sixth principal meridian, Dakota County, Nebraska, Hydrologic Unit 102300001, on right bank on upstream side of bridge on U.S. Highway 20 and 77 at South Sioux City, Nebraska. 1.9 mi downstream from Big Sioux River. and at mile 732.2.

PERIOD OF RECORD.--October 1897 to current year in reports of the U.S. Geological Survey. Prior to October 1928 and October 1931 to September 1938, monthly discharges only, published in WSP 1310. January 1879 to December 1890, monthly discharges only, in House Document 238, 73rd Congress, 2d session, Missouri River. Gage height records collected in this vicinity September 1878 to December 1899 are contained in reports of Missouri River Commission and since July 1889 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,056.98 ft above NGVD. Sept. 2, 1878, to Dec. 31, 1905, nonrecording gages at various locations within 1.7 mi of present site and at various datums. Jan. 1, 1906 to Feb. 14, 1935, nonrecording gage, and Feb. 15, 1935 to Sept. 30, 1969, water-stage recorder at site 227 ft downstream at datum 19.98 ft higher, and Oct. 1, 1969 to Sept. 30, 1970 at datum 20.00 ft higher. Oct. 1, 1970 to Jan. 30, 1981, water-stage recorder at site 227 ft downstream at present datum.

AVERAGE DISCHARGE.--91 years, 32,040 ft³/s, 23,210,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,200 ft³/s Sept. 15, gage height, 19.96 ft; minimum daily discharge, 11,100 ft³/s Jan. 5; minimum gage height, 10.39 ft, Jan. 5.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31100	33800	19600	15900	18900	23000	31700	31800	32200	30600	31100	36100
2	30900	33500	19400	16100	17700	23700	31200	31500	32600	30400	31400	37700
3	30700	33400	19500	17700	18200	23400	30800	31600	32400	31600	31700	37200
4	30800	33900	19400	16500	19100	23200	30500	31500	32800	31800	32700	37200
5	31000	34100	19500	11100	19000	23700	30700	30900	32400	31800	31700	36900
6	31000	34600	19600	12400	18300	23900	31200	31200	32400	31600	31300	36400
7	30900	34500	19700	15300	17600	22400	30600	32200	32100	31400	31300	36700
8	31100	34500	19900	15700	17500	22600	30200	32700	31700	31900	31700	37400
9	31200	34500	20500	16200	19000	21700	30900	32600	31100	31600	31400	37500
10	31200	34300	20200	17000	18700	21600	30900	32000	31400	31000	31100	37500
11	31400	34300	20400	17800	18200	21800	30900	32000	31500	31100	31000	37700
12	31800	34000	20300	18800	17800	22500	31100	32200	31600	31000	30900	37600
13	31600	33800	20200	16500	17500	22000	31600	32000	31700	31000	31200	37400
14	31500	33700	20100	17000	18500	21400	31500	32300	32200	31100	31400	37100
15	31600	33500	20100	19000	19000	21100	31200	32300	32500	31200	31700	38300
16	31700	33900	19700	20000	18500	20600	31200	32100	32500	31200	31800	38400
17	31900	33400	19500	19800	19000	20600	31100	32200	32700	30900	31500	35700
18	32000	33500	19800	19500	19900	21600	30900	32100	32900	31100	31700	32900
19	32400	34200	20000	18000	21000	22900	30800	32100	32700	31500	31600	33600
20	32600	34800	20000	17500	20800	25400	31100	31700	32600	31900	30700	33600
21	32400	34600	19900	17100	20400	27900	31000	33000	32500	31400	30700	32200
22	32300	34500	20200	18100	20800	29100	31200	32400	32400	31400	32700	32600
23	32300	34200	20200	19800	21300	29900	31300	32000	31900	31400	34100	33100
24	32300	34000	20200	19800	21300	31200	30700	31300	31700	31400	33900	32900
25	32600	31900	19100	19200	20200	33500	30700	32800	31500	31500	33100	33200
26	33100	29300	19200	17700	20500	33200	31500	33600	31300	31200	33900	33300
27	33100	26800	20000	18900	20800	32900	32200	32400	31000	30700	33900	33500
28	33600	24200	19800	19500	21800	33300	31600	31900	31000	30800	33500	34800
29	34000	21600	19700	19600	22400	33600	31700	31500	30800	30800	33100	34400
30	33800	20000	20000	19500	---	33400	31900	31400	30500	31000	32500	32000
31	33700	---	19500	19300	---	32800	---	31400	---	31000	33400	---
TOTAL	991600	971300	615200	546300	563700	799900	933900	992700	958600	968300	993700	1064900
MEAN	31990	32380	19850	17620	19440	25800	31130	32020	31950	31240	32050	35500
MAX	34000	34800	20500	20000	22400	33600	32200	33600	32900	31900	34100	38400
MIN	30700	20000	19100	11100	17500	20600	30200	30900	30500	30400	30700	32000
AC-FT	1967000	1927000	1220000	1084000	1118000	1587000	1852000	1969000	1901000	1921000	1971000	2112000
CAL YR 1987	TOTAL 10941500		MEAN 29980		MAX 46600		MIN 19100		AC-FT 217000000			
WTR YR 1988	TOTAL 10400100		MEAN 28420		MAX 38400		MIN 11100		AC-FT 206300000			

OMAHA CREEK BASIN

75

06601000 OMAHA CREEK AT HOMER, NE

LOCATION.--Lat 42°19'29", long 96°29'43". in SW1/4SE1/4 sec.11, T.27 N., R.8 E., Dakota County, Hydrologic Unit 10230001, on left bank 80 ft downstream from bridge on main street of Homer.

DRAINAGE AREA.--168 mi².

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR NE-72: Drainage area. WDR NE-75-1: 1971-73.

GAGE.--Water-stage recorder. Datum of gage is 1,082.45 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 4, 1952, at bridge 0.5 mi downstream at datum 8.03 ft lower. Aug. 4, 1952, to Nov. 3, 1966, at site 80 ft upstream at present datum. June 27, 1984 to Aug. 28, 1984 at temporary site 700 ft downstream at datum 2.00 ft lower.

REMARKS.--Estimated daily discharges: Dec. 22 to Mar. 3 and Mar. 13-17. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--43 years, 38.1 ft³/s, 27,600 acre-ft/yr; median of yearly mean discharges, 33.0 ft³/s, 23,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,100 ft³/s Feb. 19, 1971, gage height, 26.47 ft, from floodmark, from rating curve extended above 3,700 ft³/s on basis of slope-area measurements at gage heights 16.38 ft and 23.62 ft; minimum daily, 0.1 ft³/s Sept. 16, 18, 19, 1948, Sept. 9, 13, 14, 1955, Oct. 7, 8, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Greatest flood known occurred June 4, 1940, stage, about 32.5 ft, present site and datum, discharge estimated as 51,000 ft³/s at site 2.5 mi upstream from present site.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 16	0115	*1810	*9.14	July 18	0045	1060	6.22

Minimum daily discharge, 5.8 ft³/s Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	28	32	22	31	48	30	25	15	12	9.9	7.4
2	26	28	32	23	34	50	38	23	16	10	9.0	7.2
3	24	28	32	22	32	52	45	27	17	10	8.3	7.4
4	26	28	33	20	31	52	37	26	15	9.7	10	7.7
5	27	27	32	16	26	38	34	25	14	9.3	10	7.7
6	27	27	32	15	27	40	33	25	13	7.9	9.2	7.4
7	27	27	33	16	29	43	32	27	13	8.1	9.1	7.0
8	26	27	33	17	28	41	31	24	14	7.7	27	6.6
9	26	27	37	19	25	36	33	21	13	8.8	18	6.8
10	26	27	37	21	22	36	37	21	12	27	11	6.8
11	26	28	36	26	26	38	32	20	12	23	10	6.4
12	27	28	35	25	29	38	31	20	11	23	10	6.0
13	28	28	35	26	33	23	30	19	13	13	9.6	5.8
14	28	28	34	29	36	24	29	19	12	11	9.2	6.0
15	28	29	35	31	44	26	28	18	11	45	9.0	7.0
16	28	31	43	35	50	27	28	17	11	423	8.7	105
17	27	30	33	33	56	29	27	18	13	95	8.2	24
18	27	29	40	32	100	32	25	21	12	218	8.1	11
19	27	29	38	31	500	31	26	19	11	23	9.6	9.9
20	28	29	37	30	300	33	26	24	9.9	19	9.5	11
21	27	29	36	31	180	33	27	75	8.8	15	9.1	18
22	27	29	36	30	300	32	30	37	7.8	13	91	88
23	28	29	35	29	100	33	31	24	7.2	13	47	21
24	28	29	32	28	80	37	28	20	7.2	12	11	11
25	28	30	27	27	76	40	30	18	7.0	11	9.2	9.2
26	31	30	29	28	130	33	37	18	7.4	10	8.3	8.3
27	29	30	27	29	120	31	30	17	8.1	10	8.1	8.1
28	28	31	25	30	100	32	28	16	7.8	9.4	8.1	96
29	28	31	24	32	80	32	26	16	9.2	9.4	8.1	60
30	28	31	22	50	---	32	26	15	10	10	8.1	25
31	28	---	20	42	---	30	---	14	---	9.9	7.7	---
TOTAL	845	862	1012	845	2625	1102	925	709	338.4	1126.2	429.1	671.7
MEAN	27.3	28.7	32.6	27.3	90.5	35.5	30.8	22.9	11.3	36.3	13.8	22.4
MAX	31	31	43	50	500	52	45	75	17	423	91	105
MIN	24	27	20	15	22	23	25	14	7.0	7.7	7.7	5.8
AC-FT	1680	1710	2010	1680	5210	2190	1830	1410	671	2230	851	1330

CAL YR 1987 TOTAL 18152 MEAN 49.7 MAX 370 MIN 20 AC-FT 36000
WTR YR 1988 TOTAL 11490.4 MEAN 31.4 MAX 500 MIN 5.8 AC-FT 22790

LOCATION.--Lat 41°15'32", long 95°55'20", in SE1/4NW1/4 sec.23, T.15 N., R.13 E., Douglas County, Hydrologic Unit 10230006, on right bank on left side of concrete floodwall, at foot of Douglas Street, 275 ft downstream from Interstate 480 Highway bridge in Omaha, and at mile 615.9.

PERIOD OF RECORD.--September 1928 to current year. April 1872 to December 1899 (gage heights only) in reports of the Missouri River Commission and since January 1875, (gage heights only) in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 948.24 ft above NGVD. See WSP 1730 for history of changes prior to Sept. 30, 1936. Oct. 1, 1936 to Sept. 30, 1982 at datum 10.00 ft higher.

AVERAGE DISCHARGE.--60 years, 30,910 ft³/s, 22,390,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43,600 ft³/s Aug. 23; maximum gage height, 19.23 ft June 8; minimum daily discharge, 12,900 ft³/s Jan. 7; minimum gage height, 10.89 ft Jan. 7.

CAL YR 1987	TOTAL	13088000	MEAN	35860	MAX	58800	MIN	19500	AC-FT	25960000
WTR YR 1988	TOTAL	11553100	MEAN	31570	MAX	42200	MIN	12900	AC-FT	22920000

PLATTE RIVER BASIN

77

06674500 NORTH PLATTE RIVER AT WYOMING-NEBRASKA STATE LINE

LOCATION.--Lat 41°59'25", long 104°02'57", in SW1/4 NE1/4 SE1/4 sec.4, T.23 N., R.58 W., Scottsbluff County, NE, Hydrologic Unit 10180009, on right bank 650 ft upstream from bridge on NE State Highway 86, 700 ft downstream from Wyoming-Nebraska State line, and 0.5 mi south of Henry, NE.

DRAINAGE AREA.--22,218 mi², of which 1,929 mi² is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1929 to current year.

REVISED RECORDS.--WDR WY-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,021.35 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 6, 1929, nonrecording gage and Nov. 6, 1929, to Sept. 30, 1959, water-stage recorder at site 0.5 mi upstream at datum 4.42 ft higher. Oct. 7, 1959 to Feb. 22, 1972, water-stage recorder at site 0.5 mi upstream at datum 3.42 ft higher.

REMARKS.--Estimated daily discharges: Dec. 15, 16, Dec. 24 to Jan. 10, Jan. 13, 20, 21, 24, 25, and Feb. 1-4. Records fair except those for October and for estimated daily discharges, which are poor. Natural flow of stream affected by storage reservoirs, transbasin diversions, power development, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Gering-Mitchell Canal diverts from right bank 0.8 mi upstream. U.S. Corps of Engineers satellite telemeter at station.

COOPERATION.--Four discharge measurements provided by the Wyoming State Engineer's Office.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 17,900 ft³/s, June 2, 1929, gage height, 7.04 ft, site and datum then in use; minimum daily, 13 ft³/s, May 12, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,140 ft³/s, May 5, gage height, 3.38 ft; maximum gage height, 3.53 ft, July 8; minimum daily discharge, 176 ft³/s, Mar. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	652	328	263	205	190	198	241	1070	359	1430	1270	952
2	600	316	260	210	190	198	232	1170	352	1390	1250	934
3	562	310	258	210	192	198	251	1590	335	1380	1230	895
4	536	310	255	209	192	200	252	1950	319	1400	1280	862
5	515	306	255	207	199	199	250	2060	305	1450	1260	862
6	492	302	252	206	209	198	253	1890	313	1450	1270	870
7	463	313	250	204	196	198	257	1660	325	1400	1280	846
8	466	306	251	203	196	193	263	1590	317	1700	1280	776
9	461	300	249	201	196	192	264	1470	316	1590	1270	753
10	453	283	248	245	197	188	268	1330	321	1620	1270	709
11	448	288	243	229	199	189	309	1150	425	1580	1240	675
12	445	287	242	206	197	178	338	767	482	1610	1220	694
13	431	295	241	194	202	176	327	603	619	1540	1220	672
14	424	287	239	197	201	179	328	522	684	1390	1200	635
15	417	290	237	200	198	184	340	481	698	1340	1220	620
16	411	286	235	199	199	187	350	473	710	1310	1220	589
17	404	282	235	198	199	188	338	450	678	1330	1220	561
18	393	280	237	198	198	188	336	443	681	1380	1260	560
19	391	278	237	198	196	190	341	627	675	1510	1250	665
20	388	278	236	190	196	197	339	816	663	1520	1240	793
21	378	275	233	195	196	213	338	685	704	1420	1230	753
22	376	276	230	203	196	223	382	589	848	1340	1250	761
23	373	274	233	198	194	222	409	536	1080	1280	1220	801
24	365	272	228	195	196	221	496	522	1220	1220	1150	867
25	361	269	210	195	196	218	567	522	1330	1200	1100	873
26	355	268	224	198	196	219	886	453	1400	1320	1070	855
27	344	268	216	200	198	220	1440	423	1370	1310	1030	833
28	341	265	213	203	198	229	1470	423	1390	1270	1010	776
29	337	266	210	206	198	219	1280	393	1480	1250	1040	777
30	332	265	210	204	---	220	1120	373	1440	1200	1030	763
31	329	---	205	205	---	235	---	363	---	1210	986	---
TOTAL	13243	8623	7335	6311	5710	6257	14265	27394	21839	43340	37066	22982
MEAN	427	287	237	204	197	202	475	884	728	1398	1196	766
MAX	652	328	263	245	209	235	1470	2060	1480	1700	1280	952
MIN	329	265	205	190	190	176	232	363	305	1200	986	560
AC-FT	26270	17100	14550	12520	11330	12410	28290	54340	43320	85960	73520	45580

CAL YR 1987 TOTAL 214984 MEAN 589 MAX 1710 MIN 205 AC-FT 426400
WTR YR 1988 TOTAL 214365 MEAN 586 MAX 2060 MIN 176 AC-FT 425200

PLATTE RIVER BASIN

06674500 NORTH PLATTE RIVER AT WYOMING-NEBRASKA STATE LINE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	PH (STAND- ARD UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV 04...	1000	310	902	9.0	8.2	659	10.4	104	31
DEC 02...	1115	259	920	6.0	--	--	--	--	--
JAN 12...	1530	211	945	1.0	8.2	650	12.4	103	K2
FEB 19...	1240	196	960	4.0	--	--	--	--	--
APR 04...	0845	250	890	10.0	8.2	645	8.9	94	66
27...	1030	1420	727	9.0	--	--	--	--	--
MAY 31...	1830	371	840	17.0	--	--	--	--	--
JUN 30...	1600	1420	735	20.0	8.0	658	7.9	101	96
AUG 01...	1400	1300	745	25.5	--	--	--	--	--
SEP 12...	1135	695	762	13.0	--	--	--	--	--

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

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS TOTAL (MG/L AS P)
JUN 03...	1830	325	--	23.0	0.9	0.02	0.18	0.2	0.02
30...	1600	1420	735	20.0	0.2	0.03	0.47	0.5	0.08

79

LOCATION.--Lat 41°56'21", long 103°59'13", in SE1/4NE1/4 sec.25, T.23 N., R.58 W., Scotts Bluff County, Hydrologic Unit 10180012, on right bank 10 ft upstream from county highway bridge, 1.8 mi upstream from mouth, 2.2 mi downstream from Owl Creek, and 3.2 mi northeast of Lyman.

PERIOD OF RECORD.--February 1931 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,992.84 ft above National Geodetic Vertical Datum of 1929 (levels by private engineering firm). See WSP 2118 for history of changes prior to Apr. 17, 1967.

AVERAGE DISCHARGE.--57 years, 75.8 ft³/s, 54,920 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 727 ft³/s May 20, gage height, 6.04 ft; minimum daily, 10 ft³/s Jan. 4-7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	41	27	14	30	36	151	62	316	80	94	137
2	89	40	29	12	32	65	157	79	338	89	86	140
3	85	41	28	11	30	66	157	98	353	79	88	154
4	82	39	28	10	29	56	152	140	323	80	93	158
5	78	35	28	10	28	53	149	151	307	106	89	175
6	71	35	28	10	27	54	143	136	297	90	86	170
7	65	43	29	10	27	51	133	118	302	88	87	166
8	60	39	29	11	27	46	124	129	287	239	89	182
9	56	35	29	12	27	51	118	136	267	164	89	166
10	55	33	28	14	28	45	123	138	246	154	84	177
11	55	33	28	16	29	20	122	117	256	157	84	173
12	55	31	28	18	30	18	110	93	252	147	80	186
13	56	31	28	20	31	18	86	79	330	140	79	200
14	56	31	28	30	32	18	74	143	325	141	80	235
15	56	31	27	40	33	25	68	289	295	129	83	254
16	53	32	26	50	40	30	63	271	294	120	81	248
17	53	31	26	60	42	26	61	191	293	122	83	225
18	52	28	25	50	49	33	58	159	284	122	85	223
19	52	27	24	40	39	66	57	323	263	170	85	206
20	50	28	25	30	44	127	52	599	260	168	83	200
21	50	28	24	20	43	269	43	542	243	153	85	189
22	49	28	23	20	45	317	76	581	208	156	84	186
23	49	26	22	20	40	287	86	484	174	153	87	158
24	48	25	22	22	42	283	115	406	164	138	90	127
25	48	25	22	22	41	289	127	354	146	145	91	113
26	47	25	22	24	44	247	120	373	140	145	88	96
27	45	25	22	26	45	207	127	395	120	141	85	92
28	46	24	22	26	44	182	117	349	90	126	89	88
29	42	23	20	26	38	174	88	319	86	112	93	88
30	40	23	18	28	---	177	65	320	88	100	110	85
31	41	---	16	30	---	164	---	322	---	96	132	---
TOTAL	1777	936	781	732	1036	3500	3122	7896	7347	4050	2742	4997
MEAN	57.3	31.2	25.2	23.6	35.7	113	104	255	245	131	88.5	167
MAX	93	43	29	60	49	317	157	599	353	239	132	254
MIN	40	23	16	10	27	18	43	62	86	79	79	85
AC-FT	3520	1860	1550	1450	2050	6940	6190	15660	14570	8030	5440	9910
CAL YR 1987	TOTAL 44697	MEAN 122	MAX 630	MIN 16	AC-FT 88660							
WTR YR 1988	TOTAL 38916	MEAN 106	MAX 599	MIN 10	AC-FT 77190							

PLATTE RIVER BASIN

06678000 SHEEP CREEK NEAR MORRILL, NE

LOCATION.--Lat 41°57'50", long 103°56'20", in NW1/4SW1/4 sec.16, T.23 N., R.57 W., Scotts Bluff County, Hydrologic Unit 10180009, on right bank 40 ft upstream from Burlington Northern Inc. bridge, 50 ft downstream from bridge on U.S. Highway 26 1 mi west of Morrill, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--362 mi², of which about 25 mi² is noncontributing.

PERIOD OF RECORD.--October 1931 to current year.

REVISED RECORDS.--WDR NE-67: Drainage area. WSP 2118: 1936(M), 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 3,995.04 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 14, 1940, nonrecording gage at site 20 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 25 to Jan. 4, and Jan. 9-12. Record good except for periods of estimated record, which are fair. Natural flow of stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--57 years, 55.3 ft³/s, 40,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 516 ft³/s July 21, 1978, gage height, 6.62 ft; maximum gage height, 6.75 ft Aug. 2, 1932, from floodmark, due to break in Interstate Canal (discharge not determined); minimum daily discharge, 0.1 ft³/s Dec. 16, 23, 1956, Jan. 18, Mar. 12, 1957, result of diversion for construction upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 152 ft³/s Sept. 24, gage height, 3.03 ft; minimum daily, 5.1 ft³/s Sept. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	92	85	82	76	75	73	70	7.0	7.4	8.7	7.4
2	102	92	84	82	77	74	73	72	6.7	7.8	8.3	7.6
3	106	91	85	82	77	76	72	69	6.4	8.0	8.8	7.9
4	106	92	84	82	77	76	73	67	6.7	8.2	8.8	7.9
5	105	93	84	83	78	76	72	67	6.5	8.5	8.9	8.2
6	104	92	83	82	78	75	71	66	6.8	8.4	9.0	8.3
7	103	93	83	82	79	75	72	64	7.1	8.4	9.3	8.2
8	104	90	82	81	78	74	71	65	6.9	9.3	8.9	7.4
9	102	90	82	82	77	74	71	65	6.1	9.2	8.7	7.5
10	102	90	84	82	76	76	71	65	6.3	8.6	8.8	7.5
11	102	91	81	80	77	77	72	66	6.5	8.6	8.7	7.5
12	101	91	78	80	77	74	72	66	7.0	8.4	8.7	6.4
13	102	90	80	81	78	75	71	65	7.5	8.3	9.2	6.1
14	102	90	81	81	77	74	71	63	6.6	8.3	9.3	6.1
15	102	90	78	81	77	74	71	62	6.3	8.4	9.6	5.7
16	99	89	79	80	76	73	70	62	6.3	8.4	9.5	5.6
17	99	89	80	79	76	74	71	24	6.5	8.6	8.9	5.6
18	98	89	81	79	77	73	71	6.9	6.4	8.7	9.0	5.8
19	100	89	82	79	76	75	71	7.1	6.2	9.1	8.8	5.2
20	98	88	81	79	77	73	72	6.7	6.2	8.8	8.9	5.1
21	98	87	82	80	76	74	73	6.4	6.3	8.7	9.1	5.3
22	97	87	81	80	75	73	82	6.3	6.3	8.4	8.7	5.6
23	95	87	82	79	75	72	77	6.3	6.0	8.5	8.6	6.2
24	92	86	81	77	75	72	78	6.3	6.3	8.1	8.1	75
25	94	86	80	77	75	72	78	6.7	6.8	8.2	7.9	99
26	94	86	82	78	77	72	76	6.7	7.4	8.7	7.9	97
27	94	86	82	79	77	72	75	6.0	7.5	8.7	7.6	100
28	94	85	82	79	76	72	74	6.3	8.0	8.4	8.0	105
29	93	86	82	79	76	72	73	6.5	8.1	8.2	7.9	105
30	93	85	82	77	---	72	70	6.7	7.1	8.4	7.9	104
31	92	---	82	76	---	73	---	7.1	---	8.6	7.8	---
TOTAL	3076	2672	2535	2480	2223	2289	2187	1170.0	201.8	262.3	268.3	839.1
MEAN	99.2	89.1	81.8	80.0	76.7	73.8	72.9	37.7	6.73	8.46	8.65	28.0
MAX	106	93	85	83	79	77	82	72	8.1	9.3	9.6	105
MIN	92	85	78	76	75	72	70	6.0	6.0	7.4	7.6	5.1
AC-FT	6100	5300	5030	4920	4410	4540	4340	2320	400	520	532	1660

CAL YR 1987 TOTAL 21168.6 MEAN 58.0 MAX 267 MIN 5.1 AC-FT 41990
WTR YR 1988 TOTAL 20203.5 MEAN 55.2 MAX 106 MIN 5.1 AC-FT 40070

PLATTE RIVER BASIN

81

06679500 NORTH PLATTE RIVER AT MITCHELL, NE

LOCATION.--Lat 41°55'38", long 103°48'48", in NE1/4NE1/4 sec.33, T.23 N., R.56 W., Scotts Bluff County, Hydrologic Unit 10180009, on right bank of main channel 10 ft downstream from bridge on State Highway 29, 0.5 mi south of Mitchell.

DRAINAGE AREA.--24,300 mi², approximately, of which about 22,300 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--June 1901 to September 1910, May to December 1911, February 1912 to July 1913 (gage heights only), May 1916 to October 1918 (irrigation seasons only), May 1920 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,929.3 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to May 27, 1960. May 27, 1960, to Aug. 24, 1971, at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges: Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE (since Glendo project).--31 years (water years 1958-88), 876 ft³/s, 634,700 acre-ft/yr; median of yearly mean discharges, 553 ft³/s, 400,600 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,500 ft³/s June 3, 1909, gage height, 6.45 ft, datum then in use, from graph based on gage readings, from rating curve extended above 17,000 ft³/s; maximum gage height, 7.80 ft May 29, 1984; minimum daily discharge observed, 25 ft³/s Sept. 25-29, 1908.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,240 ft³/s May 6, gage height, 3.99 ft; minimum daily, 266 ft³/s June 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	641	558	460	455	460	581	1350	612	346	354	399
2	1030	634	559	463	470	461	591	1220	626	334	346	409
3	978	636	552	473	484	482	611	1230	607	323	308	423
4	943	635	550	457	466	464	601	1730	576	316	327	398
5	908	625	554	472	448	459	595	2040	550	374	354	418
6	876	617	545	474	439	456	589	1970	539	378	331	460
7	860	654	544	457	463	448	589	1600	516	380	325	471
8	847	643	540	468	465	445	579	1520	484	704	337	459
9	820	627	531	450	463	451	561	1440	474	716	338	438
10	801	615	533	457	449	467	566	1300	470	676	346	446
11	788	604	527	505	451	451	598	1070	474	649	339	460
12	776	609	517	472	469	380	651	816	474	649	306	465
13	764	619	510	474	500	391	636	542	559	650	304	489
14	750	622	510	492	515	402	614	441	658	500	321	542
15	742	626	496	495	491	410	612	509	609	426	344	579
16	724	612	493	497	497	418	625	520	604	374	311	622
17	716	604	509	492	480	419	615	484	574	337	303	622
18	703	592	517	497	477	418	603	404	522	374	322	598
19	694	589	519	492	468	436	606	537	444	492	339	658
20	686	593	514	452	459	498	606	1090	416	632	339	787
21	681	593	510	477	467	607	605	1070	387	599	331	834
22	679	585	506	478	464	714	681	1010	343	547	348	814
23	677	576	515	483	458	705	696	924	311	492	369	814
24	668	577	496	470	461	699	760	817	310	438	348	855
25	668	569	460	456	464	705	820	812	311	407	333	954
26	656	569	460	481	467	681	968	727	340	427	323	1010
27	654	572	509	487	468	655	1370	722	322	464	303	1130
28	656	568	508	494	469	626	1660	698	266	429	304	1230
29	649	562	494	502	466	603	1560	636	337	415	317	1270
30	651	556	484	508	---	608	1420	620	371	375	363	1300
31	647	---	443	500	---	593	---	615	---	360	415	---
TOTAL	23732	18124	15963	14835	13593	16012	22569	30464	14086	14583	10348	20354
MEAN	766	604	515	479	469	517	752	983	470	470	334	678
MAX	1040	654	559	508	515	714	1660	2040	658	716	415	1300
MIN	647	556	443	450	439	380	561	404	266	316	303	398
AC-FT	47070	35950	31660	29430	26960	31760	44770	60430	27940	28930	20530	40370

CAL YR 1987 TOTAL 243383 MEAN 667 MAX 2190 MIN 273 AC-FT 482800
WTR YR 1988 TOTAL 214663 MEAN 587 MAX 2040 MIN 266 AC-FT 425800

LOCATION.--Lat 41°49'22", long 103°37'02", in SE1/4NE1/4 sec.6, T.21 N., R.54 W., Scotts Bluff County, Hydrologic Unit 10180009, on right bank 200 ft downstream from county road bridge, 0.2 mi downstream from bridge on State Highway 92, 1 mi upstream from mouth, and 2 mi east of Gering.

REVISED RECORDS.--WSP 896: 1935(M). WDR NE-79-1: 1977, 1978 (M).

REMARKS.--No estimated daily discharges. Records good. Base flow is mainly return water from land irrigated by Fort Laramie Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,560 ft³/s June 8, 1958, gage height, 18.3 ft, present datum, from floodmarks, from rating curve extended above 2,200 ft³/s on basis of slope-area measurements at gage heights 16.67 ft and 18.3 ft present datum; minimum daily, 5 ft³/s Aug. 13, 16, 19, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 671 ft³/s May 20, gage height, 5.59 ft; minimum daily, 21 ft³/s May 14. 15.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	33	30	30	26	26	25	22	175	87	105	145
2	36	32	31	30	26	26	25	29	174	76	100	164
3	36	32	32	30	26	25	25	29	164	74	110	172
4	35	32	31	29	25	25	25	26	169	78	113	188
5	34	32	32	29	25	25	25	25	167	85	109	201
6	34	32	31	29	25	25	25	24	147	90	105	205
7	34	33	31	30	25	25	25	23	140	106	98	198
8	34	32	31	30	25	24	25	22	131	101	109	190
9	33	31	31	29	26	24	25	22	125	102	110	173
10	33	31	31	30	25	25	25	23	121	106	105	158
11	34	31	31	30	25	23	25	23	122	103	100	167
12	34	31	31	30	27	30	25	23	122	100	101	179
13	34	30	30	31	29	27	25	22	225	104	102	183
14	33	30	30	31	27	27	25	21	146	103	101	183
15	33	31	29	31	26	27	26	21	132	101	98	184
16	33	31	29	30	25	26	26	120	134	97	97	187
17	33	31	29	30	25	25	27	162	130	96	99	198
18	33	32	29	31	25	25	28	102	128	101	100	199
19	33	32	29	30	25	27	29	290	124	147	98	221
20	32	32	29	29	25	31	29	354	120	146	95	221
21	33	32	29	29	25	31	32	138	111	146	98	206
22	32	32	29	27	26	28	38	109	102	147	103	156
23	33	32	30	26	25	27	24	108	99	139	106	80
24	32	33	28	25	25	27	25	126	83	136	116	74
25	33	32	28	25	25	26	25	193	68	128	125	62
26	32	33	29	25	26	26	24	161	93	129	136	43
27	32	32	31	25	26	26	23	147	113	130	129	41
28	33	31	30	26	25	26	22	146	92	113	130	42
29	32	31	29	27	25	26	22	151	83	108	145	46
30	32	31	29	28	---	26	22	162	87	105	147	41
31	33	---	30	27	---	25	---	170	---	105	142	---
TOTAL	1055	950	929	889	741	812	772	2994	3827	3389	3432	4507
MEAN	34.0	31.7	30.0	28.7	25.6	26.2	25.7	96.6	128	109	111	150
MAX	57	33	32	31	29	31	38	354	225	147	147	221
MIN	32	30	28	25	25	23	22	21	68	74	95	41
AC-FT	2090	1880	1840	1760	1470	1610	1530	5940	7590	6720	6810	8940
CAL YR 1987	TOTAL	27578	MEAN	75.6	MAX	591	MIN	23	AC-FT	54700		
WTR YR 1988	TOTAL	24297	MEAN	66.4	MAX	354	MIN	21	AC-FT	48190		

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LOCATION.--Main channel gage: Lat 41°47'26", long 103°31'11", in NE1/4SE1/4 sec.13, T.21 N., R.54 W., Scotts Bluff County, Hydrologic Unit 10180009, on left bank 220 ft upstream from bridge on State Highway 326 and 1.8 mi southwest of Minatare. Nine Mile channel gage: Lat 41°47'32", long 103°31'08", in NE1/4SE1/4 sec.13, T.21 N., R.54 W., Scotts Bluff County, Hydrologic Unit 10180009, on left bank 50 ft upstream from bridge on State Highway 326 and 750 ft north of main channel bridge.

PERIOD OF RECORD.--May to August 1916, May 1917 to September 1918, May to October 1919, April to September 1922, June 1923 to current year. Monthly discharge only for some periods. published in WSP 1310.

GAGE.--Main channel: Water-stage recorder. Datum of gage is 3,810.7 ft above National Geodetic Vertical Datum of 1929. Nov. 2, 1966, to July 13, 1976, water-stage recorder at datum 1.00 ft higher. See WDR NE-72 for history of changes prior to Nov. 2, 1966.

Nine Mile channel: Water-stage recorder. Datum of gage is 3,812.3 ft above National Geodetic Vertical Datum of 1929. See WDR NE-72 for history of changes prior to Aug. 25, 1971.

AVERAGE DISCHARGE (since Glendo project).--31 years (water years 1958-88), 1,115 ft³/s, 807,800 acre-ft/yr; median of yearly mean discharges, 809 ft³/s, 586,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,500 ft³/s July 2, 1917, from graph based on mean daily discharge and discharge measurement published by State engineer of Nebraska; minimum daily, 11 ft³/s Aug. 16-18, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge. 2.580 ft³/s May 6: minimum daily. 355 ft³/s June 29.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1280	960	771	634	660	685	752	1600	932	448	449	632
2	1280	958	769	641	667	682	752	1600	944	427	416	658
3	1250	953	761	641	671	688	757	1450	924	417	423	676
4	1220	944	756	636	657	700	762	1780	900	411	454	705
5	1180	940	756	639	637	698	766	2310	898	417	477	740
6	1150	933	759	655	639	686	752	2500	874	447	490	780
7	1130	937	759	660	650	684	756	2190	859	477	478	834
8	1120	936	755	669	657	672	750	2050	812	572	472	843
9	1100	924	755	665	663	666	735	1920	752	824	497	814
10	1080	915	758	550	658	673	736	1720	764	780	485	780
11	1070	910	745	620	651	676	729	1530	725	803	485	789
12	1060	903	729	665	660	622	755	1250	739	777	467	826
13	1070	901	719	720	678	638	779	950	1020	780	482	872
14	1060	891	719	750	691	631	762	748	1070	721	491	908
15	1080	890	711	782	696	635	748	671	954	591	463	945
16	1070	878	702	749	691	632	750	708	952	531	413	986
17	1070	862	708	710	701	634	756	733	923	490	401	1030
18	1060	848	714	691	699	635	744	673	878	476	430	1030
19	1040	846	709	673	691	647	747	878	816	613	451	1040
20	1030	845	706	641	685	678	748	1840	756	749	459	1140
21	1020	844	703	636	686	731	741	1960	666	815	468	1200
22	1030	838	703	636	681	814	862	1790	601	791	484	1120
23	1010	828	706	637	673	864	879	1700	542	741	496	1040
24	999	827	704	623	671	872	915	1560	478	680	531	1010
25	993	818	680	610	678	874	996	1480	422	632	537	1060
26	990	820	647	615	691	883	1090	1390	399	615	541	1090
27	971	819	655	621	695	857	1340	1130	422	624	523	1150
28	984	802	667	632	695	803	1740	1040	382	594	510	1320
29	983	790	665	652	694	773	1850	971	355	564	543	1540
30	975	780	657	671	---	752	1720	911	442	519	570	1550
31	969	---	647	691	---	746	---	927	---	476	611	---
TOTAL	33324	26340	22195	20415	19566	22231	27169	43960	22201	18802	14997	29108
MEAN	1075	878	716	659	675	717	906	1418	740	607	484	970
MAX	1280	960	771	782	701	883	1850	2500	1070	824	611	1550
MIN	969	780	647	550	637	622	729	671	355	411	401	632
AC-FT	66100	52250	44020	40490	38810	44100	53890	87190	44040	37290	29750	57740
CAL YR 1987	TOTAL 346540											

PLATTE RIVER BASIN

06682505 NORTH PLATTE RIVER AT MC GREW, NE

LOCATION.--Lat 41°45'42", long 103°25'02", in SW1/4 sec.25, T.21 N., R.53 W., Scotts Bluff County, Hydrologic Unit 10180009, at bridge on county road 1.2 mi north of State Highway 92, 0.3 mi downstream from Ninemile Creek and 0.9 mi north of McGrew.

PERIOD OF RECORD.--Chemical analyses: water years 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 19...	1015	1180	978	7.50	9.5	10.5	11	270	700
NOV 17...	1045	932	982	8.04	5.0	11.4	21	80	5800
DEC 14...	1345	787	1040	8.40	4.5	11.6	13	K11	1200
JAN 20...	1000	718	1010	8.50	0.5	12.3	26	48	1400
FEB 17...	0915	753	970	8.60	4.5	12.0	17	520	K21000
MAR 15...	0930	740	974	8.24	2.5	12.1	8	800	9600
APR 19...	1315	784	992	8.40	15.5	9.0	14	730	550
MAY 17...	1345	839	945	8.40	23.0	7.9	31	130	760
JUN 20...	1345	734	977	8.60	26.0	7.6	31	730	350
JUL 11...	1345	876	900	7.90	23.0	7.8	42	800	720
AUG 15...	1345	594	1000	--	27.0	7.2	28	46	1800
SEP 13...	1345	1020	966	7.90	14.5	9.1	23	1200	1700

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

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)	SODIUM, DIS- SOLVED (MG/L AS Na) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 19...	310	86	23	110	3	230	23	474	0.64
NOV 17...	310	87	22	100	3	220	25	459	0.62
DEC 14...	310	88	23	100	3	250	24	487	0.66
JAN 20...	330	93	24	110	3	240	27	494	0.67
FEB 17...	300	83	22	110	3	240	26	481	0.65
MAR 15...	320	90	22	100	3	220	24	456	0.62
APR 19...	300	82	22	99	3	230	24	457	0.62
MAY 17...	290	78	23	91	2	220	20	432	0.59
JUN 20...	290	80	23	100	3	230	21	454	0.62
JUL 11...	290	80	22	100	3	220	23	445	0.61
AUG 15...	310	86	22	100	3	210	27	445	0.61
SEP 13...	280	82	19	95	3	220	22	438	0.60

PLATTE RIVER BASIN

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06682505 NORTH PLATTE RIVER AT MC GREW, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 19...	1510	97	2.90	0.060	0.67	0.73	3.6	0.100	3.7
NOV 17...	1160	41	3.40	0.200	0.52	0.72	4.1	0.120	3.6
DEC 14...	1030	48	3.20	0.300	0.21	0.51	3.7	0.090	5.0
JAN 20...	958	50	3.80	0.480	0.13	0.61	4.4	0.240	3.6
FEB 17...	978	124	3.30	0.250	1.0	1.3	4.6	0.270	5.6
MAR 15...	911	86	3.50	0.170	0.75	0.92	4.4	0.220	3.9
APR 19...	967	64	2.50	0.100	0.90	1.0	3.5	0.150	4.6
MAY 17...	979	245	1.60	0.100	1.2	1.3	2.9	0.280	5.6
JUN 20...	900	186	1.70	0.060	0.72	0.78	2.5	0.230	5.4
JUL 11...	1050	462	1.90	0.090	1.6	1.7	3.6	0.610	8.2
AUG 15...	714	267	2.50	0.100	1.0	1.1	3.6	0.680	6.3
SEP 13...	1210	336	1.30	<0.020	--	1.1	2.4	0.380	8.1

PLATTE RIVER BASIN

06684500 NORTH PLATTE RIVER AT BRIDGEPORT, NE

LOCATION.--Main channel gage: Lat 41°40'54", long 103°05'52", in NW1/4NW1/4 sec.28, T.20 N., R.50 W., Morrill County, Hydrologic Unit 10180009, on left bank 0.3 mi upstream from bridge on U.S. Highway 26, 0.8 mi north of Bridgeport. Browns Creek channel gage: Lat 41°40'55", long 103°05'53", in NW1/4NW1/4 sec.28, T.20 N., R.50 W., Morrill County, on right bank 0.2 mi upstream from culvert on U.S. Highway 26 and 0.8 mi north of Bridgeport.

DRAINAGE AREA.--25,300 mi², approximately, of which about 23,300 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--June 1896 to October 1900 (no winter records most years), May 1902 to November 1906, June to August 1915, May 1916 to current year. Monthly discharge only for some years, published in WSP 1310. Published as "near Camp Clark" 1896-1900.

REVISED RECORDS.--WSP 1390: 1897, 1915. WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Main channel: Water-stage recorder. Datum of gage is 3,656.14 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to Oct. 7, 1927. Oct. 7, 1927 to July 16, 1978 at downstream side of bridge on U.S. Highway 26, 0.3 mi downstream at same datum. Browns Creek channel: Water-stage recorder. Datum of gage is 3,663.51 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to June 1, 1943. June 1, 1943 to Nov. 17, 1983 on left bank at same location and datum.

REMARKS.--Main channel: Estimated daily discharge Jan. 1 to Feb. 13, Mar. 12-14. Browns Creek channel: Estimated daily discharges, Oct. 15-17, Jan. 1-13, Feb. 2-8, 11, 12, and Apr. 22-26. Records good except for periods of estimated record, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. River flows in two independently rated channels for which separate records are computed; figures herein represent combined discharge.

AVERAGE DISCHARGE (since Glendo project).--31 years (water years 1958-88), 1,399 ft³/s, 1,014,000 acre-ft/yr; median of yearly mean of discharges, 1,057 ft³/s, 766,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,900 ft³/s June 26, 1899, gage height, 5.39 ft, site and datum then in use, from graph based on gage readings; minimum daily, 55 ft³/s May 28, 1934, Aug. 15, 1940, but may have been less during periods of no record for Browns Creek channel.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,070 ft³/s May 20; minimum daily, 442 ft³/s July 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1620	1180	987	766	1120	861	944	1530	1250	640	578	904
2	1630	1150	995	780	980	891	911	1620	1260	606	545	919
3	1630	1100	988	740	900	924	844	1480	1220	557	532	958
4	1590	1110	978	700	906	904	818	1470	1110	505	613	993
5	1520	1140	993	680	920	848	828	2130	1020	442	689	1010
6	1460	1160	1010	650	960	848	818	2220	976	456	674	1080
7	1490	1160	1030	650	985	782	832	2050	923	494	629	1120
8	1490	1180	1020	650	1030	767	850	2020	901	504	620	1140
9	1480	1200	1000	650	1040	778	854	2000	882	692	692	1110
10	1500	1180	1020	680	1070	834	830	1900	853	761	753	1080
11	1500	1190	1020	790	975	845	849	1780	800	750	774	1100
12	1440	1180	1020	900	1140	830	847	1590	773	709	774	1110
13	1400	1180	1000	1030	980	820	825	1420	969	731	742	1150
14	1410	1200	984	1100	849	840	802	1170	1380	737	699	1240
15	1390	1200	952	1120	885	813	817	1050	1380	713	693	1330
16	1370	1160	973	1130	887	824	784	1010	1340	677	662	1330
17	1370	1090	977	1080	885	845	755	1010	1300	583	608	1320
18	1370	1060	940	1070	876	792	782	966	1220	584	620	1340
19	1390	1040	940	1060	896	826	785	1170	1120	867	678	1320
20	1360	1040	947	1030	892	834	782	2370	1040	1070	756	1330
21	1300	1080	970	997	907	870	789	2760	921	1110	745	1460
22	1260	1090	998	1010	895	910	925	2240	872	1030	764	1480
23	1220	1070	1020	1020	881	999	979	2140	838	905	781	1400
24	1190	1070	1040	1040	900	985	1030	1980	760	832	808	1340
25	1200	1060	944	1040	918	960	1070	1740	764	774	815	1360
26	1220	1040	820	1060	936	980	1090	1630	703	701	795	1360
27	1200	959	903	1100	914	969	1170	1490	691	641	784	1400
28	1190	979	1030	1130	870	939	1500	1350	673	674	822	1480
29	1170	990	948	1150	851	939	1680	1240	577	649	845	1660
30	1160	989	946	1140	---	918	1610	1160	623	617	855	1690
31	1180	---	888	1130	---	927	---	1220	---	593	888	---
TOTAL	42700	33227	30281	29073	27248	27102	28400	50906	29139	21604	22233	37514
MEAN	1377	1108	977	938	940	874	947	1642	971	697	717	1250
MAX	1630	1200	1040	1150	1140	999	1680	2760	1380	1110	888	1690
MIN	1160	959	820	650	849	767	755	966	577	442	532	904
AC-FT	84700	65910	60060	57670	54050	53760	56330	101000	57800	42850	44100	74410

CAL YR 1987 TOTAL 447686 MEAN 1227 MAX 4330 MIN 555 AC-FT 888000
WTR YR 1988 TOTAL 379427 MEAN 1037 MAX 2760 MIN 442 AC-FT 752600

PLATTE RIVER BASIN

87

06685000 PUMPKIN CREEK NEAR BRIDGEPORT, NE

LOCATION.--Lat 41°37'38", long 103°02'10", in SW1/4 sec.12, T.19 N., R.50 W., Morrill County, Hydrologic Unit 10180013, on right bank 250 ft downstream from bridge on U.S. Highway 385 and State Highway 92, 0.5 mi upstream from mouth, and 4 mi southeast of Bridgeport.

DRAINAGE AREA.--1,020 mi², approximately.

PERIOD OF RECORD.--February 1931 to current year.

REVISED RECORDS.--WSP 1390: 1932, 1934(M), 1935, 1936(M), 1938-39. WDR NE-67: Drainage area.

GAGE.--Water-stage recorder. Sheet piling control since December 1964. Datum of gage is 3,635.99 ft above National Geodetic Vertical Datum of 1929. Prior to June 25, 1934, nonrecording gage on downstream side of bridge 240 ft upstream and June 25, 1934, to May 18, 1936, water-stage recorder at upstream side of bridge 260 ft upstream, both at datum 0.29 ft higher. May 19, 1936, to June 8, 1965, water-stage recorder, June 9, 1965, to Sept. 1, 1965, non-recording gage, and Sept. 2, 1965, to Sept. 18, 1980, water-stage recorder, all on left bank 250 ft downstream from bridge at present datum.

REMARKS.--Estimated daily discharges: Dec. 10 to Feb. 11, and Mar. 10-19. Records good except for periods of estimated record, which are fair. Natural flow of stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--57 years, 27.3 ft³/s, 19,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,880 ft³/s June 9, 1965, gage height, 9.98 ft, from floodmark, from rating curve extended above 3,500 ft³/s on basis of rating extension for main channel and determination of flow over road; no flow for several days in 1975-77, 1981, 1982, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 86 ft³/s May 20, gage height, 2.88 ft; maximum gage height, 3.59 ft Jan. 21, backwater from ice; minimum daily discharge, 0.01 ft³/s Aug. 6, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	20	19	15	25	24	32	38	67	8.4	.10	25
2	15	20	20	15	24	22	32	66	64	9.5	.04	24
3	12	20	20	15	21	29	32	56	59	11	.15	25
4	12	20	22	15	20	27	32	49	52	11	.10	25
5	10	19	22	15	20	30	33	50	48	8.4	.09	26
6	8.4	19	21	15	20	29	31	52	45	5.9	.01	24
7	8.3	20	22	15	18	30	32	53	44	3.4	.03	22
8	8.5	20	22	14	17	28	31	54	41	3.1	.09	25
9	8.9	20	22	10	19	27	31	51	38	3.2	.04	34
10	10	20	23	12	20	30	31	45	36	.57	.01	33
11	11	19	25	20	19	25	30	45	30	.72	1.8	32
12	12	20	25	25	17	20	30	42	25	1.8	3.9	31
13	12	20	25	26	19	20	31	39	27	1.9	4.2	31
14	12	19	25	28	18	21	31	43	27	1.4	3.7	32
15	13	20	20	30	18	22	32	47	28	1.4	3.3	33
16	13	20	20	32	18	23	32	46	26	1.4	1.1	32
17	13	20	21	32	17	24	34	52	24	.99	.51	33
18	12	19	23	35	17	25	33	41	23	2.7	.38	33
19	14	19	23	30	17	24	31	63	18	6.6	.24	32
20	17	20	24	20	17	21	32	77	12	11	.14	32
21	17	21	24	20	18	24	28	58	12	12	.05	32
22	18	22	25	22	17	27	31	56	11	12	.06	33
23	18	22	24	24	17	26	26	63	12	11	.06	34
24	19	22	20	30	17	24	29	63	12	8.9	3.6	35
25	19	21	19	29	19	26	33	63	13	7.7	14	35
26	18	21	18	28	20	28	33	62	9.7	6.2	14	35
27	18	21	17	27	20	30	33	59	8.2	2.9	18	35
28	20	21	16	26	21	30	33	58	8.0	1.1	22	35
29	20	20	15	26	24	31	36	56	8.6	.65	22	37
30	19	19	15	25	---	31	35	59	8.2	.24	24	37
31	20	---	15	25	---	31	---	68	---	.13	24	---
TOTAL	453.1	604	652	701	554	809	950	1674	836.7	157.20	161.70	932
MEAN	14.6	20.1	21.0	22.6	19.1	26.1	31.7	54.0	27.9	5.07	5.22	31.1
MAX	25	22	25	35	25	31	36	77	67	12	24	37
MIN	8.3	19	15	10	17	20	26	38	8.0	.13	.01	22
AC-FT	899	1200	1290	1390	1100	1600	1880	3320	1660	312	321	1850

CAL YR 1987 TOTAL 7539.03 MEAN 20.7 MAX 61 MIN .29 AC-FT 14950
WTR YR 1988 TOTAL 8484.70 MEAN 23.2 MAX 77 MIN .01 AC-FT 16830

PLATTE RIVER BASIN

06686000 NORTH PLATTE RIVER AT LISCO, NE
(National stream-quality accounting network station)

LOCATION.--Lat 41°29'18", long 102°37'25", in NW1/4SE1/4 sec.33, T.18 N., R.46 W., Garden County, Hydrologic Unit 10180009, near right bank on downstream side of pier of highway bridge, 0.5 mi south of Lisco.

DRAINAGE AREA.--26,700 mi², approximately, of which about 24,700 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to September 1916, June to October 1917, September 1931 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,474.5 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 8, 1931, nonrecording gage at present site at different datum and Sept. 8, 1931 to May 3, 1932, at present site at datum 1.0 ft higher. May 4, 1932, to May 28, 1974, water-stage recorder at present site at datum 1.0 ft higher.

REMARKS.--Estimated daily discharges: Dec. 26 to Feb. 21. Records good except for period of estimated record, which is fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water and return flow from irrigated areas.

AVERAGE DISCHARGE (since Glendo project).--31 years (water years 1958-88), 1,479 ft³/s, 1,072,000 acre-ft/yr; median of yearly mean discharges, 1,160 ft³/s, 840,400 acre-ft/yr. Figures are unadjusted for storage and diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,100 ft³/s June 27, 29, 1917, from graph based on daily gage readings, from rating curve extended above 15,000 ft³/s; minimum daily, 8 ft³/s Aug. 4, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,090 ft³/s May 21, gage height, 2.81 ft; minimum daily, 342 ft³/s July 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1710	1390	1130	1080	1140	1070	999	1740	1480	456	476	912
2	1730	1400	1120	1080	1100	1060	1020	2260	1430	445	472	894
3	1740	1420	1170	1100	1100	1060	1020	2100	1430	431	478	967
4	1710	1340	1200	1080	1100	1060	1050	1730	1380	417	495	1020
5	1600	1240	1240	1060	1100	1070	1040	1990	1320	391	511	1030
6	1550	1220	1220	1060	1120	1070	993	2450	1240	350	553	1030
7	1490	1270	1210	1040	1160	1070	985	2380	1130	342	585	1080
8	1490	1230	1290	1040	1180	1050	953	2140	1030	345	566	1100
9	1530	1200	1240	1040	1200	1030	953	2060	1000	354	564	1140
10	1540	1190	1190	1060	1200	1050	956	1930	992	461	580	1130
11	1520	1180	1160	1060	1200	1050	947	1890	994	567	598	1140
12	1490	1210	1160	1100	1250	857	947	1780	979	596	610	1260
13	1460	1230	1060	1140	1300	929	952	1580	982	582	665	1380
14	1460	1250	1140	1100	1350	944	990	1330	1190	551	646	1470
15	1430	1270	1140	1100	1400	943	1010	1120	1400	530	640	1530
16	1410	1340	1180	1080	1400	936	991	1080	1330	494	622	1540
17	1460	1320	1210	1060	1450	940	969	1050	1280	478	597	1570
18	1520	1310	1270	1000	1500	942	952	1050	1240	491	545	1600
19	1490	1310	1240	980	1600	947	957	1170	1170	569	542	1570
20	1470	1240	1130	1000	1500	947	964	2140	1100	786	616	1570
21	1450	1200	1120	1000	1400	947	1000	2910	975	945	704	1630
22	1420	1210	1110	1000	1170	947	1090	2680	844	978	720	1610
23	1420	1140	1130	1120	1090	949	1150	2380	832	930	761	1570
24	1410	1160	1170	1140	1070	977	1170	2230	747	827	789	1520
25	1410	1180	1120	1120	1070	982	1250	2020	708	784	808	1470
26	1400	1220	1060	1140	1080	1010	1320	1870	649	703	820	1440
27	1390	1250	1040	1140	1080	1020	1330	1760	592	618	820	1430
28	1400	1240	1020	1140	1080	1020	1440	1520	556	548	819	1500
29	1410	1180	1000	1160	1070	984	1740	1370	504	541	823	1680
30	1410	1140	1020	1160	---	969	1820	1300	487	530	831	1870
31	1400	---	1060	1160	---	949	---	1420	---	496	874	---
TOTAL	46320	37480	35550	33540	35460	30779	32958	56430	30991	17536	20130	40653
MEAN	1494	1249	1147	1082	1223	993	1099	1820	1033	566	649	1355
MAX	1740	1420	1290	1160	1600	1070	1820	2910	1480	978	874	1870
MIN	1390	1140	1000	980	1070	857	947	1050	487	342	472	894
AC-FT	91880	74340	70510	66530	70330	61050	65370	111900	61470	34780	39930	80640

CAL YR 1987 TOTAL 489979 MEAN 1342 MAX 3870 MIN 456 AC-FT 971900
WTR YR 1988 TOTAL 417827 MEAN 1142 MAX 2910 MIN 342 AC-FT 828800

PLATTE RIVER BASIN
06686000 NORTH PLATTE RIVER AT LISCO, NE--Continued

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WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1970 to September 1981.
WATER TEMPERATURES: October 1970 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,280 microsiemens Feb. 11, 1981; minimum daily, 275 microsiemens Mar. 1, 1978.
WATER TEMPERATURES: Maximum, 31.0°C July 19, 1972; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT										
19...	0900	1500	952	7.60	7.5	670	--	11.3	11	K120
NOV										
16...	1000	1350	930	8.60	3.5	665	20	11.4	--	K11
16...	1005	--	--	--	--	--	--	--	12	--
DEC										
14...	0915	1160	1010	8.60	0.5	672	--	12.5	15	K7
JAN										
21...	1030	1010	940	8.30	0.5	667	0.40	12.6	--	80
21...	1035	--	--	--	--	--	--	--	14	--
FEB										
16...	1155	1380	873	8.60	2.0	662	--	12.0	22	K6
MAR										
14...	1115	936	940	8.60	0.5	668	24	12.6	--	K2
14...	1120	--	--	--	--	--	--	--	9	--
APR										
18...	1035	945	936	8.60	11.5	664	--	10.3	22	24
MAY										
16...	0930	1070	957	8.60	17.0	670	44	8.7	--	42
16...	0935	--	--	--	--	--	--	--	24	--
JUN										
21...	1330	970	920	8.60	30.5	667	--	7.0	46	410
JUL										
12...	1245	602	868	8.60	27.5	664	150	7.4	--	K630
12...	1250	--	--	--	--	--	--	--	58	--
AUG										
15...	0900	650	910	8.50	21.0	668	--	8.6	30	120
SEP										
12...	0930	1240	912	8.60	13.0	672	54	9.4	--	520
12...	0935	--	--	--	--	--	--	--	44	--

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

PLATTE RIVER BASIN

06686000 NORTH PLATTE RIVER AT LISCO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	STREP- TOCOCCHI FECAL KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)
OCT 19...	270	310	--	86	22	100	3	--	--
NOV 16...	180	300	53	84	21	90	2	10	245
NOV 16...	--	300	--	84	21	96	3	--	--
DEC 14...	780	320	--	90	23	100	3	--	--
JAN 21...	210	310	51	88	21	89	2	9.0	257
JAN 21...	--	320	--	92	22	100	3	--	--
FEB 16...	K6700	270	--	76	19	93	3	--	--
MAR 14...	400	320	51	90	22	93	2	10	263
MAR 14...	--	320	--	92	21	95	2	--	--
APR 18...	41	300	--	82	22	94	2	--	--
MAY 16...	130	290	51	77	23	92	2	9.0	--
MAY 16...	--	300	--	81	23	89	2	--	--
JUN 21...	900	290	--	80	22	99	3	--	--
JUL 12...	390	280	53	76	22	89	2	9.9	230
JUL 12...	--	290	--	80	21	96	3	--	--
AUG 15...	230	270	--	74	20	97	3	--	--
SEP 12...	1100	280	56	74	22	82	2	9.6	221
SEP 12...	--	280	--	79	19	86	2	--	--

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)
OCT 19...	230	20	--	--	--	458	0.62	1850	142
NOV 16...	220	24	0.50	39	628	650	0.85	2290	--
NOV 16...	210	22	--	--	--	--	--	--	82
DEC 14...	250	24	--	--	--	484	0.66	1520	45
JAN 21...	220	21	0.50	40	666	657	0.91	1820	--
JAN 21...	220	24	--	--	--	--	--	--	23
FEB 16...	220	22	--	--	--	430	0.58	1600	133
MAR 14...	220	23	0.50	40	665	674	0.90	1680	--
MAR 14...	220	25	--	--	--	--	--	--	85
APR 18...	230	23	--	--	--	451	0.61	1150	111
MAY 16...	220	20	0.50	30	614	623	0.84	1960	--
MAY 16...	210	22	--	--	--	--	--	--	144
JUN 21...	220	21	--	--	--	442	0.60	1160	262
JUL 12...	220	20	0.40	30	604	613	0.82	982	--
JUL 12...	210	28	--	--	--	--	--	--	506
AUG 15...	210	24	--	--	--	425	0.58	746	230
SEP 12...	210	19	0.40	36	578	595	0.79	1940	--
SEP 12...	210	20	--	--	--	--	--	--	273

PLATTE RIVER BASIN

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06686000 NORTH PLATTE RIVER AT LISCO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

		NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)		
	OCT 19...	2.90	--	0.070	0.72	0.79	3.7	0.140	--	--		
	NOV 16...	--	3.10	0.020	0.68	0.70	--	--	0.020	0.020		
	16...	3.30	--	0.090	0.55	0.64	3.9	0.130	--	--		
	DEC 14...	3.30	--	0.080	0.07	0.15	3.5	0.120	--	--		
	JAN 21...	--	3.30	0.120	0.38	0.50	--	--	0.050	0.040		
	21...	2.90	--	0.230	0.0	0.11	3.0	0.120	--	--		
	FEB 16...	2.90	--	0.140	1.7	1.8	4.7	0.340	--	--		
	MAR 14...	--	3.40	0.050	0.55	0.60	--	--	0.040	0.040		
	14...	3.30	--	0.100	0.72	0.82	4.1	0.170	--	--		
	APR 18...	2.40	--	0.110	0.86	0.97	3.4	0.180	--	--		
	MAY 16...	--	2.00	0.010	0.49	0.50	--	0.030	0.020	<0.010		
	16...	1.90	--	0.100	1.5	1.6	3.5	0.220	--	--		
	JUN 21...	1.60	--	0.090	1.9	2.0	3.6	0.330	--	--		
	JUL 12...	--	1.60	0.040	2.3	2.3	--	0.420	0.030	0.010		
	12...	1.70	--	0.110	1.8	1.9	3.6	0.470	--	--		
	AUG 15...	1.90	--	0.090	1.2	1.3	3.2	0.260	--	--		
	SEP 12...	--	2.30	<0.010	--	1.3	--	0.220	0.020	0.020		
	12...	2.30	--	0.070	0.75	0.82	3.1	0.300	--	--		
DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	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)	
NOV	16...	1000	30	7	97	<0.5	<1	110	<3	6	5	<5
MAR	14...	1115	20	6	100	<0.5	<1	30	<3	7	7	<5
MAY	16...	0930	20	7	92	<0.5	<1	<1	<3	8	6	<5
JUL	12...	1245	30	8	100	<0.5	1	10	<3	4	8	<5
DATE		LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV	16...	42	2	1.6	<10	2	3	1.0	880	8	5	--
MAR	14...	41	3	<0.1	<10	1	<1	1.0	920	8	5	--
MAY	16...	39	3	<0.1	<10	4	4	1.0	830	10	4	--
JUL	12...	41	2	<0.1	<10	2	4	<1.0	780	11	4	--

PLATTE RIVER BASIN

06686000 NORTH PLATTE RIVER AT LISCO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, DIS- SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 16...	1000	1350	3.5	251	915	35
JAN 21...	1030	1010	0.5	47	128	42
MAR 14...	1115	936	0.5	184	465	42
MAY 16...	0930	1070	17.0	194	560	73
JUL 12...	1245	602	27.5	598	972	93
SEP 12...	0930	1240	13.0	388	1300	64

PLATTE RIVER BASIN

93

06687000 BLUE CREEK NEAR LEWELLEN, NE

LOCATION.--Lat 41°20'08", long 102°10'21", in NE1/4 sec.30, T.16 N., R.42 W., Garden County, Hydrologic Unit 10180009, on left bank 5 ft downstream from county highway bridge, 0.5 mi downstream from bridge on U.S. Highway 26, 0.8 mi upstream from mouth, and 1.5 mi west of Lewellen.

DRAINAGE AREA.--1,190 mi², approximately, of which about 80 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 1310: 1941(M). WDR NE-67: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,310.04 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to Apr. 10, 1958. Apr. 10, 1958 to Sept. 17, 1983, recording gage at site 125 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Oct. 12-19, Oct. 30 to Nov. 5, Nov. 7-9, Dec. 16, 17, Dec. 26 to Feb. 28, and June 22, 29. Records good except for periods of estimated record, which are poor. Natural flow of stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--58 years, 69.1 ft³/s, 50,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 720 ft³/s May 20, 1938, gage height, 6.46 ft, present datum, from rating curve extended above 500 ft³/s; maximum gage height observed, 7.28 ft, Dec. 17, 1985, backwater from ice; no flow for short periods in 1940, 1947, 1957, 1960-61, 1963, 1971, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 210 ft³/s May 20, gage height, 4.57 ft; maximum gage height, 6.50 ft Jan. 22, backwater from ice; minimum daily discharge, 0.02 ft³/s June 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	86	90	88	100	102	94	87	88	.62	.60	.08
2	17	86	93	84	100	114	100	146	92	.18	.23	.73
3	24	86	95	82	102	110	97	186	89	.10	.39	1.3
4	25	86	95	80	102	110	95	125	83	.05	1.3	.13
5	38	86	96	80	104	110	93	97	80	.05	2.5	.38
6	46	86	96	80	106	105	91	93	78	.06	6.2	.24
7	49	88	96	78	104	102	92	90	79	10	8.8	2.7
8	62	90	107	74	104	98	94	90	78	5.5	5.1	12
9	56	92	103	70	106	102	92	90	76	.21	.39	6.5
10	50	92	99	68	108	108	92	89	75	.41	1.4	6.3
11	59	89	98	70	110	109	91	88	73	.28	2.9	6.2
12	70	91	94	70	100	104	91	88	74	.18	5.0	9.1
13	74	93	92	70	98	90	90	88	76	.18	27	11
14	80	91	92	72	100	100	90	86	76	.10	28	13
15	80	94	91	78	102	108	90	86	67	.18	25	14
16	80	98	90	88	102	104	91	86	45	.20	23	16
17	82	94	94	90	102	102	91	81	23	.11	9.5	16
18	82	92	95	94	102	103	90	83	24	5.7	3.5	14
19	84	92	95	96	102	106	90	102	5.2	17	.21	19
20	84	94	94	96	100	105	91	174	.98	9.6	1.2	22
21	89	98	94	86	100	104	90	171	.06	5.1	4.0	24
22	88	98	92	90	100	102	92	117	.06	4.0	8.2	27
23	88	99	92	92	100	102	93	104	.06	1.8	4.4	24
24	87	96	87	92	100	99	92	97	.16	.20	2.4	23
25	88	95	83	94	100	98	92	94	.08	.19	.80	29
26	91	95	86	94	100	94	90	93	.12	.24	.15	30
27	87	95	86	98	102	97	89	89	.18	1.6	.12	31
28	87	94	86	98	102	96	88	89	.19	.78	.11	18
29	88	93	86	98	100	94	87	87	.02	.22	.39	12
30	88	89	88	98	---	93	86	85	.36	.22	.11	42
31	88	---	88	98	---	95	---	88	---	.52	.11	---
TOTAL	2128	2758	2873	2646	2958	3166	2744	3169	1283.47	65.58	173.01	430.66
MEAN	68.6	91.9	92.7	85.4	102	102	91.5	102	42.8	2.12	5.58	14.4
MAX	91	99	107	98	110	114	100	186	92	17	28	42
MIN	17	86	83	68	98	90	86	81	.02	.05	.11	.08
AC-FT	4220	5470	5700	5250	5870	6280	5440	6290	2550	130	343	854

CAL YR 1987 TOTAL 23652.65 MEAN 64.8 MAX 248 MIN .12 AC-FT 46920
WTR YR 1988 TOTAL 24394.72 MEAN 66.7 MAX 186 MIN .02 AC-FT 48390

PLATTE RIVER BASIN

06687500 NORTH PLATTE RIVER AT LEWELLEN, NE

LOCATION.--Lat 41°19'01", long 102°07'32", in SE1/4NW1/4 sec.34, T.16 N., R.42 W., Garden County, Hydrologic Unit 10180009, on left bank 19 ft downstream from bridge on State Highway 26, 1 mi southeast of Lewellen, and approximately 0.5 mi upstream from high-water line of Lake McConaughy.

DRAINAGE AREA.--28,600 mi², approximately, of which about 25,400 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--July to September 1931, December 1940 to current year.

REVISED RECORDS.--WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,285.88 ft above National Geodetic Vertical Datum of 1929. July to September 1931, nonrecording gage at site 0.9 mi upstream at different datum. December 1940 to Sept. 19, 1973, water-stage recorders on two channels at present site at datum 1.28 ft lower. Sept. 21, 1973 to July 13, 1984, water-stage recorder at site 0.9 mi upstream at datum 4.28 ft higher.

REMARKS.--Estimated daily discharges: Dec. 16 to Feb. 25. Records good except for period of estimated record, which is fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE (since Glendo project).--31 years (water years 1958-88), 1,579 ft³/s, 1,144,000 acre-ft/yr; median of yearly mean discharges, 1,300 ft³/s, 941,800 acre-ft/yr. Figures are unadjusted for storage and diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft³/s June 4, 1971, at different datum; minimum daily, 44 ft³/s July 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,700 ft³/s May 22, gage height, 6.29 ft; maximum gage height, 7.05 ft, Dec 19, backwater from ice; minimum daily discharge, 336 ft³/s July 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1670	1550	1310	1100	1100	1270	1270	1920	1620	417	472	824
2	1630	1520	1290	1060	1060	1270	1290	3060	1600	394	436	862
3	1710	1480	1280	1060	1000	1260	1270	3300	1540	398	412	856
4	1710	1460	1260	1040	1080	1240	1250	2360	1440	371	406	864
5	1680	1450	1270	1040	1100	1260	1220	1830	1320	352	429	881
6	1630	1430	1270	1020	1080	1280	1210	2350	1230	336	454	943
7	1570	1460	1270	1000	1060	1280	1230	2630	1180	433	469	1030
8	1570	1510	1320	1000	1100	1270	1210	2520	1130	427	511	1110
9	1540	1420	1320	1000	1120	1250	1160	2300	1060	390	534	1160
10	1530	1400	1270	1040	1180	1250	1160	2350	998	443	652	1180
11	1600	1360	1240	1040	1200	1280	1160	2250	949	442	596	1160
12	1680	1340	1210	1100	1250	1160	1160	2070	955	529	606	1130
13	1660	1340	1200	1140	1300	1100	1150	1870	926	562	827	1160
14	1660	1330	1090	1140	1350	1270	1140	1630	976	541	725	1220
15	1690	1340	1120	1160	1350	1270	1170	1390	1190	515	659	1400
16	1650	1460	1100	1160	1350	1200	1170	1210	1290	510	628	1380
17	1630	1430	1120	1160	1400	1190	1160	1130	1220	529	597	1400
18	1620	1360	1200	1180	1450	1180	1150	1090	1220	480	584	1450
19	1640	1340	1200	1200	1450	1150	1130	1280	1140	545	574	1450
20	1590	1340	1200	1200	1500	1210	1120	2440	1030	554	552	1400
21	1570	1350	1250	1200	1500	1250	1130	3120	949	727	610	1400
22	1580	1380	1250	1200	1550	1250	1140	3490	873	771	718	1510
23	1620	1400	1200	1160	1500	1250	1270	2980	801	907	726	1500
24	1620	1370	1100	1100	1500	1280	1340	2670	759	856	756	1440
25	1630	1350	1000	1080	1450	1280	1360	2330	656	775	797	1370
26	1620	1330	1040	1000	1430	1280	1380	2040	588	785	803	1360
27	1590	1320	1100	1000	1320	1280	1400	1910	529	686	822	1420
28	1560	1320	1120	1060	1260	1270	1410	1840	465	620	789	1490
29	1580	1340	1160	1100	1260	1280	1570	1690	435	585	801	1510
30	1610	1340	1120	1100	---	1230	1900	1560	439	580	811	1840
31	1590	---	1100	1120	---	1260	---	1530	---	536	835	---
TOTAL	50230	41820	36980	33960	37250	38550	37680	66140	30508	17096	19591	37700
MEAN	1620	1394	1193	1095	1284	1244	1256	2134	1017	551	632	1257
MAX	1710	1550	1320	1200	1550	1280	1900	3490	1620	907	835	1840
MIN	1530	1320	1000	1000	1000	1100	1120	1090	435	336	406	824
AC-FT	99630	82950	73350	67360	73890	76460	74740	131200	60510	33910	38860	74780

CAL YR 1987 TOTAL 518399 MEAN 1420 MAX 4330 MIN 387 AC-FT 1028000
WTR YR 1988 TOTAL 447505 MEAN 1223 MAX 3490 MIN 336 AC-FT 887600

06690000 LAKE MCCONAUGHY NEAR KEYSTONE, NE

LOCATION.--Lat 41°12'45", long 101°40'03", in NW1/4SW1/4 sec.3, T.14 N., R.38 W., Keith County, Hydrologic Unit 10180014, near right bank at outlet tower of Kingsley Dam on North Platte River, 4.5 mi west of Keystone.

DRAINAGE AREA.--29,300 mi², approximately, of which about 25,800 mi² contributes directly to surface runoff.

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

GAGE.--Electric tape gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam; storage began Feb. 9, 1941. Capacity, 1,948,000 acre-ft between elevations 3,130.0 ft, sill of outlet gates, and 3,270.0 ft, top of morning-glory spillway gates. Elevation of crest of morning-glory spillway is 3,254.0 ft. Dead storage negligible. Figures given herein represent total contents. Water is used for power development and irrigation in South-Central Nebraska by the Central Nebraska Public Power and Irrigation District.

COOPERATION.--Records of elevations and capacity table furnished by the Central Nebraska Public Power and Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 1,920,000 acre-ft July 12-16, 1971, elevation, 3,269.1 ft; minimum observed since operation of reservoir began, 32,860 acre-ft Sept. 29, 1941, elevation, 3,153.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 1,653,000 acre-ft June 6-12, elevation, 3,262.0 ft; minimum observed, 1,269,000 acre-ft Sept. 5-13, elevation, 3,247.8 ft.

MONTHEND ELEVATION AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	3,255.5	1,468,000	-
Oct. 31	3,255.2	1,460,000	-8,000
Nov. 30	3,255.4	1,465,000	+5,000
Dec. 31	3,255.6	1,471,000	+6,000
CAL YR 1987	-	-	-99,000
Jan. 31	3,256.5	1,495,000	+24,000
Feb. 29	3,258.3	1,546,000	+51,000
Mar. 31	3,259.5	1,580,000	+34,000
Apr. 30	3,259.8	1,588,000	+8,000
May 31	3,261.6	1,641,000	+53,000
June 30	3,258.4	1,548,000	-93,000
July 31	3,252.5	1,388,000	-160,000
Aug. 31	3,248.2	1,279,000	-109,000
Sept. 30	3,248.7	1,291,000	+12,000
WTR YR 1988	-	-	-177,000

PLATTE RIVER BASIN

06690500 NORTH PLATTE RIVER NEAR KEYSTONE, NE

LOCATION.--Lat 41°12'30", long 101°37'50", in SW1/4 sec.1, T.14 N., R.38 W., Keith County, Hydrologic Unit 10180014, on right bank 0.2 mi downstream from diversion dam of Sutherland Reservoir supply canal and 2.5 mi southwest of Keystone.

DRAINAGE AREA.--29,300 mi², approximately, of which about 25,800 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--June to August 1917, July to September 1939, May to September 1940, January to April 1941, March 1942 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1390: 1942, 1946-47. WSP 1630: 1958. WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,105.59 ft above National Geodetic Vertical Datum of 1929 (Nebraska Public Power District bench mark). See WSP 1918 for history of changes prior to May 1, 1964.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Flow completely regulated by Lake McConaughy (station 06690000) since Feb. 9, 1941. Supply canal for Nebraska Public Power District diverts 0.2 mi upstream from station.

AVERAGE DISCHARGE.--46 years (water years 1943-88), 535 ft³/s, 387,600 acre-ft/yr; median of yearly mean discharges, 370 ft³/s, 268,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,300 ft³/s June 30, 1917, from graph based on daily gage readings; no flow for many days in 1975-88.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,590 ft³/s June 29, gage height, 5.67 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	143	124	1420	1930	347
2	.00	.00	.00	.00	.00	.00	.00	361	127	1420	1940	325
3	3.4	.99	4.0	.00	.00	.00	.00	926	145	1400	1770	304
4	2.1	.00	.00	.00	.00	.00	.00	844	127	1380	1430	313
5	.00	.00	.00	.00	.00	.00	.00	408	123	1400	1300	265
6	3.6	.00	.00	.00	.00	.00	.00	553	122	1730	1300	223
7	.00	.00	.00	.00	.00	.00	.00	672	161	1980	1230	218
8	.00	.00	.00	.00	.00	.00	.00	991	217	1970	848	208
9	.00	.00	.58	.00	.00	.00	.00	764	205	1680	470	206
10	.00	.00	.00	.00	.00	.00	.00	436	212	1410	487	198
11	.00	.00	.00	.00	.00	.00	.00	371	210	1230	464	209
12	.00	.00	.00	.00	.00	.00	.00	418	210	1150	449	226
13	.00	.00	.00	.00	.00	.00	.00	377	393	1120	194	172
14	.00	.00	.00	.00	.00	.00	.00	136	873	1280	240	126
15	.00	.00	.00	.00	.00	.00	.00	155	873	1140	452	109
16	.00	.00	.00	.00	.00	.00	.00	160	893	1290	513	108
17	.00	.00	.00	.00	.00	.00	.00	181	987	1250	630	102
18	.00	.00	.00	.00	.00	.00	.00	205	1050	1240	512	96
19	.00	.00	.00	.00	.00	.00	.00	193	1270	700	529	97
20	.00	.00	.00	.00	.00	.00	.00	83	1650	405	525	74
21	.00	.00	.00	.00	.00	.00	.00	.00	1970	341	518	2.5
22	.00	.00	.00	.00	.00	.00	.00	.00	2040	452	535	14
23	2.3	.00	.00	.00	.00	.00	.00	.56	2050	429	543	14
24	8.5	.00	.00	.00	.00	.00	.00	.00	2320	496	769	18
25	8.4	3.8	.00	.00	.00	.00	4.3	.00	2580	601	1030	22
26	3.8	.00	.00	.00	.00	.00	16	43	2690	889	1140	18
27	.89	.00	.00	.00	.00	.00	277	124	2920	1400	1150	13
28	.00	.00	.00	.00	.00	.00	305	125	2890	1690	1130	6.1
29	.00	2.8	.00	.00	.00	.00	225	128	2990	1810	939	4.9
30	.00	.00	.00	.00	---	.00	150	121	1990	1860	675	7.6
31	1.8	---	.00	.00	---	.00	---	119	---	1860	478	---
TOTAL	34.79	7.59	4.58	0.00	0.00	0.00	977.30	9037.56	34412	38423	26120	4046.1
MEAN	1.12	.25	.15	.00	.00	.00	32.6	292	1147	1239	843	135
MAX	8.5	3.8	4.0	.00	.00	.00	305	991	2990	1980	1940	347
MIN	.00	.00	.00	.00	.00	.00	.00	.00	122	341	194	2.5
AC-FT	69	15	9.1	.0	.0	.0	1940	17930	68260	76210	51810	8030

CAL YR 1987 TOTAL 102912.46 MEAN 282 MAX 2000 MIN .00 AC-FT 204100
WTR YR 1988 TOTAL 113062.92 MEAN 309 MAX 2990 MIN .00 AC-FT 224300

PLATTE RIVER BASIN

97

06691000 NORTH PLATTE RIVER NEAR SUTHERLAND, NE

LOCATION.--Lat 41°12'37", long 101°06'53", in sec.4, T.14 N., R.33 W., Lincoln County, Hydrologic Unit 10180014, on left bank 80 ft downstream from bridge on county road, 2.5 mi upstream from Birdwood Creek, and 3.5 mi north of Sutherland.

DRAINAGE AREA.--29,800 mi², approximately, of which about 26,120 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--June to October 1917, July 1931 to August 1933 (irrigation seasons only), May to September 1935, May 1936 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 976: 1942. WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,920 ft, from topographic map. Prior to Apr. 29, 1936, nonrecording gage near present site at different datums. Apr. 29, 1936 to Oct. 6, 1971, water-stage recorder at site 80 ft upstream and Oct. 7, 1971 to Sept. 30, 1984 at present site, all at datum 1.0 ft higher.

REMARKS.--Estimated daily discharges: Dec. 14-18, Dec. 24 to Feb. 20, and Mar. 11-13. Records good except for periods of estimated record, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--46 years (water years 1943-88), 540 ft³/s, 391,200 acre-ft/yr; median of yearly mean discharges, 362 ft³/s, 262,000 acre-ft/yr. Figures unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,300 ft³/s June 29, 1917, from discharge graph based on daily gage readings, from rating curve extended above 16,000 ft³/s; no flow July 24-28, 30, 31, 1931, Aug. 7, 1934, July 20-28, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,710 ft³/s June 30, gage height, 4.36 ft; minimum daily discharge, 65 ft³/s Apr. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	156	162	120	120	185	134	247	158	1670	1570	272
2	123	147	156	110	125	183	214	359	312	1110	1680	169
3	123	142	161	100	130	178	310	763	206	1050	1700	170
4	121	138	158	100	130	173	246	1160	135	1040	1540	157
5	119	133	159	100	125	180	199	971	98	1020	1210	142
6	115	131	157	100	130	188	180	621	87	928	1210	134
7	119	151	153	100	130	183	169	685	87	1430	1220	105
8	121	205	182	100	135	182	158	800	94	1710	994	107
9	117	172	201	110	135	165	151	992	117	2090	592	116
10	124	160	185	112	140	155	143	725	188	1630	393	112
11	130	152	177	120	180	150	141	509	301	1190	309	112
12	130	154	170	130	200	160	138	442	265	1150	273	120
13	128	152	163	140	230	165	136	453	152	981	385	140
14	129	152	160	145	240	166	132	408	328	861	157	141
15	135	162	155	150	220	155	126	288	692	901	86	144
16	133	213	155	130	240	149	124	191	730	786	148	131
17	130	191	155	150	235	150	123	99	729	918	206	123
18	127	174	160	120	230	145	120	86	808	1040	383	118
19	130	166	157	100	240	147	118	106	779	1340	320	164
20	132	162	146	100	250	148	121	268	915	788	304	207
21	126	155	153	104	250	146	123	343	1220	520	287	201
22	122	159	153	110	247	144	171	239	1610	413	252	173
23	121	170	150	120	210	139	168	177	1740	347	239	150
24	118	182	150	120	188	137	139	121	1770	268	197	137
25	130	189	130	120	179	130	104	99	1920	229	453	132
26	142	177	84	125	187	126	111	88	2060	274	705	128
27	136	166	92	125	189	123	65	81	2180	528	813	125
28	131	163	100	130	188	123	233	88	2370	964	846	132
29	137	163	104	130	188	124	341	85	2440	1310	837	134
30	137	163	104	135	---	125	303	81	2580	1440	640	146
31	155	---	110	135	---	129	---	81	---	1490	442	---
TOTAL	3967	4900	4602	3691	5391	4753	4941	11656	27071	31416	20391	4342
MEAN	128	163	148	119	186	153	165	376	902	1013	658	145
MAX	155	213	201	150	250	188	341	1160	2580	2090	1700	272
MIN	115	131	84	100	120	123	65	81	87	229	86	105
AC-FT	7870	9720	9130	7320	10690	9430	9800	23120	53700	62310	40450	8610

CAL YR 1987 TOTAL 111014 MEAN 304 MAX 1660 MIN 68 AC-FT 220200
WTR YR 1988 TOTAL 127121 MEAN 347 MAX 2580 MIN 65 AC-FT 252100

PLATTE RIVER BASIN

06692000 BIRDWOOD CREEK NEAR HERSHEY, NE

LOCATION.--Lat 41°13'20", long 101°04'12", in NE1/4NW1/4 sec.2, T.14 N., R.33 W., Lincoln County, Hydrologic Unit 10180014, on left bank 60 ft downstream from bridge on county road, 1 mi upstream from mouth, and 5 mi northwest of Hershey.

DRAINAGE AREA.--940 mi², approximately, of which about 80 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--May 1931 to current year.

REVISED RECORDS.--WSP 1390: 1948(M), 1949, 1951-52(M). WDR NE-67, WDR NE 76-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,920 ft above National Geodetic Vertical Datum of 1929, from topographic map. Jan. 1, 1931, to Dec. 16, 1934, nonrecording gage and Dec. 17, 1934 to Nov. 4, 1953, water-stage recorder, at site 50 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Jan. 1 to Feb. 16. Records good except for period of estimated record, which is fair. Natural flow of stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--57 years, 151 ft³/s, 109,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,770 ft³/s Apr. 1, 1949, gage height, 4.35 ft, from rating curve extended above 680 ft/s; maximum gage height, 5.12 ft Dec. 15, 1940, backwater from ice; minimum daily discharge, 61 ft³/s Jan. 19, 1935, Apr. 7, 1938.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 240 ft³/s Jan. 22, gage height, 3.56 ft, backwater from ice; maximum gage height, 4.42 ft, Jan. 13, backwater from ice; minimum daily discharge, 104 ft³/s June 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	157	176	161	140	165	192	148	155	173	124	108	126
2	153	171	170	135	150	184	168	198	184	118	108	126
3	153	172	179	130	150	176	166	179	165	120	113	122
4	162	172	176	130	145	173	178	160	162	127	121	122
5	160	170	173	125	140	172	173	167	159	126	113	123
6	154	174	166	120	155	185	161	163	158	125	113	122
7	152	185	165	120	170	193	168	162	158	125	117	127
8	154	172	165	125	175	169	167	160	153	117	120	127
9	153	155	136	135	165	168	153	156	153	164	129	126
10	150	156	146	150	160	184	152	159	150	134	139	127
11	149	155	163	160	150	173	158	163	146	128	138	130
12	148	156	152	160	165	137	161	162	149	131	135	133
13	153	160	133	160	175	153	161	161	137	122	157	137
14	158	164	130	170	190	153	153	162	134	113	149	140
15	157	172	135	170	195	160	158	161	128	109	144	153
16	158	185	136	185	200	166	158	158	128	109	124	142
17	154	172	137	185	207	153	159	155	126	112	123	141
18	155	172	148	190	193	160	151	159	128	114	129	147
19	159	170	160	180	200	170	156	176	127	179	127	154
20	157	170	156	190	195	184	160	176	124	135	125	132
21	150	183	145	210	197	184	161	180	117	129	132	141
22	155	177	139	220	191	179	173	162	113	129	133	144
23	156	172	147	210	176	173	144	171	111	129	132	140
24	160	167	137	205	186	174	154	171	108	129	129	142
25	165	166	143	200	189	159	168	165	107	119	127	142
26	171	167	148	190	198	156	171	161	105	112	125	142
27	159	167	166	185	201	165	154	160	104	114	125	146
28	159	163	153	185	181	163	156	158	106	113	124	162
29	159	158	146	180	185	152	160	156	106	116	125	152
30	162	153	148	180	---	165	158	155	122	115	124	153
31	173	---	144	170	---	153	---	162	---	110	125	---
TOTAL	4865	5052	4703	5195	5149	5228	4808	5093	4041	3847	3933	4121
MEAN	157	168	152	168	178	169	160	164	135	124	127	137
MAX	173	185	179	220	207	193	178	198	184	179	157	162
MIN	148	153	130	120	140	137	144	155	104	109	108	122
AC-FT	9650	10020	9330	10300	10210	10370	9540	10100	8020	7630	7800	8170
CAL YR 1987	TOTAL 54122		MEAN 148	MAX 217	MIN 102	AC-FT 107400						

PLATTE RIVER BASIN

99

06693000 NORTH PLATTE RIVER AT NORTH PLATTE, NE

LOCATION.--Lat 41°09'13", long 100°45'16", in sec.28, T.14 N., R.30 W., Lincoln County, Hydrologic Unit 10180014, on right bank 150 ft downstream from bridge on U.S. Highway 83, 0.5 mi north of city of North Platte, and 4.5 mi upstream from confluence with South Platte River.

DRAINAGE AREA.--30,900 mi², approximately, of which about 26,300 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--February 1895 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR NE-67, WDR NE-76-1: Drainage area. WSP 2118: 1915(M).

GAGE.--Water-stage recorder. Datum of gage is 2,792.14 ft above National Geodetic Vertical Datum of 1929 (Nebraska Department of Roads bench mark). See WSP 2118 for history of changes prior to June 3, 1968.

REMARKS.--Estimated daily discharges: Dec. 10 to Feb. 23. Records good except for period of estimated record, which is fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--46 years (water years 1943-88), 780 ft³/s, 565,100 acre-ft/yr; median of yearly mean discharges, 601 ft³/s, 435,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 29,600 ft³/s June 11, 1909, discharge measurement; minimum daily, 20 ft³/s Sept. 20, 1904.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,840 ft³/s June 29, gage height, 4.91 ft; minimum daily discharge, 280 ft³/s Dec. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	391	425	436	350	390	451	406	500	371	2520	1650	633
2	379	406	438	350	380	457	510	601	580	1610	1790	526
3	376	387	444	350	380	450	710	969	546	1430	1860	495
4	386	389	453	350	370	452	617	1390	431	1380	1900	478
5	384	393	443	350	380	458	526	1480	355	1360	1730	473
6	376	395	423	350	370	471	480	1150	327	1230	1520	478
7	372	401	412	350	390	501	446	869	315	1410	1600	447
8	374	471	436	350	400	491	433	995	320	1820	1400	406
9	365	447	499	350	420	467	423	1260	335	2240	1140	409
10	373	420	450	350	420	463	409	1250	322	2230	816	411
11	381	413	400	350	420	461	394	849	374	1720	651	398
12	385	401	400	360	400	449	389	682	417	1560	563	406
13	388	402	390	360	410	463	382	613	398	1390	654	442
14	397	407	390	370	410	454	374	552	369	1210	663	503
15	401	413	400	370	410	432	376	496	677	1140	489	524
16	381	481	400	380	420	428	371	438	854	1100	397	513
17	372	483	410	380	420	433	361	403	884	1080	420	457
18	363	456	410	380	420	425	356	330	897	1150	524	426
19	364	439	410	370	440	425	342	365	929	1700	582	450
20	378	435	400	370	440	445	341	456	981	1610	537	470
21	376	435	400	360	490	441	356	641	1130	1100	530	449
22	379	434	400	360	500	426	431	586	1450	852	518	424
23	380	457	400	350	550	420	448	490	1710	766	474	404
24	366	461	400	350	470	422	413	432	1810	626	448	380
25	364	464	400	350	452	409	363	385	1900	517	459	375
26	373	461	350	370	457	401	358	346	2080	425	673	363
27	369	451	300	390	468	401	367	302	2170	483	880	370
28	372	444	280	390	466	396	363	306	2290	845	968	402
29	369	434	300	400	450	395	509	322	2520	1210	1020	428
30	373	435	330	400	---	395	527	329	2590	1470	984	403
31	411	---	340	390	---	394	---	337	---	1550	796	---
TOTAL	11718	12940	12344	11300	12393	13576	12781	20124	30332	40734	28636	13343
MEAN	378	431	398	365	427	438	426	649	1011	1314	924	445
MAX	411	483	499	400	550	501	710	1480	2590	2520	1900	633
MIN	363	387	280	350	370	394	341	302	315	425	397	363
AC-FT	23240	25670	24480	22410	24580	26930	25350	39920	60160	80800	56800	26470

CAL YR 1987 TOTAL 198250 MEAN 543 MAX 1890 MIN 251 AC-FT 393200
WTR YR 1988 TOTAL 220221 MEAN 602 MAX 2590 MIN 280 AC-FT 436800

PLATTE RIVER BASIN

06762500 LODGEPOLE CREEK AT BUSHNELL, NE

LOCATION.--Lat 41°13'50", long 103°53'28", in sec.32, T.15 N., R.57 W., Kimball County, Hydrologic Unit 10190016, on right bank 0.1 mi south of Bushnell at south end of highway bridge on State Highway 53c.

DRAINAGE AREA.--1,350 mi².

PERIOD OF RECORD.--October 1931 to current year. Records for March to September 1931 at site 1.5 mi upstream not equivalent owing to diversions. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1390: 1933, 1935, 1937-38, 1941, 1948-49. WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,845.31 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 26, 1938, nonrecording gage, Mar. 26, 1938 to July 2, 1981 water stage recorder, July 3, 1981 to Sept. 30, 1981 a nonrecording gage at previous site 1.7 mi downstream from present site at datum 33.01 ft lower.

REMARKS.--Estimated daily discharges: Oct. 11-22, Nov. 9, 16, 26 to Feb. 1, 6, 13, 21, and Feb. 27 to Mar. 24. Records fair except for periods of estimated record, which are poor. Natural flow or stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas. Diversions for irrigation of about 12,600 acres above station.

AVERAGE DISCHARGE.--57 years, 10.6 ft³/s, 7,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,500 ft³/s Sept. 15, 1950, gage height, 9.98 ft, from rating curve extended above 2,700 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 10.06 ft July 2, 1981, from highwater mark, site and datum then in use; minimum daily discharge, 0.09 ft³/s July 20, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 443 ft³/s July 18, gage height, 2.87 ft; minimum daily, 2.0 ft³/s Aug. 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	4.1	4.2	4.0	3.9	5.4	8.5	8.2	6.7	3.5	2.8	2.3
2	3.1	4.0	4.2	3.8	4.4	5.4	11	8.6	6.7	3.7	2.7	2.2
3	3.1	4.0	4.1	3.8	4.1	5.4	10	9.1	6.7	3.6	2.4	2.1
4	3.2	4.0	4.1	3.8	3.9	5.4	9.7	8.9	6.2	3.6	2.6	2.3
5	3.1	4.0	4.1	3.6	3.9	5.4	9.0	9.0	6.0	3.7	2.6	2.4
6	3.1	4.0	4.1	3.4	3.9	5.4	8.5	8.3	5.5	3.6	2.4	2.4
7	3.1	4.1	4.1	3.4	4.5	5.0	8.4	7.4	5.5	3.6	2.3	2.3
8	3.3	4.2	4.1	3.4	4.4	5.0	7.7	7.5	5.3	3.6	2.5	2.2
9	3.3	4.2	4.1	3.6	4.4	5.2	7.3	7.5	5.0	3.6	2.7	2.2
10	3.3	4.1	4.0	4.0	4.4	5.4	7.6	6.9	5.0	3.5	2.3	2.2
11	3.4	4.1	4.0	4.5	4.5	5.0	7.6	7.1	4.9	3.5	2.2	2.3
12	3.4	4.1	3.8	4.5	4.7	4.5	7.6	7.4	4.7	3.3	2.4	2.9
13	3.4	4.1	3.6	5.0	4.0	4.0	7.4	7.3	4.8	3.2	2.5	2.7
14	3.5	4.1	3.4	5.0	5.5	4.0	7.1	6.9	4.9	3.3	2.4	3.1
15	3.5	4.2	3.4	5.0	6.0	4.0	6.9	6.6	4.7	3.0	2.4	3.1
16	3.6	4.2	3.8	5.0	6.0	4.0	7.3	6.7	4.7	3.3	2.1	3.1
17	3.6	4.2	4.2	5.0	5.5	4.0	7.1	6.6	4.6	4.1	2.2	3.0
18	3.7	3.9	4.8	5.0	5.5	4.0	6.9	6.4	4.4	2.5	2.1	2.9
19	3.7	3.9	5.0	4.5	5.7	4.5	6.7	10	4.4	3.4	2.2	2.9
20	3.8	4.0	4.8	4.4	5.5	5.0	6.9	18	4.2	3.1	2.0	3.0
21	3.8	4.1	4.4	4.3	5.5	6.0	7.5	14	4.1	3.1	2.0	3.1
22	3.9	4.1	4.2	4.3	5.5	7.0	13	13	4.0	3.1	2.2	3.0
23	3.9	4.1	4.2	4.2	5.4	8.0	15	11	3.9	2.9	2.1	3.0
24	3.8	4.0	4.0	4.1	5.4	10	15	9.7	3.8	3.1	2.2	3.0
25	3.9	4.1	3.8	4.1	5.2	12	14	8.6	3.7	3.2	2.2	2.9
26	3.9	5.0	3.8	4.1	5.4	13	12	8.6	3.6	3.3	2.3	2.9
27	3.8	4.8	4.0	4.2	5.4	12	10	8.6	3.6	3.3	2.3	3.1
28	3.8	4.6	4.0	4.2	5.4	11	9.2	8.1	3.4	3.2	2.1	3.4
29	3.9	4.4	4.1	3.9	5.4	10	8.8	7.7	3.4	3.1	2.3	3.5
30	3.9	4.2	4.2	3.9	---	9.9	8.6	7.2	3.3	3.3	2.3	3.5
31	4.1	---	4.0	3.9	---	9.3	---	6.7	---	3.2	2.4	---
TOTAL	110.0	124.9	126.6	129.9	143.3	204.2	272.3	267.6	141.7	126.0	72.2	83.0
MEAN	3.55	4.16	4.08	4.19	4.94	6.59	9.08	8.63	4.72	4.06	2.33	2.77
MAX	4.1	5.0	5.0	5.0	6.0	13	15	18	6.7	2.5	2.8	3.5
MIN	3.1	3.9	3.4	3.4	3.9	4.0	6.7	6.4	3.3	2.9	2.0	2.1
AC-FT	218	248	251	258	284	405	540	531	281	250	143	165

CAL YR 1987 TOTAL 1858.7 MEAN 5.09 MAX 79 MIN 2.3 AC-FT 3690
WTR YR 1988 TOTAL 1801.7 MEAN 4.92 MAX 25 MIN 2.0 AC-FT 3570

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO

LOCATION.--Lat 40°58'46", long 102°15'15", in NW1/4NE1/4 and SE1/4NE1/4 (two channels) sec.33, T.12 N., R.44 W., Sedgwick County, Hydrologic Unit 10190018, on left bank of channel 4 (left channel) 215 ft downstream from bridge, and on right bank of channel 2, 800 ft downstream from bridge on U.S. Highway 385, 0.9 mi southeast of Julesburg, 3.0 mi upstream from Colorado-Nebraska State line, and 8 mi downstream from Lodgepole Creek.

DRAINAGE AREA.--23,193 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1902 to current year. Monthly discharge only for some periods, published in WSP 1310. Published as "near Julesburg" 1903-8, 1915-16, and as "at Ovid" 1922-24.

REVISED RECORDS.--WSP 1310: 1902, 1906-7, 1948(P). WSP 1440: 1903-4. WDR CO-86-1: Drainage area.

GAGE.--Two water-stage recorders. Datum of gages is 3,446.76 ft above National Geodetic Vertical Datum of 1929. See WSP 1710 or 1730 for history of changes prior to Oct. 1, 1956. Since Oct. 1, 1956, water-stage recorders on channels nos. 2 and 4. Channel no. 2: Oct. 1, 1956, to Sept. 22, 1965, at site 300 ft downstream at present datum. Channel no. 4: Oct. 1, 1956, to Dec. 10, 1958, at site 135 ft downstream at present datum. Since May 11, 1973, supplementary water-stage recorder on channel no. 2 at bridge 800 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Water year 1987, Jan. 22 to Feb. 5; Water year 1988, Oct. 10-14, Dec. 28 to Jan. 6, Jan. 8 to Feb. 24, May 22-24, and Sept. 10-30. Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation of 1,200,000 acres upstream from station, and return flow from irrigated areas.

COOPERATION.--Records collected and computed by Colorado Division of Water Resources and reviewed by Geological Survey.

AVERAGE DISCHARGE.--85 years, 549 ft³/s; 397,800 acre-ft/yr; 86 years, 549 ft³/s; 397,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,600 ft³/s, June 20, 1965, gage height, 10.44 ft, from floodmarks in gage well; no flow, Aug. 18-20, 1902, July 25 to Aug. 7, 1903.

EXTREMES FOR WATER YEAR 1987.--Maximum discharge, not determined; minimum daily, 43 ft³/s, Aug. 19, 21.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, not determined; minimum daily, 37 ft³/s, Aug. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	955	392	504	1090	935	740	1020	787	5150	146	51	686
2	784	392	528	1040	935	1240	986	711	4590	136	47	640
3	674	391	523	1070	935	1360	916	1140	4190	137	49	554
4	620	374	512	1090	935	1240	852	1260	3820	289	51	503
5	597	424	534	1170	935	1240	797	1300	3320	524	46	497
6	601	600	570	1090	934	1280	759	1600	2790	675	55	504
7	573	623	593	974	927	1310	744	2400	2490	419	62	502
8	499	621	642	896	1040	1440	758	2580	2070	301	85	531
9	441	617	674	889	1050	1450	785	2720	1960	231	80	543
10	405	611	624	864	1040	1450	781	2780	2440	197	73	556
11	377	609	516	819	1040	1430	794	2810	2370	162	67	602
12	342	608	636	862	1000	1420	815	2850	3040	171	72	593
13	322	620	768	857	974	1620	850	2720	4550	203	69	549
14	316	623	824	851	942	1720	861	2490	4360	192	77	575
15	339	685	1010	865	800	1780	887	2280	3690	183	78	607
16	401	694	1140	732	688	1800	871	2080	3130	143	70	590
17	426	713	1220	559	662	1790	1100	1870	2610	141	59	539
18	417	755	1240	514	645	1790	1170	2100	2140	150	47	478
19	397	714	1210	610	644	1870	1150	2180	1780	169	43	424
20	397	691	1170	637	693	2000	1090	2040	1390	153	44	392
21	398	700	1120	673	671	2060	1060	2380	1090	130	43	373
22	393	721	1200	715	617	2090	992	2980	883	110	53	341
23	383	729	1240	740	632	2020	913	3880	750	92	61	320
24	380	701	1180	765	646	1970	1050	4820	621	81	69	301
25	389	667	1160	790	675	1890	1260	5750	516	70	83	271
26	384	667	1120	815	717	1770	1320	6190	408	60	93	258
27	393	624	1120	840	584	1680	1230	6330	264	54	93	201
28	418	598	1170	865	418	1530	1130	6320	227	53	113	219
29	412	566	1170	885	---	1250	1080	6060	190	53	225	225
30	411	565	1170	910	---	1160	957	5780	161	53	484	218
31	396	---	1070	935	---	1060	---	5650	---	50	682	---
TOTAL	14240	18295	28158	26412	22714	48450	28978	96838	66990	5528	3224	13592
MEAN	459	610	908	852	811	1563	966	3124	2233	178	104	453
MAX	955	755	1240	1170	1050	2090	1320	6330	5150	675	682	686
MIN	316	374	504	514	418	740	744	711	161	50	43	201
AC-FT	28250	36290	55850	52390	45050	96100	57480	192100	132900	10960	6390	26960

CAL YR 1986 TOTAL 317287 MEAN 869 MAX 6600 MIN 34 AC-FT 629300
WTR YR 1987 TOTAL 373419 MEAN 1023 MAX 6330 MIN 43 AC-FT 740700

06764000 SOUTH PLATTE RIVER AT JULESBURG, CO--CONTINUED

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	203	280	292	400	1300	1470	682	303	1130	68	47	48
2	186	270	301	400	1300	1450	800	440	1150	64	50	52
3	178	270	295	450	1250	1290	903	974	1170	70	47	50
4	177	263	298	550	1250	1150	981	724	1270	58	46	46
5	173	270	299	610	1250	1240	964	603	1250	51	48	46
6	177	278	292	630	1200	1210	974	546	1170	46	48	46
7	183	288	284	616	1200	1180	945	470	1020	51	46	51
8	180	298	283	700	1250	1150	873	419	910	47	48	52
9	153	292	283	750	1300	1100	757	408	800	58	47	53
10	142	291	294	850	1350	1000	764	374	750	54	42	58
11	142	295	260	950	1400	898	752	297	700	55	42	55
12	145	280	236	950	1450	812	598	270	600	61	129	55
13	140	277	216	1000	1600	820	412	233	550	60	136	58
14	149	281	209	1050	1750	826	399	205	500	52	63	80
15	208	290	218	1050	1900	806	350	191	600	49	55	107
16	224	296	244	1050	2050	785	293	198	700	42	44	103
17	226	293	236	1050	2100	796	247	187	700	86	42	108
18	233	293	243	1050	2200	797	227	151	700	82	47	130
19	240	311	288	1050	2250	836	229	189	700	71	50	148
20	246	324	367	1050	2400	849	206	440	650	68	45	155
21	252	334	478	1050	2500	835	184	595	600	93	44	148
22	258	337	649	1050	2300	734	196	932	500	110	39	138
23	254	304	676	1050	2100	734	227	2720	400	91	37	130
24	254	300	623	1050	1900	718	305	2700	300	81	38	130
25	251	320	427	1050	1700	737	315	2130	200	73	39	132
26	243	319	416	1200	1660	771	317	1700	150	64	39	129
27	247	312	354	1350	1490	799	362	1340	120	60	38	128
28	249	305	364	1500	1440	758	423	1180	90	55	38	132
29	249	293	310	1450	1400	715	371	1120	60	51	44	134
30	257	293	370	1450	---	694	317	1110	59	59	52	136
31	271	---	430	1400	---	650	---	1090	---	49	52	---
TOTAL	6490	8857	10535	29806	48240	28610	15373	24239	19499	1979	1582	2838
MEAN	209	295	340	961	1663	923	512	782	650	63.8	51.0	94.6
MAX	271	337	676	1500	2500	1470	981	2720	1270	110	136	155
MIN	140	263	209	400	1200	650	184	151	59	42	37	46
AC-FT	12870	17570	20900	59120	95680	56750	30490	48080	38680	3930	3140	5630
CAL YR 1987	TOTAL 338608			MEAN 928	MAX 6330	MIN 43	AC-FT 671600					
WTR YR 1988	TOTAL 198048			MEAN 541	MAX 2720	MIN 37	AC-FT 392800					

PLATTE RIVER BASIN

103

06764880 SOUTH PLATTE RIVER AT ROSCOE, NE

LOCATION.--Lat 41°07'33" long 101°34'35", in NW1/4SW1/4 sec.4, T.13 N., R.37 W., Keith County, Hydrologic Unit 10190018, on left bank 20 ft downstream from bridge on Highway L-51B connecting Interstate 80 and U.S. Highway 30, 0.5 mi southeast of Roscoe.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,150 ft, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 15 to Feb. 27. Records good except for period of estimated record, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--6 years, 1,426 ft³/s, 1,033,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,700 ft³/s July 2, 1983, gage height, 9.31 ft; maximum gage height, 10.23 ft Dec. 16, 1984, backwater from ice; minimum daily discharge, 3.9 ft³/s Aug. 24, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,670 ft³/s May 24, gage height, 6.95 ft; maximum gage height, 7.29 ft Feb. 17, backwater from ice; minimum daily discharge, 12.0 ft³/s Aug. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	310	340	350	1200	1830	737	415	1120	51	17	17
2	180	318	353	400	1250	1800	737	524	1180	61	15	15
3	169	329	351	440	1250	1750	816	871	1270	44	15	16
4	160	322	350	500	1250	1690	923	1390	1340	33	14	15
5	155	313	353	680	1250	1630	938	984	1280	26	14	14
6	160	309	340	660	1200	1580	932	791	1170	20	13	14
7	155	330	317	680	1200	1470	989	715	1090	53	12	13
8	147	353	352	680	1300	1360	1110	677	970	49	15	16
9	141	347	371	700	1400	1240	1130	621	828	68	26	17
10	143	341	358	800	1450	1160	1110	581	761	35	50	17
11	144	336	332	940	1450	1100	1060	533	676	36	26	19
12	141	330	339	960	1500	987	982	422	594	146	23	22
13	141	330	344	980	1700	948	843	352	535	50	158	29
14	143	330	326	1000	1900	907	709	296	473	34	98	47
15	139	330	300	1000	2250	879	624	268	468	27	93	109
16	150	351	300	1000	2400	845	541	247	588	22	70	94
17	179	335	300	1000	2450	848	439	231	655	18	54	93
18	196	332	310	1000	2500	831	363	217	686	101	51	107
19	225	335	320	1080	2600	815	309	229	690	155	41	159
20	239	347	300	1100	2750	782	289	363	601	100	30	186
21	251	346	320	1060	2750	759	269	541	482	99	26	206
22	262	344	330	1000	2600	753	262	709	348	93	23	211
23	258	351	400	1000	2400	747	262	1410	257	123	17	193
24	263	349	500	1000	2400	751	259	3440	199	127	15	166
25	297	354	450	1020	2400	745	302	2750	138	99	13	149
26	318	347	400	1040	2250	747	325	2140	103	59	16	140
27	302	353	300	1180	2100	747	319	1750	91	31	16	138
28	288	354	380	1300	2050	752	379	1480	52	20	17	141
29	284	347	340	1400	1910	752	512	1340	47	20	12	143
30	271	347	400	1400	---	745	487	1170	44	21	16	143
31	268	---	420	1350	---	737	---	1110	---	16	15	---
TOTAL	6368	10120	10896	28700	55110	32687	18957	28567	18736	1837	1021	2649
MEAN	205	337	351	926	1900	1054	632	922	625	59.3	32.9	88.3
MAX	318	354	500	1400	2750	1830	1130	3440	1340	155	158	211
MIN	139	309	300	350	1200	737	259	217	44	16	12	13
AC-FT	12630	20070	21610	56930	109300	64830	37600	56660	37160	3640	2030	5250

CAL YR 1987 TOTAL 352007.6 MEAN 964 MAX 6370 MIN 5.0 AC-FT 698200
WTR YR 1988 TOTAL 215648 MEAN 589 MAX 3440 MIN 12 AC-FT 427700

LOCATION.--Lat 41°07'08", long 100°45'45", in NE1/4NW1/4 sec.9, T.13 N., R.30 W., Lincoln County, Hydrologic Unit 10190018, on left bank 50 ft downstream from bridge on U.S. Highway 83, 0.5 mi north of intersection of U.S. Highway 83 and Interstate 80 south of North Platte, and 4.5 mi upstream from confluence with North Platte River.

PERIOD OF RECORD.--June to November 1897, June to August 1914, May to September 1915, and May 1917 to current year. Monthly discharge only for some periods. published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 2,787.73 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to Dec. 11, 1956. Dec. 11, 1956, to Mar. 29, 1973, at site 50 ft upstream at same datum. Mar. 30, 1973, to Aug. 12, 1981, at site 0.5 mi upstream at same datum.

AVERAGE DISCHARGE.--42 years (water years 1947-88, since Sutherland Canal diversion), 459 ft³/s, 332,500 acre-ft/yr; median of yearly mean discharges, 290 ft³/s, 210,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,230 ft³/s Feb. 23, gage height, 4.53 ft; maximum gage height, 5.72 ft Feb. 13, backwater from ice; minimum daily discharge, 131 ft³/s Sept. 1.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	168	151	180	370	980	922	179	207	350	193	171	131
2	156	155	167	390	1000	754	258	296	477	192	151	146
3	154	160	170	400	1020	699	329	515	441	216	147	143
4	161	162	177	410	1000	666	371	816	398	207	185	138
5	157	159	179	420	940	566	278	1160	347	190	184	142
6	165	162	182	430	920	530	216	1020	298	197	173	139
7	169	157	179	440	900	490	217	841	264	179	158	145
8	156	157	202	440	880	437	207	719	245	187	165	132
9	148	162	219	440	880	385	188	619	244	236	168	132
10	150	161	200	440	880	316	158	601	240	243	178	134
11	153	164	180	440	880	259	165	563	220	210	184	147
12	156	162	178	440	1200	282	172	507	203	194	185	155
13	164	165	177	460	1300	265	191	451	205	236	226	168
14	158	165	173	480	1450	310	185	363	198	236	195	214
15	159	171	190	500	1450	351	162	277	196	190	176	164
16	152	176	185	540	1650	387	184	218	204	180	201	147
17	173	172	205	580	1750	359	194	194	204	177	182	171
18	155	174	199	600	1800	344	190	208	204	177	221	185
19	149	167	214	640	1900	450	203	279	214	278	179	179
20	148	174	225	700	2000	409	191	343	229	300	168	196
21	157	177	225	740	2200	332	185	439	214	265	173	225
22	156	180	230	760	2190	280	223	494	201	245	178	233
23	144	195	207	800	2140	266	218	500	179	243	156	237
24	144	189	204	820	1960	270	220	578	170	244	151	230
25	148	189	229	840	1790	266	216	1740	148	277	188	234
26	150	186	228	880	1800	243	202	1630	135	264	196	232
27	158	174	251	860	1740	237	185	1200	144	214	174	225
28	158	178	304	880	1550	230	166	910	153	187	164	227
29	154	179	299	880	1170	202	157	669	189	178	164	228
30	165	178	336	880	---	190	161	513	191	186	161	232
31	173	---	350	900	---	186	---	355	---	186	140	---
TOTAL	4858	5101	6644	18800	41320	11883	6171	19225	7105	6707	5442	5411
MEAN	157	170	214	606	1425	383	206	620	237	216	176	180
MAX	173	195	350	900	2200	922	371	1740	477	300	226	237
MIN	144	151	167	370	880	186	157	194	135	177	140	131
AC-FT	9640	10120	13180	37290	81960	23570	12240	38130	14090	13300	10790	10730

CAL YR 1987	TOTAL	240069	MEAN	658	MAX	5060	MIN	134	AC-FT	476200
WTR YR 1988	TOTAL	138667	MEAN	379	MAX	2200	MIN	131	AC-FT	275000

PLATTE RIVER BASIN

105

06766000 PLATTE RIVER AT BRADY, NE

LOCATION.--Lat 41°01'10", long 100°22'16" (north channel only), on two channels in secs.11 and 23, T.12 N., R.27 W., Lincoln County, Hydrologic Unit 10200101, on downstream side of highway bridges 0.5 mi and 2.5 mi, respectively, south of Brady and 18 mi downstream from confluence of North Platte and South Platte Rivers.

DRAINAGE AREA.--56,200 mi², approximately, of which about 51,400 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--May to September 1937, May 1938 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1390: 1941(M). WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Two water-stage recorders. Datum of gage on north channel is 2,639.19 ft and on south channel, 2,640.66 ft above National Geodetic Vertical Datum of 1929. No information available on gages operated by State engineer prior to Nov. 18, 1938. Nov. 18, 1938, to Sept. 30, 1942, gage on north channel at datum 1 ft higher. Nov. 18, 1938, to Oct. 1, 1983, gage on south channel at datum 1 ft higher.

REMARKS.--Channel No. 1: Estimated daily discharge: Dec. 26 to Feb. 29, Mar. 12-15. Channel No. 4: Estimated daily discharge, Dec. 30 to Jan. 15, 22. Records good except for period of estimated record, which is fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Tri-County main supply canal, capacity, about 2,000 ft³/s, diverts 18 mi above station; diversion started Nov. 26, 1940. River flows in two channels for which separate

AVERAGE DISCHARGE.--47 years (water years 1942-88, since storage in Lake McConaughy), 800 ft³/s, 579,600 acre-ft/yr; median of yearly mean discharges, 374 ft³/s, 271,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft³/s June 29, 1983; no flow Aug. 22-24, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,050 ft³/s June 30; minimum daily, 109 ft³/s June 15 and Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	256	211	215	470	782	536	201	250	237	2690	1460	337
2	220	196	221	480	683	456	273	402	233	1900	1570	208
3	225	172	220	518	723	369	618	1020	224	1170	1630	167
4	255	159	220	538	679	303	746	1490	212	1020	1710	145
5	266	141	219	538	675	268	467	1970	204	859	1690	134
6	213	144	221	566	656	271	347	1900	180	776	1410	126
7	195	148	216	604	729	273	292	1590	173	683	1290	119
8	188	166	231	604	783	283	257	1300	160	1110	1330	120
9	157	151	245	646	881	277	231	1270	144	1600	1090	117
10	131	140	270	648	978	283	220	1390	136	1840	746	113
11	118	141	272	570	1070	275	219	1200	127	1590	563	111
12	116	141	239	592	1380	217	229	880	129	1180	465	109
13	113	145	209	614	1480	284	307	699	125	1120	660	112
14	112	139	192	594	1380	297	345	602	116	1100	519	153
15	117	149	196	615	1280	304	333	551	109	1020	415	146
16	119	206	186	655	1480	295	234	447	117	952	351	130
17	121	202	200	695	1840	270	241	264	197	1020	301	119
18	120	190	361	695	1900	249	196	374	264	915	327	121
19	120	188	285	571	1960	262	188	288	388	1210	325	141
20	120	187	226	490	2020	295	186	181	477	1670	302	118
21	122	180	183	569	2020	290	180	354	670	1020	282	117
22	122	181	164	708	2240	276	199	525	957	635	333	119
23	124	175	190	928	2240	264	202	452	1290	545	303	118
24	123	239	151	1030	2020	248	208	320	1610	523	468	117
25	128	250	129	984	1860	233	205	415	1770	576	487	119
26	133	275	259	952	1710	221	198	1050	1820	639	423	117
27	128	252	404	904	1660	218	194	835	1950	734	659	115
28	124	237	476	802	890	212	187	612	2040	799	829	130
29	128	223	548	820	559	204	179	391	2140	905	829	120
30	122	219	498	883	---	204	228	295	2680	1170	727	123
31	189	---	498	888	---	203	---	239	---	1340	562	---
TOTAL	4725	5547	8144	21171	38558	8640	8110	23556	20879	34311	24056	4041
MEAN	152	185	263	683	1330	279	270	760	696	1107	776	135
MAX	266	275	548	1030	2240	536	746	1970	2680	2690	1710	337
MIN	112	139	129	470	559	203	179	181	109	523	282	109
AC-FT	9370	11000	16150	41990	76480	17140	16090	46720	41410	68060	47720	8020

CAL YR 1987 TOTAL 289893 MEAN 794 MAX 5610 MIN 112 AC-FT 575000
WTR YR 1988 TOTAL 201738 MEAN 551 MAX 2690 MIN 109 AC-FT 400100

PLATTE RIVER BASIN

06766500 PLATTE RIVER NEAR COZAD, NE

LOCATION.--North Channel gage: Lat 40°50'13", Long 99°59'09" in NE1/4SW1/4 sec.18, T.10 N., R.23 W., Dawson County, Hydrologic Unit 10200101, on left bank 30 ft upstream from highway bridge, 1.5 mi south of Cozad. South Channel gage: Lat 40°49'51", Long 99°59'16" in SE1/4SW1/4 sec.18, T.10 N., R.23 W., Dawson County, on right bank on upstream side of highway bridge, 1.5 mi south of Cozad.

DRAINAGE AREA.--56,500 mi², approximately, of which about 51,700 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--July to September 1932, May 1937 to current year (prior to April 1939, irrigation seasons only). Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Two water-stage recorders. Datum of gage on south channel is 2,473.07 ft and on north channel, 2,475.72 ft above National Geodetic Vertical Datum of 1929 (Nebraska Department of Roads bench mark). See WSP 2118 for history of changes prior to May 10, 1966. North channel gage: May 10, 1966, to May 10, 1976, at datum 1.00 ft higher and May 11, 1976, to June 16, 1977, at present datum, both at downstream side of highway bridge 30 ft downstream. South channel gage: May 10, 1966, to July 17, 1980, at downstream side of highway bridge at present datum.

REMARKS.--Estimated daily discharges on one or both channels: Oct. 8, 9, Dec. 27 to Feb. 13, Feb. 20 to Mar. 9, Mar. 12-14, and May 18-25. Records good except for periods of estimated record, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. River flows in two channels for which separate records are computed; figures given herein represent combined discharge.

AVERAGE DISCHARGE.--47 years (water years 1942-88, since storage in Lake McConaughy), 712 ft³/s, 515,800 acre-ft/yr; median of yearly mean discharges, 329 ft³/s, 238,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft³/s June 29, 1983; no flow at times in 1937-40.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,060 ft³/s June 30; minimum daily, 23 ft³/s June 10, 11, July 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	323	234	355	450	925	667	340	258	51	2710	38	30
2	298	299	355	440	920	554	368	353	34	2330	47	100
3	322	322	355	460	812	546	461	736	32	1400	81	53
4	310	528	348	489	715	525	800	1260	29	853	118	28
5	311	663	348	511	695	525	855	1880	38	482	160	33
6	308	538	349	510	697	506	598	2360	29	198	102	39
7	288	358	344	528	665	505	480	2190	29	176	54	40
8	280	350	356	527	740	522	417	1710	49	204	166	43
9	260	324	380	546	740	520	375	1560	26	356	294	47
10	241	301	374	626	795	514	351	1570	23	519	261	49
11	230	298	374	606	820	514	327	1580	23	518	162	63
12	223	294	360	566	1300	420	305	1300	26	185	151	64
13	213	296	342	567	1500	380	307	982	27	35	284	72
14	205	286	329	608	1530	552	381	779	28	85	152	77
15	207	291	321	590	1450	601	427	710	44	139	114	105
16	208	348	312	571	1430	544	391	1040	37	40	58	109
17	200	351	304	632	1660	475	311	812	39	179	40	80
18	197	329	324	674	1900	430	303	311	55	88	51	115
19	198	319	403	655	1980	409	272	410	94	501	39	139
20	199	308	367	577	2000	416	261	212	93	744	36	126
21	196	312	346	519	2050	451	252	186	54	837	41	123
22	201	309	342	619	2220	442	258	185	41	313	34	118
23	161	301	349	819	2380	419	251	287	36	149	26	104
24	172	311	339	920	2330	415	268	361	25	118	25	95
25	189	364	307	1150	2150	398	259	238	28	88	35	89
26	195	381	276	1140	1940	390	264	575	38	90	24	86
27	186	391	259	1080	1710	403	257	982	71	65	27	84
28	166	385	309	1010	1110	385	243	674	109	46	58	124
29	199	371	360	976	940	333	235	449	329	38	72	135
30	203	359	461	933	---	332	233	233	2740	35	106	187
31	228	---	460	925	---	341	---	124	---	33	54	---
TOTAL	7117	10521	10808	21224	40104	14434	10850	26307	4277	13554	2910	2557
MEAN	230	351	349	685	1383	466	362	849	143	437	93.9	85.2
MAX	323	663	461	1150	2380	667	855	2360	2740	2710	294	187
MIN	161	234	259	440	665	332	233	124	23	33	24	28
AC-FT	14120	20870	21440	42100	79550	28630	21520	52180	8480	26880	5770	5070

CAL YR 1987 TOTAL 279993 MEAN 767 MAX 5400 MIN 25 AC-FT 555400
WTR YR 1988 TOTAL 164663 MEAN 450 MAX 2740 MIN 23 AC-FT 326600

PLATTE RIVER BASIN

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06768000 PLATTE RIVER NEAR OVERTON, NE

LOCATION.--Lat 40°40'57", long 99°32'27", in NE1/4NW1/4 sec.12, T.8 N., R.20 W., Dawson County, Hydrologic Unit 10200101, on left bank 25 ft upstream from county highway bridge, 4 mi south of Overton and 4 mi downstream from Plum Creek.

DRAINAGE AREA.--57,700 mi², approximately, of which about 52,900 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to September 1914 (gage heights only), October 1914 to current year. Monthly discharge only for some periods, published in WSP 1310. Published as "near Elm Creek" 1914-15.

REVISED RECORDS.--WDR NE-67, WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,297.83 ft above National Geodetic Vertical Datum of 1929. July 1914 to October 1917, nonrecording gages at site 8 mi downstream at different datum. June 1918 to Sept. 12, 1928, nonrecording gage at present site (south channel only) at datum 4.0 ft higher. Sept. 13, 1928 to Sept. 30, 1930, nonrecording gage and Oct. 1, 1930 to Sept. 30, 1968, water-stage recorder, at present site (south channel only) at datum 2.0 ft higher. Oct. 1, 1968 to Feb. 3, 1976, water-stage recorder on south channel at present site at datum 2.0 ft higher, and Feb. 4 to June 2, 1976 (south channel gage discontinued), at datum 1.0 ft higher. Oct. 1, 1968 to July 10, 1974, north channel gage at present site at datum 2.0 ft higher and July 11, 1974 to June 1, 1976, at datum 1.0 ft higher. June 2, 1976 to Aug. 19, 1984, at site 600 ft downstream, at datum 1.0 ft higher. Aug. 20, 1984 to Oct. 6, 1986, at site 600 ft downstream.

REMARKS.--Estimatee daily discharge: Oct. 23-27, Dec. 26 to Feb. 19, Mar. 7-17, Aug. 15-18, 22-25. Records good except for periods of estimated record, which are fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and areturn flow from irrigated areas.

AVERAGE DISCHARGE.--47 years (water years 1942-88, since storage in Lake McConaughy), 1,662 ft³/s, 1,204,000 acre-ft per year; median of yearly mean discharges, 1,243 ft³/s, 901,000 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,600 ft³/s June 5, 1935, gage height, 6.25 ft, datum then in use, south channel; maximum gage height, 7.44 ft, present datum, June 22, 1983; no flow at times in 1919, 1922, 1925, 1927-28, 1930-41.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,990 ft³/s Feb. 24, gage height, 4.10 ft; maximum gage height, 7.25 ft Jan. 21, backwater from ice; minimum daily discharge, 91 ft³/s June 26, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2360	1520	2500	1800	3000	3920	1930	1920	1670	3180	262	375
2	2070	914	2480	1850	2800	3420	2020	2070	1420	2700	269	415
3	2110	1010	2480	1850	2600	3250	2080	1990	1370	2220	272	768
4	2110	1100	2460	1900	2500	3080	2300	2150	1500	1430	314	939
5	2080	1450	2440	1900	2400	2960	2540	2530	1440	965	320	928
6	1800	2060	2420	1900	2300	2850	2570	3070	1430	610	351	939
7	1500	2120	2430	1900	2100	2750	2630	3480	842	434	334	887
8	1310	1940	2250	2000	2200	2650	2410	3370	491	392	834	716
9	1500	1870	2390	2000	2400	2500	2500	3020	329	438	1750	557
10	1840	2080	2480	2000	2500	2400	2390	2860	271	529	2170	636
11	1910	2190	2480	2050	2200	2400	2480	2900	284	684	1130	675
12	1670	2240	2480	2100	2000	2400	2370	2730	292	778	619	692
13	1830	2150	2480	2200	2500	2350	1910	2550	302	543	2090	765
14	2210	2120	2490	2000	3000	2350	1240	2160	252	363	2420	1030
15	2140	2100	2500	2000	3100	2300	2100	2020	183	952	2430	1230
16	2140	2200	2210	2000	3200	2300	2240	1950	131	1020	1500	1270
17	2240	2370	2210	1900	3300	2300	2260	1980	127	673	1000	1360
18	2060	2380	2340	1800	3400	2500	2190	1420	120	664	700	1300
19	1210	2360	2320	1800	3800	2650	1880	1280	119	2140	586	1300
20	702	1360	2370	1700	4280	2750	1740	1290	137	2780	483	1710
21	2080	1910	2280	1800	4230	2830	1560	1370	148	2580	450	1680
22	2100	2410	2120	1900	4130	2800	1370	1550	130	1930	350	1330
23	2050	2440	1910	2000	4380	2680	1390	1580	117	1200	300	1440
24	2100	2450	1820	2200	4530	2650	1350	1990	110	862	275	1340
25	1900	2460	1990	2500	4560	2420	1460	1810	101	719	250	1260
26	1800	2440	1900	2800	4380	2250	1690	1780	91	495	244	1170
27	1600	2440	1900	3200	4270	2100	1110	2150	91	351	235	887
28	2000	2460	1850	3200	4260	2150	1400	2340	114	319	225	891
29	1840	2480	1850	3200	4150	2080	1720	2210	160	293	273	900
30	1820	2490	1800	3200	---	1970	1920	2000	975	276	340	1000
31	1960	---	1800	3000	---	1950	---	1810	---	258	379	---
TOTAL	58042	61514	69430	67650	94470	79960	58750	67330	14747	32778	23155	30390
MEAN	1872	2050	2240	2182	3258	2579	1958	2172	492	1057	747	1013
MAX	2360	2490	2500	3200	4560	3920	2630	3480	1670	3180	2430	1710
MIN	702	914	1800	1700	2000	1950	1110	1280	91	258	225	375
AC-FT	115100	122000	137700	134200	187400	158600	116500	133500	29250	65020	45930	60280

CAL YR 1987 TOTAL 850041 MEAN 2329 MAX 6470 MIN 185 AC-FT 1686000
WTR YR 1988 TOTAL 658216 MEAN 1798 MAX 4560 MIN 91 AC-FT 1305000

PLATTE RIVER BASIN

06768000 PLATTE RIVER NEAR OVERTON, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952, 1958 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1958 to current year.

WATER TEMPERATURES: January 1958 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,480 microsiemens May 15, 1966 (south chan.); minimum daily,

214 microsiemens July 23, 1968 (south chan.).

WATER TEMPERATURES: Maximum, 37.0°C June 13, 1959 (south chan.), July 9, 1960 (north chan.); minimum,

0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,250 microsiemens Feb. 26, and Mar. 3 (south channel); minimum daily,

623 microsiemens July 15 (south chan.).

WATER TEMPERATURES: Maximum daily, 36.0°C July 14 (north chan.); minimum daily, 1.0°C on many

days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	
OCT													
09...	1300	1910	--	8.84	8.68	11.5	709	11.1	--	110	84	--	0
09...	1305			--	--	--	--	--	25	--	260	--	--
NOV													
08...	1400	1070		8.68	8.57	15.0	699	9.9	5	17	77	280	--
DEC													
09...	1315	2120	--	8.72	8.65	2.0	701	13.3	--	24	120	--	0
09...	1320			--	--	--	--	--	11	--	280	--	--
JAN													
06...	1300	1200	--	10.20	8.53	0.5	710	12.3	--	32	89	--	0
06...	1305			--	--	--	--	--	9	--	350	--	--
FEB													
03...	1330	E2850		10.80	8.40	0.5	707	12.7	8	55	K2800	390	--
29...	1320	2610	--	11.60	8.46	4.0	706	12.6	--	K4	2900	--	0
29...	1325			--	--	--	--	--	21	--	380	--	--
APR													
06...	1300	3080	--	10.20	8.79	10.5	705	11.4	--	260	630	--	0
06...	1305			--	--	--	--	--	14	--	330	--	--
28...	1300	753	--	10.40	8.63	14.0	704	9.5	--	K3	K36	--	0
28...	1305			--	--	--	--	--	8	--	330	--	--
MAY													
25...	1415	2020		10.20	8.42	20.5	705	9.8	39	20	42	320	--
JUN													
22...	1410	100	--	9.04	8.72	27.5	701	9.3	--	62	22	--	0
22...	1415			--	--	--	--	--	19	--	300	--	--
JUL													
19...	1215	2340	--	5.13	8.22	18.0	706	8.5	--	K16000	K73000	--	0
19...	1220			--	--	--	--	--	85	--	150	--	--
AUG													
17...	1115	1600		9.05	8.39	25.0	702	8.3	22	640	420	290	--
SEP													
12...	1330	710	--	8.64	8.69	15.5	705	9.4	--	53	100	--	0
12...	1335			--	--	--	--	--	34	--	240	--	--

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

PLATTE RIVER BASIN

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06768000 PLATTE RIVER NEAR OVERTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)
OCT											
09...	--	--	80	--	12	181	--	--	0.60	24	--
09...	66	24	86	2	--	--	270	27	--	--	--
NOV											
08...	72	24	81	2	--	--	230	28	--	--	438
DEC											
09...	--	--	79	--	12	190	--	--	0.60	28	--
09...	74	24	78	2	--	--	240	27	--	--	--
JAN											
06...	--	--	84	--	13	216	--	--	0.50	30	--
06...	92	28	92	2	--	--	230	30	--	--	--
FEB											
03...	100	33	100	2	--	--	310	40	--	--	583
29...	--	--	96	--	12	208	--	--	0.60	25	--
29...	100	31	110	3	--	--	320	45	--	--	--
APR											
06...	--	--	91	--	10	185	--	--	0.60	22	--
06...	85	29	93	2	--	--	290	37	--	--	--
28...	--	--	94	--	10	182	--	--	0.60	18	--
28...	84	30	94	2	--	--	330	42	--	--	--
MAY											
25...	79	30	92	2	--	--	310	38	--	--	549
JUN											
22...	--	--	87	--	10	170	--	--	0.70	27	--
22...	76	27	93	2	--	--	260	35	--	--	--
JUL											
19...	--	--	42	--	10	103	--	--	0.40	13	--
19...	39	12	40	1	--	--	120	17	--	--	--
AUG											
17...	76	24	83	2	--	--	220	29	--	--	432
SEP											
12...	--	--	87	--	9.5	172	--	--	0.50	22	--
12...	62	21	84	2	--	--	220	25	--	--	--

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)
OCT											
09...	--	--	--	--	0.540	--	--	--	--	--	0.030
09...	--	--	66	0.550	--	0.080	0.47	0.55	1.1	0.150	--
NOV											
08...	0.60	1270	15	0.910	--	0.100	0.82	0.92	1.8	0.090	--
DEC											
09...	--	--	--	--	0.890	--	--	--	--	--	0.030
09...	--	--	7	0.970	--	0.120	0.52	0.64	1.6	0.060	--
JAN											
06...	--	--	--	--	1.50	--	--	--	--	--	0.070
06...	--	--	8	1.60	--	0.190	0.57	0.76	2.4	0.080	--
FEB											
03...	0.79	--	9	2.00	--	0.310	0.69	1.0	3.0	0.180	--
29...	--	--	--	--	2.10	--	--	--	--	--	0.170
29...	--	--	68	2.30	--	0.390	1.1	1.5	3.8	0.440	--
APR											
06...	--	--	--	--	1.40	--	--	--	--	--	0.040
06...	--	--	40	1.40	--	0.100	1.7	1.8	3.2	0.150	--
28...	--	--	--	--	1.10	--	--	--	--	--	0.020
28...	--	--	16	1.10	--	0.090	0.91	1.0	2.1	0.070	--
MAY											
25...	0.75	2990	14	0.770	--	0.250	0.65	0.90	1.7	0.100	--
JUN											
22...	--	--	--	--	0.450	--	--	--	--	--	0.020
22...	--	--	17	--	--	0.050	0.87	0.92	--	0.090	--
JUL											
19...	--	--	--	--	1.70	--	--	--	--	--	0.300
19...	--	--	963	1.60	--	0.170	3.6	3.8	5.4	0.360	--
AUG											
17...	0.59	1870	87	1.20	--	0.070	0.83	0.90	2.1	0.200	--
SEP											
12...	--	--	--	--	0.750	--	--	--	--	--	0.020
12...	--	--	51	0.800	--	0.060	1.0	1.1	1.9	0.200	--

PLATTE RIVER BASIN

06768000 PLATTE RIVER NEAR OVERTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 09...	1300	--	130	--	--	--	4
NOV 08...	1400	10	--	<15	<10	<10	--
DEC 09...	1315	--	140	--	--	--	3
JAN 06...	1300	--	140	--	--	--	11
FEB 03...	1330	11	--	<15	<10	<10	--
29...	1320	--	160	--	--	--	6
APR 06...	1300	--	150	--	--	--	<3
28...	1300	--	160	--	--	--	6
MAY 25...	1415	10	--	<15	<10	<10	--
JUN 22...	1410	--	140	--	--	--	8
JUL 19...	1215	--	80	--	--	--	18
AUG 17...	1115	12	--	<15	<10	<10	--
SEP 12...	1330	--	150	--	--	--	15

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 09...	--	1	--	--	--	--	--
NOV 08...	<20	--	<0.10	<9	<1	<30	5.1
DEC 09...	--	4	--	--	--	--	--
JAN 06...	--	4	--	--	--	--	--
FEB 03...	<20	--	<0.10	8	<1	<30	20
29...	--	2	--	--	--	--	--
APR 06...	--	2	--	--	--	--	--
28...	--	2	--	--	--	--	--
MAY 25...	<20	--	<0.10	16	<1	<30	7.3
JUN 22...	--	13	--	--	--	--	--
JUL 19...	--	6	--	--	--	--	--
AUG 17...	20	--	0.10	6	<1	50	3.8
SEP 12...	--	--	--	--	--	--	7.5

PLATTE RIVER BASIN

06767998 PLATTE RIVER NEAR OVERTON, NE (NORTH CHANNEL)

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	897	905	852	871	1000	954	920	1000	980	643	870	892
2	889	790	818	965	1030	944	910	910	1010	773	843	881
3	907	898	892	951	1030	930	900	870	1010	803	901	902
4	899	856	885	986	1060	938	850	780	1020	822	880	891
5	850	874	882	997	1110	957	750	700	1030	847	877	888
6	875	880	866	941	1130	966	810	770	1020	862	839	898
7	891	875	868	962	1110	967	850	880	1010	854	856	885
8	902	870	868	1060	1130	968	910	930	1010	875	814	902
9	912	832	858	1060	1130	969	920	940	990	843	724	900
10	911	882	844	1020	1130	968	940	900	990	867	799	911
11	907	882	861	1020	1130	952	950	850	1000	834	938	872
12	914	885	864	1040	1080	954	970	840	1000	857	891	893
13	919	846	858	994	1140	974	980	860	1000	899	908	880
14	839	783	839	992	1150	980	990	870	990	928	912	847
15	917	790	912	979	1080	910	950	870	980	869	902	866
16	915	823	943	1010	981	951	940	860	970	887	911	899
17	926	828	933	902	980	926	970	940	920	910	913	855
18	917	868	871	968	992	975	970	950	920	886	912	853
19	918	804	869	961	1000	975	1010	980	940	740	913	846
20	846	859	863	965	946	994	1000	900	930	840	920	850
21	912	852	865	983	983	973	970	940	930	938	911	845
22	889	888	876	1020	940	968	960	940	930	875	904	862
23	915	888	872	968	978	964	940	840	930	888	892	844
24	953	868	876	1100	971	971	970	840	930	867	888	858
25	904	854	909	1110	996	974	960	930	930	903	899	843
26	904	846	975	1080	1040	981	920	960	930	898	902	857
27	925	765	943	1020	955	965	950	940	920	880	907	771
28	944	849	928	1030	961	963	960	940	930	878	881	812
29	870	853	992	998	960	966	980	970	920	909	933	849
30	913	858	969	938	---	973	970	980	670	895	935	853
31	911	---	993	937	---	972	---	980	---	880	898	---
MEAN	903	852	892	994	1040	962	936	899	958	860	886	867

06767999 PLATTE RIVER NEAR OVERTON, NE (SOUTH CHANNEL)

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	871	903	904	957	1140	1200	1100	1100	998	657	928	879
2	885	910	898	953	1150	1220	1090	1070	1020	722	906	874
3	880	872	852	965	1130	1250	1080	1070	1020	723	950	853
4	864	853	866	987	1150	1240	1080	1010	1020	717	895	845
5	867	834	859	980	1190	1230	1090	1020	1020	887	924	838
6	882	838	846	991	1160	1240	1100	1070	1030	892	898	838
7	872	819	874	996	1180	1210	1090	1080	1010	904	922	838
8	875	877	871	1010	1170	1210	1090	1060	1020	893	908	855
9	873	843	883	990	1180	1200	1120	1070	997	868	886	855
10	854	832	881	994	---	1210	1120	1060	985	880	825	816
11	882	828	878	986	---	1150	1120	1070	1000	870	860	841
12	878	845	886	1040	---	1150	1120	1070	975	928	890	847
13	893	858	885	1020	1200	1150	1110	1080	990	933	744	839
14	894	871	882	999	1220	1150	1130	1050	971	968	822	822
15	881	848	890	985	1220	1170	1120	1110	963	623	745	822
16	895	822	916	1000	1210	1140	1120	1110	952	950	821	865
17	889	851	888	1010	1220	1140	1120	1110	917	976	855	827
18	898	861	892	1040	1220	1130	1110	1110	918	965	896	824
19	921	891	894	1030	1170	1130	1090	1110	913	775	891	823
20	933	829	889	1040	1160	1120	1100	1100	914	859	917	818
21	904	856	895	1040	1220	1110	1030	1110	921	947	914	817
22	893	848	903	1020	1160	1120	1120	1100	924	957	947	828
23	896	784	915	1020	1210	1110	1110	1080	923	962	947	807
24	899	814	910	---	1190	1110	1110	1080	920	963	931	823
25	892	815	906	---	1240	1110	1100	1080	915	961	928	807
26	899	869	924	1070	1250	1110	1030	1070	916	955	927	822
27	900	860	916	1110	1230	1110	1030	1060	909	940	932	808
28	909	823	919	1110	1230	1100	1100	1050	916	932	906	803
29	898	874	908	1130	1220	1100	1100	1060	891	933	925	643
30	888	859	917	1120	---	1100	1100	1060	655	913	921	756
31	894	---	904	1140	---	1100	---	1040	---	932	877	---
MEAN	889	850	892	---	---	1160	1100	1070	951	883	892	824

PLATTE RIVER BASIN

06767998 PLATTE RIVER NEAR OVERTON, NE (NORTH CHANNEL)

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	18.0	5.0	1.0	1.0	8.0	6.0	17.0	20.0	21.0	28.0	29.0
2	17.0	18.0	7.0	1.0	1.0	6.0	7.0	12.0	23.0	24.0	31.0	28.0
3	17.0	16.0	7.0	1.0	1.0	2.0	17.0	12.0	27.0	28.0	32.0	25.0
4	18.0	16.0	6.0	1.0	1.0	5.0	18.0	15.0	27.0	22.0	24.0	24.0
5	16.0	12.0	6.0	1.0	1.0	9.0	15.0	19.0	25.0	28.0	32.0	25.0
6	16.0	13.0	7.0	1.0	1.0	7.0	19.0	18.0	26.0	32.0	32.0	22.0
7	16.0	11.0	7.0	1.0	1.0	7.0	11.0	18.0	32.0	27.0	33.0	23.0
8	16.0	9.0	5.0	1.0	1.0	3.0	19.0	18.0	30.0	29.0	29.0	24.0
9	9.0	8.0	3.0	1.0	1.0	10.0	14.0	20.0	30.0	31.0	33.0	25.0
10	8.0	6.0	6.0	1.0	1.0	5.0	10.0	23.0	28.0	32.0	30.0	19.0
11	12.0	10.0	4.0	1.0	1.0	3.0	16.0	21.0	26.0	29.0	33.0	24.0
12	15.0	10.0	4.0	1.0	1.0	3.0	12.0	25.0	29.0	32.0	23.0	16.0
13	14.0	10.0	2.0	1.0	1.0	4.0	20.0	25.0	25.0	35.0	30.0	22.0
14	12.0	9.0	1.0	1.0	1.0	5.0	10.0	18.0	27.0	36.0	28.0	19.0
15	15.0	10.0	3.0	1.0	1.0	4.0	10.0	24.0	28.0	30.0	31.0	21.0
16	14.0	7.0	1.0	1.0	1.0	1.0	11.0	23.0	30.0	30.0	31.0	19.0
17	14.0	6.0	1.0	1.0	1.0	4.0	13.0	25.0	31.0	31.0	32.0	25.0
18	13.0	5.0	2.0	1.0	1.0	8.0	12.0	24.0	33.0	22.0	25.0	24.0
19	11.0	9.0	2.0	1.0	1.0	6.0	---	24.0	27.0	21.0	23.0	20.0
20	10.0	6.0	2.0	1.0	1.0	13.0	---	20.0	29.0	30.0	31.0	21.0
21	11.0	5.0	2.0	1.0	1.0	16.0	13.0	13.0	31.0	30.0	31.0	25.0
22	11.0	8.0	2.0	1.0	1.0	14.0	14.0	15.0	31.0	28.0	29.0	21.0
23	11.0	7.0	3.0	1.0	1.0	15.0	15.0	21.0	32.0	31.0	31.0	21.0
24	10.0	7.0	1.0	1.0	5.0	10.0	16.0	24.0	31.0	29.0	28.0	20.0
25	8.0	7.0	1.0	1.0	6.0	10.0	20.0	24.0	28.0	31.0	30.0	23.0
26	12.0	4.0	1.0	1.0	9.0	12.0	15.0	24.0	28.0	30.0	25.0	22.0
27	12.0	4.0	1.0	1.0	8.0	16.0	20.0	30.0	28.0	29.0	28.0	20.0
28	13.0	3.0	1.0	1.0	7.0	10.0	11.0	29.0	28.0	28.0	26.0	18.0
29	15.0	5.0	1.0	1.0	7.0	14.0	17.0	24.0	30.0	29.0	18.0	14.0
30	12.0	5.0	1.0	1.0	---	10.0	22.0	23.0	21.0	31.0	28.0	16.0
31	12.0	---	1.0	1.0	---	9.0	---	20.0	---	28.0	26.0	---
MEAN	13.2	8.8	3.1	1.0	2.2	8.0	---	20.9	28.0	28.8	28.7	21.8

06767999 PLATTE RIVER NEAR OVERTON, NE (SOUTH CHANNEL)

WATER TEMPERATURE, DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	17.0	5.0	1.0	1.0	6.0	6.0	16.0	20.0	20.0	29.0	28.0
2	18.0	17.0	6.0	1.0	1.0	5.0	7.0	12.0	25.0	25.0	31.0	28.0
3	18.0	14.0	5.0	1.0	1.0	3.0	12.0	12.0	22.0	28.0	32.0	24.0
4	19.0	14.0	5.0	1.0	1.0	5.0	14.0	15.0	25.0	22.0	23.0	23.0
5	15.0	13.0	5.0	1.0	1.0	7.0	12.0	20.0	25.0	28.0	31.0	25.0
6	16.0	14.0	5.0	1.0	1.0	5.0	14.0	18.0	26.0	32.0	32.0	22.0
7	18.0	11.0	5.0	1.0	1.0	5.0	9.0	19.0	31.0	26.0	33.0	22.0
8	18.0	9.0	4.0	1.0	1.0	3.0	15.0	16.0	30.0	29.0	29.0	22.0
9	12.0	10.0	4.0	1.0	1.0	8.0	12.0	19.0	30.0	30.0	30.0	24.0
10	11.0	8.0	5.0	1.0	---	5.0	10.0	21.0	28.0	32.0	28.0	19.0
11	14.0	10.0	4.0	1.0	---	3.0	14.0	20.0	26.0	28.0	32.0	24.0
12	17.0	10.0	4.0	1.0	---	3.0	12.0	23.0	28.0	32.0	22.0	16.0
13	14.0	11.0	4.0	1.0	1.0	3.0	17.0	23.0	25.0	34.0	28.0	22.0
14	12.0	9.0	2.0	1.0	1.0	4.0	10.0	17.0	28.0	35.0	28.0	19.0
15	15.0	9.0	3.0	1.0	1.0	5.0	9.0	22.0	28.0	29.0	28.0	20.0
16	14.0	8.0	1.0	1.0	1.0	1.0	11.0	20.0	30.0	28.0	28.0	19.0
17	15.0	7.0	2.0	1.0	1.0	5.0	13.0	23.0	31.0	31.0	30.0	24.0
18	12.0	7.0	3.0	1.0	1.0	6.0	15.0	23.0	33.0	23.0	25.0	23.0
19	12.0	11.0	3.0	1.0	1.0	4.0	---	23.0	27.0	19.0	24.0	19.0
20	10.0	8.0	2.0	1.0	1.0	8.0	---	19.0	29.0	28.0	31.0	20.0
21	12.0	5.0	2.0	1.0	1.0	11.0	13.0	15.0	31.0	28.0	31.0	23.0
22	12.0	8.0	2.0	1.0	1.0	9.0	14.0	16.0	31.0	26.0	28.0	20.0
23	11.0	7.0	4.0	1.0	1.0	11.0	15.0	19.0	33.0	30.0	29.0	21.0
24	10.0	7.0	3.0	---	5.0	8.0	16.0	22.0	32.0	29.0	28.0	19.0
25	8.0	7.0	1.0	---	5.0	9.0	18.0	22.0	28.0	30.0	29.0	22.0
26	11.0	5.0	1.0	1.0	8.0	11.0	15.0	22.0	28.0	30.0	25.0	21.0
27	11.0	4.0	1.0	1.0	7.0	13.0	20.0	25.0	28.0	29.0	25.0	20.0
28	12.0	4.0	1.0	1.0	6.0	9.0	11.0	25.0	28.0	28.0	25.0	18.0
29	13.0	5.0	1.0	1.0	6.0	12.0	16.0	22.0	30.0	28.0	18.0	15.0
30	11.0	5.0	1.0	1.0	---	9.0	20.0	22.0	20.0	31.0	18.0	17.0
31	11.0	---	1.0	1.0	---	8.0	---	20.0	---	28.0	26.0	---
MEAN	13.6	9.1	3.1	---	---	6.6	---	19.7	27.9	28.3	27.6	21.3

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LOCATION.--Lat 40°39'53", long 99°15'20", in SW1/4NW1/4 sec.16, T.8 N., R.17 W., Phelps County, Hydrologic Unit 10200101, on right bank 15 ft downstream from county bridge, 2.5 mi south of Odessa and 5 mi downstream from Elm Creek.

PERIOD OF RECORD.--March 1937 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 2,195.07 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 7, 1938, nonrecording gage and Oct. 7, 1938 to Sept. 30, 1942, water-stage recorder, both at datum 3.00 ft higher and Oct. 1, 1942 to July 23, 1984, water-stage recorder at datum 2.00 ft higher, all at present site. July 24, 1984 to Apr. 5, 1988, water-stage recorder at site 1,500 ft downstream at present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,410 ft³/s July 20, gage height, 5.03 ft; minimum daily, 13 ft³/s June 27.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2100	1930	2090	1600	2900	3700	2210	1930	1160	1930	210	154
2	2070	1590	2110	1650	2800	3500	2260	2200	1050	2610	220	190
3	2050	1390	2110	1700	2700	3300	2200	2140	894	2260	230	269
4	2070	1420	2120	1750	2700	3000	2150	2230	965	1640	297	574
5	2090	1450	2130	1800	2600	2890	2400	2340	918	1030	305	608
6	2060	1670	2130	1800	2500	2840	2450	2710	828	749	277	642
7	2020	1870	2140	1850	2300	2810	2680	3570	699	469	260	694
8	1960	1860	2200	1900	2400	2790	2550	3590	307	389	441	650
9	1750	1750	2170	1950	2500	2780	2790	3190	210	455	1200	536
10	1910	1780	2240	2000	2600	2700	2780	3030	230	550	2200	437
11	1960	1880	2300	2000	2200	2500	2750	3050	220	546	1740	564
12	1970	1950	2330	2000	2100	2500	2570	2950	230	561	826	620
13	1880	1980	2270	2000	2500	2400	2140	2570	240	503	1720	657
14	2020	2020	2290	2000	2700	2400	1890	2100	100	278	2810	789
15	2030	1970	2400	2000	3100	2400	1670	1940	68	711	2600	1060
16	2020	1970	2230	2050	3200	2500	2190	1790	50	1430	1910	1170
17	2020	2000	2160	2000	3300	2500	2160	1830	45	1020	1410	1210
18	2010	2050	2210	1950	3400	2500	2100	1540	40	685	1000	1160
19	1910	2060	2180	1900	3450	2550	2030	877	36	2160	621	1190
20	1510	1830	2180	1800	3600	2570	1580	901	33	4070	480	1440
21	1620	1590	2130	1900	3800	2540	1660	1090	30	3420	366	1490
22	1950	2000	2080	2100	3900	2570	1550	1230	28	2370	263	1380
23	2100	2040	2030	2300	4000	2540	1570	1470	25	1560	240	1040
24	2000	2050	1970	2600	4100	2520	1600	1640	22	1010	200	1110
25	1700	2070	1970	2700	4200	2340	1600	1660	18	778	170	993
26	1500	2070	1970	3000	4100	2230	2150	1500	15	625	160	906
27	1450	2100	1950	3300	4000	2300	1570	1620	13	450	150	883
28	1600	2110	1900	3300	3900	2350	1590	1930	18	375	120	761
29	1800	2110	1800	3300	3800	2330	1620	1760	23	330	110	671
30	1900	2130	1700	3100	---	2260	2050	1550	200	290	130	834
31	1900	---	1700	3100	---	2270	---	1350	---	255	150	---
TOTAL	58930	56690	65190	68400	91350	81380	62510	63278	8715	35509	22816	24682
MEAN	1901	1890	2103	2206	3150	2625	2084	2041	290	1145	736	823
MAX	2100	2130	2400	3300	4200	3700	2790	3590	1160	4070	2810	1490
MIN	1450	1390	1700	1600	2100	2230	1550	877	13	255	110	154
AC-FT	116900	112400	129300	135700	181200	161400	124000	125500	17290	70430	45260	48960
CAL YR 1987	TOTAL 856708											
WTR YR 1988	TOTAL 639450											
	MEAN 2347	MEAN 1747	MEAN 2347	MAX 5250	MIN 239	AC-FT 1699000						
	MEAN 4200	MAX 13	AC-FT 1268000									

PLATTE RIVER BASIN

06770200 PLATTE RIVER NEAR KEARNEY, NE

LOCATION.--Lat 40°39'32", long 99°05'08", in SE1/4SE1/4 sec.14, T.8 N., R.16 W., Kearney county, Hydrologic Unit 10200101, on right bank near downstream side of bridge on State Highway 44, 2 mi south of Kearney.

DRAINAGE AREA.--58,200 mi², approximately, of which about 53,400 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--January 1982 to current year.

GAGE.--Water stage recorder. Datum of gage is 2134.11 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 25 to Feb. 22. Records good except for period of estimated record, which is fair. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--6 years (water years 1983-88), 3,340 ft³/s, 2,420,000 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft³/s June 29, 1983, gage height, 7.42 ft; minimum daily discharge, 14 ft³/s June 27, 29, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,900 ft³/s Feb. 24, gage height, 4.50 ft; maximum gage height, 5.38 ft Feb. 14, 17, backwater from ice; minimum daily discharge, 14 ft³/s June 27, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1870	1480	2070	950	2900	3780	2120	1600	1300	907	244	206
2	1680	945	2190	1000	2850	3520	2150	1740	1240	2470	219	210
3	1580	708	2340	1050	2750	3040	2130	1940	1050	2470	222	240
4	1670	750	2400	1050	2400	2930	2140	1930	1080	2040	335	449
5	1640	787	2350	1100	2100	2820	2250	2130	1130	1270	384	542
6	1590	1060	2310	1160	1900	2730	2290	2390	1050	882	361	570
7	1190	1430	2260	1100	2180	2640	2200	3230	1020	668	351	621
8	1100	1460	2120	1000	2350	2620	2180	3320	618	542	370	616
9	996	1290	1910	1080	2350	2550	2200	2950	449	486	865	553
10	1380	1370	2060	1120	2200	2520	2210	2780	321	520	1930	516
11	1520	1560	1940	1200	1800	2370	2080	2740	244	527	1960	584
12	1590	1670	1800	1300	1800	2350	1930	2870	244	555	960	571
13	1160	1630	1770	1400	2300	2220	1640	2640	259	551	1550	585
14	1540	1640	1730	1400	2300	2200	1640	2220	237	417	2800	659
15	1530	1820	2090	1300	2600	2310	1320	1900	216	776	2540	877
16	1400	2050	1840	1500	2800	2400	1930	1720	176	1650	2060	978
17	1410	2050	1800	1600	3100	2450	2010	1740	153	1080	1650	1010
18	1540	2170	1920	1600	3000	2370	1930	1570	108	722	1270	1060
19	1280	2110	2040	1600	3250	2540	1880	964	94	1990	884	1070
20	774	1860	2060	1500	3500	2600	1480	872	80	4480	647	1170
21	773	980	2010	1320	3800	2590	1480	1050	56	4030	466	1490
22	1440	1720	2020	1500	4100	2560	1310	1140	38	3000	401	1490
23	1540	1970	1750	1800	4290	2430	1210	1400	34	1940	324	1140
24	1410	2060	1530	1800	4490	2360	1260	1450	36	1170	275	1190
25	1280	2110	1200	1700	4370	2170	1260	1480	29	908	224	1090
26	1270	2140	950	2100	4250	2020	1620	1310	17	748	168	1010
27	1200	2220	820	2200	4150	2050	1320	1380	14	500	144	1020
28	1290	2250	840	2400	4040	1930	1280	1730	17	382	124	947
29	1410	2180	860	2500	3970	2020	1310	1710	14	332	111	779
30	1330	2110	820	2800	---	2070	1570	1550	50	314	141	846
31	1540	---	880	2900	---	2130	---	1410	---	278	182	---
TOTAL	42923	49580	54680	48030	87890	77290	53330	58856	11374	38605	24162	24089
MEAN	1385	1653	1764	1549	3031	2493	1778	1899	379	1245	779	803
MAX	1870	2250	2400	2900	4490	3780	2290	3320	1300	4480	2800	1490
MIN	773	708	820	950	1800	1930	1210	872	14	278	111	206
AC-FT	85140	98340	108500	95270	174300	153300	105800	116700	22560	76570	47930	47780

CAL YR 1987 TOTAL 819310 MEAN 2245 MAX 6670 MIN 311 AC-FT 1625000
WTR YR 1988 TOTAL 570809 MEAN 1560 MAX 4490 MIN 14 AC-FT 1132000

PLATTE RIVER BASIN

115

06770500 PLATTE RIVER NEAR GRAND ISLAND, NE

LOCATION.--Lat 40°52'28", long 98°16'54", in SW1/4SW1/4 sec.31, T.11 N., R.8 W., Merrick County, Hydrologic Unit 10200101, on left bank 20 ft downstream from bridge on U.S. Highway 34, 2 mi upstream from Burlington Northern Inc. bridge, and 5 mi southeast of Grand Island.

DRAINAGE AREA.--58,800 mi², approximately, of which about 54,000 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1933 to current year.

REVISED RECORDS.--WSP 956: 1935. WSP 1390: 1942. WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,831.89 ft above National Geodetic Vertical Datum of 1929 (Nebraska Department of Highways bench mark). Prior to Oct. 23, 1933, nonrecording gage at bridge 68 ft downstream and Oct. 23, 1933, to Aug. 19, 1980, water-stage recorder at site 98 ft downstream, all at same datum.

REMARKS.--Estimated daily discharges: Dec. 27 to Feb. 27 and May 24, 25, 27-31. Records good except for periods of estimated record, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--47 years (water years 1942-88, since storage in Lake McConaughy), 1,608 ft³/s, 1,165,000 acre-ft per year; median of yearly mean discharges, 1,200 ft³/s, 869,000 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s June 6, 1935, gage height, 5.99 ft, from rating curve extended above 18,000 ft³/s; maximum gage height, 6.16 ft Mar. 27, 1960, backwater from ice; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,080 ft³/s Feb. 25, gage height, 4.22 ft, backwater from ice; maximum gage height, 4.77 ft Feb. 22, backwater from ice; minimum daily discharge, 4.9 ft³/s June 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1710	2090	2240	1080	3350	3510	1970	1720	1730	63	296	129
2	1770	2100	2250	1150	3300	3320	2240	1930	1580	54	236	179
3	1830	1660	2260	1200	2500	3130	2260	2310	1380	1400	161	210
4	1700	1250	2250	1220	2000	2840	2120	2350	1250	1990	273	212
5	1640	1220	2210	1250	1900	2850	2130	2260	1210	1730	368	276
6	1670	1290	2120	1300	2000	2810	2210	2340	1240	1140	435	530
7	1780	1520	1980	1300	2300	2730	2290	2340	1140	805	374	633
8	1500	1870	1990	1250	2400	2630	2190	2930	1110	629	358	620
9	1310	1910	2090	1150	2450	2650	2100	3090	849	517	375	664
10	1240	1730	1920	1300	2400	2690	2080	2810	669	399	557	644
11	1520	1800	1970	1350	2000	2570	2160	2570	519	379	1350	529
12	1680	2010	2030	1400	2400	2660	2110	2610	429	376	1760	420
13	1730	2110	1990	1500	2500	2510	2100	2640	438	389	1420	530
14	1510	2160	1860	1500	2500	2330	1980	2490	369	408	1450	760
15	1700	2110	1740	1300	2700	2450	1790	2230	292	406	2460	1080
16	1820	2360	1790	1500	3000	2480	1500	2030	246	946	2430	1060
17	1780	2330	1670	1900	3300	2560	2060	1970	301	1530	2080	1080
18	1790	2200	1550	2100	3600	2380	2160	1970	203	1300	1700	1060
19	1770	2250	1760	2100	3400	2290	2150	1840	148	984	1410	1140
20	1600	2280	1740	2000	4000	2240	2140	1420	87	1410	998	1140
21	1220	2250	1720	1850	4300	2310	1800	1290	61	3600	784	1100
22	946	1450	1760	2300	4900	2300	1680	1310	45	3410	625	1310
23	1600	1800	1810	2400	4800	2300	1570	1650	36	2790	514	1330
24	2020	2080	1570	2300	5400	2300	1500	1700	25	2070	411	1100
25	2060	2150	1410	2200	5600	2260	1550	1750	18	1470	306	1170
26	1990	2170	1020	2400	5400	2180	1680	1700	12	1150	241	1130
27	1850	2140	900	2600	5200	2140	1800	1750	6.1	978	201	1140
28	1780	2120	800	2900	3860	2080	1610	1800	4.9	798	191	1820
29	1880	2170	900	2900	3600	1960	1420	1900	13	572	175	1400
30	1920	2140	950	3150	---	2000	1460	1850	44	446	148	1120
31	1960	---	1000	3300	---	1930	---	1800	---	356	126	---
TOTAL	52276	58720	53250	57150	97060	77390	57810	64350	15455.0	34495	24213	25516
MEAN	1686	1957	1718	1844	3347	2496	1927	2076	515	1113	781	851
MAX	2060	2360	2260	3300	5600	3510	2290	3090	1730	3600	2460	1820
MIN	946	1220	800	1080	1900	1930	1420	1290	4.9	54	126	129
AC-FT	103700	116500	105600	113400	192500	153500	114700	127600	30650	68420	48030	50610
CAL YR 1987	TOTAL	873603	MEAN	2393	MAX	6630	MIN	181	AC-FT	1733000		
WTR YR 1988	TOTAL	617685.0	MEAN	1688	MAX	5600	MIN	4.9	AC-FT	1225000		

PLATTE RIVER BASIN

06770500 PLATTE RIVER NEAR GRAND ISLAND, NE--Continued

WATER QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1972 to September 1980.

WATER TEMPERATURES: July 1972 to September 1980.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,250 microsiemens Feb. 3, 1980; minimum daily, 575 microsiemens May 24, 1977.

WATER TEMPERATURES: Maximum, 34.5°C July 23, 1972; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT									
21...	0950	1240	922	8.57	5.5	12.2	15	32	44
NOV									
10...	1120	1750	891	8.53	5.0	12.8	5	K16	110
DEC									
02...	0940	2210	888	8.43	1.5	13.2	21	22	52
JAN									
12...	1110	1410	1170	8.19	0.5	8.2	18	34	K19
FEB									
01...	1130	3350	1060	8.13	0.5	11.3	8	44	72
MAR									
16...	1000	2600	1110	8.55	1.5	13.6	16	36	1600
APR									
28...	0810	1640	1060	8.64	12.5	10.1	16	31	58
MAY									
17...	0940	2150	984	8.78	18.0	10.3	52	42	94
JUN									
09...	1000	864	1060	8.75	26.0	9.0	32	81	86
JUL									
20...	0945	983	898	8.95	23.5	10.2	34	K120	78
AUG									
10...	1000	520	--	8.80	29.0	9.2	29	200	160
SEP									
21...	0955	976	885	8.68	17.5	10.3	41	120	140

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT									
21...	310	77	28	93	2	240	33	469	0.64
NOV									
10...	300	76	26	83	2	230	29	445	0.61
DEC									
02...	300	78	25	88	2	240	29	459	0.62
JAN									
12...	380	99	32	100	2	310	30	571	0.78
FEB									
01...	350	93	29	93	2	280	36	531	0.72
MAR									
16...	370	100	30	100	2	300	43	573	0.78
APR									
28...	340	87	29	97	2	310	40	563	0.77
MAY									
17...	330	87	28	95	2	280	37	527	0.72
JUN									
09...	310	75	30	110	3	330	44	589	0.80
JUL									
20...	270	69	24	83	2	250	35	461	0.63
AUG									
10...	240	59	23	98	3	420	35	635	0.86
SEP									
21...	250	64	21	87	2	240	29	441	0.60

PLATTE RIVER BASIN

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06770500 PLATTE RIVER NEAR GRAND ISLAND, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 21...	1570	30	0.740	0.070	0.49	0.56	1.3	0.110	4.7
NOV 10...	2100	38	0.910	0.110	0.45	0.56	1.5	0.150	4.7
DEC 02...	2740	44	1.20	0.130	0.49	0.62	1.8	0.190	3.6
JAN 12...	2170	<4	1.50	0.170	0.57	0.74	2.2	0.090	4.6
FEB 01...	4800	4	1.40	0.200	0.75	0.95	2.4	0.120	4.5
MAR 16...	4020	74	2.10	0.150	1.0	1.2	3.3	0.340	4.0
APR 28...	2490	53	0.920	0.060	2.0	2.1	3.0	0.260	4.9
MAY 17...	3060	128	0.090	0.100	2.0	2.1	2.2	0.230	8.5
JUN 09...	1370	73	0.080	0.100	1.0	1.1	1.2	0.120	6.4
JUL 20...	1220	117	<0.020	0.060	1.5	1.6	--	0.310	6.4
AUG 10...	892	38	<0.020	0.030	0.79	0.82	--	0.220	5.8
SEP 21...	1160	115	0.120	<0.020	--	1.4	1.5	0.380	5.1

PLATTE RIVER BASIN

06772000 WOOD RIVER NEAR ALDA, NE

LOCATION.--Lat 40°51'10", long 98°28'20", in NE1/4SE1/4 sec.7, T.10 N., R.10 W., Hall County, Hydrologic Unit 10200102, on right bank 1.2 mi south of Alda, 2.2 mi upstream from old north channel of the Platte River, and 19 mi upstream from present mouth.

DRAINAGE AREA.--628 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,897.66 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Estimated daily discharges: Nov. 18, 27-30, Dec. 1-6, 9-31, and Jan. 1, 2.. Records good except for periods of estimated arecord, which are fair. Numerous small pump diversions for irrigation above station.

AVERAGE DISCHARGE.--35 years, 10.5 ft³/s, 7,610 acre-ft/yr; median of yearly mean discharges, 7.9 ft³/s, 5,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,630 ft³/s June 16, 1967, gage height, 12.22 ft; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	1600	*96	*6.10	No peaks greater than base discharge.			
No flow for many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	2.0	.95	.04	17	2.3	4.0	.32	4.2	7.9	.00
2	.00	.00	2.5	.90	.00	16	4.0	4.4	.28	5.2	7.8	.00
3	.00	.00	2.3	.85	.00	13	4.2	4.3	.08	2.8	6.2	.00
4	.00	.00	2.5	.09	.00	14	5.1	5.7	.00	1.6	3.5	.00
5	.00	.00	2.6	.00	.00	11	3.6	3.6	.00	.65	1.8	.00
6	.00	.00	2.7	.00	.00	11	2.6	2.4	.00	.43	3.5	.00
7	.00	.00	2.8	.00	.00	12	2.8	2.7	.00	.52	4.7	.00
8	.00	.00	2.9	.00	.00	7.8	2.4	4.0	.00	2.3	4.7	.00
9	.00	.00	2.8	.00	.00	9.8	2.6	5.9	.00	21	1.6	.00
10	.00	.00	2.5	.00	.00	7.0	1.7	4.2	.00	18	.47	.00
11	.00	.00	2.6	.00	.00	5.9	2.1	3.0	.00	15	.98	.00
12	.00	.00	2.2	.00	.00	6.4	2.4	3.4	.00	12	1.6	.00
13	.00	.38	2.5	.00	.00	6.3	2.1	3.0	.00	11	4.8	.00
14	.00	1.0	1.7	.00	.00	5.2	1.6	2.0	.00	7.7	1.1	.00
15	.00	.83	1.9	.00	.00	5.9	1.5	1.6	.00	11	.19	.00
16	.00	2.1	2.1	.00	.00	10	1.4	1.4	.00	7.3	.30	.00
17	.00	3.6	2.0	.00	.00	7.6	1.4	.76	.00	23	.30	.00
18	.00	4.7	2.1	.00	.00	5.5	1.9	.44	.00	19	.41	.00
19	.00	3.4	2.2	.00	24	3.9	1.6	.19	.00	10	.06	.00
20	.00	3.3	2.4	.00	57	5.6	1.1	.15	.00	4.6	.76	.00
21	.00	2.7	2.3	.00	70	2.7	1.4	.39	.00	2.3	3.0	.00
22	.00	2.5	2.1	.00	83	2.6	2.2	.84	.00	1.0	1.7	.00
23	.00	2.3	2.0	.00	59	3.1	2.2	2.3	.00	.03	1.6	.00
24	.00	2.1	1.8	.00	53	5.4	4.9	1.8	.00	1.1	1.5	.00
25	.00	1.8	2.4	.00	53	5.9	2.1	.84	.00	2.4	.52	.00
26	.00	1.6	2.5	.00	26	5.1	2.5	.63	.00	7.5	.07	.00
27	.00	2.1	2.0	.00	17	3.9	3.3	.19	1.2	6.5	.00	.00
28	.00	2.2	1.2	.00	15	2.8	4.2	.12	.85	4.2	.00	.00
29	.00	2.1	1.0	.00	18	2.2	2.7	.28	.23	4.8	.00	.00
30	.00	2.2	1.0	.16	---	1.9	3.4	.32	5.0	9.0	.00	.00
31	.00	---	1.0	.86	---	2.4	---	.69	---	7.0	.00	---
TOTAL	0.00	40.91	66.6	3.81	475.04	218.9	77.3	65.54	7.96	223.13	61.06	0.00
MEAN	.00	1.36	2.15	.12	16.4	7.06	2.58	2.11	.27	7.20	1.97	.00
MAX	.00	4.7	2.9	.95	83	17	5.1	5.9	5.0	23	7.9	.00
MIN	.00	.00	1.0	.00	.00	1.9	1.1	.12	.00	.03	.00	.00
AC-FT	.0	81	132	7.6	942	434	153	130	16	443	121	.0

CAL YR 1987 TOTAL 5099.00 MEAN 14.0 MAX 256 MIN .00 AC-FT 10110
WTR YR 1988 TOTAL 1240.25 MEAN 3.39 MAX 83 MIN .00 AC-FT 2460

PLATTE RIVER BASIN

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06774000 PLATTE RIVER NEAR DUNCAN, NE
(National stream-quality accounting network station)

LOCATION.--Lat 41°22'04", long 97°29'40", in SE1/4SW1/4 sec.12, T.16 N., R.2 W., Platte County, Hydrologic Unit 10200103, on left bank near northwest corner of county bridge, 1.5 mi south of Duncan, and 12 mi upstream from Loup River.

DRAINAGE AREA.--60,900 mi², approximately, of which about 56,100 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1895 to December 1909 (irrigation seasons only 1895-1900), July 1910 to December 1911 (gage heights and discharge measurements only), April 1912 to September 1915, June 1928 to current year.
Published as "near Columbus" 1895-1915.

REVISED RECORDS.--WSP 956: 1935. WSP 1390: 1897, 1899-1901, 1903-5, 1929-32, 1935(M), 1936. WDR NE-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,476.82 ft above National Geodetic Vertical Datum of 1929. June 1895 to December 1909, April 1912 to September 1915, and June to October 1928, nonrecording gage at site 7 mi downstream at different datums. Oct. 25, 1928, to Feb. 20, 1935, nonrecording gage and Feb. 20, 1935 to Mar. 21, 1984 recording gage both at present site at 2.00 ft higher datum. Mar. 22, 1984, to Mar. 4, 1987, at site 300 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 27 to Feb. 27, Apr. 11 to May 3, May 5 to June 1, June 11 to July 4, July 11-17, and Aug. 2. Records good except for periods of estimated record, which are poor. Natural flow of stream affected by transmountain diversions, storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--47 years (water years 1942-88, since storage in Lake McConaughy), 1,798 ft³/s, 1,303,000 acre-ft/yr; median of yearly mean discharges, 1,390 ft³/s, 1,010,000 acre-ft/yr. Figures unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 44,100 ft³/s June 23, 1905, gage height, 6.50 ft, site and datum then in use; maximum gage height, 6.78 ft Mar. 24, 1987, present site and datum. No flow at times in 1896, 1902, 1904-5, 1910-11, 1913-14, 1928, all at site downstream, 1931, 1933-42, 1944, 1952-57, 1959, 1963, 1974, 1976, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,200 ft³/s Feb. 24, gage height, 6.33 ft, backwater from ice; maximum gage height, 6.51 ft Feb. 26, backwater from ice; minimum daily discharge, 6.0 ft³/s June 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1550	2660	2870	1350	4100	4400	2580	2000	2000	30	681	57
2	1770	2520	2940	1450	4000	4350	2760	2400	1920	50	300	59
3	1980	2550	2940	1550	3700	4350	2910	2550	1490	48	159	62
4	2100	2360	2940	1600	3500	4220	2790	2500	1540	400	116	46
5	1760	1670	2940	1700	3400	3880	2520	2650	1350	1070	96	46
6	1620	1380	2850	1800	3500	3740	2430	2700	1240	1550	97	58
7	1630	1400	2850	1700	3800	3640	2510	3000	1330	1330	93	65
8	1800	1430	2850	1550	3700	3540	2550	3400	1280	1050	153	105
9	1680	2050	2920	1450	3500	3440	2420	3500	1210	926	173	179
10	1380	2450	3000	1500	3000	3350	2470	3600	1160	617	162	254
11	1340	2380	2830	1600	3200	3200	2500	3400	940	500	171	331
12	1330	2330	2680	1400	3400	2960	2500	3100	760	450	245	301
13	1710	2420	2760	1350	3700	2830	2450	3100	600	430	1080	255
14	1890	2570	2740	1400	3500	2640	2400	3200	470	440	1340	291
15	1830	2670	2590	1700	3600	2610	2300	2900	480	500	1140	648
16	1540	2760	2330	2300	3800	2780	2250	2600	350	470	1620	1070
17	2140	2880	2300	2700	4100	2900	2500	2450	330	500	2400	1080
18	2170	3040	2270	2900	5000	3060	2700	2400	300	710	2350	1040
19	2060	2880	2030	2900	4800	3170	2700	2300	200	1610	1970	1030
20	1970	2880	2430	2800	5600	3180	2750	2200	130	1410	1560	1040
21	1890	2910	2540	2900	6000	3070	2500	2000	130	1180	1240	1100
22	1480	2910	2510	3300	6600	3130	2300	1750	86	2720	916	1070
23	1180	2480	2670	3400	6800	3050	2000	1900	60	4000	624	1080
24	1210	2180	2640	3200	7200	3040	1900	2000	42	3530	429	1170
25	2070	2690	1800	3100	7200	2930	1800	2100	30	2930	298	1170
26	2380	2840	1400	3000	7000	2920	2000	2150	20	2460	215	1030
27	2360	2910	1300	3300	6800	2950	2100	2200	12	1760	155	1060
28	2300	3030	1200	3700	7040	2660	2200	2150	7.0	1330	112	1700
29	2240	2940	1300	4000	4990	2620	2100	2100	6.0	1140	90	1860
30	2210	2920	1500	4100	---	2710	1900	2100	10	1040	78	2160
31	2350	---	1350	4200	---	2650	---	2050	---	864	67	---
TOTAL	56920	75090	74270	74900	136530	99970	71790	78450	19483.0	37045	20130	21417
MEAN	1836	2503	2396	2416	4708	3225	2393	2531	649	1195	649	714
MAX	2380	3040	3000	4200	7200	4400	2910	3600	2000	4000	2400	2160
MIN	1180	1380	1200	1350	3000	2610	1800	1750	6.0	30	67	46
AC-FT	112900	148900	147300	148600	270800	198300	142400	155600	38640	73480	39930	42480

CAL YR 1987 TOTAL 1086591 MEAN 2977 MAX 15300 MIN 108 AC-FT 2155000
WTR YR 1988 TOTAL 765995.0 MEAN 2093 MAX 7200 MIN 6.0 AC-FT 1519000

PLATTE RIVER BASIN

06774000 PLATTE RIVER NEAR DUNCAN, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1977 to September 1981.

WATER TEMPERATURES: November 1977 to September 1980.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,100 microsiemens Feb. 12, 1981; minimum daily, 290 microsiemens Mar. 21, 1978.

WATER TEMPERATURES: Maximum, 33.0°C July 10, 11, 1980; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
NOV 18...	1015	3030	882	8.32	2.0	737	13	13.4	K71	130	280
JAN 14...	1050	1300	1090	8.18	0.0	726	3.2	11.5	K30	120	370
MAR 08...	1415	3530	1060	8.48	4.0	717	13	11.9	K40	K1700	370
MAY 04...	1000	2450	969	8.55	11.0	738	40	11.6	K50	K370	330
JUL 06...	0800	1570	717	8.93	25.5	725	68	9.5	1000	1500	160
SEP 29...	1130	1860	650	8.35	16.0	730	76	9.7	830	1100	180

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

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
NOV 18...	63	73	23	77	2	10	216	210	24	0.50	24
JAN 14...	150	98	31	100	2	11	228	310	37	0.60	29
MAR 08...	160	98	30	92	2	12	--	310	41	0.60	25
MAY 04...	150	83	29	90	2	4.0	174	300	40	0.60	15
JUL 06...	82	33	19	80	3	11	80	220	27	0.40	14
SEP 29...	58	41	19	73	2	11	122	190	23	0.40	15

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV 18...	573	576	0.78	4690	0.990	--	--	1.0	0.140	0.060	0.040
JAN 14...	775	760	1.05	2720	1.50	0.250	0.75	1.0	0.130	0.110	0.090
MAR 08...	748	747	1.02	7130	2.60	0.060	0.74	0.80	0.180	0.170	0.140
MAY 04...	680	698	0.92	4500	6.60	0.020	0.98	1.0	0.070	0.020	0.020
JUL 06...	463	453	0.63	1960	0.130	0.030	1.5	1.5	0.390	0.030	0.010
SEP 29...	436	446	0.59	2150	<0.100	<0.010	--	0.50	0.190	<0.010	<0.010

PLATTE RIVER BASIN

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06774000 PLATTE RIVER NEAR DUNCAN, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	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)
NOV 18...	1015	<10	4	77	<0.5	<1	<1	<3	2	4	<5
MAR 08...	1415	<10	5	97	<0.5	2	1	<3	3	6	<5
MAY 04...	1000	<10	4	78	<0.5	<1	<1	<3	7	3	<5
JUL 06...	0800	10	5	49	<0.5	<1	<1	<3	29	6	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 18...	29	4	<0.1	<10	<1	2	<1.0	680	<6	6
MAR 08...	40	4	0.1	<10	4	2	<1.0	890	<6	5
MAY 04...	36	2	0.2	<10	3	3	<1.0	800	6	19
JUL 06...	32	3	<0.1	10	2	2	<1.0	470	13	4

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 18...	1015	3030	2.0	221	1810	38
JAN 14...	1050	1300	0.0	54	190	32
MAR 08...	1415	3530	4.0	236	2250	39
MAY 04...	1000	2450	11.0	247	1630	59
JUL 06...	0800	1570	25.5	363	1540	82
SEP 29...	1130	1860	16.0	418	2100	72

LOCATION.--Lat 41°49'50", long 100°06'00", in NW1/4SE1/4 sec.33, T.22 N., R.24 W., Blaine County, Hydrologic Unit 10210001, on left bank just upstream from bridge on State Highway 2 at northeast corner of Dunning, 1 mi upstream from Dismal River.

WATER-DISCHARGE RECORDS

REVISÉD RECORDS.--WDR NE-72: Drainage area.

REMARKS.--Estimated daily discharges: Dec. 14, 16, 17, 24-26, and Dec. 28 to Feb. 15. Records good except for periods of estimated record, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,020 ft³/s Apr. 20, 1971, gage height, 2.50 ft; maximum gage height, 7.02 ft Mar. 31, 1949, backwater from ice, site and datum then in use; minimum daily discharge, 100 ft³/s Dec. 5, 6, 1950.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 793 ft³/s Aug. 13, gage height, 1.99 ft; maximum gage height, 4.73 ft Jan. 13, backwater from ice; minimum daily discharge, 350 ft³/s Feb. 2.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	444	455	474	485	440	550	497	476	509	536	411	444
2	439	463	471	490	350	594	569	595	501	504	411	451
3	450	469	481	490	430	619	536	658	491	484	457	449
4	455	469	481	485	450	616	524	573	482	468	519	439
5	462	465	497	480	460	570	563	592	479	454	458	436
6	457	457	486	475	470	545	521	611	469	441	431	437
7	447	483	495	465	470	583	501	605	463	440	435	443
8	460	511	523	460	465	559	511	579	450	452	440	448
9	462	484	488	455	460	524	502	504	450	441	433	443
10	463	487	483	450	450	522	474	491	450	437	430	436
11	451	493	506	460	450	600	481	493	442	455	427	443
12	446	491	499	475	470	488	483	479	441	476	479	454
13	460	496	484	480	500	448	489	471	458	440	727	447
14	474	502	485	485	540	438	481	479	453	431	513	469
15	458	533	486	490	600	431	481	475	442	428	469	476
16	464	555	475	485	550	459	481	462	435	425	450	469
17	453	532	465	480	550	468	482	463	443	419	455	459
18	453	502	435	470	544	459	485	464	476	451	456	470
19	449	496	451	460	538	463	476	522	449	496	452	566
20	438	480	448	450	538	479	471	538	443	459	444	477
21	429	496	456	450	538	500	465	673	431	430	437	460
22	438	514	461	450	573	521	524	621	428	423	452	454
23	445	507	470	460	526	533	494	654	434	426	446	458
24	435	520	485	470	513	567	479	659	426	429	442	449
25	448	515	490	480	496	553	497	649	423	424	438	438
26	445	510	485	480	520	516	540	620	421	426	435	441
27	452	507	473	485	523	515	492	590	425	425	432	447
28	447	514	470	485	540	534	481	558	422	421	430	503
29	425	504	475	490	528	493	487	535	444	441	427	507
30	431	494	480	490	---	493	474	519	538	419	433	461
31	437	---	485	470	---	517	---	510	---	409	432	---
TOTAL	13917	14904	14843	14680	14482	16157	14941	17118	13618	13810	14101	13774
MEAN	449	497	479	474	499	521	498	552	454	445	455	459
MAX	474	555	523	490	600	619	569	673	538	536	727	566
MIN	425	455	435	450	350	431	465	462	421	409	411	436
AC-FT	27600	29560	29440	29120	28730	32050	29640	33950	27010	27390	27970	27320
CAL YR 1987	TOTAL 172945		MEAN 474	MAX 715	MIN 399	AC-FT 343000						
WTR YR 1988	TOTAL 176345											

PLATTE RIVER BASIN

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06775500 MIDDLE LOUP RIVER AT DUNNING, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-56, 1965 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1949 to September 1956, October 1965 to current year.

SUSPENDED SEDIMENT DISCHARGE: March 1950 to September 1952, October 1953 to September 1954.

INSTRUMENTATION.--Temperature recorder from Oct. 1, 1965.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURES: Maximum, 34.0°C June 21, 1956; minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 3,800 mg/L Feb. 23, 1952; minimum daily, 56 mg/L Jan. 23, 1952.

SEDIMENT LOADS: Maximum daily, 5,160 tons Mar. 31, 1952; minimum daily, 21 tons Jan. 23, 1952.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum, 30.5°C June 21; minimum, 0.5°C on many days during winter period.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.5	12.0	---	---	4.5	2.0	.5	.5	.5	.5	10.5	6.0
2	14.5	11.0	---	---	5.5	2.5	.5	.5	.5	.5	8.5	5.0
3	15.5	10.0	---	---	6.0	4.0	.5	.5	.5	.5	8.5	2.5
4	16.5	12.0	12.0	10.5	6.5	4.0	.5	.5	.5	.5	5.5	2.5
5	15.5	11.0	10.5	8.5	6.0	4.5	.5	.5	.5	.5	8.5	2.5
6	---	---	10.0	7.0	7.0	5.0	.5	.5	.5	.5	10.5	5.0
7	---	---	10.0	8.5	4.5	4.0	.5	.5	.5	.5	9.0	4.5
8	---	---	8.5	6.0	6.0	4.5	.5	.5	.5	.5	6.5	3.5
9	---	---	6.5	4.5	4.5	2.5	.5	.5	.5	.5	10.5	3.5
10	---	---	6.0	4.0	6.5	3.5	.5	.5	.5	.5	11.0	6.5
11	---	---	8.5	4.5	6.5	3.5	.5	.5	.5	.5	9.0	1.0
12	---	---	9.0	6.0	3.5	1.5	.5	.5	.5	.5	1.0	1.0
13	---	---	9.5	6.0	2.5	1.0	.5	.5	.5	.5	1.0	1.0
14	---	---	9.0	7.5	2.0	1.0	.5	.5	.5	.5	1.0	1.0
15	---	---	8.5	4.0	1.5	1.0	.5	.5	1.5	.5	6.5	1.0
16	---	---	5.0	2.0	1.0	1.0	.5	.5	5.5	1.5	4.5	1.0
17	---	---	4.0	1.5	1.0	1.0	.5	.5	6.5	1.0	6.0	2.0
18	---	---	4.0	1.5	3.5	1.5	.5	.5	7.0	1.5	7.5	1.0
19	---	---	5.0	2.0	3.5	2.5	.5	.5	6.0	3.5	10.5	4.0
20	---	---	6.0	4.0	2.5	1.5	.5	.5	6.0	3.5	12.5	6.0
21	---	---	6.5	4.0	2.5	1.0	.5	.5	7.5	4.5	14.5	7.0
22	---	---	6.5	4.0	2.0	1.0	.5	.5	7.0	2.5	13.5	9.0
23	---	---	7.0	5.5	2.0	1.0	.5	.5	4.0	1.0	12.0	7.5
24	---	---	6.5	5.5	1.0	.5	.5	.5	5.5	1.0	10.5	7.5
25	---	---	6.0	5.0	.5	.5	.5	.5	8.5	1.5	10.0	5.5
26	---	---	5.5	5.0	.5	.5	.5	.5	9.5	4.5	12.0	4.5
27	---	---	5.0	4.5	.5	.5	.5	.5	10.5	5.0	15.0	7.5
28	---	---	4.5	2.5	.5	.5	.5	.5	9.0	5.5	11.0	7.0
29	---	---	4.0	2.5	.5	.5	.5	.5	10.5	4.5	10.5	4.5
30	---	---	4.0	2.0	.5	.5	.5	.5	---	---	10.0	5.5
31	---	---	---	---	.5	.5	.5	.5	---	---	7.5	4.5
MONTH	16.5	10.0	12.0	1.5	7.0	.5	.5	.5	10.5	.5	15.0	1.0

PLATTE RIVER BASIN
06775500 MIDDLE LOUP RIVER AT DUNNING, NE--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988												
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.5	4.5	16.5	13.5	20.5	16.5	18.5	17.0	25.5	20.0	21.5	19.5
2	7.0	5.5	14.0	9.5	22.5	16.0	22.5	16.0	22.5	20.0	22.0	17.5
3	14.0	5.5	9.5	8.5	25.0	16.5	26.0	17.5	27.5	22.0	20.5	16.5
4	16.5	9.5	14.5	8.5	25.5	19.0	27.0	20.0	21.5	19.5	19.5	14.5
5	15.0	10.0	17.5	10.5	24.5	19.0	27.5	21.0	23.5	16.5	19.5	14.5
6	15.5	7.0	18.5	13.5	23.5	17.0	27.0	21.0	25.0	19.5	18.5	14.5
7	18.5	10.5	16.0	12.5	26.0	17.5	24.5	20.0	25.0	20.0	17.0	17.0
8	16.5	10.5	14.5	10.0	27.0	19.5	22.5	19.5	25.0	18.5	17.5	14.5
9	12.5	7.0	15.5	7.5	26.5	20.5	26.5	19.5	26.0	19.5	17.5	14.5
10	13.5	6.5	19.0	11.0	25.0	19.0	26.5	19.5	26.0	19.5	19.5	16.0
11	15.5	7.0	19.5	13.5	24.0	17.0	23.5	19.5	26.5	20.5	19.5	17.0
12	17.5	9.0	21.5	14.0	24.0	19.0	25.5	17.5	25.0	20.5	17.5	14.0
13	15.5	11.5	20.5	14.5	25.5	18.5	28.5	19.5	25.0	19.5	15.5	14.0
14	16.5	8.5	21.5	15.5	25.5	19.0	29.0	21.5	26.5	20.5	15.5	14.5
15	16.5	9.0	21.0	15.0	24.5	17.5	27.5	21.0	25.5	21.5	17.0	14.5
16	16.0	9.5	21.5	14.5	25.5	19.0	29.0	21.0	25.5	21.5	18.5	14.5
17	14.5	11.0	22.0	13.5	27.5	19.5	28.5	20.5	26.0	21.5	20.0	15.5
18	15.0	7.0	22.0	17.0	27.5	21.0	26.5	20.0	24.5	20.5	20.5	17.0
19	15.5	8.5	20.0	16.5	27.5	21.0	22.5	19.0	25.0	20.0	19.5	14.0
20	16.5	10.5	17.0	11.5	28.5	20.0	24.0	17.0	25.0	20.0	16.0	12.0
21	14.0	10.0	11.5	10.5	30.5	21.5	25.0	17.0	25.5	20.5	19.0	14.5
22	10.5	5.5	11.0	10.5	27.5	22.5	25.0	18.5	25.0	20.5	18.5	15.5
23	12.0	4.5	17.5	11.0	29.5	22.0	26.0	19.0	24.0	20.0	16.5	14.5
24	16.0	8.5	20.5	13.5	28.5	21.5	25.5	19.5	23.5	18.5	16.5	14.0
25	16.0	10.5	21.5	15.5	27.0	22.0	25.5	20.0	22.0	19.0	17.0	14.5
26	11.5	6.0	23.5	16.0	26.5	20.0	26.5	19.5	21.5	17.0	19.0	15.5
27	15.0	6.0	25.5	18.5	27.0	19.5	26.5	20.5	20.0	16.5	19.0	15.5
28	17.0	9.5	25.0	18.5	28.5	21.0	27.5	20.5	19.5	14.5	15.5	12.5
29	17.5	11.0	22.5	18.5	25.5	21.5	27.5	22.0	21.0	16.0	12.5	11.0
30	20.0	12.5	21.5	17.5	21.0	18.5	28.5	22.0	20.0	16.0	11.5	11.0
31	---	---	21.0	17.5	---	---	27.5	21.0	22.5	17.0	---	---
MONTH	20.0	4.5	25.5	7.5	30.5	16.0	29.0	16.0	27.5	14.5	22.0	11.0

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LOCATION.--Lat 41°46'45", long 100°31'30", in SE1/4NW1/4 sec.23, T.21 N., R.28 W., Thomas County, Hydrologic Unit 10210002, on right bank 1,400 ft downstream from bridge on U.S. Highway 83, 2 mi upstream from boundary of Nebraska National Forest (Bessey Division), and 14 mi south of Thedford.

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1090 ft³/s July 18, gage height, 3.40 ft; minimum daily discharge, 194 ft³/s Dec. 26.

[illegible]

PLATTE RIVER BASIN
06775900 DISMAL RIVER NEAR THEDFORD, NE--Continued

WATER QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)
NOV 20...	1140	207	176	7.54	7.5	689	7.4	11.2	57	50	72
FEB 25...	1130	218	185	7.84	5.5	689	17	12.6	K10	42	75
MAY 18...	0935	202	183	8.16	18.5	678	17	8.5	110	79	72
AUG 10...	1030	200	175	8.15	21.5	687	19	8.5	120	220	72

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

DATE	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
NOV 20...	0	23	3.5	6.9	0.4	5.0	77	7.4	1.6	0.40	58
FEB 25...	0	24	3.6	7.5	0.4	5.0	81	8.1	1.0	0.30	56
MAY 18...	0	23	3.6	7.0	0.4	4.8	80	7.9	0.90	0.30	57
AUG 10...	0	23	3.5	7.2	0.4	4.8	82	7.0	0.90	0.20	60

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV 20...	151	153	0.21	84.4	0.490	0.010	<0.20	0.310	0.130	0.130
FEB 25...	154	156	0.21	90.6	0.510	<0.010	0.30	0.240	0.140	0.140
MAY 18...	154	156	0.21	84.0	0.450	0.030	<0.20	0.120	--	0.120
AUG 10...	156	158	0.21	84.2	0.380	<0.010	0.40	0.130	0.130	0.120

PLATTE RIVER BASIN

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06775900 DISMAL RIVER NEAR THEDFORD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	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)
NOV 20...	1140	20	5	54	<0.5	<1	1	<3	2	20	<5
FEB 25...	1130	<10	5	49	<0.5	<1	1	<3	<1	9	<5
MAY 18...	0935	20	14	47	<0.5	<1	2	<3	4	17	<5
AUG 10...	1030	20	5	54	<0.5	<1	<1	<3	1	12	<5

DATE	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
NOV 20...	16	2	1.4	<10	<1	<1	1.0	110	10	32
FEB 25...	13	2	<0.1	<10	1	<1	<1.0	120	10	9
MAY 18...	12	2	<0.1	<10	<1	<1	<1.0	120	12	<3
AUG 10...	11	3	<0.1	<10	2	<1	<1.0	120	10	<3

DATE	TIME	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L) (09511)
NOV 20...	1140	1.0	2.3	5.2	1.8	4.1	1.7	0.04
MAY 18...	0935	<0.4	1.7	5.4	2.2	4.1	2.0	0.07

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 20...	1140	207	7.5	555	310	16
FEB 25...	1130	218	5.5	661	389	21
MAY 18...	0935	202	18.5	579	316	21
AUG 10...	1030	200	21.5	564	305	16

LOCATION.--Lat 41°49'23", long 100°06'05", in sec.4, T.21 N., R.24 W., Blaine County, Hydrologic Unit 10210002, on right bank 100 ft downstream from bridge on State Highway 2 at southeast corner of Dunning and 1 mi upstream from mouth.

PERIOD OF RECORD.--March to June 1932. September 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,606.3 ft above National Geodetic Vertical Datum of 1929. Mar. 1 to June 30, 1932, nonrecording gage at site 0.2 mi upstream at datum 0.5 ft lower. Sept. 13, 1945 to Apr. 19, 1956, nonrecording gage on bridge 100 ft upstream at present datum.

AVERAGE DISCHARGE.--43 years (1945-88), 326 ft³/s, 236,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 ft³/s June 13, 1983, gage height, 2.40 ft; maximum gage height observed, 5.21 ft Jan. 19, 1947, backwater from ice; minimum daily discharge, 100 ft³/s Jan. 25, 1950. Jan. 9, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 928 ft³/s July 19, gage height, 1.88 ft; maximum gage height, 3.93 ft Jan. 22, backwater from ice; minimum daily, 240 ft³/s Jan. 25.

[illegible]

PLATTE RIVER BASIN

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06779000 MIDDLE LOUP RIVER AT ARCADIA, NE

LOCATION.--Lat 41°25'20", long 99°08'10", in sec.26, T.17 N., R.16 W., Valley County, Hydrologic Unit 10210003, on left bank 80 ft downstream from bridge on State Highway 70 at southwest edge of Arcadia.

DRAINAGE AREA.--5,040 mi², approximately, of which about 820 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--July 1937 to current year.

REVISED RECORDS.--WDR NE-72: Drainage area. WDR NE-82-1: 1981(M).

GAGE.--Water-stage recorder. Datum of gage is 2,146.30 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Apr. 23, 1938, nonrecording gage at bridge just upstream at datum 1.23 ft lower.

REMARKS.--Estimated daily discharges: Dec. 15 to Mar. 2. Records fair except for periods of estimated record, which are poor. Middle Loup Public Power and Irrigation District began diversion above station Mar. 30, 1938. Farwell Irrigation District canal began diversion from river in November 1962 at point 8 mi above station.

AVERAGE DISCHARGE.--26 years (1962-88), 697 ft³/s, 505,000 acre-ft/yr since diversion to Farwell Irrigation District canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge estimated, about 18,500 ft³/s June 22, 1947, gage height, 6.24 ft; maximum discharge computed, 9,700 ft³/s May 27, 1945, gage height, 5.12 ft; maximum gage height, 6.41 ft Mar. 27, 1960, backwater from ice; minimum daily discharge, 6.0 ft³/s July 23, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,820 ft³/s July 1, release from Farwell Irrigation District diversion dam, gage height, 3.67 ft; maximum gage height 4.25 ft on Feb. 21, backwater from ice; minimum daily discharge, 46 ft³/s June 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1190	495	1080	480	1300	2000	678	1010	1030	1210	170	65
2	1110	616	1190	480	1200	2000	896	1370	1540	659	120	86
3	1110	809	1160	500	1150	1550	1270	1670	976	303	131	104
4	1120	807	1020	520	1100	1320	896	965	685	270	221	151
5	1100	581	1070	520	1100	1270	970	617	617	372	281	143
6	925	727	921	550	1200	1250	977	818	578	101	247	218
7	895	888	1090	580	1250	1040	926	1090	535	51	161	214
8	990	980	1110	620	1300	1240	791	1060	475	105	278	264
9	931	873	1140	670	1200	687	823	729	492	260	274	273
10	980	883	922	700	1000	641	690	594	467	248	202	312
11	931	837	911	800	850	891	640	542	395	176	129	279
12	845	871	950	900	820	1170	703	631	277	153	133	316
13	917	1030	954	1050	900	756	714	577	315	163	377	352
14	914	1040	730	1100	1100	785	713	577	321	67	973	388
15	899	1090	700	1200	1200	711	733	613	302	52	417	518
16	1010	1340	740	1250	1200	847	760	526	154	49	279	553
17	1020	1150	800	1300	1150	1020	734	329	188	67	193	487
18	890	1090	900	1200	1200	1220	737	210	156	54	112	477
19	920	785	1000	1100	1250	887	819	449	114	91	78	753
20	937	729	1050	1150	1300	746	705	649	129	145	71	1000
21	891	1120	1100	1250	1400	527	835	1240	79	223	79	563
22	790	1130	1050	1350	1450	703	1110	1240	75	151	86	483
23	785	1120	950	1250	1500	828	915	1030	62	136	77	497
24	883	1180	900	1150	1500	1090	615	912	46	137	75	495
25	963	1140	850	1100	1600	996	792	810	47	139	59	489
26	804	1130	650	1150	1650	863	1070	768	52	124	84	549
27	662	1170	450	1300	1700	617	984	685	57	116	116	1120
28	604	1170	450	1400	1700	857	849	816	49	111	84	1790
29	484	1210	450	1400	2000	793	967	936	61	143	100	1530
30	512	1040	460	1400	---	695	979	829	270	162	74	1320
31	468	---	470	1400	---	815	---	895	---	187	71	---
TOTAL	27480	29031	27218	30820	37270	30815	25291	25187	10544	6225	5752	15789
MEAN	886	968	878	994	1285	994	843	812	351	201	186	526
MAX	1190	1340	1190	1400	2000	2000	1270	1670	1540	1210	973	1790
MIN	468	495	450	480	820	527	615	210	46	49	59	65
AC-FT	54510	57580	53990	61130	73930	61120	50160	49960	20910	12350	11410	31320

CAL YR 1987 TOTAL 302342 MEAN 828 MAX 2520 MIN 60 AC-FT 599700
WTR YR 1988 TOTAL 271422 MEAN 742 MAX 2000 MIN 46 AC-FT 538400

PLATTE RIVER BASIN

06783500 MUD CREEK NEAR SWEETWATER, NE

LOCATION.--Lat 41°02'15", long 98°59'35", in NE1/4SE1/4 sec.3, T.12 N., R.15 W., Buffalo County, Hydrologic Unit 10210005, on right bank 12 ft downstream from bridge on State Highway 2, 0.9 mi southeast of Sweetwater, and 11.6 mi upstream from mouth.

DRAINAGE AREA.--707 mi², of which 655 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR NE-72: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,013.69 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 14, 15, 25-31, Jan. 1 to Feb. 17, Feb. 24-25, and June 21-27. Records good except for periods of estimated discharge, which are poor. Minor irrigation developments above station.

AVERAGE DISCHARGE.--42 years, 38.6 ft³/s, 27,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge estimated, about 27,000 ft³/s June 22, 1947, gage height, 23.20 ft; maximum discharge computed, 5,600 ft³/s June 24, 1968, gage height, 20.07 ft; no flow at times in 1955-56.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1929, that of June 22, 1947, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 550 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 18	2400	*278	*9.83	No peaks greater than base discharge.			
Minimum daily discharge, 2.1 ft ³ /s June 30.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	24	25	20	30	81	32	30	24	6.2	8.8	5.6
2	17	25	25	22	25	68	36	33	25	12	9.9	5.7
3	18	24	25	21	21	66	40	44	26	40	7.5	9.0
4	18	23	25	19	20	62	40	46	26	50	8.1	7.6
5	18	23	25	20	20	54	44	55	32	19	8.6	6.9
6	19	23	25	22	23	44	37	45	26	11	11	6.6
7	19	23	26	21	30	39	34	38	25	8.2	11	7.3
8	19	23	27	22	34	40	33	36	23	6.1	11	8.7
9	19	24	26	21	33	39	33	34	22	4.8	11	8.5
10	19	23	26	22	32	37	32	34	21	5.7	12	7.7
11	20	24	26	22	30	38	32	32	20	15	10	7.4
12	20	26	26	23	31	38	32	31	20	24	7.6	7.6
13	21	24	27	24	32	39	32	31	19	16	7.6	8.3
14	21	23	25	25	35	40	31	30	19	47	12	9.3
15	21	24	25	25	37	43	31	29	18	19	20	11
16	21	26	28	26	77	52	31	29	18	13	21	11
17	21	27	32	27	150	54	31	28	19	11	18	11
18	21	27	29	27	200	57	30	27	18	9.0	13	11
19	22	27	34	26	257	38	30	27	16	8.6	14	12
20	21	26	30	23	213	37	30	27	12	7.3	13	12
21	21	25	27	24	199	37	30	28	7.5	7.7	13	11
22	22	25	30	26	212	37	30	30	6.7	9.1	14	12
23	22	25	33	28	174	36	32	34	6.2	6.7	12	14
24	22	25	30	26	140	35	32	37	5.8	5.4	11	12
25	23	25	22	24	125	34	32	32	5.2	8.8	11	11
26	24	25	20	29	117	33	36	31	4.5	8.0	9.3	11
27	24	26	22	30	104	34	35	26	3.8	6.0	11	11
28	24	26	24	31	95	35	34	26	3.0	5.9	11	15
29	23	26	24	33	80	34	33	25	3.1	5.7	11	25
30	24	26	22	35	---	32	32	25	2.1	4.9	9.7	20
31	24	---	21	37	---	32	---	25	---	9.1	7.8	---
TOTAL	646	743	812	781	2576	1345	997	1005	476.9	410.2	355.9	316.2
MEAN	20.8	24.8	26.2	25.2	88.8	43.4	33.2	32.4	15.9	13.2	11.5	10.5
MAX	24	27	34	37	257	81	44	55	32	50	21	25
MIN	17	23	20	19	20	32	30	25	2.1	4.8	7.5	5.6
AC-FT	1280	1470	1610	1550	5110	2670	1980	1990	946	814	706	627

CAL YR 1987 TOTAL 12701 MEAN 34.8 MAX 218 MIN 12 AC-FT 25190
WTR YR 1988 TOTAL 10464.2 MEAN 28.6 MAX 257 MIN 2.1 AC-FT 20760

PLATTE RIVER BASIN

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06783500 MUD CREEK NEAR SWEETWATER, NE--Continued

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 19...	0915	22	617	7.88	6.5	9.2	18	120	16000
NOV 17...	1020	27	618	8.31	3.5	12.7	19	1200	5000
DEC 16...	1430	29	596	8.36	0.5	13.0	17	54	96
JAN 13...	1150	23	--	7.53	0.5	3.4	22	110	190
FEB 11...	1420	30	733	7.62	0.5	6.0	8	51	300
MAR 17...	1410	57	655	8.23	1.0	12.0	25	22	200
APR 05...	0955	47	628	8.30	12.0	8.8	32	240	580
MAY 03...	1335	47	601	8.22	12.0	8.2	75	K18000	36000
JUN 28...	1015	2.9	645	8.08	22.0	6.2	32	1900	2600
JUL 26...	1420	8.6	631	8.48	24.5	8.3	21	1500	1000
AUG 22...	1410	15	615	8.30	24.0	6.5	52	2900	4200
SEP 22...	0925	11	598	8.17	17.0	7.4	30	1100	8500

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 19...	330	100	17	16	0.4	26	9.2	171	0.23
NOV 17...	300	95	16	16	0.4	26	11	164	0.22
DEC 16...	330	100	18	17	0.4	31	11	181	0.25
JAN 13...	350	110	18	18	0.4	28	6.4	180	0.25
FEB 11...	310	96	17	20	0.5	31	13	177	0.24
MAR 17...	320	99	17	17	0.4	28	9.9	171	0.23
APR 05...	300	95	16	17	0.4	28	9.7	166	0.23
MAY 03...	280	86	15	17	0.5	31	11	160	0.22
JUN 28...	340	110	16	17	0.4	22	6.5	171	0.23
JUL 26...	300	96	15	16	0.4	24	10	161	0.22
AUG 22...	280	90	14	14	0.4	21	7.3	146	0.20
SEP 22...	270	87	12	17	0.5	23	16	155	0.21

PLATTE RIVER BASIN
06783500 MUD CREEK NEAR SWEETWATER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 19...	10.2	14	0.360	0.070	0.40	0.47	0.83	0.360	3.8
NOV 17...	12.0	14	0.960	0.130	0.50	0.63	1.6	0.370	4.0
DEC 16...	14.2	22	1.30	0.280	0.08	0.36	1.7	0.340	3.8
JAN 13...	11.2	8	1.60	0.310	0.16	0.47	2.1	0.440	2.7
FEB 11...	14.3	8	1.50	0.800	0.50	1.3	2.8	0.550	3.6
MAR 17...	26.3	260	1.70	0.680	1.0	1.7	3.4	0.750	5.0
APR 05...	21.0	306	1.40	0.250	2.0	2.3	3.7	0.840	5.6
MAY 03...	20.3	481	0.880	0.330	3.8	4.1	5.0	1.00	8.8
JUN 28...	1.34	82	0.840	0.160	1.0	1.2	2.0	0.690	5.4
JUL 26...	3.74	59	0.910	0.070	0.67	0.74	1.7	0.690	4.6
AUG 22...	5.93	435	1.30	0.230	1.7	1.9	3.2	0.700	5.3
SEP 22...	4.60	130	0.580	0.020	0.88	0.90	1.5	0.870	4.8

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LOCATION.--Lat 41°01'53", long 98°44'25", in NW1/4NW1/4 sec.12, T.12 N., R.13 W., Buffalo County, Hydrologic Unit 10210004, 5 ft downstream and 30 ft shoreward from right downstream corner of county highway bridge, 0.6 mi northeast of St. Michael, and 3.4 mi upstream from Sweet Creek.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WDR NE-74: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,921.26 ft above National Geodetic Vertical Datum of 1929. Prior to June 22, 1947, water-stage recorder, and June 25 to Sept. 30, 1947, nonrecording gage, at present site at datum 2.00 ft higher. Oct. 1, 1947 to July 3, 1958, nonrecording gage at present site and datum. July 4, 1958 to Sept. 7, 1960, water-stage recorder at site 600 ft upstream at present datum. Sept. 8, 1960 to June 24, 1968, water-stage recorder at site 100 ft upstream at present datum. June 25 to Nov. 21, 1968, nonrecording gage at present site and datum. Nov. 22, 1968 to May 19, 1981, water-stage recorder at site 40 ft upstream at present datum. May 20 to July 16, 1981, water-stage recorder at site 70 ft upstream at present datum.

AVERAGE DISCHARGE.--45 years, 238 ft³/s, 172,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge estimated, about 50,000 ft³/s June 22, 1947, gage height, 12.0 ft, present datum, from graph based on gage readings; maximum discharge computed, 27,500 ft³/s June 24, 1968, gage height, 11.00 ft; no flow Aug. 5-8, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,450 ft³/s July 1, gage height, 4.83 ft; maximum gage height 5.85 ft Feb. 18, backwater from ice; minimum daily discharge, 38 ft³/s Sept. 12.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	207	187	96	320	365	212	248	200	1140	76	54
2	127	213	184	100	300	351	245	264	196	611	64	52
3	126	208	192	105	270	334	245	340	194	412	62	96
4	130	204	190	110	230	343	263	391	192	383	92	83
5	132	196	195	115	230	344	256	347	201	285	103	51
6	133	192	202	120	250	359	280	338	223	202	114	50
7	128	186	204	125	260	357	242	296	205	147	124	47
8	129	199	217	130	240	345	244	284	197	113	129	46
9	128	196	242	150	230	342	244	282	184	128	118	50
10	146	205	233	160	210	333	236	263	177	137	128	51
11	154	206	220	170	210	342	235	260	166	270	118	43
12	153	212	205	180	210	349	226	248	159	421	101	38
13	152	214	205	185	220	314	218	230	161	245	151	51
14	154	212	204	195	240	298	206	219	153	172	153	94
15	154	212	185	200	260	243	204	208	153	200	140	118
16	156	234	165	210	250	228	203	194	144	153	145	111
17	159	230	118	220	250	270	198	183	149	134	137	108
18	160	238	142	220	270	269	193	181	134	133	118	108
19	163	234	167	205	280	270	202	180	127	146	106	123
20	171	222	197	220	300	251	208	188	116	157	96	127
21	169	210	176	230	320	257	202	209	106	146	96	132
22	168	198	177	240	350	267	202	232	102	190	96	122
23	170	188	179	230	400	272	215	319	98	175	95	110
24	169	192	197	230	470	280	231	313	81	126	79	108
25	179	204	170	240	550	291	238	295	71	103	69	101
26	193	203	140	250	640	293	308	263	65	94	63	93
27	186	206	96	270	593	286	298	246	64	88	61	95
28	189	209	81	290	485	272	285	233	64	78	62	160
29	190	194	80	300	370	261	265	225	63	75	68	174
30	191	185	88	300	---	235	262	211	90	77	67	193
31	196	---	92	310	---	214	---	206	---	78	62	---
TOTAL	4887	6209	5330	6106	9208	9235	7066	7896	4235	6819	3093	2789
MEAN	158	207	172	197	318	298	236	255	141	220	99.8	93.0
MAX	196	238	242	310	640	365	308	391	223	1140	153	193
MIN	126	185	80	96	210	214	193	180	63	75	61	38
AC-FT	9690	12320	10570	12110	18260	18320	14020	15660	8400	13530	6130	5530
CAL YR 1987	TOTAL 94723		MEAN 260	MAX 2190	MIN 43	AC-FT 187900						
WTR YR 1988	TOTAL 72873		MEAN 199	MAX 1								

PLATTE RIVER BASIN

06784000 SOUTH LOUP RIVER AT ST. MICHAEL, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1974 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED SEDIMENT DISCHARGE: June 1946 to June 1953.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SEDIMENT CONCENTRATIONS: Maximum daily, 19,300 mg/L June 19, 1946; minimum daily, 13 mg/L Dec. 30, 31, 1951.

SEDIMENT LOADS: Maximum daily, 672,000 tons June 22, 1947; minimum daily, 6.1 tons Dec. 30, 31, 1951.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)
OCT						
19...	1105	161	421	7.98	7.5	11.0
NOV						
17...	1420	229	417	8.45	5.5	11.4
DEC						
16...	1045	161	460	8.45	0.5	12.4
JAN						
13...	1010	184	387	7.68	0.5	8.9
FEB						
11...	0955	207	381	7.65	0.5	7.9
MAR						
17...	1030	268	418	8.44	1.5	12.8
APR						
05...	1140	258	423	8.45	12.5	9.6
MAY						
03...	1030	332	437	8.47	11.5	8.5
JUN						
28...	1140	67	336	8.31	27.5	7.9
JUL						
26...	1045	97	--	9.04	25.5	9.1
AUG						
22...	1115	101	344	8.83	24.0	8.6
SEP						
22...	1025	121	380	8.51	18.0	8.5

DATE	TIME	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
MAR											
17...	1030	28	210	0	67	11	13	0.4	9.5	214	21
JUL											
26...	1045	40	150	0	47	7.2	11	0.4	6.0	159	18

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	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)
MAR											
17...	4.5	0.30	48	307	0.42	222	0.940	0.010	40	11	17
JUL											
26...	3.6	0.30	43	231	0.31	60.6	<0.100	0.080	40	12	3

PLATTE RIVER BASIN

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06784200 SHERMAN RESERVOIR NEAR LOUP CITY, NE

LOCATION.--Lat 41°18'10", long 98°52'45", in SW1/4NW1/4 sec.1, T.15 N., R.14 W., Sherman County, Hydrologic Unit 10210003, in control house of outlet works of Sherman Dam, 5 mi northeast of Loup City.

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

GAGE.--Mercury-column pressure gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam; closure date of dam, August 1960. First diversions from Middle Loup River, Nov. 8, 1962. Usable capacity, 65,237 acre-ft between elevations 2,118.5 ft, sill of canal outlet works, and 2,162.3 ft, crest of spillway. Dead and inactive storage, 3,839 acre-ft below elevation 2,118.5 ft. Figures given herein represent total contents. Water is used for irrigation of Farwell Unit of Bureau of Reclamation.

COOPERATION.--Records of elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 70,230 acre-ft June 22, 1975, elevation, 2,162.7 ft; minimum observed since appreciable storage was attained, 9,450 acre-ft Aug. 2, 1980, elevation, 2,127.7 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 69,650 acre-ft June 20, elevation, 2,162.5 ft; minimum observed, 36,780 acre-ft Aug. 29, elevation, 2,148.7 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,157.0	54,920	-
Oct. 31	2,156.2	52,970	-1,950
Nov. 30	2,155.8	52,000	-970
Dec. 31	2,155.4	51,060	-940
CAL YR 1987	-	-	-1,660
Jan. 31	2,155.1	50,350	-710
Feb. 29	2,154.7	49,420	-930
Mar. 31	2,154.1	48,040	-1,380
Apr. 30	2,155.4	51,060	+3,020
May 31	2,162.3	69,080	+18,020
June 30	2,157.8	56,930	-12,150
July 31	2,153.5	46,700	-10,230
Aug. 31	2,148.7	36,780	-9,920
Sept. 30	2,157.2	55,420	+18,640
WTR YR 1988	-	-	+500

PLATTE RIVER BASIN

06784800 TURKEY CREEK NEAR DANNEBROG, NE

LOCATION.--Lat 41°09'24", long 98°33'22", in SW1/4NW1/4 sec.26, T.14 N., R.11 W., Howard County, Hydrologic Unit 10210003, on left bank 25 ft downstream from bridge on State Highway 11, 2.8 mi north of Dannebrog, and 10 mi upstream from mouth.

DRAINAGE AREA.--66.2 mi².

PERIOD OF RECORD.--May 1966 to September 1970, October 1978 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,870.35 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Estimated daily discharges: Dec. 17-24, Dec. 26 to Jan. 15, Jan. 19, 20, Jan. 23 to Feb. 6, Feb. 10 and Mar. 11, 13-15. Records good except for periods of estimated record, which are poor. Low flow includes return water from Farwell Irrigation District.

AVERAGE DISCHARGE.--10 years (1979-88), 21.6 ft³/s, 15,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,680 ft³/s June 14, 1967, gage height, 19.21 ft; maximum gage height, 19.26 ft June 12, 1983; no flow May 17-20, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 446 ft³/s June 30, gage height, 11.31 ft; minimum daily, 7.2 ft³/s Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	16	15	14	15	22	13	12	10	61	37	16
2	14	15	15	13	15	22	27	14	11	28	37	15
3	13	14	16	13	14	19	32	30	10	21	30	20
4	13	14	16	12	14	18	20	17	9.5	19	46	16
5	14	12	15	12	14	18	17	14	9.5	18	47	14
6	13	12	16	11	14	19	15	14	9.1	16	31	12
7	12	13	16	11	14	20	14	14	9.1	15	24	9.6
8	13	15	18	11	14	20	14	13	9.1	18	24	9.3
9	13	12	25	11	14	18	13	12	8.4	21	23	9.0
10	12	12	19	10	14	18	13	12	8.2	27	22	8.4
11	12	12	19	10	14	17	13	14	7.5	28	19	8.2
12	13	13	17	10	15	16	13	13	7.7	36	19	7.5
13	13	13	16	12	24	16	13	11	7.3	35	31	7.6
14	13	13	15	13	77	15	12	11	7.4	36	32	9.4
15	13	14	15	14	74	15	12	11	7.5	43	29	14
16	12	22	14	15	52	15	12	11	7.3	47	25	10
17	12	16	15	16	114	15	12	11	12	34	21	8.7
18	12	14	15	17	98	15	12	11	14	38	23	8.4
19	12	14	16	17	85	16	12	10	13	35	28	9.3
20	12	14	16	17	56	16	12	10	12	39	31	10
21	12	14	16	17	35	16	12	11	12	28	33	8.1
22	13	15	16	17	70	15	13	12	12	25	32	8.2
23	13	15	16	17	30	15	12	20	13	25	29	7.9
24	13	14	16	17	20	15	12	14	20	23	29	7.2
25	14	14	16	16	19	15	12	11	17	23	29	7.3
26	19	14	16	16	22	14	18	11	19	25	32	7.5
27	14	14	16	16	25	14	15	10	22	26	32	8.7
28	13	16	16	16	24	14	13	10	21	29	28	41
29	13	16	16	16	22	14	13	9.8	53	37	27	23
30	14	16	16	15	---	13	12	9.9	281	39	25	15
31	14	---	15	15	---	13	---	9.7	---	36	24	---
TOTAL	406	428	504	437	1018	508	433	393.4	659.6	931	899	356.3
MEAN	13.1	14.3	16.3	14.1	35.1	16.4	14.4	12.7	22.0	30.0	29.0	11.9
MAX	19	22	25	17	114	22	32	30	281	61	47	41
MIN	12	12	14	10	14	13	12	9.7	7.3	15	19	7.2
AC-FT	805	849	1000	867	2020	1010	859	780	1310	1850	1780	707

CAL YR 1987 TOTAL 10135 MEAN 27.8 MAX 536 MIN 11 AC-FT 20100
WTR YR 1988 TOTAL 6973.3 MEAN 19.1 MAX 281 MIN 7.2 AC-FT 13830

PLATTE RIVER BASIN

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06785000 MIDDLE LOUP RIVER AT ST. PAUL, NE

LOCATION.--Lat 41°12'13", long 98°26'46", in SE1/4NW1/4NE1/4 sec.10, T.14 N., R.10 W., Howard County, Hydrologic Unit 10210003, on left bank at St. Paul, 20 ft upstream from bridge on U.S. Highway 281 and 6 mi upstream from confluence with North Loup River.

DRAINAGE AREA.--8,090 mi², approximately, of which about 3,130 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1894 to September 1915, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1036: 1943. WSP 1390: 1896, 1903, 1928(M), 1944. WDR NE-72: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,776.61 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to June 5, 1957. June 5, 1957, to Mar. 16, 1978, water-stage recorder on left bank 430 ft upstream at same datum. Mar. 17 to May 31, 1978, nonrecording gage on railroad bridge 30 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 15 to Feb. 29, July 25-27, and Aug. 22-29. Records poor. Diversions above station for irrigation.

AVERAGE DISCHARGE.--81 years, 1,195 ft³/s, 865,800 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,000 ft³/s June 23, 1947, gage height, 12.69 ft, site then in use, present datum, from rating curve extended above 55,000 ft³/s; minimum daily since 1929, 23 ft³/s Aug. 9, 10, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,400 ft³/s July 1, gage height, 4.17 ft; maximum gage height, 5.42 ft Feb. 18, backwater from ice; minimum daily discharge, 176 ft³/s June 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	1690	1410	630	1600	2900	2010	1430	1080	1570	398	270
2	1360	1420	1340	640	1500	1660	2130	1740	1170	1550	406	277
3	1600	1460	1360	660	1500	1250	2100	3070	1320	946	383	282
4	1430	1780	1270	680	1500	1370	1920	2060	1220	738	469	289
5	1450	1580	1130	700	1500	1530	1680	1180	971	620	748	288
6	1580	1320	1140	740	1500	1400	1580	775	914	416	776	305
7	1480	1250	1030	780	1600	1180	1730	734	875	560	669	306
8	1470	1420	1160	840	1700	1320	1690	840	843	339	485	363
9	1510	1550	1350	880	1700	1360	1950	849	747	331	440	371
10	1390	1360	1440	920	1500	1120	1920	648	720	475	581	384
11	1300	1550	1180	960	1300	1240	1960	642	688	538	453	353
12	1270	1540	1210	1050	1100	1420	1800	775	618	745	372	390
13	1370	1570	1210	1120	1500	1240	1890	819	591	582	424	411
14	1520	1710	1270	1170	1600	1010	1900	715	532	386	610	642
15	1620	1730	1300	1270	1500	1590	1860	740	539	451	1350	835
16	1380	1920	1320	1400	1500	1540	1780	728	520	407	1040	604
17	1490	2140	1350	1550	1600	1440	1840	748	602	348	626	748
18	1590	2000	1350	1550	1500	1690	1780	752	670	325	467	603
19	1580	2060	1350	1420	1600	1720	1860	681	536	363	408	677
20	1400	2030	1350	1320	1650	1530	1720	713	378	382	363	791
21	1270	1950	1330	1400	1750	1630	1600	945	293	393	315	1140
22	1120	2060	1330	1550	1850	1710	1420	1540	287	408	360	755
23	1100	1920	1330	1800	1950	1820	1530	1760	253	462	380	572
24	1010	1840	1300	1600	2050	1820	1400	1210	237	370	325	566
25	1050	1790	1190	1400	2400	1780	1350	1200	208	365	305	583
26	1060	1680	900	1600	2600	1930	1630	1070	186	360	255	576
27	1010	1700	700	1750	2800	1940	1680	1110	180	355	305	646
28	986	1660	570	1900	3200	2140	1480	1010	176	381	375	1700
29	1160	1610	590	1900	2800	2370	1340	962	342	360	313	1980
30	1160	1470	600	1900	---	2130	1450	1160	1000	378	312	2110
31	1230	---	620	1900	---	2040	---	1090	---	402	308	---
TOTAL	40996	50760	35980	38980	51850	50820	51980	33696	18696	16306	15021	19817
MEAN	1322	1692	1161	1257	1788	1639	1733	1087	623	526	485	661
MAX	1620	2140	1440	1900	3200	2900	2130	3070	1320	1570	1350	2110
MIN	986	1250	570	630	1100	1010	1340	642	176	325	255	270
AC-FT	81320	100700	71370	77320	102800	100800	103100	66840	37080	32340	29790	39310

CAL YR 1987 TOTAL 495324 MEAN 1357 MAX 6630 MIN 257 AC-FT 982500
WTR YR 1988 TOTAL 424902 MEAN 1161 MAX 3200 MIN 176 AC-FT 842800

PLATTE RIVER BASIN

06785000 MIDDLE LOUP RIVER AT ST. PAUL, NE--Continued

WATER QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)
OCT						
20...	1405	1420	267	8.38	8.5	10.7
NOV						
09...	1340	1530	270	8.39	6.5	12.0
DEC						
01...	1420	1400	292	8.29	3.5	12.0
JAN						
14...	1200	1170	311	7.78	0.5	11.4
FEB						
02...	1305	1510	307	7.68	0.5	10.3
MAR						
15...	1445	1450	300	8.32	2.5	12.5
APR						
06...	1330	1680	296	8.38	15.0	9.5
MAY						
18...	1100	731	331	8.73	22.0	9.1
JUN						
29...	0945	199	394	8.53	27.5	8.0
JUL						
18...	0920	320	358	8.70	26.5	7.9
AUG						
29...	1345	313	362	8.66	24.5	9.0
SEP						
20...	1400	804	302	8.22	20.0	9.0

DATE	TIME	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
MAR											
15...	1445	47	140	0	43	7.2	11	0.4	7.4	148	18
JUL											
18...	0920	52	160	0	51	8.7	13	0.5	8.0	172	19

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	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)
MAR											
15...	2.9	0.30	52	235	0.32	920	0.970	--	30	29	6
JUL											
18...	4.2	0.40	47	254	0.35	220	<0.100	0.230	50	<3	3

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LOCATION.--Lat 41°46'37", long 99°22'45", in NE1/4SE1/4 sec.22, T.21 N., R.18 W., Loup County, Hydrologic Unit 10210006, on left bank 64 ft downstream from bridge on U.S. Highway 183 and 0.4 mi north of Taylor.

PERIOD OF RECORD.--November 1936 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,248.21 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 28, 1938, nonrecording gage at same site and datum. Sept. 28, 1938, to July 16, 1958, water-stage recorder at site 450 ft upstream at same datum.

AVERAGE DISCHARGE.--51 years (1937-88), 471 ft³/s, 341.200 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,420 ft³/s Feb. 29, gage height, 4.91 ft, maximum gage height, 6.69 ft Jan. 25, backwater from ice; minimum daily discharge, 146 ft³/s Aug. 2.

[illegible]

PLATTE RIVER BASIN

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06787300 CALAMUS RESERVOIR NEAR BURWELL, NE

LOCATION.--Lat 41°49'38", long 99°13'11", in SW1/4SW1/4 sec.31, T.22 N., R.16W., Garfield County, Hydrologic Unit 1021008, near right bank in control house of outlet works of Calamus Dam on Calamus River, 4 mi upstream from mouth, 5.5 mi northwest of Burwell.

DRAINAGE AREA.--1,050 mi², approximately, of which about 110 mi² contributes directly to surface runoff.

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

GAGE.--Fluid gage with continuous recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam; storage began Oct. 1, 1985. Usable capacity, 102,750 acre-ft between elevations 2213.3 ft, bottom of conservation pool, and 2244.0 ft, top of inlet structure; inactive capacity, 23,830 acre-ft between elevations 2185.0 ft, sill of outlet gate, and 2213.3 ft. Dead storage 817 acre-ft below elevation 2185.0 ft. Figures given herein represent total contents. Water is used for irrigation of North Loup project of Bureau of Reclamation.

COOPERATION.--Records of elevations and capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 93,330 acre-ft May 29, 1987, elevation, 2236.66 ft; minimum observed since appreciable storage was attained, 41,540 acre-ft Aug. 31, 1986, elevation 2221.10 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 131,100 acre-ft June 25, elevation, 2244.71 ft; minimum observed, 87,770 acre-ft Oct. 1, elevation, 2235.30 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,235.25	87,570	-
Oct. 31	2,238.45	101,000	+13,430
Nov. 30	2,240.06	108,200	+7,200
Dec. 31	2,240.08	108,300	+100
CAL YR 1987	-	-	+35,730
Jan. 31	2,240.11	108,500	+200
Feb. 29	2,240.24	109,100	+600
Mar. 31	2,240.50	110,300	+1,200
Apr. 30	2,243.57	125,200	+14,900
May 31	2,244.04	127,600	+2,400
June 30	2,244.68	130,900	+3,300
July 31	2,243.82	126,500	-4,400
Aug. 31	2,242.73	121,000	-5,500
Sept. 30	2,237.97	98,900	-22,100
WTR YR 1988	-	-	+11,330

PLATTE RIVER BASIN

06787500 CALAMUS RIVER NEAR BURWELL, NE

LOCATION.--Lat 41°48'35", long 99°10'56", in NW1/4NW1/4 sec.9, T.21 N., R.16 W., Garfield County, Hydrologic Unit 10210008, on left bank 20 ft downstream from highway bridge, 1.1 mi downstream from Calamus Dam, 1.5 mi upstream from mouth, and 3 mi northwest of Burwell.

DRAINAGE AREA.--1,060 mi², approximately, of which about 110 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 1918: 1958. WDR NE-72: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,156.48 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Apr. 20, 1945, nonrecording gage at site 20 ft upstream; Apr. 21, 1945 to Jan. 28, 1964, water-stage recorder at site 400 ft downstream; Jan. 29, 1964 to Oct. 4, 1977, water-stage recorder at site 230 ft downstream; and Oct. 5, 1977 to July 30, 1985, water-stage recorder at site 190 ft downstream, all at present datum.

REMARKS.--Estimated daily discharges: Oct. 2-13 and Apr. 20-24. Records good except for periods of estimated record, which are fair. Diversions for irrigation above station, and since Oct. 1, 1985, flow regulated by the Calamus Dam.

AVERAGE DISCHARGE.--3 years (water years 1986-1988), 272 ft³/s, 197,100 acre-ft/yr. Average discharge prior dam closure: 45 years (water years 1941-85), 305 ft³/s, 221,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,790 ft³/s May 4, 1964, gage height, 4.35 ft; maximum gage height, 5.90 ft Jan. 26, 1967, backwater from ice; minimum daily discharge, 13 ft³/s Apr. 27, 1986, Oct. 8-10, 1987, due to temporary closure of Calamus Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 811 ft³/s Sept. 12, 13, gage height, 3.47 ft; minimum daily, 47 ft³/s Oct. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	53	352	310	315	424	102	57	303	296	247	314
2	78	53	360	310	320	456	103	61	334	299	235	377
3	72	51	360	310	320	480	101	272	325	290	229	465
4	68	51	332	310	320	501	98	260	306	282	224	559
5	64	49	304	310	320	495	95	363	281	275	220	634
6	62	49	303	310	327	493	94	364	248	244	258	636
7	60	49	304	310	331	483	94	354	229	227	276	685
8	58	49	302	310	328	468	94	390	216	237	279	711
9	56	49	299	312	318	472	90	384	149	289	279	704
10	56	50	299	315	310	457	90	307	80	260	279	750
11	54	50	299	316	310	422	91	251	77	246	279	732
12	52	50	304	308	310	387	91	251	75	233	286	751
13	50	51	304	312	305	393	90	279	75	306	316	787
14	50	59	299	315	281	388	89	286	77	384	320	763
15	50	188	304	315	299	357	89	285	75	375	311	658
16	48	360	320	315	304	349	88	297	75	333	312	603
17	48	360	326	315	281	341	86	302	82	239	315	605
18	49	359	332	305	308	325	84	290	55	225	315	603
19	48	350	326	307	331	316	74	292	62	262	316	630
20	47	344	326	320	331	321	62	301	67	258	307	667
21	49	354	326	320	320	317	60	415	71	256	304	686
22	48	355	326	319	304	301	58	451	76	251	306	683
23	48	360	326	312	304	280	56	533	75	257	309	689
24	48	357	315	311	307	271	56	512	75	260	317	714
25	49	355	315	305	310	248	55	520	76	269	321	733
26	49	351	310	304	326	205	55	530	74	276	322	750
27	48	349	310	306	355	115	53	517	74	282	315	770
28	49	353	310	310	349	106	53	425	91	284	316	705
29	51	358	304	319	374	106	54	389	151	277	316	622
30	52	360	310	326	---	106	55	365	265	272	318	633
31	53	---	310	317	---	104	---	328	---	267	317	---
TOTAL	1705	6226	9817	9684	9218	10487	2360	10631	4219	8511	9064	19619
MEAN	55.0	208	317	312	318	338	78.7	343	141	275	292	654
MAX	91	360	360	326	374	501	103	533	334	384	322	787
MIN	47	49	299	304	281	104	53	57	55	225	220	314
AC-FT	3380	12350	19470	19210	18280	20800	4680	21090	8370	16880	17980	38910

CAL YR 1987 TOTAL 101930 MEAN 279 MAX 577 MIN 47 AC-FT 202200
WTR YR 1988 TOTAL 101541 MEAN 277 MAX 787 MIN 47 AC-FT 201400

PLATTE RIVER BASIN

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06788500 NORTH LOUP RIVER AT ORD, NE

LOCATION.--Lat 41°36'27", long 98°55'17", in SW1/4NW1/4 sec.22, T.19 N., R.14 W., Valley County, Hydrologic Unit 10210007, on right bank 150 ft downstream from bridge on State Highway 70 at Ord.

DRAINAGE AREA.--3,750 mi², approximately, of which about 700 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--November 1936 to September 1938 (published as "near Ord"), June 1952 to current year.

REVISED RECORDS.--WSP 1730: 1957(M). WDR NE-74: Drainage area. WDR NE-75: 1974.

GAGE.--Water-stage recorder. Datum of gage is 2,012.14 ft above National Geodetic Vertical Datum of 1929. Nov. 25, 1936, to Sept. 30, 1938, nonrecording gage at site 2 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Dec. 30 to Feb. 26. Records good except for period of estimated record, which is poor. Diversions above stations for irrigation. Flow includes return water from North Loup irrigation project.

AVERAGE DISCHARGE.--37 years (1937-38, 1952-88), 889 ft³/s, 644,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s June 7, 1962, gage height, 5.52 ft; maximum gage height, 6.56 ft Jan. 16, 1981, ice jam; minimum daily discharge, 100 ft³/s Jan. 3, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,260 ft³/s Mar. 1, gage height, 3.28 ft; maximum gage height, 4.87 ft Feb. 24, backwater from ice; minimum daily discharge, 308 ft³/s June 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	721	701	1060	830	920	2140	808	984	1180	1050	508	700
2	650	692	1040	800	960	1980	1010	1150	1190	1270	478	767
3	671	699	1020	790	980	1820	1220	1540	1130	952	494	884
4	667	712	1060	780	1020	1780	1280	1740	1020	790	638	940
5	652	709	968	770	1060	1810	1310	1720	962	680	707	1050
6	662	723	950	770	1100	1890	1280	1710	908	584	786	1100
7	639	741	973	760	1120	1920	1230	1610	860	509	830	1110
8	615	773	976	750	1140	1900	984	1610	854	591	884	1280
9	595	824	972	740	1130	1900	944	1500	812	807	830	1270
10	649	852	1030	740	1120	2050	872	1300	625	703	792	1310
11	640	811	1010	760	1120	2030	744	1030	604	646	757	1300
12	626	802	1010	760	1130	1650	766	1050	590	623	719	1310
13	621	793	1010	780	1140	1290	859	1080	592	641	1110	1330
14	642	792	994	840	1150	1130	882	1060	588	829	1580	1390
15	664	822	980	860	1160	1160	880	1060	621	719	1120	1440
16	649	1100	995	880	1190	1270	831	1070	602	638	842	1440
17	674	1170	1040	860	1220	1340	790	1100	649	517	752	1410
18	678	1100	1070	840	1280	1230	743	1090	617	464	693	1420
19	693	1030	1050	820	1340	1400	745	1100	548	827	681	1490
20	708	971	973	800	1400	1510	689	1150	508	980	658	1550
21	720	940	973	780	1440	1630	696	1500	485	986	637	1470
22	695	978	988	800	1480	1680	869	1760	473	834	658	1460
23	677	1060	933	800	1500	1660	1080	1880	452	798	689	1470
24	679	1100	941	800	1510	1580	1020	1760	409	752	612	1450
25	721	1110	825	810	1500	1460	908	1730	366	716	592	1440
26	744	1120	778	820	1470	1340	1020	1700	332	648	571	1450
27	730	1110	801	830	1610	1070	1150	1650	308	571	565	1520
28	714	1120	855	840	1810	921	1110	1510	310	530	608	1660
29	697	1080	873	860	1970	929	1070	1410	351	516	625	1540
30	702	1030	870	880	---	841	1060	1320	592	515	663	1570
31	708	---	850	900	---	788	---	1250	---	574	653	---
TOTAL	20903	27465	29868	25050	36970	47099	28850	43124	19538	22260	22732	39521
MEAN	674	915	963	808	1275	1519	962	1391	651	718	733	1317
MAX	744	1170	1070	900	1970	2140	1310	1880	1190	1270	1580	1660
MIN	595	692	778	740	920	788	689	984	308	464	478	700
AC-FT	41460	54480	59240	49690	73330	93420	57220	85540	38750	44150	45090	78390

CAL YR 1987 TOTAL 346063 MEAN 948 MAX 2100 MIN 423 AC-FT 686400
WTR YR 1988 TOTAL 363380 MEAN 993 MAX 2140 MIN 308 AC-FT 720800

PLATTE RIVER BASIN

06788988 MIRA CREEK NEAR NORTH LOUP, NE

LOCATION.--Lat 41°30'09", long 98°47'47", in NW1/4SE1/4 sec.27, T.18 N., R.13 W., Valley County, Hydrologic Unit 10210007, on left bank near county road 1.4 mi northwest of North Loup.

PERIOD OF RECORD.--October 1979 to current year.

REVISED RECORDS.--WDR NE-83-1: 1982(M).

GAGE.--Water-stage recorder. Datum of gage is 1,964.41 ft above National Geodetic Vertical Datum of 1929, (levels by Nebraska Department of Roads).

REMARKS.--Estimated daily discharges: May 21-23. Records fair.

AVERAGE DISCHARGE.--9 years, 1.96 ft³/s, 1,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,460 ft³/s Aug. 5, 1981, gage height, 10.56 ft, from floodmark, from rating curve extended above 200 ft³/s on basis of indirect measurement of peak flow; no flow at times in 1980-81.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 23 ft³/s and maximim (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 16	2300	*30	*2.36	No other peak greater than base discharge.			

Minimum daily discharge, 0.03 ft³/s, Sept. 23-27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.30	.50	.33	1.3	1.9	1.8	.66	.27	.65	.56	.20
2	.23	.37	.50	.23	.89	2.9	4.4	1.2	.29	.71	.44	.35
3	.23	.31	.48	.26	.75	2.6	3.0	3.1	.27	.57	.28	.34
4	.22	.93	.47	.27	.63	2.0	2.2	3.0	.26	.26	.36	.29
5	.21	1.1	.51	.20	.63	2.1	1.4	2.0	.23	.20	.53	.23
6	.19	.80	.63	.18	.61	2.6	1.2	1.2	.19	.15	.56	.07
7	.19	.45	.53	.17	.55	3.0	1.2	1.1	.19	.12	.55	.05
8	.19	.35	.49	.18	.58	2.5	1.1	.94	.18	.21	.51	.05
9	.14	.33	.51	.17	.57	2.2	.85	.88	.16	.45	.47	.05
10	.13	.26	.59	.15	.50	1.7	.84	.79	.15	.37	.26	.06
11	.15	.23	.67	.15	.45	1.6	.68	.68	.14	.32	.22	.05
12	.16	.23	.63	.18	.45	1.3	.64	.63	.11	.33	.21	.05
13	.15	.22	.51	.17	.59	1.1	.61	.57	.13	.38	.26	.05
14	.16	.22	.49	.17	2.8	1.1	.50	.57	.12	.34	.21	.08
15	.17	.27	.45	.18	5.2	1.1	.52	.52	.11	.27	.37	.11
16	.19	.85	.38	.26	11	1.1	.49	.51	.10	.27	.19	.11
17	.18	.92	.36	.30	27	1.1	.41	.47	.17	.43	.06	.08
18	.15	.51	.39	.30	20	1.2	.42	.41	.16	.56	.04	.07
19	.14	.35	.42	.29	14	1.1	.44	.46	.12	1.3	.04	.12
20	.14	.34	.46	.29	8.2	1.2	.44	.50	.09	1.9	.05	.13
21	.15	.34	.49	.29	5.2	1.1	.41	.58	.06	2.0	.05	.12
22	.20	.33	.50	.28	9.1	1.1	.49	.66	.20	1.7	.05	.11
23	.20	.35	.64	.30	3.5	.93	.54	.74	.39	1.3	.06	.03
24	.19	.34	.68	.33	3.3	.91	.63	.82	.21	1.3	.07	.03
25	.21	.30	.48	.52	2.2	.81	.66	.75	.36	1.2	.10	.03
26	.25	.33	.38	.36	2.3	.78	1.3	.61	.68	.62	.14	.03
27	.20	.64	.34	.36	2.5	.74	1.1	.49	.91	.52	.16	.03
28	.18	.54	.37	.35	2.3	.71	.85	.40	.91	.34	.15	.29
29	.20	.55	.44	.37	2.0	.76	.81	.33	.46	.59	.11	.19
30	.21	.55	.45	.42	---	.79	.75	.30	.48	.86	.18	.17
31	.21	---	.45	1.1	---	.76	---	.27	---	.71	.20	---
TOTAL	5.77	13.61	15.19	9.11	129.10	44.79	30.68	26.14	8.10	20.93	7.44	3.57
MEAN	.19	.45	.49	.29	4.45	1.44	1.02	.84	.27	.68	.24	.12
MAX	.25	1.1	.68	1.1	.27	3.0	4.4	3.1	.91	2.0	.56	.35
MIN	.13	.22	.34	.15	.45	.71	.41	.27	.06	.12	.04	.03
AC-FT	11	27	30	18	256	89	61	52	16	42	15	7.1

CAL YR 1987 TOTAL 456.22 MEAN 1.25 MAX 33 MIN .06 AC-FT 905
WTR YR 1988 TOTAL 314.43 MEAN .86 MAX 27 MIN .03 AC-FT 624

PLATTE RIVER BASIN

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06790500 NORTH LOUP RIVER NEAR ST. PAUL, NE

LOCATION.--Lat 41°15'48", long 98°26'56", in NW1/4NW1/4NE1/4 sec.22, T.15 N., R.10 W., Howard County, Hydrologic Unit 10210007, on right bank 310 ft downstream from bridge on U.S. Highway 281, 3 mi north of St. Paul, and 4 mi upstream from confluence with Middle Loup River.

DRAINAGE AREA.--4,290 mi², approximately, of which about 1,240 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1894 to September 1915, August 1928 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 976: 1942. WSP 1390: 1896. WDR NE-74: Drainage area. WDR NE-75: 1974.

GAGE.--Water-stage recorder. Datum of gage is 1,759.29 ft, adjusted, above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to Oct. 1, 1954.

REMARKS.--Estimated daily discharges: Dec. 28, Dec. 31 to Mar. 1, June 25-28, and July 17. Records good except for periods of estimated record, which are poor. Natural flow affected by diversions and ground-water withdrawals for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--81 years, 977 ft³/s, 707,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,000 ft³/s, estimated, June 6, 1896, gage height, 14.9 ft, from floodmark, datum then in use; minimum daily since 1931, 85 ft³/s Aug. 8, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,100 ft³/s Feb. 29, gage height, 4.86 ft, backwater from ice; maximum gage height, 5.75 ft Feb. 24, backwater from ice; minimum daily discharge, 160 ft³/s June 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	991	902	1080	860	1040	2480	759	956	1330	531	547	658
2	782	911	1080	840	1100	1960	846	1010	1340	1140	457	725
3	666	929	1040	820	1120	1850	997	1530	1290	1190	423	758
4	646	912	1080	800	1160	1740	955	1860	1270	907	570	844
5	636	881	1100	780	1180	1900	1020	1690	1200	705	654	992
6	615	888	1070	760	1200	2050	1060	1740	1110	604	688	1050
7	626	895	1040	740	1210	2130	1060	1700	1020	507	749	1080
8	630	931	1080	760	1220	2180	1020	1620	917	454	732	1140
9	659	905	1110	720	1230	2120	947	1670	776	726	804	1240
10	679	931	1070	720	1240	2270	935	1390	714	998	763	1220
11	696	979	1090	720	1250	2390	866	1160	559	675	713	1250
12	691	904	1120	740	1250	2210	787	993	518	956	675	1320
13	657	849	1040	740	1250	1570	758	973	530	583	786	1400
14	658	841	1050	760	1250	1220	718	994	518	590	1050	1520
15	649	907	951	800	1250	1350	731	985	487	721	1520	1470
16	732	1300	756	830	1250	1460	732	961	493	782	1170	1460
17	717	1370	736	850	1300	1600	748	947	517	689	897	1410
18	734	1300	794	860	1350	1590	726	930	518	495	793	1350
19	713	1260	966	870	1400	1530	681	916	488	524	731	1500
20	710	1200	1000	860	1450	1500	676	953	411	966	714	1470
21	712	1150	1060	840	1500	1510	636	1070	378	964	705	1490
22	747	1200	1010	830	1550	1570	709	1860	366	904	685	1460
23	723	1200	968	820	1600	1540	801	2150	332	746	697	1470
24	734	1200	915	820	1650	1490	859	1970	295	765	717	1430
25	771	1210	903	830	1750	1410	885	1840	195	722	701	1400
26	829	1180	741	840	1850	1320	973	1820	165	669	636	1410
27	796	1200	720	860	2200	1180	1110	1800	160	600	604	1460
28	803	1150	780	900	2600	923	1190	1740	160	540	598	1810
29	809	1110	739	930	2800	820	1040	1540	185	527	628	1740
30	832	1120	926	960	---	789	991	1440	390	525	650	1610
31	855	---	880	980	---	784	---	1360	---	512	682	---
TOTAL	22498	31715	29895	25440	42200	50436	26216	43568	18632	22217	22739	39137
MEAN	726	1057	964	821	1455	1627	874	1405	621	717	734	1305
MAX	991	1370	1120	980	2800	2480	1190	2150	1340	1190	1520	1810
MIN	615	841	720	720	1040	784	636	916	160	454	423	658
AC-FT	44620	62910	59300	50460	83700	100000	52000	86420	36960	44070	45100	77630

CAL YR 1987 TOTAL 382791 MEAN 1049 MAX 3310 MIN 310 AC-FT 759360
WTR YR 1988 TOTAL 374693 MEAN 1024 MAX 2800 MIN 160 AC-FT 743200

PLATTE RIVER BASIN

06790500 NORTH LOUP RIVER NEAR ST. PAUL, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1974 to September 1978.

WATER TEMPERATURES: July 1974 to September 1978.

SUSPENDED SEDIMENT DISCHARGE: April 1946 to June 1953.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 426 microsiemens Jan. 18, 1976; minimum daily, 138 microsiemens Oct. 21, 1977.

WATER TEMPERATURES: Maximum, 34.0°C July 17, 1978; minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 17,400 mg/L Apr. 27, 1951; minimum daily, not determined.

SEDIMENT LOADS: Maximum daily, 463,000 tons June 22, 1947; minimum daily, 20 tons Aug. 3, 1946, Feb. 22, 1953.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)
OCT						
20...	1020	712	249	8.24	6.5	11.6
NOV						
09...	1040	877	255	8.35	4.5	12.2
DEC						
01...	1110	1100	238	8.11	2.0	12.6
JAN						
14...	1000	756	251	7.87	0.5	12.0
FEB						
02...	1025	1100	214	7.61	0.5	11.0
MAR						
15...	1120	1350	275	8.07	0.5	12.4
APR						
06...	1020	1070	260	8.32	11.0	10.2
MAY						
18...	0920	907	233	8.75	20.0	9.1
JUN						
29...	1510	265	293	8.83	27.0	7.4
JUL						
18...	1240	494	244	8.84	31.5	7.3
AUG						
29...	1030	629	249	8.72	21.0	10.1
SEP						
20...	1010	1490	209	8.17	15.0	9.5

DATE	TIME	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
MAR											
15...	1120	19	110	0	33	5.6	9.1	0.4	6.5	119	11
JUL											
18...	1240	22	120	0	36	6.1	9.0	0.4	8.6	127	11

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	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)
MAR											
15...	2.1	0.30	43	185	0.25	676	0.750	--	30	48	4
JUL											
18...	2.5	0.30	31	181	0.25	241	<0.100	0.100	40	5	8

PLATTE RIVER BASIN

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06791500 CEDAR RIVER NEAR SPALDING, NE

LOCATION.--Lat 41°42'41", long 98°26'48", in NE1/4NE1/4NE1/4 sec.15, T.20 N., R.10 W., Greeley County, Hydrologic Unit 10210010, on left bank 15 ft downstream from bridge on county road, 0.4 mi upstream from small tributary, and 4.7 mi northwest of Spalding.

DRAINAGE AREA.--762 mi², approximately, of which about 50 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1944 to September 1953, October 1957 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WDR NE-73: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,896.24 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 4, 1961, at two sites 6.5 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Dec. 13, 17, 31 and Jan. 1 to Feb. 17. Records good except for periods of estimated record, which are poor. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--40 years, 164 ft³/s, 118,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft³/s June 23, 1947, gage height, 7.50 ft, site and datum then in use, from rating curve extended above 640 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 30 ft³/s Jan. 30, 1946.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 22	2230	(a)	*4.63	May 23	0400	532	4.18
Mar. 14	1130	357	3.75	May 24	0200	559	4.24
May 7	1300	*564	4.25	July 20	0700	310	3.62

a Backwater from ice.

Minimum daily discharge, 145 ft³/s June 27, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	193	201	170	180	381	181	232	215	195	159	154
2	174	194	201	170	170	378	225	231	210	188	158	156
3	169	195	200	170	170	402	254	282	230	175	159	155
4	174	193	198	165	170	405	258	365	255	172	171	155
5	180	191	195	165	170	348	266	374	290	170	174	154
6	180	189	195	165	175	309	264	467	278	160	169	154
7	178	192	193	160	180	288	254	514	267	146	163	154
8	180	193	197	160	180	285	241	412	234	154	169	155
9	178	193	201	160	180	280	226	265	202	174	169	157
10	177	193	203	170	160	285	210	249	170	197	166	158
11	180	193	202	180	180	291	202	225	169	167	162	157
12	183	194	199	190	195	274	202	201	166	166	161	156
13	182	194	200	190	220	182	197	162	168	165	172	159
14	182	194	197	190	250	275	146	167	212	168	171	165
15	183	198	196	200	280	239	170	165	239	156	168	173
16	185	207	196	210	350	169	184	162	244	164	165	172
17	188	210	195	210	300	195	183	160	226	163	161	170
18	190	202	193	210	260	206	187	160	166	161	158	168
19	190	200	193	200	263	213	184	159	207	204	157	173
20	188	198	194	180	262	217	184	177	214	276	153	190
21	187	196	193	170	261	219	185	218	205	238	154	183
22	186	195	193	170	270	226	194	266	168	205	156	179
23	186	195	191	180	271	229	206	421	157	165	158	174
24	186	195	190	190	272	228	212	469	153	174	157	169
25	187	193	193	180	269	221	210	329	148	169	156	166
26	192	193	193	210	272	211	242	411	147	164	156	166
27	192	192	201	220	280	207	250	420	145	160	155	167
28	190	197	198	220	302	204	248	328	145	157	155	226
29	190	199	200	230	323	196	249	292	146	159	154	236
30	190	199	204	230	---	188	243	250	158	160	154	218
31	191	---	180	220	---	180	---	222	---	159	154	---
TOTAL	5695	5870	6085	5835	6815	7931	6457	8755	5934	5431	4994	5119
MEAN	184	196	196	188	235	256	215	282	198	175	161	171
MAX	192	210	204	230	350	405	266	514	290	276	174	236
MIN	169	189	180	160	160	169	146	159	145	146	153	154
AC-FT	11300	11640	12070	11570	13520	15730	12810	17370	11770	10770	9910	10150

CAL YR 1987 TOTAL 91292 MEAN 250 MAX 2240 MIN 101 AC-FT 181100
WTR YR 1988 TOTAL 74921 MEAN 205 MAX 514 MIN 145 AC-FT 148600

PLATTE RIVER BASIN

06792000 CEDAR RIVER NEAR FULLERTON, NE
(National stream-quality accounting network station)

LOCATION.--Lat 41°23'36", long 98°00'15", in NE1/4NE1/4 sec.4, T.16 N., R.6 W., Nance County, Hydrologic Unit 10210010, on left upstream bank near county bridge, 3 mi northwest of Fullerton and 7.2 mi, upstream from mouth.

DRAINAGE AREA.--1,220 mi², approximately, of which about 480 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1931 to June 1932, October 1940 to current year.

REVISED RECORDS.--WSP 1086: Drainage area. WSP 1390: 1932, 1941, 1943. WSP 1710: 1951(P), 1952(M), 1953, 1955(M).

GAGE.--Water-stage recorder. Datum of gage is 1,638.39 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 5, 1942, nonrecording gage; Nov. 5, 1942, to June 23, 1947, water-stage recorder; June 24, 1947, to Apr. 6, 1948, nonrecording gage; Apr. 7, 1948, to Apr. 15, 1971, water-stage recorder, all on downstream side of bridge pier at datum 2.00 ft higher; Apr. 16, 1971, to Aug. 26, 1980, on downstream side of bridge pier and Aug. 27, 1980, to Mar. 5, 1987, on left bank upstream from bridge both at present datum. Mar. 5, 1987 to Apr. 19, 1988, on left bank 400 ft downstream from county bridge.

REMARKS.--Estimated daily discharges: Dec. 29 to Feb. 29, Mar. 16, and Apr. 14, 15. Records good except for periods of estimated record, which are poor. Natural flow affected by power developments, ground-water and surface-water withdrawals for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--48 years (1940-88), 250 ft³/s, 181,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,700 ft³/s Aug. 13, 1966, gage height, 16.90 ft, present datum, from high point on surge, from rating curve extended above 6,600 ft³/s on basis of flow-over-highway-embankment and contracted-opening measurement of peak flow; minimum daily, 30 ft³/s July 18, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 20	2010	(a)	*4.55	No peaks greater than base discharge.			
May 24	0838	*620	3.20				

a Backwater from ice.

Minimum daily discharge, 110 ft³/s June 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	264	245	270	220	290	371	262	310	337	195	141	169
2	259	254	276	210	260	421	305	310	328	238	123	254
3	255	320	273	220	245	435	333	326	310	256	113	277
4	247	280	268	220	240	470	332	345	313	228	178	176
5	244	263	264	210	235	467	334	416	335	187	194	149
6	236	259	257	210	230	439	340	429	359	163	196	161
7	236	236	250	210	260	430	333	488	384	144	197	163
8	239	222	255	210	300	449	309	476	387	206	208	158
9	240	240	272	210	290	427	282	398	350	158	201	159
10	248	248	269	215	280	374	268	347	301	151	207	169
11	259	267	269	230	280	414	259	327	287	193	189	168
12	255	270	262	250	290	417	243	315	251	220	165	163
13	267	267	255	230	330	358	209	330	275	189	207	180
14	269	270	265	220	390	343	195	228	271	160	218	198
15	274	295	264	240	380	372	250	229	256	151	199	228
16	330	268	236	280	420	350	249	244	243	207	181	238
17	282	322	218	270	540	278	243	235	260	177	151	230
18	276	285	241	270	500	288	248	226	251	202	140	222
19	274	288	267	260	450	303	267	225	220	218	136	227
20	278	278	267	250	380	319	298	225	188	302	115	230
21	270	277	262	250	360	322	291	270	189	311	121	248
22	263	273	277	240	350	309	283	326	183	323	129	252
23	263	258	268	250	340	309	297	357	164	265	139	232
24	270	266	249	270	340	298	305	465	148	231	139	215
25	295	274	249	250	350	298	309	468	133	203	145	207
26	317	281	218	270	350	326	335	386	124	195	137	212
27	299	267	232	280	360	335	328	439	118	184	145	219
28	282	278	242	320	370	333	322	464	124	141	153	396
29	270	279	240	350	370	330	325	414	110	157	160	422
30	263	269	240	340	---	298	314	379	124	162	164	382
31	269	---	235	320	---	262	---	314	---	154	157	---
TOTAL	8293	8099	7910	7775	9780	11145	8668	10711	7323	6271	5048	6704
MEAN	268	270	255	251	337	360	289	346	244	202	163	223
MAX	330	322	277	350	540	470	340	488	387	323	218	422
MIN	236	222	218	210	230	262	195	225	110	141	113	149
AC-FT	16450	16060	15690	15420	19400	22110	17190	21250	14530	12440	10010	13300

CAL YR 1987 TOTAL 132267 MEAN 362 MAX 4280 MIN 97 AC-FT 262400
WTR YR 1988 TOTAL 97727 MEAN 267 MAX 540 MIN 110 AC-FT 193800

PLATTE RIVER BASIN

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06792000 CEDAR RIVER NEAR FULLERTON, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958-59, 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1974 to September 1983.

WATER TEMPERATURES: July 1974 to September 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 550 microsiemens Jan. 1, 1978; minimum daily, 119 microsiemens Nov. 23, 1980.

WATER TEMPERATURES: Maximum, 36.0°C July 7, 1975; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT											
22...	1330	263	294	8.39	6.0	--	2	--	--	--	--
NOV											
17...	1435	286	300	8.17	5.5	730	42	5.8	12.4	220	900
DEC											
15...	1230	288	305	8.13	0.0	--	7	--	--	--	--
JAN											
14...	1420	222	329	7.80	0.0	721	6	8.2	11.7	K16	92
FEB											
11...	1305	280	292	7.59	0.0	--	6	--	--	--	--
MAR											
08...	1030	440	250	8.16	3.5	719	28	35	12.1	K170	500
APR											
06...	1350	334	273	7.97	12.5	--	18	--	--	--	--
MAY											
05...	1200	444	277	8.10	17.0	737	15	75	10.6	410	3000
JUN											
08...	1130	425	250	--	26.0	720	35	--	8.9	1000	1100
JUL											
06...	1215	164	235	8.99	29.5	728	17	34	10.7	310	390
AUG											
02...	1300	124	250	8.60	28.0	735	17	--	--	--	--
SEP											
29...	1345	425	--	7.82	15.5	730	55	93	8.8	K47000	K130000

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT											
22...	130	42	7.0	8.7	0.3	6.8	--	12	1.5	0.20	43
NOV											
17...	140	43	7.2	8.5	0.3	6.7	142	10	4.2	0.30	44
DEC											
15...	130	42	7.1	8.7	0.3	6.8	--	11	2.7	0.30	44
JAN											
14...	130	42	7.2	8.4	0.3	7.4	146	11	2.6	0.30	48
FEB											
11...	140	44	7.3	8.5	0.3	7.6	--	11	2.5	0.30	46
MAR											
08...	120	36	6.3	8.7	0.4	7.0	122	13	2.5	0.30	34
APR											
06...	130	39	6.9	8.9	0.4	6.6	--	17	2.4	0.30	39
MAY											
05...	120	38	6.6	9.4	0.4	9.1	--	14	2.1	0.30	36
JUN											
08...	100	32	5.6	9.3	0.4	5.8	--	11	2.1	0.30	33
JUL											
06...	110	35	5.6	7.6	0.3	6.6	116	7.3	1.6	0.20	43
AUG											
02...	110	36	6.0	7.9	0.3	6.7	--	11	1.5	0.20	40
SEP											
29...	110	34	6.6	7.7	0.3	8.7	122	13	2.7	0.20	32

PLATTE RIVER BASIN

06792000 CEDAR RIVER NEAR FULLERTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 22...	--	210	0.29	149	0.520	--	--	--	0.170	0.150	--
NOV 17...	206	212	0.28	159	0.540	0.020	--	--	0.240	0.170	0.140
DEC 15...	--	209	0.28	163	0.170	--	--	--	--	--	--
JAN 14...	215	219	0.29	129	0.840	0.100	0.50	0.60	0.220	0.180	0.160
FEB 11...	--	219	0.30	166	0.860	--	--	--	--	0.180	--
MAR 08...	178	185	0.24	170	0.560	0.080	--	--	0.190	0.150	0.120
APR 06...	--	206	0.28	185	0.350	--	--	--	--	0.050	--
MAY 05...	195	198	0.27	234	0.210	0.030	0.27	0.30	0.180	0.130	0.110
JUN 08...	--	171	0.23	196	<0.100	--	--	--	0.410	0.030	--
JUL 06...	177	176	0.24	78.4	<0.100	0.020	--	<0.20	0.260	0.190	0.160
AUG 02...	--	187	0.25	62.5	<0.100	--	--	--	--	0.160	--
SEP 29...	180	182	0.24	237	0.470	0.050	0.65	0.70	0.330	0.200	0.200

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 22...	1330	--	--	--	--	30	--	--	--	--	39
NOV 17...	1435	10	7	150	<0.5	--	<1	<1	<3	1	15
DEC 15...	1230	--	--	--	--	30	--	--	--	--	22
JAN 14...	1420	--	--	--	--	--	--	--	--	--	--
FEB 11...	1305	--	--	--	--	20	--	--	--	--	21
MAR 08...	1030	30	4	130	<0.5	20	<1	2	<3	2	71
APR 06...	1350	--	--	--	--	30	--	--	--	--	32
MAY 05...	1200	20	6	120	<0.5	30	<1	<1	<3	1	24
JUN 08...	1130	--	--	--	--	20	--	--	--	--	29
JUL 06...	1215	20	10	110	<0.5	--	<1	<1	<3	1	<3
AUG 02...	1300	--	--	--	--	30	--	--	--	--	33
SEP 29...	1345	--	--	--	--	30	--	--	--	--	--

PLATTE RIVER BASIN

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06792000 CEDAR RIVER NEAR FULLERTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
OCT 22...	--	--	9	--	--	--	--	--	--	--	--
NOV 17...	<5	15	19	<0.1	<10	<1	1	<1.0	230	<6	40
DEC 15...	--	--	16	--	--	--	--	--	--	--	--
JAN 14...	--	--	--	--	--	--	--	--	--	--	--
FEB 11...	--	--	25	--	--	--	--	--	--	--	--
MAR 08...	<5	17	12	<0.1	<10	3	<1	<1.0	200	<6	14
APR 06...	--	--	38	--	--	--	--	--	--	--	--
MAY 05...	<5	14	13	0.1	<10	8	1	<1.0	230	7	5
JUN 08...	--	--	4	--	--	--	--	--	--	--	--
JUL 06...	<5	16	3	<0.1	<10	<1	1	<1.0	210	14	<3
AUG 02...	--	--	15	--	--	--	--	--	--	--	--
SEP 29...	--	--	--	--	--	--	--	--	--	--	--

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 17...	1435	286	5.5	441	341	47
JAN 14...	1420	222	0.0	63	38	75
MAR 08...	1030	440	3.5	896	1060	41
MAY 05...	1200	444	17.0	1150	1380	62
JUL 06...	1215	164	29.5	243	108	35
SEP 29...	1345	425	15.5	1200	1380	56

06792500 LOUP RIVER POWER CANAL NEAR GENOA. NE

LOCATION.--Lat 41°25'03", long 97°47'37", in NE1/4NE1/4 sec.32, T.17 N., R.4 W., Nance County, Hydrologic Unit 10210009, at skimming weir on downstream end of settling basin on left bank, 2 mi downstream from point of diversion and 3.5 mi southwest of Genoa.

PERIOD OF RECORD.--December 1936 to current year.

GAGE.--Water-stage recorder and concrete weir. Datum of gage is 1,566.26 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1956, at datum 3.0 feet higher.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from Loup River in sec.6, T.16 N., R.4 W.; water is used in powerplants near Monroe and Columbus and is returned to Platte River 1.5 mi downstream from Loup River. Diversion began Dec. 2, 1936.

AVERAGE DISCHARGE.--51 years (water years 1938-88), 1,600 ft³/s, 1,159,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,410 ft³/s Apr. 27, 1944; no flow Aug. 16, 24-27, 30, 31, 1966, flood damage to canal was being repaired.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,820 ft³/s May 26; minimum daily, 10 ft³/s Dec. 16. 17. 21. 25-28. Jan. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2290	2340	2690	169	1080	906	2520	1980	2620	1630	806	876
2	2160	2310	2540	10	1150	1580	2660	1940	2580	2290	771	1010
3	2060	2270	2510	15	1180	2030	2610	2290	2570	2610	693	1070
4	2040	2300	2510	223	1200	2120	2620	2510	2670	2350	790	978
5	1920	2420	2520	571	1120	2130	2550	2560	2470	1840	1020	1150
6	1920	2430	2480	985	494	2120	2600	2580	2210	1530	1230	1170
7	2070	2310	2500	1210	682	2070	2490	2550	2310	1240	1260	1250
8	2000	2240	2490	1290	1090	2090	2380	2570	2170	1520	1490	865
9	1910	2650	2700	1250	1230	2190	2450	2600	2010	1170	1420	1760
10	2050	2680	2700	1100	621	1900	2540	2600	1860	1260	1350	1560
11	2210	2480	2570	670	474	2170	2530	2560	1730	1570	1350	1540
12	2150	2450	2600	918	998	2160	2420	2270	1520	1500	1200	1530
13	2070	2260	1850	770	1280	315	2190	2080	1430	1740	1210	1660
14	2030	2310	647	1160	1470	58	2320	2040	1390	1380	1320	1840
15	2140	2330	20	1360	1550	65	2300	1930	1310	1190	1590	2340
16	2160	2690	10	1740	1740	142	2280	1940	1300	1560	2080	2330
17	2120	2690	10	1740	1900	952	2260	1890	1330	1390	1710	2140
18	2150	2660	23	1670	2060	2120	2270	1830	1390	1220	1350	2200
19	2170	2660	76	687	2090	2290	2220	1720	1370	1250	1140	2170
20	2190	2720	55	874	1950	2250	2100	1640	1270	1210	1060	2320
21	2300	2590	10	1270	1960	1920	2050	1930	1030	1650	902	2450
22	2240	2720	52	1200	2030	2380	2120	2340	874	1660	884	2520
23	2180	2780	352	1230	2000	2540	2310	2710	774	1570	917	2530
24	2140	2770	262	1270	2060	2580	2330	2770	656	1510	916	2310
25	2290	2780	10	961	2080	2660	2080	2800	550	1310	904	2250
26	2530	2690	10	515	2020	2670	2180	2820	422	1140	822	2200
27	2580	2680	10	1010	1550	2550	2440	2780	352	1030	785	2200
28	2360	1180	10	1590	950	2280	2560	2650	305	916	746	2630
29	2250	1630	308	1590	565	2300	2220	2700	275	826	792	2630
30	2170	2670	356	1360	---	2470	2100	2550	702	867	835	2580
31	2210	---	460	1460	---	2360	---	2610	---	843	832	---
TOTAL	67060	73690	35341	31868	40574	58368	70700	72740	43450	44772	34175	56059
MEAN	2163	2456	1140	1028	1399	1883	2357	2346	1448	1444	1102	1869
MAX	2580	2780	2700	1740	2090	2670	2660	2820	2670	2610	2080	2630
MIN	1910	1180	10	10	474	58	2050	1640	275	826	693	865
AC-FT	133000	146200	70100	63210	80480	115800	140200	144300	86180	88810	67790	111200
CAL YR 1987	TOTAL 604067		MEAN 1655	MAX 3010	MIN 10	AC-FT 11980000						
WTR YR 1988	TOTAL 628797		MEAN 1718	MAX 2820	MIN 10	AC-FT 1247000						

PLATTE RIVER BASIN

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06793000 LOUP RIVER NEAR GENOA, NE

LOCATION.--Lat 41°25'05", long 97°43'25", in SW1/4NE1/4 sec.25, T.17 N., R.4 W., Nance County, Hydrologic Unit 10210009, on right bank 12 ft downstream from bridge on State Highway 39, 2 mi south of Genoa, 3 mi upstream from Beaver Creek, and 6 mi downstream from diversion dam of Loup River Public Power District.

DRAINAGE AREA.--14,400 mi², approximately, of which about 5,650 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--August 1928 to June 1932, October 1943 to current year (October 1953 to April 1955, monthly discharge only).

REVISED RECORDS.--WDR NE-74: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,540.13 ft above National Geodetic Vertical Datum of 1929. Aug. 17, 1928, to June 30, 1932, nonrecording gage at present site at datum 1.49 ft higher. Oct. 1, 1943, to Sept. 16, 1974, (Apr. 26 to Dec. 22, 1949, wire-weight gage only), at present site and datum. Sept. 17, 1974, to Nov. 21, 1977, at site 300 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 24 to Mar. 2. Records good except for period of estimated record, which is poor. Natural flow of stream affected by power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas. Records do not include flow of Loup River power canal (station 06792500), which diverts at point 6 mi upstream and returns to Platte River below mouth of Loup River; diversion began Dec. 2, 1936.

AVERAGE DISCHARGE.--45 years (water years 1944-88), 675 ft³/s, 489,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 129,000 ft³/s Aug. 13, 1966, gage height, 13.93 ft, from rating curve extended above 42,000 ft³/s on basis of indirect measurement of peak flow; no flow at times during 1956, 1959, 1961, 1963, 1970, 1973, 1974, 1975, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,600 ft³/s Feb. 27, gage height, 8.54 ft, backwater from ice; maximum gage height 8.99 ft Feb. 24, backwater from ice; minimum daily discharge, 7.6 ft³/s June 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	22	434	1600	1800	6600	199	18	36	18	35	110
2	20	21	360	1900	1800	5000	593	54	28	713	26	78
3	19	20	147	2100	2100	3620	1290	518	28	304	26	122
4	21	19	76	1700	2100	2630	1090	2540	27	87	34	121
5	17	19	95	1400	2000	2640	685	1840	28	72	44	74
6	16	21	95	900	2200	2720	609	1170	24	52	34	91
7	17	21	83	400	2900	2760	497	1170	34	50	29	133
8	15	20	105	450	2700	2580	303	1080	24	56	33	149
9	14	61	483	560	2600	2540	263	1590	22	43	32	80
10	14	80	555	800	2600	2410	425	1010	23	42	27	57
11	53	43	563	1500	2900	1980	280	235	22	46	25	52
12	22	34	286	1400	3300	2330	64	69	19	42	23	57
13	17	26	1030	1600	2900	4090	43	26	20	41	29	54
14	15	25	2310	2100	2700	3140	85	23	18	35	24	65
15	15	38	3050	2400	3300	2820	26	21	17	34	32	93
16	52	251	2780	2400	4000	2970	19	20	18	35	132	81
17	105	967	2450	2300	4200	2490	21	24	19	35	112	52
18	39	1000	2580	2000	4000	1410	32	31	17	31	82	48
19	23	753	2710	1900	3600	1360	37	23	16	48	109	51
20	18	468	3220	1900	4200	1320	17	27	15	35	102	44
21	16	346	3380	2100	4800	1510	17	38	13	35	118	42
22	15	183	3360	2200	5000	758	19	244	13	35	132	356
23	15	223	2980	2500	5200	913	45	2280	12	36	105	137
24	15	184	2800	2300	5000	884	136	1850	15	34	110	41
25	20	229	2900	2100	5600	1130	66	919	18	33	105	33
26	17	414	2300	2200	7000	906	25	774	17	34	110	30
27	15	462	1900	2400	7400	790	431	435	17	30	108	32
28	15	1840	1700	2600	7200	462	323	387	8.9	28	106	570
29	15	1520	1500	2600	7000	585	66	194	7.6	29	113	1810
30	26	470	1500	2500	---	384	20	73	14	34	119	1480
31	26	---	1300	2200	---	140	---	44	---	31	115	---
TOTAL	730	9780	49032	57010	112100	65872	7726	18727	590.5	2178	2231	6143
MEAN	23.5	326	1582	1839	3866	2125	258	604	19.7	70.3	72.0	205
MAX	105	1840	3380	2600	7400	6600	1290	2540	36	713	132	1810
MIN	14	19	76	400	1800	140	17	18	7.6	18	23	30
AC-FT	1450	19400	97250	113100	222400	130700	15320	37140	1170	4320	4430	12180

CAL YR 1987 TOTAL 427643 MEAN 1172 MAX 12300 MIN 14 AC-FT 848200
WTR YR 1988 TOTAL 332119.5 MEAN 907 MAX 7400 MIN 7.6 AC-FT 658800

PLATTE RIVER BASIN

06793500 BEAVER CREEK AT LORETTO, NE

LOCATION.--Lat 41°45'50", long 98°04'50", in NE1/4SE1/4 sec.26, T.21 N., R.7 W., Boone County, Hydrologic Unit 10210009, on left bank 5 ft downstream from county road bridge, at the west edge of Loretto.

DRAINAGE AREA.--311 mi², of which about 100 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1944 to September 1953, October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,785.95 ft above National Geodetic Vertical Datum of 1929. Prior to May 15, 1945, staff gage at bridge 25 ft upstream, May 15, 1945, to Aug. 16, 1946, water-stage recorder at site 85 ft upstream, Aug. 17, 1946, to Sept. 30, 1953, at site 5 ft downstream, all at present datum.

REMARKS.--Estimated daily discharges: Dec. 28 to Feb. 20 and Mar. 13-15. Records fair except for periods of estimated record, which are poor. There are diversions for irrigation above station during the summer period.

COOPERATION.--Records were furnished by Nebraska Department of Water Resources.

AVERAGE DISCHARGE.--18 years (water years 1945-53, 1980-88), 83.9 ft³/s, 60,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,570 ft³/s June 2, 1950, gage height, 11.74 ft; minimum daily, 12 ft³/s July 8, Aug. 8, 9, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 13	----	Ice Jam	*5.31	No peaks greater than base discharge.			
May 24	1640	*272	4.35				

Minimum daily discharge, 30 ft³/s Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	59	70	48	60	161	76	86	75	40	33	40
2	54	59	70	49	52	174	100	78	78	42	31	42
3	55	60	70	49	48	157	161	91	74	41	30	40
4	56	60	69	45	47	141	154	104	75	39	46	43
5	55	59	67	40	47	131	141	103	70	37	45	43
6	54	57	67	39	46	131	124	99	64	33	41	44
7	55	59	66	40	45	133	112	93	63	34	39	44
8	56	58	68	40	45	129	99	86	63	40	38	43
9	55	57	76	45	44	126	90	80	57	45	39	43
10	55	59	72	50	44	123	86	76	54	49	38	44
11	58	59	70	55	50	125	85	71	53	46	36	41
12	57	59	70	58	67	110	82	68	52	49	36	40
13	58	58	70	54	74	94	80	64	61	47	41	44
14	57	59	67	56	79	79	81	60	67	43	44	46
15	57	60	64	60	84	90	85	58	58	46	39	49
16	56	68	61	64	82	100	81	57	55	54	36	48
17	57	70	64	66	101	96	78	56	58	52	36	47
18	55	67	69	68	110	96	74	53	59	51	34	45
19	54	66	69	70	120	98	73	52	53	79	36	46
20	53	66	68	64	134	102	70	53	51	77	37	49
21	55	66	66	52	152	104	68	91	47	58	40	46
22	56	65	67	48	206	100	75	124	44	53	40	45
23	57	65	69	52	180	97	87	173	41	50	43	44
24	56	65	69	54	147	93	86	251	38	49	41	44
25	57	65	64	46	144	92	81	209	34	47	40	44
26	62	65	58	54	134	90	93	163	33	44	40	47
27	61	66	55	56	154	90	136	141	33	40	39	44
28	60	68	54	62	158	84	125	116	34	36	40	72
29	58	69	54	64	159	82	110	95	36	36	40	101
30	59	70	54	68	---	79	96	85	36	37	39	63
31	59	---	52	66	---	74	---	80	---	36	40	---
TOTAL	1753	1883	2029	1682	2813	3381	2889	3016	1616	1430	1197	1431
MEAN	56.5	62.8	65.5	54.3	97.0	109	96.3	97.3	53.9	46.1	38.6	47.7
MAX	62	70	76	70	206	174	161	251	78	79	46	101
MIN	53	57	52	39	44	74	68	52	33	33	30	40
AC-FT	3480	3730	4020	3340	5580	6710	5730	5980	3210	2840	2370	2840

CAL YR 1987 TOTAL 39221 MEAN 107 MAX 1470 MIN 30 AC-FT 77790
WTR YR 1988 TOTAL 25120 MEAN 68.6 MAX 251 MIN 30 AC-FT 49830

PLATTE RIVER BASIN

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06794000 BEAVER CREEK AT GENOA, NE

LOCATION.--Lat 41°26'32", long 97°44'11", in NE1/4SE1/4 sec.14, T.17 N., R.4 W., Nance County, Hydrologic Unit 10210009, on left bank in city park at southwest corner of Genoa, 0.2 mi downstream from Union Pacific Railroad bridge, 0.2 mi upstream from bridge on State Highway 39, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--647 mi², of which about 410 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1310: 1942(M). WDR NE-73: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,542.13 ft above National Geodetic Vertical Datum of 1929. October 1940 to Nov. 5, 1942, nonrecording gage and Nov. 6, 1942, to Nov. 1, 1955, water-stage recorder, at site 0.4 mi upstream at datum 4.62 ft higher.

REMARKS.--Estimated daily discharges: Dec. 27 to Feb. 17. Records fair except for period of estimated record, which is poor. Natural flow affected slightly by ground-water and surface-water withdrawals for irrigation.

AVERAGE DISCHARGE.--48 years, 127 ft³/s, 92,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft³/s July 19, 1950, gage height, 18.70 ft, site and datum then in use, from rating curve extended above 8,500 ft³/s; minimum daily, 0.41 ft³/s July 25, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	1830	(a)	*7.77	No peaks greater than base discharge.			
May 25	1110	*367	6.04				

a Backwater from ice.

Minimum daily discharge, 18 ft³/s Aug. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	96	106	70	110	245	108	143	149	39	23	30
2	85	96	101	74	106	235	118	131	127	40	20	44
3	84	96	102	76	114	242	129	130	116	43	18	40
4	84	95	104	70	116	220	184	128	114	41	27	38
5	88	91	104	64	110	192	187	141	110	36	41	37
6	86	91	102	62	108	176	163	142	106	30	43	39
7	86	91	101	68	114	175	143	141	112	25	41	41
8	86	92	103	66	118	201	129	133	107	35	41	43
9	86	92	110	70	114	193	121	125	98	40	40	42
10	88	91	114	76	104	212	109	118	91	33	36	44
11	89	90	116	74	108	190	105	113	84	34	31	45
12	88	90	110	72	112	180	108	109	80	33	26	44
13	90	90	113	70	118	139	99	104	79	30	31	45
14	95	90	114	76	140	118	96	99	81	30	33	51
15	99	94	100	86	180	118	95	94	88	27	33	64
16	97	106	116	92	210	136	96	90	87	29	30	66
17	90	104	107	92	230	143	96	88	83	42	25	64
18	87	103	117	98	260	130	92	86	82	45	23	62
19	87	102	119	100	280	129	90	84	85	64	24	62
20	88	104	114	94	350	130	89	83	79	192	24	63
21	88	103	106	86	310	135	87	92	71	90	26	64
22	88	102	110	92	300	138	86	112	63	60	29	66
23	88	103	108	102	290	136	88	206	55	51	32	65
24	88	100	115	96	270	132	96	234	48	46	32	65
25	90	108	110	92	260	130	100	353	43	43	32	64
26	95	102	108	88	250	127	107	296	38	38	29	64
27	96	109	100	94	240	123	106	241	31	34	27	66
28	96	107	92	102	221	121	148	215	25	31	30	106
29	94	115	80	112	229	116	186	180	24	25	28	91
30	93	112	74	120	---	113	160	152	34	25	27	144
31	93	---	68	118	---	111	---	133	---	24	29	---
TOTAL	2780	2965	3244	2656	5472	4886	3521	4496	2390	1355	931	1759
MEAN	89.7	98.8	105	85.7	189	158	117	145	79.7	43.7	30.0	58.6
MAX	99	115	119	120	350	245	187	353	149	192	43	144
MIN	84	90	68	62	104	111	86	83	24	24	18	30
AC-FT	5510	5880	6430	5270	10850	9690	6980	8920	4740	2690	1850	3490

CAL YR 1987 TOTAL 58943 MEAN 161 MAX 1370 MIN 29 AC-FT 116900
WTR YR 1988 TOTAL 36455 MEAN 99.6 MAX 353 MIN 18 AC-FT 72310

PLATTE RIVER BASIN
06794000 BEAVER CREEK AT GENOA, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL KF AGAR (COLS. PER 100 ML) (31673)
OCT 21...	1540	88	368	8.06	6.5	12.5	15	K210	880
NOV 17...	1600	100	339	7.83	5.5	12.1	22	550	3800
DEC 15...	1400	108	367	8.16	0.0	13.7	49	490	100
JAN 13...	1505	70	374	7.70	0.0	9.3	16	130	1300
FEB 10...	0930	104	359	7.11	0.0	11.6	11	73	4800
MAR 08...	1245	169	316	8.12	5.0	11.5	50	K100	3600
APR 05...	1450	187	286	8.11	12.0	9.5	63	540	1600
MAY 04...	1500	125	355	8.21	16.0	9.8	25	420	1300
JUN 08...	0930	118	350	8.39	24.0	8.0	47	3200	2300
JUL 06...	1430	34	366	8.62	31.0	8.8	34	1500	660
AUG 02...	1500	18	385	8.60	30.0	12.0	58	3500	1300
SEP 29...	1515	84	245	7.60	15.0	9.0	37	66000	62000

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 21...	180	56	9.1	11	0.4	13	3.5	93	0.13
NOV 17...	150	48	7.7	9.1	0.3	12	2.9	80	0.11
DEC 15...	160	52	8.3	9.8	0.3	15	3.9	89	0.12
JAN 13...	180	56	9.1	12	0.4	14	2.8	94	0.13
FEB 10...	160	52	8.3	10	0.4	14	2.8	87	0.12
MAR 08...	120	36	6.3	9.4	0.4	12	3.9	68	0.09
APR 05...	120	38	6.3	11	0.5	11	2.0	68	0.09
MAY 04...	170	52	8.7	12	0.4	12	3.5	88	0.12
JUN 08...	170	53	8.4	10	0.4	11	4.4	87	0.12
JUL 06...	170	55	8.5	11	0.4	12	2.8	89	0.12
AUG 02...	200	63	9.8	8.9	0.3	14	3.4	99	0.13
SEP 29...	120	38	5.2	6.6	0.3	8.1	6.9	65	0.09

PLATTE RIVER BASIN

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06794000 BEAVER CREEK AT GENOA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 21...	22.0	61	0.760	0.040	0.56	0.60	1.4	0.340	2.8
NOV 17...	21.5	98	0.950	0.330	0.58	0.91	1.9	0.390	2.9
DEC 15...	26.0	65	0.890	0.200	0.21	0.41	1.3	0.270	4.3
JAN 13...	17.7	5	1.10	0.210	0.70	0.91	2.0	0.410	2.7
FEB 10...	24.5	49	0.980	0.300	0.90	1.2	2.2	0.340	16
MAR 08...	30.8	253	0.830	0.150	1.5	1.7	2.5	0.600	8.4
APR 05...	34.5	934	0.700	0.100	3.3	3.4	4.1	0.160	11
MAY 04...	29.8	116	0.730	0.050	1.2	1.3	2.0	0.520	6.6
JUN 08...	27.7	406	0.720	0.080	1.3	1.4	2.1	0.830	6.6
JUL 06...	8.20	181	1.20	0.090	1.6	1.7	2.9	0.670	4.6
AUG 02...	4.82	183	0.030	0.040	1.9	1.9	1.9	0.770	6.6
SEP 29...	14.7	516	0.870	0.080	1.5	1.6	2.5	1.30	4.8

PLATTE RIVER BASIN

06795500 SHELL CREEK NEAR COLUMBUS, NE

LOCATION.--Lat 41°31'33", long 97°16'55", in NE1/4NW1/4 sec.23, T.18 N., R.1 E., Platte County, Hydrologic Unit 10200201, on right bank 80 ft upstream from county road bridge, 1 mi upstream from Loseke Creek, and 7 mi northeast of Columbus.

DRAINAGE AREA.--270 mi², approximately.

PERIOD OF RECORD.--August 1947 to September 1975, October 1977 to current year.

GAGE.--Water--stage recorder. Elevation of gage is 1,435 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 16 to Mar. 17. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--39 years, 44.1 ft³/s, 31,950 acre-ft/yr; median of yearly mean discharges, 40 ft³/s, 29,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,970 ft³/s June 3, 1950, gage height, 21.38 ft; maximum gage height, 22.11 ft May 20, 1982, backwater from log jam; minimum daily discharge, 0.4 ft³/s July 27, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1947, reached a stage of 21.7 ft, from floodmark, discharge, 4,600 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 22	1200	781	8.74	July 20	0700	*802	*8.88

Minimum daily discharge, 5.1 ft³/s Aug. 30, Sept. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	22	24	14	27	40	29	24	31	13	13	5.9
2	19	24	26	15	25	38	30	23	35	14	11	6.4
3	18	23	26	14	24	33	44	23	40	12	9.8	6.8
4	17	24	26	13	23	32	46	26	29	10	7.4	5.1
5	19	22	28	11	24	33	38	28	27	10	11	5.6
6	18	20	27	10	25	34	36	25	25	10	13	6.2
7	19	20	26	12	24	35	36	23	26	9.3	9.0	6.4
8	18	21	26	11	25	36	33	23	27	8.9	6.0	6.6
9	21	21	27	10	24	35	30	22	26	78	7.1	6.8
10	21	20	27	12	23	34	30	21	24	49	7.0	6.9
11	19	20	28	12	22	35	28	21	24	21	6.7	7.4
12	19	20	28	11	22	34	28	20	23	17	7.3	6.8
13	19	22	28	13	23	33	28	22	22	57	7.5	7.7
14	19	22	28	13	27	33	27	22	22	19	7.0	8.5
15	20	23	28	13	32	34	26	19	21	12	8.9	9.3
16	20	22	30	14	42	35	25	19	21	8.7	9.2	19
17	20	29	25	15	80	35	25	19	21	57	8.1	19
18	19	26	23	15	200	35	25	19	21	83	7.6	13
19	19	23	25	15	150	34	25	19	20	52	7.8	11
20	19	23	25	14	90	34	24	19	16	588	7.5	11
21	18	24	26	13	54	34	24	20	16	94	6.8	11
22	20	22	27	15	40	34	25	374	14	25	8.0	11
23	23	22	30	17	40	33	25	263	13	18	8.7	11
24	20	22	25	15	43	33	26	87	13	16	8.2	12
25	20	22	23	13	41	33	25	47	12	16	7.1	11
26	21	23	20	13	42	32	25	39	12	15	7.0	12
27	26	23	25	18	43	32	28	33	11	13	7.6	11
28	23	23	21	21	42	29	31	31	10	13	6.9	40
29	22	24	18	24	41	30	28	29	11	11	5.6	85
30	22	24	15	31	---	30	25	28	11	11	5.1	25
31	22	---	13	29	---	29	---	30	---	13	5.9	---
TOTAL	619	676	774	466	1318	1041	875	1418	624	1373.9	248.8	404.4
MEAN	20.0	22.5	25.0	15.0	45.4	33.6	29.2	45.7	20.8	44.3	8.03	13.5
MAX	26	29	30	31	200	40	46	374	40	588	13	85
MIN	17	20	13	10	22	29	24	19	10	8.7	5.1	5.1
AC-FT	1230	1340	1540	924	2610	2060	1740	2810	1240	2730	493	802

CAL YR 1987 TOTAL 18741 MEAN 51.3 MAX 1690 MIN 10 AC-FT 37170
WTR YR 1988 TOTAL 9838.1 MEAN 26.9 MAX 588 MIN 5.1 AC-FT 19510

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LOCATION.--Lat 41°27'10", long 96°45'50", in SE1/4 sec.7, T.17 N., R.6 E., Dodge County, Hydrologic Unit 10200201, on left bank 80 ft upstream from bridge on State Highway 79, 1 mi south of North Bend, and 5 mi downstream from Shell Creek.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 1,262.32 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 12, 1951, nonrecording gage and Sept. 12, 1951, to Sept. 30, 1970, water-stage recorder, at present site at datum 2.00 ft higher.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 112,000 ft³/s Mar. 29, 1960, gage height, 10.04 ft, present datum; maximum gage height, 15.55 ft Mar. 19, 1978, ice jam; minimum daily discharge, 36 ft³/s July 29, 1974.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4390	5480	6900	2000	5200	14900	2950	5100	5400	290	1220	1220
2	4970	5420	6360	1900	5000	14800	5010	5650	5200	360	815	1290
3	4630	5580	6370	2000	4900	11200	5400	5470	4790	540	888	1500
4	5140	5420	6670	2000	4800	12800	6930	6430	4980	1000	873	1340
5	5130	5450	6660	2100	4700	10500	6510	9020	4230	1740	895	1080
6	4430	4470	6110	2000	4600	9820	6730	8230	4330	2520	1060	1170
7	4740	4590	6120	2100	5200	8560	6440	6630	3770	4230	1280	1180
8	4770	4620	6550	2000	5600	8800	6260	7430	4100	2110	1570	1250
9	4960	4470	7070	2000	6200	8750	7190	6190	3760	2710	1490	1480
10	4930	4690	6890	2100	5600	8160	5550	7740	3710	2490	1650	1830
11	4770	5260	7340	2200	5400	8030	5490	7460	3540	1790	1910	1810
12	4920	4900	7030	2400	5600	8490	4970	6200	3130	2240	1400	1470
13	4690	4870	7320	2400	5400	7430	5650	5710	2490	1790	1210	1550
14	4710	4760	6500	2800	5000	6420	4880	5420	3310	2440	2170	1810
15	5420	4500	5900	3000	5000	4820	5180	5990	2060	1690	2370	2780
16	4720	5160	6400	3800	5200	5310	5090	5740	1680	1630	2500	3720
17	5370	4950	5590	4000	5200	5990	5140	5530	1600	1960	3070	3640
18	4950	6580	5480	4000	6000	6290	4400	4740	2730	1770	3600	3300
19	4550	6350	5720	3900	6400	5740	4320	4370	2330	2210	2820	3210
20	4780	5670	5800	3800	7000	7600	4180	5230	1660	3120	2630	3150
21	5540	5360	6210	4000	7800	6340	4740	3950	2250	3400	2130	3190
22	5240	5560	6410	4300	8800	5170	4820	5480	1360	2910	2400	3670
23	4560	5090	6400	4300	9800	5090	4200	7630	508	4050	1490	3820
24	3580	4800	5900	4100	10400	5330	3960	6930	580	5060	1870	3850
25	4990	3990	5400	4000	12000	5340	3820	6590	782	4500	1530	3960
26	4720	5280	4500	3900	14000	3760	4130	6090	445	3690	1440	3460
27	4810	4870	3500	4300	17000	5500	4270	6390	311	3140	1180	4280
28	4960	5970	2500	4600	16000	6410	4830	5660	319	2470	1200	3950
29	4730	6240	2300	5000	15500	4100	5230	5850	270	1180	843	5990
30	4720	5880	2300	5400	---	4260	6020	5230	250	2250	1410	6530
31	4710	---	2200	5200	---	2990	---	4900	---	1460	812	---
TOTAL	149530	156230	176400	101600	219300	228700	154290	188980	75875	72740	51726	82480
MEAN	4824	5208	5690	3277	7562	7377	5143	6096	2529	2346	1669	2749
MAX	5540	6580	7340	5400	17000	14900	7190	9020	5400	5060	3600	6530
MIN	3580	3990	2200	1900	4600	2990	2950	3950	250	290	812	1080
AC-FT	296600	309900	349900	201500	435000	453600	306000	374800	150500	144300	102600	163600
CAL YR 1987	TOTAL 2443256		MEAN 6694	MAX 43700	MIN 551		AC-FT 4846000					
WTR YR 1988	TOTAL 1657851		MEAN 4530	MAX 17000	MIN 250		AC-FT 3288000					

PLATTE RIVER BASIN
06796000 PLATTE RIVER AT NORTH BEND, NE--Continued
WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1972 to September 1977.

WATER TEMPERATURES: October 1972 to September 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 790 microsiemens June 25, 1973; minimum daily, 218 microsiemens Sept. 19, 1977.

WATER TEMPERATURE: Maximum, 29.5°C several days during summer periods; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 20...	1250	4140	367	8.08	7.0	11.7	21	K93	160
NOV 18...	1415	7370	508	8.22	5.5	12.3	32	200	400
DEC 17...	1045	5580	585	8.39	0.0	13.9	22	260	280
JAN 13...	1005	2370	661	7.98	0.0	12.8	10	490	250
FEB 09...	1330	6110	501	7.67	0.0	13.0	9	1000	2000
MAR 09...	1045	9320	589	8.32	4.0	13.1	30	K70	700
APR 05...	1045	7170	576	8.18	13.0	10.1	14	80	180
MAY 03...	1215	5800	575	8.56	14.0	10.7	12	K36	K68
JUN 07...	1330	5000	398	8.58	25.0	9.5	47	200	K68
JUL 05...	1125	1710	--	8.87	28.0	9.9	48	470	210
AUG 04...	1230	515	472	8.65	24.5	8.7	24	--	--
SEP 27...	1200	4400	--	8.62	20.0	10.4	29	100	140

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 20...	160	47	10	22	0.8	47	8.9	135	0.18
NOV 18...	190	51	14	36	1	91	12	204	0.28
DEC 17...	230	64	16	46	1	140	18	282	0.38
JAN 13...	260	76	18	51	1	130	17	288	0.39
FEB 09...	180	54	12	32	1	83	12	193	0.26
MAR 09...	210	60	15	41	1	130	18	264	0.36
APR 05...	210	60	15	46	1	130	19	270	0.37
MAY 03...	210	59	15	42	1	120	18	254	0.35
JUN 07...	150	40	12	33	1	77	12	174	0.24
JUL 05...	150	44	8.6	20	0.8	36	7.2	116	0.16
AUG 04...	180	51	12	30	1	62	13	168	0.23
SEP 27...	100	32	5.4	12	0.5	15	4.1	68	0.09

PLATTE RIVER BASIN

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06796000 PLATTE RIVER AT NORTH BEND, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 20...	1510	76	0.920	0.030	0.47	0.50	1.4	0.210	2.3
NOV 18...	4060	55	1.20	0.090	0.69	0.78	2.0	0.230	3.4
DEC 17...	4250	53	1.30	0.170	0.27	0.44	1.7	0.270	3.1
JAN 13...	1840	6	1.70	0.200	0.65	0.85	2.5	0.240	3.3
FEB 09...	3180	19	1.30	0.190	0.91	1.1	2.4	0.220	4.2
MAR 09...	6640	104	1.60	0.080	1.0	1.1	2.7	0.290	7.0
APR 05...	5230	236	1.30	0.080	1.2	1.3	2.6	0.320	5.4
MAY 03...	3980	69	0.450	0.050	1.2	1.2	1.7	0.220	5.1
JUN 07...	2350	176	<0.020	0.040	1.2	1.2	--	0.340	6.6
JUL 05...	535	222	0.230	0.030	1.6	1.6	1.8	0.150	4.6
AUG 04...	234	24	0.020	0.020	0.90	0.92	0.94	0.190	4.8
SEP 27...	814	116	0.070	<0.020	--	1.4	1.5	0.400	5.0

LOCATION.--Lat 42°29'12", long 98°54'42", in SW1/4NW1/4 sec.13, T.29 N., R.14 W, Holt County, Hydrologic Unit 10220001, on left bank 10 ft downstream from county road bridge, 4.0 mi southeast of Atkinson.

PERIOD OF RECORD.--October 1982 to current year.

REMARKS.--Estimated daily discharges: Dec. 16-18, Dec. 25 to Feb. 25, and Mar. 13-15. Records good except for periods of estimated daily discharges, which are poor. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--6 years (water years 1983-88), 126 ft³/s, 91,290 acre-ft/year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 640 ft³/s May 5, gage height, 6.25 ft; minimum daily, 11 ft³/s Aug. 26-28.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	25	26	20	20	413	74	154	123	30	12	12
2	21	26	26	21	20	455	81	137	120	29	12	12
3	22	26	26	21	19	440	108	251	112	29	15	12
4	22	25	26	20	19	415	134	507	97	28	24	13
5	23	25	25	21	20	389	136	617	86	27	22	13
6	22	25	25	21	20	353	138	585	77	24	21	12
7	22	25	25	21	21	332	133	489	71	22	19	13
8	23	25	25	21	21	300	120	397	65	21	19	13
9	21	24	25	21	22	287	104	334	57	21	18	13
10	22	24	25	22	24	318	91	290	50	21	17	14
11	23	25	26	21	25	324	84	246	47	27	16	13
12	23	26	25	22	25	241	80	205	44	31	15	16
13	24	26	25	22	26	100	74	170	43	29	17	15
14	23	25	24	22	26	100	69	143	41	28	16	15
15	24	25	27	23	27	105	66	123	39	25	15	18
16	24	28	30	23	28	110	64	91	38	23	14	17
17	24	27	29	24	30	111	62	79	38	22	12	17
18	24	26	28	24	31	114	58	70	36	21	12	17
19	24	26	27	24	33	126	57	63	35	20	12	21
20	24	26	29	23	36	171	56	59	33	19	12	19
21	25	26	29	23	40	227	53	63	32	19	12	19
22	25	26	31	22	45	210	54	105	29	18	16	17
23	25	26	25	21	60	172	59	217	28	17	14	17
24	24	25	24	21	80	146	67	308	27	17	13	17
25	25	25	24	21	140	129	74	357	26	16	13	18
26	26	25	24	21	168	114	88	364	25	16	11	18
27	25	25	23	22	195	105	148	307	25	15	11	20
28	24	25	22	23	228	95	226	246	24	14	11	19
29	25	26	22	23	287	86	218	200	23	14	12	29
30	25	25	21	20	---	79	186	165	25	14	12	26
31	25	---	21	20	---	76	---	137	---	13	12	---
TOTAL	732	764	790	674	1736	6643	2962	7479	1516	670	457	495
MEAN	23.6	25.5	25.5	21.7	59.9	214	98.7	241	50.5	21.6	14.7	16.5
MAX	26	28	31	24	287	455	226	617	123	31	24	29
MIN	21	24	21	20	19	76	53	59	23	13	11	12
AC-FT	1450	1520	1570	1340	3440	13180	5880	14830	3010	1330	906	982

CAL YR 1987	TOTAL 56391	MEAN 154	MAX 2160	MIN 15	AC-FT 111900
WTR YR 1988	TOTAL 24918	MEAN 68.1	MAX 617	MIN 11	AC-FT 49420

PLATTE RIVER BASIN

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06796973 ELKHORN RIVER NEAR ATKINSON, NE--Continued

WATER QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 22...	1115	25	232	7.66	6.5	12.9	5	4100	600
NOV 18...	1130	27	244	7.98	1.5	14.0	24	1800	960
DEC 16...	1340	30	242	7.55	0.5	13.6	9	570	410
JAN 12...	1245	22	278	6.98	0.5	10.7	6	1200	560
FEB 11...	0945	25	212	6.86	0.5	13.9	8	K3300	840
MAR 09...	1315	284	238	7.73	3.0	13.3	49	74	640
APR 07...	1050	136	281	7.98	12.5	10.0	56	100	230
MAY 05...	1430	636	286	7.96	12.0	9.4	62	1700	9800
JUN 03...	1440	108	310	8.18	25.5	8.9	47	440	130
JUL 28...	1120	16	254	8.70	25.5	7.8	20	800	210
AUG 26...	1110	11	242	8.61	19.0	10.4	<8	1200	500
SEP 23...	1130	18	239	8.62	16.0	9.2	<8	270	96

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 22...	91	30	4.0	11	0.5	10	3.1	58	0.08
NOV 18...	86	28	3.9	10	0.5	9.9	3.2	55	0.07
DEC 16...	89	29	4.0	10	0.5	10	4.2	57	0.08
JAN 12...	120	40	4.8	12	0.5	12	2.4	71	0.10
FEB 11...	92	30	4.1	11	0.5	12	3.0	60	0.08
MAR 09...	86	27	4.4	12	0.6	7.6	3.1	54	0.07
APR 07...	110	34	5.0	15	0.7	6.0	3.5	63	0.09
MAY 05...	110	35	5.4	17	0.7	5.7	2.5	66	0.09
JUN 03...	120	39	6.2	17	0.7	4.7	3.9	71	0.10
JUL 28...	97	32	4.2	8.8	0.4	8.8	2.9	57	0.08
AUG 26...	100	34	3.9	10	0.5	10	3.4	61	0.08
SEP 23...	89	30	3.5	9.2	0.4	7.8	3.8	54	0.07

PLATTE RIVER BASIN

06796973 ELKHORN RIVER NEAR ATKINSON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 22...	3.92	8	2.30	0.060	0.30	0.36	2.7	0.190	2.3
NOV 18...	4.01	11	2.40	0.130	0.43	0.56	3.0	0.230	2.7
DEC 16...	4.63	13	2.40	0.200	0.66	0.86	3.3	0.240	3.8
JAN 12...	4.23	<4	0.620	0.400	0.37	0.77	1.4	0.240	4.4
FEB 11...	4.06	4	2.80	0.280	0.35	0.63	3.4	0.310	3.4
MAR 09...	41.5	23	0.210	0.040	1.8	1.8	2.0	0.170	16
APR 07...	23.3	22	0.740	0.150	1.2	1.4	2.1	0.110	19
MAY 05...	113	11	0.020	0.090	2.1	2.2	2.2	0.180	26
JUN 03...	20.6	20	1.20	0.060	1.2	1.3	2.5	0.200	16
JUL 28...	2.45	12	1.20	0.050	1.0	1.1	2.3	0.210	3.9
AUG 26...	1.82	<4	1.80	0.060	0.40	0.46	2.3	0.240	3.5
SEP 23...	2.64	<4	1.70	0.040	--	<0.50	--	0.330	4.0

PLATTE RIVER BASIN

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06796978 HOLT CREEK NEAR EMMET, NE

LOCATION.--Lat 42°25'19", long 98°51'46", in SE1/4SW1/4 sec.5, T.28 N., R.13 W., Holt County, Hydrologic Unit 10220001, on left bank 12 ft downstream from bridge on county road, 4 mi southwest of Emmet.

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

GAGE.--Water-stage recorder. Datum of gage is 2,070.12 ft above National Geodetic Vertical Datum of 1929. (Levels by Nebraska Natural Resources Commission.)

REMARKS.--Estimated daily discharges: Dec. 12 to Mar. 3. Records good except for period of estimated record which is poor.

AVERAGE DISCHARGE.--10 years, 37.4 ft³/s, 27,100 acre-ft/yr; median of yearly mean discharge, 28 ft³/s, 20,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 948 ft³/s Mar. 19, 1987, gage height, 6.83 ft, from floodmark; maximum gage height, 7.61 ft Feb. 28, 1979, backwater from ice; minimum daily discharge, 0.10 ft³/s Jan. 24, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 254 ft³/s May 4, gage height, 5.42 ft; maximum gage height, 6.50 ft Feb. 19, backwater from ice; minimum daily discharge, .90 ft³/s Jan. 10, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	7.9	24	6.2	4.9	90	30	66	48	14	2.2	3.6
2	7.8	9.2	25	5.5	4.9	110	38	74	52	11	2.1	3.5
3	7.9	9.2	23	5.0	4.9	140	49	149	46	8.7	4.4	3.0
4	7.7	8.2	23	4.2	4.9	179	52	234	40	7.6	11	3.1
5	7.1	8.7	24	3.4	4.9	157	69	222	36	6.3	8.2	3.0
6	6.7	9.9	24	2.6	4.9	107	71	166	29	4.9	6.7	2.8
7	6.6	10	24	1.9	4.9	91	64	133	26	4.9	6.0	2.9
8	6.7	11	25	1.4	4.9	110	54	96	24	6.0	5.8	3.0
9	6.4	11	26	1.0	4.9	116	44	73	20	7.0	5.4	3.1
10	6.6	13	27	.90	4.9	97	38	64	16	6.4	5.0	3.1
11	7.0	13	27	.90	4.9	89	34	53	14	8.5	4.1	3.3
12	7.3	12	25	.94	4.9	44	32	46	13	8.7	3.6	9.5
13	7.1	11	21	1.1	4.9	115	29	40	13	6.9	6.8	6.6
14	6.8	11	17	1.3	5.0	149	28	34	12	5.9	5.4	6.4
15	6.9	11	14	1.5	5.0	128	26	29	11	5.5	3.9	9.4
16	6.8	16	11	1.8	5.1	105	24	25	9.8	5.8	2.8	8.2
17	6.8	17	10	2.2	5.4	86	22	21	11	6.1	2.5	6.4
18	6.3	18	9.6	2.5	5.8	62	21	19	9.7	5.4	8.8	6.3
19	6.1	21	9.2	2.9	6.8	55	21	19	9.0	6.1	7.5	14
20	6.1	18	9.0	3.3	10	70	19	18	7.9	5.9	6.4	12
21	7.0	18	9.0	3.7	14	76	17	29	7.3	5.3	5.7	10
22	6.4	17	9.0	4.0	20	66	22	66	6.4	4.5	8.5	8.2
23	6.2	16	8.8	4.3	35	53	28	140	6.0	4.1	7.1	7.2
24	6.1	17	8.8	4.5	50	47	33	191	5.3	4.0	5.7	5.9
25	6.7	19	8.8	4.6	40	37	33	236	4.5	3.9	4.6	5.3
26	8.4	19	8.7	4.7	45	35	49	192	4.6	3.7	4.3	5.0
27	8.2	19	8.6	4.8	52	24	94	143	4.5	3.5	4.1	5.1
28	8.1	21	8.2	4.9	64	33	125	104	4.6	2.7	4.1	7.2
29	7.6	22	7.8	4.9	78	30	117	79	5.0	3.2	4.2	8.9
30	7.2	24	7.2	4.9	---	26	90	65	8.6	3.4	3.9	9.1
31	6.8	---	6.8	4.9	---	44	---	51	---	2.6	3.7	---
TOTAL	218.2	438.1	489.5	100.74	504.8	2571	1373	2877	504.2	182.5	164.5	185.1
MEAN	7.04	14.6	15.8	3.25	17.4	82.9	45.8	92.8	16.8	5.89	5.31	6.17
MAX	8.8	24	27	6.2	78	179	125	236	52	14	11	14
MIN	6.1	7.9	6.8	.90	4.9	24	17	18	4.5	2.6	2.1	2.8
AC-FT	433	869	971	200	1000	5100	2720	5710	1000	362	326	367

CAL YR 1987 TOTAL 22627.4 MEAN 62.0 MAX 900 MIN 3.3 AC-FT 44880
WTR YR 1988 TOTAL 9608.64 MEAN 26.3 MAX 236 MIN .90 AC-FT 19060

PLATTE RIVER BASIN

06797500 ELKHORN RIVER AT EWING, NE

LOCATION.--Lat 42°16'03", long 98°20'11", in NW1/4SW1/4 sec.35, T.27 N., R.9 W., Holt County, Hydrologic Unit 10220001, on right bank 800 ft downstream from bridge on State Highway L-45B, 0.8 mi north of Ewing, and 1.5 mi upstream from South Fork Elkhorn River.

DRAINAGE AREA.--1,400 mi², approximately, of which about 740 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--August 1947 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,836.24 ft, above National Geodetic Vertical Datum of 1929, levels by Nebraska Department of Roads. Prior to Oct. 22, 1952, at site 300 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 15 to Mar. 2. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--41 years, 186 ft³/s, 134,800 acre-ft/yr; median of yearly mean discharges, 121 ft³/s, 87,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,500 ft³/s June 10, 1962, gage height, 10.60 ft; minimum daily, 5.2 ft³/s Sept. 6, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 11.32 ft June 23, 24, 1947, from floodmark at site 300 ft upstream, discharge, 6,600 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 5	2300	1020	5.57	May 27	1800	715	5.31
May 7	1130	*1080	*5.95				

Minimum daily discharge, 18 ft³/s Sept. 7, 8, 9, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	64	83	44	50	210	208	376	325	62	33	20
2	49	65	77	44	48	250	217	325	315	69	28	20
3	49	65	79	42	46	304	245	307	291	71	32	20
4	49	62	80	37	44	717	259	367	263	64	52	19
5	50	62	79	34	41	977	267	528	235	58	52	19
6	49	61	79	33	41	935	291	783	210	52	52	19
7	47	62	79	34	42	878	298	1020	191	48	49	18
8	49	66	83	34	42	777	289	969	174	47	51	18
9	51	64	84	34	43	735	266	815	158	47	45	18
10	51	62	80	36	43	732	237	645	144	48	42	19
11	53	63	82	37	43	730	216	501	133	52	39	18
12	56	64	81	40	44	720	201	411	125	57	35	22
13	56	64	76	42	44	500	188	348	123	58	38	28
14	57	65	63	44	45	334	180	290	118	58	36	34
15	57	67	62	45	46	337	175	245	109	52	33	38
16	56	75	56	44	47	340	166	211	101	50	30	38
17	57	78	58	42	48	347	160	184	100	48	27	38
18	57	78	64	41	50	335	153	165	95	46	29	37
19	55	76	66	40	52	334	147	151	90	52	31	47
20	54	74	68	41	56	344	145	145	83	49	31	53
21	56	76	68	43	60	352	140	161	77	44	31	54
22	56	77	68	45	66	364	142	213	71	42	44	51
23	59	76	68	46	70	391	155	361	65	40	41	47
24	60	75	60	46	80	399	162	461	61	37	36	45
25	61	76	54	43	95	375	162	528	57	34	32	44
26	66	77	50	44	110	316	178	617	54	32	28	43
27	66	78	50	47	130	277	209	690	52	31	26	42
28	65	80	49	50	145	259	251	689	50	29	25	49
29	64	80	48	54	160	241	307	591	49	32	23	54
30	64	77	47	56	---	230	377	469	51	55	22	59
31	63	---	44	54	---	219	---	377	---	42	21	---
TOTAL	1733	2109	2085	1316	1831	14259	6391	13943	3970	1506	1094	1031
MEAN	55.9	70.3	67.3	42.5	63.1	460	213	450	132	48.6	35.3	34.4
MAX	66	80	84	56	160	977	377	1020	325	71	52	59
MIN	47	61	44	33	41	210	140	145	49	29	21	18
AC-FT	3440	4180	4140	2610	3630	28280	12680	27660	7870	2990	2170	2040

CAL YR 1987 TOTAL 161355 MEAN 442 MAX 6570 MIN 30 AC-FT 320000
WTR YR 1988 TOTAL 51268 MEAN 140 MAX 1020 MIN 18 AC-FT 101700

PLATTE RIVER BASIN

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06798000 SOUTH FORK ELKHORN RIVER NEAR EWING, NE

LOCATION.--Lat 42°14'29", long 98°23'53", in SE1/4NE1/4 sec.7, T.26 N., R.9 W., Holt County, Hydrologic Unit 10220001, on right bank 17 ft downstream from bridge on county highway, 2.9 mi southwest of intersection with U.S. Highway 275 in Ewing and 5.5 mi upstream from mouth.

DRAINAGE AREA.--314 mi², approximately, of which about 190 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--July 1947 to September 1953, August 1960 to September 1972, October 1977 to current year. Prior to October 1977 station published as "at Ewing" at sites 4.5 mi downstream at different datum.

GAGE.--Water-stage recorder. Elevation of gage is 1,880 ft from topographic map. See WSP 1918 for history of changes prior to June 14, 1963.

REMARKS.--Estimated daily discharges: Dec. 25 to Feb. 28 and Mar. 13-16. Records fair except for periods of estimated record, which are poor.

COOPERATION.--Records were furnished by Nebraska Department of Water Resources.

AVERAGE DISCHARGE.--29 years (water years 1948-53, 1961-72, 1978-88) 53.6 ft³/s, 38,800 acre-ft/yr; median of yearly mean discharges, 53.0 ft³/s, 38,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,640 ft³/s Mar. 18, 1987, gage height, 7.59 ft; minimum discharge, 11 ft³/s Jan. 15, 1953.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 21, 1947, reached a stage of 7.22 ft, from floodmarks at site and datum then in use; discharge, about 3,400 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 3	2230	*257	1.88	May 25	1930	218	*1.99

Minimum daily discharge, 28 ft³/s Sept. 1, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	38	44	35	30	110	66	80	79	38	32	28
2	34	40	41	35	31	127	75	75	77	37	31	29
3	38	40	41	36	30	206	70	77	73	37	34	28
4	41	40	40	35	31	207	80	90	77	35	41	29
5	40	39	40	32	30	155	86	127	73	34	34	30
6	38	42	39	32	30	129	81	134	70	33	33	31
7	38	42	40	33	33	124	86	131	78	32	32	31
8	38	42	42	33	35	105	81	113	67	34	32	31
9	37	44	43	34	34	105	75	96	60	35	31	32
10	37	46	42	35	33	116	72	91	56	35	30	33
11	39	46	43	36	32	116	69	82	57	39	29	32
12	40	46	44	37	32	96	69	81	56	40	29	33
13	40	46	46	39	34	80	69	79	57	37	34	33
14	42	46	50	40	34	75	68	77	53	35	31	34
15	42	44	55	41	35	76	66	74	51	33	30	36
16	41	45	66	41	35	77	67	73	50	34	30	36
17	41	43	69	41	38	81	66	71	51	33	30	36
18	41	43	61	40	40	83	64	69	49	32	33	35
19	42	41	56	40	41	83	65	68	51	36	34	42
20	42	43	57	39	43	82	64	68	47	35	35	39
21	42	44	60	36	45	86	65	74	46	34	35	38
22	43	43	52	36	47	90	68	82	43	34	44	36
23	43	41	45	37	56	86	71	102	41	33	37	34
24	43	41	46	36	58	88	68	143	39	32	34	35
25	43	42	46	32	66	86	65	197	37	31	33	36
26	43	42	44	32	74	77	75	204	36	30	33	36
27	43	43	44	33	82	76	75	180	37	31	33	34
28	40	43	43	35	90	73	87	152	36	31	32	42
29	41	44	42	35	102	76	99	116	35	32	31	41
30	40	44	42	34	---	75	90	96	35	34	29	37
31	39	---	40	32	---	70	---	83	---	33	29	---
TOTAL	1246	1283	1463	1112	1301	3116	2202	3185	1617	1059	1015	1027
MEAN	40.2	42.8	47.2	35.9	44.9	101	73.4	103	53.9	34.2	32.7	34.2
MAX	43	46	69	41	102	207	99	204	79	40	44	42
MIN	34	38	39	32	30	70	64	68	35	30	29	28
AC-FT	2470	2540	2900	2210	2580	6180	4370	6320	3210	2100	2010	2040

CAL YR 1987 TOTAL 48229 MEAN 132 MAX 4180 MIN 28 AC-FT 95660
WTR YR 1988 TOTAL 19626 MEAN 53.6 MAX 207 MIN 28 AC-FT 38930

PLATTE RIVER BASIN

06798300 CLEARWATER CREEK NR CLEARWATER, NE

LOCATION.--Lat 42°08'20", long 98°12'10", in SW1/4NW1/4 sec.13, T.25 N., R.8 W., Antelope County, Hydrologic Unit 10220001, on left bank at downstream side of county road bridge, 0.5 mi west and 2 mi south of Clearwater, and about 3 mi upstream from mouth.

DRAINAGE AREA.--210 mi², approximately, of which about 130 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--July 1961 to September 1964, October 1977 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,810 ft above National Geodetic Vertical Datum of 1929 from topographic map. Prior to Sept,ire-weight gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 16, 17, and Dec. 26 to Feb. 19. Records good except those for estimated periods, which are poor.

COOPERATION.--Records were furnished by Nebraska Department of Water Resources.

AVERAGE DISCHARGE.--14 years (water years 1962-64, 1978-88), 44.6 ft³/s, 32,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1510 ft³/s Mar. 18, 1987, gage height, 9.00 ft; maximum gage height, 9.00 ft Aug. 5, 1981 and Mar. 18, 1987; minimum daily discharge, 4.4 ft³/s Aug. 8, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 28	2130	*135	*4.34	May 24	1100	108	4.16

Minimum daily discharge, 10 ft³/s Aug. 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	36	31	25	21	128	36	42	37	27	13	14
2	24	35	31	26	25	115	52	38	40	27	13	14
3	27	35	33	25	23	99	68	48	38	24	13	15
4	29	32	32	22	23	84	75	49	35	26	18	16
5	25	32	31	22	25	77	64	53	33	20	19	18
6	26	34	31	20	27	78	55	47	30	16	17	17
7	26	35	31	20	30	79	50	50	30	15	17	17
8	27	33	32	21	35	74	43	47	28	19	18	17
9	25	33	35	20	34	75	37	45	26	28	18	19
10	25	32	36	23	30	75	35	39	24	24	17	20
11	27	33	36	26	25	71	36	36	22	25	14	20
12	28	32	34	26	35	64	34	39	23	26	11	20
13	29	31	33	24	38	55	33	38	25	23	16	22
14	29	30	34	32	36	55	32	38	25	20	17	24
15	30	31	36	35	36	50	31	35	25	17	15	28
16	28	39	30	33	40	47	31	34	24	18	12	26
17	30	33	29	35	45	45	30	29	25	18	12	25
18	29	31	31	32	50	46	31	27	22	16	10	23
19	29	30	31	28	60	48	32	28	22	17	10	28
20	29	29	32	25	66	51	34	32	22	20	11	28
21	30	30	34	20	70	52	35	47	20	18	12	26
22	32	30	27	23	78	51	39	61	24	17	17	24
23	32	29	27	27	69	46	44	84	25	15	16	22
24	31	29	27	25	67	43	43	101	23	16	15	22
25	32	29	30	22	60	41	40	84	21	16	14	23
26	37	29	30	25	74	39	51	63	19	14	14	27
27	32	29	29	26	94	39	62	47	18	14	15	24
28	32	29	29	30	119	36	66	40	16	13	16	32
29	33	30	29	35	130	37	56	35	16	13	16	28
30	35	31	29	30	---	36	46	36	20	15	13	27
31	35	---	25	25	---	35	---	36	---	14	13	---
TOTAL	909	951	965	808	1465	1871	1321	1428	758	591	452	666
MEAN	29.3	31.7	31.1	26.1	50.5	60.4	44.0	46.1	25.3	19.1	14.6	22.2
MAX	37	39	36	35	130	128	75	101	40	28	19	32
MIN	24	29	25	20	21	35	30	27	16	13	10	14
AC-FT	1800	1890	1910	1600	2910	3710	2620	2830	1500	1170	897	1320

CAL YR 1987 TOTAL 26581 MEAN 72.8 MAX 1210 MIN 18 AC-FT 52720
WTR YR 1988 TOTAL 12185 MEAN 33.3 MAX 130 MIN 10 AC-FT 24170

PLATTE RIVER BASIN

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06798500 ELKHORN RIVER AT NELIGH, NE

LOCATION.--Lat 42°07'20", long 98°01'40", in SE1/4NE1/4 sec.20, T.25 N., R.6 W., Antelope County, Hydrologic Unit 10220001, on right bank 30 ft downstream from bridge on old State Highway 14 at Neligh.

DRAINAGE AREA.--2,200 mi², approximately, of which about 1,200 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1930 to September 1958, August 1960 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1006: 1935, 1942. WSP 1390: 1931-32, 1937(M). WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,714.00 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 16, 1933, nonrecording gage at site 10 ft downstream at present datum. Apr. 16, 1933, to Jan. 23, 1939, nonrecording gage at bridge 30 ft upstream at present datum. Jan. 24, 1939, to Oct. 9, 1958, and Aug. 8, 1960, to Sept. 8, 1970, water-stage recorder at site 20 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 16 to Feb. 27, and Mar. 14-17. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--56 years, 308 ft³/s, 223,100 acre-ft/yr; median of yearly mean discharges, 240 ft³/s, 174,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s Mar. 19, 1987, gage height, 11.99 ft; maximum gage height, 12.53 ft June 23, 1947; minimum daily, 12 ft³/s July 2, 1932.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 29, 1960, reached a stage of 12.24 ft, from floodmark, discharge, 12,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 6	1845	*1510	*5.41	May 26	1430	1150	4.83
May 7	1530	1330	5.19				

Minimum daily discharge, 51 ft³/s Aug. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	180	218	100	210	897	332	591	550	137	72	62
2	141	183	221	106	200	896	367	539	500	160	59	64
3	140	182	223	94	190	787	450	531	469	155	57	62
4	147	175	211	86	185	978	482	523	428	155	94	62
5	150	171	208	78	180	1200	523	664	391	135	112	61
6	145	177	208	88	180	1360	536	934	348	113	96	63
7	144	194	206	100	180	1250	529	1230	335	99	93	61
8	149	188	209	98	180	1100	510	1230	316	100	96	63
9	148	181	222	92	180	1050	474	1080	277	118	91	64
10	149	175	213	96	170	949	420	864	250	119	80	65
11	156	176	214	100	170	890	382	726	219	121	74	63
12	162	175	204	108	170	823	354	604	203	152	64	62
13	165	172	194	120	170	661	333	515	203	140	69	78
14	166	183	190	130	175	500	315	448	200	129	73	88
15	166	209	169	135	180	400	290	394	186	118	65	112
16	165	244	145	135	180	430	280	344	176	110	59	116
17	159	233	165	140	190	500	271	317	178	102	52	108
18	155	205	190	140	200	512	265	288	178	96	51	102
19	153	204	195	140	210	481	257	262	173	102	63	117
20	152	198	180	145	240	494	256	281	164	123	69	134
21	149	198	170	150	250	529	254	418	152	107	68	129
22	154	200	180	150	270	552	266	468	141	95	93	129
23	154	202	175	160	300	577	307	726	124	88	121	119
24	153	202	155	155	450	594	314	904	116	86	97	113
25	157	201	120	160	600	551	308	1020	116	85	83	110
26	172	206	94	170	800	477	349	1110	114	81	75	110
27	169	207	110	180	880	424	418	1100	101	75	70	113
28	165	213	120	190	800	399	465	1020	93	69	68	142
29	167	217	110	200	901	373	531	900	90	64	69	161
30	167	215	100	220	---	360	576	788	97	68	69	155
31	168	---	96	210	---	343	---	648	---	90	66	---
TOTAL	4832	5866	5415	4176	8991	21337	11414	21467	6888	3392	2368	2888
MEAN	156	196	175	135	310	688	380	692	230	109	76.4	96.3
MAX	172	244	223	220	901	1360	576	1230	550	160	121	161
MIN	140	171	94	78	170	343	254	262	90	64	51	61
AC-FT	9580	11640	10740	8280	17830	42320	22640	42580	13660	6730	4700	5730

CAL YR 1987 TOTAL 259335 MEAN 711 MAX 12600 MIN 81 AC-FT 514400
WTR YR 1988 TOTAL 99034 MEAN 271 MAX 1360 MIN 51 AC-FT 196400

PLATTE RIVER BASIN

06799000 ELKHORN RIVER AT NORFOLK, NE

LOCATION.--Lat 42°00'14", long 97°25'31", in SW1/4SW1/4 sec.34, T.24 N., R.1 W., Madison County, Hydrologic Unit 10220001, on left bank 200 ft downstream from U.S. Highway 81 bridge, 1 mi south of intersection of U.S. Highways 81 and 275, and 3.6 mi upstream from North Fork Elkhorn River.

DRAINAGE AREA.--2,790 mi², approximately, of which about 1,790 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1896 to November 1903 (no winter records), October 1945 to current year. Gage height records collected at site 200 ft upstream from May 10, 1941 to Sept. 26, 1945 are contained in reports of U.S. Weather Bureau. Published as "near Norfolk" from October 1957 to September 1977.

REVISED RECORDS.--WSP 1390: 1898-1900. WSP 1730: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,502.95 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to Aug. 30, 1958. Aug. 30, 1958, to July 27, 1978, water-stage recorder at site 3.2 mi upstream at datum 19.88 ft higher and July 28, 1978 to Mar. 18, 1987, present site at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Dec. 28 to Feb. 29 and Aug. 21, 23. Records fair except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--43 years, 520 ft³/s, 376,700 acre-ft/yr; median of yearly mean discharges, 425 ft³/s, 308,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s June 14, 1967, gage height, 8.52 ft, site and datum then in use; maximum gage height observed, 15.63 ft Mar. 11, 1949, at site 200 ft upstream at present datum, backwater from ice; minimum daily discharge, 33 ft³/s Aug. 3, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 13, 1944, reached a stage of 13.8 ft, at site 200 ft upstream at present datum, discharge, 14,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 21	1814	*1920	4.54	No peaks greater than base discharge.			
Feb. 19	1600	(a)	*5.50				

a Backwater from ice.

Minimum daily discharge, 83 ft³/s Sept. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	197	300	339	160	280	936	475	805	933	200	137	100
2	196	295	365	175	260	941	532	829	814	200	147	99
3	201	303	365	180	240	884	630	865	734	216	145	87
4	212	294	364	175	230	1010	672	856	692	212	159	87
5	219	276	358	165	230	1310	689	837	619	204	162	92
6	221	276	350	155	230	1500	736	958	556	190	184	87
7	222	281	340	160	220	1310	717	1280	507	168	180	87
8	231	291	350	160	217	1190	731	1510	488	453	171	83
9	235	281	393	170	215	1090	736	1230	451	451	172	86
10	231	279	397	175	210	1170	684	1220	419	272	166	96
11	231	284	380	180	210	1230	631	1180	390	301	160	99
12	242	293	362	185	205	1170	598	1080	366	349	149	100
13	257	312	347	195	210	811	565	962	361	324	136	106
14	259	316	318	200	220	563	542	869	509	300	142	114
15	261	320	308	205	230	451	520	781	414	338	149	163
16	264	356	310	210	250	536	512	715	342	959	155	188
17	266	352	266	215	270	602	498	647	329	477	148	189
18	269	349	314	220	310	626	465	590	336	312	134	171
19	271	327	358	230	350	581	456	538	331	278	140	173
20	271	315	371	215	390	573	450	567	324	312	132	185
21	262	319	362	215	430	588	443	1270	314	252	160	206
22	258	327	356	240	500	636	456	1090	306	228	164	211
23	258	324	368	260	550	655	479	856	274	197	192	200
24	264	319	361	250	600	706	509	1080	223	195	168	195
25	271	316	290	240	680	715	512	1160	213	186	153	181
26	299	313	295	260	890	679	564	1320	204	180	146	172
27	305	325	263	270	1060	635	635	1410	191	174	139	173
28	302	337	250	300	1100	627	677	1400	185	153	132	244
29	295	350	250	320	1000	582	688	1320	187	146	125	357
30	300	338	250	330	---	523	758	1200	203	143	120	376
31	306	---	195	300	---	472	---	1070	---	137	108	---
TOTAL	7876	9368	10195	6715	11787	25302	17560	31495	12215	8507	4675	4707
MEAN	254	312	329	217	406	816	585	1016	407	274	151	157
MAX	306	356	397	330	1100	1500	758	1510	933	959	192	376
MIN	196	276	195	155	205	451	443	538	185	137	108	83
AC-FT	15620	18580	20220	13320	23380	50190	34830	62470	24230	16870	9270	9340

CAL YR 1987 TOTAL 331221 MEAN 907 MAX 12100 MIN 102 AC-FT 657000
WTR YR 1988 TOTAL 150402 MEAN 411 MAX 1510 MIN 83 AC-FT 298300

PLATTE RIVER BASIN

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06799000 ELKHORN RIVER AT NORFOLK, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-69, 1974 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT									
27...	1445	376	332	8.31	9.0	12.0	5	K130	120
NOV									
17...	1430	355	340	8.23	5.0	11.9	24	3200	K17000
DEC									
21...	1550	410	364	8.41	0.5	14.2	14	93	220
JAN									
13...	1430	193	356	7.85	0.0	9.9	8	730	740
FEB									
16...	1645	486	330	7.51	0.0	10.7	15	1100	8000
MAR									
08...	1500	1160	237	7.85	3.0	12.5	72	K460	1200
APR									
13...	1645	947	336	8.38	15.0	9.4	30	200	330
MAY									
02...	1340	833	293	8.37	17.5	10.1	37	K110	160
JUN									
14...	1705	399	293	8.23	28.0	6.9	140	K11000	9500
JUL									
05...	1500	202	--	--	32.0	10.4	42	K140	440
AUG									
10...	1435	205	320	8.97	30.0	9.7	43	--	K100
SEP									
07...	1500	100	380	8.50	23.5	9.0	23	K93	130

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT									
27...	160	50	8.0	11	0.4	12	3.8	85	0.12
NOV									
17...	150	49	7.7	9.9	0.4	13	4.2	84	0.11
DEC									
21...	150	49	7.6	10	0.4	15	4.2	86	0.12
JAN									
13...	190	60	9.2	12	0.4	14	2.5	98	0.13
FEB									
16...	140	46	7.2	10	0.4	12	3.3	78	0.11
MAR									
08...	100	31	5.6	10	0.5	9.1	2.9	59	0.08
APR									
13...	140	45	7.2	12	0.5	10	4.0	78	0.11
MAY									
02...	130	40	6.4	14	0.6	7.5	3.1	71	0.10
JUN									
14...	130	39	6.9	9.0	0.4	7.2	2.9	65	0.09
JUL									
05...	150	48	7.0	11	0.4	10	3.3	79	0.11
AUG									
10...	150	49	7.1	11	0.4	9.3	4.0	80	0.11
SEP									
07...	170	55	7.5	9.4	0.3	12	3.4	87	0.12

PLATTE RIVER BASIN

06799000 ELKHORN RIVER AT NORFOLK, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 27...	86.1	16	0.770	0.230	1.1	1.3	2.1	0.200	3.2
NOV 17...	80.3	40	0.920	0.340	0.55	0.89	1.8	0.230	3.6
DEC 21...	95.0	71	1.10	0.220	0.46	0.68	1.8	0.250	4.0
JAN 13...	50.9	10	1.30	0.260	0.32	0.58	1.9	0.240	2.6
FEB 16...	103	10	1.20	0.370	0.16	0.53	1.7	0.240	4.7
MAR 08...	184	294	0.340	0.210	2.4	2.6	2.9	0.480	13
APR 13...	200	50	0.460	0.060	0.84	0.90	1.4	0.240	10
MAY 02...	160	57	0.210	0.030	1.4	1.4	1.6	0.280	13
JUN 14...	70.0	1420	1.10	0.740	6.5	7.2	8.3	1.20	12
JUL 05...	43.3	46	<0.020	0.050	1.4	1.4	--	0.300	7.2
AUG 10...	44.5	53	0.020	<0.020	--	1.1	1.1	0.320	6.5
SEP 07...	23.6	26	0.150	0.060	1.9	2.0	2.1	0.220	4.0

PLATTE RIVER BASIN

173

06799080 WILLOW CREEK NEAR FOSTER, NE

LOCATION.--Lat 42°10'38", long 97°40'02" in NW1/4NE1/4 sec.4, T.25 N., R.3 W., Pierce County, Hydrologic Unit 10220002, on left downstream bank at county road bridge, 6.8 mi south of Foster and 7.2 mi southwest of Pierce.

DRAINAGE AREA.--137 mi².

PERIOD OF RECORD.--October 1975 (monthly discharge only) to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,650 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 16, 17, Dec. 25 to Feb. 29, and Mar. 13-15. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--13 years, 15.4 ft³/s, 11,160 acre-ft/yr; median of yearly mean discharges, 10 ft³/s, 7,240 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 574 ft³/s Mar. 18, 1987, gage height, 7.94 ft; maximum gage height, 8.28 ft Feb. 24, 1983, backwater from ice; minimum daily discharge, 1.5 ft³/s Feb. 2, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 25	0830	*173	*5.91	No other peak greater than base discharge.			

Minimum daily discharge, 4.9 ft³/s Sept. 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	11	11	8.8	12	36	19	19	16	8.8	6.2	4.9
2	8.9	11	12	9.6	11	28	22	17	15	9.1	6.2	4.9
3	9.1	11	12	9.0	11	24	28	18	14	8.6	6.2	4.9
4	9.6	10	12	8.6	9.8	22	31	18	14	8.4	7.4	5.0
5	9.1	10	13	8.4	9.4	22	32	17	13	7.6	7.4	5.1
6	9.2	10	13	8.2	8.8	22	32	16	12	7.3	7.0	5.2
7	9.6	11	13	8.6	9.6	22	29	16	13	7.2	6.8	5.3
8	9.7	10	14	9.0	9.8	21	26	16	12	8.8	7.1	5.3
9	9.4	10	15	8.6	10	22	23	16	11	10	7.2	5.5
10	9.3	10	14	8.2	9.0	22	22	15	11	8.8	7.0	5.5
11	9.8	10	14	8.6	8.4	21	21	14	11	8.4	6.6	5.2
12	10	10	14	9.2	12	20	21	14	10	9.2	6.4	5.1
13	10	10	13	9.6	13	19	19	14	12	8.6	6.6	5.7
14	10	10	13	10	13	17	18	14	11	8.2	6.4	5.8
15	10	10	14	11	12	17	17	13	11	7.9	6.1	7.0
16	10	13	14	12	11	19	17	13	10	8.3	5.8	6.7
17	11	11	14	12	12	18	16	13	11	7.8	5.4	6.2
18	10	11	14	12	17	18	16	12	10	7.5	5.4	6.0
19	10	11	13	11	20	19	15	12	9.9	7.9	5.8	6.5
20	9.9	11	13	10	21	19	15	12	9.6	8.5	5.9	7.1
21	10	11	15	8.6	20	19	15	15	9.4	7.9	5.4	6.9
22	10	11	13	9.0	25	19	16	30	9.1	7.5	6.5	6.6
23	10	11	13	10	30	20	17	84	9.0	7.4	6.3	6.6
24	10	11	13	10	27	20	17	130	8.8	7.4	5.8	6.8
25	10	11	12	9.6	30	21	17	164	8.2	7.1	5.6	6.6
26	11	11	10	9.0	34	21	19	89	8.1	7.1	5.5	6.8
27	11	11	9.4	11	39	20	25	42	8.3	7.0	5.5	6.9
28	10	11	9.6	12	42	19	26	29	8.1	6.8	5.5	9.4
29	11	11	10	13	43	22	25	23	8.0	6.8	5.4	13
30	10	11	9.6	13	---	20	22	19	8.3	6.9	5.2	11
31	11	---	10	12	---	19	---	16	---	6.6	5.0	---
TOTAL	308.1	321	389.6	309.6	529.8	648	638	940	321.8	245.4	190.6	193.5
MEAN	9.94	10.7	12.6	9.99	18.3	20.9	21.3	30.3	10.7	7.92	6.15	6.45
MAX	11	13	15	13	43	36	32	164	16	10	7.4	13
MIN	8.9	10	9.4	8.2	8.4	17	15	12	8.0	6.6	5.0	4.9
AC-FT	611	637	773	614	1050	1290	1270	1860	638	487	378	384

CAL YR 1987 TOTAL 8812.5 MEAN 24.1 MAX 516 MIN 6.0 AC-FT 17480
WTR YR 1988 TOTAL 5035.4 MEAN 13.8 MAX 164 MIN 4.9 AC-FT 9990

PLATTE RIVER BASIN

06799100 NORTH FORK ELKHORN RIVER NEAR PIERCE, NE

LOCATION.--Lat 42°10'44", long 97°29'04", in SW1/4 sec.31, T.26 N., R.1 W., Pierce County, Hydrologic Unit 10220002, on left downstream wingwall of county road bridge, 2.5 mi southeast of Pierce.

DRAINAGE AREA.--700 mi², approximately, of which about 30 mi² is noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,553.07 ft above National Geodetic Vertical Datum of 1929 (U.S. Weather Bureau levels).

REMARKS.--Estimated daily discharges: Dec. 24 to Feb. 27 and Mar. 13-15. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--28 years, 92.1 ft³/s, 66,730 acre-ft/yr; median of yearly mean discharges, 72 ft³/s, 52,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft³/s Feb. 19, 1971, gage height, 15.10 ft; minimum daily, 3.8 ft³/s July 24, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 870 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 22	1930	(a)	*7.22	No peaks greater than base discharge.			
Feb. 28	1500	*310	5.36				

a Backwater from ice.

Minimum daily discharge, 5.4 ft³/s Aug. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	49	56	31	45	202	87	109	128	23	11	13
2	35	50	56	30	45	185	95	99	93	23	7.5	14
3	35	48	57	29	45	150	136	101	83	20	7.0	14
4	35	47	61	28	44	133	164	117	78	19	16	14
5	35	47	61	29	43	131	147	114	72	20	17	15
6	34	48	63	30	43	131	154	101	66	15	16	15
7	34	49	63	31	43	140	150	95	65	14	15	15
8	35	49	67	32	44	139	126	91	63	22	15	15
9	36	48	109	33	44	122	113	90	58	21	17	16
10	36	48	112	34	44	122	105	80	54	26	13	16
11	36	48	102	35	45	128	101	75	51	25	12	16
12	36	49	86	36	45	121	95	73	49	28	7.7	17
13	37	50	74	38	46	112	90	67	52	31	7.5	17
14	37	50	65	40	46	108	87	64	52	35	5.4	17
15	37	51	58	41	52	99	86	60	50	29	7.1	20
16	37	62	55	44	54	104	82	58	47	29	7.3	22
17	37	66	65	46	50	99	79	56	44	26	5.8	21
18	37	62	59	47	56	99	76	53	43	23	7.3	19
19	37	59	58	47	62	104	75	53	38	22	8.5	21
20	37	57	56	44	205	104	74	54	36	23	12	25
21	37	56	56	42	250	101	72	87	31	22	12	22
22	38	57	53	42	300	97	76	210	30	21	17	20
23	38	57	54	42	280	94	88	237	28	21	19	20
24	39	55	50	43	200	97	97	267	27	18	16	20
25	41	54	45	46	180	106	95	222	24	18	16	20
26	46	54	34	48	180	110	98	167	23	16	16	20
27	45	54	38	50	200	102	140	144	21	16	16	22
28	45	57	37	50	295	96	168	128	19	14	15	36
29	43	54	35	51	241	93	166	114	19	14	15	44
30	44	55	33	50	---	90	132	99	22	14	15	34
31	49	---	32	48	---	88	---	98	---	14	14	---
TOTAL	1184	1590	1850	1237	3227	3607	3254	3383	1466	662	386.1	600
MEAN	38.2	53.0	59.7	39.9	111	116	108	109	48.9	21.4	12.5	20.0
MAX	49	66	112	51	300	202	168	267	128	35	19	44
MIN	34	47	32	28	43	88	72	53	19	14	5.4	13
AC-FT	2350	3150	3670	2450	6400	7150	6450	6710	2910	1310	766	1190

CAL YR 1987 TOTAL 48332 MEAN 132 MAX 2400 MIN 27 AC-FT 95870
WTR YR 1988 TOTAL 22446.1 MEAN 61.3 MAX 300 MIN 5.4 AC-FT 44520

PLATTE RIVER BASIN

175

06799230 UNION CREEK AT MADISON, NE

LOCATION.--Lat 41°49'52", long 97°27'19", in SW1/4SE1/4 sec.32, T.22 N., R.1 W., Madison County, Hydrologic Unit 10220003, on left bank 12 ft downstream from bridge on U.S. Highway 81, in Madison.

DRAINAGE AREA.--174 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,549.70 ft, above National Geodetic Vertical Datum of 1929, levels by Nebraska Natural Resources Commission.

REMARKS.--No estimated daily discharges. Records good.

AVERAGE DISCHARGE.--10 years, 40.6 ft³/s, 29,410 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,630 ft³/s June 17, 1984, gage height, 22.90 ft; minimum daily, 3.6 ft³/s July 30, 31, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 18	2100	*365	*11.51	No peaks greater than base discharge.			
Minimum daily discharge, 6.3 ft ³ /s Aug. 18.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	25	26	24	36	36	25	23	31	14	7.5	11
2	17	21	27	24	32	34	36	23	33	13	6.9	13
3	17	22	27	24	29	30	48	29	28	9.3	6.8	14
4	17	21	28	23	27	29	41	27	26	9.4	12	16
5	17	20	29	23	25	30	34	27	25	8.8	10	17
6	17	21	29	22	25	30	33	24	24	7.9	10	18
7	18	22	28	22	25	32	33	23	25	7.0	9.3	18
8	18	22	32	20	25	31	29	22	24	9.4	9.9	18
9	18	21	35	20	25	29	28	23	21	26	10	19
10	19	25	34	20	24	30	26	22	21	11	9.3	19
11	19	23	31	20	23	29	27	22	20	11	7.7	17
12	19	22	30	20	24	27	26	21	20	9.9	6.8	18
13	19	22	29	20	35	23	27	20	19	9.6	8.8	18
14	20	22	28	20	68	25	25	20	18	7.9	9.0	21
15	21	26	27	21	43	25	25	20	17	9.8	8.6	30
16	20	33	26	23	84	25	25	20	16	15	7.5	29
17	23	32	25	24	219	26	25	20	17	11	7.4	24
18	21	25	26	24	264	26	24	20	15	11	6.3	23
19	21	23	27	26	217	27	25	19	13	14	6.9	25
20	20	22	27	25	115	27	25	38	12	81	6.8	26
21	20	23	28	25	76	26	24	60	12	32	6.9	24
22	20	23	27	24	99	26	27	143	11	16	10	23
23	20	23	28	24	57	26	27	136	11	14	10	24
24	20	23	27	24	39	27	27	46	11	13	9.2	24
25	22	24	26	24	35	27	26	34	9.8	12	9.0	24
26	24	23	25	24	35	26	32	29	9.5	10	9.0	26
27	24	24	27	24	36	26	31	28	9.1	8.9	9.2	28
28	21	25	27	25	38	25	29	27	8.7	7.0	9.1	37
29	20	26	27	28	37	25	26	27	9.3	7.9	9.1	29
30	21	26	27	42	---	25	24	29	12	7.9	9.1	22
31	22	---	26	50	---	25	---	33	---	8.0	9.9	---
TOTAL	612	710	866	759	1817	855	860	1055	528.4	432.7	268.0	655
MEAN	19.7	23.7	27.9	24.5	62.7	27.6	28.7	34.0	17.6	14.0	8.65	21.8
MAX	24	33	35	50	264	36	48	143	33	81	12	37
MIN	17	20	25	20	23	23	24	19	8.7	7.0	6.3	11
AC-FT	1210	1410	1720	1510	3600	1700	1710	2090	1050	858	532	1300

CAL YR 1987 TOTAL 19514.6 MEAN 53.5 MAX 1770 MIN 5.7 AC-FT 38710
WTR YR 1988 TOTAL 9418.1 MEAN 25.7 MAX 264 MIN 6.3 AC-FT 18680

PLATTE RIVER BASIN

06799350 ELKHORN RIVER AT WEST POINT, NE

LOCATION.--Lat 41°50'22", long 96°43'38", in SW1/4NW1/4 sec.34, T.22 N., R.6 E., Cuming county, Hydrologic Unit 10220003, on right bank near right downstream wingwall of bridge on State Highway 32 and 1 mi west of West Point.

DRAINAGE AREA.--5,100 mi², approximately, of which about 4,100 mi² contributes directly to surface runoff.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year. March 1960 to September 1972 (no winter records 1960-68) in files of Corps of Engineers. Gage-height records collected since 1940 are in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,291.26 ft above National Geodetic Vertical Datum of 1929. Prior to May 18, 1976, at site on left bank 50 ft upstream from bridge at same datum.

REMARKS.--Estimated daily discharges: Dec. 27 to Mar. 1. Records good except for period of estimated record, which is poor. Some small diversions above station for irrigation.

AVERAGE DISCHARGE.--20 years (water years 1969-88), 888 ft³/s, 643,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge estimated, 33,000 ft³/s June 25, 1969, gage height, 13.21 ft; maximum gage height, 16.09 ft Mar. 18, 1978, ice jam; minimum daily, 41 ft³/s Aug. 31, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 31, 1960 reached a stage of 16.09 ft, backwater from ice; observed by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	1719	(a)	*10.41	No other peak greater than base discharge.			
May 21	0212	*5090	8.72				

a Backwater from ice.

Minimum daily discharge, 148 ft³/s Aug. 21.

CORRECTIONS.--The stage of 19.09 ft listed under EXTREMES OUTSIDE PERIOD OF RECORD, published reports, 1979-87, is incorrect as a result of a typographical error. The correct stage should read 16.09 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	422	525	551	540	600	3400	791	997	1600	226	191	161
2	420	568	554	510	630	2920	871	988	1430	236	177	203
3	418	539	558	500	620	1870	1090	1020	1240	237	175	203
4	421	525	566	480	610	1620	1220	1060	1040	248	188	168
5	421	512	573	460	560	1750	1250	1020	935	255	217	157
6	419	510	579	450	540	2330	1320	984	856	238	238	159
7	419	512	583	440	540	2710	1370	1070	795	222	232	166
8	422	512	623	430	540	2390	1350	1420	753	201	256	167
9	425	512	652	430	540	1790	1310	2550	687	549	249	167
10	425	510	662	420	550	1420	1280	2220	640	871	232	168
11	428	506	742	410	550	1350	1170	1590	590	553	229	162
12	438	511	708	400	560	1630	1060	1220	552	862	214	163
13	446	512	658	400	580	1380	978	1050	522	504	199	164
14	449	512	624	400	600	1170	909	941	494	388	187	172
15	458	512	595	400	600	877	846	823	587	400	178	238
16	456	515	583	400	620	871	803	735	578	1610	179	311
17	457	598	576	400	640	974	749	675	490	1040	169	306
18	458	601	551	410	680	1020	679	621	456	1050	160	262
19	452	585	572	410	720	1060	659	574	404	498	156	255
20	455	547	596	420	780	1030	633	652	370	434	150	258
21	459	530	602	423	860	1050	623	2880	340	427	148	260
22	463	525	574	430	940	988	646	3070	307	498	158	266
23	456	525	575	440	1100	1060	683	3150	280	400	210	270
24	455	533	581	450	1350	1120	690	2730	263	332	203	260
25	462	532	592	460	1700	1140	693	2440	248	298	191	253
26	485	538	565	470	2800	1180	758	2210	231	284	189	237
27	502	540	560	490	3000	1130	858	2140	212	272	180	227
28	502	544	570	500	3700	1030	895	2150	202	246	170	368
29	505	595	590	520	3500	968	934	2120	192	224	160	478
30	495	556	590	540	---	897	972	1960	196	214	163	461
31	486	---	580	580	---	850	---	1700	---	209	164	---
TOTAL	13979	16042	18485	14013	31010	44975	28090	48760	17490	14026	5912	7090
MEAN	451	535	596	452	1069	1451	936	1573	583	452	191	236
MAX	505	601	742	580	3700	3400	1370	3150	1600	1610	256	478
MIN	418	506	551	400	540	850	623	574	192	201	148	157
AC-FT	27730	31820	36660	27790	61510	89210	55720	96720	34690	27820	11730	14060

CAL YR 1987 TOTAL 506245 MEAN 1387 MAX 17900 MIN 267 AC-FT 1004000
WTR YR 1988 TOTAL 259872 MEAN 710 MAX 3700 MIN 148 AC-FT 515500

PLATTE RIVER BASIN

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06799350 ELKHORN RIVER AT WEST POINT, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968-69, October 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML) (31673)
OCT									
27...	1045	502	500	8.41	7.0	12.7	5	700	3100
NOV									
17...	1000	617	496	8.15	4.5	12.1	34	1600	5600
DEC									
21...	1245	619	531	8.37	0.0	13.8	9	140	1200
JAN									
13...	1050	423	564	7.65	0.0	9.3	6	870	700
FEB									
16...	1200	613	490	7.71	0.5	10.2	17	2500	11000
MAR									
08...	1100	1700	325	7.96	4.0	12.1	74	2000	12000
APR									
13...	1305	921	--	8.42	15.0	11.0	46	K200	670
MAY									
02...	0945	1070	455	8.02	15.5	10.2	31	220	140
JUN									
14...	1215	496	373	--	26.0	10.9	49	310	96
JUL									
05...	1130	296	--	8.78	27.5	9.6	50	450	1100
AUG									
10...	1045	243	412	8.70	26.0	8.4	62	K40000	K7300
SEP									
07...	1045	211	430	8.46	16.5	10.7	42	K590	170

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT									
27...	230	70	14	19	0.6	39	9.6	152	0.21
NOV									
17...	220	66	14	18	0.5	39	9.7	147	0.20
DEC									
21...	250	74	15	20	0.6	48	14	171	0.23
JAN									
13...	280	86	17	21	0.6	41	7.3	172	0.23
FEB									
16...	210	64	13	17	0.5	37	8.8	140	0.19
MAR									
08...	140	43	8.7	14	0.5	27	5.9	99	0.13
APR									
13...	210	61	13	20	0.6	40	9.1	143	0.19
MAY									
02...	190	58	12	20	0.6	--	8.1	--	--
JUN									
14...	160	46	11	18	0.6	26	7.9	109	0.15
JUL									
05...	150	40	11	17	0.6	26	8.8	103	0.14
AUG									
10...	170	49	12	19	0.7	29	14	123	0.17
SEP									
07...	170	48	12	18	0.6	29	14	121	0.16

PLATTE RIVER BASIN

06799350 ELKHORN RIVER AT WEST POINT, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 27...	205	65	1.60	0.340	0.56	0.90	2.5	0.290	3.0
NOV 17...	244	91	2.00	0.180	0.58	0.76	2.8	0.330	3.3
DEC 21...	286	30	2.00	0.380	0.46	0.84	2.8	0.210	4.0
JAN 13...	197	15	2.00	0.410	0.0	--	2.3	--	2.5
FEB 16...	231	37	1.90	0.520	0.58	1.1	3.0	0.340	6.0
MAR 08...	453	428	0.900	0.320	2.3	2.6	3.5	0.230	16
APR 13...	356	58	0.860	0.090	1.3	1.4	2.3	0.340	9.6
MAY 02...	--	89	0.580	0.070	1.5	1.6	2.2	0.360	8.9
JUN 14...	146	104	<0.020	0.170	1.1	1.3	--	0.340	8.1
JUL 05...	82.2	35	<0.020	0.030	1.3	1.3	--	0.290	8.4
AUG 10...	80.7	56	<0.020	<0.020	--	2.2	--	0.380	12
SEP 07...	68.9	57	<0.020	<0.020	--	1.8	--	0.300	6.6

PLATTE RIVER BASIN

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06799385 PEBBLE CREEK AT SCRIBNER, NE

LOCATION.--Lat 41°39'34", long 96°41'00", in NW1/4SE1/4 sec.36, T.20 N., R.6 E., Dodge County, Hydrologic Unit 10220003, on right bank 12 ft downstream from bridge on county road, 1 mi southwest of Scribner and 3 mi upstream from mouth.

DRAINAGE AREA.--204 mi².

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

REVISED RECORDS.--WRD NE-82-1: 1980.

GAGE.--Water-stage recorder. Datum of gage is 1,234.72 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 26 to Feb. 22. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--10 years, 67.9 ft³/s, 49,190 acre-ft/yr; median of yearly mean discharges, 51 ft³/s, 36,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,300 ft³/s June 16, 1984, gage height, 23.75 ft; minimum daily, 0.29 ft³/s July 20, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 28	2245	*3050	*14.90	No other peak greater than base discharge.			
Minimum daily discharge, 5.6 ft ³ /s Aug. 20.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	33	34	24	100	42	28	26	31	24	13	6.8
2	33	32	33	24	60	42	42	26	28	18	13	7.8
3	32	32	33	23	38	36	60	29	28	16	12	9.7
4	33	31	34	22	35	33	40	31	51	16	13	8.0
5	33	30	33	22	30	34	35	28	24	14	13	7.1
6	32	30	32	22	29	33	35	28	23	12	11	7.7
7	31	30	33	21	29	35	33	30	22	13	11	8.5
8	32	31	36	21	29	33	31	31	23	34	10	8.6
9	33	31	45	21	27	29	32	27	21	81	10	9.2
10	33	31	37	22	29	33	37	26	19	35	9.5	11
11	33	31	33	25	30	32	32	25	18	21	9.4	12
12	34	32	33	27	32	31	30	25	21	32	9.2	12
13	34	32	31	30	35	31	29	24	20	24	8.8	13
14	32	32	29	35	40	30	28	24	19	20	8.3	13
15	33	31	25	37	44	30	27	24	18	20	7.4	22
16	33	34	26	40	46	31	27	24	18	72	7.6	26
17	33	34	48	42	150	32	27	24	17	25	6.3	14
18	32	33	33	45	200	29	26	24	16	19	6.6	10
19	31	31	27	36	160	29	26	25	14	22	5.8	9.1
20	31	31	26	34	100	29	25	35	13	42	5.6	8.3
21	31	31	26	31	64	28	26	65	12	21	6.0	7.1
22	32	32	28	31	70	28	30	168	11	19	8.4	7.6
23	31	33	28	29	53	28	30	197	11	18	11	7.7
24	31	31	26	28	66	28	28	46	11	18	8.5	7.8
25	31	31	21	28	47	33	26	36	10	31	7.6	11
26	35	31	23	35	47	29	33	36	10	18	7.3	12
27	33	32	24	45	51	28	38	34	10	17	7.2	14
28	31	35	23	60	46	28	30	31	10	16	7.2	928
29	31	31	23	150	42	28	28	29	11	15	7.0	695
30	31	32	23	200	---	27	27	26	51	16	7.0	24
31	32	---	24	300	---	27	---	26	---	15	6.9	---
TOTAL	1000	951	930	1510	1729	966	946	1230	591	764	274.6	1938.0
MEAN	32.3	31.7	30.0	48.7	59.6	31.2	31.5	39.7	19.7	24.6	8.86	64.6
MAX	35	35	48	300	200	42	60	197	51	81	13	928
MIN	31	30	21	21	27	27	25	24	10	12	5.6	6.8
AC-FT	1980	1890	1840	3000	3430	1920	1880	2440	1170	1520	545	3840

CAL YR 1987 TOTAL 28004 MEAN 76.7 MAX 2010 MIN 21 AC-FT 55550
WTR YR 1988 TOTAL 12829.6 MEAN 35.1 MAX 928 MIN 5.6 AC-FT 25450

PLATTE RIVER BASIN

06799450 LOGAN CREEK AT PENDER, NE

LOCATION.--Lat 42°06'40", long 96°42'00", in NW1/4 sec.26, T.25 N., R.6 E., Thurston County, Hydrologic Unit 10220004, on right bank 200 ft downstream from bridge on Nebraska State Highway 94 at Pender and 0.7 mi downstream from Rattlesnake Creek.

DRAINAGE AREA.--731 mi², approximately.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,300.96 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 23, 1966, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Dec. 17, 18, Dec. 26 to Feb. 27, and Mar. 13-16. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--23 years, 164 ft³/s, 118,800 acre-ft/yr; median of yearly mean discharges, 136 ft³/s, 98,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,900 ft³/s Feb. 19, 1971, gage height, 23.11 ft; minimum daily, 12 ft³/s Aug. 11, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	----	1700	ice jam	May 21	0400	*3280	*10.22

Minimum daily discharge, 18 ft³/s Aug. 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	125	126	92	100	236	138	141	146	51	32	43
2	115	124	126	94	110	221	152	134	165	52	28	41
3	114	124	128	90	120	187	218	135	137	53	27	42
4	113	124	131	84	130	207	199	145	127	52	36	43
5	112	122	132	80	110	174	173	138	123	54	36	42
6	111	122	132	88	100	171	175	134	119	51	31	41
7	112	120	132	100	110	174	175	133	115	48	27	45
8	111	120	138	90	112	163	158	131	114	170	55	45
9	111	120	162	108	100	145	156	122	110	135	53	42
10	109	120	177	120	90	151	166	115	107	101	45	44
11	111	119	164	130	100	149	151	111	106	78	39	45
12	111	119	160	110	120	145	143	109	105	87	35	41
13	116	119	148	130	110	145	137	107	104	76	31	43
14	115	119	139	170	116	140	135	104	103	68	30	45
15	115	120	130	190	122	135	131	103	103	61	27	60
16	115	128	130	200	130	140	129	103	100	95	24	81
17	117	138	125	190	180	152	126	104	99	77	21	72
18	115	135	120	175	250	147	124	104	93	83	19	60
19	117	131	135	165	1300	150	123	101	92	68	19	55
20	115	123	130	150	1000	149	122	151	89	64	18	57
21	116	122	124	130	740	148	123	1650	84	59	18	59
22	117	120	124	143	850	148	133	947	80	58	40	59
23	117	120	118	145	700	150	146	384	77	55	69	57
24	116	119	120	150	650	155	147	238	72	51	55	55
25	117	119	109	160	380	163	138	196	66	46	47	55
26	121	119	100	165	350	157	144	174	63	41	45	54
27	126	121	104	155	350	149	178	161	58	38	46	53
28	126	124	100	145	342	145	177	152	58	36	45	96
29	126	128	96	130	266	143	163	154	57	37	45	111
30	126	128	94	118	---	143	144	150	52	37	46	80
31	126	---	90	108	---	139	---	140	---	34	45	---
TOTAL	3604	3692	3944	4105	9138	4921	4524	6771	2924	2016	1134	1666
MEAN	116	123	127	132	315	159	151	218	97.5	65.0	36.6	55.5
MAX	126	138	177	200	1300	236	218	1650	165	170	69	111
MIN	109	119	90	80	90	135	122	101	52	34	18	41
AC-FT	7150	7320	7820	8140	18130	9760	8970	13430	5800	4000	2250	3300

CAL YR 1987 TOTAL 73356 MEAN 201 MAX 2370 MIN 90 AC-FT 145500
WTR YR 1988 TOTAL 48439 MEAN 132 MAX 1650 MIN 18 AC-FT 96080

PLATTE RIVER BASIN

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06799450 LOGAN CREEK AT PENDER, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964-68, 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 27...	1345	126	843	8.26	8.5	12.2	5	K300	180
NOV 17...	1100	138	914	8.29	4.0	11.6	24	2800	6700
DEC 21...	1420	119	892	8.33	0.5	12.8	21	110	460
JAN 13...	1200	58	1050	7.65	0.0	8.2	<5	K60	300
FEB 16...	1445	130	814	7.63	0.5	10.6	26	370	300
MAR 08...	1215	159	900	8.20	4.0	12.0	34	K640	32000
APR 13...	1500	138	860	8.04	15.0	9.0	26	K93	830
MAY 02...	1100	144	826	8.31	15.0	9.8	<8	390	K11000
JUN 14...	1515	103	797	8.55	27.0	10.7	20	330	520
JUL 05...	1245	53	680	8.58	29.0	9.3	10	K93	K64
AUG 10...	1300	47	712	8.64	30.0	10.0	14	3300	440
SEP 07...	1300	44	800	8.44	20.0	11.3	11	K69	190

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

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)	SODIUM, DIS- SOLVED (MG/L AS Na) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl) (00940)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 27...	440	120	32	30	0.6	150	9.9	350	0.48
NOV 17...	450	120	34	30	0.6	150	10	350	0.48
DEC 21...	460	130	34	29	0.6	180	9.6	383	0.52
JAN 13...	490	140	33	31	0.6	150	12	366	0.50
FEB 16...	420	120	29	27	0.6	160	8.9	345	0.47
MAR 08...	430	120	31	28	0.6	160	9.0	348	0.47
APR 13...	440	120	33	32	0.7	160	9.9	355	0.48
MAY 02...	410	110	32	31	0.7	170	8.5	351	0.48
JUN 14...	400	110	30	29	0.7	150	8.4	327	0.45
JUL 05...	370	100	29	30	0.7	140	11	310	0.42
AUG 10...	360	100	27	29	0.7	130	12	298	0.41
SEP 07...	390	110	27	28	0.6	150	12	327	0.44

PLATTE RIVER BASIN

06799450 LOGAN CREEK AT PENDER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 27...	119	52	3.10	0.320	0.28	0.60	3.7	0.170	2.4
NOV 17...	130	87	3.40	0.340	0.31	0.65	4.0	0.210	3.7
DEC 21...	123	70	3.40	0.290	--	--	--	0.220	4.5
JAN 13...	57.3	18	3.70	0.220	--	--	--	0.200	2.2
FEB 16...	121	76	3.10	0.290	0.02	0.31	3.4	0.240	4.2
MAR 08...	149	258	3.60	0.290	0.91	1.2	4.8	0.530	10
APR 13...	132	105	2.40	0.140	0.50	0.64	3.0	0.250	5.4
MAY 02...	137	59	2.10	0.130	0.87	1.0	3.1	0.240	3.3
JUN 14...	91.0	122	1.80	0.110	0.87	0.98	2.8	0.240	3.2
JUL 05...	44.4	23	1.40	0.060	0.62	0.68	2.1	0.120	2.8
AUG 10...	37.8	23	1.00	<0.020	--	0.52	1.5	0.160	3.2
SEP 07...	38.8	42	1.50	0.060	0.46	0.52	2.0	0.160	2.4

PLATTE RIVER BASIN

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06799500 LOGAN CREEK NEAR UEHLING, NE

LOCATION (REVISED).--Lat 41°42'45", long 96°31'19", in NE1/4NE1/4 sec.16, T.20 N., R.8 E., Dodge County, Hydrologic Unit 10220004, near right bank on downstream side of bridge on county road, 2 mi southwest of Uehling and 8 mi upstream from mouth.

DRAINAGE AREA.--1,030 mi², approximately.

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

GAGE.--Water-stage recorder. Datum of gage is 1,208.73 ft above National Geodetic Vertical Datum of 1929. See WSP 1918 for history of changes prior to July 15, 1963.

REMARKS.--Estimated daily discharges: Dec. 17 to May 17. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--47 years, 204 ft³/s, 147,800 acre-ft/yr; median of yearly mean discharges, 180 ft³/s, 130,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,200 ft³/s Feb. 20, 1971, gage height, 20.15 ft, from floodmark; maximum gage height, 20.15 ft, Mar. 27, 1962, present datum, in addition to Feb. 20, 1971; minimum daily discharge, 6.1 ft³/s July 26, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1940, reached a stage of 20.6 ft, present datum, from floodmarks, discharge, 22,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 19	--	2200	ice jam	May 22	1923	1750	6.52
May 21	1423	*2350	*7.50				

Minimum daily discharge, 47 ft³/s July 7, 8, Aug. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	152	169	125	170	370	190	195	186	63	64	66
2	142	155	172	130	180	300	210	195	197	57	54	69
3	143	159	180	116	190	270	240	180	203	64	50	72
4	146	155	182	110	205	280	250	185	178	64	57	65
5	149	151	183	100	200	260	230	195	162	53	57	66
6	145	153	184	114	180	250	220	185	152	51	56	67
7	145	153	192	124	190	230	225	180	147	47	58	67
8	145	156	202	140	200	220	220	175	146	47	53	66
9	143	154	224	135	180	210	215	170	140	175	70	66
10	144	152	251	155	165	198	225	165	136	155	67	65
11	145	155	248	170	170	200	230	160	132	115	60	64
12	149	160	220	190	180	200	200	155	127	114	56	63
13	151	161	206	210	190	195	185	149	127	109	57	63
14	151	162	194	230	200	190	170	145	124	88	54	66
15	150	163	177	250	215	200	158	145	123	81	52	89
16	151	168	168	270	230	195	160	140	121	394	53	124
17	154	185	165	250	232	190	155	136	117	210	51	106
18	151	191	160	235	350	190	155	134	110	506	47	95
19	146	177	155	220	2500	190	150	135	104	209	49	82
20	147	169	160	200	2300	185	155	137	97	139	51	80
21	148	170	160	210	2000	190	160	1290	87	121	48	78
22	151	174	161	207	1500	195	175	1350	80	110	51	77
23	148	173	165	215	1000	200	185	1010	69	100	68	75
24	146	169	160	225	900	210	195	453	61	94	89	70
25	146	168	150	230	700	215	185	322	54	90	77	66
26	160	168	140	240	500	220	190	267	56	78	68	65
27	159	170	135	230	450	215	200	238	55	76	66	66
28	156	182	145	220	430	210	220	217	52	73	65	352
29	156	181	140	205	420	200	210	198	62	71	66	214
30	153	175	130	195	---	195	200	206	62	76	66	153
31	149	---	125	180	---	190	---	193	---	70	69	---
TOTAL	4613	4961	5403	5831	16327	6763	5863	9005	3467	3700	1849	2717
MEAN	149	165	174	188	563	218	195	290	116	119	59.6	90.6
MAX	160	191	251	270	2500	370	250	1350	203	506	89	352
MIN	142	151	125	100	165	185	150	134	52	47	47	63
AC-FT	9150	9840	10720	11570	32380	13410	11630	17860	6880	7340	3670	5390

CAL YR 1987	TOTAL	116168	MEAN	318	MAX	3810	MIN	125	AC-FT	230400
WTR YR 1988	TOTAL	70499	MEAN	193	MAX	2500	MIN	47	AC-FT	139800

PLATTE RIVER BASIN

06800000 MAPLE CREEK NEAR NICKERSON, NE

LOCATION.--Lat 41°32'45", long 96°30'05", in NW1/4SW1/4 sec.11, T.18 N., R.8 E., Dodge County, Hydrologic Unit 10220003, on left bank 30 ft downstream from bridge on U.S. Highways 77 and 275, 1.5 mi northwest of Nickerson, and 4 mi upstream from mouth.

DRAINAGE AREA.--450 mi², approximately.

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

REVISED RECORDS.--WSP 1630: 1957-58.

GAGE.--Water-stage recorder. Datum of gage is 1,194.56 ft above National Geodetic Vertical Datum of 1929. Prior to July 28, 1960, nonrecording gage at site 60 ft upstream, and July 28, 1960 to July 28, 1987, water-stage recorder at site 180 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 15-20, Dec. 26 to Feb. 20, and Mar. 12-15. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--37 years, 67.6 ft³/s, 48,980 acre-ft/yr; median of yearly mean discharges, 52 ft³/s, 37,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s June 21, 1960, gage height, 14.67 ft; maximum gage height, 16.54 ft June 18, 1983; minimum daily discharge, 0.1 ft³/s Jan. 15, 16, 1956, Aug. 1, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known since 1944, 35,000 ft³/s June 11, 1944, from indirect measurement of peak flow; gage height, 16.28 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 28	2314	*2690	*13.04	No other peak above base discharge.			
Minimum daily discharge, 3.2 ft ³ /s Sept. 12.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	53	52	27	40	99	48	43	31	24	15	3.8
2	43	55	53	28	37	100	57	41	30	21	12	3.9
3	42	54	52	28	41	82	86	44	27	17	8.2	5.2
4	42	51	53	29	44	74	95	49	28	14	11	9.0
5	42	49	57	30	40	76	72	50	22	13	12	5.8
6	41	49	55	32	44	79	63	44	21	9.8	6.7	5.6
7	38	50	56	33	50	89	66	45	23	9.8	5.5	4.1
8	40	51	59	36	45	84	60	46	24	73	7.5	3.8
9	41	49	65	38	35	69	56	46	23	33	6.1	3.5
10	42	48	63	42	30	70	64	38	21	24	5.1	3.4
11	43	50	56	41	40	75	61	35	20	19	4.8	3.4
12	44	53	54	42	70	54	53	34	20	19	4.2	3.2
13	46	54	50	46	80	45	50	33	20	27	4.3	3.7
14	47	52	47	50	66	44	47	32	19	20	3.8	4.2
15	46	53	41	60	72	45	45	30	19	19	5.5	14
16	48	55	35	58	80	64	45	28	18	31	5.2	17
17	48	57	37	56	100	71	45	27	17	85	5.1	18
18	49	53	41	52	284	64	44	28	16	37	5.2	13
19	48	50	40	46	330	59	43	28	8.6	30	5.3	11
20	48	49	42	40	370	60	43	39	7.5	234	5.0	8.6
21	49	51	45	32	486	57	41	51	6.9	84	5.1	8.2
22	50	53	48	43	400	56	43	86	6.1	34	6.8	7.8
23	51	51	53	41	483	55	47	80	5.6	23	8.5	7.4
24	50	49	50	36	383	56	49	66	5.4	19	7.3	6.7
25	50	48	39	33	328	59	46	44	4.5	27	6.3	6.5
26	53	47	25	40	177	57	47	35	3.8	18	5.1	6.1
27	56	49	26	52	88	53	61	30	3.4	15	4.8	5.9
28	53	55	28	74	97	50	62	26	3.3	15	4.6	367
29	51	54	29	90	98	49	50	25	4.7	15	4.7	911
30	50	51	28	70	---	49	46	24	14	16	4.5	135
31	50	---	27	50	---	48	---	24	---	16	4.1	---
TOTAL	1446	1543	1406	1375	4438	1992	1635	1251	472.8	1041.6	199.3	1605.8
MEAN	46.6	51.4	45.4	44.4	153	64.3	54.5	40.4	15.8	33.6	6.43	53.5
MAX	56	57	65	90	486	100	95	86	31	234	15	911
MIN	38	47	25	27	30	44	41	24	3.3	9.8	3.8	3.2
AC-FT	2870	3060	2790	2730	8800	3950	3240	2480	938	2070	395	3190

CAL YR 1987	TOTAL	38134	MEAN	104	MAX	2040	MIN	25	AC-FT	75640
WTR YR 1988	TOTAL	18405.5	MEAN	50.3	MAX	911	MIN	3.2	AC-FT	36510

PLATTE RIVER BASIN

185

06800500 ELKHORN RIVER AT WATERLOO, NE
(National stream-quality accounting network station)

LOCATION.--Lat 41°17'25", long 96°17'05", in SW1/4 sec.3, T.15 N., R.10 E., Douglas County, Hydrologic Unit 10220003, on right bank 100 ft upstream from old highway bridge at north edge of Waterloo and 3.5 mi downstream from Rawhide Creek.

DRAINAGE AREA.--6,900 mi², approximately, of which about 5,870 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1899 to November 1903, May 1911 to September 1915, August 1928 to current year. Published as "at Arlington" 1899-1903, July 1913 to September 1915. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1390: 1914(M), 1915, 1936, 1943(M). WDR NE-74: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,104.73 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1960, to July 28, 1978, at datum 2.00 ft higher. See WSP 1918 for history of changes prior to Oct. 1, 1960.

REMARKS.--Estimated daily discharges: Dec. 30 to Feb. 22 and Apr. 25. Records good except for periods of estimated record, which are poor. Some small diversions above station for irrigation.

AVERAGE DISCHARGE.--68 years, 1,224 ft³/s, 888,800 acre-ft/yr; median of yearly mean discharges, 1,030 ft³/s, 746,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft³/s June 12, 1944, gage height, 16.6 ft from floodmark in gage well, site and datum then in use, from rating curve extended above 22,000 ft³/s on basis of current-meter measurement of peak flow in main channel and velocity-area studies of overflow section; minimum observed, 50 ft³/s Nov. 12, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stage and discharge of the flood of June 12, 1944, are the greatest known since at least 1880.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 21	1815	ice jam	*8.79	Sept. 29	1030	*6210	6.55

Minimum daily discharge, 196 ft³/s Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	820	948	1120	680	1700	2410	1320	1560	1650	483	341	244
2	809	944	1100	720	1550	2620	1360	1510	1610	503	306	244
3	795	1010	1110	700	1450	2160	1550	1550	1580	469	267	254
4	779	1030	1120	680	1350	2030	1850	1650	1490	451	249	298
5	785	974	1140	660	1300	1950	1950	1720	1440	434	255	298
6	783	957	1150	660	1200	2110	1810	1670	1250	424	261	254
7	766	943	1170	720	1350	2380	1810	1590	1160	390	249	240
8	760	938	1250	780	1300	2470	1770	1650	1110	375	259	235
9	764	921	1330	640	1250	2300	1700	1840	1070	443	267	226
10	770	916	1380	740	1200	2070	1710	2270	1000	512	287	235
11	768	908	1430	840	1100	1950	1730	2290	956	969	301	240
12	789	922	1460	760	1050	1880	1610	1950	902	925	275	235
13	814	944	1410	840	940	1910	1490	1730	859	839	263	240
14	810	964	1330	960	960	1730	1390	1580	838	919	246	244
15	834	970	1220	1000	1000	1520	1310	1440	799	675	240	293
16	848	989	1070	940	980	1450	1240	1330	777	644	223	458
17	847	1020	993	900	1000	1480	1190	1220	845	1500	208	686
18	840	1100	1010	860	1200	1500	1160	1160	808	1390	201	671
19	835	1150	1080	820	1700	1550	1110	1110	742	1990	197	623
20	831	1100	1130	820	2500	1560	1090	1090	694	1310	196	525
21	824	1070	1090	880	2700	1540	1060	1630	645	1090	197	500
22	823	1060	1100	940	2900	1520	1050	4170	585	815	240	488
23	831	1060	1150	960	3220	1510	1120	3630	530	756	298	488
24	832	1060	1210	1000	3080	1530	1170	2940	478	727	335	494
25	825	1060	1100	900	2580	1580	1220	2400	436	644	378	482
26	846	1050	820	900	2500	1680	1260	2100	401	616	367	464
27	887	1060	820	960	2360	1660	1360	1920	381	522	329	452
28	906	1120	751	1100	2400	1540	1520	1820	367	471	308	583
29	910	1170	791	1200	2600	1450	1570	1760	471	425	293	3600
30	913	1130	780	1400	---	1390	1550	1720	460	390	283	1400
31	939	---	800	1800	---	1340	---	1660	---	377	264	---
TOTAL	25583	30488	34415	27760	50420	55770	43030	57660	26334	22478	8383	15694
MEAN	825	1016	1110	895	1739	1799	1434	1860	878	725	270	523
MAX	939	1170	1460	1800	3220	2620	1950	4170	1650	1990	378	3600
MIN	760	908	751	640	940	1340	1050	1090	367	375	196	226
AC-FT	50740	60470	68260	55060	100000	110600	85350	114400	52230	44590	16630	31130

CAL YR 1987 TOTAL 832400 MEAN 2281 MAX 22900 MIN 538 AC-FT 1651000
WTR YR 1988 TOTAL 398015 MEAN 1087 MAX 4170 MIN 196 AC-FT 789500

PLATTE RIVER BASIN
06800500 ELKHORN RIVER AT WATERLOO, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1977 to September 1981.

WATER TEMPERATURES: November 1977 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 750 microsiemens Jan. 10, 1979; minimum daily, 235 microsiemens Mar. 15, 1979.

WATER TEMPERATURES: Maximum, 36.0°C Aug. 19, 1979; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT 28...	1115	905	630	8.39	7.0	750	--	11.4	6	570
NOV 30...	1025	1130	592	8.47	1.0	732	37	13.1	--	350
NOV 30...	1030	--	--	--	--	--	--	--	21	--
DEC 21...	1015	1040	670	8.21	0.5	745	--	16.2	22	240
FEB 01...	1140	1660	556	7.94	0.0	737	--	8.2	66	2400
FEB 18...	1200	1200	547	7.85	1.0	737	31	12.4	--	830
FEB 18...	1205	--	--	--	--	--	--	--	32	--
MAR 31...	1100	1350	580	8.31	10.0	745	51	11.6	--	700
MAR 31...	1105	--	--	--	--	--	--	--	28	--
APR 26...	1355	1260	543	8.49	13.0	732	--	11.3	22	K660
MAY 31...	1050	1660	460	8.39	22.5	730	13	8.0	--	3200
MAY 31...	1055	--	--	--	--	--	--	--	79	--
JUN 29...	1110	440	500	8.51	26.0	735	--	7.2	65	900
AUG 01...	1100	345	502	8.80	28.0	745	22	10.9	--	220
AUG 01...	1105	--	--	--	--	--	--	--	93	--
AUG 31...	1100	261	549	8.62	20.0	740	--	9.5	40	K9300
SEP 30...	1045	1400	--	7.57	16.5	737	62	5.6	--	E100000
SEP 30...	1050	--	--	--	--	--	--	--	220	--

E Estimated value.

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

DATE	STREP- TOCOC FECAL KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)
OCT 28...	330	300	--	86	21	26	0.7	--	--
NOV 30...	880	290	35	84	19	23	0.6	6.4	253
NOV 30...	--	290	--	83	20	24	0.6	--	--
DEC 21...	1600	320	--	91	22	26	0.7	--	--
FEB 01...	K78000	230	--	67	16	20	0.6	--	--
FEB 18...	K34000	250	37	73	17	23	0.7	9.2	216
FEB 18...	--	240	--	70	16	23	0.7	--	--
MAR 31...	1500	250	17	72	17	23	0.7	7.4	233
MAR 31...	--	250	--	74	16	26	0.7	--	--
APR 26...	210	250	--	72	17	22	0.6	--	--
MAY 31...	2900	210	17	60	14	21	0.7	8.3	189
MAY 31...	--	210	--	62	14	20	0.6	--	--
JUN 29...	1600	210	--	58	15	28	0.9	--	--
AUG 01...	760	180	15	45	16	27	0.9	9.1	163
AUG 01...	--	180	--	49	15	27	0.9	--	--
AUG 31...	620	210	--	58	17	29	0.9	--	--
SEP 30...	E40000	100	0	28	7.3	10	0.5	16	--
SEP 30...	--	95	--	28	6.0	9.0	0.4	--	--

PLATTE RIVER BASIN

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06800500 ELKHORN RIVER AT WATERLOO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)
OCT 28...	62	13	--	--	--	208	0.28	508	68
NOV 30...	56	13	0.30	27	389	394	0.53	1190	--
NOV 30...	65	12	--	--	--	--	--	--	73
DEC 21...	82	13	--	--	--	234	0.32	657	61
FEB 01...	47	11	--	--	--	161	0.22	722	173
FEB 18...	51	14	0.30	26	380	360	0.52	1330	--
FEB 18...	57	15	--	--	--	--	--	--	101
MAR 31...	58	11	0.40	26	374	366	0.51	1360	--
MAR 31...	59	11	--	--	--	--	--	--	224
APR 26...	57	12	--	--	--	180	0.24	612	101
MAY 31...	45	8.3	0.50	27	327	307	0.44	1470	--
MAY 31...	45	7.5	--	--	--	--	--	--	484
JUN 29...	49	21	--	--	--	171	0.23	203	208
AUG 01...	57	15	0.30	19	296	288	0.40	276	--
AUG 01...	53	17	--	--	--	--	--	--	98
AUG 31...	61	27	--	--	--	192	0.26	135	72
SEP 30...	32	10	0.30	12	188	180	0.26	711	--
SEP 30...	25	9.5	--	--	--	--	--	--	2150

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 28...	2.50	--	0.100	0.80	0.90	3.4	0.350	--	--
NOV 30...	--	2.70	0.120	0.68	0.80	--	0.290	0.190	0.170
NOV 30...	2.60	--	0.290	0.61	0.90	3.5	0.430	--	--
DEC 21...	3.10	--	0.350	0.26	0.61	3.7	0.310	--	--
FEB 01...	2.90	--	1.50	3.5	5.0	7.9	0.940	--	--
FEB 18...	--	3.40	1.20	1.3	2.5	--	0.430	0.350	0.200
FEB 18...	3.10	--	1.10	1.0	2.1	5.2	0.580	--	--
MAR 31...	--	2.10	0.110	1.1	1.2	--	0.410	0.250	0.210
MAR 31...	0.560	--	0.250	1.2	1.5	2.1	0.640	--	--
APR 26...	1.60	--	0.080	1.1	1.2	2.8	0.430	--	--
MAY 31...	--	1.60	0.030	0.77	0.80	--	0.330	0.300	0.270
MAY 31...	1.70	--	0.130	2.6	2.7	4.4	0.440	--	--
JUN 29...	0.020	--	0.040	1.8	1.6	1.8	0.450	--	--
AUG 01...	--	<0.100	0.060	0.74	0.80	--	0.440	0.190	0.160
AUG 01...	<0.020	--	0.070	1.7	1.8	--	0.390	--	--
AUG 31...	0.160	--	0.040	1.8	1.8	2.0	0.620	--	--
SEP 30...	--	--	0.790	2.2	3.0	--	0.800	0.280	--
SEP 30...	1.30	--	1.20	--	--	--	--	--	--

PLATTE RIVER BASIN

06800500 ELKHORN RIVER AT WATERLOO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)
NOV											
30...	1025	<10	--	4	170	<0.5	--	<1	--	<1	<3
30...	1030	--	14	--	--	--	<15	--	<10	--	--
FEB											
01...	1140	--	9	--	--	--	<15	--	<10	--	--
MAR											
31...	1100	<10	--	6	160	<0.5	--	2	--	<1	<3
MAY											
31...	1050	<10	--	8	140	<0.5	--	<1	--	<1	<3
31...	1055	--	11	--	--	--	<15	--	10	--	--
AUG											
01...	1100	20	--	9	140	<0.5	--	<1	--	<1	<3
31...	1100	--	48	--	--	--	<15	--	<10	--	--

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
NOV										
30...	--	3	4	--	<5	24	41	--	<0.1	<10
30...	10	--	--	<20	--	--	--	<0.10	--	--
FEB										
01...	11	--	--	<20	--	--	--	<0.10	--	--
MAR										
31...	--	7	26	--	<5	21	11	--	--	<10
MAY										
31...	--	22	10	--	<5	21	2	--	<0.1	<10
31...	20	--	--	<20	--	--	--	2.0	--	--
AUG										
01...	--	2	9	--	<5	22	4	--	<0.1	<10
31...	10	--	--	--	--	--	--	0.60	--	--

DATE	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV										
30...	2	--	7	--	1.0	400	<6	--	7	--
30...	--	8	--	<1	--	--	--	<30	--	3.9
FEB										
01...	--	5	--	<1	--	--	--	<30	--	15
MAR										
31...	4	--	<1	--	<1.0	360	<6	--	<3	--
MAY										
31...	20	--	5	--	1.0	300	9	--	<3	--
31...	--	12	--	<1	--	--	--	40	--	12
AUG										
01...	3	--	2	--	<1.0	300	11	--	7	--
31...	--	9	--	<1	--	--	--	<30	--	5.9

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV						
30...	1025	1130	1.0	315	961	61
FEB						
18...	1200	1200	1.0	206	667	53
MAR						
31...	1100	1350	10.0	403	1470	64
MAY						
31...	1050	1660	22.5	754	3380	74
AUG						
01...	1100	345	28.0	127	118	86
SEP						
30...	1045	1400	16.5	2280	8620	92

PLATTE RIVER BASIN

189

06803000 SALT CREEK AT ROCA, NE

LOCATION.--Lat 40°39'29", long 96°39'55", in NW1/4SW1/4 sec.17, T.8 N., R.7 E., Lancaster County, Hydrologic Unit 10200203, on left bank 15 ft downstream from highway bridge at west edge of Roca.

DRAINAGE AREA.--167 mi².

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

REVISED RECORDS.--WDR NE-71: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,192.50 ft above National Geodetic Vertical Datum of 1929, Kansas City supplementary adjustment of 1943. Prior to May 16, 1956, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 15, 25-29, Dec. 31 to Jan. 1, and Jan. 7-12, 24, 25. Records good except for periods of estimated record, which are poor. Flood flow affected by several detention dams.

AVERAGE DISCHARGE.--37 years, 48.1 ft³/s, 34,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,700 ft³/s July 10, 1958, gage height, 22.70 ft; minimum daily, 0.2 ft³/s July 23, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 8, 1950, reached a stage of 26.0 ft, from floodmark established by Corps of Engineers, discharge, 67,000 ft³/s, but may have been exceeded by flood of July 5, 1908.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 850 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 9	1545	*242	*5.56	No peaks greater than base discharge.			
Minimum daily discharge, 2.0 ft ³ /s Aug. 13.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	38	25	17	29	18	20	13	6.9	14	3.1	3.2
2	10	28	33	16	26	19	35	12	7.5	14	3.2	3.1
3	9.7	21	27	15	21	18	30	13	7.3	13	3.1	2.7
4	10	19	28	15	21	17	24	17	6.7	12	3.2	3.1
5	10	19	26	14	22	18	22	15	6.5	10	3.0	3.1
6	9.9	19	26	14	23	18	21	14	7.3	9.5	3.3	3.0
7	10	19	26	14	29	19	20	13	6.9	8.2	3.4	2.9
8	10	19	27	15	28	21	18	14	6.2	8.9	2.9	3.2
9	10	17	34	16	26	20	18	13	6.2	40	2.3	3.4
10	11	16	29	17	22	21	18	13	6.0	10	3.4	3.5
11	12	17	27	17	25	21	17	12	6.0	7.0	3.1	3.6
12	12	18	26	17	32	21	16	12	6.2	5.8	2.7	3.6
13	13	19	26	18	36	19	16	12	6.1	5.6	2.0	4.3
14	12	19	24	20	53	20	15	11	6.1	5.5	2.9	4.8
15	14	19	23	20	42	23	14	11	5.8	5.2	3.2	4.5
16	19	21	22	21	29	19	14	10	5.9	4.6	3.0	8.8
17	15	22	22	20	30	19	13	11	5.8	4.5	2.9	10
18	13	22	22	19	24	19	13	10	7.1	5.7	3.0	4.6
19	13	20	24	21	23	20	13	10	6.1	7.5	63	3.9
20	12	22	25	24	22	21	13	20	5.9	8.4	24	4.8
21	12	45	22	18	21	20	14	41	5.8	7.0	5.1	4.8
22	12	44	22	18	26	20	14	37	6.1	6.0	3.1	4.1
23	14	42	22	19	22	20	14	71	6.5	5.3	3.3	4.1
24	13	20	22	25	20	20	14	36	6.8	5.2	3.2	4.2
25	14	20	20	30	21	21	15	23	7.3	4.9	3.0	4.3
26	18	20	20	21	23	19	16	19	7.9	4.5	3.0	4.5
27	17	20	20	19	23	18	16	34	7.7	4.3	2.9	37
28	15	25	20	19	18	17	16	9.5	8.6	3.5	3.2	27
29	16	26	20	27	18	17	15	7.8	9.7	2.9	3.2	9.8
30	16	26	19	60	---	17	14	7.2	12	3.3	3.4	4.8
31	18	---	19	52	---	16	---	6.9	---	3.9	3.2	---
TOTAL	400.6	702	748	658	755	596	518	548.4	206.9	250.2	177.3	188.7
MEAN	12.9	23.4	24.1	21.2	26.0	19.2	17.3	17.7	6.90	8.07	5.72	6.29
MAX	19	45	34	60	53	23	35	71	12	40	63	37
MIN	9.7	16	19	14	18	16	13	6.9	5.8	2.9	2.0	2.7
AC-FT	795	1390	1480	1310	1500	1180	1030	1090	410	496	352	374

CAL YR 1987 TOTAL 50682.0 MEAN 139 MAX 2720 MIN 8.5 AC-FT 100500
WTR YR 1988 TOTAL 5749.1 MEAN 15.7 MAX 71 MIN 2.0 AC-FT 11400

PLATTE RIVER BASIN

06803500 SALT CREEK AT LINCOLN, NE

LOCATION.--Lat 40°50'49", long 96°40'54", in NW1/4SW1/4 sec.7, T.10 N., R.7 E., Lancaster County, Hydrologic Unit 10200203 on right bank 135 ft downstream from bridge on North 27th Street at north edge of Lincoln, 1 mi downstream from Oak Creek.

DRAINAGE AREA.--684 mi².

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

REVISED RECORDS.--WDR NE-71: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,113.90 ft above National Geodetic Vertical Datum of 1929. Prior to July 27, 1979, water-stage recorder for stages above 6.2 ft on downstream side of bridge pier, 135 ft upstream at same datum, and nonrecording gage read twice daily.

REMARKS.--No estimated daily discharges. Records good. Flood flow affected by several detention dams.

AVERAGE DISCHARGE.--39 years, 235 ft³/s, 170,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,200 ft³/s June 2, 1951, gage height, 26.15 ft; minimum daily, 21 ft³/s July 10, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 2, 1951, may have been equaled or exceeded in discharge by flood of July 6, 1908, which reached a stage of 33.6 ft. Channel changes since 1908 have materially altered the stage-discharge relation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 28	0915	*3940	*9.51	No other peak greater than base discharge.			
Minimum daily discharge, 29 ft ³ /s Aug. 28.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	175	211	106	138	143	152	110	131	89	64	55
2	148	188	204	110	167	144	244	142	115	73	63	59
3	136	180	166	106	149	140	199	138	114	70	61	50
4	132	419	176	96.4	140	132	177	139	109	69	63	52
5	132	345	198	96	133	132	164	128	108	69	61	44
6	129	256	194	91	123	129	160	117	101	68	59	39
7	124	253	191	93	124	133	152	156	101	63	55	48
8	122	250	254	93	129	137	144	132	120	77	59	64
9	119	245	207	93	132	141	175	114	123	101	62	62
10	118	241	166	91	123	135	150	106	103	122	62	56
11	117	240	145	95	112	137	144	103	96	81	59	53
12	120	241	131	100	113	139	137	98	90	70	60	42
13	122	240	122	99	130	134	134	93	91	66	162	48
14	127	236	119	104	146	119	132	89	91	62	69	45
15	161	243	114	109	144	119	126	89	90	58	67	249
16	146	241	103	119	157	125	121	85	90	70	72	198
17	133	224	111	124	159	130	115	82	87	73	70	97
18	124	201	120	129	168	127	116	83	82	55	56	76
19	121	195	121	152	166	128	112	240	78	291	108	132
20	120	192	120	149	163	129	112	242	86	94	80	49
21	119	260	115	129	157	130	111	361	84	77	55	61
22	120	263	117	133	169	129	109	325	85	69	47	63
23	126	257	121	159	154	131	100	473	79	58	36	51
24	125	227	118	164	136	129	98	320	76	56	31	46
25	134	202	107	158	133	129	176	206	74	64	38	51
26	145	195	97	152	153	128	208	154	70	169	40	57
27	143	213	126	141	148	123	141	141	73	77	39	66
28	141	228	127	146	147	117	125	158	73	68	29	1650
29	137	247	120	164	142	116	118	126	84	68	47	897
30	139	226	124	235	---	111	114	111	106	65	52	208
31	199	---	104	260	---	103	---	107	---	61	53	---
TOTAL	4145	7123	4449	3996.4	4155	3999	4266	4968	2810	2553	1879	4668
MEAN	134	237	144	129	143	129	142	160	93.7	82.4	60.6	156
MAX	199	419	254	260	169	144	244	473	131	291	162	1650
MIN	117	175	97	91	112	103	98	82	70	55	29	39
AC-FT	8220	14130	8820	7930	8240	7930	8460	9850	5570	5060	3730	9260

CAL YR 1987 TOTAL 210392 MEAN 576 MAX 14200 MIN 97 AC-FT 417300
WTR YR 1988 TOTAL 49011.4 MEAN 134 MAX 1650 MIN 29 AC-FT 97210

PLATTE RIVER BASIN

191

06803510 LITTLE SALT CREEK NEAR LINCOLN, NE

LOCATION.--Lat 40°53'36", long 96°40'52", in NW1/4SW1/4 sec.30, T.11 N., R.7 E., Lancaster County, Hydrologic Unit 10200203, on left bank 10 ft downstream from county road bridge and 0.4 mi north of intersection of Interstate Highway 80 and North 27th Street north of Lincoln.

DRAINAGE AREA.--43.6 mi².

PERIOD OF RECORD.--January 1969 to current year.

REVISED RECORDS.--WDR NE-77-1: 1969-73(M).

GAGE.--Water-stage recorder. Datum of gage is 1,114.73 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 10, 1980, water-stage recorder at present site and datum 3.00 ft higher.

REMARKS.--Estimated daily discharges: Dec. 26-28, Dec. 30 to Jan. 15, Jan. 20-26, 29, 30, and Feb. 1-7, 11, 12, 14, 15. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--19 years, 15.7 ft³/s, 11,370 acre-ft/yr; median of yearly mean discharges, 15 ft³/s, 10,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s July 19, 1985, gage height, 18.24 ft, from floodmark, from rating curve extended above 3,710 ft³/s; maximum gage height, 20.02 ft, Aug. 25, 1987; minimum daily discharge, 0.20 ft³/s Sept. 29, 30, 1969.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 550 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 21	1715	*907	*9.58	No other peak greater than base discharge.			

Minimum daily discharge, 2.0 ft³/s June 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	14	12	9.1	13	12	11	9.1	8.9	2.1	4.2	3.7
2	8.2	12	12	8.2	9.0	12	32	8.6	8.6	2.6	4.1	3.6
3	7.4	11	14	7.8	8.4	9.9	20	10	8.0	2.5	3.2	3.3
4	8.0	9.5	15	7.9	8.2	9.5	16	9.8	7.2	3.3	3.0	3.4
5	7.8	8.2	13	7.6	8.0	10	12	9.0	6.8	3.7	3.8	3.2
6	7.2	9.1	13	7.3	8.0	11	12	8.8	6.5	4.1	4.1	3.3
7	6.9	10	13	7.7	8.2	12	11	9.1	8.6	4.1	3.7	3.4
8	7.3	9.4	16	8.3	8.3	12	11	19	9.4	4.1	4.3	3.5
9	7.6	7.9	27	7.6	8.5	11	11	11	5.9	3.0	4.4	3.6
10	7.3	7.8	16	8.2	7.8	12	11	8.9	4.7	4.7	5.3	3.8
11	7.6	8.4	14	8.9	7.3	12	9.0	8.8	4.8	4.4	4.4	4.4
12	8.4	9.4	12	8.9	7.8	9.4	9.2	9.1	5.3	4.2	4.2	3.8
13	8.5	9.7	11	7.7	8.1	9.4	9.2	8.8	5.3	5.1	4.9	3.7
14	8.2	9.6	11	9.0	9.2	8.5	8.2	8.6	5.3	5.5	4.9	2.7
15	9.6	11	11	10	10	7.8	7.7	8.2	4.8	4.7	3.6	7.4
16	12	14	9.7	8.9	11	7.9	7.7	7.4	4.3	6.8	3.8	12
17	6.8	13	9.5	9.6	15	8.8	8.1	7.4	4.4	4.2	3.5	6.3
18	6.8	11	11	9.3	13	9.2	7.2	8.0	4.1	4.4	3.1	5.3
19	5.7	10	13	12	13	9.8	7.2	8.3	4.5	5.1	4.6	5.7
20	5.5	9.8	12	10	13	10	8.0	102	4.5	5.4	3.1	5.2
21	5.7	10	10	8.7	13	10	7.0	307	3.8	3.7	3.1	3.5
22	6.6	11	11	9.0	18	11	6.8	92	3.4	3.8	3.6	4.3
23	6.6	11	12	9.5	12	11	7.3	65	3.1	4.0	3.5	3.3
24	6.6	10	13	10	9.2	11	7.5	22	3.3	4.6	3.3	3.5
25	6.3	10	9.9	9.5	9.7	11	9.5	15	3.2	4.6	3.3	5.2
26	9.8	10	9.7	8.0	13	9.6	26	12	2.4	4.1	3.0	5.8
27	8.2	11	9.8	9.1	14	9.8	13	11	2.0	3.9	3.4	5.3
28	7.5	15	10	10	13	9.9	10	9.5	2.7	4.2	3.2	87
29	8.5	15	11	12.5	12	9.2	9.9	8.9	3.1	4.2	3.5	76
30	9.0	14	9.8	25	---	8.4	9.4	8.3	2.3	5.0	3.8	9.0
31	12	---	8.6	22	---	8.4	---	7.9	---	4.6	3.6	---
TOTAL	242.9	321.8	380.0	307.3	308.7	313.5	334.9	838.5	151.2	130.7	117.5	294.2
MEAN	7.84	10.7	12.3	9.91	10.6	10.1	11.2	27.0	5.04	4.22	3.79	9.81
MAX	12	15	27	25	18	12	32	307	9.4	6.8	5.3	87
MIN	5.5	7.8	8.6	7.3	7.3	7.8	6.8	7.4	2.0	2.1	3.0	2.7
AC-FT	482	638	754	610	612	622	664	1660	300	259	233	584

CAL YR 1987 TOTAL 12397.8 MEAN 34.0 MAX 2480 MIN 3.2 AC-FT 24590
WTR YR 1988 TOTAL 3741.2 MEAN 10.2 MAX 307 MIN 2.0 AC-FT 7420

PLATTE RIVER BASIN

06803520 STEVENS CREEK NEAR LINCOLN, NE

LOCATION.--Lat 40°51'25", long 96°35'42", in NW1/4NE1/4 sec.11, T.10 N., R.7 E., Lancaster County, Hydrologic Unit 10200203, on left bank 10 ft upstream and 20 ft west from county road bridge on Havelock Avenue and 1.6 mi east of 70th Street at east edge of Lincoln.

DRAINAGE AREA.--47.8 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,125.57 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--20 years, 18.4 ft³/s, 13,330 acre-ft/yr; median of yearly mean discharges, 16 ft³/s, 11,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,620 ft³/s June 13, 1984, gage height, 19.57 ft; no flow July 31, Aug. 2-4, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 21	1910	*547	*6.49	No other peak above base discharge.			

Minimum daily discharge, 0.74 ft³/s Sept. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	18	15	8.7	9.2	10	6.5	5.1	6.7	4.6	2.1	1.0
2	6.2	12	13	8.0	8.7	11	16	4.8	6.6	2.7	2.0	.86
3	6.0	11	15	8.1	8.2	10	13	4.8	6.4	2.3	2.0	.82
4	6.3	11	21	7.9	8.2	9.4	10	5.1	6.4	2.0	2.2	.83
5	6.6	11	17	7.0	8.0	9.8	8.6	5.1	6.5	1.9	2.7	.79
6	6.2	9.4	17	6.6	7.9	9.4	8.2	4.8	5.4	1.9	2.1	.86
7	6.1	9.9	19	6.5	8.3	9.6	7.7	4.7	4.3	1.7	2.0	.94
8	6.5	9.8	20	6.5	8.7	9.6	7.2	5.8	4.7	67	1.7	.80
9	6.6	9.0	37	6.5	8.8	9.3	6.6	6.0	4.9	30	1.4	.79
10	6.5	9.4	14	6.5	8.5	8.9	6.9	4.8	4.2	25	1.7	.74
11	6.9	10	12	6.6	8.2	9.0	6.8	4.4	3.4	6.6	1.5	.88
12	7.8	11	11	7.1	8.5	8.7	6.5	4.4	3.3	4.5	1.4	1.0
13	8.3	11	10	7.2	9.6	7.9	6.4	4.3	3.1	5.6	1.8	1.0
14	8.3	11	10	7.2	13	7.9	6.5	4.2	2.9	3.8	1.6	.87
15	9.1	11	10	7.5	11	7.9	6.0	3.7	2.8	3.5	1.5	1.3
16	11	13	10	8.0	11	7.9	5.6	3.7	2.8	3.1	1.3	2.6
17	9.8	13	9.6	8.5	12	7.7	5.4	3.6	3.0	3.0	1.1	1.7
18	9.0	14	9.4	8.4	12	7.5	5.2	3.6	2.6	3.1	.89	1.1
19	9.0	13	9.6	9.5	13	7.8	5.1	3.5	2.4	4.3	1.5	1.1
20	8.7	11	9.9	10	12	7.9	4.9	4.5	2.3	6.5	1.2	1.2
21	8.7	12	9.9	8.8	12	7.8	4.9	161	2.1	4.7	1.2	1.2
22	10	11	9.9	8.1	14	7.5	4.9	77	2.0	3.8	1.2	1.1
23	14	12	9.6	8.6	13	7.3	4.9	117	2.0	3.2	1.3	1.1
24	11	12	9.6	12	12	7.4	5.0	19	2.0	3.0	1.2	1.1
25	15	12	9.6	12	12	7.4	5.0	12	1.8	2.7	1.1	1.1
26	17	12	9.4	7.9	12	7.8	6.4	10	1.5	2.7	1.0	1.3
27	12	12	9.2	7.6	12	7.2	7.0	17	1.5	2.4	.85	.98
28	11	17	10	7.9	11	6.6	5.9	11	1.6	2.3	.90	66
29	14	19	9.7	10	11	6.6	5.4	8.8	2.1	2.2	.97	22
30	17	18	9.6	19	---	6.5	5.3	7.8	7.3	2.2	1.0	3.2
31	13	---	9.4	14	---	6.2	---	6.8	---	2.2	.97	---
TOTAL	294.2	365.5	395.4	268.2	303.8	255.5	203.8	538.3	108.6	214.5	45.38	120.26
MEAN	9.49	12.2	12.8	8.65	10.5	8.24	6.79	17.4	3.62	6.92	1.46	4.01
MAX	17	19	37	19	14	11	16	161	7.3	67	2.7	66
MIN	6.0	9.0	9.2	6.5	7.9	6.2	4.9	3.5	1.5	1.7	.85	.74
AC-FT	584	725	784	532	603	507	404	1070	215	425	90	239

CAL YR 1987 TOTAL 14323.0 MEAN 39.2 MAX 1190 MIN 3.7 AC-FT 28410
WTR YR 1988 TOTAL 3113.44 MEAN 8.51 MAX 161 MIN .74 AC-FT 6180

PLATTE RIVER BASIN

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06803525 SALT CREEK BELOW STEVENS CREEK, NEAR WAVERLY, NE

LOCATION.--Lat 40°54'18", long 96°35'09", in NW1/4SW1/4 sec.24, T.11 N., R.7 E., Lancaster County, Hydrologic Unit 10200203, at bridge 0.5 mi north of Interstate Highway 80 and 3 mi southwest of Waverly.

DRAINAGE AREA.--815 mi².

PERIOD OF RECORD.--Water years 1971 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)
OCT 06...	1115	216	--	7.87	12.0	8.0	K6300	K120	350	54
NOV 02...	1340	240	3440	8.04	16.0	8.0	--	2900	330	21
DEC 02...	1115	274	3440	8.02	3.0	11.0	K82000	K15000	300	17
JAN 27...	1145	202	4190	8.35	2.0	11.0	E9300	E29000	360	53
FEB 22...	1300	260	--	8.00	7.0	11.4	E26000	E4100	340	28
MAR 18...	0945	172	5160	7.90	4.0	13.2	K140000	17000	350	15
APR 20...	1045	155	5340	8.21	13.0	7.7	--	7900	390	98
MAY 25...	0930	223	3400	7.80	19.0	6.0	4700	8100	80	0
JUN 21...	1230	99	--	8.20	27.5	10.8	280	K81	370	--
JUL 20...	1030	182	4020	7.61	19.5	5.3	K29000	6700	240	55
AUG 16...	1130	96	--	7.89	26.5	6.2	K25000	K290	340	69
SEP 14...	1600	80	7890	7.80	20.0	7.1	400	160	380	89

E Estimated value.

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

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT 06...	95	28	1000	24	13	299	260	1400	0.60	23
NOV 02...	89	25	690	17	11	305	180	930	0.50	21
DEC 02...	83	22	670	18	9.4	281	180	--	0.50	20
JAN 27...	100	27	870	21	15	308	270	1200	0.60	26
FEB 22...	92	26	830	20	10	309	230	1100	0.50	17
MAR 18...	94	28	1000	24	13	336	280	1200	0.60	22
APR 20...	100	33	1100	25	10	288	300	1400	0.60	19
MAY 25...	14	11	760	38	10	246	180	840	0.60	22
JUN 21...	92	33	1600	38	10	--	360	1900	0.70	21
JUL 20...	63	19	720	21	9.8	181	210	1000	0.60	17
AUG 16...	83	32	1500	37	18	270	390	1900	0.60	22
SEP 14...	95	34	1700	39	14	289	410	2200	0.60	4.1

PLATTE RIVER BASIN

06803525 SALT CREEK BELOW STEVENS CREEK, NEAR WAVERLY, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
OCT 06...	3010	4.09	1750	2.00	1.90	2.40	0.90	3.3	5.3	2.20
NOV 02...	2130	2.90	1380	1.40	1.10	1.70	1.2	2.9	4.3	1.10
DEC 02...	--	--	--	1.40	1.50	2.00	1.2	3.2	4.6	1.00
JAN 27...	2690	3.66	1470	2.20	--	4.30	0.80	5.1	7.3	1.90
FEB 22...	2500	3.40	1750	1.70	1.80	2.50	0.70	3.2	4.9	1.10
MAR 18...	2850	3.87	1320	1.50	1.50	3.40	1.7	5.1	6.6	2.00
APR 20...	3140	4.27	1310	0.800	0.880	3.70	1.1	4.8	5.6	1.80
MAY 25...	1990	2.71	1200	1.90	1.90	1.80	0.20	2.0	3.9	1.20
JUN 21...	4020	5.46	1070	1.80	--	2.90	0.80	3.7	5.5	3.00
JUL 20...	2150	2.92	1060	1.50	<0.100	1.30	1.9	3.2	4.7	1.20
AUG 16...	4120	5.60	1070	2.10	2.00	2.60	0.10	2.7	4.8	3.10
SEP 14...	4630	6.30	1000	1.80	--	4.10	0.40	4.5	6.3	3.40

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)
NOV 02...	<1	<100	<1	13	7	910	<5
FEB 22...	3	200	1	3	9	620	<5
MAY 25...	9	200	1	<1	13	9300	14
AUG 16...	6	<100	1	3	5	580	<5

DATE	MANGANESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV 02...	470	0.70	2	1	<10	8.8
FEB 22...	540	<0.10	2	<1	<10	6.7
MAY 25...	740	--	2	1	50	18
AUG 16...	360	0.10	2	1	20	8.0

PLATTE RIVER BASIN

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06803530 ROCK CREEK NEAR CERESCO, NE

LOCATION.--Lat 41°00'56", long 96°32'39", in NE1/4NE1/4 sec.17, T.12 N., R.8 E., Lancaster County, Hydrologic Unit 10200203, on right bank 20 ft downstream from bridge on east-west county road and 5.7 mi southeast of Ceresco.

DRAINAGE AREA.--119 mi².

PERIOD OF RECORD.--April 1970 to current year.

REVISED RECORDS.--WDR NE-76-1: 1975(M).

GAGE.--Water-stage recorder. Datum of gage is 1,112.18 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 6, 1980, at present site at datum 3.0 ft higher. July 14, 1981 to Feb. 29, 1984, on left bank 30 ft downstream from bridge at present datum.

REMARKS.--Estimated daily discharges: Dec. 15-17, 21, Dec. 26 to Feb. 14, Feb. 22-25, and Mar. 13-16. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--18 years, 39.9 ft³/s, 28,910 acre-ft/yr; median of yearly mean discharges, 34 ft³/s, 24,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 ft³/s Aug. 25, 1987, gage height, 19.60 ft, present datum, from floodmark; minimum daily, 0.25 ft³/s July 13, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 850 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 21	2400	978	7.74	Sept. 29	0308	*1550	*9.54

Minimum daily discharge, 4.3 ft³/s Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	26	25	20	20	18	22	17	24	12	7.3	5.3
2	15	22	24	17	14	19	66	17	18	13	6.2	5.3
3	15	21	26	16	15	17	43	20	16	11	5.8	5.7
4	16	19	29	15	15	16	31	20	25	11	5.9	5.5
5	16	17	26	15	13	17	27	18	16	10	6.8	5.3
6	15	18	28	14	12	18	26	17	14	9.3	7.2	5.4
7	15	19	29	14	14	20	24	17	17	8.5	6.5	5.3
8	16	19	34	15	18	21	23	24	17	9.4	6.3	5.5
9	16	18	55	13	15	20	25	19	14	9.6	7.6	5.6
10	15	18	32	14	13	20	26	16	13	12	7.0	5.8
11	16	18	28	17	16	21	23	16	13	10	6.0	5.8
12	17	19	25	15	18	20	23	16	13	9.3	6.0	5.4
13	17	20	24	14	20	15	22	15	13	8.6	8.6	5.5
14	17	20	24	16	30	14	22	15	13	7.6	7.7	5.7
15	19	21	21	17	40	12	21	15	12	7.0	6.9	9.6
16	22	25	20	18	30	13	19	14	12	19	6.5	29
17	18	25	20	19	32	21	18	14	12	10	5.8	7.6
18	17	23	22	18	25	21	17	14	12	9.1	5.1	4.6
19	17	20	24	17	22	22	17	14	12	11	4.5	6.9
20	17	20	25	16	20	22	17	19	11	16	5.1	6.7
21	17	20	21	16	19	22	17	254	10	10	5.9	4.8
22	18	21	23	17	20	22	17	283	9.2	9.3	6.2	4.6
23	18	21	24	16	32	20	17	61	7.8	9.2	6.5	4.5
24	18	20	25	15	21	21	17	29	7.9	9.2	5.5	4.4
25	18	20	22	14	18	21	17	21	7.7	9.9	5.4	4.4
26	23	21	18	14	18	20	19	19	7.5	12	5.6	4.4
27	20	22	19	16	19	18	24	19	7.8	8.7	5.7	4.3
28	18	27	20	18	18	18	19	17	8.9	8.3	5.6	173
29	19	27	20	35	18	18	18	17	8.8	8.0	5.4	590
30	18	26	21	100	---	18	17	16	9.5	8.7	5.7	21
31	21	---	30	45	---	17	---	16	---	8.0	5.5	---
TOTAL	540	633	784	626	585	582	694	1089	382.1	314.7	191.8	956.9
MEAN	17.4	21.1	25.3	20.2	20.2	18.8	23.1	35.1	12.7	10.2	6.19	31.9
MAX	23	27	55	100	40	22	66	283	25	19	8.6	590
MIN	15	17	18	13	12	12	17	14	7.5	7.0	4.5	4.3
AC-FT	1070	1260	1560	1240	1160	1150	1380	2160	758	624	380	1900

CAL YR 1987 TOTAL 38488.1 MEAN 105 MAX 11400 MIN 7.4 AC-FT 76340
WTR YR 1988 TOTAL 7378.5 MEAN 20.2 MAX 590 MIN 4.3 AC-FT 14640

PLATTE RIVER BASIN

06803555 SALT CREEK AT GREENWOOD, NE

LOCATION.--Lat 40°57'56", long 96°27'01", at center of sec.31, T.12 N., R.9 E., Cass County, Hydrologic Unit 10200203, on right bank just downstream from county road bridge, 0.5 mi west of Greenwood.

DRAINAGE AREA.--1,051 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1951 to current year. Records furnished by Corps of Engineers prior to Oct. 1, 1972.

REVISED RECORDS.--WDR NE-71: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,068.14 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 5, 1964, nonrecording gage at same site and datum.

REMARKS.--Estimated daily discharges: Jan. 1 to Feb. 16. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--36 years (water years 1953-88), 343 ft³/s, 248,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,800 ft³/s June 13, 1984, gage height, 26.50 ft; minimum daily, 14 ft³/s Jan. 10, 1957.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 29	0430	*3690	*7.99	No other peak greater than base discharge.			

Minimum daily discharge, 92 ft³/s Aug. 29, Sept. 3, 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	256	334	352	190	260	245	221	189	218	161	104	93
2	247	298	346	200	260	245	415	186	202	145	103	93
3	237	296	328	220	260	239	343	228	188	129	100	92
4	230	387	319	220	260	232	285	219	185	123	102	96
5	229	474	336	210	250	228	256	208	185	120	107	92
6	221	360	336	220	240	226	242	200	170	117	101	96
7	213	350	331	230	280	227	227	195	170	183	99	96
8	213	353	342	220	290	233	213	243	182	566	95	96
9	210	345	501	200	270	230	232	223	177	305	100	102
10	210	342	342	210	240	227	232	190	161	233	100	109
11	209	342	305	240	270	224	215	180	149	183	98	109
12	208	346	280	230	300	221	206	174	141	156	96	108
13	215	350	265	230	340	212	201	168	139	146	174	109
14	212	350	257	240	350	202	198	160	141	138	131	105
15	228	354	254	270	360	200	192	157	139	130	109	136
16	291	381	238	260	340	203	190	153	139	132	105	413
17	241	379	234	270	294	204	191	149	133	133	101	171
18	226	355	243	280	290	208	188	147	130	129	97	138
19	215	339	248	270	289	208	189	149	125	246	172	168
20	215	329	246	260	287	206	186	199	123	256	137	144
21	215	344	235	230	280	209	185	1310	124	151	133	121
22	222	382	232	260	298	207	188	1290	121	135	116	118
23	223	366	230	270	274	206	186	1010	124	127	123	115
24	222	355	233	250	252	206	186	424	117	120	104	113
25	223	332	215	240	250	206	187	295	115	117	99	113
26	269	319	197	240	262	200	358	248	111	165	95	111
27	256	322	211	260	261	197	262	285	110	148	99	113
28	249	368	235	280	255	190	214	242	114	122	99	1360
29	244	375	222	300	248	190	195	210	129	117	92	2120
30	245	381	213	290	---	188	190	195	145	116	95	412
31	268	---	204	280	---	176	---	186	---	110	95	---
TOTAL	7162	10608	8528	7570	8110	6595	6773	9412	4407	5159	3381	7262
MEAN	231	354	275	244	280	213	226	304	147	166	109	242
MAX	291	474	501	300	360	245	415	1310	218	566	174	2120
MIN	208	296	197	190	240	176	185	147	110	110	92	92
AC-FT	14210	21040	16920	15020	16090	13080	13430	18670	8740	10230	6710	14400

CAL YR 1987 TOTAL 314450 MEAN 862 MAX 20900 MIN 197 AC-FT 623700
WTR YR 1988 TOTAL 84967 MEAN 232 MAX 2120 MIN 92 AC-FT 168500

PLATTE RIVER BASIN
06803555 SALT CREEK AT GREENWOOD, NE--Continued

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WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to October 1984.

WATER TEMPERATURES: October 1980 to October 1984.

SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976.

REMARKS.--Prior to July 1, 1971, sediment records were obtained by the U.S. Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 9,100 microsiemens Sep. 22, 1981; minimum daily, 170 microsiemens June 13, 1984.

WATER TEMPERATURES: Maximum, 36.0°C June 25, 1981; minimum, 0.0°C on many days during winter period.

SEDIMENT CONCENTRATIONS: Maximum daily, 15,900 mg/L May 18, 1974; minimum daily, 5 mg/L Oct. 9, 1971.

SEDIMENT LOADS: Maximum daily, 492,000 tons Oct. 11, 1973; minimum daily, 1.0 ton Oct. 9, 1971.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 06...	1030	255	3620	7.96	12.0	7.9	50	K23000	820
NOV 02...	1215	295	3350	8.42	15.0	7.5	22	--	2500
DEC 02...	1000	349	3130	8.09	3.0	10.4	19	K75000	K22000
JAN 27...	1000	260	--	7.76	0.0	10.2	28	E18000	9800
FEB 22...	1115	336	3230	7.96	6.0	10.5	30	E60000	E19000
MAR 18...	1145	207	3910	7.90	4.5	11.2	21	9300	1300
APR 20...	0910	190	4200	8.24	13.0	7.8	24	K140	90
MAY 25...	1100	295	2600	7.83	20.0	5.5	60	1200	9300
JUN 21...	1100	127	5490	8.40	28.5	11.1	48	200	150
JUL 20...	0825	257	2060	7.42	20.0	4.4	89	K33000	K27000
AUG 16...	1015	108	5720	7.95	26.5	4.5	10	K21000	1200
SEP 14...	1440	102	5720	8.17	21.0	5.6	34	6000	200

E Estimated value.

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 06...	330	87	27	840	21	230	1100	2280	3.11
NOV 02...	330	89	27	640	16	190	350	1290	1.76
DEC 02...	320	86	25	580	15	180	730	1600	2.18
JAN 27...	360	97	28	770	18	210	1000	2100	2.86
FEB 22...	320	87	24	620	16	200	860	1790	2.44
MAR 18...	320	83	27	770	19	220	1200	2300	3.13
APR 20...	340	88	28	820	20	250	1200	2350	3.19
MAY 25...	260	71	21	450	12	160	630	1330	1.81
JUN 21...	360	93	30	1300	31	310	1600	3330	4.53
JUL 20...	160	44	12	360	13	110	550	1080	1.46
AUG 16...	340	90	28	1300	32	300	1800	3520	4.78
SEP 14...	320	87	26	1200	30	300	1500	3110	4.23

PLATTE RIVER BASIN

06803555 SALT CREEK AT GREENWOOD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
OCT 06...	1570	28	2.40	1.20	0.40	1.6	4.0	2.30
NOV 02...	1030	40	2.00	1.30	0.20	1.5	3.5	0.970
DEC 02...	1510	34	2.40	--	--	--	--	1.10
JAN 27...	1480	26	2.40	3.00	1.3	4.3	6.7	1.40
FEB 22...	1620	67	2.40	1.80	1.2	3.0	5.4	1.40
MAR 18...	1290	8	2.30	2.30	0.40	2.7	5.0	1.80
APR 20...	1200	16	1.40	2.00	1.4	3.4	4.8	1.50
MAY 25...	1080	350	2.10	1.10	2.0	3.1	5.2	0.330
JUN 21...	1140	43	1.70	0.950	1.4	2.3	4.0	2.10
JUL 20...	747	604	1.30	0.870	1.5	2.4	3.7	0.660
AUG 16...	1030	103	2.70	0.910	1.5	2.4	5.1	0.210
SEP 14...	857	31	2.30	2.20	0.80	3.0	5.3	2.60

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV 02...	1215	17	<15	<10	<10	<20	<0.10	13	<1	<30	5.7
FEB 22...	1115	17	<15	<10	<10	20	<0.10	10	<1	<30	5.9
MAY 25...	1100	12	<15	10	20	<20	<0.10	29	<1	50	10
AUG 16...	1015	--	<15	20	10	40	<0.10	31	<1	40	7.6

PLATTE RIVER BASIN

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06804000 WAHOO CREEK AT ITHACA, NE

LOCATION.--Lat 41°08'40", long 96°32'10", in NW1/4NW1/4 sec.33, T.14 N., R.8 E., Saunders County, Hydrologic Unit 10200203, on right bank 16 ft downstream from bridge on State Highway 63 and 0.5 mi south of Ithaca.

DRAINAGE AREA.--271 mi², of which 268 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WDR NE-71-1: Drainage area. WDR NE-78-1: 1977(P).

GAGE.--Water-stage recorder. Datum of gage is 1,110.48 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 27, 1959, nonrecording gages at same site and datum. Oct. 28, 1959, to Feb. 22, 1961, nonrecording gage at site 1.5 mi upstream at datum 8.21 ft higher.

REMARKS.--Estimated daily discharges: Dec. 16, 17, Jan. 1-12, 20, 21, 24-28, Feb. 1-12, 24-25, Mar. 13-16. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--39 years, 88.0 ft³/s, 63,760 acre-ft/yr; median of yearly mean discharges, 77.1 ft³/s, 55,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 77,400 ft³/s June 24, 1963, gage height, 22.93 ft, from rating curve extended above 13,000 ft³/s on basis of indirect measurement of peak flow; minimum daily, 3.3 ft³/s June 11, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since about 1910, 23.22 ft, from floodmark, Aug. 2, 1959, discharge, 45,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 29	0526	*2540	*16.67	No other peak above base discharge.			

Minimum daily discharge, 23 ft³/s Sept. 1-2, 8-13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	78	82	60	80	71	59	54	64	43	38	23
2	70	80	81	62	84	71	79	54	49	44	36	23
3	69	75	80	62	80	68	94	58	44	40	35	24
4	69	74	82	60	80	65	72	69	117	38	34	26
5	71	71	82	62	80	67	67	62	56	37	37	24
6	68	70	82	64	80	66	65	57	47	35	35	24
7	67	72	85	68	85	67	63	56	47	34	34	24
8	68	72	87	68	90	68	62	63	79	54	32	23
9	68	71	109	66	85	66	62	63	47	191	33	23
10	68	70	93	74	82	64	64	54	43	64	32	23
11	70	71	86	80	80	65	60	52	43	50	31	23
12	71	72	84	85	90	65	59	53	42	43	32	23
13	71	73	80	87	104	48	59	52	41	41	32	23
14	71	74	79	116	151	50	58	51	40	38	33	24
15	73	75	77	108	137	54	57	50	39	43	32	33
16	75	78	66	106	129	58	56	48	39	438	31	100
17	74	80	68	100	104	65	56	48	39	68	27	36
18	72	77	79	92	90	62	56	48	39	54	28	28
19	70	74	80	81	86	62	56	48	38	83	27	31
20	70	74	81	70	84	62	56	48	38	114	27	28
21	70	74	75	66	78	61	56	59	37	53	28	27
22	70	76	79	127	86	61	57	174	37	45	29	28
23	72	77	78	88	78	61	58	70	37	42	30	29
24	72	76	80	64	64	62	58	59	35	40	29	29
25	71	75	74	64	60	62	57	52	36	513	26	28
26	76	75	69	66	77	61	62	49	35	122	25	30
27	76	77	78	66	77	59	62	48	35	54	25	30
28	72	83	77	69	74	58	58	46	34	47	25	145
29	73	85	76	97	73	60	57	44	36	42	25	1270
30	74	83	75	316	---	59	55	44	44	40	25	72
31	74	---	64	144	---	58	---	44	---	40	24	---
TOTAL	2206	2262	2468	2738	2548	1926	1840	1777	1357	2590	937	2274
MEAN	71.2	75.4	79.6	88.3	87.9	62.1	61.3	57.3	45.2	83.5	30.2	75.8
MAX	76	85	109	316	151	71	94	174	117	513	38	1270
MIN	67	70	64	60	60	48	55	44	34	34	24	23
AC-FT	4380	4490	4900	5430	5050	3820	3650	3520	2690	5140	1860	4510

CAL YR 1987 TOTAL 65810 MEAN 180 MAX 6790 MIN 48 AC-FT 130500
WTR YR 1988 TOTAL 24923 MEAN 68.1 MAX 1270 MIN 23 AC-FT 49430

LOCATION.--Lat 41°00'55", long 96°09'28", in NW1/4NW1/4 sec.14, T.12 N., R.11 E., Sarpy County, Hydrologic Unit 10200202, on the left bank at the upstream side of bridge on Nebraska Highway 50, 1 mi north of Louisville.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WDR NE-76-1: Drainage area.

REMARKS.--Estimated daily discharges: Jan. 4 to Feb. 28. Records good except for period of estimated record, which is fair. Natural flow of stream affected by storage reservoirs, power developments, ground-water withdrawals and diversions for irrigation, and return flow from irrigated areas.

AVERAGE DISCHARGE.--35 years, 6,634 ft³/s, 4,806,000 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known since at least 1881, 144,000 ft³/s June 14, 1984, gage height, 11.34 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,000 ft³/s Feb. 29, gage height, 6.54 ft; maximum gage height, 7.05 ft Feb. 28, backwater from ice; minimum daily discharge, 922 ft³/s June 28.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5590	6710	7250	2640	7400	18300	6110	6250	6360	1020	2470	1550
2	5170	6730	7590	1870	7800	17700	5830	6030	6610	1140	1970	1180
3	5390	6920	7140	2050	6600	17800	7510	5870	6610	1300	1660	1520
4	4870	6910	7000	2700	6400	14100	7830	6250	6590	1890	1430	1520
5	5460	6710	7050	2600	6200	14600	8910	6590	6570	3450	1270	1660
6	5760	6630	7290	2900	6400	12900	8800	8830	5750	2500	1290	1620
7	4700	6160	6970	2800	7000	12600	8290	8520	5670	2340	1260	1330
8	4960	5870	7190	2800	7800	12300	7910	7800	5060	3930	1320	1430
9	5090	5700	7640	2700	8000	12700	7880	8230	5260	3490	1550	1470
10	5300	5650	7880	3000	8000	12200	8560	7600	4660	3340	1560	1620
11	5250	5390	7520	3100	7600	11100	7520	9040	4260	3220	1550	1770
12	4980	6350	7870	3500	8000	10800	7410	8170	4170	2790	1650	2280
13	5360	6300	7370	4000	7200	11300	6880	8180	3770	3060	1670	2050
14	5580	6080	7560	4500	7000	10900	7200	7210	3280	2620	1600	2250
15	5480	6270	6980	5200	7000	8810	6510	6560	3380	2890	1440	2300
16	6170	6380	6140	5600	6900	7760	6480	6550	3140	3170	2060	3780
17	5900	6490	7190	5800	7000	7630	6370	6410	2690	2790	2210	3690
18	6260	6750	6110	5600	7200	8270	6500	6190	2540	3230	2460	4440
19	6150	7970	5880	5200	8000	8270	5920	5560	2850	3200	3660	3860
20	5920	7940	6190	4900	9000	8150	5350	5910	2490	3980	3080	4030
21	6040	7230	6110	4600	10000	9110	5960	6250	2540	4170	3040	3540
22	6290	7020	6360	4900	12000	8740	5880	11000	2210	4530	2850	4160
23	6300	7110	6710	5200	14000	7530	6160	10200	2050	3610	2810	3790
24	5890	6910	6910	5400	15000	7510	6100	9880	1720	4300	2370	4220
25	5090	6830	6400	5200	15000	7660	5610	10400	1200	5380	2240	4310
26	6150	6280	5940	5000	17000	7800	6150	8590	1210	5740	2010	3790
27	6140	6950	5790	5800	19000	6710	6280	8270	1100	4760	1890	4230
28	7030	7270	5050	6800	20000	7590	5990	8060	922	4010	1740	5270
29	6730	7770	3810	7400	22300	8390	6300	7420	1070	3170	1470	11000
30	6680	7660	3420	7800	---	6670	6670	6770	1040	2950	1510	11100
31	6540	---	3250	7600	---	6570	---	7110	---	2350	1220	---
TOTAL	178220	200940	201560	139160	290800	322470	204870	235700	106772	100320	60310	100760
MEAN	5749	6698	6502	4489	10030	10400	6829	7603	3559	3236	1945	3359
MAX	7030	7970	7880	7800	22300	18300						

PLATTE RIVER BASIN

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06805500 PLATTE RIVER AT LOUISVILLE, NE--Continued

WATER QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1974 to September 1981.

WATER TEMPERATURES: November 1974 to September 1981.

SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1981.

REMARKS.--Prior to July 1, 1971, sediment records were obtained by the U.S. Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,450 microsiemens Sept. 1, 1976; minimum daily, 254 microsiemens Aug. 7, 1981.

WATER TEMPERATURES: Maximum, 36.0°C July 24, 1977, Aug. 19, 1979; minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATIONS: Maximum daily, 11,600 mg/L May 19, 1974; minimum daily, 60 mg/L July 19, 1976.

SEDIMENT LOADS: Maximum daily, 1,180,000 tons Mar. 21, 1978; minimum daily, 64 tons July 19, 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW- INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT										
27...	1200	--	550	8.42	8.5	--	--	12.7	9	330
NOV										
25...	0900	7020	747	8.41	5.0	742	29	11.8	--	1100
25...	0905	--	--	--	--	--	--	--	25	--
DEC										
21...	1230	6280	740	8.00	0.5	745	--	15.9	21	K140
JAN										
21...	1105	4400	724	7.95	0.0	754	--	14.9	12	270
FEB										
17...	1100	6740	--	8.17	0.0	749	17	12.3	--	K110
17...	1105	--	--	--	--	--	--	--	15	--
MAR										
15...	1230	8870	578	8.04	0.5	744	--	14.6	33	K38
APR										
13...	1130	6150	605	8.63	16.0	735	--	10.9	18	K110
MAY										
10...	0935	7380	677	8.45	16.5	737	37	10.0	--	K29
10...	0940	--	--	--	--	--	--	--	49	--
JUN										
14...	0950	2900	772	8.81	22.0	747	--	9.8	45	--
JUL										
14...	0940	2300	560	8.38	29.0	733	--	7.1	64	840
AUG										
10...	0925	1860	818	8.60	26.5	737	23	9.1	--	1600
10...	0930	--	--	--	--	--	--	--	54	--
SEP										
06...	1205	1670	731	8.44	19.5	746	--	10.6	55	31

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

PLATTE RIVER BASIN
06805500 PLATTE RIVER AT LOUISVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	STREP- TOCOC KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)
OCT 27...	220	210	--	61	15	39	1	--	--
NOV 25...	400	230	66	65	16	54	2	8.2	163
25...	--	220	--	62	16	58	2	--	--
DEC 21...	330	240	--	67	17	58	2	--	--
JAN 21...	150	230	--	66	16	54	2	--	--
FEB 17...	4600	230	61	66	16	48	1	9.5	172
17...	--	230	--	65	16	50	1	--	--
MAR 15...	450	240	--	68	16	42	1	--	--
APR 13...	--	230	--	66	17	38	1	--	--
MAY 10...	120	210	46	59	16	49	2	8.9	168
10...	--	220	--	60	16	51	2	--	--
JUN 14...	--	180	--	48	15	86	3	--	--
JUL 14...	K6300	160	--	45	12	60	2	--	--
AUG 10...	270	200	30	55	14	92	3	11	164
10...	--	180	--	50	13	100	3	--	--
SEP 06...	52	170	--	50	11	85	3	--	--

DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)
OCT 27...	70	26	--	--	--	211	0.29	0.0	65
NOV 25...	94	40	0.40	35	433	418	0.59	8450	--
25...	100	40	--	--	--	--	--	--	128
DEC 21...	100	42	--	--	--	284	0.39	4820	52
JAN 21...	100	36	--	--	--	272	0.37	3230	12
FEB 17...	100	31	0.40	38	429	421	0.58	7680	--
17...	110	34	--	--	--	--	--	--	65
MAR 15...	100	22	--	--	--	248	0.34	5940	165
APR 13...	100	15	--	--	--	236	0.32	3920	74
MAY 10...	110	32	0.40	26	414	404	0.56	8220	--
10...	100	34	--	--	--	--	--	--	239
JUN 14...	88	72	--	--	--	309	0.42	2420	126
JUL 14...	62	58	--	--	--	237	0.32	1470	340
AUG 10...	73	120	0.40	22	509	488	0.69	2560	--
10...	65	110	--	--	--	--	--	--	150
SEP 06...	58	93	--	--	--	297	0.40	1340	109

PLATTE RIVER BASIN

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06805500 PLATTE RIVER AT LOUISVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 27...	1.30	--	0.050	0.64	0.69	2.0	0.270	--	--
NOV 25...	--	1.50	0.040	0.66	0.70	--	0.200	0.180	0.160
25...	1.50	--	0.250	0.54	0.79	2.3	0.350	--	--
DEC 21...	1.40	--	0.250	0.37	0.62	2.0	0.240	--	--
JAN 21...	1.70	--	0.330	0.30	0.63	2.3	0.230	--	--
FEB 17...	--	1.80	0.290	0.71	1.0	--	0.290	0.230	0.180
17...	1.60	--	0.340	0.32	0.66	2.3	0.330	--	--
MAR 15...	1.60	--	0.140	1.4	1.5	3.1	0.520	--	--
APR 13...	0.970	--	0.050	1.2	1.2	2.2	0.300	--	--
MAY 10...	--	0.240	0.020	2.2	2.2	--	0.160	0.080	0.050
10...	0.250	--	0.080	1.7	1.8	2.0	0.420	--	--
JUN 14...	<0.020	--	0.090	1.2	1.3	--	0.410	--	--
JUL 14...	0.790	--	0.100	1.8	1.9	2.7	0.220	--	--
AUG 10...	--	<0.100	<0.010	--	2.0	--	0.360	0.190	0.180
10...	0.020	--	0.060	1.6	1.7	1.7	0.550	--	--
SEP 06...	0.020	--	0.050	1.7	1.7	1.7	0.540	--	--

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)
NOV 25...	0900	<10	--	6	130	<0.5	--	<1	--	<1	<3
25...	0905	--	19	--	--	--	<15	--	<10	--	--
FEB 17...	1100	<10	--	4	130	<0.5	--	2	--	1	<3
17...	1105	--	7	--	--	--	<15	--	<10	--	--
MAY 10...	0935	<10	--	8	110	<0.5	--	<1	--	1	<3
10...	0940	--	13	--	--	--	<15	--	<10	--	--
AUG 10...	0925	20	--	10	130	<0.5	--	2	--	<1	<3
10...	0930	--	10	--	--	--	<15	--	<10	--	--

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)
NOV 25...	--	3	6	--	<5	24	8	--	<0.1	<10
25...	10	--	--	<20	--	--	--	<0.10	--	--
FEB 17...	--	7	5	--	<5	25	14	--	<0.1	<10
17...	<10	--	--	<20	--	--	--	<0.10	--	--
MAY 10...	--	4	5	--	<5	25	1	--	<0.1	<10
10...	20	--	--	<20	--	--	--	1.0	--	--
AUG 10...	--	2	8	--	<5	19	9	--	0.1	<10
10...	20	--	--	20	--	--	--	1.5	--	--

PLATTE RIVER BASIN

06805500 PLATTE RIVER AT LOUISVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV 25...	<1	--	2	--	1.0	430	<6	--	6	--
25...	--	9	--	<1	--	--	--	30	--	3.8
FEB 17...	2	--	3	--	<1.0	440	<6	--	14	--
17...	--	<2	--	<1	--	--	--	<30	--	3.9
MAY 10...	2	--	3	--	<1.0	420	10	--	<3	--
10...	--	5	--	<1	--	--	--	<30	--	8.4
AUG 10...	2	--	2	--	3.0	310	7	--	<3	--
10...	--	<2	--	<1	--	--	--	40	--	6.3

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 25...	0900	7020	5.0	312	5910	44
FEB 17...	1100	6740	0.0	423	7700	17
MAY 10...	0935	7380	16.5	363	7230	60
AUG 10...	0925	1860	26.5	178	894	85

WEeping WATER CREEK BASIN

205

06806500 WEeping WATER CREEK AT UNION, NE

LOCATION.--Lat 40°47'35", long 95°54'40", in SW1/4NW1/4 sec.36, T.10 N., R.13 E., Cass County, Hydrologic unit 10240001, on left bank near downstream side of bridge on U.S. Highways 73 and 75, 1.5 mi southeast of Union and 2.8 mi downstream from South Branch Weeping Water Creek.

DRAINAGE AREA.--241 mi².

PERIOD OF RECORD.--February 1950 to current year.

REVISED RECORDS.--WSP 2118: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 926.72 ft above National Geodetic Vertical Datum of 1929. Prior to May 14, 1951, nonrecording gage at site 2 mi upstream at different datum. May 15, 1951, to Aug. 22, 1968, water-stage recorder for stages above 7.9 ft and nonrecording gage, Aug. 23, 1968 to Aug. 22, 1980, water-stage recorder on downstream side of bridge pier, Aug. 23, 1980 to Nov. 4, 1980 at present site, all at datum 3.00 ft higher. Nov. 5, 1980 to Aug. 23, 1984 at present site and datum. Aug. 24, 1984, to Mar. 5, 1986, on left bank 200 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 15-18, 21, 25, 26, Dec. 29 to Jan 16, Jan 19-26, Jan 29 to Feb. 15, Feb. 23-27, and Mar. 14-16. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--38 years, 97.8 ft³/s, 70,860 acre-ft/yr; median of yearly mean discharges, 71 ft³/s, 51,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,300 ft³/s May 9, 1950, gage height, 29.80 ft, from floodmark, present site and datum, from rating curve extended above 12,000 ft³/s on basis of measurement of peak flow through bridges and over highway embankment; minimum daily, 0.1 ft³/s Sept. 10-12, 14, 15, 17, 18, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 23	0948	*1070	*11.06	No peaks greater than base discharge.			

Minimum daily discharge, 6.9 ft³/s Sept. 12, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	164	82	48	50	57	49	43	207	32	15	8.5
2	68	126	77	50	50	58	80	41	70	31	14	7.9
3	67	100	78	50	48	56	106	47	57	26	13	7.7
4	70	93	86	49	48	54	79	56	56	24	12	8.1
5	70	86	87	48	46	53	68	49	46	19	12	7.5
6	66	84	86	47	44	55	63	45	41	18	12	7.7
7	65	84	98	45	50	56	59	43	39	17	12	7.7
8	68	84	102	44	52	58	55	42	38	15	11	7.8
9	68	81	127	43	54	58	54	41	36	24	11	7.4
10	66	79	124	48	58	57	58	41	34	40	12	7.5
11	69	77	94	52	58	56	54	38	33	29	11	7.0
12	71	78	86	58	60	55	51	38	32	24	11	6.9
13	72	80	78	62	62	52	50	38	30	20	12	6.9
14	71	80	76	68	70	46	49	36	29	17	11	7.3
15	74	77	70	76	84	46	47	34	29	15	11	9.7
16	93	80	66	81	108	48	46	32	29	15	9.8	15
17	81	86	68	82	121	54	46	31	31	15	10	16
18	75	85	70	76	103	54	44	32	30	47	8.3	14
19	70	77	74	68	78	54	44	33	29	45	11	11
20	69	72	76	60	65	55	47	123	28	58	12	10
21	68	73	66	50	57	54	45	179	27	37	11	9.0
22	70	72	71	54	64	54	43	228	26	28	13	9.5
23	70	71	69	54	56	58	44	617	26	26	17	8.8
24	70	71	70	56	52	55	44	217	24	23	14	8.5
25	69	78	62	60	50	55	46	77	23	23	12	8.0
26	79	74	58	52	54	52	67	60	20	21	9.9	7.8
27	77	75	74	54	58	50	61	173	19	19	9.2	8.1
28	72	94	72	59	59	49	52	107	19	19	8.7	43
29	70	104	60	54	58	49	47	87	24	17	8.3	298
30	71	89	54	52	---	49	45	59	28	17	7.9	35
31	90	---	46	52	---	49	---	47	---	16	8.3	---
TOTAL	2237	2574	2407	1752	1817	1656	1643	2734	1160	777	350.4	617.3
MEAN	72.2	85.8	77.6	56.5	62.7	53.4	54.8	88.2	38.7	25.1	11.3	20.6
MAX	93	164	127	82	121	58	106	617	207	58	17	298
MIN	65	71	46	43	44	46	43	31	19	15	7.9	6.9
AC-FT	4440	5110	4770	3480	3600	3280	3260	5420	2300	1540	695	1220

CAL YR 1987 TOTAL 81813 MEAN 224 MAX 7230 MIN 39 AC-FT 162300
WTR YR 1988 TOTAL 19724.7 MEAN 53.9 MAX 617 MIN 6.9 AC-FT 39120

06807000 MISSOURI RIVER AT NEBRASKA CITY, NE

LOCATION.--Lat 40°40'55", long 95°50'48", in NW1/4NE1/4 sec.9, T.8 N., R.14 E., Otoe County, Hydrologic Unit 10240001, on right bank 0.7 mi upstream from Waubesa Highway Bridge at Nebraska City, and at mile 562.6.

DRAINAGE AREA --410,000 mi², approximately. The 3.959 mi² in Great Divide basin are not included.

PERIOD OF RECORD.--August 1929 to current year. Gage-height records collected in this vicinity from August 1878 to December 1899 are contained in reports of Missouri River Commission.

REVISED RECORDS.--WSP 761: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 905.36 ft above NGVD, supplementary adjustment of 1954. See WSP 1918 or 1919 for history of changes prior to Apr. 1, 1963.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by upstream main-stem reservoirs. U.S. Army Corps of Engineers rain-gage and satellite data collection platform and U.S. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--59 years, 37,110 ft³/s, 26,890,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 414,000 ft³/s Apr. 19, 1952; maximum gage height, 27.66 ft Apr. 18, 1952; minimum discharge, 1,600 ft³/s Dec. 31, 1946 (discharge measurement); minimum gage height observed, -0.28 ft Dec. 24, 1960, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 49,000 ft³/s May 23, gage height, 11.84 ft; minimum daily discharge, 17,700 ft³/s Jan. 8, gage height, 4.17 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39800	40600	32000	23900	30900	40300	42000	38700	42500	34100	34100	33900
2	39600	40500	30300	22400	28200	40000	41100	38900	41300	34300	33900	35000
3	38900	41400	29800	21000	26900	41000	40500	38500	41400	34400	33700	37600
4	38600	41600	29200	21200	25800	39800	40600	39200	41100	34100	34000	38900
5	38300	41500	29100	22400	25700	39000	40300	39600	40100	34400	34200	38600
6	38400	41600	29100	22200	26000	37800	41300	40600	39700	35900	34900	38600
7	37800	41200	29100	19000	25800	37600	40600	41600	38700	34900	34100	38200
8	37700	40500	29000	17700	25200	38000	41800	41400	38100	35000	33500	37700
9	38600	40100	29200	19600	25000	37400	41900	42000	41100	37300	33700	38000
10	39100	39900	29900	21300	26000	36900	41300	42200	40000	36700	34400	38500
11	39600	39900	29900	21800	25900	36300	41900	41100	37600	36400	34300	38700
12	39900	40500	29900	22100	25200	35700	41500	41200	37000	35600	34100	39000
13	40500	41200	29700	22200	24700	35400	41300	39700	36900	35400	34500	39500
14	40100	41300	29500	23000	25200	35600	40700	39500	36200	35200	34400	39500
15	39200	41600	29400	23000	25600	35000	41000	38800	35600	34800	34000	40200
16	39000	42200	28700	22100	25900	31700	40700	37900	36000	37300	34000	40900
17	39200	42600	28800	23500	26400	30600	40700	37900	35500	37500	34300	42300
18	39100	43400	28400	25400	27200	30800	40500	37500	35000	36800	34200	41900
19	39100	43300	27300	26400	29600	30900	40200	37700	34900	36900	34600	39800
20	38600	43800	27600	26600	32400	31700	39800	38000	35400	36800	36000	37800
21	38400	42700	28300	26000	34800	32800	39000	39900	34900	35800	35700	38300
22	38400	42400	28300	24800	37900	36200	38900	45200	34900	35800	35300	38300
23	38800	42600	28600	23900	37400	37200	38600	48100	34800	35900	37200	37600
24	38600	42700	29100	25100	37600	38500	38700	46100	34900	35100	41500	37600
25	38300	42400	29300	24900	37600	39600	38700	44500	34300	35900	39100	38200
26	38200	41400	28400	24700	37100	41300	38800	42400	33600	36900	37000	38400
27	38500	38800	27500	24500	37900	43100	39600	42100	33900	37300	35400	37900
28	38200	37600	26800	23800	38800	43200	40700	42200	33400	36200	35400	38800
29	37900	36100	25800	23700	42300	43200	40600	41900	34400	35300	35200	41200
30	39100	34000	25000	26600	---	43200	39900	41200	34500	34700	34600	44700
31	39800	---	24600	29900	---	42000	---	41500	---	34300	34100	---
TOTAL	1205300	1229400	887600	724700	875000	1161800	1213200	1267100	1107700	1107000	1085400	1165600
MEAN	38880	40980	28630	23380	30170	37480	40440	40870	36920	35710	35010	38850
MAX	40500	43800	32000	29900	42300	43200	42000	48100	42500	37500	41500	44700
MIN	37700	34000	24600	17700	24700	30600	38600	37500	33400	34100	33500	33900
AC-FT	2391000	2439000	1761000	1437000	1736000	2304000	2406000	2513000	2197000	2196000	2153000	2312000
CAL YR 1987	TOTAL 16362700		MEAN 44830		MAX 119000		MIN 24600		AC-FT 32460000			
WTR YR 1988	TOTAL 13029800		MEAN 35600		MAX 48100		MIN 17700		AC-FT 25840000			

LITTLE NEMAH RIVER BASIN

207

06811500 LITTLE NEMAH RIVER AT AUBURN, NE

LOCATION.--Lat 40°23'33", long 95°48'46", in NE1/4NW1/4 sec.23, T.5 N., R.14 E., Nemaha County, Hydrologic Unit 10240006, on left bank at downstream side of bridge on U.S. Highway 136, 1 mi downstream from Longs Creek and Willow Creek and 1 mi east of Auburn.

DRAINAGE AREA.--793 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 889.87 ft above National Geodetic Vertical Datum of 1929. See WSP 2119 for history of changes prior to July 24, 1967.

REMARKS.--Estimated daily discharges: Oct. 2-4, Dec. 16-18, and Jan. 1 to Feb. 20. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--39 years, 298 ft³/s, 215,900 acre-ft/yr; median of yearly mean discharges, 203 ft³/s, 147,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 164,000 ft³/s May 9, 1950, gage height, 27.65 ft, from floodmark, from rating curve extended above 49,000 ft³/s on basis of computations of peak flow through bridge and culvert openings and over highway and railway embankments at gage heights 24.96 ft and 27.65 ft; minimum daily, 0.87 ft³/s July 6-8, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 24	0030	*4850	*11.62	No peak greater than base discharge.			

Minimum daily discharge, 24 ft³/s Aug. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	391	262	90	130	148	113	100	132	85	38	32
2	164	492	228	110	120	146	190	97	157	85	36	32
3	162	305	233	150	120	143	310	100	141	68	33	32
4	160	245	315	140	110	138	256	111	124	59	30	32
5	160	219	299	130	110	134	199	114	111	50	28	32
6	154	202	262	110	120	139	183	109	101	44	27	31
7	151	202	263	115	130	144	164	105	93	42	26	31
8	153	193	255	130	140	149	147	102	89	48	27	30
9	152	186	281	125	130	152	144	98	85	138	26	29
10	153	179	318	125	130	149	159	93	81	552	25	30
11	160	177	257	145	130	149	147	90	78	215	24	30
12	163	178	231	130	135	147	136	89	74	114	24	29
13	164	179	211	125	150	137	131	88	68	88	29	30
14	161	178	201	135	160	131	126	85	66	78	34	31
15	160	176	202	150	170	139	120	82	63	71	33	44
16	185	177	180	170	190	140	116	79	61	66	29	88
17	191	193	190	190	210	143	114	76	57	76	26	54
18	177	202	200	210	220	144	112	75	56	79	26	45
19	168	189	224	220	210	143	110	72	52	116	52	43
20	163	178	229	200	200	140	108	276	47	153	54	41
21	161	174	209	160	213	137	107	605	44	119	42	40
22	161	171	207	180	198	136	108	931	43	87	39	37
23	161	171	204	180	173	132	110	1460	42	75	78	34
24	162	168	203	170	144	133	111	1860	40	68	56	34
25	168	192	189	150	141	133	109	411	40	62	40	34
26	190	207	168	130	153	130	111	233	37	61	36	34
27	198	201	209	140	163	123	124	178	36	56	35	34
28	187	255	221	150	155	121	120	334	37	50	35	71
29	178	299	203	160	150	117	109	182	39	47	35	411
30	172	286	197	170	---	116	102	144	50	44	35	171
31	190	---	182	160	---	113	---	125	---	42	34	---
TOTAL	5195	6565	7033	4650	4505	4246	4196	8504	2144	2938	1092	1646
MEAN	168	219	227	150	155	137	140	274	71.5	94.8	35.2	54.9
MAX	198	492	318	220	220	152	310	1860	157	552	78	411
MIN	151	168	168	90	110	113	102	72	36	42	24	29
AC-FT	10300	13020	13950	9220	8940	8420	8320	16870	4250	5830	2170	3260

CAL YR 1987 TOTAL 221632 MEAN 607 MAX 19200 MIN 128 AC-FT 439600
WTR YR 1988 TOTAL 52714 MEAN 144 MAX 1860 MIN 24 AC-FT 104600

LITTLE NEMAHA RIVER BASIN
06811500 LITTLE NEMAHA RIVER AT AUBURN, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL KF AGAR PER (COLS. 100 ML) (31673)
OCT 05...	1045	158	594	8.33	13.0	--	11	1700	500
NOV 03...	1645	285	560	8.18	17.0	9.0	22	3900	7800
DEC 02...	1445	227	539	8.31	2.5	13.4	19	900	6900
JAN 27...	1445	142	642	7.85	0.5	12.5	9	K3700	580
FEB 24...	1240	142	535	8.26	1.5	12.6	30	4300	6300
MAR 16...	1345	145	604	8.18	5.0	14.5	12	4500	1100
APR 21...	1015	106	552	8.51	13.0	10.5	<8	1100	1000
MAY 25...	1120	396	396	8.16	21.0	7.6	83	16000	44000
JUN 22...	0830	42	573	8.32	23.5	7.2	22	3100	1500
JUL 19...	1700	167	119	7.28	20.0	4.8	410	--	--
AUG 16...	1110	29	597	8.01	30.0	9.5	24	E24000	140
SEP 14...	0815	32	568	7.75	18.5	8.4	10	2500	2000

E Estimated value.

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 05...	250	71	17	30	0.9	54	12	184	0.25
NOV 03...	210	60	15	28	0.9	43	8.9	155	0.21
DEC 02...	240	68	17	32	0.9	48	11	176	0.24
JAN 27...	300	86	20	38	1	55	13	212	0.29
FEB 24...	240	70	16	31	0.9	48	10	175	0.24
MAR 16...	280	81	18	36	1	52	11	198	0.27
APR 21...	240	68	18	35	1	55	12	188	0.26
MAY 25...	140	40	9.8	23	0.9	33	5.7	111	0.15
JUN 22...	240	64	19	42	1	68	14	207	0.28
JUL 19...	52	15	3.6	2.9	0.2	5.1	1.5	28	0.04
AUG 16...	230	64	17	43	1	63	22	209	0.28
SEP 14...	250	72	17	38	1	70	16	213	0.29

LITTLE NEMAHA RIVER BASIN

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06811500 LITTLE NEMAHA RIVER AT AUBURN, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 05...	78.5	50	2.70	0.330	0.16	0.49	3.2	0.300	2.9
NOV 03...	119	167	1.60	0.050	1.7	1.8	3.4	0.220	4.5
DEC 02...	108	79	3.00	0.160	0.94	1.1	4.1	0.420	4.5
JAN 27...	81.3	22	3.60	0.380	--	--	--	0.310	3.7
FEB 24...	67.1	199	2.90	0.250	0.73	0.98	3.9	0.180	4.5
MAR 16...	77.5	99	2.90	0.140	0.66	0.80	3.7	0.340	3.0
APR 21...	53.8	50	1.40	0.140	0.62	0.76	2.2	0.270	3.8
MAY 25...	119	920	2.20	0.590	2.6	3.2	5.4	0.490	9.0
JUN 22...	23.5	50	0.290	0.140	1.3	1.4	1.7	0.260	4.0
JUL 19...	12.7	6480	1.20	0.700	9.3	10	11	0.070	13
AUG 16...	16.4	460	0.270	0.260	1.0	1.3	1.6	0.290	5.3
SEP 14...	18.4	15	0.240	0.200	0.45	0.65	0.89	0.230	2.8

06813500 MISSOURI RIVER AT RULO. NE

DRAINAGE AREA.--414,900 mi², approximately. The 3.959 mi² in Great Divide basin are not included.

PERIOD OF RECORD.--October 1949 to current year in reports of U.S. Geological Survey. Gage-height record collected at site 80 ft upstream January 1886 to December 1899 published in reports of Missouri River Commission September 1929 to September 1950 in files of Kansas City office of U.S. Army Corps of Engineers.

GAGE.--Water-stage recorder. Datum of gage is 837.23 ft above NGVD. Oct. 1949 to Sept. 12, 1950, nonrecording gage at site 80 ft upstream and Sept. 13, 1950 to Apr. 19, 1983, recording gage on downstream end of middle pier, all at same datum.

REMARKS.--Estimated daily discharges: Aug. 15, 16. Records good except those for estimated daily discharges, which are poor. Flow regulated by upstream main-stem reservoirs. U.S. Army Corps of Engineers satellite data collection platform at station.

AVERAGE DISCHARGE.--39 years, 41,650 ft³/s, 30,180,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 358,000 ft³/s Apr. 22, 1952, gage height, 25.60 ft; minimum daily discharge, 4,420 ft³/s Jan. 13, 1957; minimum gage height, 0.65 ft Jan. 7, 1971, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1881 reached a stage of 22.9 ft, from floodmark, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 52,000 ft³/s May 24, gage height, 12.02 ft; minimum daily discharge, 20,500 ft³/s Jan. 9; minimum gage height 4.43 ft Jan. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42000	49000	37200	28200	35000	45900	44500	41400	42800	35900	36300	34800
2	40700	47200	35400	27100	31800	43500	44600	41000	42800	35800	36500	35100
3	40200	46000	34000	25600	28900	44200	44000	41900	42400	35800	35900	37000
4	40300	45700	33400	25000	28300	44700	43500	42200	42300	35400	35600	40200
5	39700	45400	32800	25900	28100	42300	42900	43100	42100	35300	35700	40400
6	40000	45600	32700	26700	28600	41700	43400	43300	41500	35900	36300	40200
7	40200	46000	32800	25000	28600	40600	43600	45200	41100	36500	36500	40400
8	39500	45300	32400	21100	28100	41100	43700	45200	40300	35600	34700	39900
9	40100	44800	32900	20500	27800	40500	44600	44900	41300	37000	34600	39400
10	40100	44600	33500	22700	28200	40500	44500	47000	45100	39400	35100	40100
11	40500	44300	34200	24000	29300	40200	44700	46100	42400	39000	35400	40400
12	40200	44200	33800	24500	28100	39300	44100	46400	39400	37900	35300	40700
13	39900	44900	33700	25100	27500	38800	44300	45400	38800	37600	35400	41300
14	40200	44400	32900	25400	27500	39000	43000	44200	37700	37400	36200	41500
15	40500	43700	32500	25900	28500	39300	42900	43000	36900	36900	35700	42000
16	41400	44300	31700	24900	28700	36800	42700	41700	36600	38100	36300	42900
17	42500	44600	30700	25000	29600	34100	42500	41200	37100	40000	35700	43600
18	43000	44900	31800	27900	29900	33400	41500	40800	36500	41600	35300	44000
19	43100	44900	31200	30300	31700	33100	41100	39900	36400	39700	35300	42400
20	43300	45400	30900	30700	34400	33100	40300	39600	36500	41400	36300	39200
21	43200	45100	32000	29900	37800	34000	39900	40700	36600	39300	37000	38000
22	42900	44100	32400	29100	39900	35800	40400	44200	36000	38200	36200	39000
23	42600	44100	32300	27400	41200	38400	40100	49500	35900	38100	36300	39500
24	42100	44200	32700	27800	39800	39200	40200	50700	36100	37300	40100	38800
25	41000	44800	33000	27800	40300	40800	40500	46700	35800	36800	42400	38900
26	40200	44200	32600	27600	39300	42200	40000	45400	35000	37700	38700	39000
27	40600	42100	32000	27100	39800	44500	39800	43400	34900	38600	36400	38900
28	40800	40900	31300	26700	41400	45300	40600	44900	35100	38200	35700	39700
29	41600	40300	30300	25800	45200	45300	41400	43700	34700	37300	35800	42100
30	41500	38900	29200	27100	---	45400	41700	42600	36000	37100	35500	46600
31	43300	---	28800	30900	---	44300	---	41600	---	36800	35100	---
TOTAL	1277200	1333900	1007100	818700	953300	1247300	1271000	1356900	1156100	1167600	1123300	1206000
MEAN	41200	44460	32490	26410	32870	40240	42370	43770	38540	37660	36240	40200
MAX	43300	49000	37200	30900	45200	45900	44700	50700	45100	41600	42400	46600
MIN	39500	38900	28800	20500	27500	33100	39800	39600	34700	35300	34600	34800
AC-FT	2533000	2646000	1998000	1624000	1891000	2474000	2521000	2691000	2293000	2316000	2228000	2392000
CAL YR 1987	TOTAL 18113900		MEAN 49630		MAX 140000		MIN 28800		AC-FT 35930000			
WTR YR 1988	TOTAL 13918400		MEAN 38030		MAX 50700		MIN 20500		AC-FT 27610000			

MISSOURI RIVER BASIN

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BIG NEMAHA RIVER BASIN

06814000 TURKEY CREEK NEAR SENECA, KS

LOCATION.--Lat 39°56'52", long 96°06'30", in SW1/4 NW1/4 SW1/4 sec.20, T.1 S., R.12 E., Nemaha County, Hydrologic Unit 10240007, on left bank at downstream side of highway bridge, 2.0 mi downstream from Clear Creek, 5.0 mi upstream from Big Nemaha River, and 8.0 mi northwest of Seneca.

DRAINAGE AREA.--276 mi².

PERIOD OF RECORD.--October 1948 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 1,037.53 ft above sea level. Prior to Oct. 19, 1956, water-stage recorder (occasional operation only) and nonrecording gage on former channel 400 ft south of present site at present datum. Oct. 19, 1956, to June 15, 1957, nonrecording gage at highway bridge 1.2 mi upstream at different datum. June 16, 1957, to Mar. 27, 1958, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 15-20, 26-28 and Dec. 30 to Feb. 25. Records good except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--40 years, 130 ft³/s, 94,180 acre-ft per yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s Oct. 11, 1973, gage height, 24.77 ft; no flow at times in 1956-57, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 20	0900	*616	*7.84	No peak greater than base discharge.			

Minimum discharge, 0.06 ft³/s Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	79	42	23	40	30	17	23	33	8.8	4.4	.38
2	38	59	38	21	35	29	389	22	29	7.6	3.1	.33
3	34	38	41	21	35	28	209	30	24	7.3	2.9	.34
4	36	31	45	18	25	26	100	43	22	5.8	2.7	1.1
5	38	28	48	16	20	25	71	32	24	4.7	2.8	2.1
6	35	26	40	15	15	26	63	27	17	3.4	2.4	.39
7	32	30	36	15	15	26	52	25	15	2.7	2.6	.26
8	31	30	36	15	17	26	43	23	13	2.4	2.0	.20
9	30	27	36	15	18	25	43	22	12	9.7	1.6	.17
10	29	27	36	15	15	24	62	20	10	41	1.8	.12
11	29	27	34	16	13	22	50	20	9.9	21	1.2	.14
12	31	27	32	19	12	21	39	19	9.5	9.7	.92	.12
13	31	27	31	19	12	18	35	18	8.6	6.4	1.4	.11
14	30	28	31	22	13	18	32	17	9.1	5.0	1.5	.22
15	30	30	29	25	13	20	30	17	12	5.3	1.4	.37
16	39	32	25	30	15	21	30	15	9.3	6.7	1.2	.68
17	35	33	25	35	17	22	30	15	8.0	3.8	.97	3.0
18	30	30	28	40	19	21	30	14	7.6	4.5	.78	2.3
19	27	28	35	45	22	21	28	14	6.5	10	.86	1.4
20	26	28	40	47	25	20	28	14	5.8	246	1.3	.61
21	25	28	39	45	30	18	27	51	5.2	39	1.2	.55
22	25	27	38	40	35	17	26	117	4.4	15	1.2	.36
23	26	27	34	45	35	16	26	58	4.8	10	.94	.19
24	27	27	32	40	33	15	26	230	4.7	8.8	.84	.15
25	27	30	26	35	30	15	25	87	3.7	6.0	.61	.11
26	32	31	25	30	41	14	25	44	3.1	4.9	.41	.10
27	31	31	25	30	38	14	25	33	2.6	3.8	.91	.07
28	28	38	25	35	34	14	24	29	2.6	3.0	.58	.37
29	28	43	25	40	32	14	24	24	2.7	2.9	.44	.63
30	27	48	25	45	---	13	23	22	7.4	20	.44	.53
31	35	---	25	50	---	13	---	21	---	6.3	.47	---
TOTAL	960	995	1027	907	704	632	1632	1146	326.5	531.5	45.87	17.40
MEAN	31.0	33.2	33.1	29.3	24.3	20.4	54.4	37.0	10.9	17.1	1.48	.58
MAX	39	79	48	50	41	30	389	230	33	246	4.4	3.0
MIN	25	26	25	15	12	13	17	14	2.6	2.4	.41	.07
AC-FT	1900	1970	2040	1800	1400	1250	3240	2270	648	1050	91	35

CAL YR 1987 TOTAL 82978.00 MEAN 227 MAX 6430 MIN 17 AC-FT 164600
WTR YR 1988 TOTAL 8924.27 MEAN 24.4 MAX 389 MIN .07 AC-FT 17700

BIG NEMAHA RIVER BASIN

06814500 NORTH FORK BIG NEMAHA RIVER AT HUMBOLDT, NE

LOCATION.--Lat 40°09'25", long 95°56'40", in NW1/4NE1/4 sec.10, T.2 N., R.13 E., Richardson County, Hydrologic Humboldt, Unit 10240008, on right bank near right downstream wingwall of bridge on State Highway 105 at south edge of Humboldt, 800 ft downstream from Long Branch Creek.

DRAINAGE AREA.--548 mi².

PERIOD OF RECORD.--October 1952 to current year. Prior to October 1967 published as North Fork Nemaha River at Humboldt.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder; nonrecording gage read twice daily. Datum of gage is 944.44 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 5, 1968, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 16-20 and Dec. 30 to Feb. 22. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--36 years, 205 ft³/s, 148,500 acre-ft/yr; median of yearly mean discharges, 185 ft³/s, 134,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,500 ft³/s Aug. 13, 1982, gage height, 31.25 ft, from floodmark; maximum gage height, 31.70 ft July 10, 1958; minimum daily, 0.07 ft³/s July 22, 23, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 19	2200	*1750	*5.34	No peaks greater than base discharge.			

Minimum daily discharge, 12 ft³/s Aug. 11, 12, 17, 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	206	102	80	86	79	65	42	93	34	22	13
2	64	149	91	96	84	81	278	42	78	32	18	13
3	60	119	101	100	80	76	225	57	68	27	15	13
4	63	98	123	90	76	69	157	65	64	23	16	13
5	66	82	103	82	66	67	127	56	59	20	13	13
6	62	77	104	84	74	69	117	48	53	18	14	13
7	61	84	99	90	84	71	95	43	50	18	14	13
8	63	84	94	94	88	75	81	41	47	23	13	13
9	65	77	95	88	90	71	90	42	46	72	15	14
10	64	71	92	90	78	70	116	39	44	312	14	15
11	68	70	94	100	84	67	86	37	42	137	12	15
12	72	72	89	120	92	64	74	34	40	57	12	15
13	76	75	85	104	120	48	69	34	41	36	14	16
14	78	76	83	100	110	59	64	31	42	28	16	16
15	76	76	74	110	116	60	60	31	42	22	15	18
16	93	81	70	110	140	64	57	29	41	20	13	24
17	84	89	80	116	130	62	57	27	38	37	12	28
18	78	78	94	130	110	62	58	26	38	278	13	79
19	74	74	104	150	120	61	54	200	38	214	19	61
20	72	71	110	140	116	62	54	272	36	571	22	35
21	70	69	105	82	104	60	56	487	31	114	21	28
22	73	70	98	88	98	58	55	462	26	60	16	24
23	75	74	96	90	90	56	55	626	31	41	15	25
24	75	72	95	90	79	54	52	751	28	33	15	26
25	73	79	73	70	82	55	50	206	23	30	14	24
26	86	80	84	60	90	52	51	123	20	29	13	19
27	85	81	117	66	92	47	51	96	19	25	13	18
28	80	98	113	88	87	50	47	83	25	24	12	17
29	79	110	102	104	82	51	46	80	21	23	12	22
30	78	110	98	110	---	48	44	70	22	23	13	29
31	104	---	86	90	---	52	---	65	---	24	13	---
TOTAL	2284	2652	2954	3012	2748	1920	2491	4245	1246	2405	459	672
MEAN	73.7	88.4	95.3	97.2	94.8	61.9	83.0	137	41.5	77.6	14.8	22.4
MAX	104	206	123	150	140	81	278	751	93	571	22	79
MIN	60	69	70	60	66	47	44	26	19	18	12	13
AC-FT	4530	5260	5860	5970	5450	3810	4940	8420	2470	4770	910	1330

CAL YR 1987 TOTAL 161287.1 MEAN 442 MAX 12100 MIN 56 AC-FT 319900
WTR YR 1988 TOTAL 27088 MEAN 74.0 MAX 751 MIN 12 AC-FT 53730

BIG NEMAHA RIVER BASIN

213

06815000 BIG NEMAHA RIVER AT FALLS CITY, NE

LOCATION.--Lat 40°02'08", long 95°35'45", in NE1/4SE1/4 sec.22, T.1 N., R.16 E., Richardson County, Hydrologic Unit 10240008, on right bank near upstream side of bridge on U.S. Highway 73, 1 mi south of Falls City and 13 mi upstream from mouth.

DRAINAGE AREA.--1,340 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1944 to current year. Prior to October 1967, published as Nemaha River at Falls City.

REVISED RECORDS.--WSP 1086: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 861.24 ft National Geodetic Vertical Datum of 1929. Prior to Oct. 16, 1952, nonrecording gage and Oct. 17, 1952 to Aug. 24, 1982, water-stage recorder for stages above 6.1 ft at site 150 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 14-17 and Jan. 1 to Feb. 18. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--44 years, 614 ft³/s, 444,800 acre-ft/yr; median of yearly mean discharges, 532 ft³/s, 385,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,600 ft³/s Oct. 11, 1973, gage height, 31.40 ft; minimum daily discharge, 3.0 ft³/s July 9, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 15,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 1	0730	3620	6.95	No peak greater than base discharge.			
Minimum daily discharge, 24 ft ³ /s Aug. 18.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	231	2270	362	190	180	208	156	148	137	145	68	28
2	213	1030	315	185	180	203	1020	142	168	119	48	26
3	202	498	306	205	180	195	1460	168	166	79	38	26
4	200	341	369	205	170	184	764	239	140	61	38	26
5	198	274	361	190	170	174	539	296	132	51	38	25
6	191	230	335	180	200	178	454	210	123	45	32	26
7	182	215	312	190	240	191	402	178	116	40	33	25
8	179	218	291	200	260	203	344	164	107	40	31	25
9	176	211	289	190	250	206	317	155	97	72	30	25
10	171	189	281	200	240	202	385	141	94	234	29	26
11	172	183	278	230	260	202	428	132	91	362	27	25
12	173	181	242	215	280	188	337	127	87	178	26	25
13	176	184	222	210	290	171	296	123	81	98	28	26
14	180	183	210	220	270	161	258	117	80	66	32	27
15	177	185	160	230	280	173	228	111	97	53	31	57
16	223	196	180	240	320	183	210	102	89	47	27	58
17	220	199	200	260	400	186	205	99	89	103	26	82
18	198	191	261	300	700	188	200	97	79	221	24	56
19	170	181	288	330	632	187	199	96	73	273	32	52
20	161	170	533	300	508	180	192	467	69	685	37	45
21	154	167	556	250	447	177	187	556	63	457	37	43
22	151	165	342	250	413	171	184	591	56	236	33	41
23	149	170	306	270	342	159	182	679	53	121	34	38
24	150	168	276	270	263	156	182	1160	54	85	29	37
25	149	181	241	250	204	148	180	696	52	73	29	35
26	157	192	167	200	211	139	175	398	48	62	27	34
27	162	211	259	220	230	134	167	248	42	57	27	33
28	158	245	308	250	229	137	162	190	40	52	27	43
29	149	329	263	290	214	142	158	164	48	49	26	50
30	144	358	265	300	---	144	153	149	48	47	28	51
31	217	---	210	230	---	134	---	135	---	44	29	---
TOTAL	5533	9515	8988	7250	8563	5404	10124	8278	2619	4255	1001	1116
MEAN	178	317	290	234	295	174	337	267	87.3	137	32.3	37.2
MAX	231	2270	556	330	700	208	1460	1160	168	685	68	82
MIN	144	165	160	180	170	134	153	96	40	40	24	25
AC-FT	10970	18870	17830	14380	16980	10720	20080	16420	5190	8440	1990	2210

CAL YR 1987 TOTAL 423674 MEAN 1161 MAX 25500 MIN 144 AC-FT 840400
WTR YR 1988 TOTAL 72646 MEAN 198 MAX 2270 MIN 24 AC-FT 144100

BIG NEMAHA RIVER BASIN
06815000 BIG NEMAHA RIVER AT FALLS CITY, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951, 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 05...	1245	208	642	8.48	16.5	10.4	11	14000	K71
NOV 03...	1105	480	553	8.10	16.0	8.5	27	12000	K55000
DEC 02...	1140	306	683	8.38	2.0	13.7	14	3700	K14000
JAN 27...	1120	220	743	7.88	0.0	13.0	47	130	210
FEB 24...	1100	243	586	8.24	0.5	12.2	30	K86	3800
MAR 16...	1130	176	707	8.19	4.5	14.2	8	<10	K17
APR 21...	1300	190	593	8.44	15.0	10.4	8	<10	120
MAY 24...	1530	1370	306	7.74	22.0	5.9	150	--	40000
JUN 21...	1600	65	--	8.75	34.0	8.4	35	K33	K20
JUL 19...	1425	203	384	7.81	27.0	6.6	110	26000	26000
AUG 16...	1525	27	659	8.48	37.0	8.8	20	E50000	K58
SEP 13...	1545	26	728	8.33	26.5	9.6	9	280	88

E Estimated value.

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 05...	280	79	21	31	0.8	81	20	232	0.32
NOV 03...	210	63	14	24	0.7	51	19	171	0.23
DEC 02...	300	86	21	37	1	78	31	253	0.34
JAN 27...	370	110	24	40	0.9	86	28	288	0.39
FEB 24...	270	80	17	26	0.7	66	16	205	0.28
MAR 16...	330	96	23	36	0.9	82	22	259	0.35
APR 21...	260	70	21	31	0.9	85	19	226	0.31
MAY 24...	120	37	7.9	14	0.6	26	7.1	92	0.13
JUN 21...	280	76	22	46	1	84	27	255	0.35
JUL 19...	140	42	9.7	19	0.7	42	13	126	0.17
AUG 16...	230	61	19	55	2	110	44	289	0.39
SEP 13...	270	72	21	53	1	120	46	312	0.42

BIG NEMAHA RIVER BASIN

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06815000 BIG NEMAHA RIVER AT FALLS CITY, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE		SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
OCT	05...	130	13	1.70	0.270	0.23	0.50	2.2	0.110
NOV	03...	222	203	1.60	0.070	2.7	2.8	4.4	0.370
DEC	02...	209	30	2.70	0.420	0.58	1.0	3.7	0.290
JAN	27...	171	29	3.10	0.350	0.62	0.97	4.1	0.280
FEB	24...	135	165	2.10	0.230	0.67	0.90	3.0	0.450
MAR	16...	123	27	1.70	0.090	0.47	0.56	2.3	0.190
APR	21...	116	43	0.600	0.090	0.45	0.54	1.1	0.150
MAY	24...	340	2460	1.80	1.20	5.0	6.2	8.0	1.80
JUN	21...	44.8	34	<0.020	0.030	1.1	1.1	--	0.190
JUL	19...	68.9	3210	2.50	0.140	4.7	4.8	7.3	1.20
AUG	16...	21.1	18	<0.020	0.030	1.4	1.4	--	0.140
SEP	13...	21.9	11	<0.020	<0.020	--	<0.50	--	0.140

DATE		TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV	03...	1105	13	<15	<10	10	<20	<0.10	7	<1	40	6.2
FEB	24...	1100	8	<15	<10	<10	<20	<0.10	4	<1	<30	5.2
MAY	24...	1530	35	<15	70	70	20	<0.10	13	<1	260	16
AUG	16...	1525	9	<15	<10	<10	<20	<0.10	<2	<1	<40	6.0

KANSAS RIVER BASIN

06821500 ARIKAREE RIVER AT HAIGLER, NE

LOCATION.--Lat 40°01'45", long 101°58'10", in NE1/4NE1/4 sec.29, T.1 N., R.41 W., Dundy County, Hydrologic Unit 10250001, on right bank at downstream side of bridge on U.S. Highway 34, 1.3 mi upstream from Burlington Northern Inc. bridge, 1.8 mi upstream from confluence with North Fork Republican River, 2 mi northwest of Haigler, and 3.2 mi downstream from Kansas-Nebraska State line.

DRAINAGE AREA.--1,640 mi², approximately, of which about 980 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1931 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1919: 1951, 1954, 1956, 1960. WSP 2119: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,250.98 ft above National Geodetic Vertical Datum of 1929. See WSP 1919 for history of changes prior to Sept. 29, 1964. Sept. 29, 1964 to Apr. 25, 1982 on left bank 57 ft downstream from bridge at present datum.

REMARKS.--Estimated daily discharge: Nov. 5-14, Dec. 15 to Feb. 13, Feb. 16-27, and Mar. 12-19. Records fair except for periods of estimated record, which are poor. Natural flow affected by ground-water withdrawals and diversions for irrigation of about 1,500 acres in Colorado and by return flow from Haigler Canal.

AVERAGE DISCHARGE.--57 years, 21.7 ft³/s, 15,720 acre-ft/yr; median of yearly mean discharges, 18 ft³/s, 13,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s May 31, 1935, gage height, 11.2 ft, site and datum then in use, from floodmarks, from rating curve extended above 3,800 ft³/s on basis of slope-area measurement of peak flow; no flow for some periods in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 3	0400	*223	*6.60	No peaks greater than base discharge.			
No flow June 22-23, Aug. 12, Sept. 1.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	8.0	1.1	.80	2.8	3.4	7.6	10	32	6.0	.30	.00
2	9.4	8.0	.94	.80	2.3	3.9	6.0	30	25	1.2	.30	.02
3	9.1	7.8	.95	.80	2.7	4.1	54	139	24	1.1	.39	1.2
4	8.6	7.5	.85	.90	2.6	3.7	61	46	22	1.4	4.5	3.6
5	8.6	7.4	.90	1.0	2.7	3.3	56	40	19	1.2	.69	2.6
6	7.6	7.4	.87	1.1	2.0	3.7	42	35	17	.98	.47	1.1
7	7.0	7.3	.70	.80	2.1	3.9	39	33	16	.91	.69	1.9
8	9.1	7.3	.63	.90	2.6	4.2	37	31	15	1.0	.76	1.3
9	9.3	7.2	.61	1.0	3.0	3.5	34	36	20	1.1	.41	.75
10	9.3	7.0	.71	1.3	2.2	3.4	33	32	13	1.4	.42	.96
11	9.0	6.8	.67	1.8	2.0	3.4	31	30	4.6	1.2	.09	4.2
12	9.0	6.7	.71	1.9	3.5	3.2	24	30	7.5	1.3	.00	2.6
13	7.9	6.7	.70	1.5	5.0	2.9	22	29	7.4	1.3	.08	4.3
14	8.7	6.5	.68	1.7	6.5	3.0	20	26	9.2	1.0	.73	7.5
15	9.0	6.1	.60	1.9	6.2	3.5	18	24	7.5	.98	.75	7.0
16	8.9	5.6	.60	2.1	4.5	3.4	17	22	6.9	1.3	.49	5.3
17	8.4	5.4	.70	2.0	4.3	3.2	17	20	5.1	.57	.30	6.2
18	9.1	5.3	.70	2.0	4.2	3.8	18	19	5.1	.72	.40	4.4
19	8.5	4.8	.70	1.9	4.3	4.5	16	23	4.5	.76	.31	6.1
20	8.2	4.7	.70	1.7	3.5	6.0	16	35	3.3	.80	.54	4.8
21	8.2	4.4	.70	1.3	3.6	4.6	16	48	3.6	.33	1.5	1.4
22	8.0	3.7	.80	1.2	4.5	3.7	20	43	.00	.28	1.6	2.5
23	8.0	3.3	.80	1.4	3.5	3.4	16	40	.00	.68	.97	12
24	8.0	2.7	.90	2.5	3.2	3.4	16	34	1.5	.88	1.0	9.8
25	7.6	2.7	.70	2.2	3.5	3.4	16	30	2.2	1.4	.68	7.5
26	7.6	2.7	.70	2.1	4.0	3.7	15	30	2.7	.76	.60	4.3
27	7.6	1.8	.70	2.5	3.5	3.4	14	27	2.8	.92	.74	7.8
28	7.6	1.5	.70	2.8	3.4	4.0	13	24	3.2	.41	1.2	9.4
29	7.6	1.3	.60	2.9	3.3	3.7	12	23	2.6	.28	.56	11
30	7.9	1.2	.70	3.5	---	3.7	12	19	14	.50	.14	12
31	8.1	---	.90	3.3	---	5.3	---	31	---	.35	.23	---
TOTAL	259.7	158.8	23.22	53.60	101.5	116.3	718.6	1039	296.70	33.01	21.84	143.53
MEAN	8.38	5.29	.75	1.73	3.50	3.75	24.0	33.5	9.89	1.06	.70	4.78
MAX	9.4	8.0	1.1	3.5	6.5	6.0	61	139	32	6.0	4.5	12
MIN	7.0	1.2	.60	.80	2.0	2.9	6.0	10	.00	.28	.00	.00
AC-FT	515	315	46	106	201	231	1430	2060	589	65	43	285

CAL YR 1987 TOTAL 2910.36 MEAN 7.97 MAX 78 MIN .00 AC-FT 5770
WTR YR 1988 TOTAL 2965.80 MEAN 8.10 MAX 139 MIN .00 AC-FT 5880

KANSAS RIVER BASIN

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06823000 NORTH FORK REPUBLICAN RIVER AT COLORADO-NEBRASKA STATE LINE

LOCATION.--Lat 40°04'10", long 102°03'05", in sec.10, T.1 N., R.42 W., Dundy County, Nebraska, Hydrologic Unit 10250002, on right bank 100 ft east of Colorado-Nebraska State line and 9.5 mi upstream from confluence with Arikaree River.

DRAINAGE AREA.--1,360 mi², approximately, of which about 100 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1932, published as North Fork of Arikaree River at Colorado-Nebraska State line. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1240: 1947(M). WSP 1390: 1934. WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Steel piling control since January 1965. Datum of gage is 3,336.09 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1934, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 15-17, 25-29, Dec. 31 to Jan. 15, 20-29, Feb. 2, 6, 10, 11, May 10-20, 30, and Sept. 16-19, 29. Records good except for periods of estimated record, which are fair. Natural flow affected by diversion in Pioneer Canal for irrigation of about 2,700 acres in Colorado and Nebraska.

AVERAGE DISCHARGE.--58 years, 46.8 ft³/s, 33,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft³/s Apr. 28, 1947, gage height, 5.92 ft, from rating curve extended above 800 ft³/s on basis of slope-area measurement of peak flow; no flow Aug. 25, 26, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft³/s and maximum (*).

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 13	0800	ice jam	*2.93	No peaks greater than base discharge.			
May 3	0530	*106	1.31				

Minimum daily discharge, 5.8 ft³/s, July 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	31	55	49	45	54	65	55	39	7.8	7.5	9.8
2	26	29	54	48	54	54	79	70	36	8.1	7.6	11
3	22	29	57	48	48	53	85	95	35	9.5	7.5	12
4	27	29	56	45	48	53	96	77	34	7.5	7.2	20
5	28	28	55	43	48	54	96	66	33	7.5	6.7	21
6	27	31	55	45	46	54	90	62	32	7.8	7.1	13
7	26	38	55	35	47	54	80	59	31	14	8.1	13
8	26	45	57	37	47	52	70	48	29	13	7.1	16
9	27	43	57	38	49	53	65	32	27	18	7.3	13
10	27	44	56	41	47	55	61	30	32	15	8.2	13
11	29	51	56	50	52	60	60	27	30	12	8.5	11
12	30	52	54	54	49	71	59	25	25	10	10	11
13	30	52	53	42	52	72	59	23	24	9.1	9.9	9.9
14	32	52	53	44	53	57	57	22	25	7.4	8.9	17
15	32	53	52	45	53	58	57	20	25	8.4	8.1	20
16	33	54	48	46	47	59	56	19	23	7.7	6.8	19
17	32	51	54	46	43	59	57	18	21	7.9	7.1	20
18	32	55	53	46	40	59	56	17	19	8.3	8.4	21
19	35	53	53	31	40	61	57	25	19	12	7.9	22
20	34	53	53	29	40	60	57	40	14	8.9	8.8	23
21	32	53	54	27	49	57	55	50	11	7.7	8.7	20
22	27	51	54	35	53	56	57	59	9.4	7.1	6.7	19
23	27	51	54	45	53	55	56	56	8.1	6.8	7.8	22
24	27	55	53	52	53	54	55	50	7.8	6.8	11	26
25	26	58	50	45	53	53	56	46	7.4	6.9	11	27
26	28	56	47	40	54	54	55	38	6.9	11	9.3	25
27	30	58	56	45	54	57	54	35	7.0	8.7	9.1	25
28	31	56	52	48	54	55	53	33	6.7	6.9	8.3	25
29	32	56	50	52	54	55	56	33	6.5	5.8	11	26
30	31	55	53	53	---	55	58	35	7.8	6.7	10	27
31	30	---	50	54	---	62	---	46	---	7.6	10	---
TOTAL	905	1422	1659	1358	1425	1765	1917	1311	631.6	281.9	261.6	557.7
MEAN	29.2	47.4	53.5	43.8	49.1	56.9	63.9	42.3	21.1	9.09	8.44	18.6
MAX	35	58	57	54	54	72	96	95	39	18	11	27
MIN	22	28	47	27	40	52	53	17	6.5	5.8	6.7	9.8
AC-FT	1800	2820	3290	2690	2830	3500	3800	2600	1250	559	519	1110

CAL YR 1987 TOTAL 14680.7 MEAN 40.2 MAX 104 MIN 6.0 AC-FT 29120
WTR YR 1988 TOTAL 13494.8 MEAN 36.9 MAX 96 MIN 5.8 AC-FT 26770

KANSAS RIVER BASIN

06823500 BUFFALO CREEK NEAR HAIGLER, NE

LOCATION.--Lat 40°02'22", long 101°51'57", in SE1/4NW1/4 sec.20, T.1 N., R.40 W., Dundy County, Hydrologic Unit 10250002, on left bank 15 ft upstream from county highway bridge, 0.4 mi upstream from mouth, and 4 mi northeast of Haigler.

DRAINAGE AREA.--260 mi², approximately, of which about 13 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 2119: 1948-50(M), 1957(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,188.90 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 19, 1980, at site 0.5 mi upstream at datum 15.67 ft higher.

REMARKS.--Estimated daily discharges: Dec. 13 to Jan. 30, Feb. 4-7, 9-14, Mar. 12-15, and May 21, 22. Records fair except for periods of estimated record, which are poor. Natural low affected by diversion about 1 mi upstream for irrigation of 880 acres.

AVERAGE DISCHARGE.--48 years, 7.35 ft³/s, 5,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 140 ft³/s June 27, 1948, gage height, 4.37 ft, site and datum then in use; maximum gage height, 5.93 ft Jan. 3, 1976, site and datum then in use, backwater from ice; no flow at times in 1955, 1968, 1973-80, 1984, 1987, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 28	1500	(a)	*4.55	May 3	0830	*28	4.36
Apr. 2	1700	22	4.20				

a Backwater from ice.

No flow Aug. 20-24, Aug. 26 to Sept. 1, Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	6.5	7.8	4.5	9.1	6.8	7.5	8.2	8.9	.09	.02	.00
2	3.9	6.5	7.3	4.2	7.6	7.0	12	10	8.1	.09	.03	.16
3	3.8	6.1	7.4	4.0	7.8	7.9	17	22	7.7	.42	.03	.21
4	4.0	5.9	6.8	4.5	6.6	7.7	14	14	7.3	.26	.06	.21
5	4.1	5.9	6.7	8.4	5.8	7.2	10	10	7.1	.01	.04	.22
6	4.1	6.1	7.0	8.2	5.0	7.7	8.7	8.6	7.1	.01	.03	.24
7	3.8	6.2	6.8	6.0	6.0	7.3	7.9	7.6	7.1	.03	.02	.26
8	3.7	6.6	7.6	6.6	6.4	7.2	7.8	6.9	6.9	.02	.02	.06
9	4.4	5.9	8.1	7.4	6.0	7.4	8.7	7.3	7.4	.09	.03	.00
10	6.1	6.2	7.5	8.0	5.4	7.5	8.2	7.3	4.2	.23	.03	.16
11	5.4	6.1	7.2	8.0	5.0	6.8	7.6	7.5	2.7	.65	.03	1.8
12	6.6	6.1	7.4	7.8	6.6	9.0	7.5	7.3	2.4	.78	.04	3.8
13	6.5	6.0	7.0	7.0	8.6	6.4	7.3	7.1	2.5	.12	.05	4.2
14	6.5	6.0	6.6	7.2	8.2	7.0	6.8	7.0	2.8	.03	.02	5.0
15	6.6	6.4	5.6	8.0	8.0	7.4	6.8	6.8	2.7	.03	.01	5.5
16	6.6	7.3	6.2	8.4	8.2	7.8	6.8	7.3	2.5	.47	.01	4.5
17	6.1	6.8	7.0	8.6	7.9	8.4	7.3	7.0	2.4	1.0	.03	3.8
18	6.4	6.4	9.0	8.0	7.4	8.3	7.4	7.0	2.4	.66	.05	3.6
19	6.5	6.7	10	4.0	7.2	6.8	7.6	6.6	2.5	1.1	.02	3.3
20	6.4	6.6	9.0	2.7	7.2	7.2	7.4	8.3	2.2	1.8	.00	3.3
21	5.5	6.2	7.0	3.5	8.2	5.8	7.4	10	1.9	1.4	.00	4.4
22	6.2	6.2	8.0	4.5	8.0	4.7	8.1	9.8	2.0	.10	.00	5.2
23	6.4	6.6	9.0	6.0	7.1	5.0	8.8	9.5	1.7	.06	.00	5.4
24	6.3	7.6	7.0	8.0	7.5	5.4	9.1	8.7	1.4	.06	.00	4.7
25	6.2	7.9	5.0	7.4	7.7	5.3	8.1	7.3	.35	.62	.03	4.6
26	5.8	7.6	3.6	7.0	7.9	5.4	7.8	6.6	.13	.26	.00	4.5
27	5.3	7.4	4.5	7.4	7.9	4.9	7.6	6.8	.09	.21	.00	5.2
28	5.3	7.2	4.5	8.0	7.7	5.3	7.8	6.8	.08	.11	.00	5.2
29	5.8	7.2	5.0	9.0	6.3	5.9	8.0	6.8	.10	.04	.00	5.7
30	6.0	7.5	5.6	9.4	---	5.4	8.7	6.8	.16	.02	.00	6.6
31	6.6	---	5.2	11	---	6.5	---	7.9	---	.02	.00	---
TOTAL	171.0	197.7	212.4	212.7	208.3	208.4	255.7	260.8	104.81	10.79	0.60	91.82
MEAN	5.52	6.59	6.85	6.86	7.18	6.72	8.52	8.41	3.49	.35	.019	3.06
MAX	6.6	7.9	10	11	9.1	9.0	17	22	8.9	1.8	.06	6.6
MIN	3.7	5.9	3.6	2.7	5.0	4.7	6.8	6.6	.08	.01	.00	.00
AC-FT	339	392	421	422	413	413	507	517	208	21	1.2	182

CAL YR 1987 TOTAL 2238.55 MEAN 6.13 MAX 29 MIN .00 AC-FT 4440
WTR YR 1988 TOTAL 1935.02 MEAN 5.29 MAX 22 MIN .00 AC-FT 3840

KANSAS RIVER BASIN

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06824000 ROCK CREEK AT PARKS, NE

LOCATION.--Lat 40°02'30", long 101°43'40", in SW1/4NE1/4 sec.21, T.1 N., R.39 W., Dundy County, Hydrologic Unit 10250002, on right bank at west edge of Parks, 100 ft downstream from county road bridge and 0.5 mi upstream from mouth.

DRAINAGE AREA.--20 mi², approximately, of which about 17 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 1630: 1951(M). WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,093.35 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 12, 13, 15-18, Dec. 24 to Jan. 16, Jan. 19-30, and Feb. 2, 4-6, 11, 14. Records good except for periods of estimated record, which are poor. One diversion about 2 mi above station for irrigation of 215 acres; flow regulated at times by reservoir at State fish hatchery 7 mi upstream.

AVERAGE DISCHARGE.--48 years, 13.6 ft³/s, 9,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 493 ft³/s July 5, 1965, gage height, 6.00 ft, from rating curve extended above 40 ft³/s on basis of slope-conveyance study; minimum daily, 2.6 ft³/s Nov. 19, 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 21	0845	(a)	*4.16	May 3	0715	*41	2.53
Apr. 3	1530	31	2.22				

a Backwater from ice.

Minimum daily discharge, 7.5 ft³/s Apr. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	12	12	8.8	13	9.9	14	9.6	14	12	8.1	8.8
2	9.6	11	12	9.0	12	9.9	22	17	14	12	8.4	9.2
3	9.7	11	12	9.0	11	10	27	35	13	12	8.5	9.1
4	9.7	11	12	10	11	10	22	25	12	12	9.7	8.7
5	9.6	11	12	11	10	10	16	19	12	12	9.9	8.7
6	9.5	11	12	12	14	10	14	15	11	9.8	9.3	9.1
7	9.4	11	12	8.0	11	11	13	13	11	9.2	9.0	9.1
8	9.6	12	12	8.4	10	10	12	13	10	9.7	9.2	9.0
9	9.7	11	12	8.6	11	10	12	13	10	11	9.5	8.7
10	9.6	11	12	9.6	12	10	11	12	10	10	11	8.4
11	9.4	11	12	12	11	12	11	12	9.6	9.6	10	8.4
12	9.5	11	12	14	12	13	11	12	9.6	10	9.5	8.9
13	9.7	11	12	13	12	13	10	12	9.8	9.9	11	9.2
14	9.7	11	12	14	12	13	10	11	11	9.4	10	13
15	9.6	12	9.0	17	11	13	10	11	11	9.2	9.3	14
16	9.8	13	9.4	18	11	13	10	11	9.9	9.3	8.6	13
17	9.7	12	11	14	11	14	9.7	11	12	9.3	8.9	11
18	9.5	12	14	15	11	14	7.8	12	14	9.2	10	11
19	9.6	11	13	15	11	13	7.7	15	14	10	10	12
20	9.8	11	13	14	11	12	7.5	19	13	10	9.7	11
21	9.9	12	13	10	11	12	8.4	22	12	9.5	9.2	11
22	10	11	13	10	11	12	10	23	13	9.3	9.3	12
23	10	11	13	11	11	12	9.7	22	12	9.2	9.6	12
24	10	12	12	14	10	12	9.5	19	12	9.1	10	11
25	9.7	13	10	13	10	11	9.4	16	11	9.5	9.7	11
26	9.6	12	10	12	11	11	8.8	14	11	11	9.3	10
27	9.9	12	9.2	16	11	11	8.9	13	11	10	9.2	9.9
28	9.9	12	9.4	16	11	11	9.1	12	11	9.5	9.0	10
29	9.8	12	8.4	18	9.8	11	9.3	12	11	9.4	8.9	11
30	10	12	8.8	20	---	12	9.7	11	12	9.3	8.8	12
31	11	---	9.4	13	---	14	---	14	---	8.7	8.6	---
TOTAL	302.2	346	353.6	393.4	323.8	359.8	350.5	475.6	346.9	310.1	291.2	310.2
MEAN	9.75	11.5	11.4	12.7	11.2	11.6	11.7	15.3	11.6	10.0	9.39	10.3
MAX	11	13	14	20	14	14	27	35	14	12	11	14
MIN	9.4	11	8.4	8.0	9.8	9.9	7.5	9.6	9.6	8.7	8.1	8.4
AC-FT	599	686	701	780	642	714	695	943	688	615	578	615

CAL YR 1987 TOTAL 4105.4 MEAN 11.2 MAX 32 MIN 7.4 AC-FT 8140
WTR YR 1988 TOTAL 4163.3 MEAN 11.4 MAX 35 MIN 7.5 AC-FT 8260

KANSAS RIVER BASIN

06824500 REPUBLICAN RIVER AT BENKELMAN, NE

LOCATION.--Lat 40°01'55", long 101°32'30", in SE1/4SW1/4 sec.19, T.1 N., R.37 W., Dundy County, Hydrologic Unit 10250002, on left bank at downstream side of bridge on U.S. Highway 34, 0.6 mi south of Burlington Northern Inc. track, 1 mi southwest of Benkelman, 2 mi upstream from South Fork Republican River, and 11 mi downstream from Rock Creek.

DRAINAGE AREA.--4,830 mi², approximately, of which about 1,230 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1894 to September 1895 (published as North Fork Republican River at Benkelman), October 1902 to November 1906, October 1946 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1895. WSP 1919: 1952, 1956. WSP 2119: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,975.34 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 17, 1946, nonrecording gages at several sites within 1.5 mi of present site at various datums; Dec. 17, 1946, to May 26, 1972, water-stage recorder at present site and datum and May 27, 1972, to Aug 11, 1978, at site 150 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 14 to Feb. 23 and Mar. 14-19. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--47 years, 85.3 ft³/s, 61,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,040 ft³/s Sept. 7, 1951, gage height, 7.58 ft; maximum gage height, 7.80 ft Aug. 9, 1950; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1826, 13.1 ft May 31, 1935, from elevations furnished by State Highway Department.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 550 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 14	0830	(a)	*4.88	No peaks greater than base discharge.			
May 3	2115	*352	4.42				

a Backwater from ice.

No flow Aug. 1, 3, 16, Sept. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	51	79	62	92	83	88	74	135	13	.00	.00
2	33	50	79	60	88	76	136	143	123	18	.05	.49
3	34	48	79	58	86	69	186	286	107	8.4	.00	.61
4	35	45	80	60	84	71	234	259	94	4.4	.95	.26
5	34	44	87	62	82	79	206	176	90	3.3	1.2	.28
6	34	44	89	66	82	89	180	140	79	3.0	.55	.35
7	36	48	90	60	82	91	165	122	72	3.3	.03	1.1
8	37	58	88	60	82	87	151	113	67	3.9	.05	.76
9	36	59	88	60	84	84	136	102	60	5.2	.10	.79
10	37	60	84	78	84	88	123	97	62	4.3	.30	.70
11	38	61	83	80	84	89	116	93	52	4.6	.22	.20
12	37	62	80	74	86	74	114	87	49	4.6	.23	.51
13	36	62	79	70	88	62	108	86	46	2.9	1.3	2.6
14	37	63	80	72	90	64	97	79	54	2.2	.74	12
15	40	70	76	74	92	69	87	74	52	2.2	.04	8.6
16	40	79	74	76	92	75	90	69	47	1.7	.00	13
17	38	78	76	78	90	81	97	61	42	1.6	.02	13
18	38	74	78	80	90	90	97	56	38	1.7	1.1	12
19	41	73	80	72	88	93	94	70	32	5.2	1.2	14
20	44	73	82	64	90	97	94	105	29	2.9	.98	12
21	45	75	84	60	92	93	92	148	25	2.1	.55	13
22	44	77	86	64	94	85	97	193	25	1.4	.23	12
23	44	70	84	80	96	80	90	189	17	1.2	.43	13
24	44	70	82	90	96	80	84	164	12	1.4	.67	16
25	43	75	80	88	96	75	79	131	9.6	1.1	.72	17
26	42	76	78	86	95	70	73	112	8.6	3.1	.46	17
27	42	76	76	88	93	71	66	109	8.3	1.4	.14	17
28	44	80	74	90	90	75	67	100	5.9	.87	.53	17
29	45	81	76	94	85	72	69	89	7.1	.66	.61	21
30	46	80	68	96	---	71	72	81	9.9	.58	.31	27
31	51	---	64	96	---	84	---	105	---	.23	.02	---
TOTAL	1229	1962	2483	2298	2573	2467	3388	3713	1458.4	110.44	13.73	263.25
MEAN	39.6	65.4	80.1	74.1	88.7	79.6	113	120	48.6	3.56	.44	8.77
MAX	51	81	90	96	96	97	234	286	135	18	1.3	.27
MIN	33	44	64	58	82	62	66	56	5.9	.23	.00	.00
AC-FT	2440	3890	4930	4560	5100	4890	6720	7360	2890	219	27	522

CAL YR 1987 TOTAL 23925.88 MEAN 65.6 MAX 251 MIN .00 AC-FT 47460
WTR YR 1988 TOTAL 21958.82 MEAN 60.0 MAX 286 MIN .00 AC-FT 43560

KANSAS RIVER BASIN

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06824500 REPUBLICAN RIVER AT BENKELMAN, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-73, October 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 01...	1510	34	499	7.90	21.5	8.8	8	64	71
NOV 04...	1345	45	554	8.64	15.0	10.0	5	23	47
DEC 01...	1600	75	505	7.23	3.0	12.6	19	38	110
JAN 04...	1315	59	519	--	0.0	11.2	<5	15	250
FEB 01...	1400	88	--	--	1.0	11.2	11	19	1700
MAR 07...	1745	94	540	8.60	3.0	11.8	<8	22	170
APR 06...	1000	185	712	7.50	9.0	11.4	21	700	--
MAY 10...	1300	99	646	--	18.0	14.0	38	1600	130
JUN 06...	0935	80	615	--	21.5	8.1	34	2000	380
JUL 07...	0710	3.7	751	8.57	22.0	7.7	16	1600	2500
AUG 09...	1000	0.07	592	--	26.5	7.3	19	3500	5900
SEP 07...	1800	1.3	513	--	22.0	9.8	39	2000	1700

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 01...	200	52	16	29	0.9	56	5.8	159	0.22
NOV 04...	230	61	19	26	0.8	80	7.3	193	0.26
DEC 01...	220	58	18	23	0.7	69	7.4	175	0.24
JAN 04...	250	66	20	27	0.8	68	6.9	188	0.26
FEB 01...	230	60	20	32	0.9	79	8.6	200	0.27
MAR 07...	230	62	18	26	0.8	71	4.0	181	0.25
APR 06...	250	63	23	43	1	120	12	261	0.35
MAY 10...	270	70	24	36	1	120	10	260	0.35
JUN 06...	250	65	21	35	1	100	9.3	230	0.31
JUL 07...	290	75	26	55	1	180	15	351	0.48
AUG 09...	210	52	19	47	1	120	13	251	0.34
SEP 07...	180	44	17	40	1	120	9.1	230	0.31

KANSAS RIVER BASIN

06824500 REPUBLICAN RIVER AT BENKELMAN, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT									
01...	14.6	42	0.570	0.070	0.33	0.40	0.97	0.080	2.8
NOV									
04...	23.5	21	0.880	0.120	0.73	0.85	1.7	0.030	2.4
DEC									
01...	35.5	39	1.50	0.080	0.55	0.63	2.1	0.050	3.7
JAN									
04...	29.9	10	1.60	0.170	0.27	0.44	2.0	0.080	2.8
FEB									
01...	47.4	5	1.30	0.150	0.85	1.0	2.3	0.090	4.6
MAR									
07...	45.9	44	0.830	0.040	0.52	0.56	1.4	0.120	2.8
APR									
06...	130	112	0.690	0.120	0.98	1.1	1.8	0.210	9.2
MAY									
10...	69.5	126	0.840	0.090	1.2	1.3	2.1	0.260	6.5
JUN									
06...	49.7	88	0.820	0.060	0.54	0.60	1.4	0.230	4.2
JUL									
07...	3.51	20	0.140	0.060	0.84	0.90	1.0	0.110	4.3
AUG									
09...	0.05	31	<0.020	<0.020	--	0.80	--	0.120	3.6
SEP									
07...	0.81	57	<0.020	0.050	1.7	1.7	--	0.160	4.5

06827500 SOUTH FORK REPUBLICAN RIVER NEAR BENKELMAN, NE

LOCATION.--Lat 40°00'34", long 101°32'32", in NE1/4SW1/4 sec.31, T.1 N., R.37 W., Dundy County, Hydrologic Unit 10250003, on right bank 100 ft upstream from bridge on State Highway 61, 1 mi downstream from Kansas-Nebraska State line, 2.5 mi southwest of Benkelman, and 4 mi upstream from mouth.

DRAINAGE AREA.--2,740 mi², approximately, of which about 2,190 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1894 to September 1895, October 1902 to November 1906, October 1930 to September 1932, August 1937 to current year. Published as South Fork of Republican River at Benkelman prior to 1906 and as Republican River at Benkelman 1931-32. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1310: 1904-6, 1931. WSP 1390: 1940, 1945, 1947. WSP 1919: 1951-52, 1954-56. WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,990.91 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 10, 1947, nonrecording gages at several sites within 3.5 mi of present site at various datums. Dec. 10, 1947, to Sept. 28, 1966, water-stage recorder 130 ft downstream at datum 2.00 ft higher, and Sept. 29, 1966, to Mar. 7, 1968, at present site at datum 2.00 ft higher.

REMARKS.--Estimated daily discharges: Dec. 14 to Feb. 27. Records fair except for period of estimated record, which is poor. Natural flow affected by irrigation development above station, and since July 6, 1950, by storage in Bonny Reservoir.

AVERAGE DISCHARGE.--58 years, 47.5 ft³/s, 34,410 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge determined, 19,600 ft³/s Aug. 16, 1958, gage height, 8.70 ft, site and datum then in use, but may have been higher during flood of June 24, 1945; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1923, 10.1 ft May 31, 1935, from floodmarks at site 0.2 mi downstream, at datum 2.00 ft higher, discharge, 150,000 ft³/s, by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 125 ft³/s May 3, gage height, 3.20 ft; maximum gage height, 4.10 ft, Feb. 19, or may have been higher, backwater from ice; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	16	6.0	10	34	36	13	37	6.8	.00	.00
2	.00	.00	16	5.6	9.2	33	37	30	38	6.8	.00	.00
3	.00	.00	14	5.0	9.2	31	60	92	37	5.7	.00	.00
4	.00	.00	14	4.6	9.2	31	66	80	34	3.9	.00	.00
5	.00	.00	14	4.8	9.2	31	57	68	30	2.7	.00	.00
6	.00	.00	15	5.2	9.4	30	48	62	27	2.1	.00	.00
7	.00	1.3	15	5.6	10	30	43	56	25	3.3	.00	.00
8	.00	3.0	15	6.0	11	29	38	52	23	7.8	.00	.00
9	.00	4.0	17	6.6	12	29	32	47	21	8.6	.00	.00
10	.00	4.8	17	6.8	12	29	30	42	19	5.7	.00	.00
11	.00	5.5	16	6.8	12	29	28	36	17	4.1	.00	.00
12	.00	6.2	17	6.8	11	28	26	32	16	3.2	.00	.00
13	.00	7.0	16	6.6	11	30	25	29	16	2.2	.00	.00
14	.00	7.5	14	6.4	12	29	22	26	16	4.2	.00	.00
15	.00	8.0	9.0	6.6	14	28	21	22	15	6.5	.00	.00
16	.00	8.5	9.4	6.6	16	28	20	19	14	6.4	.00	.00
17	.00	8.4	10	6.8	17	29	19	18	13	5.1	.00	.00
18	.00	9.0	9.6	7.2	18	31	19	17	12	4.2	.00	.00
19	.00	10	11	7.4	18	31	19	18	11	5.9	.00	.00
20	.00	10	11	7.2	18	30	21	24	10	6.1	.00	.00
21	.00	10	10	6.8	18	29	19	41	9.0	6.1	.00	.00
22	.00	10	12	7.0	18	28	17	55	8.2	4.3	.00	.00
23	.00	10	11	7.4	22	28	16	65	7.3	3.0	.00	.00
24	.00	11	10	8.4	29	29	16	59	6.4	2.2	.00	.00
25	.00	12	8.0	9.6	35	31	15	48	5.6	1.4	.00	.00
26	.00	12	7.8	11	45	30	15	42	4.8	2.1	.00	.00
27	.00	12	7.6	12	40	30	14	39	4.4	1.2	.00	.00
28	.00	12	7.2	12	36	35	14	32	4.1	.83	.00	.00
29	.00	16	5.8	12	35	33	14	28	4.2	.77	.00	.00
30	.00	15	6.0	11	---	32	14	24	6.2	.48	.00	.00
31	.00	---	6.2	11	---	35	---	29	---	.00	.00	---
TOTAL	0.00	213.20	367.6	232.8	526.2	940	821	1245	491.2	123.68	0.00	0.00
MEAN	.00	7.11	11.9	7.51	18.1	30.3	27.4	40.2	16.4	3.99	.00	.00
MAX	.00	16	17	12	45	35	66	92	38	8.6	.00	.00
MIN	.00	.00	5.8	4.6	9.2	28	14	13	4.1	.00	.00	.00
AC-FT	.0	423	729	462	1040	1860	1630	2470	974	245	.0	.0

CAL YR 1987 TOTAL 6119.10 MEAN 16.8 MAX 121 MIN .00 AC-FT 12140
WTR YR 1988 TOTAL 4960.68 MEAN 13.6 MAX 92 MIN .00 AC-FT 9840

KANSAS RIVER BASIN

06828500 REPUBLICAN RIVER AT STRATTON, NE

LOCATION.--Lat 40°08'28", long 101°13'42", in SW1/4NW1/4 sec.13, T.2 N., R.35 W., Hitchcock County, Hydrologic Unit 10250004, on right bank at downstream side of county bridge, 0.5 mi south of Stratton, 0.2 mi downstream from Muddy Creek, 10 mi upstream from Trenton Dam, and 19 mi downstream from South Fork Republican River.

DRAINAGE AREA.--8,450 mi², approximately, of which about 3,800 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--July 1950 to current year.

REVISED RECORDS.--WSP 2119: Drainage area. WDR NE-73: 1968-71(M), 1972.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,775.49 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1967, at site 0.3 mi downstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 15 to Feb. 21 and Mar. 15-19. Records good except for periods of estimated records, which are poor. Natural flow affected by irrigation development above station and by storage in Bonny Reservoir (station 06826000).

AVERAGE DISCHARGE.--38 years, 123 ft³/s, 89,110 acre-ft/yr; median of yearly mean discharges, 108 ft³/s, 78,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,800 ft³/s July 31, 1962, gage height, 9.34 ft, site then in use; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1826 occurred May 31, 1935, discharge, about 200,000 ft³/s, based on slope-area measurement at Max.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 850 ft³/s May 3, gage height, 7.82 ft; maximum gage height, 7.91 ft Feb. 17, backwater from ice; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	47	77	66	106	138	105	88	148	.35	.00	.00
2	3.1	45	77	64	98	140	165	155	180	.37	.00	.00
3	3.1	42	82	64	96	139	227	414	168	1.5	.00	.00
4	5.7	41	79	62	94	133	295	507	146	.14	.00	.00
5	5.5	38	79	70	92	126	308	327	123	.02	.00	.00
6	5.4	37	78	66	92	122	279	257	113	.00	.00	.00
7	7.6	48	83	62	92	123	248	207	101	.00	.00	.00
8	9.0	49	97	62	94	117	219	179	92	.00	.00	.00
9	9.9	47	99	70	94	109	192	158	81	.00	.00	.00
10	9.3	51	102	80	94	109	172	137	73	.00	.00	.00
11	12	54	97	90	98	110	155	132	67	.00	.00	.00
12	15	55	87	92	100	95	143	129	59	.00	.00	.00
13	18	60	81	80	104	84	137	122	58	.00	.41	.00
14	21	60	77	80	108	81	128	114	84	.00	.60	.00
15	23	66	74	82	110	84	121	103	75	180	.00	.00
16	23	74	74	86	112	94	115	95	72	18	.00	.00
17	21	64	76	88	112	104	112	92	61	1.7	.00	.00
18	21	61	78	86	110	108	114	95	50	.75	.00	.00
19	24	58	80	80	110	120	115	99	43	30	.00	.00
20	25	60	84	72	108	120	126	120	33	4.2	.00	.00
21	28	64	90	70	108	117	118	166	27	.73	.00	.00
22	32	66	92	74	110	115	116	203	25	.42	.00	.00
23	31	62	94	86	112	105	114	220	20	.25	.00	.00
24	29	71	90	96	116	99	111	222	10	.13	.00	.00
25	32	80	86	98	120	97	109	210	3.8	.07	.00	.00
26	35	78	82	96	124	96	105	173	1.2	.68	.00	.00
27	32	82	80	94	130	97	98	152	.85	.16	.00	7.9
28	35	80	78	96	134	94	90	133	.59	.06	.00	124
29	40	78	76	106	136	96	93	114	.51	.01	.00	2.2
30	42	77	74	110	---	86	94	98	.44	.00	.00	.14
31	64	---	68	108	---	88	---	105	---	.00	.00	---
TOTAL	663.3	1795	2571	2536	3114	3346	4524	5326	1916.39	239.54	41.60	134.24
MEAN	21.4	59.8	82.9	81.8	107	108	151	172	63.9	7.73	1.34	4.47
MAX	64	82	102	110	136	140	308	507	180	180	41	124
MIN	1.7	37	68	62	92	81	90	88	.44	.00	.00	.00
AC-FT	1320	3560	5100	5030	6180	6640	8970	10560	3800	475	83	266

CAL YR 1987 TOTAL 28637.16 MEAN 78.5 MAX 707 MIN .00 AC-FT 56800
WTR YR 1988 TOTAL 26207.07 MEAN 71.6 MAX 507 MIN .00 AC-FT 51980

06829000 SWANSON LAKE NEAR TRENTON, NE

LOCATION.--Lat 40°10'10", long 101°03'35", in SE1/4NE1/4 sec.5, T.2 N., R.33 W., Hitchcock County, Hydrologic Unit 10250004, in gate-control house at right end of spillway on downstream side of Trenton Dam on Republican River, 2.5 mi west of Trenton.

DRAINAGE AREA.--8,620 mi², approximately, of which about 3,940 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Nov. 13, 1953, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam; storage began May 4, 1953. Capacity, 110,100 acre-ft between elevations 2,710.0 ft, sill of outlet gates, and 2,752.0 ft, top of storage pool. Top of flood-control pool is at elevation 2,773.0 ft, capacity, 246,300 acre-ft. Top of superstorage flood-control pool at elevation 2,785.0 ft, capacity, 353,900 acre-ft. Dead storage, 2,120 acre-ft. Figures given herein represent total contents. Water used for irrigation in Frenchman-Cambridge irrigation project.

COOPERATION.--Capacity table furnished by Bureau of Reclamation (effective Feb. 1984).

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 148,900 acre-ft Aug. 2, 3, 1962, elevation, 2,757.42 ft; minimum since operation of reservoir began, 19,950 acre-ft Oct. 24, 1954, elevation, 2,722.61 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 104,600 acre-ft June 8, elevation, 2,750.42 ft; minimum contents, 59,180 acre-ft Oct. 20-23, elevation, 2,739.31 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

2,730	31,690	2,750	102,600
2,735	45,210	2,755	127,700
2,740	61,590	2,760	156,100
2,745	80,700		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60190	59500	63010	66460	69260	77570	84320	92860	103500	90140	74910	60220
2	60050	59560	63120	66600	69330	77860	85280	93880	103700	89490	74160	60150
3	59980	59560	63230	66680	69600	78140	85750	94410	104000	88670	73490	60010
4	59940	59630	63370	66680	69680	78380	86220	95310	104200	87890	72710	59910
5	59870	59630	63510	66720	69790	78660	86780	95890	104200	87160	72010	59800
6	59800	59670	63690	66790	69980	78860	87120	96530	104400	86480	71440	59800
7	59740	60220	63800	66900	70060	79310	87590	96800	104500	85630	70820	59800
8	59630	60220	64160	66940	70170	79470	87930	97210	104600	84730	70170	59740
9	59530	60260	64340	67010	70400	79640	88280	97250	104600	84150	69640	59700
10	59530	60330	64480	67080	70510	79960	88580	97480	104500	83520	68990	59700
11	59530	60470	64700	67160	70740	80290	88800	97700	104200	83100	68360	59460
12	59460	60540	64740	67230	70890	80290	89100	97970	104200	82850	68090	59430
13	59460	60570	64810	67310	71160	80330	89270	98110	104100	82400	68130	59430
14	59430	60610	64920	67380	71400	80490	89620	98340	104000	82060	67680	59530
15	59430	60920	64950	67500	71670	80660	89880	98480	103900	82110	67270	59560
16	59320	60960	64990	67570	72010	81030	90050	98570	103500	81940	66790	59560
17	59290	60990	65030	67680	72400	81280	90220	98710	102700	81440	66380	59560
18	59250	61060	65100	67940	72870	81530	90440	98930	102100	81030	66160	59600
19	59220	61340	65170	68240	73380	81730	90740	99120	101500	81150	65830	59530
20	59180	61410	65240	68280	73810	81980	90920	99440	100900	80910	65460	59500
21	59180	61590	65460	68390	74240	82150	91090	99800	99990	80450	65130	59500
22	59180	61700	65540	68470	74670	82400	91350	100200	99250	80050	64770	59500
23	59180	61730	65650	68540	75110	82600	91620	100800	98200	79760	64410	59460
24	59220	62020	65760	68580	75500	82940	91750	101200	97160	79390	64020	59430
25	59220	62090	65900	68580	75900	83190	92100	101500	96030	78980	63440	59390
26	59220	62300	66020	68620	76290	83230	92190	101800	94820	78740	62980	59250
27	59220	62480	66130	68660	76650	83400	92280	102000	93650	78140	62440	59390
28	59220	62660	66200	68770	77010	83600	92410	102200	92590	77490	61980	59560
29	59220	62730	66270	68840	77290	83690	92590	102300	91750	76890	61480	59560
30	59250	62870	66350	68990	---	83860	92720	102400	91000	76250	61030	59560
31	59390	---	66380	69070	---	84060	---	102800	---	75620	60610	---
MEAN	59460	60990	64900	67730	72470	81050	89570	98710	100900	82210	67120	59620
MAX	60190	62870	66380	69070	77290	84060	92720	102800	104600	90140	74910	60220
MIN	59180	59500	63010	66460	69260	77570	84320	92860	91000	75620	60610	59250
(†)	2739.37	2740.36	2741.33	2742.05	2744.16	2745.81	2747.82	2750.03	2747.43	2743.74	2739.72	2739.42
(‡)	-830	+3480	+3510	+2690	+8220	+6770	+8660	+10080	-11800	-15380	-15010	-1050
CAL YR 1987	MEAN	77350	MAX	106600	MIN	59180	(†)	-780				
WTR YR 1988	MEAN	75390	MAX	104600	MIN	59180	(‡)	-660				

(†) Elevation, in feet, at end of month.

(‡) Change in contents, in acre-feet.

KANSAS RIVER BASIN

06829500 REPUBLICAN RIVER AT TRENTON, NE

LOCATION.--Lat 40°10'00", long 101°02'40", in SE1/4 sec.4, T.2 N., R.33 W., Hitchcock County, Hydrologic Unit 10250004, on left bank 300 ft upstream from Elm Creek, 0.9 mi downstream from centerline of spillway of Trenton Dam, and 1.5 mi southwest of Trenton.

DRAINAGE AREA.--8,620 mi², approximately, of which about 3,940 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1946 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,671.06 ft above National Geodetic Vertical Datum of 1929. See WSP 2119 for history of changes prior to Oct. 1, 1959.

REMARKS.--Estimated daily discharges: Dec. 14-15 and Jan. 12, 19-25. Records fair. Natural flow affected by irrigation development above station, since July 6, 1950, by storage in Bonny Reservoir (station 06826000), since 1953 by storage in Swanson Lake (station 06829000), and since June 1957 by Meeker-Driftwood Canal which diverts directly from Swanson Lake for irrigation of about 16,400 acres.

AVERAGE DISCHARGE.--35 years (1954-88), 53.2 ft³/s, 38,540 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,800 ft³/s June 16, 1948, gage height, 5.64 ft, former site and datum; no flow at times in 1947-50, 1952-54.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood known since about 1826 occurred May 31, 1935, discharge, about 200,000 ft³/s. Discharge of 21,100 ft³/s was measured July 3, 1946, gage height, 6.0 ft, former site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 183 ft³/s June 17, gage height, 4.45 ft; minimum daily, 0.29 ft³/s Apr. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.84	.80	1.1	1.1	1.1	.97	.32	1.7	126	72	19
2	.98	.73	.80	1.1	1.0	.94	2.1	.85	1.2	127	72	1.1
3	1.1	.70	.85	1.0	.99	1.0	1.4	1.0	.91	130	89	1.0
4	1.1	.74	1.0	1.0	.91	1.0	1.2	.91	.91	131	85	1.0
5	1.1	.70	1.0	1.0	.91	1.1	1.4	.95	.91	134	71	1.1
6	.89	.69	1.0	1.0	.89	.95	.94	.97	.92	136	71	1.3
7	.86	1.2	1.1	1.0	.91	.91	.76	1.2	1.0	136	70	1.5
8	.82	.72	1.4	1.0	.82	.93	1.0	.91	1.1	135	69	1.4
9	.80	.63	1.2	1.2	.90	.59	.76	.70	1.1	135	69	1.4
10	.80	.64	1.0	1.2	.85	.64	.70	.70	1.3	135	68	1.4
11	.83	.77	.91	1.2	.75	.54	.78	.70	3.7	141	68	1.4
12	.80	.78	.91	1.1	.80	.46	.80	.80	2.5	138	79	1.3
13	.80	.65	.91	.97	.80	.47	.71	.80	4.1	134	87	1.3
14	.78	.82	.80	.91	.74	.52	.78	.82	8.6	135	48	1.2
15	.76	.82	.80	.91	.81	.61	.85	.80	53	126	48	1.2
16	.71	.91	.91	.91	.91	.61	.84	.80	94	107	46	1.0
17	.72	.70	.91	.91	.82	.61	.90	.80	128	106	46	.84
18	.79	.71	1.2	.98	.80	.61	1.0	.73	175	105	45	.91
19	.84	.67	1.2	1.1	.84	.63	.94	.78	173	115	45	1.1
20	.90	.70	1.2	1.0	.91	.59	.88	.95	172	104	46	1.0
21	.71	.80	1.2	.70	.99	.69	.71	1.0	173	89	46	1.0
22	.74	.80	1.3	.80	.97	.66	.69	.94	174	77	46	1.0
23	.71	.72	1.5	.80	.99	.77	.60	.98	177	76	45	1.1
24	.63	.74	1.5	.90	1.2	.74	.46	.89	180	75	45	1.1
25	.79	.80	1.5	.90	1.3	.84	.46	.82	183	74	45	1.1
26	.80	.80	1.5	.75	1.3	.83	.47	.80	184	74	45	1.2
27	.68	.80	1.5	.73	1.3	.96	.46	.80	184	73	45	.99
28	.72	.77	1.5	.83	1.1	.83	.36	.74	183	73	45	1.3
29	.80	.75	1.3	.91	1.1	.89	.29	.77	182	73	45	1.1
30	.75	.80	1.3	.97	---	.99	.30	.84	148	74	45	1.3
31	.86	---	1.2	1.2	---	.91	---	1.1	---	73	45	---
TOTAL	25.67	22.90	35.20	30.08	27.71	23.92	24.51	26.17	2592.95	3367	1791	52.64
MEAN	.83	.76	1.14	.97	.96	.77	.82	.84	86.4	109	57.8	1.75
MAX	1.1	1.2	1.5	1.2	1.3	1.1	2.1	1.2	184	141	89	19
MIN	.63	.63	.80	.70	.74	.46	.29	.32	.91	73	45	.84
AC-FT	51	45	70	60	55	47	49	52	5140	6680	3550	104

CAL YR 1987 TOTAL 7231.36 MEAN 19.8 MAX 151 MIN .48 AC-FT 14340
WTR YR 1988 TOTAL 8019.75 MEAN 21.9 MAX 184 MIN .29 AC-FT 15910

227

LOCATION.--Lat 40°25'45", long 101°37'25", in SW1/4NW1/4 sec.3, T.5 N., R.38 W., Chase County, Hydrologic Unit 10250005, on right bank 0.2 mi downstream from bridge on county highway, 5.8 mi upstream from Enders Dam, and 6.1 miles south of Imperial.

PERIOD OF RECORD.--October 1940 to current year. Published as Frenchman River near Imperial October 1965 to September 1972.

GAGE.--Water-stage recorder. Elevation of gage is 3,130 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 7, 1941, nonrecording gage at bridge 0.2 mi upstream at different datum. Mar. 7, 1941, to Sept. 30, 1958, water-stage recorder at site 0.2 mi downstream at datum 4.35 ft lower.

AVERAGE DISCHARGE.--48 years, 59.1 ft³/s, 42,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,340 ft³/s Mar. 22, 1960, gage height, 8.43 ft; minimum daily, 4.8 ft³/s Mar. 12, 1977, backwater from ice.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1940, reached a stage of 12.4 ft. from floodmarks, site and datum in use Mar. 7, 1941, to Sept. 30, 1958 (discharge not determined but believed greater than that of Mar. 22, 1960).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 16	1103	*52	*1.47	No peaks greater than base discharge.			
Minimum daily discharge, 16 ft ³ /s Aug. 1-3, 6-8, 16, 21-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	25	28	27	35	36	30	30	32	20	16	17
2	21	25	28	27	34	35	38	36	33	20	16	17
3	21	25	28	26	36	34	45	42	31	20	16	17
4	21	24	27	25	33	34	45	36	29	19	17	17
5	20	24	28	26	30	34	43	33	27	18	17	17
6	20	24	27	27	30	33	38	31	27	17	16	18
7	20	25	27	26	34	33	37	31	28	18	16	18
8	20	26	29	26	34	33	35	30	28	19	16	18
9	20	26	28	26	35	31	33	30	26	20	17	18
10	21	26	28	26	28	30	32	30	26	20	17	18
11	21	26	28	26	34	32	32	30	26	19	17	17
12	23	26	26	26	38	25	32	29	26	18	17	18
13	24	26	27	25	39	34	31	29	26	18	19	19
14	25	27	28	27	42	34	30	29	27	18	17	22
15	25	28	26	28	43	33	30	28	26	19	17	21
16	25	30	27	29	47	33	29	28	25	19	16	21
17	23	28	28	29	45	35	29	27	25	18	17	20
18	22	28	28	30	43	35	30	28	25	18	17	20
19	22	27	28	24	41	35	29	33	24	22	17	23
20	22	27	28	17	38	34	30	36	23	21	17	20
21	22	27	28	22	39	33	30	43	22	19	16	19
22	22	27	28	22	39	31	32	42	22	18	16	19
23	23	26	28	34	37	30	31	40	22	18	16	19
24	22	28	28	33	36	30	31	37	21	18	16	18
25	23	29	26	32	36	29	31	35	20	18	16	18
26	23	28	27	32	36	29	30	35	20	18	17	18
27	23	28	29	34	36	29	30	35	20	18	20	18
28	23	27	27	37	36	28	30	33	20	17	18	19
29	24	25	27	41	36	28	30	30	20	18	18	20
30	24	27	29	43	---	28	30	29	20	17	18	21
31	26	---	25	41	---	29	---	30	---	17	17	---
TOTAL	692	795	854	894	1070	987	983	1015	747	577	523	565
MEAN	22.3	26.5	27.5	28.8	36.9	31.8	32.8	32.7	24.9	18.6	16.9	18.8
MAX	26	30	29	43	47	36	45	43	33	22	20	23
MIN	20	24	25	17	28	25	29	27	20	17	16	17
AC-FT	1370	1580	1690	1770	2120	1960	1950	2010	1480	1140	1040	1120

CAL YR 1987	TOTAL 9996	MEAN 27.4	MAX 69	MIN 18	AC-FT 19830
WTR YR 1988	TOTAL 9702	MEAN 26.5	MAX 47	MIN 16	AC-FT 19240

KANSAS RIVER BASIN

06832000 ENDERS RESERVOIR NEAR ENDERS, NE

LOCATION.--Lat 40°25'05", long 101°30'55", in NE1/4 sec.9, T.5 N., R.37 W., Chase County, Hydrologic Unit 10250005, near right bank in control house at outlet tube of Enders Dam on Frenchman Creek, 2.2 mi southeast of Enders.

DRAINAGE AREA.--950 mi², approximately, of which about 790 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Sept. 3, 1960, mercury-column pressure gage at same datum.

REMARKS.--Reservoir is formed by earthfill dam; storage began Oct. 23, 1950. Capacity, 36,010 acre-ft between elevations 3,080.0 ft, sill of outlet gates, and 3,112.3 ft, top of storage pool. Top of flood-control pool at elevation 3,127.0 ft, capacity, 74,520 acre-ft. Top of superstorage flood-control pool at elevation 3,129.5 ft, capacity, 80,730 acre-ft. Dead storage, 8,470 acre-ft. Figures given herein represent total contents. Water used for irrigation in Frenchman-Cambridge irrigation project.

COOPERATION.--Capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 55,330 acre-ft Mar. 25, 1960, elevation, 3,118.20 ft; minimum since operation of reservoir began, 8,870 acre-ft Aug. 28, 1978, elevation, 3,080.67 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,760 acre-ft June 8, elevation, 3,102.52 ft; minimum, 13,870 acre-ft Aug. 19, elevation, 3,087.71 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

3,085	11,770	3,100	26,540
3,090	15,830	3,110	40,660

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15640	17250	19200	20970	22750	24850	26380	27930	29410	23860	18760	14600
2	15640	17330	19260	21010	22810	24880	26600	28060	29500	23620	18430	14670
3	15680	17390	19320	21070	22870	24940	26690	28120	29570	23500	18040	14680
4	15740	17440	19380	21110	22940	25010	26780	28180	29620	23310	17700	14700
5	15750	17490	19450	21170	23020	25100	26790	28270	29630	23030	17400	14740
6	15790	17550	19510	21230	23090	25160	26890	28340	29650	22750	17110	14740
7	15830	17660	19570	21290	23160	25230	26940	28340	29700	22500	16830	14820
8	15880	17700	19660	21330	23230	25300	26940	28310	29740	22230	16590	14850
9	15890	17760	19720	21400	23310	25370	26980	28360	29740	22030	16350	14910
10	15930	17800	19780	21470	23380	25480	27020	28430	29700	21850	16120	14970
11	16000	17880	19840	21540	23450	25470	27060	28460	29690	21680	15880	14970
12	16050	17940	19860	21590	23530	25440	27120	28520	29660	21510	15780	14970
13	16110	17990	19910	21650	23610	25470	27170	28540	29670	21400	15550	15020
14	16170	18060	19950	21690	23680	25530	27190	28570	29660	21380	15320	15160
15	16230	18140	19980	21750	23810	25580	27250	28590	29660	21380	15040	15260
16	16270	18250	20040	21800	23880	25650	27280	28630	29700	21290	14640	15300
17	16350	18300	20110	21860	23960	25710	27300	28620	29710	21150	14260	15360
18	16370	18380	20170	22000	24030	25770	27320	28700	29580	21020	13880	15390
19	16420	18430	20210	22040	24110	25870	27380	28710	29420	20940	13900	15420
20	16480	18500	20280	22030	24200	25920	27430	28750	29050	20890	13970	15470
21	16530	18550	20340	22060	24300	25980	27530	28840	28590	20840	14030	15540
22	16580	18620	20400	22110	24260	26030	27520	28930	28080	20780	14090	15570
23	16630	18670	20440	22180	24380	26080	27590	29020	27570	20720	14150	15590
24	16680	18780	20500	22210	24460	26120	27640	29110	27030	20690	14200	15650
25	16750	18830	20530	22290	24540	26160	27650	29230	26480	20600	14260	15700
26	16800	18900	20610	22330	24590	26180	27650	29300	25930	20450	14330	15730
27	16850	18970	20680	22400	24680	26210	27700	29360	25400	20250	14340	15770
28	16920	19030	20760	22480	24710	26230	27750	29380	24870	20030	14390	15740
29	16970	19070	20820	22550	24790	26270	27760	29380	24430	19800	14450	15780
30	17110	19130	20880	22640	---	26280	27840	29380	24050	19520	14500	15850
31	17180	---	20900	22700	---	26300	---	29400	---	19140	14560	---
MEAN	16300	18190	20070	21800	23780	25660	27240	28700	28480	21420	15450	15230
MAX	17180	19130	20900	22700	24790	26300	27840	29400	29740	23860	18760	15850
MIN	15640	17250	19200	20970	22750	24850	26380	27930	24050	19140	13880	14600
(†)	3091.46	3093.44	3095.14	3096.77	3098.56	3099.81	3101.03	3102.24	3097.94	3093.45	3088.53	3090.02
(‡)	+1610	+1950	+1770	+1800	+2090	+1510	+1540	+1560	-5350	-4910	-4580	+1290
CAL YR 1987	MEAN	22020	MAX	30280	MIN	12760	(†)	-260				
WTR YR 1988	MEAN	21850	MAX	29740	MIN	13880	(‡)	+280				

(†) Elevation, in feet, at end of month.

(‡) Change in contents, in acre-feet.

KANSAS RIVER BASIN

229

06832500 FRENCHMAN CREEK NEAR ENDERS, NE

LOCATION.--Lat 40°25'05", long 101°30'35", in NW1/4NW1/4 sec.10, T.5 N., R.37 W., Chase County, Hydrologic Unit 10250005, on left bank 0.2 mi downstream from Enders Dam and 2.5 mi southeast of Enders.

DRAINAGE AREA.--950 mi², approximately, of which about 790 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--February 1946 to current year. Published as Frenchman River near Enders October 1965 to September 1972.

REVISED RECORDS.--WSP 2119: 1956, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,026.22 ft above National Geodetic Vertical Datum of 1929. Prior to June 14, 1948, at site 800 ft upstream at datum 6.03 ft higher. June 14, 1948, to Sept. 14, 1972, at present site at datum 5.00 ft higher.

REMARKS.--Estimated daily discharges, Sept. 14-30. Records good except those below 5.0 ft³/s and period of estimated record, which are poor. Flow regulated by Enders Reservoir (station 06832000).

AVERAGE DISCHARGE.--42 years, 57.1 ft³/s, 41,370 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 763 ft³/s Aug. 20, 1953, gage height, 11.31 ft, present datum; maximum gage height, 11.65 ft, present datum, July 18, 1958, backwater from downstream tributary; no flow for many days in 1972-85.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 262 ft³/s June 25, gage height, 8.35 ft; minimum daily discharge, 0.18 ft³/s Oct. 31 to Nov. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	.18	.20	.20	.33	.68	1.7	.78	5.1	118	174	.33
2	.24	.18	.20	.20	.33	.73	7.7	2.0	4.4	114	171	.33
3	.24	.18	.20	.20	.32	.92	10	1.5	8.6	98	164	.33
4	.24	.18	.20	.20	.31	.89	6.1	.82	12	112	161	.33
5	.24	.18	.20	.20	.29	.78	.76	.70	11	144	147	.33
6	.24	.19	.20	.20	.29	.76	.75	.58	8.3	153	147	.33
7	.24	.19	.20	.20	.29	.86	.64	.58	5.1	146	142	.33
8	.24	.19	.20	.20	.27	.66	.56	.61	5.1	129	126	.33
9	.24	.19	.20	.20	.27	.76	.91	3.1	8.6	125	128	.33
10	.24	.19	.20	.20	.27	.82	.90	7.1	9.3	106	126	.38
11	.24	.19	.20	.20	.27	.71	1.1	9.3	7.1	93	121	.41
12	.24	.19	.20	.22	.27	1.0	.81	7.0	7.0	91	125	.38
13	.24	.19	.20	.22	.25	1.4	.66	6.4	7.0	89	127	.37
14	.28	.19	.20	.22	.26	1.7	.88	5.2	7.2	82	129	.40
15	.28	.19	.20	.22	.27	1.9	.92	5.4	6.9	41	147	.40
16	.28	.20	.20	.22	.27	1.6	.77	5.0	6.7	64	186	.40
17	.28	.20	.20	.22	.27	1.6	.74	4.1	9.3	75	217	.40
18	.28	.19	.20	.22	.29	1.5	1.2	4.2	60	79	209	.40
19	.28	.20	.20	.23	.29	.77	1.0	5.7	96	58	18	.40
20	.28	.19	.20	2.6	.30	.72	.84	7.3	153	43	7.5	.40
21	.32	.19	.20	7.6	.31	.84	.87	6.9	229	44	7.3	.40
22	.33	.20	.20	7.6	.32	.80	1.9	5.4	250	43	3.2	.40
23	.37	.20	.20	7.3	.33	1.0	1.3	4.2	254	43	.29	.40
24	.37	.20	.20	7.3	.33	1.5	.87	3.4	253	43	.29	.40
25	.38	.20	.20	7.3	.33	1.4	.82	2.9	255	60	.29	.40
26	.46	.20	.20	7.3	.34	1.0	.93	2.6	261	95	.39	.40
27	.48	.20	.20	7.3	.50	1.2	1.0	2.2	254	107	.61	.40
28	.48	.20	.20	7.3	.56	1.7	.84	2.5	245	119	.45	.40
29	.48	.20	.20	7.3	.74	2.0	.83	2.7	214	118	.45	.40
30	.37	.20	.20	3.8	---	1.9	.76	2.8	174	135	.42	.40
31	.18	---	.20	.37	---	1.9	---	4.6	---	169	.44	---
TOTAL	9.32	5.77	6.20	77.04	9.47	36.00	49.06	117.57	2826.7	2936	2786.63	11.31
MEAN	.30	.19	.20	2.49	.33	1.16	1.64	3.79	94.2	94.7	89.9	.38
MAX	.48	.20	.20	7.6	.74	2.0	1.0	9.3	261	169	217	.41
MIN	.18	.18	.20	.20	.25	.66	.56	.58	4.4	41	.29	.33
AC-FT	18	11	12	153	19	71	97	233	5610	5820	5530	22

CAL YR 1987 TOTAL 9854.00 MEAN 27.0 MAX 264 MIN .17 AC-FT 19550
WTR YR 1988 TOTAL 8871.07 MEAN 24.2 MAX 261 MIN .18 AC-FT 17600

LOCATION.--Lat 40°21'12", long 101°07'35", in SW1/4SE1/4 sec.36, T.5 N., R.34 W., Hayes County, Hydrologic Unit 10250005, on right bank at upstream side of bridge on U.S. Highway 6, 0.7 mi west of Falisade, and 1.5 mi upstream from Stinking Water Creek.

PERIOD OF RECORD.--October 1894 to October 1896, June 1950 to current year. Published as Frenchman River at Palisade, October 1894 to October 1896 and October 1965 to September 1972.

GAGE.--Water-stage recorder. Datum of gage is 2,743.49 ft above National Geodetic Vertical Datum of 1929. October 1894 to October 1896, nonrecording gage at railroad bridge 0.4 mi downstream at different datum; June 1950 to Feb. 7, 1977, recording gage at site 2,000 ft upstream at datum 4.0 ft higher.

AVERAGE DISCHARGE.--40 years, 79.4 ft³/s, 57,520 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,240 ft³/s July 15, gage height, 8.66 ft; minimum daily, 17 ft³/s Oct. 1-16.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	22	26	23	37	33	30	28	85	192	161	31
2	17	22	26	21	33	32	36	38	46	141	173	26
3	17	22	25	20	31	31	39	43	37	134	176	24
4	17	22	25	20	32	30	38	40	34	117	174	23
5	17	22	25	20	33	30	37	35	33	113	177	23
6	17	22	25	21	32	30	34	34	33	136	164	23
7	17	24	25	20	34	30	31	32	33	143	160	23
8	17	26	27	18	37	30	29	31	32	148	157	23
9	17	24	28	18	40	29	28	30	30	152	145	22
10	17	23	27	21	41	29	28	30	28	134	144	21
11	17	23	27	24	38	30	28	31	28	120	142	20
12	17	23	26	24	37	32	29	33	28	108	152	20
13	17	23	28	25	39	32	28	34	27	105	505	21
14	17	23	26	28	42	32	27	32	29	102	175	26
15	17	24	23	30	45	32	27	30	28	676	160	27
16	17	28	23	32	46	31	27	29	26	136	162	24
17	18	27	24	33	47	32	28	29	25	114	193	23
18	18	26	26	32	54	32	27	31	24	111	233	22
19	18	25	27	30	60	32	27	32	25	130	234	23
20	19	25	28	29	49	31	29	34	66	114	116	23
21	19	25	28	26	43	31	29	39	117	96	83	22
22	20	25	27	25	39	30	28	40	178	81	66	22
23	20	25	24	28	35	30	29	38	211	77	60	21
24	21	26	22	30	34	30	29	36	222	74	58	21
25	21	27	22	33	34	30	29	34	226	72	53	21
26	21	26	23	32	33	30	29	33	231	72	46	21
27	21	25	23	32	33	30	28	32	244	99	42	21
28	21	25	24	32	33	29	28	31	242	108	40	22
29	21	25	24	34	33	29	29	29	238	122	38	22
30	21	25	24	38	---	29	29	28	222	124	36	23
31	22	---	24	39	---	30	---	33	---	130	33	---
TOTAL	573	730	782	838	1124	948	894	1029	2828	4181	4258	684
MEAN	18.5	24.3	25.2	27.0	38.8	30.6	29.8	33.2	94.3	135	137	22.8
MAX	22	28	28	39	60	33	39	43	244	676	505	31
MIN	17	22	22	18	31	29	27	28	24	72	33	20
AC-FT	1140	1450	1550	1660	2230	1880	1770	2040	5610	8290	8450	1360
CAL YR 1987	TOTAL 16577	MEAN 45.4	MAX 233	MIN 16	AC-FT 32880							
WTR YR 1988	TOTAL 18869	MEAN 51.6	MAX 676	MIN 17	AC-FT 37430							

KANSAS RIVER BASIN

231

06835000 STINKING WATER CREEK NEAR PALISADE, NE

LOCATION.--Lat 40°22'10", long 101°06'50", in SW1/4NW1/4 sec.30, T.5 N., R.33 W., Hayes County, Hydrologic Unit 10250006, on right bank 25 ft downstream from county bridge, 1.2 mi upstream from mouth, and 1.8 mi northwest of Palisade.

DRAINAGE AREA.--1,500 mi², approximately, of which about 380 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 1730: 1952(M). WSP 1919: 1951(P), 1955. WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,740.99 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 1, Nov. 30-Dec. 2, Dec. 4-7, 9-13, 18-21, 25, Dec. 27 to Jan. 14, Jan. 19, 20, Feb. 1, 4, 6, 8-11, 16-23, May 12-15, and Aug. 23, 24. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--39 years, 38.7 ft³/s, 28,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,030 ft³/s June 17, 1956, gage height, 11.30 ft, from rating curve extended above 1,200 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 6.0 ft³/s Aug. 4, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 2	1430	*282	*6.90	No other peak greater than base discharge.			

Minimum daily discharge, 13.0 ft³/s Dec. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	26	34	20	29	41	31	32	41	16	16	18
2	17	26	31	21	26	40	35	36	184	16	15	17
3	17	27	29	23	27	39	40	44	56	16	14	16
4	17	27	29	24	27	38	51	55	48	15	15	16
5	17	27	28	25	27	37	48	55	41	14	15	16
6	18	27	28	26	25	36	44	50	34	14	15	16
7	18	27	28	24	22	36	42	48	31	14	14	16
8	18	28	27	22	21	36	41	42	29	14	14	15
9	19	33	27	21	23	37	37	38	27	26	14	15
10	19	38	27	20	25	37	35	36	26	22	14	15
11	19	34	28	21	28	37	34	35	25	16	14	15
12	20	33	28	23	29	36	33	33	24	15	22	15
13	20	32	27	21	37	33	33	32	23	15	106	16
14	21	32	27	24	39	32	32	30	24	15	63	19
15	21	32	25	25	41	33	32	29	24	28	26	20
16	22	33	24	26	36	35	31	28	24	17	21	20
17	22	35	20	28	39	34	31	29	23	15	21	20
18	22	36	21	28	40	34	31	30	22	15	23	20
19	23	35	22	27	44	34	31	32	21	50	22	21
20	23	34	23	30	48	35	31	34	20	67	21	21
21	23	36	24	33	55	36	31	41	20	25	18	22
22	24	37	24	37	66	36	33	47	19	20	17	22
23	24	36	24	39	61	35	34	50	18	19	16	20
24	25	37	24	38	55	34	38	49	18	18	17	20
25	25	38	23	39	45	33	36	49	17	17	17	20
26	26	39	14	35	44	33	35	46	16	17	18	19
27	27	39	13	40	43	32	33	41	16	17	19	20
28	27	39	15	40	43	33	32	37	15	17	18	21
29	28	38	16	31	42	32	32	34	15	17	18	22
30	29	36	17	31	---	31	32	32	17	16	17	23
31	28	---	18	32	---	31	---	33	---	16	17	---
TOTAL	675	997	745	874	1087	1086	1059	1207	918	619	677	556
MEAN	21.8	33.2	24.0	28.2	37.5	35.0	35.3	38.9	30.6	20.0	21.8	18.5
MAX	29	39	34	40	66	41	51	55	184	67	106	23
MIN	16	26	13	20	21	31	31	28	15	14	14	15
AC-FT	1340	1980	1480	1730	2160	2150	2100	2390	1820	1230	1340	1100

CAL YR 1987 TOTAL 9590.6 MEAN 26.3 MAX 59 MIN 4.9 AC-FT 19020
WTR YR 1988 TOTAL 10500 MEAN 28.7 MAX 184 MIN 13 AC-FT 20830

KANSAS RIVER BASIN

06835500 FRENCHMAN CREEK AT CULBERTSON, NE

LOCATION.--Lat 40°14'05", long 100°52'40", in SW1/4SE1/4 sec.12, T.3 N., R.32 W., Hitchcock County, Hydrologic Unit 10250005, on right bank 8 ft upstream from bridge on U.S. Highways 6 and 34, 2 mi west of Culbertson, and 4.5 mi upstream from mouth.

DRAINAGE AREA.--2,770 mi², approximately, of which about 1,470 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--June 1913 to September 1915 (gage heights and discharge measurements only), October 1930 to current year. Published as Frenchman River at Culbertson October 1965 to September 1972. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1390: 1931, 1933, 1934(M), 1938(M). WSP 2119: Drainage area. WDR NE-84-1: 1979, 1982(M).

GAGE.--Water-stage recorder. Datum of gage is 2,583.44 ft above National Geodetic Vertical Datum of 1929. See WSP 1919 for history of changes prior to Nov. 2, 1950.

REMARKS.--Estimated daily discharges: Dec. 19-21, Dec. 29 to Jan. 1, Jan. 3-14, 19-22, 26, Feb. 5, 7, 9, 10, 16-22, and July 22 to Aug. 2. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station and, since Oct. 23, 1950, by storage in Enders Reservoir (station 06832000). Principal diversion is by Culbertson Canal, 20,800 acres.

AVERAGE DISCHARGE.--58 years, 97.9 ft³/s, 70,930 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s, estimated, May 31, 1935, gage height, 14.8 ft, from floodmarks, present site and datum; no flow Aug. 7, 8, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 933 ft³/s July 19, gage height, 8.08 ft; minimum daily, 3.3 ft³/s July 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	54	64	48	62	97	71	31	29	7.3	10	51
2	37	55	65	46	62	96	83	34	76	6.8	9.7	38
3	40	55	65	46	56	93	91	35	122	5.8	9.0	35
4	39	54	65	47	51	91	94	43	58	4.9	7.5	34
5	37	54	65	48	52	89	100	43	49	3.9	7.7	33
6	35	54	65	48	46	89	90	41	43	3.4	8.6	26
7	37	55	65	46	50	88	86	40	37	3.7	6.9	27
8	38	59	68	42	51	87	83	39	31	3.3	6.6	30
9	39	59	69	37	54	87	80	36	29	23	6.5	30
10	46	62	69	35	56	86	76	31	27	17	5.4	34
11	42	61	69	38	53	86	75	30	26	10	4.8	32
12	42	59	66	43	52	82	74	29	25	11	5.4	26
13	43	59	64	49	65	78	73	28	23	20	4.19	27
14	45	59	63	51	95	77	74	29	23	8.4	278	34
15	45	60	59	53	105	78	75	27	19	74	100	39
16	45	65	51	54	112	78	71	27	14	279	59	40
17	45	64	51	56	130	79	71	27	12	48	50	43
18	46	64	53	58	124	78	70	27	12	26	64	40
19	47	63	54	54	135	79	69	28	11	393	67	42
20	47	61	56	52	145	80	70	27	11	82	52	49
21	47	61	63	54	160	80	64	29	10	61	35	50
22	48	62	63	60	150	80	49	33	12	27	30	51
23	49	62	64	81	132	79	41	40	15	18	25	51
24	49	64	63	47	119	78	64	45	16	15	16	55
25	50	67	58	45	108	75	59	43	13	13	14	51
26	51	68	44	47	103	74	41	42	11	13	13	46
27	50	68	44	50	100	75	35	35	10	13	12	45
28	50	67	48	54	99	76	34	29	11	13	13	46
29	51	66	50	56	98	74	34	27	8.7	12	15	49
30	51	66	52	58	---	72	32	27	9.6	11	12	51
31	53	---	50	61	---	71	---	27	---	11	39	---
TOTAL	1381	1827	1845	1564	2625	2532	2029	1029	793.3	1237.5	1401.1	1205
MEAN	44.5	60.9	59.5	50.5	90.5	81.7	67.6	33.2	26.4	39.9	45.2	40.2
MAX	53	68	69	81	160	97	100	45	122	393	419	55
MIN	35	54	44	35	46	71	32	27	8.7	3.3	4.8	26
AC-FT	2740	3620	3660	3100	5210	5020	4020	2040	1570	2450	2780	2390

CAL YR 1987 TOTAL 16316.1 MEAN 44.7 MAX 111 MIN 1.3 AC-FT 32360
WTR YR 1988 TOTAL 19468.9 MEAN 53.2 MAX 419 MIN 3.3 AC-FT 38620

KANSAS RIVER BASIN

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06836500 DRIFTWOOD CREEK NEAR MCCOOK, NE

LOCATION.--Lat 40°09'41", long 100°39'35", in SE1/4SW1/4 sec.1, T.2 N., R.30 W., Red Willow County, Hydrologic Unit 10250004, on right bank downstream from county road bridge, 3.0 mi downstream from siphon and wasteway on Meeker-Driftwood Canal, 3.5 mi southwest of McCook, and 2.6 miles upstream from mouth.

DRAINAGE AREA.--360 mi², approximately, of which about 350 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 1210: 1950.

GAGE.--Water-stage recorder. Datum of gage is 2,485.23 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 12, 1962, at site 1.7 mi upstream in old channel at datum 8.55 ft higher, Oct. 12, 1962, to Apr. 11, 1963, at site 1.4 mi upstream at datum 4.80 ft higher, and Apr. 12, 1963 to Apr. 22, 1982 at site 1.9 mi upstream at datum 8.55 ft higher.

REMARKS.--Estimated daily discharges: Dec. 16, 17, Dec. 25 to Jan. 25, Jan. 30 to Feb. 8, and Feb. 10, 12-14. Records good except for periods of estimated record, which are poor. Natural flow affected by waste from Meeker-Driftwood Canal and by irrigation development above station.

AVERAGE DISCHARGE.--42 years, 10.2 ft³/s, 7,390 acre-ft/yr; median of yearly mean discharges, 8.3 ft³/s, 6,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,740 ft³/s Aug. 7, 1950, gage height, 25.43 ft, at site then in use, from floodmark, from rating curve extended above 3,000 ft³/s; no flow at times in 1946-50, 1952-56.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 9	2300	347	7.78	July 19	2030	*436	*8.58

Minimum daily discharge, 3.7 ft³/s, May 19, June 13-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	7.2	5.7	6.4	8.0	6.8	5.6	4.5	5.2	24	13	10
2	4.7	6.2	5.7	6.2	7.0	6.8	8.2	5.8	5.1	14	10	9.8
3	5.0	5.9	5.7	6.4	6.4	6.7	9.6	7.9	4.9	8.5	9.2	9.1
4	5.0	5.7	5.7	6.2	6.2	6.7	7.5	5.8	5.0	7.7	13	7.1
5	5.0	5.9	5.7	6.2	6.0	6.7	6.8	6.5	4.8	5.8	14	6.2
6	5.3	6.0	5.7	6.2	5.8	6.5	6.7	5.6	4.4	6.5	12	6.1
7	5.8	6.7	5.4	6.0	6.0	6.5	6.3	4.9	4.2	8.3	11	6.0
8	6.0	8.7	6.0	5.8	6.0	6.5	6.3	4.7	4.1	8.7	11	6.0
9	6.0	7.1	7.5	6.2	6.4	6.5	6.0	4.7	11	196	12	5.9
10	6.0	6.5	6.8	6.8	7.0	6.3	5.7	4.5	18	168	12	5.8
11	6.6	6.3	6.3	7.0	8.0	6.3	5.7	4.5	3.9	35	15	5.7
12	7.8	6.4	5.9	6.8	9.0	5.4	5.9	4.4	3.8	27	15	5.7
13	8.2	7.2	5.4	6.8	12	5.6	5.9	4.2	3.7	19	49	5.7
14	8.1	6.8	5.6	7.0	40	5.9	5.8	4.1	3.7	40	28	6.4
15	7.9	6.6	5.6	7.2	50	6.0	5.6	3.9	3.7	33	21	6.8
16	7.9	9.3	5.4	6.8	64	5.7	5.6	3.9	5.1	15	11	6.5
17	7.7	7.6	5.6	6.0	41	5.8	5.6	3.9	4.4	21	8.4	6.0
18	7.9	6.2	5.9	5.4	21	5.9	5.7	3.8	3.9	14	38	5.9
19	7.7	5.9	5.9	5.8	17	6.2	5.5	3.7	3.8	267	28	6.0
20	7.5	5.8	5.9	5.8	15	6.1	5.3	4.0	3.9	100	13	6.2
21	7.6	5.7	5.7	6.2	14	6.0	5.4	4.6	3.9	20	10	6.0
22	7.9	5.8	5.7	6.2	12	5.9	5.3	5.0	4.6	16	9.5	5.9
23	7.9	5.8	5.7	6.4	9.8	5.7	5.3	5.2	4.8	12	8.8	5.7
24	7.9	5.7	5.7	6.4	8.0	5.7	5.1	7.3	4.0	9.5	8.4	5.6
25	8.0	6.3	5.8	6.6	7.5	5.7	5.3	5.8	4.0	8.9	8.9	5.6
26	8.0	6.3	6.0	6.6	7.5	5.6	5.0	5.0	4.9	9.6	8.6	5.6
27	7.8	6.2	6.2	5.6	7.2	5.6	4.8	4.6	5.1	11	8.9	5.6
28	7.1	6.2	6.0	5.6	7.2	5.8	4.8	4.4	5.1	13	12	5.6
29	7.2	6.2	5.8	6.1	6.8	5.6	4.8	4.2	5.3	13	11	5.8
30	7.0	6.1	6.0	8.0	---	5.6	4.7	4.1	25	13	11	6.4
31	7.0	---	6.2	9.0	---	5.6	---	4.8	---	13	9.4	---
TOTAL	214.2	194.3	182.2	199.7	421.8	187.7	175.8	150.3	173.3	1157.5	450.1	190.7
MEAN	6.91	6.48	5.88	6.44	14.5	6.05	5.86	4.85	5.78	37.3	14.5	6.36
MAX	8.2	9.3	7.5	9.0	64	6.8	9.6	7.9	25	267	49	10
MIN	4.7	5.7	5.4	5.4	5.8	5.4	4.7	3.7	3.7	5.8	8.4	5.6
AC-FT	425	385	361	396	837	372	349	298	344	2300	893	378

CAL YR 1987 TOTAL 2789.5 MEAN 7.64 MAX 61 MIN 4.1 AC-FT 5530
WTR YR 1988 TOTAL 3697.6 MEAN 10.1 MAX 267 MIN 3.7 AC-FT 7330

KANSAS RIVER BASIN

06837000 REPUBLICAN RIVER AT MCCOOK, NE

LOCATION.--Lat 40°11'15", long 100°37'04", in SW1/4NE1/4 sec.32, T.3 N., R.29 W., Red Willow County, Hydrologic Unit 10250004, on left bank 225 ft downstream from bridge on U.S. Highway 83 at south edge of McCook, 2.5 mi downstream from Driftwood Creek, and 10.5 mi upstream from Red Willow Creek.

DRAINAGE AREA.--12,310 mi², approximately, of which about 6,260 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1930 to June 1932, October 1954 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,456.37 ft above National Geodetic Vertical Datum of 1929. October 1930 to June 1932, nonrecording gage on former highway bridge 525 ft upstream at different datum and October 1954 to Mar. 13, 1959, on highway bridge 225 ft upstream at present datum. Mar. 13, 1959 to Mar. 29, 1988 on left bank 200 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 16 to Feb. 21. Records good except for period of estimated record, which is poor. Natural flow affected by irrigation development above station and by storage in Bonny Reservoir, Enders Reservoir (station 06832000), and Swanson Lake (station 06829000).

AVERAGE DISCHARGE.--35 years, 171 ft³/s, 123,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,890 ft³/s Mar. 21, 1960, gage height, 9.14 ft; no flow for several days in July and August 1931.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1826 occurred May 31, 1935, discharge, about 245,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,090 ft³/s July 19, gage height, 6.21 ft; minimum daily, 44 ft³/s Oct. 1-2, June 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	68	95	56	76	151	99	87	63	166	113	126
2	44	69	95	60	78	150	124	105	64	145	113	86
3	47	68	94	64	80	146	131	113	97	135	110	68
4	49	69	91	64	78	139	130	107	86	128	120	61
5	51	70	88	62	80	135	131	106	68	120	120	58
6	49	65	89	58	84	132	130	100	63	116	114	56
7	52	70	89	64	94	132	127	98	61	119	110	53
8	53	85	100	64	100	132	121	89	57	122	112	53
9	52	86	105	68	108	130	113	83	54	207	109	53
10	56	85	100	70	106	131	111	77	60	242	108	54
11	65	84	102	60	98	127	110	72	50	167	112	55
12	62	78	106	54	100	120	111	73	46	185	115	55
13	63	76	103	50	104	112	111	70	47	204	414	57
14	65	77	99	56	116	110	110	67	45	189	488	65
15	65	82	93	66	110	115	109	64	44	197	233	68
16	65	103	84	74	155	119	108	63	48	278	124	67
17	66	95	80	72	150	122	107	61	66	245	92	64
18	66	92	78	74	160	123	104	59	83	194	120	67
19	68	89	80	74	190	123	103	59	127	553	132	66
20	69	89	82	64	220	122	105	60	142	478	108	64
21	69	89	86	56	240	120	101	64	151	264	91	65
22	69	89	90	64	271	119	94	70	160	214	82	63
23	73	86	86	80	232	116	85	74	166	177	80	65
24	75	93	84	90	198	113	88	77	166	172	73	66
25	76	97	80	88	179	109	96	77	159	147	70	67
26	74	97	78	80	166	109	88	73	156	134	67	66
27	72	99	76	86	159	110	89	70	156	130	66	63
28	70	96	70	94	154	109	91	63	154	124	67	64
29	70	96	66	100	152	108	93	61	157	120	69	67
30	70	94	64	106	---	112	89	61	178	121	68	72
31	69	---	60	90	---	102	---	65	---	117	70	---
TOTAL	1938	2536	2693	2208	4038	3798	3209	2368	2974	5910	3870	1954
MEAN	62.5	84.5	86.9	71.2	139	123	107	76.4	99.1	191	125	65.1
MAX	76	103	106	106	271	151	131	113	178	553	488	126
MIN	44	65	60	50	76	102	85	59	44	116	66	53
AC-FT	3840	5030	5340	4380	8010	7530	6370	4700	5900	11720	7680	3880

CAL YR 1987 TOTAL 33547 MEAN 91.9 MAX 343 MIN 22 AC-FT 66540
WTR YR 1988 TOTAL 37496 MEAN 102 MAX 553 MIN 44 AC-FT 74370

KANSAS RIVER BASIN

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06837000 REPUBLICAN RIVER AT MC COOK, NE--Continued

WATER QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: December 1966 to current year.

INSTRUMENTATION.--Temperature recorder since Dec. 13, 1966.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 38.5°C June 24, 1971; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum, 33.5°C Aug. 7; minimum, 0.0°C on many days during winter period.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	22.5	15.5	15.0	12.5	4.0	1.0	---	---	1.0	1.0	9.0	7.0
2	19.5	10.5	17.5	12.0	5.5	1.5	1.5	.5	1.0	.5	7.5	5.5
3	20.5	8.5	16.0	9.5	6.0	2.5	1.5	.0	1.5	.5	8.5	4.0
4	21.5	10.5	15.5	9.0	7.0	2.5	1.5	.0	2.0	.5	6.0	2.5
5	19.0	11.0	12.5	7.0	7.0	4.0	1.5	.0	1.5	.5	10.0	4.0
6	17.0	6.5	12.5	7.0	8.5	4.0	.5	.5	2.0	.5	11.5	4.5
7	16.0	6.5	11.5	9.5	7.0	3.5	1.5	.0	1.5	.5	9.0	6.0
8	17.0	7.5	9.5	6.0	6.0	3.5	1.5	.0	.5	.0	6.5	4.0
9	15.0	8.5	9.0	4.0	5.0	2.5	1.5	.0	.5	.0	10.5	4.0
10	8.5	6.0	8.5	2.5	6.5	2.0	.5	.0	1.5	.5	12.0	6.5
11	13.5	2.5	9.5	2.5	6.5	4.0	.5	.0	1.5	.0	9.5	3.5
12	15.0	4.0	10.0	4.0	4.5	1.5	1.5	.0	.5	.0	6.5	1.5
13	14.0	6.5	11.5	6.0	2.5	1.5	.5	.0	.5	.0	6.5	1.0
14	11.0	9.0	9.5	6.0	1.5	1.0	.5	.0	.5	.0	7.0	1.0
15	14.5	6.0	9.5	6.0	1.5	1.0	.0	.0	.5	.0	7.0	1.5
16	14.5	7.5	7.0	4.0	1.5	1.0	.5	.0	1.0	.0	4.5	2.0
17	15.0	4.5	6.0	2.0	1.5	1.0	.5	.0	1.0	.0	7.5	2.0
18	14.5	7.0	6.0	1.5	1.5	1.0	.0	.0	.5	.0	10.0	3.5
19	10.5	6.5	6.0	1.5	1.5	1.0	.5	.0	2.0	.5	13.5	5.5
20	10.0	4.5	6.5	1.5	1.5	1.0	1.5	.0	5.5	1.5	15.5	6.5
21	12.0	2.5	6.0	1.5	2.0	1.0	1.0	.0	5.5	2.5	17.5	7.5
22	12.5	4.5	7.0	2.0	2.0	1.5	.5	.0	5.5	1.5	17.5	9.5
23	12.5	4.5	7.0	2.5	1.5	1.5	.5	.0	6.5	1.0	17.0	9.5
24	10.0	6.0	5.5	3.5	2.0	1.5	1.5	.0	7.5	2.0	14.5	9.5
25	12.0	6.5	5.0	4.0	2.5	1.5	1.0	.0	8.5	7.0	13.5	7.0
26	13.5	7.0	4.5	3.5	2.0	2.0	1.0	.0	8.5	7.0	17.0	7.0
27	13.5	6.5	4.5	2.5	2.0	1.5	1.0	.0	9.0	7.0	20.5	9.5
28	13.5	5.0	4.5	2.5	2.0	1.5	.5	.0	9.0	7.0	14.0	10.5
29	14.5	5.5	5.5	2.0	---	---	.5	.0	9.0	7.0	17.0	7.5
30	11.0	6.0	5.0	1.5	---	---	.5	.0	---	---	11.5	6.5
31	15.5	11.0	---	---	---	---	1.0	.0	---	---	10.0	7.0
MONTH	22.5	2.5	17.5	1.5	8.5	1.0	1.5	.0	9.0	.0	20.5	1.0

KANSAS RIVER BASIN
06837000 REPUBLICAN RIVER AT MC COOK, NE--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.5	5.5	21.0	14.5	19.0	16.0	24.0	20.5	30.5	21.5	26.5	21.5
2	6.0	2.5	16.5	11.0	24.0	15.0	25.5	19.5	32.0	21.5	26.5	20.0
3	15.0	4.5	14.5	9.0	25.5	16.0	31.0	20.0	33.0	24.0	28.5	18.5
4	17.5	8.5	21.0	8.5	26.5	18.5	31.5	22.0	27.0	23.5	27.0	16.0
5	16.5	11.0	23.5	11.0	28.5	17.5	30.0	24.0	28.5	20.0	27.0	16.0
6	18.5	8.5	23.5	15.0	28.5	17.0	30.5	22.0	31.5	21.5	22.5	16.0
7	20.5	10.5	23.5	12.5	29.0	18.5	25.0	21.5	33.5	22.5	25.5	15.5
8	21.0	12.0	19.5	12.5	26.5	19.0	28.5	21.5	30.5	22.5	24.5	16.0
9	17.0	10.0	22.5	10.0	24.0	18.5	26.5	19.0	31.5	21.5	26.0	15.0
10	15.0	7.5	25.5	12.0	28.5	19.0	28.5	21.5	31.5	20.5	27.0	17.0
11	19.0	6.5	26.0	12.5	25.0	17.0	29.0	21.5	32.5	22.5	27.0	19.0
12	20.0	8.5	28.5	14.5	29.0	18.5	29.5	21.5	32.0	22.5	21.5	16.0
13	21.5	11.0	26.5	15.0	24.0	18.5	31.0	22.0	25.0	21.5	20.0	15.5
14	18.5	10.0	27.0	16.5	24.5	17.0	32.0	24.5	26.5	22.5	19.0	16.5
15	19.5	9.5	29.0	16.0	22.5	17.0	30.5	23.5	29.5	23.5	22.0	17.0
16	20.0	10.0	28.5	14.5	25.0	17.5	27.5	25.0	30.5	23.5	25.5	16.0
17	16.0	11.5	27.5	15.0	28.5	19.5	29.5	24.0	32.0	22.5	27.0	16.5
18	18.5	7.5	26.0	17.0	30.5	20.0	30.5	23.5	29.0	23.5	27.5	18.5
19	19.5	9.5	26.5	16.5	32.5	22.5	27.0	20.0	28.5	22.0	21.0	14.0
20	21.5	11.5	20.0	14.5	31.5	22.5	24.0	19.0	29.5	21.5	23.5	13.5
21	21.5	12.5	14.5	11.0	31.0	22.0	26.0	20.5	31.0	22.5	26.5	17.0
22	15.0	9.5	14.0	10.5	31.0	24.0	27.5	20.5	30.0	23.5	26.0	17.0
23	17.5	7.0	19.5	10.0	30.5	23.5	28.5	21.0	31.0	21.5	22.0	14.0
24	20.0	9.0	24.5	14.0	31.0	22.5	30.5	22.5	30.0	22.0	23.5	12.0
25	20.5	10.0	26.0	16.0	31.0	23.5	30.5	22.5	30.0	20.0	25.0	15.0
26	19.5	9.5	26.5	17.0	29.5	22.0	30.5	22.0	25.5	19.5	25.5	16.5
27	21.5	8.5	25.5	16.5	28.5	22.0	31.0	22.0	25.0	20.0	22.5	17.0
28	21.5	12.0	28.5	16.5	28.5	22.5	31.5	22.0	24.0	16.0	20.5	16.0
29	19.0	12.5	26.5	17.5	27.5	22.5	31.0	23.5	26.0	16.5	15.5	12.5
30	25.5	12.0	24.5	17.0	24.0	22.0	32.0	22.5	27.0	17.0	17.0	13.5
31	---	---	20.0	17.0	---	---	31.0	22.0	29.5	20.0	---	---
MONTH	25.5	2.5	29.0	8.5	32.5	15.0	32.0	19.0	33.5	16.0	27.5	12.0

KANSAS RIVER BASIN

237

06837300 RED WILLOW CREEK ABOVE HUGH BUTLER LAKE, NE

LOCATION.--Lat 40°24'05", long 100°46'45", in NE1/4SE1/4 sec.13, T.5 N., R.31 W., Hayes County, Hydrologic Unit 10250007, on right bank 1,000 ft above county road bridge, 7.2 mi upstream from Red Willow Dam, and 12 mi northeast of Culbertson.

DRAINAGE AREA.--600 mi², approximately, of which about 200 mi² contributes directly to surface runoff.

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

GAGE.--Water-stage recorder and crest-stage gage. Artificial control since March 1961. Datum of gage is 2,594.80 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 23, 1961, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 15 to Feb. 21, Mar. 13-15, and July 31. Records good except for periods of estimated record, which are poor. Natural flow affected by pump irrigation development above station.

AVERAGE DISCHARGE.--28 years, 27.0 ft³/s, 19,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,020 ft³/s June 16, 1972, gage height, 13.27 ft, from rating curve extended above 1,000 ft³/s on basis of slope-conveyance study; minimum daily, 3.2 ft³/s June 28, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 13	0815	*828	*5.44	Aug. 18	1200	430	3.88

Minimum daily discharge, 3.2 ft³/s June 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	19	22	13	17	34	22	22	20	10	4.4	15
2	10	21	22	14	23	32	24	25	21	17	4.1	14
3	11	21	21	14	22	31	28	39	22	15	4.5	13
4	11	20	21	14	25	30	34	49	22	12	9.1	13
5	11	19	21	13	20	29	41	54	24	9.5	8.8	13
6	11	19	21	15	15	28	36	48	23	9.3	8.5	13
7	12	18	21	16	17	27	29	36	21	9.2	8.2	13
8	12	19	21	15	21	27	27	29	19	11	18	13
9	13	20	24	13	25	28	26	26	17	15	35	13
10	13	21	25	13	21	28	25	24	16	21	13	13
11	13	22	25	16	19	28	24	22	15	15	11	13
12	13	22	25	15	17	28	23	21	14	12	14	13
13	13	21	25	14	25	25	23	20	14	13	315	13
14	14	20	23	13	35	24	22	20	14	12	85	15
15	14	20	20	14	34	21	22	19	14	39	48	17
16	15	21	17	16	37	24	22	19	14	17	56	19
17	15	22	18	15	40	24	22	18	14	9.8	78	19
18	15	22	18	15	45	25	22	19	13	7.2	210	17
19	16	22	19	16	43	25	22	20	13	13	42	17
20	16	22	18	13	42	25	22	25	12	14	38	17
21	16	22	16	11	45	26	22	35	10	12	44	17
22	16	22	17	12	54	28	22	46	9.0	11	33	18
23	17	22	18	16	66	28	22	51	9.1	11	26	17
24	17	22	17	18	65	26	24	49	9.8	8.0	22	16
25	17	23	14	16	50	25	24	42	8.8	7.7	19	15
26	18	24	13	14	42	24	24	34	6.2	7.0	17	14
27	18	24	14	14	39	24	24	29	4.4	6.7	16	14
28	18	24	14	17	37	23	23	26	3.2	6.5	15	13
29	18	24	15	20	36	23	23	23	4.6	4.2	15	15
30	18	23	16	20	---	22	22	21	19	4.1	15	18
31	18	---	14	19	---	22	---	20	---	3.4	15	---
TOTAL	450	641	595	464	977	814	746	931	426.1	362.6	1247.6	450
MEAN	14.5	21.4	19.2	15.0	33.7	26.3	24.9	30.0	14.2	11.7	40.2	15.0
MAX	18	24	25	20	66	34	41	54	24	39	315	19
MIN	10	18	13	11	15	21	22	18	3.2	3.4	4.1	13
AC-FT	893	1270	1180	920	1940	1610	1480	1850	845	719	2470	893

CAL YR 1987 TOTAL 7227.9 MEAN 19.8 MAX 51 MIN 5.6 AC-FT 14340
WTR YR 1988 TOTAL 8104.3 MEAN 22.1 MAX 315 MIN 3.2 AC-FT 16070

KANSAS RIVER BASIN

06837390 HUGH BUTLER LAKE NEAR MCCOOK, NE

LOCATION.--Lat 40°21'35", long 100°39'55", in SW1/4NW1/4 sec.31, T.5 N., R.29 W., Frontier County, Hydrologic Unit 10250007, in gate-control house at outlet tube of Red Willow Dam on Red Willow Creek, 12 mi north of McCook.

DRAINAGE AREA.--730 mi², approximately, of which about 310 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to July 10, 1962, nonrecording gage at present datum.

REMARKS.--Reservoir is formed by earthfill dam; storage began Sept. 5, 1961. Capacity, 31,470 acre-ft between elevations 2,522.0 ft, sill of outlet works, and 2,581.8 ft, top of irrigation pool. Top of flood-control pool and crest of mean spillway at elevation 2,604.9 ft, capacity, 86,360 acre-ft. Top of superstorage flood control pool at elevation 2,627.8 ft, capacity, 162,600 acre-ft. Dead storage, 6,310 acre-ft. Figures given herein represent total contents. Water used for irrigation in Frenchman-Cambridge irrigation project.

COOPERATION.--Capacity table furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 41,680 acre-ft July 15, 16, 1967, elevation, 2,584.14 ft; minimum since operation of reservoir began, 16,930 acre-ft Sept. 8, 1978, elevation, 2,565.31 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 32,250 acre-ft June 8, elevation, 2,578.24 ft; minimum, 23,500 acre-ft Oct. 10, elevation, 2,571.49 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

2,570	21,800	2,580	34,910
2,575	27,800	2,585	43,170

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23590	23990	25110	26020	26890	29240	30170	30850	32140	28720	26330	25760
2	23570	24030	25130	26050	26950	29260	30330	31190	32150	28640	26150	25750
3	23560	24050	25170	26060	27000	29310	30360	31170	32180	28610	25950	25720
4	23590	24070	25210	26070	27000	29350	30430	31240	32210	28580	25740	25690
5	23570	24090	25240	26070	27050	29410	30480	31380	32210	28530	25640	25660
6	23560	24130	25280	26120	27070	29460	30520	31510	32210	28390	25550	25650
7	23530	24210	25300	26150	27110	29530	30590	31550	32240	28340	25480	25660
8	23560	24200	25410	26180	27150	29540	30650	31540	32230	28240	25380	25650
9	23520	24200	25450	26210	27180	29610	30580	31490	32110	28180	25360	25640
10	23500	24220	25510	26230	27180	29680	30590	31540	32000	28140	25280	25640
11	23510	24270	25550	26280	27210	29810	30590	31560	31930	28040	25280	25610
12	23560	24310	25550	26280	27250	29680	30640	31590	31840	28000	25640	25610
13	23580	24350	25590	26310	27340	29690	30680	31590	31760	27930	26180	25650
14	23590	24380	25610	26340	27420	29700	30670	31610	31690	27950	26380	25670
15	23590	24530	25640	26360	27520	29720	30680	31590	31580	27910	26430	25710
16	23600	24530	25640	26370	27670	29870	30700	31580	31420	27770	26490	25740
17	23610	24550	25660	26390	27850	29870	30700	31590	31270	27590	26690	25760
18	23630	24580	25690	26520	27970	29890	30670	31630	31110	27520	27070	25770
19	23630	24620	25740	26610	28100	29950	30710	31620	30950	27620	27110	25770
20	23650	24630	25750	26610	28260	29990	30740	31680	30740	27570	27100	25760
21	23660	24680	25790	26610	28410	30020	30750	31660	30490	27500	27120	25810
22	23680	24710	25810	26630	28490	30060	30720	31700	30260	27450	27050	25820
23	23680	24740	25840	26670	28610	30090	30700	31820	30020	27400	26930	25800
24	23740	24830	25850	26690	28750	30110	30740	31910	29790	27360	26760	25790
25	23780	24860	25850	26690	28860	30110	30830	31990	29550	27310	26550	25800
26	23780	24910	25870	26740	28960	30130	30770	32050	29300	27220	26360	25820
27	23790	24980	25930	26760	29010	30170	30780	32080	29050	27130	26220	25840
28	23820	25010	25960	26790	29080	30140	30800	32080	28840	27010	26050	25850
29	23850	25040	25970	26830	29150	30140	30830	32080	28960	26870	25930	25810
30	23930	25070	26010	26870	---	30150	30840	32050	28860	26730	25860	25820
31	23950	---	26010	26890	---	30140	---	32090	---	26550	25810	---
MEAN	23650	24490	25620	26430	27810	29800	30640	31650	31040	27770	26190	25730
MAX	23950	25070	26010	26890	29150	30170	30840	32090	32240	28720	27120	25850
MIN	23500	23990	25110	26020	26890	29240	30170	30850	28840	26550	25280	25610
(†)	2571.88	2572.82	2573.58	2574.29	2576.02	2576.75	2577.25	2578.13	2575.80	2574.02	2573.42	2573.43
(‡)	+370	+1120	+940	+880	+2260	+990	+700	+1250	-3230	-2310	-740	+10
CAL YR 1987	MEAN	27570	MAX	32910	MIN	23300	(†)	-720				
WTR YR 1988	MEAN	27560	MAX	32240	MIN	23500	(‡)	+2240				

(†) Elevation, in feet, at end of month.

(‡) Change in contents, in acre-feet.

KANSAS RIVER BASIN

239

06837500 RED WILLOW CREEK NEAR MCCOOK, NE

LOCATION.--Lat 40°20'50", long 100°38'35", in SW1/4NW1/4 sec.6, T.4 N., R.29 W., Red Willow County, Hydrologic Unit 10250007, on left bank 45 ft downstream from bridge on U.S. Highway 83, 3 mi downstream from Red Willow Dam and 10 mi north of McCook.

DRAINAGE AREA.--740 mi², approximately, of which about 320 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1940 to September 1947. Annual maximums, water years 1958-60. October 1960 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder, concrete control since Dec. 23, 1965. Datum of gage is 2,485.97 ft above National Geodetic Vertical Datum of 1929. October 1940 to September 1947, water-stage recorder at site 45 ft upstream at datum 9.55 ft higher. Nov. 22, 1957, to Sept. 30, 1960, crest-stage gage, Oct. 1, 1960, to Apr. 5, 1961, nonrecording gage, and Apr. 6, 1961, to Sept. 26, 1974, water-stage recorder at site 45 ft upstream, present datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow affected by irrigation development above station and, since Sept. 5, 1961, by storage in Hugh Butler Lake (station 06837390).

AVERAGE DISCHARGE.--27 years (1962-88), 20.2 ft³/s, 14,630 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s June 22, 1947, gage height, 31.95 ft, present datum, from rating curve extended above 2,500 ft³/s on basis of contracted-opening measurement of peak flow; minimum daily, 0.60 ft³/s Sept. 22, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1, 1935, reached a stage of 33.45 ft, from floodmarks, discharge, 45,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 144 ft³/s July 19, gage height, 10.16 ft; minimum daily, 2.9 ft³/s June 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	4.2	3.9	3.7	4.6	4.3	4.0	4.1	3.3	51	89	29
2	4.3	4.0	3.9	3.7	4.7	4.1	5.1	5.6	3.8	43	91	16
3	4.2	3.8	3.9	3.4	4.7	4.1	4.2	4.6	3.8	42	99	4.7
4	4.4	3.7	3.9	3.8	4.6	4.1	4.3	4.1	3.9	37	88	4.9
5	3.9	3.5	3.9	3.7	4.4	4.0	4.2	4.1	3.7	36	59	4.7
6	3.9	3.5	4.0	3.7	4.0	3.9	4.1	4.1	4.0	48	50	4.2
7	3.9	3.8	3.8	3.6	4.0	4.0	4.1	4.0	2.9	57	50	4.1
8	4.0	3.5	4.5	3.6	4.0	4.0	4.2	4.1	21	69	48	3.9
9	4.1	3.3	4.0	3.6	4.0	4.0	4.1	4.1	58	58	46	3.9
10	3.8	3.3	4.0	3.6	3.8	4.0	4.1	3.9	30	44	49	3.9
11	3.8	3.5	4.1	3.9	3.7	4.0	4.2	4.2	30	39	48	4.0
12	3.9	3.6	3.9	3.8	4.5	3.9	4.1	4.3	30	36	49	4.0
13	3.9	3.8	3.8	4.0	5.7	3.8	4.1	4.1	32	47	38	4.1
14	3.9	3.7	3.9	3.9	5.0	3.8	3.8	3.8	34	55	7.0	4.6
15	3.9	4.0	3.8	4.0	4.8	3.8	3.9	3.9	51	87	13	4.0
16	3.8	3.8	3.8	4.3	5.1	3.9	3.8	3.9	74	85	32	4.0
17	3.8	3.4	3.8	4.3	4.4	3.9	3.9	3.7	100	84	33	4.0
18	3.9	3.4	3.8	4.4	4.2	3.9	3.7	3.9	95	70	35	4.0
19	3.9	3.5	3.2	4.6	4.1	4.1	3.8	3.7	84	55	33	4.0
20	3.7	3.9	3.4	4.0	4.2	4.1	3.8	3.7	99	36	32	4.0
21	3.7	3.9	3.6	4.0	4.1	4.1	3.8	3.9	114	35	34	4.0
22	3.8	3.9	3.6	4.3	4.3	4.2	3.3	3.9	116	35	50	4.0
23	3.8	4.0	3.5	4.5	4.1	4.2	3.2	4.1	114	34	75	4.0
24	3.8	4.3	3.4	4.4	4.1	4.3	3.2	4.0	111	33	90	3.8
25	4.1	4.1	3.4	4.3	4.1	4.2	3.7	4.0	109	37	98	3.8
26	3.7	4.0	3.5	4.4	3.9	4.3	3.7	3.9	110	46	89	3.8
27	3.6	4.0	3.8	4.7	4.0	4.2	5.7	3.7	107	46	79	3.8
28	3.6	4.0	3.9	4.8	4.0	4.0	3.9	3.3	103	69	77	4.0
29	3.8	4.0	3.8	5.0	3.9	4.1	3.9	3.2	99	77	66	3.9
30	3.7	4.0	3.4	5.3	---	4.1	4.0	3.8	70	76	49	4.1
31	4.4	---	3.7	5.0	---	4.0	---	4.0	---	78	37	---
TOTAL	121.1	113.4	116.9	128.3	125.0	125.4	119.9	123.7	1816.4	1645	1733.0	159.2
MEAN	3.91	3.78	3.77	4.14	4.31	4.05	4.00	3.99	60.5	53.1	55.9	5.31
MAX	4.4	4.3	4.5	5.3	5.7	4.3	5.7	5.6	116	87	99	29
MIN	3.6	3.3	3.2	3.4	3.7	3.8	3.2	3.2	2.9	33	7.0	3.8
AC-FT	240	225	232	254	248	249	238	245	3600	3260	3440	316

CAL YR 1987 TOTAL 6765.0 MEAN 18.5 MAX 123 MIN 2.6 AC-FT 13420
WTR YR 1988 TOTAL 6327.3 MEAN 17.3 MAX 116 MIN 2.9 AC-FT 12550

KANSAS RIVER BASIN

06838000 RED WILLOW CREEK NEAR RED WILLOW, NE

LOCATION.--Lat 40°14'10", Long 100°30'00", in NE1/4NE1/4 sec.17, T.3 N., R.28 W., Red Willow County, Hydrologic Unit 10250007, on left bank near downstream side of bridge on U.S. Highways 6 and 34, 0.8 mi north of Red Willow and 2.5 mi upstream from mouth.

DRAINAGE AREA.--830 mi², approximately, of which about 410 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 1510: 1945(M). WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,398.64 ft above National Geodetic Vertical Datum of 1929. Prior to May 26, 1945, nonrecording gage at bridge 1.2 mi upstream at datum 11.16 ft higher, May 26, 1945, to Aug. 2, 1974, water-stage recorder at present site and datum, and Aug. 3, 1974, to June 27, 1980, on right bank at downstream side of bridge, present datum.

REMARKS.--Estimated daily discharges: Dec. 14 to Jan. 13, Jan. 16-20, 22-28, Jan 30 to Feb. 1, Feb. 4, 9, 10, 13, 14, 21-25, Mar. 13, 14, and Aug. 29 to Sept. 5. Records fair except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station, since Sept. 5, 1961, by storage in Hugh Butler Lake (station 06837390), and since June 1963 by Red Willow Canal which diverts 4.5 mi above station for irrigation of about 4,150 acres.

AVERAGE DISCHARGE.--26 years (1963-88), 14.2 ft³/s, 10,290 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s June 22, 1947, gage height, 18.36 ft, from rating curve extended above 6,800 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 0.33 ft³/s Sept. 8, 1971.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 489 ft³/s Aug. 13, gage height, 10.98 ft; minimum daily, 2.7 ft³/s July 12, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	7.9	8.4	9.2	9.4	9.3	9.3	9.0	11	12	9.6	15
2	6.3	7.9	8.6	9.0	7.0	9.2	15	13	10	8.0	7.8	7.4
3	6.3	8.0	8.5	8.8	7.6	9.1	11	14	10	6.1	8.7	7.0
4	6.4	8.0	8.5	9.0	9.0	9.1	10	10	9.9	8.4	48	6.6
5	6.3	7.9	8.6	9.2	6.2	9.4	9.8	10	9.6	4.3	31	6.2
6	6.4	8.0	8.6	9.4	10	9.5	9.5	9.6	9.6	4.0	12	5.9
7	6.9	8.5	8.6	9.6	7.7	9.6	9.8	10	9.7	3.8	10	5.9
8	6.9	9.0	9.4	9.8	9.0	10	9.7	9.3	7.7	9.2	11	5.6
9	6.7	8.2	9.6	9.8	12	9.8	9.6	8.9	11	21	8.8	5.0
10	6.6	8.2	8.9	11	14	10	9.6	9.0	19	9.9	4.7	5.3
11	6.9	8.3	8.9	11	5.7	9.7	9.7	8.9	5.8	9.3	3.2	5.2
12	7.4	8.2	8.7	10	16	9.9	9.8	9.2	6.2	2.7	7.7	5.5
13	7.3	8.3	8.8	10	25	10	9.6	8.9	6.4	7.0	310	6.6
14	7.2	8.2	9.6	10	35	9.8	9.6	8.8	6.2	2.7	33	7.9
15	7.3	8.6	8.6	11	43	9.7	9.6	8.4	5.3	14	9.1	8.3
16	7.2	10	8.2	11	35	9.4	9.6	8.4	9.8	9.4	4.8	6.8
17	6.9	8.5	8.4	12	28	9.9	9.8	8.5	25	8.9	12	5.8
18	7.0	8.2	8.6	12	14	9.4	9.8	8.2	26	27	20	5.7
19	7.0	8.2	9.0	11	11	9.8	9.8	9.6	11	204	15	5.6
20	6.9	8.2	9.4	10	10	9.8	9.8	9.8	9.5	34	7.8	5.8
21	7.0	8.4	9.2	6.4	10	9.6	9.8	11	12	27	7.1	6.0
22	7.2	8.4	9.4	8.4	10	9.7	9.6	11	12	25	9.7	5.6
23	7.2	8.2	10	9.6	10	9.4	9.8	11	13	25	24	5.2
24	7.1	9.0	9.8	11	10	9.5	9.8	11	11	24	25	5.2
25	7.6	9.3	9.4	11	9.8	9.5	9.8	10	8.5	20	45	5.4
26	7.8	8.7	8.8	9.0	9.6	9.7	9.8	10	6.9	15	56	5.2
27	7.3	8.6	8.8	11	9.2	9.9	9.8	9.7	8.8	6.2	51	5.4
28	7.5	8.5	9.0	13	9.1	9.3	11	9.2	7.3	8.0	50	5.5
29	7.6	8.4	9.0	11	9.0	9.4	9.5	8.6	9.3	4.1	48	6.4
30	7.7	8.5	9.2	11	---	9.5	9.3	8.8	24	5.6	40	6.9
31	8.3	---	9.2	10	---	9.4	---	11	---	4.7	30	---
TOTAL	219.8	252.3	277.7	314.2	401.3	297.3	298.6	302.8	331.5	570.3	960.0	189.9
MEAN	7.09	8.41	8.96	10.1	13.8	9.59	9.95	9.77	11.0	18.4	31.0	6.33
MAX	8.3	10	10	13	43	10	15	14	26	204	310	15
MIN	6.3	7.9	8.2	6.4	5.7	9.1	9.3	8.2	5.3	2.7	3.2	5.0
AC-FT	436	500	551	623	796	590	592	601	658	1130	1900	377

CAL YR 1987 TOTAL 3423.80 MEAN 9.38 MAX 70 MIN .40 AC-FT 6790
WTR YR 1988 TOTAL 4415.7 MEAN 12.1 MAX 310 MIN 2.7 AC-FT 8760

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LOCATION.--Lat 40°38'00", long 100°29'20", in SE1/4NW1/4 sec.27, T.8 N., R.28 W., Frontier County, Hydrologic Unit 10250008, on left bank 15 ft upstream from bridge on State Highway 23, 0.5 mi upstream from mouth, and 1 mi east of Curtis.

PERIOD OF RECORD.--March 1951 to September 1958. Annual maximums, water years 1960-70. October 1977 to current year.

REMARKS.--Estimated daily discharge: Feb. 6. Records good except for period of estimated record which is fair.

AVERAGE DISCHARGE.--18 years (1952-58, 1978-88), 6.60 ft³/s, 4,780 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 27.3 ft June 21, 1947, from floodmark (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 71 ft³/s July 18, gage height, 6.22 ft; minimum daily, 2.4 ft³/s Aug. 2.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	7.2	5.6	4.1	6.7	6.7	6.0	6.0	5.9	5.4	2.7	3.8
2	3.6	4.6	5.8	4.6	6.2	6.5	6.7	9.0	6.0	5.1	2.4	4.3
3	3.7	4.5	5.8	4.8	5.8	6.3	6.9	11	5.7	5.0	3.4	3.9
4	4.0	4.4	5.8	4.7	5.5	6.2	6.5	7.4	5.5	4.8	4.3	3.8
5	4.3	4.6	5.8	4.8	5.3	6.1	6.0	6.7	5.4	4.6	3.4	3.8
6	4.7	4.6	5.9	4.9	4.6	6.2	6.0	6.6	5.4	4.2	3.4	3.8
7	5.0	4.6	5.8	5.0	6.2	6.3	6.0	6.9	5.3	4.2	3.7	3.8
8	5.1	5.0	5.9	5.0	6.0	6.2	5.9	6.7	5.3	3.8	3.6	3.8
9	5.0	5.0	6.1	5.0	5.9	6.1	5.8	6.3	5.2	3.7	7.6	3.8
10	4.2	4.8	5.8	5.0	5.5	6.2	5.8	6.1	5.2	4.0	5.5	3.8
11	4.2	4.9	5.5	5.1	5.5	6.3	5.8	6.1	5.3	3.9	3.8	3.8
12	4.3	5.0	5.5	5.4	6.4	6.4	5.8	5.9	5.3	3.3	5.2	3.7
13	4.3	5.0	5.4	5.0	12	6.5	5.9	5.8	6.0	3.5	25	3.9
14	4.5	5.0	5.3	5.4	21	6.4	5.8	5.9	23	3.5	5.6	4.4
15	4.6	5.2	4.9	5.5	12	6.3	5.8	5.9	5.2	4.5	4.3	4.6
16	4.9	5.9	4.8	5.7	38	6.3	5.8	5.8	5.1	3.7	4.2	4.2
17	4.7	5.4	4.8	5.8	32	6.2	5.9	5.8	5.2	4.0	4.1	4.0
18	4.9	5.1	5.0	5.8	17	6.2	5.9	6.0	5.3	4.7	12	4.1
19	5.1	5.0	4.9	5.6	14	6.3	5.8	6.5	5.3	14	6.4	5.1
20	4.8	5.3	4.7	6.0	12	6.3	6.0	6.9	5.3	5.8	4.4	4.9
21	4.6	5.2	4.5	6.0	14	6.1	5.9	8.4	5.3	4.7	4.4	4.4
22	4.6	5.4	4.5	6.0	21	6.1	6.2	6.9	5.4	4.4	4.3	4.3
23	5.0	5.3	4.6	6.0	8.3	6.0	6.2	6.8	5.4	4.3	4.3	4.2
24	4.3	5.5	4.4	6.0	6.9	6.1	5.9	6.7	5.2	4.5	4.3	4.1
25	4.6	5.7	4.0	5.5	6.9	6.0	6.0	6.3	4.5	4.0	4.2	4.2
26	4.9	5.5	4.0	5.9	6.7	5.9	6.0	6.2	3.8	3.7	4.2	4.2
27	4.4	5.4	4.8	5.8	7.1	6.0	6.0	6.1	3.9	4.1	4.1	4.2
28	4.4	5.5	5.0	5.9	6.8	6.0	5.9	5.9	3.8	2.9	4.1	4.5
29	4.5	5.6	4.0	6.0	6.8	6.1	5.9	5.9	3.9	2.8	4.2	4.9
30	4.6	5.8	5.1	6.8	---	6.0	5.9	5.8	6.4	3.6	4.1	4.7
31	19	---	4.3	7.6	---	5.9	---	5.9	---	3.2	4.0	---
TOTAL	154.6	156.0	158.3	170.7	312.1	192.2	180.0	204.2	173.5	137.9	161.2	125.0
MEAN	4.99	5.20	5.11	5.51	10.8	6.20	6.00	6.59	5.78	4.45	5.20	4.17
MAX	19	7.2	6.1	7.6	38	6.7	6.9	11	23	14	25	5.1
MIN	3.6	4.4	4.0	4.1	4.6	5.9	5.8	5.8	3.8	2.8	2.4	3.7
AC-FT	307	309	314	339	619	381	357	405	344	274	320	248
CAL YR 1987	TOTAL 2072.6		MEAN 5.68	MAX 183	MIN 2.4	AC-FT 4110						
WTR YR 1988	TOTAL 2125.7		MEAN 5.81	MAX 38	MIN 2.4	AC-FT 4220						

LOCATION.--Lat 40°30'10", long 100°19'20", in SW1/4 sec.7, T.6 N., R.26 W., Frontier County, Hydrologic Unit 10250008, on right bank 0.3 mi downstream from top of Harry Strunk Lake flood-control pool, 2.5 mi upstream from top of irrigation pool, 3.8 mi southeast of Stockville, and 13.5 mi upstream from Medicine Creek Dam.

PERIOD OF RECORD.--January 1950 to current year. Prior to October 1950, published as "above Medicine Creek Reservoir."

GAGE.--Water-stage recorder. Concrete control since November 1950. Datum of gage is 2,380.94 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

AVERAGE DISCHARGE.--38 years, 63.8 ft³/s, 46,220 acre-ft/yr; median of yearly mean discharges, 57 ft³/s, 41,300 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1874, 24.4 ft June 22, 1947, from floodmark (discharge not determined).

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 13	0430	*1490	*15.17	No other peak greater than base discharge.			
Minimum daily discharge, 19 ft ³ /s June 27-28.							

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	133	46	46	52	59	52	43	47	28	22	28
2	28	78	46	50	54	59	56	55	46	26	23	28
3	27	54	45	49	58	58	60	80	50	27	22	28
4	29	47	45	48	52	56	65	98	49	27	28	28
5	29	41	45	47	54	55	64	80	46	24	30	29
6	29	41	46	52	50	54	59	66	43	22	26	31
7	29	44	46	46	54	56	56	58	42	22	24	31
8	31	51	47	44	60	56	54	53	38	25	24	30
9	31	55	48	42	64	56	53	47	35	28	23	31
10	31	53	54	48	70	56	52	44	34	32	33	31
11	32	51	52	56	66	57	52	42	32	30	40	30
12	33	44	49	54	70	56	52	42	32	27	92	30
13	34	44	47	48	100	52	52	45	32	26	877	31
14	35	44	45	50	150	51	52	49	42	22	249	35
15	36	45	43	52	200	53	51	48	37	28	159	38
16	37	49	41	56	260	52	50	47	32	26	151	40
17	36	55	37	52	200	51	51	46	32	25	132	38
18	36	56	35	54	160	52	50	44	31	24	95	37
19	37	51	38	50	130	53	49	47	30	142	101	36
20	37	48	39	46	98	54	49	48	29	63	65	38
21	37	47	38	37	87	57	49	58	29	49	54	36
22	37	47	43	38	94	58	48	69	27	40	48	35
23	37	47	45	45	83	57	50	68	26	33	46	34
24	38	49	42	56	65	56	53	65	24	32	44	33
25	40	50	40	52	59	55	52	59	22	31	42	32
26	41	52	42	44	57	54	51	54	20	28	40	32
27	42	52	43	45	57	53	48	50	19	25	37	32
28	43	49	44	54	59	53	45	47	19	24	34	33
29	43	48	42	58	58	52	44	45	21	24	31	33
30	43	47	48	64	---	52	43	44	35	24	29	37
31	182	---	44	60	---	52	---	45	---	23	29	---
TOTAL	1228	1572	1365	1543	2621	1695	1562	1686	1001	1007	2650	985
MEAN	39.6	52.4	44.0	49.8	90.4	54.7	52.1	54.4	33.4	32.5	85.5	32.8
MAX	182	133	54	64	260	59	65	98	50	142	877	40
MIN	27	41	35	37	50	51	43	42	19	22	22	28
AC-FT	2440	3120	2710	3060	5200	3360	3100	3340	1990	2000	5260	1950

CAL YR 1987	TOTAL 17038	MEAN 46.7	MAX 194	MIN 19	AC-FT 33790
WTR YR 1988	TOTAL 18915	MEAN 51.7	MAX 877	MIN 19	AC-FT 37520

06842000 HARRY STRUNK LAKE NEAR CAMBRIDGE, NE

LOCATION.--Lat 40°22'40", long 100°13'00", in NE1/4 sec.25, T.5 N., R.26 W., Frontier County, Hydrologic Unit 10250008, near right bank in control house at outlet tube of Medicine Creek Dam on Medicine Creek, 7 mi northwest of Cambridge.

DRAINAGE AREA.--880 mi², approximately, of which about 640 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Aug. 18, 1960, nonrecording gage at present datum.

REMARKS.--Reservoir is formed by earthfill dam; storage began Aug. 8, 1949. Capacity, 31,540 acre-ft between elevation 2,335.0 ft, sill of outlet gates, and 2,366.1 ft, top of storage pool and crest of slot in spillway. Top of flood-control pool and crest of main spillway at elevation 2,386.2 ft, capacity, 88,420 acre-ft. Top of superstorage flood-control pool at elevation 2,400.0 ft, capacity, 146,300 acre-ft. Maximum water-surface elevation, 2,408.9 ft, 194,100 acre-ft. Dead storage, 4,160 acre-ft. Figures given herein represent total contents. Water used for irrigation in Frenchman-Cambridge irrigation project.

COOPERATION.--Capacity table furnished by Bureau of Reclamation (effective Oct. 1982).

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 55,750 acre-ft Mar. 23, 1960, elevation, 2,374.10 ft; minimum since operation of reservoir began, 7,840 acre-ft Sept. 7, 1978, elevation, 2,340.39 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 38,480 acre-ft June 7, elevation, 2,367.56 ft; minimum, 19,520 acre-ft Aug. 12, elevation, 2,354.90 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

2,350	14,500	2,365	33,730
2,355	19,630	2,370	43,470
2,360	25,910	2,375	55,110

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21770	23870	26770	29320	32100	34840	34660	35820	38010	28540	21690	19920
2	21720	24050	26870	29400	32200	34790	34770	36190	38090	28510	21010	19920
3	21770	24140	26920	29450	32300	34750	34800	36190	38250	28530	20420	19970
4	21870	24210	27000	29510	32370	34790	34890	36440	38360	28510	20000	19990
5	21870	24260	27090	29610	32440	34790	34840	36620	38380	28470	19900	20000
6	21890	24350	27180	29700	32580	34800	34860	36830	38440	28200	19870	20020
7	21910	24480	27260	29790	32610	34840	34910	36920	38480	27600	19900	20090
8	22000	24510	27480	29840	32710	34860	34950	36870	38380	27180	19770	20130
9	22000	24560	27570	29930	32850	34870	34770	36870	38230	26980	19710	20190
10	21990	24640	27710	30040	32900	34870	34730	36960	38050	26830	19690	20230
11	22080	24740	27800	30120	32990	34890	34710	37030	37940	26700	19690	20280
12	22150	24820	27870	30150	33090	34800	34750	37110	37840	26590	19750	20270
13	22230	24910	27950	30230	33230	34790	34770	37130	37600	26420	21080	20290
14	22250	24990	28040	30290	33400	34750	34660	37170	37350	26080	21930	20360
15	22310	25210	28090	30400	33660	34750	34680	37170	37030	25650	22350	20440
16	22380	25260	28140	30480	34000	34750	34710	37170	36680	25220	22690	20530
17	22440	25370	28200	30570	34570	34770	34730	37180	36210	24940	23080	20640
18	22490	25460	28260	30760	35040	34750	34730	37220	35760	24650	23200	20720
19	22540	25550	28380	30960	35320	34750	34870	37200	35340	24760	23440	20730
20	22600	25650	28440	30980	35410	34800	35000	37200	34800	24990	23600	20790
21	22680	25750	28530	31010	35470	34840	35090	37150	34090	25150	23570	20910
22	22740	25870	28620	31110	35410	34840	35020	37180	33400	25230	23060	20930
23	22810	25970	28740	31220	35320	34800	35110	37330	32710	25320	22440	20950
24	22860	26060	28790	31320	35210	34730	35270	37490	31990	25370	21890	21010
25	22980	26160	28860	31400	35090	34710	35480	37620	31250	25380	21360	21080
26	23070	26280	28900	31470	35000	34750	35410	37740	30520	25140	20950	21150
27	23150	26370	29030	31570	34950	34750	35520	37860	29760	24670	20600	21240
28	23230	26470	29080	31660	34870	34700	35630	37920	29010	24090	20280	21260
29	23320	26570	29150	31760	34820	34660	35710	37920	28830	23490	20050	21270
30	23420	26670	29220	31880	---	34620	35820	37920	28660	22960	19940	21320
31	23640	---	29280	31960	---	34610	---	37970	---	22380	19940	---
MEAN	22460	25240	28100	30580	33860	34770	34990	37140	35310	25950	21190	20550
MAX	23640	26670	29280	31960	35470	34890	35820	37970	38480	28540	23600	21320
MIN	21720	23870	26770	29320	32100	34610	34660	35820	38660	22380	19690	19920
(†)	2358.29	2300.54	2362.30	2363.97	2365.61	2365.49	2366.16	2367.30	2361.90	2357.30	2355.27	2356.44
(‡)	+1970	+3030	+2610	+2680	+2860	-210	+1210	+2150	-9310	-6280	-2440	+1380
CAL YR 1987 MEAN	29120	MAX	38580	MIN	20230	(‡)	+5280					
WTR YR 1988 MEAN	29160	MAX	38480	MIN	19690	(‡)	-350					

(†) Elevation, in feet, at end of month.

(‡) Change in contents, in acre-feet.

KANSAS RIVER BASIN

06842500 MEDICINE CREEK BELOW HARRY STRUNK LAKE, NE

LOCATION.--Lat 40°22'20", long 100°13'20", at center of sec.25, T.5 N., R.26 W., Frontier County, Hydrologic Unit 10250008, on right bank 0.5 mi downstream from Medicine Creek Dam and 6.5 mi northwest of Cambridge.

DRAINAGE AREA.--880 mi², approximately, of which about 640 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1950, published as "below Medicine Creek Dam." Monthly discharge only for some periods, published in WSP 1730.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Concrete control since August 1950. Datum of gage is 2,295.26 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Apr. 24, 1950, nonrecording gage at site 0.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good except those below 1.0 ft³/s, which are fair. Flow regulated by Harry Strunk Lake (station 06842000).

AVERAGE DISCHARGE.--39 years, 59.7 ft³/s, 43,300 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft³/s Mar. 23, 1960, gage height, 5.97 ft; minimum daily, 0.06 ft³/s Sept. 24-26, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 424 ft³/s Aug. 2, gage height, 3.08 ft; minimum daily, 0.06 ft³/s Sept. 24-26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.21	.59	.49	.28	.41	60	52	.31	.40	85	366	25
2	.21	.58	.53	.28	.40	78	53	.84	.48	72	417	6.7
3	.28	.54	.54	.28	.42	67	52	3.8	.42	71	370	.18
4	.24	.59	.53	.28	.39	45	52	4.8	.48	71	218	.16
5	.25	.68	.59	.28	.33	54	52	7.2	.58	75	122	.14
6	.34	.45	.59	.30	.36	54	52	10	.63	140	85	.16
7	.39	.47	.59	.30	.36	54	53	13	45	257	78	.16
8	.38	.48	.64	.30	.38	54	53	17	104	266	97	.18
9	.35	.43	.53	.32	.38	52	53	17	89	184	67	.17
10	.37	.44	.53	.33	.35	52	54	17	80	141	54	.16
11	.42	.47	.54	.36	.34	52	54	19	80	96	78	.14
12	.44	.44	.52	.37	.37	52	53	20	81	95	156	.86
13	.42	.64	.52	.36	.41	52	52	21	118	155	75	.12
14	.42	.41	.52	.37	.39	52	53	22	156	180		.28
15	.48	.57	.52	.38	.39	52	38	23	192	244		.23
16	.56	.58	.49	.38	.41	52	29	23	200	239	.19	.09
17	.65	.44	.49	.38	.40	52	29	23	246	169	.21	.08
18	.68	.42	.48	.45	.39	52	13	24	247	168	.28	.07
19	.71	.42	.52	.51	.46	53	.43	24	246	91	.21	.10
20	.75	.42	.48	.42	.94	53	.38	26	260	.36	.24	.09
21	.81	.42	.48	.40	.95	53	.37	30	364	.30	.76	.07
22	.93	.46	.49	.39	113	53	.35	31	379	.29	.274	.08
23	1.0	.47	.52	.41	128	54	.34	33	370	.26	.358	.07
24	.92	.70	.48	.44	127	53	.34	17	363	.26	.282	.06
25	1.2	.56	.40	.41	127	53	.34	.54	385	30	266	.06
26	.89	.47	.35	.39	108	53	.33	.52	396	142	215	.06
27	.88	.55	.36	.38	91	52	.34	.51	407	232	178	.10
28	.80	.50	.35	.38	91	52	.31	.45	400	303	178	.17
29	.72	.47	.34	.39	80	52	.30	.43	358	304	144	.28
30	.59	.50	.34	.45	---	52	.30	.42	169	276	79	.25
31	.55	---	.32	.43	---	52	---	.47	---	311	39	---
TOTAL	17.84	15.16	15.07	11.40	1106.88	1671	851.13	430.29	5737.99	4398.47	4273.64	35.98
MEAN	.58	.51	.49	.37	38.2	53.9	28.4	13.9	191	142	138	1.20
MAX	1.2	.70	.64	.51	128	78	54	33	407	311	417	.25
MIN	.21	.41	.32	.28	.33	45	.30	.31	.40	.26	.19	.06
AC-FT	35	30	30	23	2200	3310	1690	853	11380	8720	8480	71

CAL YR 1987 TOTAL 12568.70 MEAN 34.4 MAX 338 MIN .20 AC-FT 24930
WTR YR 1988 TOTAL 18564.85 MEAN 50.7 MAX 417 MIN .06 AC-FT 36820

245

LOCATION.--Lat 40°17'05", long 100°08'35", in NW1/4SE1/4 sec.28, T.4 N., R.25 W., Furnas County, Hydrologic Unit 10250004, on left bank 400 ft south of U.S. Highways 6 and 34, 0.5 mi downstream from Medicine Creek, 1 mi east of Cambridge, and 1.3 mi upstream from Cambridge diversion dam.

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

GAGE.--Water-stage recorder. Datum of gage is 2,239.07 ft above National Geodetic Vertical Datum of 1929. Prior to July 13, 1948, nonrecording gage at site 150 ft upstream at same datum and July 13, 1948, to Sept. 25, 1950, at present site and datum.

AVERAGE DISCHARGE.--39 years (water years 1950-88, since storage in Harry Strunk Lake), 264 ft³/s, 191,300 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1826, 17.6 ft May 31 to June 1, 1935, from information by local resident, discharge, about 280,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,400 ft³/s July 19, gage height, 6.59 ft; minimum daily, 35 ft³/s Oct. 3-5.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	80	124	68	96	245	195	102	95	247	377	106
2	36	81	119	74	104	260	237	132	91	223	414	148
3	35	83	123	72	112	250	251	172	89	205	394	129
4	35	82	124	70	108	224	237	170	106	188	325	85
5	35	81	124	66	110	224	228	158	114	173	257	68
6	37	84	122	66	110	226	225	155	90	174	223	60
7	39	86	118	60	120	230	226	144	86	271	180	54
8	41	96	120	76	130	232	223	139	136	321	198	49
9	43	102	128	78	140	224	217	129	140	322	185	49
10	46	101	127	82	135	221	205	123	118	346	150	46
11	48	101	126	70	120	218	199	119	125	340	138	42
12	52	105	121	64	130	213	196	117	117	211	194	45
13	54	105	122	60	140	208	196	117	127	260	639	52
14	56	105	124	74	155	206	197	115	186	293	784	60
15	59	113	110	84	150	208	190	112	198	344	548	70
16	64	126	94	90	190	207	169	107	205	373	316	70
17	63	124	92	86	180	209	165	102	250	418	238	64
18	63	118	90	90	210	211	159	99	269	322	227	59
19	64	117	94	94	240	212	137	96	282	923	245	65
20	66	116	104	88	300	214	135	102	308	1070	236	63
21	68	116	106	74	340	210	134	122	351	516	219	59
22	69	116	110	86	384	208	131	126	359	339	361	59
23	73	113	106	100	366	203	129	135	353	270	465	60
24	75	122	102	116	331	199	119	136	332	235	391	59
25	79	129	98	108	307	196	119	114	327	217	331	58
26	81	128	98	100	297	195	124	107	332	280	325	58
27	80	129	94	110	293	195	114	97	331	373	270	60
28	81	129	90	120	282	195	108	91	344	395	265	61
29	78	126	80	130	272	195	108	82	351	411	241	63
30	77	125	80	140	---	193	108	76	335	365	174	72
31	80	---	76	118	---	194	---	83	---	371	111	---
TOTAL	1813	3239	3346	2714	5852	6625	5181	3679	6547	10796	9421	1993
MEAN	58.5	108	108	87.5	202	214	173	119	218	348	304	66.4
MAX	81	129	128	140	384	260	251	172	359	1070	784	148
MIN	35	80	76	60	96	193	108	76	86	173	111	42
AC-FT	3600	6420	6640	5380	11610	13140	10280	7300	12990	21410	18690	3950
CAL YR 1987	TOTAL	49046	MEAN	134	MAX	513	MIN	29	AC-FT	97280		
WTR YR 1988	TOTAL	61206	MEAN	167	MAX	1070	MIN	35	AC-FT	121400		

KANSAS RIVER BASIN

06844000 MUDDY CREEK AT ARAPAHOE, NE

LOCATION.--Lat 40°18'20", long 99°54'40", in NW1/4NW1/4 sec.22, T.4 N., R.23 W., Furnas County, Hydrologic Unit 10250009, on left bank 10 ft upstream from bridge on U.S. Highways 6 and 34, 0.2 mi west of Arapahoe, and 1.5 mi upstream from mouth.

DRAINAGE AREA.--246 mi².

PERIOD OF RECORD.--December 1950 to September 1972, and October 1977 to current year.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,143.92 ft. above National Geodetic Vertical Datum of 1929. December 1950 to Jan. 11, 1951, nonrecording gage, and Jan. 12, 1951, to Sept. 30, 1972, recording gage at site on left bank 20 ft downstream from bridge at present datum.

REMARKS.--Estimated daily discharges: Dec. 15, 21-22, Dec. 25 to Feb. 22, and Mar. 8-11. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station and return flow from irrigated areas.

AVERAGE DISCHARGE.--32 years (1951-72, 1978-88), 14.5 ft³/s, 10,510 acre-ft/yr; median of yearly mean discharges, 11 ft³/s, 8,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s May 8, 1986, gage height, 28.90 ft, observed; no flow Aug. 26 to Sept. 2, 1953, July 23, 29, Aug. 4, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 31 ft occurred June 22, 1947, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 30	2145	1130	15.65	Aug. 13	2045	*1720	*18.50

Minimum daily discharge, 4.2 ft³/s Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	6.7	8.0	6.6	11	10	8.2	6.9	6.4	341	6.7	6.5
2	4.2	6.7	7.8	7.6	9.0	10	9.6	7.6	6.5	75	6.2	6.5
3	4.6	6.7	7.8	7.4	11	10	9.6	9.5	6.6	25	6.8	6.4
4	4.7	6.6	7.8	7.2	10	9.8	9.5	8.9	6.6	14	11	6.1
5	4.7	6.4	8.0	6.4	11	9.4	8.9	8.0	6.5	10	11	5.9
6	4.7	6.2	8.0	6.6	9.0	9.4	8.4	7.3	6.3	7.2	13	5.8
7	4.7	6.3	8.0	6.0	9.6	9.4	8.2	7.0	8.6	7.8	69	5.5
8	4.6	6.6	8.2	5.8	11	8.6	8.0	6.8	12	9.2	19	5.4
9	4.7	6.7	8.6	7.0	9.0	8.0	7.7	6.6	5.4	11	102	5.5
10	5.1	6.7	8.6	8.0	8.6	7.4	7.7	6.4	5.3	8.3	28	5.3
11	5.3	6.7	8.5	9.6	7.6	8.6	7.7	6.3	5.3	8.0	12	5.3
12	5.6	6.7	8.3	8.2	10	9.0	7.5	6.2	5.4	7.7	12	5.5
13	5.7	6.7	8.2	8.6	11	8.9	7.4	6.2	5.9	7.2	545	5.5
14	5.8	6.7	7.9	9.6	12	9.6	7.4	6.3	6.8	7.2	369	6.3
15	5.9	6.8	7.6	11	13	9.9	7.4	6.2	6.8	7.2	45	7.0
16	6.1	7.4	8.0	11	25	8.9	7.4	6.0	6.8	6.8	20	6.7
17	6.2	7.4	8.3	10	40	8.8	7.3	6.1	6.8	5.2	13	6.3
18	6.2	7.4	8.1	10	60	9.3	7.2	6.0	6.8	6.6	10	6.4
19	6.2	7.4	8.0	10	40	9.2	7.2	5.9	6.7	17	9.3	6.2
20	6.3	7.2	8.0	9.6	25	9.0	7.2	6.3	6.6	72	8.4	6.1
21	6.3	7.1	7.6	8.0	20	8.8	7.2	7.1	6.6	16	7.7	6.0
22	6.5	7.1	8.0	8.6	17	8.7	7.1	7.3	6.6	9.8	7.5	5.9
23	6.5	7.1	8.1	10	15	8.5	7.1	8.2	6.6	7.8	7.4	5.9
24	6.5	7.3	8.2	11	14	8.5	7.7	7.8	6.6	7.0	7.2	5.7
25	6.9	7.7	7.2	10	13	8.4	7.7	7.6	6.6	6.8	7.1	5.6
26	6.8	7.8	7.4	9.0	12	8.3	7.6	7.0	6.6	6.4	6.9	5.6
27	6.7	8.1	7.6	9.4	11	8.2	7.2	6.9	6.6	6.9	6.8	7.2
28	6.7	8.4	7.4	9.6	10	8.2	7.1	6.6	6.5	8.4	6.6	21
29	6.7	8.2	7.0	11	10	8.2	7.1	6.4	10	6.7	6.5	15
30	6.7	8.0	7.2	12	---	8.2	7.1	6.3	353	6.3	6.5	8.0
31	6.7	---	6.8	13	---	8.2	---	6.2	---	6.6	6.5	---
TOTAL	178.6	212.8	244.2	277.8	464.8	275.4	232.4	213.9	549.8	742.1	1393.1	206.1
MEAN	5.76	7.09	7.88	8.96	16.0	8.88	7.75	6.90	18.3	23.9	44.9	6.87
MAX	6.9	8.4	8.6	13	60	10	9.6	9.5	353	341	545	21
MIN	4.2	6.2	6.8	5.8	7.6	7.4	7.1	5.9	5.3	5.2	6.2	5.3
AC-FT	354	422	484	551	922	546	461	424	1090	1470	2760	409

CAL YR 1987 TOTAL 2877.8 MEAN 7.88 MAX 90 MIN 4.2 AC-FT 5710
WTR YR 1988 TOTAL 4991.0 MEAN 13.6 MAX 545 MIN 4.2 AC-FT 9900

KANSAS RIVER BASIN

247

06844210 TURKEY CREEK AT EDISON, NE

LOCATION.--Lat 40°16'15", long 99°44'00", in the center of sec.31, T.4 N., R.21 W., Furnas County, Hydrologic Unit 10250009, on left bank 10 ft downstream from bridge on State Highway 136, 2 mi east of Edison and 5 mi upstream from mouth.

DRAINAGE AREA.--74.9 mi².

PERIOD OF RECORD.--October 1977 to current year.

REVISED RECORDS.--WDR NE-81-1: 1978-80(M).

GAGE.--Water-stage recorder. Elevation of gage is 2,090 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 16 to Feb. 19 and Mar. 3-4, 6, 14-19. Records good except for periods of estimated record, which are poor. Natural flow affected by pump irrigation development above station and by return flow from irrigated areas.

AVERAGE DISCHARGE.--11 years, 6.91 ft³/s, 5,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 940 ft³/s July 18, 1981, gage height, 11.95 ft, from floodmark; maximum gage height, 12.52 ft June 29, 1987; minimum daily, 0.74 ft³/s Sept. 9, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 324 ft³/s July 16, gage height, 8.57 ft; minimum daily, 3.9 ft³/s Sept. 6-7, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	7.5	8.8	5.0	15	13	10	12	9.4	23	7.1	4.5
2	5.5	7.6	8.8	4.8	8.0	13	11	13	9.9	7.5	7.3	4.1
3	5.6	7.4	9.0	4.6	8.4	12	12	15	10	6.6	8.1	4.1
4	5.7	7.5	9.0	6.0	9.6	14	11	13	9.8	6.3	11	4.3
5	5.8	7.4	8.8	6.4	9.0	13	9.9	12	9.5	5.7	11	4.0
6	5.9	7.3	8.9	7.0	8.0	13	10	12	9.3	5.4	5.7	3.9
7	5.8	7.4	9.3	5.0	8.6	12	10	12	9.4	5.8	4.8	3.9
8	6.1	8.1	9.2	4.5	10	12	10	11	9.3	6.0	5.6	4.0
9	6.2	8.2	9.6	5.0	9.8	12	10	11	9.2	11	5.5	3.9
10	6.2	7.7	9.5	5.6	8.6	12	9.9	11	9.1	8.7	6.8	4.0
11	6.0	7.6	9.3	6.0	8.0	11	10	11	8.8	5.3	6.4	4.6
12	6.2	7.6	9.3	5.1	13	11	10	11	8.4	4.8	5.7	4.2
13	6.6	7.8	9.1	4.8	22	11	11	11	8.3	5.2	127	4.0
14	6.9	7.9	8.7	6.0	30	10	11	10	8.1	5.3	43	4.8
15	6.8	8.1	7.2	7.0	22	9.0	11	10	8.3	53	9.3	5.5
16	6.6	8.4	6.8	7.6	45	9.4	11	10	8.4	86	6.5	5.7
17	6.7	8.5	6.6	7.2	40	8.8	11	9.9	7.9	9.3	6.2	5.1
18	6.9	8.1	6.4	10	37	11	11	9.6	7.9	6.5	5.5	4.7
19	6.9	7.9	7.4	12	34	12	11	9.7	7.9	50	4.7	4.9
20	7.1	7.9	7.0	10	32	12	11	9.7	7.7	43	6.0	5.1
21	6.6	7.9	6.6	8.0	29	11	11	10	7.2	8.4	6.0	5.1
22	6.4	8.1	6.8	5.6	22	9.9	11	11	9.5	7.3	6.0	4.8
23	6.8	8.4	7.8	6.4	23	9.9	12	10	9.1	6.8	5.9	4.7
24	6.9	8.5	7.0	9.0	15	9.9	12	9.6	9.5	7.0	5.6	4.7
25	7.0	8.7	6.0	8.0	13	9.9	12	11	9.7	7.0	5.1	4.7
26	7.1	8.9	6.2	16	13	9.7	12	11	8.7	6.4	5.3	4.9
27	7.1	8.6	5.8	13	13	9.9	12	10	10	7.2	5.8	4.9
28	7.1	8.6	6.0	14	13	10	12	9.8	9.6	8.3	5.5	4.7
29	7.2	8.7	6.2	16	13	10	12	9.6	18	7.8	4.5	5.4
30	7.4	8.8	6.6	18	---	10	13	9.3	43	8.1	4.2	5.9
31	7.4	---	6.0	25	---	10	---	9.3	---	6.5	4.5	---
TOTAL	202.1	241.1	239.7	268.6	532.0	341.4	330.8	334.5	310.9	435.2	351.6	139.1
MEAN	6.52	8.04	7.73	8.66	18.3	11.0	11.0	10.8	10.4	14.0	11.3	4.64
MAX	7.4	8.9	9.6	25	45	14	13	15	43	86	127	5.9
MIN	5.5	7.3	5.8	4.5	8.0	8.8	9.9	9.3	7.2	4.8	4.2	3.9
AC-FT	401	478	475	533	1060	677	656	663	617	863	697	276

CAL YR 1987 TOTAL 3700.3 MEAN 10.1 MAX 330 MIN 4.3 AC-FT 7340
WTR YR 1988 TOTAL 3727.0 MEAN 10.2 MAX 127 MIN 3.9 AC-FT 7390

KANSAS RIVER BASIN

06844500 REPUBLICAN RIVER NEAR ORLEANS, NE

LOCATION.--Lat 40°07'53", long 99°30'08", in NE1/4NE1/4 sec.19, T.2 N., R.19 W., Harlan County, Hydrologic Unit 10250009, on right bank 18 ft downstream from bridge on State Highway 89, 200 ft downstream from Burlington Northern Inc. bridge, 2 mi west of Orleans, 2.8 mi upstream from Sappa Creek, and 23 mi upstream from Harlan County Dam.

DRAINAGE AREA.--15,640 mi², approximately, of which about 8,910 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,972.57 ft above National Geodetic Vertical Datum of 1929. Prior to June 2, 1948, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 17 to Feb. 24. Records good except for period of estimated discharge, which is poor. Natural flow affected by irrigation development above station and regulation by upstream reservoirs.

AVERAGE DISCHARGE.--41 years, 285 ft³/s, 206,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,600 ft³/s June 22, 1948, gage height, 11.25 ft, from rating curve extended above 29,000 ft³/s; maximum gage height, 12.60 ft Mar. 22, 1960, backwater from ice; no flow at times in 1952-57, 1963, 1978-80.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1826 occurred June 1, 1935. Flood of June 23, 1947, reached a stage of 14.00 ft, from floodmark (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,150 ft³/s Aug. 14, gage height, 7.13 ft; minimum daily, 6.0 ft³/s June 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	105	146	78	110	321	234	146	88	575	88	79
2	38	104	146	86	120	305	258	151	94	521	73	60
3	42	104	146	84	140	295	280	169	96	281	70	58
4	45	104	145	82	125	297	295	191	90	190	97	98
5	43	105	146	76	130	287	279	199	88	136	155	109
6	43	108	147	78	125	272	263	190	97	97	142	98
7	46	111	144	66	150	272	260	181	104	69	126	84
8	49	113	144	84	160	268	257	172	82	62	153	76
9	49	116	144	88	165	269	251	164	75	64	121	71
10	50	119	147	94	160	271	247	158	72	78	146	69
11	56	124	148	100	140	266	246	151	75	87	177	59
12	62	124	147	76	150	260	242	149	64	129	113	43
13	69	125	145	70	170	252	242	146	66	111	138	47
14	73	126	145	90	190	247	240	146	63	68	1370	54
15	72	129	141	100	180	243	234	142	56	56	1110	75
16	75	135	117	110	230	246	234	137	64	148	621	90
17	77	136	108	100	220	249	230	133	65	117	400	88
18	76	141	100	104	250	245	218	128	52	85	288	83
19	78	142	110	108	300	248	214	120	40	896	224	79
20	82	139	120	100	350	247	211	111	35	978	188	76
21	86	140	120	90	400	246	198	114	31	910	155	75
22	89	142	130	100	500	243	191	138	27	548	128	71
23	92	140	125	120	440	246	188	150	25	353	105	63
24	92	139	120	130	370	244	187	149	21	288	114	60
25	97	140	110	120	400	242	192	151	14	235	131	61
26	100	146	114	116	385	241	180	150	8.5	204	102	61
27	98	148	110	130	374	244	174	131	6.0	155	80	56
28	101	151	106	140	345	237	169	122	8.2	124	98	58
29	102	151	92	150	330	234	161	112	8.2	110	87	56
30	104	146	96	160	---	234	153	103	82	103	84	70
31	108	---	90	150	---	230	---	95	---	103	86	---
TOTAL	2234	3853	3949	3180	7109	8001	6728	4499	1696.9	7881	6970	2127
MEAN	72.1	128	127	103	245	258	224	145	56.6	254	225	70.9
MAX	108	151	148	160	500	321	295	199	104	978	1370	109
MIN	38	104	90	66	110	230	153	95	6.0	56	70	43
AC-FT	4430	7640	7830	6310	14100	15870	13340	8920	3370	15630	13820	4220

CAL YR 1987 TOTAL 56379 MEAN 154 MAX 955 MIN 38 AC-FT 111800
WTR YR 1988 TOTAL 58227.9 MEAN 159 MAX 1370 MIN 6.0 AC-FT 115500

KANSAS RIVER BASIN

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06844500 REPUBLICAN RIVER NEAR ORLEANS, NE--Continued

WATER QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)
OCT												
05...	1900	44	--	7.50	17.0	710	8.8	26	--	--	300	7
NOV												
03...	1745	107	739	8.64	16.0	707	9.0	6	100	210	290	--
DEC												
10...	1645	152	--	7.20	4.0	697	13.6	--	59	160	--	0
10...	1650	--	--	--	--	--	--	17	--	--	300	--
JAN												
12...	1330	76	939	7.10	0.0	713	9.6	--	46	68	--	0
12...	1335	--	--	--	--	--	--	40	--	--	370	--
FEB												
09...	1300	165	820	--	0.5	713	14.9	15	42	390	310	--
MAR												
07...	1200	271	660	8.60	7.5	701	11.5	--	K28	290	--	0
07...	1205	--	--	--	--	--	--	26	--	--	270	--
APR												
14...	1400	237	678	7.21	15.0	712	12.6	--	33	78	--	0
14...	1405	--	--	--	--	--	--	30	--	--	280	--
MAY												
17...	1700	133	618	7.20	26.0	703	19.0	40	78	280	220	--
JUN												
13...	1205	63	603	7.20	23.5	710	9.4	--	540	840	--	0
13...	1210	--	--	--	--	--	--	40	--	--	220	--
JUL												
07...	1240	65	580	8.81	25.5	708	8.2	--	800	1000	--	0
07...	1245	--	--	--	--	--	--	50	--	--	220	--
AUG												
10...	1200	163	556	7.20	24.0	710	9.0	82	900	1300	200	--
SEP												
15...	1200	77	528	7.20	19.0	709	8.8	--	230	360	--	0
15...	1205	--	--	--	--	--	--	37	--	--	240	--

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

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
OCT											
05...	76	26	50	1	20	290	95	28	0.70	37	509
NOV											
03...	76	24	48	1	--	--	88	27	--	--	263
DEC											
10...	--	--	39	--	14	153	--	--	0.80	37	--
10...	79	24	45	1	--	--	93	26	--	--	--
JAN											
12...	--	--	48	--	20	328	--	--	0.80	48	--
12...	99	30	53	1	--	--	91	30	--	--	--
FEB											
09...	82	25	49	1	--	--	93	27	--	--	276
MAR											
07...	--	--	38	--	17	267	--	--	0.80	41	--
07...	75	21	39	1	--	--	72	21	--	--	--
APR											
14...	--	--	42	--	14	272	--	--	0.70	38	--
14...	74	23	42	1	--	--	78	21	--	--	--
MAY											
17...	46	26	52	2	--	--	100	27	--	--	251
JUN											
13...	--	--	44	--	12	221	--	--	0.60	41	--
13...	51	23	46	1	--	--	85	23	--	--	--
JUL											
07...	--	--	40	--	11	212	--	--	0.60	27	--
07...	55	19	42	1	--	--	74	19	--	--	--
AUG											
10...	55	16	33	1	--	--	60	18	--	--	182
SEP											
15...	--	--	44	--	10	245	--	--	0.60	33	--
15...	64	19	42	1	--	--	78	24	--	--	--

KANSAS RIVER BASIN

06844500 REPUBLICAN RIVER NEAR ORLEANS, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)
OCT 05...	0.69	60.5	29	0.590	0.550	0.070	0.53	0.60	1.2	0.190	--
NOV 03...	0.36	76.0	80	1.20	--	0.080	1.1	1.2	2.4	0.210	--
DEC 10...	--	--	--	--	3.00	--	--	--	--	--	0.120
DEC 10...	--	--	43	--	--	0.170	0.48	0.65	--	0.160	--
JAN 12...	--	--	--	--	3.00	--	--	--	--	--	0.150
JAN 12...	--	--	<4	3.00	--	0.200	--	<0.10	--	0.170	--
FEB 09...	0.38	123	9	2.50	--	0.250	1.2	1.4	3.9	0.230	--
MAR 07...	--	--	--	--	2.10	--	--	--	--	--	0.140
MAR 07...	--	--	130	2.00	--	0.070	1.0	1.1	3.1	0.320	--
APR 14...	--	--	--	--	1.40	--	--	--	--	--	0.090
APR 14...	--	--	101	1.30	--	0.110	0.99	1.1	2.4	0.250	--
MAY 17...	0.34	90.1	106	0.110	--	0.040	1.5	1.5	1.6	0.250	--
JUN 13...	--	--	--	--	<0.100	--	--	--	--	--	0.060
JUN 13...	--	--	113	--	--	0.080	1.3	1.4	--	0.280	--
JUL 07...	--	--	--	--	<0.100	--	--	--	--	--	0.550
JUL 07...	--	--	157	--	--	0.090	0.62	0.71	--	--	--
AUG 10...	0.25	80.1	693	0.540	--	0.090	3.2	3.3	3.8	0.220	--
SEP 15...	--	--	--	--	0.900	--	--	--	--	--	0.090
SEP 15...	--	--	114	1.00	--	0.040	1.8	1.8	2.8	0.500	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, DIS- SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
OCT 05...	1900	--	--	--	--	--	11
NOV 03...	1745	17	--	<15	<10	<10	--
DEC 10...	1645	--	130	--	--	--	19
JAN 12...	1330	--	140	--	--	--	13
FEB 09...	1300	12	--	<15	<10	<10	--
MAR 07...	1200	--	120	--	--	--	10
APR 14...	1400	--	130	--	--	--	11
MAY 17...	1700	10	--	<15	<10	<10	--
JUN 13...	1205	--	140	--	--	--	12
JUL 07...	1240	--	120	--	--	--	13
AUG 10...	1200	15	--	<15	18	30	--
SEP 15...	1200	--	140	--	--	--	47

KANSAS RIVER BASIN
06844500 REPUBLICAN RIVER NEAR ORLEANS, NE--Continued

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 05...	--	8	--	--	--	--	5.9
NOV 03...	<20	--	<0.10	<8	<1	<30	4.0
DEC 10...	--	7	--	--	--	--	--
JAN 12...	--	13	--	--	--	--	--
FEB 09...	<20	--	<0.10	3	<1	<30	4.3
MAR 07...	--	3	--	--	--	--	--
APR 14...	--	4	--	--	--	--	--
MAY 17...	<20	--	<0.10	11	<1	<30	9.4
JUN 13...	--	5	--	--	--	--	--
JUL 07...	--	2	--	--	--	--	--
AUG 10...	40	--	<0.10	<2	<1	110	6.8
SEP 15...	--	--	--	--	--	--	4.9

KANSAS RIVER BASIN

06846500 BEAVER CREEK AT CEDAR BLUFFS, KS

LOCATION.--Lat 39°59'06", long 100°33'35", in NW1/4 NE1/4 sec.10, T.1 S., R.29 W., Decatur County, Hydrologic Unit 10250014, on right bank at downstream side of bridge on U.S. Highway 83, 0.2 mi north of Cedar Bluffs, 1.0 mi south of Kansas-Nebraska State line, and at mile 107.4.

DRAINAGE AREA.--1,618 mi², of which 294 mi² is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1510: 1947, 1950-51.

GAGE.--Water-stage recorder. Datum of gage is 2,520.33 ft above sea level. Prior to Aug. 19, 1971, at site 0.1 mi upstream at same datum. Aug. 19, 1971, to July 12, 1972, at site 0.8 mi downstream at datum 5.00 ft lower.

REMARKS.--Estimated daily discharges: Jan. 21, 22, 30, Feb. 1-16, and July 19-21. Records fair except those for estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--43 years, 15.8 ft³/s, 11,450 acre-ft per yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,940 ft³/s June 11, 1960, gage height, 18.71 ft at site 0.1 mi upstream at same datum; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1944 reached a stage of 18.16 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 19	0400	*324	*8.24	No other peak greater than base discharge.			

No flow most days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.02	.00	.00	8.7	.00	.00	.00	.00
8	.00	.00	.00	.00	.02	.00	.00	2.4	.00	.00	.00	.00
9	.00	.00	.00	.00	.02	.00	.00	1.4	.00	43	.00	.00
10	.00	.00	.00	.00	.03	.00	.00	1.0	.08	.89	.00	.00
11	.00	.00	.00	.00	.03	.00	.00	.45	.00	.00	.00	.00
12	.00	.00	.00	.00	.21	.00	.00	.09	.00	.00	.00	.00
13	.00	.00	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.80	.00	.00	.00	4.9	.00	.00	.00
15	.00	.00	.00	.00	.80	.00	.00	.00	.19	.07	.00	.00
16	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	2.1	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.02	1.3	.00	.00	.00	.00	.00	.76	.00
19	.00	.00	.00	1.3	.49	.00	.00	.00	.00	216	.51	.00
20	.00	.00	.00	.71	.14	.00	.00	.00	.00	45	.00	.00
21	.00	.00	.00	.20	.04	.00	.00	.00	.00	2.5	.00	.00
22	.00	.00	.00	.20	.02	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.19	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.38	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	1.7	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	1.5	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	1.3	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	8.08	9.51	.00	.00	14.04	5.17	307.39	1.27	.00
MEAN	.000	.000	.000	.26	.33	.000	.000	.45	.17	9.92	.041	.000
MAX	.00	.00	.00	1.7	2.1	.00	.00	8.7	4.9	216	.76	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	16	19	.00	.00	28	10	610	2.5	.00

CAL YR 1987 TOTAL 154.71 MEAN .42 MAX 36 MIN .00 AC-FT 307
WTR YR 1988 TOTAL 345.46 MEAN .94 MAX 216 MIN .00 AC-FT 685

KANSAS RIVER BASIN

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06847000 BEAVER CREEK NEAR BEAVER CITY, NE

LOCATION.--Lat 40°07'12", long 99°53'35", in SW1/4SW1/4 sec.23, T.2 N., R.23 W., Furnas County, Hydrologic Unit 10250014, on left bank 400 ft downstream from bridge on U.S. Highway 283, 3.5 mi west of Beaver City, and at mile 24.7.

DRAINAGE AREA.--1,950 mi², approximately, of which about 1,650 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1936 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1340: 1937-38(M), 1939, 1940-41(M), 1943(M). WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,162.96 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 13, 1947, nonrecording gages and Aug. 13, 1947, to Nov. 14, 1957, water-stage recorder, at site 400 ft upstream at datum 2.0 ft higher. Nov. 15, 1957, to Sept. 22, 1958, at site 3.6 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Jan. 8-10. Records fair.

AVERAGE DISCHARGE.--52 years, 21.8 ft³/s, 15,790 acre-ft/yr; median of yearly mean discharges, 12 ft³/s, 8,690 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,510 ft³/s June 14, 1983, gage height, 15.68 ft; no flow at times in 1937-40, 1946, 1953-57, 1959, 1969-74, 1976, 1978-81.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 19	0530	*9.7	*3.20	No peaks greater than base discharge.			

Minimum daily discharge, 0.06 ft³/s Aug. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.53	.78	.82	.72	1.5	1.4	1.4	1.1	1.0	.32	.06	.17
2	.47	.66	1.2	.69	1.3	1.4	2.3	1.3	1.5	.43	.06	.18
3	.56	.65	.80	.65	1.3	1.3	1.7	4.8	.57	.50	.07	.18
4	.54	.48	.78	.65	1.4	1.3	1.6	3.4	.64	.33	.20	.18
5	.46	.47	.72	.70	1.4	1.2	1.5	1.5	.54	.24	.10	.18
6	.47	.46	.78	.70	1.9	1.3	1.3	1.4	.45	.18	.11	.20
7	.49	.50	.87	.71	1.6	1.3	1.4	1.0	.43	.23	.11	.20
8	.85	.53	.80	.66	1.4	1.2	1.3	1.0	.71	.20	.15	.20
9	.87	.65	.85	.64	1.4	1.1	1.3	.95	.72	.30	.11	.20
10	.42	.51	.94	.68	1.4	1.2	1.4	.96	.61	.26	.10	.20
11	.45	.52	1.0	.73	1.8	1.2	1.3	.89	.41	.20	.10	.18
12	.46	.51	.82	.61	1.9	1.0	1.4	.94	.30	.19	.10	.24
13	.45	.50	.75	.63	1.7	1.1	1.4	.87	.38	.28	1.4	.29
14	.43	.53	.75	.65	1.6	1.1	1.4	.79	.69	.27	.13	.39
15	.47	.56	.82	.69	1.6	1.2	1.4	.72	.70	.33	.11	.36
16	.45	.61	.78	.78	1.5	1.2	1.4	.73	.60	.36	.10	.32
17	.46	.55	.80	.78	1.4	1.2	1.4	.75	.64	.45	.11	.28
18	.45	.56	.82	.89	1.4	1.3	1.6	1.2	.52	.48	.13	.26
19	.42	.59	.86	4.8	1.4	1.4	1.3	.70	.30	1.1	.14	.43
20	.45	.58	.90	2.6	1.4	1.4	1.4	.77	.24	.47	.14	.43
21	.46	.58	.83	1.4	1.3	1.5	1.3	.89	.23	.59	.14	.37
22	.46	.59	.81	1.1	1.4	1.3	1.4	1.2	.23	.65	.14	.32
23	.55	.59	.82	1.6	1.4	1.2	1.2	1.3	.22	2.8	.14	.33
24	.92	.79	.82	2.0	1.3	1.3	1.2	1.2	.21	3.6	.16	.30
25	.54	.79	.74	1.6	1.3	1.2	1.2	.92	.17	.86	.14	.28
26	.81	.64	.72	1.3	1.3	1.3	.90	.89	.17	.37	.15	.28
27	.53	.69	.79	1.2	1.4	1.3	1.2	.73	.18	.19	.19	.29
28	.73	.75	.80	1.4	1.4	1.3	1.2	.89	.16	.12	.17	.30
29	.62	.68	.79	1.8	1.4	1.3	1.1	.88	.22	.11	.16	.34
30	.51	.71	.79	2.7	---	1.3	1.1	.86	.52	.09	.18	.38
31	.60	---	.76	2.0	---	1.3	---	.91	---	.07	.18	---
TOTAL	16.88	18.01	25.53	38.06	42.5	39.1	41.00	36.44	14.26	16.57	5.28	8.26
MEAN	.54	.60	.82	1.23	1.47	1.26	1.37	1.18	.48	.53	.17	.28
MAX	.92	.79	1.2	4.8	1.9	1.5	2.3	4.8	1.5	3.6	1.4	.43
MIN	.42	.46	.72	.61	1.3	1.0	.90	.70	.16	.07	.06	.17
AC-FT	33	36	51	75	84	78	81	72	28	33	10	16

CAL YR 1987 TOTAL 530.98 MEAN 1.45 MAX 10 MIN .33 AC-FT 1050
WTR YR 1988 TOTAL 301.89 MEAN .82 MAX 4.8 MIN .06 AC-FT 599

KANSAS RIVER BASIN

06847500 SAPPA CREEK NEAR STAMFORD, NE

LOCATION.--Lat 40°07'53", long 99°33'15", in NW1/4NW1/4 sec.23, T.2 N., R.20 W., Harlan County, Hydrologic Unit 10250011, on left bank 40 ft south of Burlington Northern Inc. track, 500 ft downstream from bridge on county highway, 2 mi east of Stamford, and 5.5 mi upstream from mouth.

DRAINAGE AREA.--3,740 mi², approximately, of which about 3,280 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1919: 1960. WSP 2119: Drainage area. WDR NE-71-1: Calendar year totals. WRD NE-82-1: 1979(M).

GAGE.--Water-stage recorder. Datum of gage is 1,981.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 2, 13-14, Dec. 16 to Mar. 4, June 14-17, July 2-7, 31 and Aug. 4. Records fair except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--43 years, 51.8 ft³/s, 37,530 acre-ft/yr; median of yearly mean discharges, 20 ft³/s, 14,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,400 ft³/s June 24, 1966, gage height, 22.13 ft, from floodmark, from contracted opening and flow-over-road measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 19	unknown	*682	*a10.32	No peaks greater than base discharge.			
a From floodmark.							
No flow for many days.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	1.1	4.7	5.2	6.4	20	11	12	2.3	.01	.04	.05
2	.07	1.2	5.8	5.6	6.2	19	17	14	2.9	.00	.08	.05
3	.06	.99	4.5	5.0	5.8	20	19	18	3.3	.00	.03	.04
4	.07	.94	4.9	4.7	5.4	21	18	19	3.0	.00	.03	.03
5	.06	.92	4.4	4.5	4.8	20	17	19	2.2	.00	.06	.03
6	.05	1.1	6.0	4.0	4.4	20	17	22	1.7	.00	.04	.02
7	.07	1.2	5.1	3.5	4.2	16	15	22	1.5	.01	.03	.01
8	.11	1.5	5.0	3.2	4.2	17	14	22	1.4	.0	.08	.00
9	.09	1.3	5.7	2.8	4.3	16	15	23	1.1	.0	.11	.00
10	.08	1.3	5.9	2.9	4.6	15	15	23	.89	.00	.09	.00
11	.11	2.9	5.9	3.0	4.4	14	14	23	.41	.00	.06	.00
12	.15	2.2	6.1	3.0	5.0	15	13	21	.30	.00	.11	.00
13	.17	1.8	6.2	3.1	6.0	12	13	17	.11	.00	3.8	.00
14	.19	1.7	5.8	3.3	8.0	9.1	12	14	.05	91	1.2	.00
15	.19	1.9	5.4	3.5	11	12	12	11	.01	104	3.5	.00
16	.21	2.7	5.2	4.0	12	9.2	13	9.4	.00	18	.55	.00
17	.51	2.8	5.0	4.2	13	10	14	9.0	.00	5.7	.46	.00
18	.39	2.2	5.4	4.4	14	14	14	7.7	.01	2.7	.42	.00
19	.32	2.1	5.6	4.6	14	15	14	5.8	.00	235	.24	.00
20	.29	2.0	5.8	4.7	16	13	15	4.1	.0	35	.17	.00
21	.30	2.4	6.0	4.5	16	12	15	4.3	.01	131	.14	.00
22	.36	2.8	5.8	5.0	18	13	15	5.2	.00	315	.11	.00
23	.81	2.8	6.0	5.6	18	11	14	6.0	.00	85	.10	.00
24	.54	3.0	6.2	6.2	17	11	15	6.2	.00	42	.11	.00
25	.66	3.1	6.4	6.6	17	11	16	8.1	.00	13	.10	.00
26	.75	3.4	6.0	5.4	18	11	16	8.0	.00	3.7	.09	.00
27	.79	4.0	5.8	5.2	18	10	15	6.9	.00	1.4	.08	.00
28	.77	5.0	5.6	6.4	19	10	15	4.9	.00	.72	.08	.00
29	1.3	4.9	5.8	6.8	20	11	14	3.7	.02	.40	.07	.00
30	1.5	4.7	5.4	7.0	---	11	13	2.8	3.2	.21	.07	.00
31	1.3	---	6.0	7.2	---	10	---	2.5	---	.09	.06	---
TOTAL	12.35	69.95	173.4	145.1	314.7	428.3	440	374.6	24.41	1083.94	12.11	0.23
MEAN	.40	2.33	5.59	4.68	10.9	13.8	14.7	12.1	.81	35.0	.39	.008
MAX	1.5	5.0	6.4	7.2	20	21	19	23	3.3	315	3.8	.05
MIN	.05	.92	4.4	2.8	4.2	9.1	11	2.5	.00	.00	.03	.00
AC-FT	24	139	344	288	624	850	873	743	48	2150	24	.5
CAL YR 1987	TOTAL 4232.71	MEAN 11.6	MAX 135	MIN .05	AC-FT 8400							
WTR YR 1988	TOTAL 3079.09	MEAN 8.41	MAX 315	MIN .00	AC-FT 6110							

KANSAS RIVER BASIN

255

06848500 PRAIRIE DOG CREEK NEAR WOODRUFF, KS

LOCATION.--Lat 39°59'09", long 99°28'39", in NW1/4 NW1/4 sec.9, T.1 S., R.19 W., Phillips County, Hydrologic Unit 10250015, on left bank at downstream side of bridge on U.S. Highway 383, 1.0 mi south of Kansas-Nebraska State line, 2.5 mi west of Woodruff, and at mile 26.5.

DRAINAGE AREA.--1,007 mi².

PERIOD OF RECORD.--October 1928 to September 1932, October 1944 to current year. Monthly discharge only for some periods, published in WSP 1310.

GAGE.--Water-stage recorder. Datum of gage is 2,016.20 ft above sea level. See WSP 1919 for history of changes prior to Oct. 7, 1955.

REMARKS.--Estimated daily discharges: Jan. 21 to Feb. 22. Records fair except those for estimated daily discharges, which are poor. Flow regulated to some extent since 1964 by Keith Sebelius Lake (station 06847950) 48.4 mi upstream and by irrigation development upstream from station.

AVERAGE DISCHARGE.--48 years, (water years 1929-32, 1945-88), 31.4 ft³/s, 22,750 acre-ft per yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s June 23, 1947, gage height, 21.04 ft, site and datum then in use, from rating curve extended above 6,500 ft³/s on basis of contracted-opening measurement of 11,300 ft³/s; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,310 ft³/s July 19, gage height, 16.48 ft; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	2.3	2.6	2.4	6.0	.72	.42	.10	10	.00	.00
2	.00	.00	2.6	2.6	2.2	5.8	.96	.56	.10	1.9	.00	.00
3	.00	.00	2.7	2.4	2.1	4.5	1.1	.89	.12	.57	.00	.00
4	.00	.00	2.7	1.9	2.0	4.0	1.3	1.0	.09	.14	3.6	.00
5	.00	.00	3.2	1.4	1.9	4.1	2.2	1.0	.04	.02	6.6	.00
6	.00	.00	2.8	1.2	1.9	4.4	2.4	1.5	.02	.00	1.0	.00
7	.00	.00	2.5	1.3	1.9	3.6	2.3	1.4	.02	.00	.32	.00
8	.00	.00	2.5	1.2	1.9	3.4	1.8	.92	.00	.00	.95	.00
9	.00	.00	2.6	1.2	2.0	3.1	1.3	.73	.00	.00	1.1	.00
10	.00	.00	2.7	1.2	2.1	3.5	.94	.56	.00	.00	2.3	.00
11	.00	.51	2.7	1.3	2.3	3.7	.72	.42	.00	.00	.29	.00
12	.00	.79	2.8	1.4	2.5	3.3	.66	.34	.00	.00	.22	.00
13	.00	.67	2.9	1.3	3.0	2.6	.63	.30	.00	.00	165	.00
14	.00	.90	2.8	1.4	4.0	2.7	.63	.21	.00	.00	42	.00
15	.00	1.0	2.9	1.5	5.0	2.7	.64	.13	.00	.00	16	.00
16	.00	1.3	3.0	1.6	7.0	2.4	.65	.07	.00	.00	3.8	.00
17	.00	1.3	2.6	1.8	9.0	2.2	.61	.01	.00	3.4	.35	.00
18	.00	1.2	2.5	2.0	9.0	2.1	.57	.35	.00	107	.05	.00
19	.00	1.7	2.5	3.9	9.0	2.4	.56	.31	.00	793	.00	.00
20	.00	6.2	2.6	3.3	10	2.7	.58	.19	.00	234	.00	.00
21	.00	4.3	2.5	3.0	10	2.9	.58	.13	.00	49	.00	.00
22	.00	2.9	2.7	2.7	10	3.3	.57	.10	.00	20	.00	.00
23	.00	2.1	3.0	2.5	10	3.4	.55	.08	.00	11	.00	.00
24	.00	1.9	3.1	2.3	9.3	3.4	.56	.45	.00	2.4	.00	.00
25	.00	1.9	3.0	2.2	7.8	3.2	.58	.28	.00	.62	.00	.00
26	.00	1.9	3.0	2.2	6.8	2.9	.54	.19	4.8	.36	.00	.00
27	.00	1.9	2.9	2.2	6.7	2.8	.50	.27	6.1	.29	.00	.00
28	.00	2.1	2.9	2.3	6.7	2.2	.53	.28	3.0	.11	.00	.00
29	.00	2.2	2.8	2.7	6.3	1.5	.54	.21	.98	.04	.00	.00
30	.00	2.3	2.9	2.9	---	1.1	.46	.17	51	.00	.00	.00
31	.00	---	2.8	2.7	---	.84	---	.12	---	.00	.00	---
TOTAL	.01	39.07	85.5	64.2	154.8	96.74	26.68	13.59	66.37	1233.85	243.58	.00
MEAN	.000	1.30	2.76	2.07	5.34	3.12	.89	.44	2.21	39.8	7.86	.000
MAX	.01	6.2	3.2	3.9	10	6.0	2.4	1.5	51	793	165	.00
MIN	.00	.00	2.3	1.2	1.9	.84	.46	.01	.00	.00	.00	.00
AC-FT	.02	77	170	127	307	192	53	27	132	2450	483	.00

CAL YR 1987 TOTAL 2102.97 MEAN 5.76 MAX 654 MIN .00 AC-FT 4170
WTR YR 1988 TOTAL 2024.39 MEAN 5.53 MAX 793 MIN .00 AC-FT 4020

KANSAS RIVER BASIN

06849000 HARLAN COUNTY LAKE NEAR REPUBLICAN CITY, NE

LOCATION.--Lat 40°04'10", long 99°12'30", in sec.11, T.1 N., R.17 W., Harlan County, Hydrologic Unit 10250009, at left end of spillway on upstream side of Harlan County Dam on Republican River, 2 mi southeast of Republican City and 8 mi southeast of Alma.

DRAINAGE AREA.--20,750 mi², approximately, of which about 13,530 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--November 1952 to current year. Prior to October 1965 published as Harlan County Reservoir near Republican City.

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

REMARKS.--Reservoir is formed by earthfill dam with gravity-type concrete spillway section; storage began Nov. 14, 1952. Capacity, 327,600 acre-ft between elevations 1,885.0 ft, sill of outlet gates, and 1,946.0 ft, top of storage pool. Top of flood-control pool at elevation 1,973.5 ft, capacity, 825,800 acre-ft. Top of superstorage flood-control pool at elevation 1,975.5 ft, capacity, 872,700 acre-ft. Figures given herein represent total contents. Water used for irrigation is the Bostwick irrigation project.

COOPERATION.--Capacity table furnished by Corps of Engineers (revised Jan. 1, 1982).

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 497,700 acre-ft Apr. 6, 1960, elevation, 1,955.67 ft; minimum since operation of reservoir began, 110,300 acre-ft Oct. 22 to Nov. 6, 1953, elevation, 1,922.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 337,000 acre-ft May 28, elevation, 1,946.70 ft; minimum, 224,500 acre-ft Sept. 13, elevation, 1,937.09 ft.

Capacity table, (elevation, in feet, and
contents, in acre-feet)

1,935	203,900	1,945	314,600
1,940	255,200	1,950	383,900

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	265400	265400	272600	278600	284800	301600	316600	328400	336500	286000	249300	227400
2	265200	265600	272900	278700	285200	302200	318200	330000	336400	285100	247500	227100
3	264900	265900	273100	278800	285800	302700	318700	331400	336200	283800	245600	226300
4	264900	265900	273200	278800	286200	303300	319200	331800	336100	281900	244600	225800
5	264700	265900	273500	278800	286400	303800	319900	331900	335800	279800	243200	225500
6	264400	266000	273600	279100	286700	304400	320100	332600	335300	277400	241500	224700
7	264100	266700	273700	279200	286900	305600	320500	332900	335300	275200	240000	224800
8	264100	266700	274800	279200	287200	305900	321600	333400	334600	273200	238900	224800
9	263600	266700	275000	279200	287500	306200	321600	333100	333700	271100	238400	224800
10	263600	266700	275400	279400	287700	307100	322100	333100	332600	269100	237400	224600
11	263600	266900	275700	279500	287900	307600	322400	333500	331300	266700	236100	224600
12	263600	267100	275700	279700	288200	307800	322900	333900	329600	264500	235900	224600
13	263600	267500	275700	279700	288600	308200	323000	334100	328300	262400	237100	224500
14	263800	267500	276100	279700	288900	308300	323400	334500	326600	260200	237800	224700
15	263700	269100	276200	279800	289100	308600	323900	334300	324700	258100	239700	225600
16	263800	269200	276200	279900	289200	309200	324300	334500	322600	255900	240100	225600
17	263800	269200	276200	280000	289800	309700	324600	334500	320500	253900	240000	225700
18	263600	269300	276300	280700	290600	310200	325000	334600	318200	251400	239600	225700
19	263800	269400	276600	281700	291400	310700	325400	334600	315900	255600	239000	225800
20	263700	269500	276600	281700	292500	311400	325700	335400	313300	258700	238100	225300
21	263600	269700	276900	282000	293600	311800	325900	335600	310500	260400	237400	225600
22	263700	270100	276900	282000	294800	312300	326600	335700	307700	261500	236500	225400
23	263700	270100	277300	282200	295800	312500	326500	336400	304700	261800	235400	225500
24	263700	270500	277300	282500	296800	313200	327100	336500	301700	261700	234500	225200
25	264500	270600	277300	282600	297600	313700	327400	336800	298800	260800	233500	225100
26	264600	270900	277700	282800	298600	313800	327900	336800	296000	259700	232400	225200
27	264600	271700	278000	283200	299500	314300	327900	336900	293000	258300	231900	225300
28	264600	272100	278300	283500	300200	314700	327900	336900	290300	256600	230900	225600
29	264700	272100	278300	283900	300800	314900	328300	336600	288800	255100	229900	225600
30	264900	272400	278600	284100	---	315200	328600	336600	287300	253600	228900	225600
31	265200	---	278600	284400	---	315700	---	336900	---	251500	228200	---
MEAN	264200	268500	275900	280800	291000	309200	323800	334300	318700	264900	237700	225400
MAX	265400	272400	278600	284400	300800	315700	328600	336900	336500	286000	249300	227400
MIN	263600	265400	272600	278600	284800	301600	316600	328400	287300	251400	228200	224500
(†)	1940.89	1941.52	1942.06	1942.55	1943.91	1945.09	1946.07	1946.69	1942.80	1939.66	1937.45	1937.20
(‡)	-400	+7200	+6200	+5800	+16400	+14900	+12900	+8300	-49600	-35800	-23300	-2600
CAL YR 1987	MEAN	280000	MAX	325100	MIN	246900	(†)	+31900				
WTR YR 1988	MEAN	282800	MAX	336900	MIN	224500	(‡)	-40000				

(†) Elevation, in feet, at end of month.
(‡) Change in contents, in acre-feet.

KANSAS RIVER BASIN

257

06849500 REPUBLICAN RIVER BELOW HARLAN COUNTY DAM, NE

LOCATION.--Lat 40°04'45", long 99°10'05", in SW1/4 sec.6, T.1 N., R.16 W., Franklin County, Hydrologic Unit 10250016, on left bank 1.4 mi west of Naponee, 1.4 mi upstream from Turkey Creek, and 2.8 mi downstream from Harlan County Dam.

DRAINAGE AREA.--20,760 mi², approximately, of which about 13,550 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--December 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,863.38 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Estimated daily discharges: Jan. 2 to Feb. 16. Records good except for period of estimated record, which is poor. Flow completely regulated by Harlan County Lake (station 06849000) and partially regulated by six upstream reservoirs.

AVERAGE DISCHARGE.--35 years (1953-88), 242 ft³/s, 175,300 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,320 ft³/s June 25, 1957, gage height, 8.65 ft; minimum daily, 1.5 ft³/s Apr. 28, 29, 1957.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1826 occurred June 1, 1935, discharge, about 260,000 ft³/s, from slope-area measurement near Bloomington.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,800 ft³/s July 19, gage height, 4.77 ft; minimum daily, 2.8 ft³/s Sept. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	8.6	5.4	11	11	11	12	11	134	846	601	240
2	5.0	7.9	9.9	9.0	10	6.4	15	15	134	802	601	175
3	5.4	7.9	9.2	10	10	6.6	12	18	126	802	601	84
4	5.4	7.9	9.2	40	10	5.7	9.5	16	110	841	559	79
5	5.2	7.9	9.9	86	10	5.3	8.5	14	110	891	519	76
6	4.6	6.6	9.9	20	9.0	5.6	11	12	111	949	519	56
7	4.7	4.7	9.9	18	9.0	5.3	9.2	11	142	978	532	7.2
8	4.7	5.4	11	70	9.4	4.9	7.8	13	279	966	528	5.4
9	4.7	4.7	11	15	11	5.4	13	12	405	925	506	6.0
10	4.7	4.7	11	13	10	5.4	14	12	432	897	489	5.4
11	4.1	4.7	9.4	15	9.4	5.5	13	13	471	891	485	5.4
12	4.1	4.7	8.6	13	10	10	10	12	552	874	519	4.1
13	4.1	4.1	8.6	13	9.0	11	7.4	12	660	852	485	4.7
14	4.1	3.6	8.6	80	11	10	8.0	11	776	863	330	7.9
15	4.1	5.4	10	15	12	11	7.2	10	813	880	334	8.6
16	4.1	6.6	11	13	12	11	6.2	11	802	868	345	4.1
17	4.1	6.0	11	12	12	10	4.7	9.2	802	868	330	2.8
18	4.4	5.4	9.5	12	12	8.4	6.9	7.6	863	852	310	6.0
19	4.7	3.6	9.3	12	12	7.1	5.5	7.9	920	767	310	7.9
20	4.7	3.6	9.3	12	12	6.1	3.7	9.4	966	43	306	6.6
21	4.5	4.1	8.3	14	12	6.0	3.7	13	1050	86	306	6.6
22	4.4	3.6	7.9	12	12	6.0	6.0	13	1130	213	306	6.6
23	9.3	3.6	7.9	13	12	6.9	6.3	12	1130	274	283	6.0
24	9.3	3.6	7.9	13	12	7.5	5.5	11	1120	348	261	6.0
25	11	3.6	7.3	13	12	8.3	5.0	11	1110	381	258	5.4
26	9.4	3.6	7.2	11	13	9.4	8.6	11	1110	456	258	6.0
27	8.1	3.6	9.0	12	13	8.4	13	11	1110	515	261	7.2
28	7.9	3.6	8.4	13	13	7.1	9.8	9.4	1100	555	261	7.2
29	7.9	3.6	7.0	13	14	9.0	9.6	11	1110	587	261	6.6
30	7.9	3.6	7.1	13	---	9.1	9.0	12	996	596	252	6.0
31	8.5	---	8.0	13	---	9.9	---	69	---	591	240	---
TOTAL	179.2	150.5	277.7	629.0	323.8	239.3	261.1	420.5	20574	21257	12156	855.7
MEAN	5.78	5.02	8.96	20.3	11.2	7.72	8.70	13.6	686	686	392	28.5
MAX	11	8.6	11	86	14	11	15	69	1130	978	601	240
MIN	4.1	3.6	5.4	9.0	9.0	4.9	3.7	7.6	110	43	240	2.8
AC-FT	355	299	551	1250	642	475	518	834	40810	42160	24110	1700

CAL YR 1987 TOTAL 26846.7 MEAN 73.6 MAX 494 MIN 2.8 AC-FT 53250
WTR YR 1988 TOTAL 57323.8 MEAN 157 MAX 1130 MIN 2.8 AC-FT 113700

KANSAS RIVER BASIN

06851000 CENTER CREEK AT FRANKLIN, NE

LOCATION.--Lat 40°06'12", long 98°58'45", in NW1/4NE1/4 sec.35, T.2 N., R.15 W., Franklin County, Hydrologic Unit 10250016, on right bank at downstream side of bridge on State Highway 136, 1 mi northwest of Franklin and 3 mi upstream from mouth.

DRAINAGE AREA.--177 mi² approximately, of which about 56 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--April 1948 to September 1956. Annual maximums and occasional low-flow measurements, water years 1961-68. October 1968 to September 1975, October 1977 to current year.

REVISED RECORDS.--WSP 2119: 1963(M), 1965(M), drainage area. WRD NE-83: 1981-82(P).

GAGE.--Water-stage recorder. Datum of gage is 1,858.34 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Dec. 19, 1952, nonrecording gage at site 1.5 mi downstream at datum 30.27 ft lower and Dec. 19, 1952, to Sept. 30, 1956, at present site at datum 0.84 ft higher. Sept. 7, 1961, to Sept. 30, 1968, crest-stage gage and Oct. 1, 1968, to Sept. 30, 1975, recording gage at present site and datum.

REMARKS.--Estimated daily discharges: Jan. 8-10, 13, 19, 21, 23-25, Feb. 4-6, 11, Aug. 11-31, and Sept. 3-5. Records fair. Two small diversions above station for irrigation.

AVERAGE DISCHARGE.--26 years (1948-56, 1968-75, 1978-88) 8.04 ft³/s, 5,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,150 ft³/s Sept. 20, 1950, gage height, 6.8 ft, from floodmark, site and datum then in use, from rating curve extended above 420 ft³/s on basis of slope-area measurement of peak flow; no flow at times during 1948-50.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 31	2215	194	2.86	July 19	1130	*415	*4.58
June 29	2230	124	2.46	Sept. 28	0300	107	2.25

Minimum daily discharge, 2.7 ft³/s Aug. 9-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	12	7.7	7.7	8.0	7.7	6.9	6.6	5.7	6.7	4.2	5.5
2	6.2	7.7	7.5	7.5	7.9	7.7	7.7	7.5	5.5	6.9	4.8	5.5
3	6.2	6.3	7.5	7.7	7.7	7.7	6.9	8.5	5.0	7.4	4.6	5.5
4	6.3	6.9	7.5	7.8	8.0	7.7	6.7	7.3	5.1	7.7	4.2	5.5
5	6.0	7.4	7.5	7.2	7.6	7.6	6.6	7.0	5.0	6.9	4.2	5.5
6	5.9	7.7	7.2	6.9	6.2	7.5	6.6	6.8	5.0	5.7	4.0	5.5
7	6.2	7.8	7.2	7.7	7.9	7.5	6.4	6.6	5.3	5.7	3.2	5.1
8	6.4	8.3	7.2	6.6	7.8	7.4	6.4	6.4	5.5	4.9	3.3	4.9
9	6.2	8.1	7.2	5.8	8.0	7.7	6.2	6.2	5.4	4.8	2.7	4.9
10	6.3	7.7	7.2	8.4	7.7	7.7	6.2	6.3	5.4	4.8	2.7	4.9
11	6.3	7.5	7.1	7.2	6.6	7.7	6.0	6.5	5.6	4.8	5.0	5.0
12	6.3	7.5	7.0	6.9	9.2	7.7	5.9	6.5	5.7	4.8	13	4.8
13	6.5	7.1	7.2	6.8	8.7	7.7	5.9	6.5	5.7	4.5	35	5.0
14	6.5	6.9	7.2	7.2	8.7	7.7	5.9	6.6	5.1	4.0	15	5.5
15	6.3	13	7.2	7.2	8.3	7.7	5.9	6.2	4.9	4.1	8.0	5.6
16	6.3	10	7.2	7.2	8.0	7.7	6.0	6.1	5.3	4.5	7.0	5.0
17	6.1	7.8	7.5	6.9	8.2	7.7	6.2	6.6	5.4	4.6	6.0	4.9
18	6.1	7.5	7.5	6.9	8.3	7.7	6.1	7.0	5.3	4.6	5.4	4.8
19	6.1	7.5	7.5	7.0	8.1	7.4	6.0	6.1	5.3	180	5.0	4.8
20	6.1	7.5	7.5	6.9	8.0	7.2	6.2	6.1	5.4	57	5.0	4.9
21	6.2	7.5	7.7	6.8	8.2	7.3	6.1	5.9	5.3	14	5.2	4.8
22	6.2	7.5	7.8	6.8	8.3	7.2	6.0	6.0	5.2	7.6	5.0	4.7
23	6.1	7.7	7.7	7.2	8.3	7.2	6.2	6.7	5.1	7.4	4.5	4.9
24	6.2	7.8	7.5	7.6	8.1	7.1	6.2	6.0	5.1	7.2	4.0	4.9
25	7.1	7.8	7.6	6.6	8.0	6.9	6.3	5.6	5.0	5.9	4.5	4.9
26	6.3	7.8	7.8	7.4	8.0	6.9	6.7	5.5	4.9	5.0	8.0	4.9
27	5.8	7.8	7.8	7.2	8.0	6.9	6.4	5.6	5.2	4.8	9.0	4.9
28	5.9	7.8	7.8	7.3	8.0	6.9	6.4	5.6	5.1	5.0	7.6	4.1
29	6.3	7.8	7.8	7.8	8.1	6.7	6.4	5.6	12	5.0	6.2	6.2
30	6.5	7.8	8.0	8.0	---	6.7	6.4	5.5	8.8	5.5	5.8	4.4
31	18	---	7.8	8.0	---	6.8	---	5.6	---	4.6	5.6	---
TOTAL	204.9	239.5	231.9	224.2	231.9	229.0	189.8	197.0	168.3	406.4	207.7	188.7
MEAN	6.61	7.98	7.48	7.23	8.00	7.39	6.33	6.35	5.61	13.1	6.70	6.29
MAX	18	13	8.0	8.4	9.2	7.7	7.7	8.5	12	180	35	41
MIN	5.8	6.3	7.0	5.8	6.2	6.7	5.9	5.5	4.9	4.0	2.7	4.4
AC-FT	406	475	460	445	460	454	376	391	334	806	412	374

CAL YR 1987 TOTAL 3018.1 MEAN 8.27 MAX 114 MIN 1.6 AC-FT 5990
WTR YR 1988 TOTAL 2719.3 MEAN 7.43 MAX 180 MIN 2.7 AC-FT 5390

KANSAS RIVER BASIN

259

06851500 THOMPSON CREEK AT RIVERTON, NE

LOCATION.--Lat 40°05'21", long 98°45'38", in NW1/4NW1/4 sec.2, T.1 N., R.13 W., Franklin County, Hydrologic Unit 10250016, on left bank at downstream side of bridge on State Highway 136, at west edge of Riverton, 240 ft upstream from Burlington Northern Inc. bridge, and 0.5 mi upstream from mouth.

DRAINAGE AREA.--279 mi², of which about 190 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--April 1948 to September 1956, October 1968 to September 1975. Annual maximums, water years 1962-68 and occasional low-flow measurements, water years 1961-68. October 1977 to current year.

REVISED RECORDS.--WRD Nebr. 1972: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,753.38 ft above National Geodetic Vertical Datum of 1929. Apr. 1 to Oct. 1, 1948, nonrecording gage 240 ft downstream at datum 2.32 ft higher. Oct. 1, 1948, to July 11, 1950, water-stage recorder at present site at datum 1.32 ft higher, July 12, 1950, to Sept. 30, 1956, and Oct. 1, 1968, to Sept. 30, 1975, at present site and datum. Sept. 7, 1961, to Sept. 30, 1968, crest-stage gage at present site and datum. Non-recording gage only, June 27, 1983 to Mar. 29, 1984 at site 240 ft downstream at present datum.

REMARKS.--Estimated daily discharges: Dec. 14-17, 20-22, and Dec. 31 to Feb. 14. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--26 years (1948-56, 1968-75, 1978-88), 31.1 ft³/s, 22,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s July 9, 1950, gage height, 13.22 ft, present datum, by slope-area measurement; minimum daily, 8.1 ft³/s Dec. 19, 1951.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 30	0230	670	7.12	Aug. 13	0500	556	6.78
July 19	0530	*1620	*9.30	Sept. 28	0700	1010	8.06

Minimum daily discharge, 9.6 ft³/s June 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	28	23	18	25	22	21	25	17	40	14	16
2	17	26	23	20	22	23	24	28	16	41	11	15
3	17	24	23	23	23	23	24	30	16	41	12	15
4	18	24	23	26	20	23	24	23	16	38	15	13
5	18	23	23	25	20	23	23	22	14	26	15	13
6	18	22	23	24	17	23	23	22	14	19	13	14
7	19	23	23	17	21	21	22	22	14	19	23	14
8	19	24	23	16	25	21	23	20	14	23	40	14
9	20	20	23	15	28	21	21	20	14	19	35	13
10	20	20	23	16	24	22	22	20	14	17	23	14
11	20	20	23	20	22	23	22	20	13	16	22	14
12	24	21	23	25	23	19	22	19	13	16	65	15
13	24	21	21	21	26	21	23	18	13	16	307	17
14	24	21	20	22	28	21	21	18	13	15	108	24
15	24	25	19	25	24	20	22	18	14	14	53	22
16	24	32	18	26	26	20	21	18	13	13	38	17
17	24	25	19	27	24	20	22	17	13	16	39	15
18	24	25	21	27	23	21	22	17	12	13	33	16
19	24	21	21	28	21	21	23	16	12	605	19	16
20	24	21	19	26	21	22	24	16	12	214	18	15
21	24	21	20	22	23	23	24	17	10	50	19	15
22	24	21	21	21	25	23	23	18	10	28	18	15
23	24	22	23	25	22	23	24	20	10	26	15	14
24	24	23	24	27	21	22	25	18	11	22	13	15
25	31	23	20	27	22	21	26	17	9.8	19	13	17
26	29	23	20	21	23	22	26	17	9.6	18	31	16
27	24	23	21	22	23	22	25	17	11	17	34	17
28	24	23	21	26	23	23	25	17	11	17	28	394
29	23	23	21	28	22	23	26	17	13	17	22	103
30	24	23	21	29	---	23	26	17	126	15	15	29
31	24	---	20	30	---	22	---	17	---	17	13	---
TOTAL	694	691	666	725	667	677	699	601	498.4	1467	1124	947
MEAN	22.4	23.0	21.5	23.4	23.0	21.8	23.3	19.4	16.6	47.3	36.3	31.6
MAX	31	32	24	30	28	23	26	30	126	605	307	394
MIN	17	20	18	15	17	19	21	16	9.6	13	11	13
AC-FT	1380	1370	1320	1440	1320	1340	1390	1190	989	2910	2230	1880

CAL YR 1987 TOTAL 11609.0 MEAN 31.8 MAX 1140 MIN 9.1 AC-FT 23030
WTR YR 1988 TOTAL 9456.4 MEAN 25.8 MAX 605 MIN 9.6 AC-FT 18760

KANSAS RIVER BASIN

06852000 ELM CREEK AT AMBOY, NE

LOCATION.--Lat 40°05'20", long 98°26'07", in NE1/4NW1/4 sec.3, T.1 N., R.10 W., Webster County, Hydrologic Unit 10250016, on left bank at downstream side of bridge on State Highway 136 at east edge of Amboy, 2.5 mi upstream from mouth, and 4.5 mi east of Red Cloud.

DRAINAGE AREA.--39.2 mi².

PERIOD OF RECORD.--April 1948 to December 1953. Annual maximums, water years 1959, 1961-77 and occasional low flow measurements, water years 1954-77. October 1977 to current year.

REVISED RECORDS.--WRD NE-83: 1982(M).

GAGE.--Water-stage recorder. Datum of gage is 1,659.07 ft above National Geodetic Vertical Datum of 1929. Prior to July 17, 1952, nonrecording gage at upstream side of bridge at datum 7.26 ft higher, July 17, 1952, to Jan. 4, 1954, water-stage recorder, present site, at datum 6.26 ft higher, and Sept. 6, 1961, to Sept. 30, 1977, crest-stage gage at present site and datum.

REMARKS.--Estimated daily discharges: Jan. 8-10, 23, 24, Jan. 30 to Feb. 1, and Feb. 6, 11. Records good except for periods of estimated record, which are fair. Natural flow affected by pump irrigation development above station.

AVERAGE DISCHARGE.--16 years (water years 1949-53, 1978-88), 21.4 ft³/s, 15,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,800 ft³/s Sept. 29, 1983, gage height, 16.96 ft, from floodmark, from rating curve extended above 6,400 ft³/s on basis of velocity-area study; maximum gage height, 17.05 ft July 4, 1959; minimum daily discharge, 6.7 ft³/s July 30, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 8	0045	208	10.66	Aug. 13	1000	248	11.04
July 19	0830	*378	*11.89				

Minimum daily discharge, 7.1 ft³/s June 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	14	15	15	16	16	15	15	14	15	13	12
2	8.6	14	15	15	16	15	18	18	14	12	12	12
3	8.9	14	16	15	15	15	16	36	15	12	12	12
4	9.5	14	16	15	14	15	16	20	15	11	14	12
5	9.6	14	15	14	14	15	15	17	15	11	12	12
6	10	14	16	14	14	15	15	16	15	11	11	12
7	10	15	16	14	14	16	15	16	15	25	10	12
8	11	15	16	14	14	15	15	15	11	87	9.3	12
9	11	14	16	13	15	15	15	15	9.9	42	9.6	12
10	12	14	15	14	14	15	15	15	9.3	18	9.8	12
11	13	14	15	14	14	15	15	16	9.0	14	10	12
12	13	14	15	14	14	15	15	17	8.8	12	11	11
13	13	14	15	13	14	15	17	15	8.9	11	106	12
14	13	14	15	14	15	15	15	14	8.3	10	28	13
15	13	16	15	14	15	15	15	14	8.5	8.9	15	15
16	12	17	15	14	18	15	16	14	9.0	8.6	13	13
17	12	15	15	14	17	16	16	14	9.9	13	12	13
18	13	14	16	14	15	16	15	15	9.2	12	12	13
19	12	14	16	16	15	16	15	15	8.0	115	13	13
20	13	15	16	15	14	17	15	16	8.0	20	13	13
21	13	15	16	15	15	16	15	24	7.5	12	12	13
22	13	15	16	14	15	16	15	19	7.4	11	11	13
23	12	15	16	16	14	16	15	28	7.4	11	11	12
24	13	15	16	17	14	16	15	17	7.4	11	11	12
25	15	15	15	17	14	16	15	14	7.4	10	11	12
26	14	15	15	16	15	16	15	14	7.1	11	11	12
27	13	15	16	16	15	16	15	13	8.1	11	12	12
28	13	16	16	16	15	16	15	13	8.5	12	12	14
29	13	16	15	16	16	16	15	13	11	13	12	43
30	13	15	16	17	---	16	15	13	26	13	12	19
31	14	---	15	17	---	15	---	13	---	13	12	---
TOTAL	372.0	441	481	462	430	482	459	514	318.6	596.5	472.7	410
MEAN	12.0	14.7	15.5	14.9	14.8	15.5	15.3	16.6	10.6	19.2	15.2	13.7
MAX	15	17	16	17	18	17	18	36	26	115	106	43
MIN	8.4	14	15	13	14	15	15	13	7.1	8.6	9.3	11
AC-FT	738	875	954	916	853	956	910	1020	632	1180	938	813

CAL YR 1987 TOTAL 7009.2 MEAN 19.2 MAX 343 MIN 8.4 AC-FT 13900
WTR YR 1988 TOTAL 5438.8 MEAN 14.9 MAX 115 MIN 7.1 AC-FT 10790

KANSAS RIVER BASIN

261

06852500 COURTLAND CANAL AT NEBRASKA-KANSAS STATE LINE

LOCATION.--Lat 40°00'15", long 98°07'55", in SW1/4SE1/4 sec.32, T.1 N., R.7 W., Nuckolls County, Nebraska, Hydrologic Unit 10250016, on left bank 0.2 mi upstream from Nebraska-Kansas State line and 3.5 mi southwest of Superior, NE.

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

GAGE.--Water-stage recorder and concrete Parshall flume. Datum of gage is 1,612.46 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from Republican River at Courtland diversion dam in sec.7, T.1 N., R.9 W. Water is used for irrigation in Nebraska and Kansas; figures published herein represent that portion which flows into Kansas.

AVERAGE DISCHARGE.--34 years, 78.4 ft³/s, 56,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 781 ft³/s Sept. 2, 1973, gage height, 5.05 ft; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 651 ft³/s July 10; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	34	649	355	207
2	.00	.00	.00	.00	.00	.00	.00	.00	43	649	354	159
3	.00	.00	.00	.00	.00	.00	.00	.00	50	648	344	126
4	.00	.00	.00	.00	.00	.00	.00	.00	101	645	343	122
5	.00	.00	.00	.00	.00	.00	.00	.00	106	635	332	121
6	.00	.00	.00	.00	.00	.00	.00	.00	102	623	317	131
7	.00	.00	.00	.00	.00	.00	.00	.00	109	620	318	112
8	.00	.00	.00	.00	.00	.00	.00	.00	110	628	323	91
9	.00	.00	.00	.00	.00	.00	.00	.00	111	650	327	76
10	.00	.00	.00	.00	.00	.00	.00	.00	153	651	311	57
11	.00	.00	.00	.00	.00	.00	.00	.00	198	648	304	57
12	.00	.00	.00	.00	.00	.00	.00	14	208	646	305	67
13	.00	.00	.00	.00	.00	.00	.00	52	273	637	322	59
14	.00	.00	.00	.00	.00	.00	.00	56	327	628	276	74
15	.00	.00	.00	.00	.00	.00	.00	57	389	622	222	100
16	.00	.00	.00	.00	.00	.00	.00	39	456	613	227	141
17	.00	.00	.00	.00	.00	.00	.00	4.3	493	618	231	135
18	.00	.00	.00	.00	.00	.00	.00	17	498	621	229	100
19	.00	.00	.00	.00	.00	.00	.00	45	492	635	234	93
20	.00	.00	.00	.00	.00	.00	.00	46	508	525	234	83
21	.00	.00	.00	.00	.00	.00	.00	47	531	330	235	77
22	.00	.00	.00	.00	.00	.00	.00	36	556	216	237	73
23	.00	.00	.00	.00	.00	.00	.00	36	602	196	241	71
24	.00	.00	.00	.00	.00	.00	.00	51	625	203	224	70
25	.00	.00	.00	.00	.00	.00	.00	50	624	229	209	69
26	.00	.00	.00	.00	.00	.00	.00	49	625	272	205	67
27	.00	.00	.00	.00	.00	.00	.00	50	629	311	206	65
28	.00	.00	.00	.00	.00	.00	.00	47	632	339	208	69
29	.00	.00	.00	.00	.00	.00	.00	44	632	346	210	200
30	.00	.00	.00	.00	---	.00	.00	43	642	349	208	221
31	.00	---	.00	.00	---	.00	---	43	---	355	207	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	826.30	10859	15737	8298	3093
MEAN	.00	.00	.00	.00	.00	.00	.00	26.7	362	508	268	103
MAX	.00	.00	.00	.00	.00	.00	.00	57	642	651	355	221
MIN	.00	.00	.00	.00	.00	.00	.00	.00	34	196	205	57
AC-FT	.0	.0	.0	.0	.0	.0	.0	1640	21540	31210	16460	6130

CAL YR 1987 TOTAL 22587.60 MEAN 61.9 MAX 367 MIN .00 AC-FT 44800
WTR YR 1988 TOTAL 38813.30 MEAN 106 MAX 651 MIN .00 AC-FT 76990

KANSAS RIVER BASIN

06853020 REPUBLICAN RIVER AT GUIDE ROCK, NE

LOCATION.--Lat 40°03'49", long 98°19'53", in NE1/4SE1/4 sec.9, T.1 N., R.9 W., Webster County, Hydrologic Unit 10250016, on left downstream bank at Nebraska State Highway 78 bridge, 0.2 mi downstream from Minnie Creek and 0.5 mi south of Guide Rock. Station is 3.1 river miles downstream from station 06853000, Republican River near Guide Rock, previous site.

DRAINAGE AREA.--22,090 mi², approximately, of which about 14,600 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1950 to current year. August 1950 to September 1984 published as Republican River near Guide Rock (06853000).

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,616.15 ft above National Geodetic Vertical Datum of 1929, levels by U.S. Corps of Engineers. Prior to Oct. 1, 1959, at datum 12.98 ft higher, and Oct. 1, 1959 to Nov. 28, 1984, at datum 7.98 ft higher, both at site 3.1 miles upstream.

REMARKS.--Estimated daily discharges: Dec. 15 to Feb. 22. Records good except for period of estimated record, which is poor. Natural flow affected by irrigation development above station, by regulation of upstream reservoirs, and since Nov. 14, 1952, by storage in Harlan County Lake (station 06849000).

AVERAGE DISCHARGE.--38 years, 319 ft³/s, 231,100 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,200 ft³/s June 16, 1957, gage height, 20.73 ft, at site and datum then in use; minimum daily, 0.1 ft³/s May 26, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum flood since at least 1826 occurred June 1 or 2, 1935, discharge, about 250,000 ft³/s, from slope-area measurements near Bloomington and Hardy.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,900 ft³/s July 19, gage height, 10.90 ft; minimum daily, 2.8 ft³/s Sept. 22, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	117	140	86	125	152	118	114	13	446	68	46
2	69	133	143	88	114	151	139	121	15	195	53	66
3	69	121	144	90	108	147	157	179	26	111	40	111
4	74	109	146	94	104	143	156	200	42	75	68	90
5	77	106	149	94	100	144	141	181	37	56	114	73
6	75	107	149	94	94	143	127	160	24	48	98	63
7	75	111	148	90	94	144	126	145	14	55	101	58
8	79	113	152	88	98	140	126	132	10	270	106	40
9	81	114	152	80	110	139	120	119	7.9	475	115	19
10	81	114	153	86	130	140	118	94	17	263	91	19
11	84	115	153	90	112	137	119	85	16	183	73	11
12	90	117	147	90	112	126	123	45	69	159	172	7.9
13	93	118	138	92	116	118	125	29	103	125	844	15
14	96	116	139	80	122	120	119	27	48	76	1040	20
15	97	124	125	92	130	124	115	23	85	48	371	41
16	97	145	114	96	130	124	114	19	64	52	198	19
17	96	201	104	102	135	130	118	16	58	100	201	7.4
18	96	160	112	110	140	132	118	16	28	154	195	5.2
19	95	137	120	118	145	135	118	15	9.3	2450	170	6.1
20	96	131	130	122	150	135	117	15	59	1960	138	3.9
21	96	131	130	102	160	132	114	25	47	573	89	3.2
22	100	133	125	98	170	130	109	46	53	373	68	2.8
23	100	129	120	106	180	125	109	56	63	315	61	2.9
24	100	129	112	112	166	124	114	38	59	256	57	3.0
25	115	133	102	106	162	120	116	28	66	236	47	2.8
26	140	136	92	106	163	117	120	19	64	132	51	2.9
27	136	140	84	118	160	121	117	14	86	53	71	3.2
28	115	154	88	135	155	118	115	13	98	49	87	3.6
29	111	158	92	140	151	115	117	13	99	27	89	50
30	109	148	88	135	---	117	119	13	324	55	81	8.5
31	113	---	86	145	---	117	---	13	---	68	63	---
TOTAL	2925	3900	3877	3185	3836	4060	3664	2013	1704.2	9438	5020	804.4
MEAN	94.4	130	125	103	132	131	122	64.9	56.8	304	162	26.8
MAX	140	201	153	145	180	152	157	200	324	2450	1040	111
MIN	69	106	84	80	94	115	109	13	7.9	27	40	2.8
AC-FT	5800	7740	7690	6320	7610	8050	7270	3990	3380	18720	9960	1600

CAL YR 1987 TOTAL 71038 MEAN 195 MAX 2350 MIN 16 AC-FT 140900
WTR YR 1988 TOTAL 44426.6 MEAN 121 MAX 2450 MIN 2.8 AC-FT 88120

KANSAS RIVER BASIN

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06853020 REPUBLICAN RIVER AT GUIDE ROCK, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1962 to current year. Prior to October 1985 published as Republican River near Guide Rock (06853000).

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 14...	1245	95	745	8.31	15.0	10.1	11	K85	170
NOV 10...	1430	112	726	8.41	6.5	12.8	9	K10	K56
DEC 09...	1330	152	780	8.42	4.0	13.3	22	K50	400
JAN 06...	0920	94	904	8.02	0.0	12.5	<5	K36	840
FEB 02...	1330	117	645	7.90	0.0	11.1	23	K92	5500
MAR 01...	1230	150	732	8.25	7.5	11.7	10	K8	88
APR 26...	1500	121	738	8.30	14.0	10.8	12	K650	130
JUN 01...	1030	13	665	8.21	19.5	10.1	12	440	1100
JUN 29...	0745	95	612	8.15	25.0	6.5	32	1700	1300
JUL 27...	1600	42	598	8.30	31.0	6.5	19	600	400
AUG 22...	1220	64	634	8.43	26.5	7.7	25	530	760
SEP 21...	1155	3.1	751	8.03	21.5	11.6	12	64	200

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

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)	SODIUM, DIS- SOLVED (MG/L AS Na) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 14...	300	92	18	35	0.9	130	25	301	0.41
NOV 10...	320	100	18	33	0.8	110	26	290	0.39
DEC 09...	340	110	19	34	0.8	130	26	316	0.43
JAN 06...	420	130	24	44	1	150	30	378	0.51
FEB 02...	310	99	16	31	0.8	100	23	269	0.37
MAR 01...	350	110	18	36	0.9	120	27	311	0.42
APR 26...	290	89	17	33	0.9	120	24	283	0.38
JUN 01...	290	88	17	30	0.8	94	23	252	0.34
JUN 29...	240	58	22	47	1	99	28	254	0.35
JUL 27...	230	62	18	40	1	80	26	226	0.31
AUG 22...	230	60	19	40	1	98	27	244	0.33
SEP 21...	310	97	16	34	0.9	94	24	265	0.36

KANSAS RIVER BASIN

06853020 REPUBLICAN RIVER AT GUIDE ROCK, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE		SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
OCT	14...	77.2	29	0.910	0.280	0.31	0.59	1.5	0.160
NOV	10...	87.7	18	1.30	0.130	0.39	0.52	1.8	0.110
DEC	09...	130	28	1.70	0.140	0.36	0.50	2.2	0.130
JAN	06...	95.9	4	2.40	0.210	0.29	0.50	2.9	0.190
FEB	02...	85.0	51	1.60	0.230	1.4	1.6	3.2	0.380
MAR	01...	126	24	1.40	0.130	0.56	0.69	2.1	0.190
APR	26...	92.5	26	0.700	0.060	0.72	0.78	1.5	0.120
JUN	01...	8.85	9	0.510	0.060	0.54	0.60	1.1	0.140
	29...	65.2	119	0.480	0.030	1.3	1.3	1.8	0.290
JUL	27...	25.6	49	0.940	0.050	0.48	0.53	1.5	0.260
AUG	22...	42.2	77	0.780	0.030	0.87	0.90	1.7	0.240
SEP	21...	2.22	<4	1.10	0.230	0.72	0.95	2.0	0.170

DATE		TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV	10...	1430	13	<15	<10	10	<20	<0.10	5	<1	<30	3.2
FEB	02...	1330	11	<15	<10	<10	<20	<0.10	6	<1	<30	7.2
JUN	01...	1030	6	<15	<10	<10	<20	<0.10	7	<1	<30	4.5
AUG	22...	1220	10	<15	<10	<10	20	<0.10	3	<1	<30	5.9

KANSAS RIVER BASIN

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06853500 REPUBLICAN RIVER NEAR HARDY, NE

LOCATION.--Lat 39°59'33", long 97°55'53", in NE1/4 NE1/4 SE1/4 sec.1, T.1 S., R.6 W., in Kansas, Republic County, Hydrologic Unit 10250016, on right bank at upstream side of highway bridge, 1.2 mi southwest of Hardy and at mile 141.2.

DRAINAGE AREA.--22,401 mi², of which about 7,500 mi² does not contribute directly to surface runoff.

PERIOD OF RECORD.--June 1904 to September 1915 (no winter records), April 1931 to current year. Prior to May 1932, published as "at Bostwick." Records for June 1896 to November 1903 published as "near Superior" in 18th to 22nd Ann. Repts., inclusive, Pt. 4, and WSP 75, 84, and 99, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 806: Drainage area. WSP 1006: 1941. WSP 1340: 1905(M), 1907-09, 1912, 1914-15, 1931. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 1,501.46 ft above sea level. Prior to May 19, 1932, nonrecording gage at site at Bostwick, 20 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Dec. 26 to Feb. 20, July 23 to Aug. 2, and Aug. 23 to Sept. 14. Records good except those for estimated daily discharges, which are poor. Natural flow affected by irrigation development upstream from station and by storage in reservoirs in Colorado, Kansas, and Nebraska. Considerable regulation since 1952 by Harlan County Lake (station 06849000).

AVERAGE DISCHARGE.--21 years (water years 1914, 1933-52), 882 ft³/s, 639,000 acre-ft per yr; 31 years (water years 1958-88, since conservation pool at Harlan County Lake was first filled), 371 ft³/s, 268,800 acre-ft per yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 225,000 ft³/s June 2, 1935, gage height, 19.4 ft, based on records for stations upstream; no flow Aug. 9-19, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stages since at least 1895, that of June 2, 1935, and 17.00 ft June 24, 1947, discharge, 100,000 ft³/s, based on records for upstream stations.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,750 ft³/s July 20, gage height, 10.36 ft; minimum discharge, 17 ft³/s June 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	154	184	140	200	272	165	141	51	356	115	120
2	112	156	181	138	175	262	175	145	50	471	105	115
3	110	165	183	145	155	252	179	175	49	310	98	110
4	112	163	184	120	140	241	178	291	46	231	89	105
5	113	151	186	115	140	229	173	242	60	158	97	125
6	110	151	188	110	150	225	161	210	62	101	133	115
7	107	153	187	110	180	221	151	188	50	99	142	105
8	109	155	191	110	200	218	146	168	36	278	145	96
9	109	153	196	118	210	212	148	155	29	486	141	90
10	108	153	197	130	215	202	146	143	26	711	141	86
11	114	153	195	145	205	198	142	130	32	446	109	80
12	121	154	192	160	205	187	145	127	45	357	107	75
13	125	154	189	175	240	167	147	108	59	317	291	70
14	129	153	184	200	275	156	147	89	103	259	972	68
15	130	157	178	210	300	157	145	79	77	189	835	69
16	133	162	180	220	320	163	145	72	73	141	455	90
17	131	168	189	240	350	173	149	65	75	135	318	68
18	129	201	189	260	360	173	153	61	56	218	293	51
19	128	191	215	280	370	177	152	55	44	1590	308	47
20	128	170	233	280	370	180	152	51	26	4560	333	45
21	129	164	227	250	362	200	154	59	35	1600	306	41
22	132	163	216	200	341	206	152	62	41	876	308	37
23	134	163	218	200	315	188	150	85	47	600	220	36
24	135	163	222	205	293	186	149	96	37	400	190	34
25	143	163	215	185	285	174	149	83	45	275	180	32
26	165	164	205	185	282	170	152	69	53	210	160	32
27	172	171	190	210	280	165	151	59	58	160	150	31
28	170	184	183	240	279	157	147	51	63	150	140	31
29	159	191	180	250	273	156	144	47	102	140	130	35
30	151	192	170	270	---	157	143	45	141	150	130	60
31	151	---	155	250	---	163	---	46	---	125	130	---
TOTAL	4016	4935	6002	5851	7470	5987	4590	3397	1671	16099	7271	2099
MEAN	130	165	194	189	258	193	153	110	55.7	519	235	70.0
MAX	172	201	233	280	370	272	179	291	141	4560	972	125
MIN	107	151	155	110	140	156	142	45	26	99	89	31
AC-FT	7970	9790	11900	11610	14820	11880	9100	6740	3310	31930	14420	4160
CAL YR 1987 TOTAL	130488			358	6080	82	AC-FT	258800				
WTR YR 1988 TOTAL	69388			190	4560	26	AC-FT	137600				

LOCATION.--Lat 41°06'05", long 97°18'35", in NW1/4NW1/4 sec.15, T.13 N., R.1 E., Butler County, Hydrologic Unit 10270201, on left bank 50 ft downstream from bridge on county road at south edge of Surprise.

PERIOD OF RECORD.--April 1964 to current year. Prior to October 1965, published as North Branch Big Blue River at Surprise.

REMARKS.--Estimated daily discharges: Dec 16-18 and Jan. 11 to Feb. 15. Records good except for periods of estimated record and those below 5 ft³/s which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s July 19, 1965, gage height, 11.52 ft; no flow for many days in most years.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 28	1422	*471	*3.90	No other peak greater than base discharge.			
Minimum daily discharge, 0.50 ft ³ /s Sept. 14.							

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	5.8	6.6	3.9	10	11	6.1	5.6	7.3	12	5.6	2.4
2	3.6	6.2	5.5	4.1	8.2	11	7.7	5.8	7.5	9.0	3.5	2.8
3	2.7	6.6	5.1	3.6	7.6	8.6	11	7.2	7.8	8.6	2.7	2.5
4	3.4	7.5	4.9	3.4	7.0	8.5	17	8.0	7.6	7.4	3.9	2.5
5	3.1	8.2	4.9	3.7	6.8	9.2	15	9.0	7.8	5.5	4.1	2.1
6	2.7	9.9	4.9	2.6	6.6	7.7	13	8.1	7.4	9.4	5.1	1.7
7	2.9	7.4	4.7	3.0	6.6	9.5	12	8.3	9.4	10	6.7	2.1
8	3.6	7.5	5.1	3.2	7.2	7.6	9.7	7.1	8.8	8.6	7.3	2.5
9	3.9	5.8	5.7	2.3	6.8	7.6	10	6.8	7.8	16	6.0	1.5
10	4.6	5.3	6.0	3.0	6.2	8.2	9.1	6.1	6.9	9.8	5.8	1.2
11	5.4	5.3	6.6	4.0	5.4	8.4	9.2	6.3	6.8	5.2	3.6	1.2
12	6.3	6.6	5.9	4.5	9.0	6.7	9.5	6.3	7.2	4.8	2.9	.64
13	8.4	6.7	5.9	4.7	17	6.1	7.0	6.5	6.8	5.8	3.8	.69
14	8.0	5.7	5.5	4.7	16	6.4	6.8	7.0	6.0	6.3	2.6	.50
15	4.9	6.4	5.0	5.2	15	7.1	6.5	7.2	6.5	11	2.8	2.2
16	8.0	7.9	4.6	5.0	18	6.9	6.3	6.8	6.4	9.7	2.4	1.2
17	6.6	8.7	4.5	4.7	23	7.5	6.1	7.2	7.0	8.5	1.6	.89
18	7.2	9.1	4.8	4.6	21	6.5	5.6	7.2	6.7	7.5	4.6	1.1
19	4.6	7.6	4.9	5.0	17	6.3	6.2	7.2	7.2	7.2	6.5	1.8
20	5.7	4.9	4.9	4.5	16	6.2	6.2	7.2	6.0	6.0	5.7	.74
21	6.9	4.8	5.1	4.0	15	6.6	5.7	23	4.5	8.7	5.5	.59
22	8.1	5.1	5.4	4.8	15	6.5	5.7	54	5.6	10	5.1	.92
23	8.4	5.3	5.4	5.0	13	6.3	6.3	54	5.7	8.8	3.9	.59
24	7.1	5.1	5.4	4.8	12	6.4	6.6	36	5.6	8.9	4.5	.57
25	7.9	5.7	4.7	4.8	14	6.0	6.6	15	5.3	8.7	4.6	.89
26	9.2	5.0	4.6	3.8	12	6.3	8.0	9.8	4.9	6.5	4.7	.71
27	11	4.9	4.7	3.7	12	5.9	8.5	8.0	6.4	5.9	4.5	.62
28	10	6.1	5.2	5.6	12	5.6	9.7	7.1	4.5	6.2	3.5	120
29	8.6	7.0	5.7	10	11	5.8	7.0	6.0	3.4	5.1	3.7	37
30	4.9	7.3	5.7	12	---	6.3	5.7	6.0	34	5.3	2.8	19
31	4.6	---	5.4	12	---	5.8	---	6.6	---	4.5	2.2	---
TOTAL	186.6	195.4	163.3	150.2	346.4	224.5	249.8	366.4	224.8	246.9	132.2	213.15
MEAN	6.02	6.51	5.27	4.85	11.9	7.24	8.33	11.8	7.49	7.96	4.26	7.10
MAX	11	9.9	6.6	12	23	11	17	54	34	16	7.3	120
MIN	2.7	4.8	4.5	2.3	5.4	5.6	5.6	5.6	3.4	4.5	1.6	.50
AC-FT	370	388	324	298	687	445	495	727	446	490	262	423
CAL YR 1987	TOTAL 14053.2	MEAN 38.5	MAX 1110	MIN 2.7	AC-FT 27870							
WTR YR 1988	TOTAL 2699.65	MEAN 7.38	MAX 120	MIN .50	AC-FT 5350							

KANSAS RIVER BASIN

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06880000 LINCOLN CREEK NEAR SEWARD, NE

LOCATION.--Lat 40°54'57", long 97°08'43", in NW1/4NE1/4 sec.24, T.11 N., R.2 E., Seward County, Hydrologic Unit 10270201, on left bank at downstream side of county road bridge, 2 mi west of Seward, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--446 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1953 to September 1973, March 1974 to current year. Monthly discharge only for some periods, published in WSP 1730.

REVISED RECORDS.--WSP 2119: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,429.27 ft above National Geodetic Vertical Datum of 1929. June 27, 1984 to June 2, 1985 at temporary site upstream from county road at same datum.

REMARKS.--Estimated daily discharges: Dec. 16, 17, 26, 31, Jan. 2 to Feb. 22, and Mar. 14, 15. Records fair except for periods of estimated record, which are poor. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--34 years, (1953-73, 1975-88) 52.4 ft³/s, 37,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s June 17, 1957, gage height, 20.53 ft; minimum daily, 1.3 ft³/s July 31, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 29	1100	*413	*9.63	No other peak greater than base discharge.			

Minimum daily discharge, 12 ft³/s Sept. 12-14, 22-27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	34	29	39	30	44	32	31	32	143	28	15
2	26	33	30	44	30	43	36	32	32	51	30	15
3	25	33	30	44	30	42	36	37	31	38	30	15
4	25	32	30	42	30	41	35	36	31	41	32	14
5	23	31	30	41	30	40	35	33	30	59	31	14
6	21	31	30	39	32	40	34	32	30	36	31	14
7	22	31	31	40	34	40	32	31	31	29	30	13
8	22	31	32	41	37	40	32	32	31	29	30	13
9	23	30	34	41	35	38	33	30	30	33	30	13
10	24	30	33	41	33	38	33	29	29	36	29	13
11	25	30	33	39	30	38	31	29	28	46	28	13
12	26	30	33	38	35	38	30	30	28	56	25	12
13	27	30	32	39	40	38	30	30	28	49	24	12
14	27	30	32	40	45	38	29	30	28	37	25	12
15	28	30	33	41	48	37	29	29	27	32	26	13
16	28	30	31	43	50	34	30	28	26	31	22	23
17	28	30	31	45	50	35	30	28	25	31	23	15
18	29	29	32	48	50	35	29	28	24	33	23	14
19	29	28	33	46	50	34	29	28	24	47	23	14
20	29	28	33	42	48	35	29	28	23	54	24	14
21	29	28	34	35	48	35	29	34	22	42	24	13
22	30	28	35	35	48	35	30	52	22	35	21	12
23	31	28	35	37	50	35	30	92	23	32	20	12
24	31	28	36	33	50	34	31	93	23	31	20	12
25	32	27	36	30	48	34	31	50	23	33	18	12
26	33	27	38	30	49	33	33	47	26	30	18	12
27	33	27	40	32	46	32	33	37	26	27	18	12
28	32	29	40	32	45	32	32	32	26	28	18	114
29	33	30	39	34	44	32	32	31	24	29	17	347
30	33	29	39	37	---	32	31	30	102	30	16	276
31	33	---	39	35	---	32	---	31	---	29	15	---
TOTAL	863	892	1043	1203	1195	1134	946	1140	885	1257	749	1103
MEAN	27.8	29.7	33.6	38.8	41.2	36.6	31.5	36.8	29.5	40.5	24.2	36.8
MAX	33	34	40	48	50	44	36	93	102	143	32	347
MIN	21	27	29	30	30	32	29	28	22	27	15	12
AC-FT	1710	1770	2070	2390	2370	2250	1880	2260	1760	2490	1490	2190
CAL YR 1987	TOTAL 35008	MEAN 95.9	MAX 3040	MIN 21	AC-FT 69440							
WTR YR 1988	TOTAL 12410	MEAN 33.9	MAX 347	MIN 12	AC-FT 24620							

KANSAS RIVER BASIN
06880000 LINCOLN CREEK NEAR SEWARD, NE--Continued
WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-70, 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 20...	0925	47	606	8.03	7.5	10.2	21	K130	720
NOV 17...	1015	34	605	8.10	6.5	10.1	24	K120	680
DEC 15...	0945	27	627	8.31	0.5	13.3	11	K36	K74
JAN 11...	1145	48	651	7.30	0.0	11.0	6	7	160
FEB 09...	1000	15	567	7.45	0.0	10.8	33	K21	700
MAR 09...	1345	39	574	8.23	5.5	13.5	10	<10	K64
APR 04...	0900	36	564	7.88	11.0	9.4	14	180	350
MAY 10...	0935	27	670	8.20	15.0	8.7	36	230	7100
JUN 07...	1125	29	566	8.25	21.0	7.5	45	2500	8800
JUL 05...	0830	61	540	8.09	25.0	5.9	63	K8200	K10000
AUG 02...	0935	31	595	8.12	24.5	6.6	49	3500	2400
SEP 27...	1045	12	510	8.04	19.0	7.0	29	2200	6900

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 20...	280	86	17	33	0.9	63	11	210	0.29
NOV 17...	270	82	16	31	0.9	58	8.7	196	0.27
DEC 15...	270	82	16	30	0.8	68	9.6	206	0.28
JAN 11...	300	91	18	34	0.9	66	9.1	218	0.30
FEB 09...	210	64	13	35	1	50	20	182	0.25
MAR 09...	250	75	15	28	0.8	60	9.2	187	0.25
APR 04...	250	77	15	33	0.9	61	8.5	194	0.26
MAY 10...	270	82	16	30	0.8	57	8.8	194	0.26
JUN 07...	260	78	15	31	0.9	56	9.1	189	0.26
JUL 05...	200	60	12	33	1	43	21	169	0.23
AUG 02...	250	77	15	28	0.8	46	11	177	0.24
SEP 27...	250	79	14	31	0.9	50	10	184	0.25

KANSAS RIVER BASIN

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06880000 LINCOLN CREEK NEAR SEWARD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON ORGANIC TOTAL (MG/L AS C) (00680)
OCT 20...	26.6	35	2.80	0.050	0.92	0.97	3.8	0.380	4.0
NOV 17...	18.0	22	3.50	0.100	0.40	0.50	4.0	0.320	3.4
DEC 15...	15.0	10	2.90	0.130	--	--	--	0.290	3.3
JAN 11...	28.3	7	3.80	0.150	0.17	0.32	4.1	0.330	2.9
FEB 09...	7.37	49	3.20	0.650	2.5	3.2	6.4	0.720	11
MAR 09...	19.7	18	3.50	0.090	0.31	0.40	3.9	0.370	3.6
APR 04...	18.9	106	3.10	0.140	0.96	1.1	4.2	0.360	5.6
MAY 10...	14.1	128	3.00	0.100	1.3	1.4	4.4	0.620	4.6
JUN 07...	14.8	34	3.40	0.130	1.5	1.6	5.0	0.460	5.6
JUL 05...	27.8	574	3.30	0.220	2.8	3.0	6.3	0.310	8.4
AUG 02...	14.8	203	2.80	0.050	1.2	1.3	4.1	0.680	7.4
SEP 27...	5.96	220	2.70	0.080	1.2	1.3	4.0	0.920	4.2

KANSAS RIVER BASIN

06880500 BIG BLUE RIVER AT SEWARD, NE

LOCATION.--Lat 40°54'10", long 97°06'40", in SE1/4SW1/4 sec.20, T.11 N., R.3 E., Seward County, Hydrologic Unit 10270201, at downstream end of right abutment of bridge on U.S. Highway 34 at west edge of Seward, 1.7 mi upstream from Plum Creek and 0.2 mi downstream from Lincoln Creek.

DRAINAGE AREA.--1,099 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1953 to current year. Monthly discharge only for some periods, published in WSP 1730.

REVISED RECORDS.--WSP 1919: Drainage area. WDR NE-80-1: 1979(M).

GAGE.--Water-stage recorder. Datum of gage is 1,421.49 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 19, 1969, at present site and datum. Dec. 19, 1969 to Nov. 7, 1983 at site 1.2 mi downstream at datum 6.33 ft lower.

REMARKS.--Estimated daily discharges: Jan. 2-14 and Jan. 20 to Feb. 22. Records good except for periods of estimated record, which are poor. Natural flow of stream affected by ground-water withdrawals and diversions for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--35 years, 132 ft³/s, 95,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,300 ft³/s June 18, 1957, gage height, 22.34 ft; maximum gage height, 22.83 ft June 16, 1967; from stage readings during 1967 flood, gage height at downstream site and datum was approximately 25.66 ft; no flow July 30, 31, 1955, result of irrigation pumping.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 30	0815	*760	*7.07	No peaks greater than base discharge.			
Minimum daily discharge, 16 ft ³ /s June 22, 23, Sept. 9-14.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	83	77	66	90	106	76	72	72	216	39	22
2	60	85	84	70	90	104	83	70	70	153	32	21
3	58	90	86	68	90	101	88	76	68	84	32	21
4	58	86	81	64	85	97	111	76	67	69	33	20
5	58	83	80	62	80	90	104	77	67	96	36	20
6	58	79	82	64	80	90	97	81	66	68	36	19
7	58	76	81	64	85	89	92	72	68	52	33	18
8	58	75	84	64	90	89	90	70	66	48	35	17
9	59	74	94	64	80	89	86	66	82	125	32	16
10	59	71	107	66	75	89	86	62	72	92	29	16
11	58	71	101	68	70	83	91	60	58	82	29	16
12	59	71	90	70	80	80	90	59	48	96	25	16
13	62	70	85	70	90	77	82	59	52	78	27	16
14	63	70	81	70	95	67	78	57	50	52	27	16
15	63	70	74	73	100	65	76	55	47	43	32	19
16	64	72	65	77	110	72	73	53	37	39	30	32
17	64	73	77	82	120	76	72	53	28	40	28	32
18	65	83	82	84	120	73	71	56	26	53	29	29
19	64	81	80	87	120	75	70	60	28	65	29	32
20	64	76	79	80	130	73	70	60	28	86	30	28
21	64	72	73	75	130	74	70	76	21	85	31	24
22	64	72	77	70	130	74	69	113	16	87	29	22
23	64	72	90	75	125	75	68	185	16	63	26	21
24	65	72	85	75	113	76	70	220	18	54	25	21
25	70	72	75	70	106	76	71	205	17	53	22	21
26	74	72	77	60	106	76	75	182	20	54	24	20
27	75	72	91	70	109	77	77	127	22	54	24	20
28	82	71	86	80	107	72	80	94	24	47	25	130
29	81	74	81	85	107	70	78	77	24	46	25	547
30	77	77	80	100	---	71	74	69	93	45	24	654
31	79	---	74	95	---	74	---	69	---	42	23	---
TOTAL	2009	2265	2559	2268	2913	2500	2418	2711	1371	2267	901	1906
MEAN	64.8	75.5	82.5	73.2	100	80.6	80.6	87.5	45.7	73.1	29.1	63.5
MAX	82	90	107	100	130	106	111	220	93	216	39	654
MIN	58	70	65	60	70	65	68	53	16	39	22	16
AC-FT	3980	4490	5080	4500	5780	4960	4800	5380	2720	4500	1790	3780

CAL YR 1987 TOTAL 95082 MEAN 260 MAX 5550 MIN 43 AC-FT 188600
WTR YR 1988 TOTAL 26088 MEAN 71.3 MAX 654 MIN 16 AC-FT 51750

KANSAS RIVER BASIN

06880500 BIG BLUE RIVER AT SEWARD, NE--Continued

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WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT									
20...	0845	64	734	8.43	8.5	9.9	26	K160	580
NOV									
17...	0925	84	740	8.15	7.0	10.2	38	250	980
DEC									
15...	0925	73	787	8.22	0.5	13.9	15	220	180
JAN									
11...	1100	69	775	7.55	0.5	12.5	6	K14	400
FEB									
09...	0930	71	668	7.36	0.0	9.6	41	87	300
MAR									
09...	1315	97	681	8.34	5.5	13.8	21	K14	K32
APR									
04...	0800	103	650	8.18	10.5	10.5	23	K40	200
MAY									
10...	0845	69	724	8.30	15.5	8.1	57	210	4000
JUN									
07...	1020	60	--	8.15	22.0	6.2	57	1800	7600
JUL									
05...	0800	116	516	7.99	24.5	5.6	76	5300	10000
AUG									
02...	0905	29	595	7.95	24.5	5.9	45	2800	3800
SEP									
27...	1000	16	520	8.06	18.0	6.0	29	3200	3900

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT									
20...	330	96	22	40	1	95	9.3	262	0.36
NOV									
17...	320	93	22	37	0.9	93	10	255	0.35
DEC									
15...	350	99	25	42	1	130	12	312	0.42
JAN									
11...	380	110	25	44	1	90	10	279	0.38
FEB									
09...	280	80	20	35	0.9	88	12	235	0.32
MAR									
09...	300	88	20	35	0.9	88	10	241	0.33
APR									
04...	290	85	20	42	1	100	10	257	0.35
MAY									
10...	290	84	20	38	1	82	9.6	234	0.32
JUN									
07...	260	76	17	33	0.9	67	8.6	202	0.27
JUL									
05...	200	59	12	30	1	44	16	161	0.22
AUG									
02...	260	78	15	31	0.9	54	11	189	0.26
SEP									
27...	250	78	14	33	0.9	52	10	187	0.25

KANSAS RIVER BASIN
06880500 BIG BLUE RIVER AT SEWARD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 20...	45.3	49	2.00	0.070	1.2	1.3	3.3	0.390	5.8
NOV 17...	57.8	64	2.70	0.120	0.98	1.1	3.8	0.390	4.1
DEC 15...	61.5	11	2.30	0.160	0.63	0.79	3.1	0.290	4.6
JAN 11...	52.0	<4	3.80	0.150	--	--	--	0.300	3.5
FEB 09...	45.0	24	2.80	0.790	2.6	3.4	6.2	0.720	3.1
MAR 09...	63.1	20	1.30	0.080	1.0	1.1	2.4	0.340	3.4
APR 04...	71.5	104	2.20	0.120	2.8	2.9	5.1	0.190	5.6
MAY 10...	43.5	158	2.00	0.180	2.5	2.7	4.7	0.410	6.5
JUN 07...	32.7	314	3.50	0.200	1.6	1.8	5.3	0.430	5.6
JUL 05...	50.4	476	3.60	0.220	3.0	3.2	6.8	0.300	8.1
AUG 02...	14.8	156	2.30	0.100	1.5	1.6	3.9	0.380	5.9
SEP 27...	8.08	166	2.20	0.110	1.3	1.4	3.6	0.850	4.8

KANSAS RIVER BASIN

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06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE
(National water-quality assessment station)

LOCATION.--Lat 40°43'52", long 97°10'38", in SW1/4SW1/4 sec.23, T.9 N., R.2 E., Seward County, Hydrologic Unit 10270203, on right bank 60 ft downstream from bridge on county road, 6.2 mi northwest of Dorchester, and 19 mi upstream from mouth.

DRAINAGE AREA.--1,206 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1919: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,403.48 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 14, 1970, on bridge pier 60 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 26-27 and Dec. 31 to Feb. 18. Records good except for periods of estimated record, which are poor. Some diversion by pumping for irrigation above station. Natural flow of stream affected by ground-water withdrawals for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--30 years, 184 ft³/s, 133,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft³/s July 1, 1986, gage height, 22.62 ft; minimum daily, 12 ft³/s Dec. 31, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 10, 1950, reached a stage of 24.8 ft, present datum, from floodmarks, discharge, 49,400 ft³/s, from contracted-opening and flow-over-road measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 30	0557	*1150	*9.58	No peak greater than base discharge.			

Minimum daily discharge, 31 ft³/s Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	95	86	76	50	115	89	83	90	85	93	45
2	70	91	85	80	49	115	98	84	108	216	81	44
3	72	89	84	76	49	113	96	88	95	224	70	44
4	75	84	83	74	49	111	97	101	85	168	71	42
5	74	83	82	70	49	111	91	99	83	119	80	41
6	74	83	82	68	52	109	90	91	79	88	92	38
7	75	83	82	68	54	108	88	87	77	85	92	36
8	77	81	84	64	54	108	88	87	78	85	89	35
9	78	79	88	62	52	105	89	86	78	92	79	33
10	78	78	85	66	50	106	87	82	76	107	76	33
11	80	79	85	76	48	105	83	80	71	122	72	32
12	82	80	83	72	56	101	83	79	71	148	70	31
13	83	82	81	70	60	98	80	78	70	107	81	32
14	82	84	81	74	70	97	79	75	67	98	89	34
15	81	86	80	76	80	96	78	74	64	96	90	41
16	81	86	78	78	90	99	78	73	61	97	78	48
17	80	85	79	78	110	100	78	73	60	100	71	54
18	80	83	79	76	120	97	77	74	57	104	72	47
19	80	83	84	74	120	95	79	74	55	132	79	45
20	80	82	83	70	120	95	80	73	54	146	73	45
21	81	82	81	60	124	95	85	198	53	144	72	49
22	82	83	81	68	125	95	83	257	49	136	72	52
23	82	83	83	70	126	95	80	194	51	112	66	49
24	83	82	82	68	121	94	80	137	48	89	63	46
25	84	81	81	58	124	91	89	122	52	79	62	44
26	89	81	76	48	124	88	110	105	51	71	62	44
27	87	82	70	49	121	88	95	100	56	68	64	45
28	89	85	75	50	118	86	95	94	58	77	63	173
29	87	87	79	56	116	86	88	87	53	92	58	984
30	86	87	85	58	---	85	84	85	68	94	53	1010
31	93	---	78	54	---	86	---	84	---	94	48	---
TOTAL	2496	2509	2525	2087	2481	3073	2597	3104	2018	3475	2281	3296
MEAN	80.5	83.6	81.5	67.3	85.6	99.1	86.6	100	67.3	112	73.6	110
MAX	93	95	88	80	126	115	110	257	108	224	93	1010
MIN	70	78	70	48	48	85	77	73	48	68	48	31
AC-FT	4950	4980	5010	4140	4920	6100	5150	6160	4000	6890	4520	6540

CAL YR 1987 TOTAL 104376 MEAN 286 MAX 7560 MIN 70 AC-FT 207000
WTR YR 1988 TOTAL 31942 MEAN 87.3 MAX 1010 MIN 31 AC-FT 63360

KANSAS RIVER BASIN

06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-70, 1973 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: May 1988 to current year.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATIONS: Maximum daily, 3,000 mg/L Sept. 28; minimum daily, 30 mg/L Sept. 11.

SEDIMENT LOADS: Maximum daily, 6,910 tons Sept. 29; minimum daily, 2.6 tons Sept. 11.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT										
05...	1120	73	--	590	8.29	13.0	739	10.3	--	--
05...	1125	--	--	--	--	--	--	16	1000	680
NOV										
03...	1000	89	--	598	8.28	13.5	723	9.3	--	--
03...	1005	--	--	--	--	--	--	14	380	710
DEC										
01...	1000	85	--	575	7.96	3.0	737	12.9	--	--
01...	1005	--	--	--	--	--	--	71	670	1100
JAN										
26...	1030	100	--	--	7.84	0.0	748	11.0	--	--
26...	1035	--	--	--	--	--	--	14	900	3900
FEB										
22...	1100	122	--	503	7.87	5.5	721	11.2	--	--
22...	1105	--	--	--	--	--	--	30	730	940
MAR										
21...	1100	105	--	590	8.19	9.0	740	11.9	--	--
21...	1105	--	--	--	--	--	--	21	--	--
APR										
18...	1020	79	--	620	8.38	10.0	730	12.4	--	--
18...	1025	--	--	--	--	--	--	51	550	320
MAY										
24...	1130	137	--	484	7.96	17.5	740	7.3	--	--
24...	1135	--	--	--	--	--	--	68	E100000	K58000
JUN										
20...	1030	54	--	622	8.32	30.0	725	8.7	--	--
20...	1035	--	--	--	--	--	--	39	1200	1200
JUL										
18...	1000	106	--	521	8.15	25.5	723	7.3	--	--
18...	1005	--	--	--	--	--	--	34	1200	1700
AUG										
08...	1115	81	--	556	8.10	26.0	726	7.6	--	--
08...	1120	--	--	--	--	--	--	45	9200	2000
31...	1400	48	--	590	8.50	21.0	730	11.3	--	--
31...	1405	--	--	--	--	--	--	25	700	380

E Estimated value.

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

KANSAS RIVER BASIN

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06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT										
05...	260	25	79	14	33	0.9	8.0	232	73	15
05...	240	--	74	13	31	0.9	--	--	65	18
NOV										
03...	260	11	82	14	39	1	9.6	252	61	23
03...	240	--	75	14	38	1	--	--	66	26
DEC										
01...	260	43	80	14	36	1	7.3	222	61	26
01...	250	--	78	14	38	1	--	--	72	22
JAN										
26...	260	0	81	15	36	1	9.1	274	70	21
26...	270	--	84	15	38	1	--	--	71	22
FEB										
22...	210	20	65	12	30	0.9	8.9	192	53	17
22...	210	--	64	12	30	0.9	--	--	59	20
MAR										
21...	260	31	80	14	34	1	7.8	226	--	--
21...	250	--	77	14	35	1	--	--	66	20
APR										
18...	250	0	77	14	36	1	7.2	290	66	20
18...	250	--	78	14	36	1	--	--	66	21
MAY										
24...	--	--	--	--	--	--	--	--	50	16
24...	180	--	53	11	25	0.8	--	--	51	18
JUN										
20...	260	24	78	15	36	1	--	234	65	17
20...	260	--	81	14	37	1	--	--	63	18
JUL										
18...	210	34	64	13	32	1	10	180	53	--
18...	210	--	66	12	29	0.9	--	--	48	19
AUG										
08...	220	22	68	13	31	0.9	10	202	51	17
08...	230	--	72	13	31	0.9	--	--	46	18
31...	250	27	75	15	34	1	10	224	59	18
31...	240	--	75	12	30	0.9	--	--	61	20

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN NITRITE DIS- SOLVED (MG/L AS N) (00613)
OCT									
05...	0.30	31	--	378	403	0.51	74.5	--	2.18
05...	--	--	--	--	--	--	40	--	0.020
NOV									
03...	--	27	--	401	416	0.55	96.4	--	1.68
03...	--	--	--	--	--	--	90	--	0.020
DEC									
01...	--	29	--	393	398	0.53	90.2	--	2.98
01...	--	--	--	--	--	--	12	--	0.020
JAN									
26...	--	33	--	425	446	0.58	115	--	3.07
26...	--	--	--	--	--	--	12	--	0.030
FEB									
22...	0.30	28	--	341	344	0.46	112	--	2.46
22...	--	--	--	--	--	--	105	--	0.040
MAR									
21...	--	30	--	--	--	--	--	--	2.56
21...	--	--	--	--	--	--	66	--	0.040
APR									
18...	--	30	--	403	424	0.55	85.7	--	<0.010
18...	--	--	--	--	--	--	127	--	--
MAY									
24...	0.40	--	--	305	--	--	--	--	--
24...	--	--	--	--	--	--	900	--	--
JUN									
20...	--	31	--	401	390	0.55	58.5	--	1.37
20...	--	--	--	--	--	--	141	--	0.030
JUL									
18...	--	29	--	352	--	--	--	--	2.76
18...	--	--	--	--	--	--	239	--	0.040
AUG									
08...	0.30	28	--	353	353	0.48	77.2	--	2.46
08...	--	--	--	--	--	--	166	--	0.040
31...	--	26	--	372	381	0.51	48.2	--	1.89
31...	--	--	--	--	--	--	82	--	0.010

WATER QUALITY DATA. WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

		NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT										
05...		--	2.20	--	0.040	--	0.70	--	0.400	0.340
05...		2.10	--	0.280	--	0.70	0.98	3.1	0.500	--
NOV										
03...		--	1.70	--	0.030	--	0.30	--	0.660	0.420
03...		2.00	--	0.290	--	1.4	1.7	3.7	0.700	--
DEC										
01...		--	3.00	--	0.100	--	0.40	--	0.640	0.520
01...		3.40	--	0.280	--	--	<0.10	--	0.640	--
JAN										
26...		--	3.10	--	0.640	--	1.2	--	0.620	0.520
26...		3.00	--	0.780	--	0.62	1.4	4.4	0.670	--
FEB										
22...		--	2.50	--	0.920	--	1.6	--	0.800	0.540
22...		2.50	--	0.920	--	1.2	2.1	4.6	0.970	--
MAR										
21...		--	2.60	--	0.110	--	0.60	--	0.510	0.370
21...		2.80	--	0.350	--	0.33	0.68	3.5	0.580	--
APR										
18...		--	0.260	--	0.020	--	0.70	--	0.490	0.040
18...		1.10	--	0.130	--	3.2	3.3	4.4	0.680	--
MAY										
24...		--	--	--	--	--	1.2	--	0.770	--
24...		2.30	--	1.10	--	2.5	3.6	5.9	1.30	--
JUN										
20...		--	1.40	--	0.120	--	0.20	--	0.680	0.390
20...		1.40	--	0.100	--	1.3	1.4	2.8	0.460	--
JUL										
18...		--	2.80	--	<0.010	--	1.3	--	0.630	0.500
18...		2.90	--	0.080	--	1.2	1.3	4.2	0.390	--
AUG										
08...		--	2.50	--	0.040	--	1.3	--	0.740	0.490
08...		2.40	--	0.090	--	1.1	1.2	3.6	0.360	--
31...		--	1.90	--	0.040	--	1.2	--	0.620	0.420
31...		1.90	--	0.060	--	0.94	1.0	2.9	0.600	--

DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC, DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	BROMIDE, DIS- SOLVED (MG/L AS BR) (71870)	CADMIUM, DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)
OCT										
05...	1120	<10	5	190	<0.5	60	0.063	<1	<5	<3
05...	1125	--	--	--	--	--	--	--	--	--
NOV										
03...	1000	<10	6	170	<0.5	70	--	<1	<1	<3
03...	1005	--	--	--	--	--	--	--	--	--
DEC										
01...	1000	<10	4	150	<0.5	60	--	<1	<2	<3
01...	1005	--	--	--	--	--	--	--	--	--
JAN										
26...	1030	<10	5	160	<0.5	60	--	<1	<1	<3
26...	1035	--	--	--	--	--	--	--	--	--
FEB										
22...	1100	<10	4	130	<0.5	50	0.050	<1	1	<3
22...	1105	--	--	--	--	--	--	--	--	--
MAR										
21...	1100	--	5	150	<0.5	--	--	<1	1	<3
21...	1105	--	--	--	--	--	--	--	--	--
APR										
18...	1020	--	6	140	<0.5	--	--	<1	--	<3
18...	1025	--	--	--	--	--	--	--	--	--
MAY										
24...	1130	--	--	--	--	--	0.029	--	--	--
24...	1135	--	--	--	--	--	--	--	--	--
JUN										
20...	1030	--	--	170	<0.5	--	--	<1	<5	<3
20...	1035	--	--	--	--	--	--	--	--	--
JUL										
18...	1000	--	7	170	<0.5	--	--	1	--	<3
18...	1005	--	--	--	--	--	--	--	--	--
25...	1245	--	--	--	--	--	--	--	--	--
AUG										
08...	1115	--	8	170	<0.5	--	0.046	<1	--	<3
08...	1120	--	--	--	--	--	--	--	--	--
31...	1400	--	7	180	<0.5	--	--	<1	<1	<3
31...	1405	--	--	--	--	--	--	--	--	--

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

KANSAS RIVER BASIN

06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

DATE	ATRA- ZINE, TOTAL (UG/L) (39630)	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	CYAN- AZINE TOTAL (UG/L) (81757)	AME- TRYNE TOTAL (82184)	METRI- BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	METOLA- CHLOR WATER WHOLE TOT.REC (UG/L) (82612)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT										
05...	--	--	--	--	--	--	--	--	--	--
NOV										
03...	0.10	<0.10	<0.10	<0.10	<0.1	<0.1	55	13	--	92
DEC										
01...	0.10	<0.10	<0.10	<0.10	<0.1	<0.1	8	1.8	--	91
JAN										
26...	0.10	<0.10	<0.10	<0.10	<0.1	<0.1	11	3.0	--	98
FEB										
22...	0.30	0.10	<0.10	<0.10	<0.1	0.1	117	39	--	99
MAR										
21...	0.10	<0.10	<0.10	<0.10	<0.1	<0.1	73	21	--	99
APR										
18...	0.10	<0.10	<0.10	<0.10	<0.1	<0.1	100	21	67	98
MAY										
24...	13	3.10	3.9	<0.10	0.3	2.5	649	240	74	99
JUN										
20...	1.5	0.10	0.30	<0.10	<0.1	0.1	174	25	--	99
JUL										
18...	3.8	0.10	0.40	0.10	<0.1	0.2	244	70	--	99
AUG										
08...	1.8	<0.10	<0.10	0.20	<0.1	<0.1	179	39	--	99
31...	0.60	<0.10	0.10	<0.10	<0.1	<0.1	74	9.6	--	100

KANSAS RIVER BASIN

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06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

SUSPENDED-SEDIMENT DISCHARGE, MARCH TO SEPTEMBER 1988

DAY	MARCH		APRIL		MAY		JUNE	
	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
1	119	37	98	24	193	43	319	78
2	133	41	105	28	178	40	840	245
3	81	25	116	30	181	43	562	144
4	68	20	122	32	210	57	373	86
5	73	22	108	26	246	66	290	65
6	70	21	80	19	166	41	287	61
7	87	25	103	24	152	36	307	64
8	88	26	135	32	170	40	266	56
9	58	16	172	41	178	41	261	55
10	83	24	128	30	151	33	250	51
11	108	31	122	27	166	36	254	49
12	86	24	144	32	168	36	243	47
13	53	14	135	29	178	38	254	48
14	44	12	118	25	195	40	245	44
15	36	9.3	120	25	186	37	280	48
16	36	9.6	126	26	205	40	260	43
17	42	11	132	28	204	40	208	34
18	53	14	103	21	172	34	197	30
19	66	17	98	21	180	36	136	20
20	72	18	125	27	174	34	170	25
21	73	19	139	32	2060	1100	222	32
22	74	19	92	21	2880	2000	215	28
23	75	19	52	11	1440	754	370	51
24	76	19	66	14	660	244	260	34
25	77	19	148	36	488	161	158	22
26	77	18	297	88	412	117	128	18
27	77	18	146	37	393	106	160	24
28	78	18	134	34	339	86	200	31
29	78	18	148	35	301	71	200	29
30	78	18	159	36	297	68	355	65
31	84	20	---	---	326	74	---	---
TOTAL	---	621.9	---	891	----	5642	---	1627
DAY	JULY		AUGUST		SEPTEMBER			
	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN CONCEN- TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)		
1	330	76	255	64	64	7.8		
2	1150	671	202	44	63	7.5		
3	1430	865	177	34	54	6.4		
4	1070	485	201	38	56	6.4		
5	730	235	228	49	39	4.3		
6	440	105	230	57	44	4.5		
7	350	80	221	55	42	4.1		
8	358	82	184	44	41	3.9		
9	344	85	190	40	37	3.3		
10	300	87	196	40	36	3.2		
11	370	122	194	38	30	2.6		
12	480	192	168	32	63	5.3		
13	325	94	178	39	57	4.9		
14	280	74	214	51	45	4.1		
15	245	64	238	58	65	7.2		
16	248	65	180	36	52	6.7		
17	262	71	178	34	76	11		
18	250	70	166	32	52	6.6		
19	385	137	162	35	58	7.0		
20	372	147	150	30	38	4.6		
21	317	122	150	29	59	7.8		
22	308	113	143	28	59	8.3		
23	252	76	153	27	55	7.3		
24	202	48	140	24	52	6.5		
25	200	43	114	19	56	6.6		
26	182	35	97	16	64	7.6		
27	138	25	96	17	90	11		
28	162	34	78	13	3000	1400		
29	211	52	84	13	2600	6910		
30	184	47	77	11	1530	4170		
31	232	59	75	9.7	----	-----		
TOTAL	---	4461	---	1058.7	----	12646.5		

KANSAS RIVER BASIN

06881000 BIG BLUE RIVER NEAR CRETE, NE

LOCATION (REVISED).--Lat 40°35'47", long 96°57'33", in SW1/4SE1/4 sec.3, T.7 N., R.4 E., Saline County, Hydrologic Unit 10270202, on right bank near downstream side of county road bridge, 1.8 mi south of Missouri Pacific Railroad station in Crete, 3.3 mi downstream from Walnut Creek, and 3.6 mi upstream from Squaw Creek.

DRAINAGE AREA.--2,716 mi².

PERIOD OF RECORD.--March 1945 to current year. Prior to Oct. 1, 1953, discharge published only for stages above 12.0 ft because of variable backwater from dam downstream until 1952 and diurnal fluctuation from powerplant upstream in 1952-53.

REVISED RECORDS.--WSP 1919: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,311.7 ft above National Geodetic Vertical Datum of 1929. Prior Jan. 20, 1954, nonrecording gage and Jan. 21, 1954 to Mar. 27, 1986, recording gage on right bank at downstream side of county road bridge at present datum. Mar. 28, 1986 to May 11, 1988 at temporary location, on right bank 250 ft downstream from bridge at present datum.

REMARKS.--Estimated daily discharges: Jan. 2-13, 21-26, Jan. 31 to Feb. 15, and Feb. 24, 25. Records good except for periods of estimated record, which are poor. Natural flow of stream affected by ground-water and surface-water withdrawals for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--35 years (1953-88), 398 ft³/s, 288,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,600 ft³/s July 10, 1950, gage height, 28.74 ft; maximum gage height, 29.86 ft July 3, 1986, from floodmark; minimum daily discharge, 6.0 ft³/s Aug. 1, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 30	0400	*1940	*14.40	No peaks greater than base discharge.			

Minimum daily discharge, 57 ft³/s June 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	190	242	239	154	340	264	212	207	200	123	153	86
2	185	230	240	180	290	265	239	204	222	303	140	85
3	178	228	238	200	270	257	252	223	239	393	122	83
4	179	221	239	190	265	245	265	229	218	320	106	81
5	179	208	239	175	260	238	258	236	212	241	97	80
6	176	200	238	170	240	232	253	234	191	188	104	77
7	175	198	235	170	250	232	239	226	181	156	120	75
8	176	196	241	180	250	234	230	225	221	127	126	75
9	168	193	255	180	240	234	238	210	212	119	124	74
10	166	191	277	180	230	232	231	208	185	165	107	73
11	168	190	268	175	185	231	229	196	181	209	107	71
12	171	190	263	170	180	232	223	196	168	191	103	72
13	175	194	245	165	185	225	224	199	154	210	113	71
14	180	195	233	168	200	211	216	194	146	175	115	72
15	189	199	222	169	200	203	210	190	138	152	127	78
16	193	204	204	172	221	203	203	186	127	138	130	83
17	190	214	188	180	235	213	202	182	118	133	117	84
18	189	215	225	191	267	219	200	180	106	136	105	89
19	187	216	224	201	279	216	197	180	96	194	112	101
20	184	214	222	207	292	218	197	181	96	271	112	91
21	181	209	221	170	301	218	198	194	86	285	109	92
22	182	207	216	180	326	217	200	508	79	254	109	92
23	185	209	215	185	315	218	199	556	70	248	109	91
24	185	212	223	185	260	218	197	497	60	213	106	89
25	189	212	220	180	265	217	199	424	60	187	103	86
26	201	211	191	185	267	215	241	365	57	205	98	84
27	203	211	190	161	265	209	256	332	62	213	97	86
28	205	220	235	182	275	207	232	265	65	156	97	202
29	204	231	208	209	265	205	225	223	65	146	97	831
30	203	235	216	252	---	201	216	205	75	152	93	1830
31	206	---	178	330	---	203	---	196	---	153	90	---
TOTAL	5742	6295	7048	5796	7418	6932	6681	7851	4090	6156	3448	5084
MEAN	185	210	227	187	256	224	223	253	136	199	111	169
MAX	206	242	277	330	340	265	265	556	239	393	153	1830
MIN	166	190	178	154	180	201	197	180	57	119	90	71
AC-FT	11390	12490	13980	11500	14710	13750	13250	15570	8110	12210	6840	10080

CAL YR 1987 TOTAL 275553 MEAN 755 MAX 17600 MIN 150 AC-FT 546600
WTR YR 1988 TOTAL 72541 MEAN 198 MAX 1830 MIN 57 AC-FT 143900

KANSAS RIVER BASIN

281

06881200 TURKEY CREEK NEAR WILBER, NE

LOCATION.--Lat 40°28'48", long 97°00'43", in NE1/4NE1/4 sec.19, T.6 N., R.4 E., Saline County, Hydrologic Unit 10270204, on left bank near downstream side of bridge on State Highway 41, 2.8 mi west of Wilber.

DRAINAGE AREA.--460 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1919: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,322.00 ft above National Geodetic Vertical Datum of 1929. Prior to July 10, 1970, at site 0.2 mile downstream at same datum.

REMARKS.--Estimated daily discharges: Jan. 4-26, Jan. 31 to Feb. 12, Feb. 15-16, 22-25, Feb. 29 to Mar. 3, and Mar. 13-19. Records good except for periods of estimated record, which are poor. Many diversions above station for irrigation.

AVERAGE DISCHARGE.--29 years, 97.1 ft³/s, 70,350 acre-ft/yr; median of yearly mean discharges, 64.9 ft³/s, 47,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s June 13, 1984, gage height, 21.43 ft, from highwater mark; no flow Sept. 20, 21, 24, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 30	0015	*713	*9.11	No peaks greater than base discharge.			

Minimum daily discharge, 0.25 ft³/s Aug. 29, 30, Sept. 4-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	57	33	24	50	45	31	28	25	8.2	4.2	.35
2	26	61	33	24	39	44	41	28	48	18	3.4	.35
3	26	39	33	24	40	42	56	29	41	101	4.9	.40
4	25	30	32	23	41	40	54	31	32	49	4.4	.25
5	23	28	32	21	35	37	41	35	27	25	4.9	.25
6	22	26	33	20	29	37	39	33	25	17	8.2	.25
7	22	23	33	21	30	36	36	29	25	11	7.1	.25
8	22	13	33	20	34	37	34	29	23	10	4.7	.25
9	21	23	39	19	38	36	33	28	23	11	4.2	.25
10	21	24	40	18	31	35	33	28	22	15	4.9	.40
11	21	23	40	30	26	35	35	26	20	34	4.4	.60
12	21	23	38	37	27	33	33	26	19	16	4.4	.60
13	21	23	34	33	30	31	32	26	19	25	5.6	.65
14	22	24	32	40	31	29	31	26	17	24	6.3	.80
15	22	24	27	45	35	26	30	25	18	19	6.3	1.0
16	24	24	29	47	45	27	29	25	17	12	6.3	1.4
17	24	25	31	48	53	28	29	25	16	9.8	8.2	1.6
18	24	25	30	48	52	30	29	24	16	7.1	13	1.8
19	23	25	25	49	52	32	29	24	15	13	19	1.4
20	22	25	21	48	53	34	29	24	15	43	8.8	1.9
21	21	25	32	40	60	35	29	27	13	51	51	1.5
22	21	25	35	44	66	35	28	84	12	39	80	2.0
23	21	25	28	49	64	34	28	132	11	58	52	2.0
24	22	25	27	49	60	34	28	115	9.0	31	10	2.1
25	23	25	26	48	60	33	28	51	9.4	22	2.6	2.0
26	26	25	23	47	47	32	29	33	9.4	21	1.3	1.4
27	26	25	32	49	47	31	29	29	9.8	13	.75	2.0
28	28	28	32	36	47	30	29	26	7.1	8.2	.45	2.9
29	28	29	29	53	47	30	29	25	5.9	6.7	.25	480
30	26	32	56	80	---	30	29	24	7.1	4.2	.25	544
31	28	---	25	70	---	30	---	24	---	4.9	.30	---
TOTAL	738	829	993	1204	1269	1048	990	1119	556.7	727.1	332.10	1054.65
MEAN	23.8	27.6	32.0	38.8	43.8	33.8	33.0	36.1	18.6	23.5	10.7	35.2
MAX	36	61	56	80	66	45	56	132	48	101	80	544
MIN	21	13	21	18	26	26	28	24	5.9	4.2	.25	.25
AC-FT	1460	1640	1970	2390	2520	2080	1960	2220	1100	1440	659	2090

CAL YR 1987 TOTAL 84957 MEAN 233 MAX 7910 MIN 13 AC-FT 168500
WTR YR 1988 TOTAL 10860.55 MEAN 29.7 MAX 544 MIN .25 AC-FT 21540

KANSAS RIVER BASIN

06881200 TURKEY CREEK NEAR WILBER, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966-70, 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT 06...	1100	25	633	7.83	11.5	8.6	33	1400	480
NOV 04...	1210	30	582	7.91	14.0	7.5	22	670	2600
DEC 01...	1330	33	660	8.26	3.0	15.0	10	K120	120
JAN 26...	1330	47	--	7.90	0.0	11.0	36	340	9300
FEB 22...	1330	63	458	7.86	1.5	11.8	17	K110	150
MAR 21...	1440	35	--	8.15	10.5	14.2	<8	--	--
APR 18...	1400	29	647	8.42	12.5	12.9	24	K57	K19
MAY 24...	1420	119	356	7.77	18.5	7.3	160	E63000	K25000
JUN 20...	1330	16	645	8.27	26.5	7.4	54	K620	820
JUL 18...	1405	7.9	587	7.51	26.0	7.3	52	1700	1500
AUG 17...	1315	5.9	698	7.72	25.0	6.5	41	1700	1500
SEP 14...	0950	0.80	2060	7.91	18.0	7.6	27	1000	2500

E Estimated value.

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT 06...	190	58	12	67	2	65	53	255	0.35
NOV 04...	190	58	12	41	1	58	38	207	0.28
DEC 01...	250	77	15	49	1	75	36	252	0.34
JAN 26...	210	64	13	36	1	64	26	203	0.28
FEB 22...	180	54	10	31	1	63	20	178	0.24
MAR 21...	220	68	13	43	1	70	35	229	0.31
APR 18...	250	75	15	52	1	79	40	261	0.35
MAY 24...	120	36	8.5	20	0.8	36	11	111	0.15
JUN 20...	230	72	13	54	2	59	45	243	0.33
JUL 18...	170	51	10	63	2	50	67	241	0.33
AUG 17...	180	55	11	80	3	--	90	--	--
SEP 14...	190	55	13	360	12	32	450	911	1.24

KANSAS RIVER BASIN

283

06881200 TURKEY CREEK NEAR WILBER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDEED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 06...	17.2	167	1.10	0.050	0.82	0.87	2.0	0.660	8.0
NOV 04...	16.8	83	0.300	0.310	1.3	1.6	1.9	0.110	9.1
DEC 01...	22.5	7	0.440	0.100	0.28	0.38	0.82	0.280	3.5
JAN 26...	25.8	25	1.00	0.290	1.6	1.9	2.9	0.460	12
FEB 22...	30.3	19	0.860	0.430	0.57	1.0	1.9	0.400	6.9
MAR 21...	21.9	20	0.210	0.120	0.36	0.48	0.69	0.290	3.5
APR 18...	20.4	66	0.090	0.100	1.2	1.3	1.4	0.380	6.6
MAY 24...	35.8	1720	1.40	1.30	8.0	9.3	11	2.30	13
JUN 20...	10.5	178	0.480	0.090	1.0	1.1	1.6	0.280	6.6
JUL 18...	5.14	183	2.00	0.140	1.2	1.3	3.3	0.620	7.9
AUG 17...	--	131	0.790	0.070	1.9	2.0	2.8	0.570	7.7
SEP 14...	1.97	98	4.50	0.150	0.52	0.67	5.2	0.690	2.9

KANSAS RIVER BASIN

285

06882000 BIG BLUE RIVER AT BARNESTON, NE
(National stream-quality accounting network station)
(National water-quality assessment station)

LOCATION.--Lat 40°02'40", long 96°35'12", in NE1/4NW1/4 sec.24, T.1 N., R.7 E., Gage County, Hydrologic Unit 10270202, on right bank at right downstream end of bridge on State Highway 8, 0.6 mi southwest of Barneston, 1.3 mi upstream from Plum Creek, and 4.3 mi upstream from Nebraska-Kansas State line.

DRAINAGE AREA.--4,447 mi², of which about 4,370 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1932 to current year.

REVISED RECORDS.--WSP 896: 1932, 1935. WSP 1919: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,162.2 ft above National Geodetic Vertical Datum of 1929. Prior to June 9, 1941, water-stage recorder at site 0.3 mi downstream at datum 1.56 ft higher. June 9 to Nov. 17, 1941, nonrecording gage and Nov. 18, 1941, to Sept. 30, 1979, water-stage recorder at site 0.7 mi upstream at datum 2.0 ft higher.

REMARKS.--Estimated daily discharges: Jan. 3-26, Feb. 1-24, and Apr. 17-19, 21. Records fair except for periods of estimated record, which are poor. Low flow regulated by dam at unused powerplant 0.7 mi upstream. No large tributaries between station and Nebraska-Kansas State line. Some pump diversions for irrigation above station. Natural flow of stream affected by ground-water withdrawals for irrigation and return flow from irrigated areas.

AVERAGE DISCHARGE.--56 years, 846 ft³/s, 612,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,700 ft³/s June 9, 1941, gage height, 34.3 ft; minimum daily, 1 ft³/s Nov. 30, 1945.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 4	1030	*a2650	*8.13	No peaks greater than base discharge.			
a Release from reservoir upstream.							
Minimum daily discharge, 54 ft ³ /s June 27.							

FROM ADR
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	449	498	420	258	450	494	352	365	351	1490	168	132
2	419	582	426	223	430	494	447	351	358	796	156	130
3	504	655	430	240	420	485	535	356	451	494	142	124
4	74	640	431	260	390	475	544	360	398	551	137	113
5	318	565	437	290	390	463	543	373	377	593	123	110
6	303	532	439	280	380	457	528	377	341	472	106	110
7	301	504	439	310	390	449	490	391	326	353	98	110
8	307	486	439	300	400	436	482	388	303	281	112	112
9	308	461	439	290	390	425	462	362	280	613	137	108
10	303	439	444	320	380	424	444	349	300	1700	152	108
11	313	437	459	340	370	420	435	334	297	698	159	107
12	321	439	477	330	380	418	426	336	267	474	129	108
13	328	440	479	310	390	390	425	321	259	410	147	102
14	330	434	464	330	400	381	405	310	246	316	167	100
15	347	433	439	346	400	377	393	305	228	301	171	123
16	387	438	400	380	400	369	367	290	209	262	162	191
17	376	441	372	355	430	360	360	283	192	229	146	167
18	367	446	364	330	470	359	350	282	172	238	144	145
19	357	441	374	338	520	363	350	286	152	328	168	155
20	355	434	388	330	560	369	350	285	153	652	208	139
21	346	432	398	320	570	376	345	328	163	507	251	145
22	347	432	402	340	570	380	342	472	111	471	190	149
23	347	430	399	360	560	380	340	721	83	443	209	133
24	349	424	401	350	560	383	337	1290	76	385	240	129
25	354	423	403	340	559	381	342	994	65	376	220	127
26	399	421	376	420	552	375	341	777	62	317	171	131
27	400	419	366	444	535	365	333	644	54	274	163	128
28	405	422	377	416	513	367	371	562	55	248	147	150
29	407	417	377	393	495	343	393	484	56	251	140	158
30	412	419	397	400	---	338	381	412	809	202	137	294
31	430	---	363	466	---	338	---	365	---	182	136	---
TOTAL	10963	13984	12819	10409	13254	12434	12213	13753	7194	14907	4936	4038
MEAN	354	466	414	336	457	401	407	444	240	481	159	135
MAX	504	655	479	466	570	494	544	1290	809	1700	251	294
MIN	74	417	363	223	370	338	333	282	54	182	98	100
AC-FT	21750	27740	25430	20650	26290	24660	24220	27280	14270	29570	9790	8010

CAL YR 1987 TOTAL 693616 MEAN 1900 MAX 35300 MIN 35 AC-FT 1376000
WTR YR 1988 TOTAL 130904 MEAN 358 MAX 1700 MIN 54 AC-FT 259600

KANSAS RIVER BASIN

06882000 BIG BLUE RIVER AT BARNESTON, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-69, October 1980 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1966 to September 1969.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 29.0°C on several days in summer periods; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TUR- BID- ITY (FTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT										
05...	1200	322	--	675	8.40	16.5	739	--	11.4	--
05...	1205	--	--	--	--	--	--	--	28	300
NOV										
02...	1100	577	--	740	8.40	13.5	735	17	10.4	--
02...	1105	--	--	--	--	--	--	--	11	1400
DEC										
01...	1100	421	--	721	8.45	3.0	731	--	14.8	--
01...	1105	--	--	--	--	--	--	--	6	120
JAN										
26...	1130	413	--	--	8.19	0.5	740	7.1	14.6	--
26...	1135	--	--	--	--	--	--	--	31	130
FEB										
23...	1130	554	--	553	8.23	1.5	737	--	14.2	--
23...	1135	--	--	--	--	--	--	--	17	250
MAR										
21...	1130	377	--	696	8.78	7.5	735	5.5	15.9	--
21...	1135	--	--	--	--	--	--	--	44	--
APR										
20...	1115	347	--	665	8.88	14.5	741	--	12.2	--
20...	1120	--	--	--	--	--	--	--	35	K53
MAY										
24...	1005	1480	--	678	8.14	19.0	734	12	8.6	--
24...	1010	--	--	--	--	--	--	--	79	2900
JUN										
21...	0925	147	--	756	8.70	26.5	738	--	7.1	--
21...	0930	--	--	--	--	--	--	--	31	<33
JUL										
19...	1025	245	--	622	8.45	27.5	746	4.6	7.2	--
19...	1030	--	--	--	--	--	--	--	23	350
AUG										
09...	0915	276	--	654	8.56	28.0	734	--	6.6	--
09...	0920	--	--	--	--	--	--	--	25	280
30...	1400	136	--	552	8.59	23.5	739	59	8.3	--
30...	1405	--	--	--	--	--	--	--	44	K490

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

KANSAS RIVER BASIN

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06882000 BIG BLUE RIVER AT BARNESTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	STREP- TOCOCCHI FECAL KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARE WH WAT TOT FLD (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WAT WH TOT IT FIELD (MG/L AS CACO3) (00419)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
OCT										
05...	--	250	32	75	16	46	1	8.8	221	69
05...	310	330	--	95	22	47	1	--	--	74
NOV										
02...	--	310	44	91	19	50	1	8.0	264	90
02...	460	290	--	85	19	52	1	--	--	96
DEC										
01...	--	300	33	88	19	53	1	6.4	266	79
01...	180	290	--	85	19	56	1	--	--	91
JAN										
26...	--	290	44	85	18	53	1	8.1	240	79
26...	440	280	--	83	18	54	1	--	--	79
FEB										
23...	--	220	32	66	14	39	1	10	192	62
23...	110	220	--	66	14	39	1	--	--	73
MAR										
21...	--	280	51	83	18	54	1	6.8	234	76
21...	--	280	--	82	18	56	2	--	--	84
APR										
20...	--	260	27	71	19	57	2	7.5	231	88
20...	K48	250	--	69	18	55	2	--	--	87
MAY										
24...	--	240	34	69	16	48	1	7.5	206	73
24...	7600	240	--	70	16	47	1	--	--	74
JUN										
21...	--	260	10	76	17	59	2	8.4	252	78
21...	K120	270	--	82	16	62	2	--	--	78
JUL										
19...	--	210	20	61	14	47	1	9.0	185	64
19...	120	180	--	62	7.3	46	2	--	--	59
AUG										
09...	--	220	13	64	14	53	2	10	208	64
09...	580	210	--	64	13	56	2	--	--	60
30...	--	200	29	57	13	44	1	10	166	55
30...	230	180	--	54	9.8	40	1	--	--	49

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
OCT										
05...	33	0.30	27	428	422	0.58	372	--	2.39	0.010
05...	36	--	--	--	--	--	--	66	--	--
NOV										
02...	36	0.30	22	483	482	0.66	752	--	1.57	0.030
02...	38	--	--	--	--	--	--	37	--	--
DEC										
01...	38	--	22	477	479	0.65	542	--	2.58	0.020
01...	38	--	--	--	--	--	--	6	--	--
JAN										
26...	38	0.40	26	469	470	0.64	523	--	3.26	0.040
26...	38	--	--	--	--	--	--	8	--	--
FEB										
23...	25	0.30	23	366	366	0.50	547	--	2.05	0.050
23...	28	--	--	--	--	--	--	25	--	--
MAR										
21...	38	0.20	18	463	442	0.63	471	--	1.77	0.030
21...	39	--	--	--	--	--	--	26	--	--
APR										
20...	46	--	12	438	441	0.60	410	--	0.460	0.030
20...	41	--	--	--	--	--	--	54	--	--
MAY										
24...	33	0.40	23	422	404	0.57	1690	--	1.79	0.110
24...	34	--	--	--	--	--	--	248	--	--
JUN										
21...	45	--	24	473	465	0.64	188	--	1.05	0.050
21...	45	--	--	--	--	--	--	38	--	--
JUL										
19...	37	0.50	24	380	386	0.52	251	--	2.91	0.090
19...	39	--	--	--	--	--	--	33	--	--
AUG										
09...	45	0.40	16	397	395	0.54	296	--	0.660	0.090
09...	44	--	--	--	--	--	--	31	--	--
30...	34	0.30	28	338	353	0.46	124	--	1.89	0.110
30...	36	--	--	--	--	--	--	126	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

		NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	
	OCT											
	05...	--	2.40	--	<0.010	--	1.2	--	--	--	0.780	
	05...	2.30	--	0.090	--	0.79	0.88	3.2	0.630	--	--	
	NOV											
	02...	--	1.60	0.040	0.060	1.2	1.2	--	0.490	0.350	0.330	
	02...	1.50	--	0.320	--	2.4	2.7	4.2	0.530	--	--	
	DEC											
	01...	--	2.60	--	0.200	--	0.70	--	0.440	--	0.370	
	01...	2.80	--	0.390	--	0.71	1.1	3.9	0.500	--	--	
	JAN											
	26...	--	3.30	0.340	0.320	0.76	1.1	--	0.520	0.450	0.400	
	26...	3.20	--	0.430	--	1.6	2.0	5.2	0.550	--	--	
	FEB											
	23...	--	2.10	--	0.470	--	1.0	--	0.580	--	0.440	
	23...	2.70	--	0.540	--	0.76	1.3	4.0	0.650	--	--	
	MAR											
	21...	--	1.80	0.020	0.030	1.5	1.5	--	0.340	0.260	0.210	
	21...	2.10	--	0.110	--	1.5	1.6	3.7	0.490	--	--	
	APR											
	20...	--	0.490	--	0.030	--	1.8	--	0.410	--	0.160	
	20...	0.450	--	0.170	--	2.7	2.9	3.3	0.470	--	--	
	MAY											
	24...	--	1.90	0.340	0.440	1.3	1.6	--	0.560	0.510	0.410	
	24...	1.70	--	0.610	--	1.8	2.4	4.1	0.180	--	--	
	JUN											
	21...	--	1.10	--	0.180	--	1.3	--	0.580	--	0.460	
	21...	1.00	--	0.330	--	0.97	1.3	2.3	0.590	--	--	
	JUL											
	19...	--	3.00	0.020	0.050	1.4	1.4	--	0.640	0.550	0.500	
	19...	2.80	--	0.130	--	1.1	1.2	4.0	0.550	--	--	
	AUG											
	09...	--	0.750	--	0.440	--	1.2	--	0.560	--	0.410	
	09...	0.620	--	0.360	--	1.0	1.4	2.0	0.560	--	--	
	30...	--	2.00	0.170	0.230	2.3	2.5	--	0.760	--	0.470	
	30...	2.00	--	0.300	--	1.2	1.5	3.5	0.780	--	--	
DATE	TIME	ALUM- INUM, DIS- SOLVED (UG/L AS AL) (01106)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE) (01010)	BORON, DIS- SOLVED (UG/L AS B) (01020)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)
OCT												
05...	1200	<10	--	6	180	<0.5	70	0.043	--	<1	--	<5
05...	1205	--	--	--	--	--	--	--	--	--	--	--
NOV												
02...	1100	<10	--	5	150	<0.5	70	--	--	<1	--	<1
02...	1105	--	11	--	--	--	--	--	<15	--	<10	--
DEC												
01...	1100	<10	--	4	140	<0.5	60	--	--	<1	--	<1
01...	1105	--	--	--	--	--	--	--	--	--	--	--
JAN												
26...	1130	--	--	4	140	<0.5	20	--	--	1	--	<1
26...	1135	--	--	--	--	--	--	--	--	--	--	--
FEB												
23...	1130	<10	--	3	110	<0.5	50	0.032	--	<1	--	<1
23...	1135	--	6	--	--	--	--	--	<15	--	<10	--
MAR												
21...	1130	<10	--	4	120	<0.5	--	--	--	<1	--	2
21...	1135	--	--	--	--	--	--	--	--	--	--	--
APR												
20...	1115	--	--	6	110	<0.5	--	--	--	<1	--	--
20...	1120	--	--	--	--	--	--	--	--	--	--	--
MAY												
24...	1005	20	--	7	140	<0.5	--	0.030	--	<1	--	<1
24...	1010	--	12	--	--	--	--	--	<15	--	<10	--
JUN												
21...	0925	--	--	10	140	<0.5	--	--	--	<1	--	1
21...	0930	--	--	--	--	--	--	--	--	--	--	--
JUL												
19...	1025	<10	--	7	150	<0.5	--	--	--	<2	--	<2
19...	1030	--	--	--	--	--	--	--	--	--	--	--
25...	0540	--	--	--	--	--	--	--	--	--	--	--
AUG												
09...	0915	--	--	12	130	<0.5	--	0.042	--	2	--	<1
09...	0920	--	11	--	--	--	--	--	<15	--	10	--
30...	1400	--	--	7	130	<0.5	--	--	--	<1	--	<1
30...	1405	--	--	--	--	--	--	--	--	--	--	--

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06882000 BIG BLUE RIVER AT BARNESTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible][illegible]

KANSAS RIVER BASIN

06882000 BIG BLUE RIVER AT BARNESTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00689)	CYANIDE DIS- SOLVED (MG/L AS CN) (00723)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT											
05...	4.3	9.6	4.0	--	4.7	1.3	<0.01	49	43	--	98
05...	--	--	--	5.7	--	--	--	--	--	--	--
NOV											
02...	--	--	--	--	7.6	1.7	--	51	79	--	73
02...	--	--	--	--	--	--	--	--	--	--	--
DEC											
01...	--	--	--	--	4.8	0.7	--	5	5.7	--	100
01...	--	--	--	3.5	--	--	--	--	--	--	--
JAN											
26...	--	--	--	--	9.2	--	--	11	12	--	91
26...	--	--	--	9.0	--	--	--	--	--	--	--
FEB											
23...	1.2	8.1	1.2	--	5.0	0.7	<0.01	30	45	--	100
23...	--	--	--	6.3	--	--	--	--	--	--	--
MAR											
21...	--	--	--	--	3.8	1.9	--	51	52	--	99
21...	--	--	--	7.6	--	--	--	--	--	--	--
APR											
20...	--	--	--	--	6.0	0.6	--	74	69	--	96
20...	--	--	--	12	--	--	--	--	--	--	--
MAY											
24...	7.7	27	7.1	--	7.9	3.7	<0.01	245	979	84	99
24...	--	--	--	11	--	--	--	--	--	--	--
JUN											
21...	--	--	--	--	4.2	4.9	--	47	19	--	96
21...	--	--	--	6.2	--	--	--	--	--	--	--
JUL											
19...	--	--	--	--	12	2.4	--	43	28	--	100
19...	--	--	--	7.9	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	96	104	--	--
AUG											
09...	2.0	11	1.9	--	6.9	2.3	<0.01	30	22	--	98
09...	--	--	--	6.0	--	--	--	--	--	--	--
30...	--	--	--	--	5.0	3.4	--	105	39	96	100
30...	--	--	--	8.3	--	--	--	--	--	--	--

KANSAS RIVER BASIN

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06883000 LITTLE BLUE RIVER NEAR DEWEESE, NE

LOCATION.--Lat 40°19'58", long 98°04'00", in SW1/4NW1/4 sec.12, T.4 N., R.7 W., Nuckolls County, Hydrologic Unit 10270206, on right bank 10 ft downstream from bridge on State Highway 14, 1 mi upstream from Walnut Creek, 3.2 mi southeast of Deweese, and 6 mi northwest of Angus.

DRAINAGE AREA.--979 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1953 to September 1972, October 1974 to current year.

REVISED RECORDS.--WSP 1919: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,632.67 ft above National Geodetic Vertical Datum of 1929. Prior to May 16, 1957, non-recording gage and Oct. 1, 1974, to Mar. 24, 1981, recording gage at present site and datum; May 16, 1957, to Sept. 30, 1972, and Mar. 25, 1981 to Mar. 24, 1982, at site 1,500 ft upstream from bridge at present datum.

REMARKS.--Estimated daily discharges: Dec. 25 to Jan. 29, Jan. 31 to Feb. 15, and Mar. 12-16. Records good for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--33 years (water years 1954-72, 1975-88), 147 ft³/s, 106,500 acre-ft/yr; median of yearly mean discharges, 128 ft³/s, 92,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,100 ft³/s Aug. 31, 1969, gage height, 18.57 ft; minimum daily, 3.2 ft³/s Aug. 11, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 26, 1951, reached a stage of 14.9 ft, from information by local residents, discharge, 16,000 ft³/s, based on records for former station at Angus.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 28	1330	*3000	*7.61	No other peak greater than base discharge.			
Minimum daily discharge, 3.2 ft ³ /s Aug 11.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	62	70	54	80	85	71	74	68	17	6.8	4.1
2	58	63	70	60	68	85	81	76	68	17	4.2	4.6
3	57	64	71	58	64	81	78	82	66	13	3.9	4.2
4	59	64	71	56	62	80	75	79	65	10	6.8	4.2
5	59	63	71	54	58	79	75	74	63	8.1	8.5	4.2
6	58	62	70	54	56	80	72	72	62	6.6	7.1	4.2
7	57	62	70	50	62	81	73	73	61	7.0	6.6	4.5
8	58	64	71	54	70	80	73	72	61	102	4.9	4.2
9	57	62	69	50	72	79	73	70	58	53	4.0	4.9
10	57	61	68	52	68	80	71	70	56	35	3.7	6.1
11	59	62	68	56	68	79	72	71	53	32	3.2	6.7
12	59	63	68	60	94	76	73	75	50	26	3.3	7.1
13	58	63	69	56	130	72	75	74	46	21	22	9.7
14	57	63	68	64	190	68	74	72	41	18	47	12
15	57	66	70	74	235	66	75	71	34	17	25	20
16	57	67	70	76	231	68	74	68	34	16	71	51
17	56	65	69	78	162	71	74	68	30	18	70	56
18	57	64	67	70	162	71	75	68	27	15	46	29
19	57	63	67	62	156	71	76	68	22	21	27	27
20	57	64	68	54	156	73	75	66	19	31	20	23
21	58	64	68	60	136	73	75	70	14	24	15	23
22	59	65	68	64	120	73	75	72	11	54	11	22
23	59	65	68	70	106	73	76	73	12	44	8.4	23
24	59	65	67	64	96	72	75	71	9.4	44	6.6	23
25	67	67	66	58	94	71	75	68	8.2	31	5.5	24
26	73	67	68	54	94	70	77	65	7.1	19	5.2	24
27	65	69	70	70	91	70	76	63	5.8	13	6.4	25
28	62	74	66	130	90	71	75	64	5.9	11	5.4	1740
29	62	73	60	190	87	69	74	63	6.2	9.9	4.9	1140
30	60	71	60	116	---	69	75	64	17	10	4.6	528
31	61	---	58	94	---	69	---	66	---	8.4	4.0	---
TOTAL	1837	1947	2104	2162	3158	2305	2238	2182	1080.6	752.0	468.0	3858.7
MEAN	59.3	64.9	67.9	69.7	109	74.4	74.6	70.4	36.0	24.3	15.1	129
MAX	73	74	71	190	235	85	81	82	68	102	71	1740
MIN	56	61	58	50	56	66	71	63	5.8	6.6	3.2	4.1
AC-FT	3640	3860	4170	4290	6260	4570	4440	4330	2140	1490	928	7650

CAL YR 1987 TOTAL 64858 MEAN 178 MAX 4540 MIN 43 AC-FT 128600
WTR YR 1988 TOTAL 24092.3 MEAN 65.8 MAX 1740 MIN 3.2 AC-FT 47790

KANSAS RIVER BASIN

06883000 LITTLE BLUE RIVER NEAR DEWEESE, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959-70, 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1979 to September 1981.

WATER TEMPERATURES: February 1979 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 508 microsiemens Feb. 14, 1980; minimum daily, 82 microsiemens May 4, 1979.

WATER TEMPERATURES: Maximum, 28.0°C Aug. 8, 9, 10, 1980; minimum, 1.0°C Jan. 29, 30, 31, Feb. 1, 1980.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT									
14...	0930	57	488	8.22	12.5	10.3	11	K110	170
NOV									
10...	1100	61	479	8.22	4.0	13.5	5	K110	160
DEC									
09...	1130	69	500	8.27	4.0	13.0	7	K42	130
JAN									
06...	1200	57	516	7.51	0.0	--	<5	--	K56
FEB									
02...	1130	68	373	7.49	0.0	12.2	47	200	K11000
MAR									
01...	1400	86	460	8.25	10.5	11.1	8	<10	K47
APR									
26...	1125	78	505	8.20	10.5	11.2	<8	K740	840
JUN									
01...	0845	65	458	8.10	18.0	7.9	9	1100	1200
28...	1450	5.0	--	8.96	34.0	12.5	23	380	820
JUL									
27...	1420	14	380	8.66	32.0	10.1	29	670	210
AUG									
22...	0915	10	420	8.23	24.0	9.3	17	430	680
SEP									
21...	0830	23	--	7.85	16.0	10.1	14	700	960

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

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)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
OCT									
14...	190	61	9.7	18	0.6	42	12	143	0.19
NOV									
10...	210	68	10	19	0.6	39	13	149	0.20
DEC									
09...	220	69	11	19	0.6	42	14	155	0.21
JAN									
06...	240	78	12	22	0.6	43	13	168	0.23
FEB									
02...	150	47	8.4	16	0.6	27	11	109	0.15
MAR									
01...	210	67	10	19	0.6	39	13	148	0.20
APR									
26...	200	63	10	18	0.6	34	13	138	0.19
JUN									
01...	200	64	10	17	0.5	37	12	140	0.19
28...	170	53	9.4	23	0.8	25	15	125	0.17
JUL									
27...	160	49	8.0	17	0.6	28	11	113	0.15
AUG									
22...	180	56	9.0	18	0.6	21	11	115	0.16
SEP									
21...	180	57	8.0	16	0.5	27	11	119	0.16

KANSAS RIVER BASIN

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06883000 LITTLE BLUE RIVER NEAR DEWEESE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 14...	22.0	5	0.750	0.070	0.16	0.23	0.98	0.210	2.6
NOV 10...	24.5	5	1.40	0.070	0.15	0.22	1.6	0.260	2.9
DEC 09...	28.9	9	1.40	0.090	0.21	0.30	1.7	0.250	2.4
JAN 06...	25.9	7	1.70	0.090	--	<0.10	--	0.260	2.5
FEB 02...	20.1	56	1.20	0.400	2.0	2.4	3.6	0.790	15
MAR 01...	34.4	30	1.60	0.080	0.28	0.36	2.0	0.330	2.0
APR 26...	29.1	34	1.00	0.090	0.63	0.72	1.7	0.320	2.8
JUN 01...	24.6	15	0.660	0.030	0.67	0.70	1.4	0.290	2.6
JUN 28...	1.69	<4	<0.020	0.030	0.57	0.60	--	0.180	4.0
JUL 27...	4.27	63	0.540	0.050	1.2	1.3	1.8	0.370	5.8
AUG 22...	3.10	35	0.670	0.030	0.71	0.74	1.4	0.440	3.8
SEP 21...	7.39	47	0.750	<0.020	--	0.90	1.7	0.650	4.6

KANSAS RIVER BASIN

06883570 LITTLE BLUE RIVER NEAR ALEXANDRIA, NE

LOCATION.--Lat 40°12'25", long 97°23'18", in SE1/4SE1/4 sec.23, T.3 N., R.1 W., Thayer County, Hydrologic Unit 10270206, on left bank 10 ft upstream from bridge on State Highway 53, 2.7 mi south of Alexandria, 9.8 mi downstream from Dry Creek, and 5.7 mi upstream from Big Sandy Creek.

DRAINAGE AREA.--1,557 mi².

PERIOD OF RECORD.--July 1959 to September 1972 (published as "near Gilead"), April 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,359.29 ft above National Geodetic Vertical Datum of 1929. July 1959 to Sept. 30, 1972, at site 2.3 mi upstream at datum 12.0 ft higher. Apr. 23, 1974 to Aug. 7, 1984, at site 750 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Oct. 12, 14, Dec. 15-20, Dec. 25 to Feb. 20, and Mar. 12-16. Records good periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--27 years (water years 1960-72, 1975-88), 249 ft³/s, 180,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft³/s Mar. 28, 1960, gage height, 17.30 ft, site and datum then in use; maximum gage height, 19.15 ft Aug. 5, 1985; minimum daily discharge, 2.9 ft³/s Aug. 9, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 29	1715	*2110	*10.55	No other peak greater than base discharge.			
Minimum daily discharge, 11 ft ³ /s Aug. 11.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	118	130	70	200	142	141	115	117	73	24	13
2	86	111	127	74	185	132	160	115	115	210	18	14
3	83	107	127	78	165	124	147	122	108	113	18	14
4	82	104	125	76	160	121	145	135	101	64	15	13
5	80	102	125	72	150	120	139	136	93	45	15	13
6	79	104	125	70	140	120	132	137	89	35	16	14
7	80	105	128	70	140	120	128	126	87	28	17	15
8	82	103	132	70	170	116	126	116	83	31	14	14
9	83	100	133	66	160	118	126	109	78	30	14	14
10	85	101	131	62	150	120	126	107	77	488	13	14
11	88	102	126	80	150	116	123	105	76	268	11	14
12	90	105	124	90	170	104	119	105	70	129	14	13
13	93	104	120	82	200	96	123	105	62	78	14	14
14	98	108	119	100	230	94	121	108	56	52	48	16
15	103	109	106	110	250	92	123	103	51	36	37	20
16	103	112	84	120	280	100	121	101	47	28	37	24
17	99	114	84	130	300	111	121	100	43	28	28	18
18	93	109	94	140	270	111	123	97	40	34	30	23
19	93	109	106	135	260	113	123	95	34	56	54	44
20	92	109	118	120	260	114	123	94	29	130	58	39
21	95	110	121	122	261	117	119	104	25	249	48	33
22	95	111	119	130	254	117	121	115	21	118	34	29
23	96	110	121	140	218	117	126	124	18	72	30	27
24	96	112	117	145	188	117	123	124	15	71	25	27
25	103	120	100	135	167	115	119	115	14	65	21	27
26	119	119	80	150	158	115	117	108	14	53	18	26
27	115	118	86	165	153	118	117	102	14	44	21	26
28	112	131	76	180	151	117	118	95	13	38	16	42
29	112	134	76	200	146	116	116	98	20	34	15	1030
30	109	138	76	240	---	118	114	96	44	31	15	1350
31	113	---	72	210	---	114	---	99	---	28	14	---
TOTAL	2944	3339	3408	3632	5686	3565	3780	3411	1654	2759	752	2980
MEAN	95.0	111	110	117	196	115	126	110	55.1	89.0	24.3	99.3
MAX	119	138	133	240	300	142	160	137	117	488	58	1350
MIN	79	100	72	62	140	92	114	94	13	28	11	13
AC-FT	5840	6620	6760	7200	11280	7070	7500	6770	3280	5470	1490	5910

CAL YR 1987 TOTAL 149426 MEAN 409 MAX 15700 MIN 62 AC-FT 296400
WTR YR 1988 TOTAL 37910 MEAN 104 MAX 1350 MIN 11 AC-FT 75190

KANSAS RIVER BASIN

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06883940 BIG SANDY CREEK AT ALEXANDRIA, NE

LOCATION.--Lat 40°14'06", long 97°23'20", in SE1/4SE1/4 sec.11, T.3 N., R.1 W., Thayer County, Hydrologic Unit 10270206, on right bank 15 ft upstream from bridge on State Highway 53, 0.8 mi south of Alexandria.

DRAINAGE AREA.--607 mi².

PERIOD OF RECORD.--October 1979 to current year.

REVISED RECORDS.--WRD NE-82-1: 1981(M).

GAGE.--Water stage recorder. Elevation of gage is 1,395 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges Jan. 23-26 and Feb. 5-8, 11, 12. Records good except for periods of estimated record, which are fair. Natural flow of stream affected by ground-water withdrawals and return flow from irrigated areas.

AVERAGE DISCHARGE.--9 years, 116 ft³/s, 84,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,900 ft³/s June 13, 1984, gage height, 16.71 ft; minimum daily, 16 ft³/s Apr. 6, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 28	1645	*733	*6.28	No peaks greater than base discharge.			
Minimum daily discharge, 21 ft ³ /s June 22-24, 26.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	33	33	31	53	26	31	29	27	358	48	27
2	27	33	33	31	43	26	35	29	26	162	46	26
3	27	32	33	31	35	26	31	29	26	79	44	26
4	27	30	33	30	33	25	30	29	26	53	45	25
5	27	29	34	30	30	26	30	28	25	41	49	25
6	28	29	34	29	29	26	30	28	25	36	50	25
7	28	30	33	29	30	25	30	28	26	34	58	26
8	28	30	32	29	30	25	31	28	25	40	57	25
9	29	30	32	29	30	25	32	28	24	46	50	25
10	29	29	32	30	29	26	31	28	24	108	47	25
11	29	29	32	30	26	27	31	27	24	149	53	25
12	30	30	32	30	27	27	31	27	24	91	50	24
13	30	32	32	30	40	27	31	26	25	63	59	23
14	30	32	32	31	52	27	30	27	24	53	112	24
15	31	33	32	31	36	27	31	28	24	47	85	24
16	31	32	32	31	42	27	31	28	24	50	59	24
17	31	32	32	32	44	27	32	28	23	49	44	24
18	31	32	32	32	41	27	31	29	22	52	38	24
19	31	32	32	35	40	27	31	29	23	62	36	25
20	31	32	32	41	38	27	31	29	22	158	35	23
21	30	33	32	38	38	27	31	32	22	150	63	23
22	30	33	32	35	40	27	31	31	21	98	91	23
23	30	32	33	40	33	27	30	31	21	61	63	23
24	30	32	33	47	31	28	31	30	21	51	47	23
25	31	32	32	43	31	28	30	29	22	46	38	23
26	32	32	32	45	31	27	30	28	21	47	34	23
27	31	32	31	46	30	27	29	28	23	52	32	23
28	31	33	31	44	29	27	29	28	23	55	31	260
29	32	33	31	47	26	27	29	28	25	59	29	197
30	31	33	31	59	---	28	29	27	217	60	28	69
31	31	---	31	66	---	29	---	28	---	52	27	---
TOTAL	921	946	998	1132	1017	828	920	882	905	2462	1548	1182
MEAN	29.7	31.5	32.2	36.5	35.1	26.7	30.7	28.5	30.2	79.4	49.9	39.4
MAX	32	33	34	66	53	29	35	32	217	358	112	260
MIN	27	29	31	29	26	25	29	26	21	34	27	23
AC-FT	1830	1880	1980	2250	2020	1640	1820	1750	1800	4880	3070	2340

CAL YR 1987 TOTAL 53329 MEAN 146 MAX 5940 MIN 25 AC-FT 105800
WTR YR 1988 TOTAL 13741 MEAN 37.5 MAX 358 MIN 21 AC-FT 27260

KANSAS RIVER BASIN

06884000 LITTLE BLUE RIVER NEAR FAIRBURY, NE

LOCATION.--Lat 40°06'54", long 97°10'13", in NW1/4NE1/4 sec.26, T.2 N., R.2 E., Jefferson County, Hydrologic Unit 10270207, at right downstream wingwall of bridge on State Highway 15, 0.8 mi south of Fairbury, and 5.2 mi upstream from Rose Creek.

DRAINAGE AREA.--2,350 mi².

PERIOD OF RECORD.--May 1908 to September 1915, October 1928 to September 1956 (published as "near Endicott"), October 1956 to current year. Monthly discharge only for some periods, published in WSP 1310.

REVISED RECORDS.--WSP 1086: 1941(M). WSP 1390: 1908(M), 1912, 1915, 1935, 1939, 1945(M). WSP 1510: 1947 (calendar year figures only). WSP 1919: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,282.19 ft above National Geodetic Vertical Datum of 1929. May 23, 1908, to Sept. 30, 1915, nonrecording gage at present site at different datum. Apr. 26, 1929, to Sept. 24, 1957, nonrecording gage or water-stage recorder at site 3.5 mi downstream at various datums.

REMARKS.--Estimated daily discharges: Dec. 15-19, Dec. 26 to Jan 28, Jan. 31 to Feb. 13, Feb. 15-16, and Mar. 13-16. Records good except for periods of estimated record, which are poor. Some regulation at low stage by thermoelectric plant above station. Natural flow of stream affected by irrigation development above station.

AVERAGE DISCHARGE.--67 years, 382 ft³/s, 276,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,900 ft³/s June 13, 1984, gage height, 16.98 ft; maximum gage height, 18.96 ft Oct. 12, 1973; minimum daily discharge, 14 ft³/s Nov. 22, 1929, discharge measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 30	0015	*2970	*6.19	No peaks greater than base discharge.			

Minimum daily discharge, 38 ft³/s June 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	165	182	126	240	190	203	175	257	430	74	44
2	145	161	180	140	210	185	255	177	192	435	66	44
3	140	145	182	140	225	184	222	182	177	320	61	44
4	139	150	183	145	220	182	211	175	166	188	61	42
5	139	150	184	150	200	175	206	192	151	135	61	40
6	135	150	185	145	195	175	195	190	147	105	63	40
7	135	150	187	140	210	176	184	186	149	87	65	39
8	136	150	188	135	220	176	176	184	123	83	73	39
9	135	150	191	130	200	177	189	176	129	127	75	39
10	136	150	194	140	195	173	186	168	123	311	70	39
11	139	150	193	150	210	172	176	164	116	508	64	40
12	128	148	192	160	250	170	171	165	116	317	64	40
13	138	150	190	140	300	160	171	161	114	193	85	39
14	144	153	192	160	315	155	166	159	104	138	124	40
15	146	157	190	175	300	155	163	160	95	108	164	45
16	150	157	180	190	280	165	160	152	92	87	126	49
17	147	158	160	190	306	175	161	149	86	98	100	50
18	146	159	160	185	313	177	163	148	81	109	78	46
19	142	157	170	185	306	174	160	147	72	178	99	57
20	141	157	187	180	291	173	159	141	64	233	106	73
21	142	159	186	195	287	172	160	198	57	359	100	66
22	142	161	184	210	267	174	157	221	52	305	122	62
23	144	161	186	220	257	174	159	238	49	182	129	57
24	144	162	187	210	232	174	161	202	45	135	95	55
25	151	167	182	190	220	174	159	190	42	125	77	55
26	167	168	160	190	208	170	160	169	38	113	66	54
27	160	169	145	195	199	170	161	159	39	103	63	55
28	168	178	140	200	193	169	161	151	43	103	60	76
29	157	185	145	196	191	166	159	150	44	100	54	665
30	155	185	140	233	---	163	165	153	187	98	50	2050
31	173	---	130	270	---	164	---	150	---	89	46	---
TOTAL	4517	4762	5455	5415	7040	5339	5279	5332	3150	5902	2541	4084
MEAN	146	159	176	175	243	172	176	172	105	190	82.0	136
MAX	173	185	194	270	315	190	255	238	257	508	164	2050
MIN	128	145	130	126	191	155	157	141	38	83	46	39
AC-FT	8960	9450	10820	10740	13960	10590	10470	10580	6250	11710	5040	8100

CAL YR 1987 TOTAL 253320 MEAN 694 MAX 24400 MIN 120 AC-FT 502500
WTR YR 1988 TOTAL 58816 MEAN 161 MAX 2050 MIN 38 AC-FT 116700

KANSAS RIVER BASIN

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06884025 LITTLE BLUE RIVER AT HOLLENBERG, KS
(National water-quality assessment station)

LOCATION.--Lat 39°58'48", long 97°00'16", NE1/4SW1/4 sec.8, T.1 S., R.4 E., Washington County, Hydrologic Unit 10270207, on right bank and 2 ft downstream from bridge on county road, 0.6 mi west of Hollenberg, and 1.75 mi downstream from Nebraska-Kansas State line.

DRAINAGE AREA.--2,752 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1973 to February 1974 (discharge measurements only), March 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,216.10 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Dec. 15-20, Dec. 25 to Feb. 21, and Mar. 12-16. Records good except for periods of estimated record, which are poor. Discharge measurements made prior to 1974 water year are published in table of miscellaneous sites in WDR NE-73.

AVERAGE DISCHARGE.--14 years, 546 ft³/s, 395,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,600 ft³/s June 13, 1984, gage height, 21.00 ft; minimum daily, 39 ft³/s June 28, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 12, 1973, reached a stage of 23.07 ft, present datum, from floodmark, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 30	1130	*3700	*8.19	No other peak greater than base discharge.			

Minimum daily discharge, 39 ft³/s June 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	290	239	150	310	247	238	190	218	1040	76	68
2	189	214	228	165	300	239	335	189	224	670	79	67
3	185	207	227	175	280	233	347	193	187	485	67	66
4	182	197	227	175	270	234	301	201	168	310	72	60
5	178	192	229	170	250	230	297	206	154	193	70	58
6	172	193	230	170	235	232	279	206	148	154	67	57
7	167	194	230	175	250	228	261	205	141	133	67	56
8	168	192	233	170	270	222	249	194	137	117	64	54
9	168	197	236	155	250	225	246	186	124	219	72	57
10	170	195	236	145	245	226	255	177	127	170	69	56
11	179	195	234	180	280	218	241	174	124	401	69	56
12	179	195	226	200	310	210	227	173	120	341	66	53
13	167	194	219	180	350	195	220	173	115	232	87	53
14	170	197	216	200	370	195	216	170	110	175	98	60
15	175	200	200	220	370	195	212	170	107	138	144	67
16	189	200	185	235	350	210	209	167	101	116	166	81
17	183	206	180	235	380	221	206	162	96	106	140	71
18	174	208	190	230	390	227	206	161	90	127	108	68
19	170	201	205	225	400	222	207	159	85	153	103	66
20	169	200	225	220	430	224	202	160	76	223	125	84
21	168	199	234	240	460	218	199	182	66	268	122	89
22	169	198	225	260	381	221	198	324	60	428	129	85
23	171	199	215	280	349	221	197	253	55	249	153	80
24	169	201	214	260	312	222	198	230	52	166	129	77
25	179	211	195	210	286	218	196	199	48	139	103	76
26	210	212	170	185	275	213	191	188	43	127	90	76
27	204	214	175	220	274	214	195	182	40	116	88	74
28	193	229	170	260	267	212	193	176	39	102	82	76
29	205	235	175	290	251	213	193	172	43	96	78	128
30	190	240	165	310	---	212	193	175	1870	94	75	1500
31	220	---	155	330	---	208	---	171	---	88	71	---
TOTAL	5611	6205	6488	6620	9145	6805	6907	5868	4968	7376	2929	3519
MEAN	181	207	209	214	315	220	230	189	166	238	94.5	117
MAX	220	290	239	330	460	247	347	324	1870	1040	166	1500
MIN	167	192	155	145	235	195	191	159	39	88	64	53
AC-FT	11130	12310	12870	13130	18140	13500	13700	11640	9850	14630	5810	6980
CAL YR 1987	TOTAL 311224	MEAN 853	MAX 26000	MIN 155	AC-FT 617300							
WTR YR 1988	TOTAL 72441	MEAN 198	MAX 1870	MIN 39	AC-FT 143700							

KANSAS RIVER BASIN
06884025 LITTLE BLUE RIVER AT HOLLENBERG, KS--Continued
WATER QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML) (31673)
OCT										
13...	1115	180	598	8.29	11.5	738	12.8	--	--	--
13...	1120	--	--	--	--	--	--	19	K160	K520
NOV										
04...	1120	205	613	8.27	16.0	740	10.9	--	--	--
04...	1125	--	--	--	--	--	--	6	K170	260
DEC										
06...	1130	230	559	8.26	6.0	737	12.6	--	--	--
06...	1135	--	--	--	--	--	--	9	--	440
JAN										
07...	1245	175	725	7.61	0.0	--	--	--	--	--
07...	1250	--	--	--	--	--	--	<5	K130	100
FEB										
03...	1300	269	503	7.86	0.0	730	13.2	--	--	--
03...	1305	--	--	--	--	--	--	21	K210	1500
MAR										
02...	1315	242	585	8.27	6.0	732	11.5	--	--	--
02...	1320	--	--	--	--	--	--	12	700	180
APR										
26...	1015	221	--	8.50	13.0	729	10.5	--	--	--
26...	1020	--	--	--	--	--	--	14	250	140
MAY										
31...	1045	168	586	8.37	23.5	730	9.7	--	--	--
31...	1050	--	--	--	--	--	--	39	470	2700
JUN										
28...	0945	41	676	8.46	23.5	728	8.8	--	--	--
28...	0950	--	--	--	--	--	--	13	K100000	1200
JUL										
27...	0920	119	512	8.99	27.0	740	15.0	--	--	--
27...	0925	--	--	--	--	--	--	63	K1500	600
AUG										
09...	1135	78	578	8.43	26.5	733	10.9	--	--	--
09...	1140	--	--	--	--	--	--	41	700	480
30...	1100	133	610	8.60	21.0	739	10.3	--	--	--
30...	1105	--	--	--	--	--	--	23	1500	230

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

DATE	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3 (00419)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT										
13...	230	0	73	11	43	1	6.8	261	45	39
13...	200	--	66	9.6	43	1	--	--	47	43
NOV										
04...	240	21	76	11	45	1	7.8	216	47	41
04...	220	--	70	11	44	1	--	--	49	42
DEC										
06...	240	29	76	11	40	1	6.3	207	47	31
06...	230	--	73	11	37	1	--	--	49	39
JAN										
07...	290	19	93	14	43	1	4.9	272	51	35
07...	290	--	94	14	45	1	--	--	46	40
FEB										
03...	200	23	65	9.5	29	0.9	9.1	179	38	23
03...	200	--	64	9.5	29	0.9	--	--	41	26
MAR										
02...	220	10	72	10	35	1	7.0	213	45	31
02...	220	--	71	10	35	1	--	--	44	32
APR										
26...	210	5	67	11	39	1	6.2	206	47	35
26...	220	--	68	11	38	1	--	--	44	34
MAY										
31...	220	--	68	11	40	1	6.4	--	41	36
31...	220	--	71	11	39	1	--	--	44	37
JUN										
28...	190	10	56	11	79	3	6.9	178	56	95
28...	190	--	58	11	86	3	--	--	50	96
JUL										
27...	160	0	50	7.9	38	1	9.5	160	35	39
27...	160	--	51	7.5	38	1	--	--	31	38
AUG										
09...	180	0	55	9.8	51	2	8.2	180	41	52
09...	180	--	56	9.2	53	2	--	--	37	49
30...	190	11	61	10	56	2	7.0	184	40	60
30...	190	--	61	8.2	52	2	--	--	37	60

KANSAS RIVER BASIN

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06884025 LITTLE BLUE RIVER AT HOLLENBERG, KS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
OCT									
13...	0.30	24	366	403	0.50	178	--	1.09	0.010
13...	--	--	--	--	--	--	32	--	--
NOV									
04...	--	24	379	386	0.52	210	--	0.980	0.020
04...	--	--	--	--	--	--	78	--	--
DEC									
06...	--	22	366	365	0.50	227	--	1.38	0.020
06...	--	--	--	--	--	--	21	--	--
JAN									
07...	--	34	450	450	0.61	213	--	2.38	0.020
07...	--	--	--	--	--	--	11	--	--
FEB									
03...	0.30	25	320	315	0.44	232	--	1.69	0.010
03...	--	--	--	--	--	--	40	--	--
MAR									
02...	--	26	352	361	0.48	230	--	1.37	0.030
02...	--	--	--	--	--	--	98	--	--
APR									
26...	0.30	19	353	353	0.48	211	--	0.660	0.010
26...	--	--	--	--	--	--	101	--	--
MAY									
31...	--	27	367	230	0.50	166	--	--	--
31...	--	--	--	--	--	--	140	--	--
JUN									
28...	--	20	441	430	0.60	48.8	--	--	<0.010
28...	--	--	--	--	--	--	9	--	--
JUL									
27...	--	15	304	293	0.41	97.7	--	--	<0.010
27...	--	--	--	--	--	--	138	--	--
AUG									
09...	0.30	22	360	350	0.49	75.8	--	0.330	0.040
09...	--	--	--	--	--	--	70	--	--
30...	--	23	368	371	0.50	132	--	0.590	0.020
30...	--	--	--	--	--	--	47	--	--
DATE	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT									
13...	--	1.10	--	<0.010	--	1.0	--	0.260	0.160
13...	0.950	--	0.080	--	0.20	0.28	1.2	0.310	--
NOV									
04...	--	1.00	--	0.060	--	0.40	--	0.300	0.190
04...	1.20	--	0.110	--	0.99	1.1	2.3	0.310	--
DEC									
06...	--	1.40	--	0.050	--	0.50	--	0.220	0.150
06...	1.50	--	0.130	--	0.48	0.61	2.1	0.230	--
JAN									
07...	--	2.40	--	0.170	--	0.30	--	0.240	0.170
07...	2.20	--	0.240	--	0.14	0.38	2.6	0.270	--
FEB									
03...	--	1.70	--	0.240	--	0.90	--	0.350	0.220
03...	1.70	--	0.320	--	1.3	1.6	3.3	0.450	--
MAR									
02...	--	1.40	--	0.140	--	0.70	--	0.280	0.240
02...	1.80	--	0.150	--	0.57	0.72	2.5	0.490	--
APR									
26...	--	0.670	--	0.020	--	0.20	--	0.200	0.110
26...	0.640	--	0.060	--	0.76	0.82	1.5	0.330	--
MAY									
31...	--	--	--	--	--	1.1	--	0.340	--
31...	0.830	--	0.100	--	0.90	1.0	1.8	0.500	--
JUN									
28...	--	<0.100	--	<0.010	--	1.0	--	0.210	0.060
28...	<0.020	--	0.020	--	0.76	0.78	--	0.200	--
JUL									
27...	--	<0.100	--	0.040	--	1.6	--	0.590	0.200
27...	<0.020	--	0.050	--	2.0	2.0	--	0.390	--
AUG									
09...	--	0.370	--	0.130	--	1.6	--	0.310	0.210
09...	0.280	--	0.020	--	0.88	0.90	1.2	0.400	--
30...	--	0.610	--	0.020	--	1.1	--	0.450	0.240
30...	0.620	--	0.070	--	0.87	0.94	1.6	0.480	--

[illegible][illegible]

WATER QUALITY DATA. WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

06884025 LITTLE BLUE RIVER AT HOLLENBERG, KS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CARBON ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C) (00688)	CYANIDE DIS- SOLVED (MG/L AS CN) (00723)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)
OCT 13...	2.4	0.1	--	32	16	--	--	--	93
NOV 04...	4.0	1.1	--	72	40	--	--	--	95
DEC 06...	3.8	0.8	--	46	29	--	--	--	80
JAN 07...	2.5	--	--	46	22	--	--	--	70
FEB 03...	5.7	0.6	<0.01	37	27	--	--	--	97
MAR 02...	3.0	1.3	--	111	73	--	--	--	88
APR 26...	3.0	1.8	<0.01	96	57	--	--	--	84
MAY 31...	3.5	3.1	--	623	283	31	64	100	25
JUN 28...	5.1	2.1	--	12	1.3	--	--	--	99
JUL 25...	5.0	>5.3	--	134	43	--	--	--	99
AUG 09...	4.6	3.8	<0.01	76	16	--	--	--	97
30...	4.0	3.0	--	57	20	--	--	--	99

Measurements of streamflow at points other than gaging stations are given in the following table. Some measurements were made during periods of base flow when streamflow is primarily from ground-water storage and may be correlated with the simultaneous discharge of a nearby stream where continuous records are available to give a picture of the low-flow potentiality of the stream.

Discharge measurements made at miscellaneous sites during water year 1988

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
Niobrara River basin						
Eagle Creek (06465050) ¹	Niobrara River	Lat 42°38'01", long 98°46'21", in SW1/4NW1/4 sec.30, T.31 N., R.12 W., Holt County, at county road bridge 4.3 miles south and 6 miles west of Midway.	--	1969-87	11-24-87 04-21-88	24 24
East Branch Eagle Creek (06465100) ¹	Eagle Creek	Lat 42°37'35", long 98°45'49", in SW1/4SE1/4 sec.30, T.31 N., R.12 W., Holt County, at county road bridge 5 miles south and 5.4 miles west of Midway.	--	1969-87	11-24-87 04-21-88	10 10
Redbird Creek (06465398) ¹	Niobrara River	Lat 42°39'33", long 98°33'31", in NE1/4SE1/4 sec.14, T.31 N., R.11 W., Holt County, at site 3.2 miles east and 2.7 miles south of Meek.	--	1969-87	11-24-87 04-21-88	22 20
Blackbird Creek (06465420) ¹	Redbird Creek	Lat 42°39'46", long 98°34'24", in SW1/4NW1/4 sec.14, T.31 N., R.11 W., Holt County, at county road bridge 2.4 miles east and 2.3 miles south of Meek.	--	1969-87	11-24-87 04-21-88	12 10
Platte River basin						
Platte River (South channel) (06770478)	Missouri River	Lat 40°48'06", long 98°22'42", in SW1/4SW1/4 sec.29, T.10 N., R.9 W., Hall County, at bridge on U.S. Highway 281 and 9 miles south of Grand Island.	--	1984-87a	11-19-87 12-03-87 01-21-88	950 984 627
Dane Creek (06788495) ¹	North Loup River	Lat 41°36'31", long 98°56'36", in NE1/4NE1/4 sec.20, T.19 N., R.14 W., Valley County, at bridge on State Highway 11 at northwest edge of Ord.	--	1962b 1977-87	11-18-87 04-19-88	.92 .61
Mira Creek (06788990) ¹	North Loup River	Lat 41°29'54", long 98°46'46", in SE1/4SW1/4 sec.26, T.18 N., R.13 W., Valley County, at bridge on State Highway 11 at west edge of North Loup.	--	1977-87	11-23-87 04-19-88	1.1 1.1
Salt Creek (06803080) ¹	Platte River	Lat 40°46'13", long 96°43'05", in SW1/4SW1/4 sec.2, T.9 N., R.6 E., Lancaster County, at bridge on county road 0.9 mile west of U.S. Highway 77 and at northwest corner of State Penitentiary, Lincoln.	221	1971-83	09-26-88 09-28-88	7.1 141
Salt Creek (06803525) ¹	Platte River	Lat 40°54'18", long 96°35'09", in NW1/4SW1/4 sec.24, T.11 N., R.7 E., Lancaster County, at bridge 0.5 mile north of Interstate Highway 80 and 3 miles southwest of Waverly.	815	1971-84	09-26-88 09-28-88	74 3400
Kansas River basin						
Republican River (06851090)	Kansas River	Lat 40°05'26", long 98°46'03", in SE1/4SE1/4 sec.34, T.2 N., R.13 W., Franklin County, at bridge on county road 0.5 mile west of Riverton.	21300	1963-67, 1970-78, 1980, 1983,1985	07-07-88	970

¹ Also published with additional data elsewhere in this report.

a Operated as continuous record site.

b Gage heights, or gage heights and discharge measurements only.

DISCHARGE AT PARTIAL RECORD STATIONS AND MISCELLANEOUS SITES

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest stage partial record stations during water year 1988

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Annual maximum		
					Date	Gage height (feet)	Dis-charge (ft ³ /s)
Tekamah Creek basin							
06608000	Tekamah Creek at Tekamah, NE	Lat 41°46'30", long 96°13'10" in SE1/4 sec.19, T.21 N., R.11 E., Burt County, on left bank upstream from bridge, 1 block east of U.S. Highway 73 in Tekamah.	23	1949-81† 1982-88	02-19-88	11.78	2,700
Kansas River basin							
06838200	Coon Creek at Indianola, NE	Lat 40°14'03", long 100°25'37", in NW1/4NE1/4 sec.13, T.3 N., R.28 W., Red Willow County, at bridge on U.S. Highways 6 and 34, 0.5 mile west of Indianola.	a69	1961-88	07-19-88	3.90	140
06838550	Dry Creek at Bartley, NE	Lat 40°15'02", long 100°19'02", in SW1/4SE1/4 sec.1, T.3 N., R.27 W., Red Willow County, at bridge on U.S. Highway 6 and 34, 0.5 mile west of Bartley.	a42	1961-88	--	--	<5
06850000	Turkey Creek at Naponee, NE	Lat 40°04'34", long 99°08'17", in SW1/4SW1/4 sec.4, T.1 N., R.16 W., Franklin County, on downstream side of county bridge at east side of Naponee.	129	1948-53‡, 1954-61b 1962-77c 1978-88b	--	--	<100
06881450	Indian Creek at Beatrice, NE	Lat 40°17'08", long 96°44'47", in SE1/4NE1/4 sec.28, T.4 N., R.6 E., Gage County, at bridge on U.S. Highway 77 at north edge of Beatrice.	74.7	1960-88	05-24-88	5.54	130

‡ Operated as a continuous-record gaging station.

a Approximate.

b Discharge measurements published in table for miscellaneous sites.

c Discharge measurements published in table for low flow partial record sites.

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	
06465050 EAGLE CREEK NEAR MIDWAY NEBR (LAT 42 38 02N LONG 098 46 29W)										
NOV 1987										
24...	1515	24	328	7.88	5.5	8	130	27	43	
APR 1988										
21...	1230	24	324	8.81	10.5	8	140	24	44	
06465100 EASTBRANCH EAGLE CREEK NR MIDWAY NEBR (LAT 42 37 30N LONG 098 45 56W)										
NOV 1987										
24...	1610	10	280	7.69	8.0	2	120	0	42	
APR 1988										
21...	1350	10	272	8.76	12.5	5	120	0	42	
06465398 REDBIRD CREEK NR MEEK NEBRASKA (LAT 42 39 33N LONG 098 33 31W)										
NOV 1987										
24...	1305	22	208	7.63	6.5	7	82	0	27	
APR 1988										
21...	0930	20	200	8.12	8.5	5	84	0	28	
06465420 BLACKBIRD CREEK NEAR MEEK NEBR (LAT 42 39 46N LONG 098 34 24W)										
NOV 1987										
24...	1405	12	276	7.85	6.0	8	120	0	39	
APR 1988										
21...	1040	10	290	8.45	8.0	9	130	0	42	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
06465050 EAGLE CREEK NEAR MIDWAY NEBR (LAT 42 38 02N LONG 098 46 29W)										
NOV 1987										
24...	6.0	9.3	0.4	5.8	105	13	6.3	0.20	41	
APR 1988										
21...	6.1	9.6	0.4	5.5	111	14	5.4	0.20	33	
06465100 EASTBRANCH EAGLE CREEK NR MIDWAY NEBR (LAT 42 37 30N LONG 098 45 56W)										
NOV 1987										
24...	4.4	6.6	0.3	5.0	133	7.2	2.0	0.30	52	
APR 1988										
21...	4.6	6.6	0.3	4.9	137	6.6	1.6	0.30	44	
06465398 REDBIRD CREEK NR MEEK NEBRASKA (LAT 42 39 33N LONG 098 33 31W)										
NOV 1987										
24...	3.5	6.9	0.3	4.5	82	13	2.9	0.20	42	
APR 1988										
21...	3.5	6.7	0.3	3.9	88	10	1.8	0.20	35	
06465420 BLACKBIRD CREEK NEAR MEEK NEBR (LAT 42 39 46N LONG 098 34 24W)										
NOV 1987										
24...	4.5	8.1	0.3	5.0	122	14	3.5	0.30	44	
APR 1988										
21...	4.9	7.9	0.3	4.5	128	12	2.6	0.30	40	

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS- PHOROUS DIS-SOLVED (MG/L AS P) (00666)	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)
06465050	EAGLE CREEK NEAR MIDWAY NEBR (LAT 42 38 02N LONG 098 46 29W)							
NOV 1987								
24...	227	0.31	14.7	8.90	0.090	30	<3	17
APR 1988								
21...	223	0.30	14.4	8.70	0.040	20	6	3
06465100	EASTBRANCH EAGLE CREEK NR MIDWAY NEBR (LAT 42 37 30N LONG 098 45 56W)							
NOV 1987								
24...	207	0.28	5.59	1.80	0.030	20	4	7
APR 1988								
21...	197	0.27	5.32	1.00	0.040	20	7	2
06465398	REDBIRD CREEK NR MEEK NEBRASKA (LAT 42 39 33N LONG 098 33 31W)							
NOV 1987								
24...	158	0.21	9.39	2.00	0.050	20	21	12
APR 1988								
21...	150	0.20	8.09	1.80	0.050	20	34	7
06465420	BLACKBIRD CREEK NEAR MEEK NEBR (LAT 42 39 46N LONG 098 34 24W)							
NOV 1987								
24...	200	0.27	6.48	1.90	0.060	20	12	26
APR 1988								
21...	200	0.27	5.39	2.00	0.040	20	20	3

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS
WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	
06788495 DANE C AT ORD, NEBR. (LAT 41 36 31N LONG 098 56 36W)										
NOV 1987										
18...	1630	0.92	930	7.56	5.5	18	390	20	120	
APR 1988										
19...	0920	0.61	811	7.96	7.5	8	370	4	110	
06788990 MIRA C AT NORTH LOUP, NEBR. (LAT 41 29 54N LONG 098 46 46W)										
NOV 1987										
23...	1315	1.1	725	7.58	5.0	6	350	0	98	
APR 1988										
19...	1120	1.1	818	8.47	12.5	4	370	0	100	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
06788495 DANE C AT ORD, NEBR. (LAT 41 36 31N LONG 098 56 36W)										
NOV 1987										
18...	22	27	0.6	19	371	55	17	0.30	47	
APR 1988										
19...	23	27	0.6	15	366	52	17	0.30	34	
06788990 MIRA C AT NORTH LOUP, NEBR. (LAT 41 29 54N LONG 098 46 46W)										
NOV 1987										
23...	25	24	0.6	14	380	31	11	0.30	39	
APR 1988										
19...	29	25	0.6	14	410	52	10	0.30	27	
DATE		SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	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)	
06788495 DANE C AT ORD, NEBR. (LAT 41 36 31N LONG 098 56 36W)										
NOV 1987										
18...	549	0.75	1.36	4.30	0.560	80	29	450		
APR 1988										
19...	514	0.70	0.85	3.60	0.030	80	19	260		
06788990 MIRA C AT NORTH LOUP, NEBR. (LAT 41 29 54N LONG 098 46 46W)										
NOV 1987										
23...	473	0.64	1.40	0.530	0.520	80	6	170		
APR 1988										
19...	504	0.68	1.50	0.100	0.240	80	7	570		

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
06879900 BIG BLUE RIVER AT SURPRISE, NEBR. (LAT 41 06 05N LONG 097 18 35W)											
JUL 1988 26...	0730	6.2	583	8.16	24.0	741	7.0	220	0	63	15
06880000 LINCOLN CREEK NEAR SEWARD, NEBR. (LAT 40 54 57N LONG 097 08 43W)											
JUL 1988 26...	0845	30	580	8.15	23.0	742	6.7	--	--	73	--
06880500 BIG BLUE RIVER AT SEWARD, NEBR. (LAT 40 54 05N LONG 097 05 55W)											
JUL 1988 26...	1000	55	555	8.05	23.0	741	5.8	210	2	60	14
26...	1005	--	--	--	--	--	--	--	--	--	--
26...	1400	55	548	8.05	25.0	741	7.4	--	--	--	--
26...	1800	55	549	8.18	26.0	741	8.4	--	--	--	--
26...	2200	55	585	7.60	26.0	740	7.4	--	--	--	--
27...	0200	55	577	8.01	24.0	740	6.7	--	--	--	--
27...	0600	55	595	7.99	23.0	741	5.5	--	--	--	--
06880800 WEST FORK BIG BLUE RIVER NR DORCHESTER, NEBR. (LAT 40 43 52N LONG 097 10 38W)											
JUL 1988 25...	1245	75	518	8.25	25.5	743	7.6	190	4	58	12
06881000 BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)											
JUL 1988 25...	1030	184	526	8.63	25.5	744	8.8	200	7	60	13
06881200 TURKEY CREEK NEAR WILBER, NEBR. (LAT 40 28 48N LONG 097 00 43W)											
JUL 1988 25...	0600	15	436	7.00	24.5	734	6.6	--	--	--	--
06881500 BIG BLUE R AT BEATRICE NEBR (LAT 40 15 00N LONG 096 45 00W)											
JUL 1988 25...	1330	235	533	8.40	28.0	761	7.3	--	--	--	--
25...	1700	231	529	8.30	29.0	735	7.2	--	--	--	--
25...	2100	215	520	8.40	29.0	735	6.7	--	--	--	--
26...	0115	211	550	8.30	27.0	734	6.7	--	--	--	--
26...	0950	192	567	8.30	25.0	734	7.2	--	--	--	--
27...	0510	163	530	8.50	26.0	734	5.8	--	--	--	--
06882000 BIG BLUE R AT BARNESTON NEBR (LAT 40 03 11N LONG 096 35 16W)											
JUL 1988 25...	0540	402	524	8.20	25.0	740	7.4	--	--	--	--
06883000 LITTLE BLUE RIVER NEAR DEWEESE, NEBR. (LAT 40 19 58N LONG 098 04 20W)											
JUL 1988 26...	0810	31	412	8.00	20.0	738	7.9	--	--	--	--
06883570 LITTLE BLUE RIVER NEAR ALEXANDRIA (GILEAD), NEBR (LAT 40 12 27N LONG 097 23 26W)											
JUL 1988 26...	0630	55	397	8.00	22.0	734	6.0	--	--	--	--
06883940 BIG SANDY CR AT ALEXANDRIA, NE (LAT 40 14 06N LONG 097 23 20W)											
JUL 1988 26...	0545	37	370	7.50	17.5	734	6.6	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
	06879900 BIG BLUE RIVER AT SURPRISE, NEBR. (LAT 41 06 05N LONG 097 18 35W)										
JUL 1988 26...	29	0.9	9.0	230	47	18	0.30	24	365	348	0.50
	06880000 LINCOLN CREEK NEAR SEWARD, NEBR. (LAT 40 54 57N LONG 097 08 43W)										
JUL 1988 26...	--	--	4.0	238	52	11	0.40	--	365	--	--
	06880500 BIG BLUE RIVER AT SEWARD, NEBR. (LAT 40 54 05N LONG 097 05 55W)										
JUL 1988 26...	28	0.9	8.0	206	66	10	0.30	24	347	345	0.47
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
	06880800 WEST FORK BIG BLUE RIVER NR DORCHESTER, NEBR. (LAT 40 43 52N LONG 097 10 38W)										
JUL 1988 25...	27	0.9	10	191	53	15	0.30	26	329	328	0.45
	06881000 BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)										
JUL 1988 25...	30	1	9.0	197	59	14	0.40	21	355	333	0.48

ANALYSES OF SAMPLES COLLECTED AT NATIONAL WATER QUALITY ASSESSMENT (NAWQA) STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988											
DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	NITRO- GEN NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
	06879900 BIG BLUE RIVER AT SURPRISE, NEBR. (LAT 41 06 05N LONG 097 18 35W)										
JUL 1988 26...	6.11	0.880	0.050	0.16	0.930	0.150	0.19	0.65	2.0	0.80	0.420
	06880000 LINCOLN CREEK NEAR SEWARD, NEBR. (LAT 40 54 57N LONG 097 08 43W)										
JUL 1988 26...	--	2.89	0.010	0.03	2.90	0.050	0.06	0.45	1.4	0.50	0.570
	06880500 BIG BLUE RIVER AT SEWARD, NEBR. (LAT 40 54 05N LONG 097 05 55W)										
JUL 1988 26...	51.5	2.25	0.050	0.16	2.30	0.150	0.19	0.85	1.9	1.0	0.730
26...	--	2.56	0.040	0.13	2.60	0.140	0.18	0.46	0.60	0.60	0.520
26...	--	2.56	0.040	0.13	2.60	0.050	0.06	0.35	0.70	0.40	0.530
26...	--	2.45	0.050	0.16	2.50	0.060	0.08	0.44	0.60	0.50	0.510
26...	--	--	--	--	--	--	--	--	--	--	--
27...	--	2.46	0.040	0.13	2.50	0.080	0.10	0.32	0.80	0.40	0.430
27...	--	2.36	0.040	0.13	2.40	0.080	0.10	0.12	0.30	0.20	0.400
	06880800 WEST FORK BIG BLUE RIVER NR DORCHESTER, NEBR. (LAT 40 43 52N LONG 097 10 38W)										
JUL 1988 25...	66.6	2.28	0.020	0.07	2.30	0.060	0.08	0.44	1.5	0.50	0.670
	06881000 BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)										
JUL 1988 25...	176	1.57	0.030	0.10	1.60	0.090	0.12	0.41	2.0	0.50	0.660

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P) (00670)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P) (00673)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PRO- PAZINE TOTAL (UG/L) (39024)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)	SIME- TRYNE TOTAL (UG/L) (39054)	SIMA- ZINE TOTAL (UG/L) (39055)	PROME- TONE TOTAL (UG/L) (39056)
	06879900 BIG BLUE RIVER AT SURPRISE, NEBR. (LAT 41 06 05N LONG 097 18 35W)										
JUL 1988 26...	0.190	0.170	0.52	0.42	0.02	16	<0.10	<0.10	<0.1	<0.10	<0.1
	06880000 LINCOLN CREEK NEAR SEWARD, NEBR. (LAT 40 54 57N LONG 097 08 43W)										
JUL 1988 26...	0.390	0.360	1.1	0.57	0.03	22	<0.10	<0.10	<0.1	0.10	<0.1
	06880500 BIG BLUE RIVER AT SEWARD, NEBR. (LAT 40 54 05N LONG 097 05 55W)										
JUL 1988 26...	0.470	0.300	0.92	0.73	0.17	29	<0.10	<0.10	<0.1	0.10	<0.1
26...	0.320	0.320	0.98	0.52	0.0	--	--	--	--	--	--
26...	0.340	0.340	1.0	0.53	0.0	--	--	--	--	--	--
26...	0.330	0.310	0.95	0.51	0.02	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
27...	0.310	0.340	1.0	0.43	0.0	--	--	--	--	--	--
27...	0.300	0.260	0.80	0.40	0.04	--	--	--	--	--	--
	06880800 WEST FORK BIG BLUE RIVER NR DORCHESTER, NEBR. (LAT 40 43 52N LONG 097 10 38W)										
JUL 1988 25...	0.520	0.500	1.5	0.67	0.02	18	<0.10	<0.10	<0.1	0.60	<0.1
	06881000 BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)										
JUL 1988 25...	0.470	0.430	1.3	0.66	0.04	13	0.10	<0.10	<0.1	0.30	<0.1

ANALYSES OF SAMPLES COLLECTED AT NATIONAL WATER QUALITY ASSESSMENT (NAWQA) STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
06884000 LITTLE BLUE RIVER NEAR FAIRBURY, NEBR. (LAT 40 06 54N LONG 097 10 13W)											
JUL 1988											
25...	0845	133	396	7.40	28.0	734	6.8	--	--	--	--
26...	1320	119	374	8.60	27.0	732	9.4	--	--	--	--
26...	1710	127	423	9.10	27.0	733	10.6	--	--	--	--
26...	2150	116	435	8.80	27.0	734	6.5	--	--	--	--
27...	0120	127	375	9.30	27.5	732	5.7	--	--	--	--
27...	0545	112	393	8.30	25.0	734	5.3	--	--	--	--
06884025 LITTLE BLUE R AT HOLLENBERG, KS (LAT 39 58 48N LONG 097 00 16W)											
JUL 1988											
25...	1150	163	501	8.70	29.0	740	7.2	--	--	--	--
402726098240500 LITTLE BLUE R NR HASTINGS, NE (LAT 40 27 26N LONG 098 24 05W)											
JUL 1988											
26...	0515	18	349	7.82	22.5	727	7.8	150	3	45	8.5
403304097311400 TURKEY CREEK NR GENEVA, NE (LAT 40 33 04N LONG 097 31 14W)											
JUL 1988											
25...	1325	2.1	362	7.98	28.5	734	6.8	110	7	32	7.7
403611098200600 WEST FK BIG BLUE R NR HASTINGS, NE (LAT 40 36 11N LONG 098 20 06W)											
JUL 1988											
26...	0630	6.7	--	7.56	21.0	719	7.1	190	16	58	10
26...	1800	--	--	--	25.5	721	4.8	--	--	--	--
27...	1215	--	--	--	20.5	720	2.1	--	--	--	--
403749097503400 SCHOOL CREEK NR SUTTON, NE (LAT 40 37 49N LONG 097 50 34W)											
JUL 1988											
25...	1130	3.8	427	7.77	23.5	727	5.1	160	10	49	10
404247097580600 WEST FK BIG BLUE R NR STOCKHAM, NE (LAT 40 42 47N LONG 097 58 06W)											
JUL 1988											
25...	1230	14	--	8.00	26.5	726	6.8	180	11	54	11
26...	1300	14	532	7.79	24.5	726	7.1	--	--	--	--
26...	1700	14	356	7.98	27.0	725	8.1	--	--	--	--
26...	2100	18	535	7.99	27.0	728	6.5	--	--	--	--
27...	0100	18	644	8.00	25.5	723	5.6	--	--	--	--
27...	0500	18	662	8.05	23.5	722	5.9	--	--	--	--
27...	0900	18	639	7.92	22.5	724	6.0	--	--	--	--
27...	1300	16	626	7.81	24.5	725	7.1	--	--	--	--
404327097354600 WEST FORK BIG BLUE R NR MCCOOL JUNCTION, NE (LAT 40 43 27N LONG 097 35 46W)											
JUL 1988											
25...	1200	27	533	8.33	27.0	734	7.6	200	18	59	12
405029097322100 BEAVER CREEK NR YORK, NE (LAT 40 50 29N LONG 097 32 21W)											
JUL 1988											
26...	1010	6.5	660	7.91	23.0	734	7.1	220	0	66	14
405221097582100 LINCOLN CREEK NR AURORA, NE (LAT 40 52 21N LONG 097 58 21W)											
JUL 1988											
26...	0945	0.34	458	7.56	20.5	725	1.6	180	0	52	12
26...	2150	--	--	--	26.0	722	2.9	--	--	--	--
27...	0550	--	--	--	21.5	721	1.2	--	--	--	--

	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
402726098240500 LITTLE BLUE R NR HASTINGS, NE (LAT 40 27 26N LONG 098 24 05W)											
JUL 1988 26...	16	0.6	10	145	35	8.9	0.30	24	259	242	0.35
403304097311400 TURKEY CREEK NR GENEVA, NE (LAT 40 33 04N LONG 097 31 14W)											
JUL 1988 25...	21	0.9	9.0	105	41	16	0.30	20	241	210	0.33
403611098200600 WEST FK BIG BLUE R NR HASTINGS, NE (LAT 40 36 11N LONG 098 20 06W)											
JUL 1988 26... 26... 27...	69 -- --	2 -- --	9.0 -- --	170 -- --	58 -- --	61 -- --	0.40 -- --	28 -- --	228 -- --	410 -- --	0.31 -- --
403749097503400 SCHOOL CREEK NR SUTTON, NE (LAT 40 37 49N LONG 097 50 34W)											
JUL 1988 25...	24	0.8	11	154	47	17	0.30	24	304	283	0.41
404247097580600 WEST FK BIG BLUE R NR STOCKHAM, NE (LAT 40 42 47N LONG 097 58 06W)											
JUL 1988 25... 26... 26... 26... 27... 27... 27... 27...	30 -- -- -- -- -- -- --	1 -- -- -- -- -- -- --	10 -- -- -- -- -- -- --	169 -- -- -- -- -- -- --	52 -- -- -- -- -- -- --	19 -- -- -- -- -- -- --	0.30 -- -- -- -- -- -- --	24 -- -- -- -- -- -- --	324 -- -- -- -- -- -- --	312 -- -- -- -- -- -- --	0.44 -- -- -- -- -- -- --
404327097354600 WEST FORK BIG BLUE R NR MCCOOL JUNCTION, NE (LAT 40 43 27N LONG 097 35 46W)											
JUL 1988 25...	27	0.9	8.0	179	60	18	0.30	26	346	318	0.47
405029097322100 BEAVER CREEK NR YORK, NE (LAT 40 50 29N LONG 097 32 21W)											
JUL 1988 26...	46	1	9.0	226	52	36	0.30	28	430	387	0.58
405221097582100 LINCOLN CREEK NR AURORA, NE (LAT 40 52 21N LONG 097 58 21W)											
JUL 1988 26... 26... 27...	25 -- --	0.8 -- --	12 -- --	180 -- --	45 -- --	16 -- --	0.30 -- --	17 -- --	307 -- --	292 -- --	0.42 -- --

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	NITRO- GEN NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
402726098240500 LITTLE BLUE R NR HASTINGS, NE (LAT 40 27 26N LONG 098 24 05W)											
JUL 1988 6...	12.6	1.35	0.050	0.16	1.40	0.070	0.09	0.53	1.9	0.60	0.640
403304097311400 TURKEY CREEK NR GENEVA, NE (LAT 40 33 04N LONG 097 31 14W)											
JUL 1988 5...	1.37	--	--	--	--	--	--	--	2.4	2.4	1.00
403611098200600 WEST FK BIG BLUE R NR HASTINGS, NE (LAT 40 36 11N LONG 098 20 06W)											
JUL 1988 6... 6... 7...	4.12 -- --	0.640 -- --	0.160 -- --	0.53 -- --	0.800 -- --	0.770 -- --	0.99 -- --	7.4 -- --	8.4 -- --	8.2 -- --	4.40 -- --
403749097503400 SCHOOL CREEK NR SUTTON, NE (LAT 40 37 49N LONG 097 50 34W)											
JUL 1988 5...	3.12	1.08	0.220	0.72	1.30	0.290	0.37	0.71	1.1	1.0	0.790
404247097580600 WEST FK BIG BLUE R NR STOCKHAM, NE (LAT 40 42 47N LONG 097 58 06W)											
JUL 1988 5... 6... 6... 6... 7... 7... 7... 7...	12.2 -- -- -- -- -- -- --	1.87 2.94 2.45 2.93 3.03 2.63 2.74 2.45	0.030 0.060 0.050 0.070 0.070 0.070 0.060 0.050	0.10 0.20 0.16 0.23 0.23 0.23 0.20 0.16	1.90 3.00 2.50 3.00 3.10 2.70 2.80 2.50	0.020 0.070 0.040 0.050 0.060 0.070 0.060 0.060	0.03 0.09 0.05 0.06 0.08 0.09 0.08 0.08	0.48 0.43 0.46 0.75 0.54 0.33 0.24 0.44	1.5 0.80 0.70 0.80 0.60 0.50 0.80 0.50	0.50 0.50 0.50 0.80 0.60 0.40 0.30 0.50	0.930 1.20 1.10 1.20 1.30 1.30 1.30 1.30
404327097354600 WEST FORK BIG BLUE R NR MCCOOL JUNCTION, NE (LAT 40 43 27N LONG 097 35 46W)											
JUL 1988 5...	25.2	--	--	--	--	--	--	--	1.7	1.2	0.660
405029097322100 BEAVER CREEK NR YORK, NE (LAT 40 50 29N LONG 097 32 21W)											
JUL 1988 6...	7.55	--	--	--	--	--	--	--	2.1	1.6	1.60
405221097582100 LINCOLN CREEK NR AURORA, NE (LAT 40 52 21N LONG 097 58 21W)											
JUL 1988 6... 6... 7...	0.28 -- --	0.210 -- --	0.190 -- --	0.62 -- --	0.400 -- --	2.00 -- --	2.6 -- --	0.0 -- --	2.8 -- --	2.0 -- --	0.510 -- --

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	PHOS- PHOROUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	PHOS- PHOROUS ORGANIC TOTAL (MG/L AS P) (00670)	PHOS- PHOROUS ORGANIC DIS- SOLVED (MG/L AS P) (00673)	CARBON, TOTAL (MG/L AS C) (00680)	PRO- PAZINE TOTAL (UG/L) (39024)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)	SIME- TRYNE TOTAL (UG/L) (39054)	SIMA- ZINE TOTAL (UG/L) (39055)	PROME- TONE TOTAL (UG/L) (39056)
402726098240500 LITTLE BLUE R NR HASTINGS, NE (LAT 40 27 26N LONG 098 24 05W)											
JUL 1988 26...	0.370	0.360	1.1	0.64	0.01	10	0.10	<0.10	<0.1	0.20	<0.1
403304097311400 TURKEY CREEK NR GENEVA, NE (LAT 40 33 04N LONG 097 31 14W)											
JUL 1988 25...	0.880	--	--	1.0	0.88	17	0.10	<0.10	<0.1	0.10	0.1
403611098200600 WEST FK BIG BLUE R NR HASTINGS, NE (LAT 40 36 11N LONG 098 20 06W)											
JUL 1988 26... 26... 27...	3.80 -- --	3.40 -- --	10 -- --	4.4 -- --	0.40 -- --	9.2 -- --	<0.10 -- --	<0.10 -- --	<0.1 -- --	<0.10 -- --	0.1 -- --
403749097503400 SCHOOL CREEK NR SUTTON, NE (LAT 40 37 49N LONG 097 50 34W)											
JUL 1988 25...	0.770	0.730	2.2	0.79	0.04	13	<0.10	<0.10	<0.1	2.1	<0.1
404247097580600 WEST FK BIG BLUE R NR STOCKHAM, NE (LAT 40 42 47N LONG 097 58 06W)											
JUL 1988 25... 26... 26... 26... 27... 27... 27... 27... 27...	0.750 1.10 0.950 1.00 1.00 1.10 1.20 1.10	0.710 1.10 0.920 0.980 0.990 1.00 1.00 1.00	2.2 3.4 2.8 3.0 3.0 3.1 3.1 3.1	0.93 1.2 1.1 1.2 1.3 1.3 1.3 1.3	0.04 0.0 0.03 0.02 0.01 0.10 0.20 0.10	9.3 -- -- -- -- -- -- --	<0.10 -- -- -- -- -- -- --	<0.10 -- -- -- -- -- -- --	<0.1 -- -- -- -- -- -- --	0.20 -- -- -- -- -- -- --	<0.1 -- -- -- -- -- -- --
404327097354600 WEST FORK BIG BLUE R NR MCCOOL JUNCTION, NE (LAT 40 43 27N LONG 097 35 46W)											
JUL 1988 25...	0.580	--	--	0.66	0.58	14	<0.10	<0.10	<0.1	0.50	<0.1
405029097322100 BEAVER CREEK NR YORK, NE (LAT 40 50 29N LONG 097 32 21W)											
JUL 1988 26...	1.50	--	--	1.6	1.5	8.3	<0.10	<0.10	<0.1	0.40	<0.1
405221097582100 LINCOLN CREEK NR AURORA, NE (LAT 40 52 21N LONG 097 58 21W)											
JUL 1988 26... 26... 27...	0.320 -- --	0.280 -- --	0.86 -- --	0.51 -- --	0.04 -- --	9.0 -- --	0.10 -- --	<0.10 -- --	<0.1 -- --	0.20 -- --	0.3 -- --

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CaCO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CaCO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS Ca) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg) (00925)
405438097354800 LINCOLN CREEK NR YORK, NE (LAT 40 54 38N LONG 097 35 48W)											
JUL 1988											
26...	0900	8.2	570	7.88	21.0	734	6.3	220	3	65	14
26...	1300	8.2	570	7.75	23.0	725	7.0	--	--	--	--
26...	1700	8.2	574	7.78	27.0	725	7.6	--	--	--	--
26...	2100	8.2	549	7.84	28.0	724	7.4	--	--	--	--
27...	0100	8.2	552	7.88	26.0	724	6.2	--	--	--	--
27...	0500	8.2	561	7.70	23.0	724	5.5	--	--	--	--
27...	0900	8.2	566	7.88	22.0	725	6.0	--	--	--	--

DATE	SODIUM, DIS- SOLVED (MG/L AS Na) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINIT LAB (MG/L AS CaCO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
------	---	--	--	---	--	--	---	--	---	---	--

405438097354800 LINCOLN CREEK NR YORK, NE (LAT 40 54 38N LONG 097 35 48W)

JUL 1988											
26...	29	0.9	8.0	217	52	17	0.30	27	368	342	0.50
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--

DATE	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N) (00607)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N) (00623)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
------	--	--	--	--	--	--	--	--	---	--	--

405438097354800 LINCOLN CREEK NR YORK, NE (LAT 40 54 38N LONG 097 35 48W)

JUL 1988											
26...	8.15	--	--	--	--	--	--	--	0.90	1.8	0.310
26...	--	2.35	0.050	0.16	2.40	0.070	0.09	1.4	0.50	1.5	0.310
26...	--	2.25	0.050	0.16	2.30	0.040	0.05	0.96	0.30	1.0	0.310
26...	--	2.15	0.050	0.16	2.20	0.080	0.10	0.82	0.90	0.90	0.330
27...	--	2.06	0.040	0.13	2.10	0.070	0.09	1.1	0.70	1.2	0.320
27...	--	2.06	0.040	0.13	2.10	0.070	0.09	1.2	1.5	1.3	0.340
27...	--	2.16	0.040	0.13	2.20	0.090	0.12	1.5	0.80	1.6	0.350

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JUL 1988											
26...	0.280	--	--	0.31	0.28	11	<0.10	<0.10	<0.1	0.10	0.2
26...	0.280	0.260	0.80	0.31	0.02	--	--	--	--	--	--
26...	0.270	0.250	0.77	0.31	0.02	--	--	--	--	--	--
26...	0.270	0.230	0.71	0.33	0.04	--	--	--	--	--	--
27...	0.300	0.250	0.77	0.32	0.05	--	--	--	--	--	--
27...	0.270	0.230	0.71	0.34	0.04	--	--	--	--	--	--
27...	0.270	0.220	0.67	0.35	0.05	--	--	--	--	--	--

	PROMETRYNE	ATRAZINE	ALACHLOR	CYANAZINE	AMETRITRINE	METBUZIN WATER WHOLE	METOLACHLOR WATER WHOLE	CHLOR-A PHYTO PLANK-TON CHROMO FLUOROM	CHLOR-B PHYTO PLANK-TON CHROMO FLUOROM	SEDIMENT, DIS-CHARGE, SUS-PENDED (T/DAY)
DATE	TOTAL (UG/L) (39057)	TOTAL (UG/L) (39630)	TOTAL RECOVER (UG/L) (77825)	TOTAL (UG/L) (81757)	TOTAL (UG/L) (82184)	TOT. REC (UG/L) (82611)	TOT. REC (UG/L) (82612)	(UG/L) (70953)	(UG/L) (70954)	(MG/L) (80154)

[illegible]

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	1,3-DI- CHLORO- BENZENE TOTAL (UG/L) (34566)	1,4-DI- CHLORO- BENZENE TOTAL (UG/L) (34571)	2- CHLORO- PHENOL TOTAL (UG/L) (34586)	2- NITRO- PHENOL TOTAL (UG/L) (34591)	2,4-DI- CHLORO- PHENOL TOTAL (UG/L) (34601)	2,4-DI- METHYL- PHENOL TOTAL (UG/L) (34606)	2,4,- DI- NITRO- PHENOL TOTAL (UG/L) (34616)	2,4,6- TRI- CHLORO- PHENOL TOTAL (UG/L) (34621)	4- NITRO- PHENOL TOTAL (UG/L) (34646)	4,6- DINITRO- -ORTHO- CRESOL TOTAL (UG/L) (34657)	DI- CHLORO- DI- FLUORO- METHANE TOTAL (UG/L) (34668)
	06881000 BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)										
SEP 1988 07...	<0.20	<0.20	<5.0	<5.0	<5.0	<5.0	<20.0	<20.0	<30.0	<30.0	<0.20
	403611098200600 WEST FK BIG BLUE R NR HASTINGS, NE (LAT 40 36 11N LONG 098 20 06W)										
SEP 1988 06...	0.20	0.50	<5.0	<5.0	<5.0	<5.0	<20.0	<20.0	<30.0	<30.0	<0.20
	405029097322100 BEAVER CREEK NR YORK, NE (LAT 40 50 29N LONG 097 32 21W)										
SEP 1988 06...	<0.20	<0.20	<5.0	<5.0	<5.0	<5.0	<20.0	<20.0	<30.0	<30.0	<0.20

DATE	PHENOL (C6H- 5OH) TOTAL (UG/L) (34694)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34699)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34704)	PENTA- CHLORO- PHENOL TOTAL (UG/L) (39032)	VINYL CHLO- RIDE TOTAL (UG/L) (39175)	TRI- CHLORO- ETHYL- ENE TOTAL (UG/L) (39180)	STYRENE TOTAL (UG/L) (77128)	123-TRI CHLORO- PROPANE WATER WHOLE TOTAL (UG/L) (77443)	1,2- DIBROMO ETHANE WATER WHOLE TOTAL (UG/L) (77651)	XYLENE TOTAL WATER WHOLE TOT REC (UG/L) (81551)
	06881000 BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)									
SEP 1988 07...	<5.0	<0.20	<0.20	<30.0	<0.20	<0.2	<0.2	<0.20	<0.2	<0.2
	403611098200600 WEST FK BIG BLUE R NR HASTINGS, NE (LAT 40 36 11N LONG 098 20 06W)									
SEP 1988 06...	<5.0	<0.20	<0.20	<30.0	<0.20	<0.2	<0.2	<0.20	<0.2	<0.2
	405029097322100 BEAVER CREEK NR YORK, NE (LAT 40 50 29N LONG 097 32 21W)									
SEP 1988 06...	<5.0	<0.20	<0.20	<30.0	<0.20	<0.2	<0.2	<0.20	<0.2	<0.2

403403098244001. Local number 7N-10W-23AB.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

DATUM.--Altitude of land-surface datum is 1,927 ft. Measuring point: Top of casing 1.0 ft above land-surface datum.

PERIOD OF RECORD.--August 1934 to October 1938; August 1948 to December 1950; and January 1951 to current year.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	115.23	114.57	113.93	.....	113.46	113.32	113.15	113.01	113.25	119.72	122.53	118.77
10	115.21	115.63	113.92	.....	113.43	114.38	113.28	113.12	114.52	119.25	123.71	118.87
15	114.83	114.24	113.87	113.57	113.36	113.33	115.65	113.17	117.25	119.77	121.64	118.15
20	114.76	115.26	113.90	113.53	113.25	113.16	113.16	113.17	119.35	120.08	124.74	117.96
25	114.68	114.16	113.85	113.54	114.41	113.36	113.12	114.47	122.34	121.01	122.06	117.79
EOM	114.70	114.02	113.79	113.53	113.29	113.24	113.14	113.12	119.10	121.91	122.30	117.70

WTR YEAR 1988 MAX 113.01 MAY 5. 1988 MIN 124.74 AUG 20. 1988

BLAINE COUNTY

414958100061501. Local number 22N-24W-33CA.

AQUIFER.--Sand and gravel deposits, undifferentiated, of Quaternary age.

DATUM.--Altitude of land-surface datum is 2,618 ft. Measuring point: Top of casing 1.40 ft above land-surface datum.

PERIOD OF RECORD.--December 1934 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.04 ft below land-surface datum, Mar. 8, 1950;
lowest, 6.97 ft below land-surface datum, Aug. 8, 1951.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988																	
DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL						
OCT	6	4.26	DEC	22	3.54	FEB	23	2.61	APR	20	3.09	JUN	13	3.30	AUG	9	3.56
NOV	4	3.95	JAN	25	3.30	MAR	17	2.78	MAY	17	3.08	JUL	12	3.19	SEP	8	3.82
DEC	1	3.45															

GROUND-WATER LEVELS

323

BOONE COUNTY

413323098074501. Local number 18N-7W-4CA.

LOCATION.--Lat 41°33'23", long 98°07'45", NE1/4SW1/4 sec.4, T.18 N., R.7 W., Hydrologic Unit 10210010, at junction of State Highways 52 and 56 approximately 1 mi east of Cedar Rapids. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

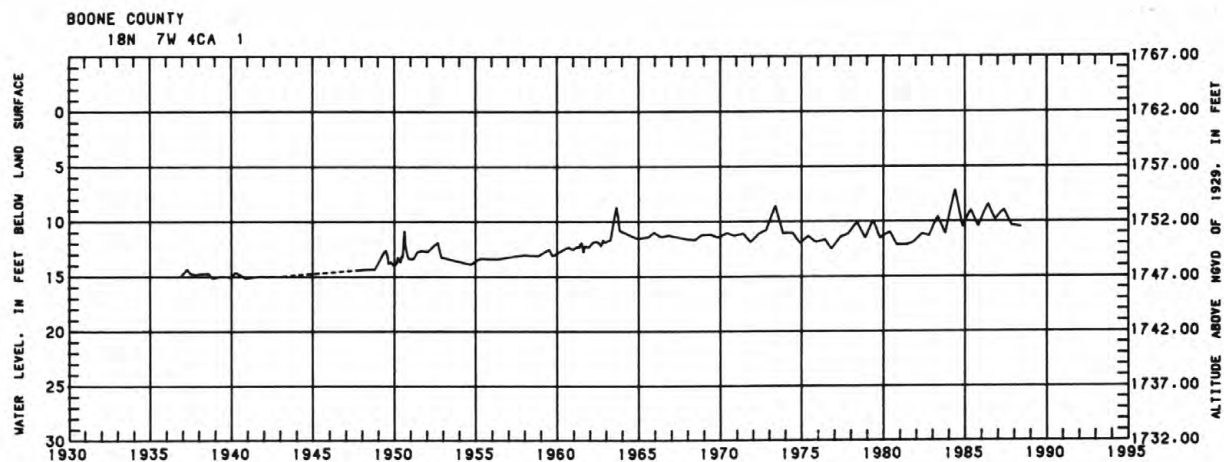
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1 in, depth 22 ft, screened 20 to 22 ft.

DATUM.--Altitude of land-surface datum is 1,762 ft. Measuring point: Top of casing 2.90 ft above land-surface datum.

PERIOD OF RECORD.--November 1936 to October 1942; April 1948 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.15 ft below land-surface datum, May 17, 1984; lowest, 15.17 ft below land-surface datum, Oct. 26, 1940.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	10.38	MAY 19	10.52



GROUND-WATER LEVELS

BOX BUTTE COUNTY

420945102551501. Local number 25N-48W-4DDD.

LOCATION.--Lat 42°09'45", long 102°55'15", SE1/4SE1/4SE1/4 sec.4, T.25 N., R.48 W., Hydrologic Unit 10150003, approximately 3.6 mi south and 2.8 mi east of Berea. Owner: U.S. Geological Survey.

AQUIFER.--Marsland Formation of Miocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in, depth 204 ft, screened 190 to 193 ft.

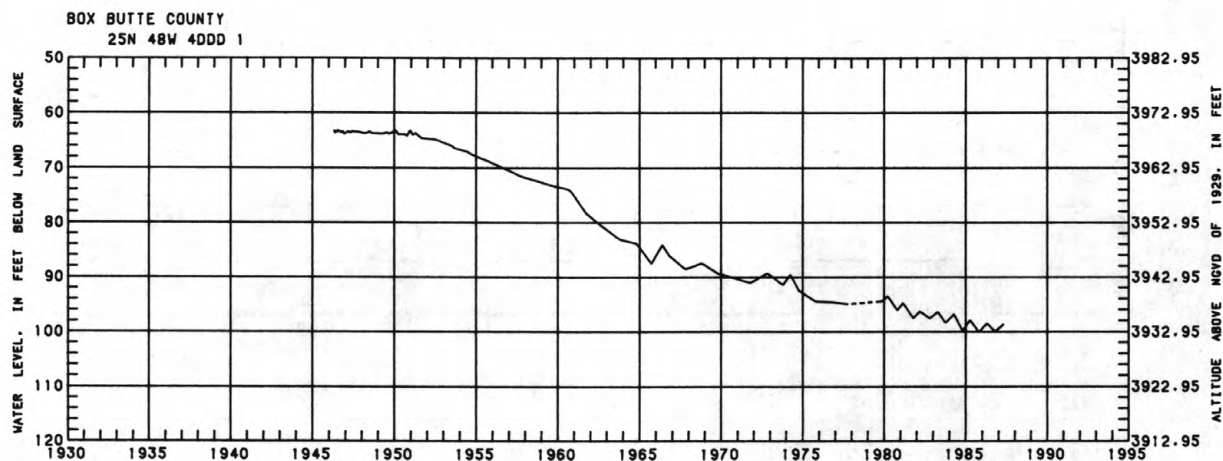
DATUM.--Altitude of land-surface datum is 4,032.95 ft. Measuring point: Top of pipe 2.00 ft above land-surface datum.

REMARKS.--Water levels in vicinity of well are affected by large withdrawals of ground water for irrigation use. Casing was broken off below the land surface during the summer of 1986. Well was cleaned and repaired during the spring of 1988.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 63.14 ft below land-surface datum, Jan. 25, 1950; lowest, 100.08 ft below land-surface datum, Nov. 1, 1985.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
Not measured during 1988 water year.											



GROUND-WATER LEVELS

325

BROWN COUNTY

423307099494501. Local number 30N-21W-19CC.

LOCATION.--Lat 42°33'07", long 99°49'45", SW1/4SW1/4 sec.19, T.30 N., R.21 W., Hydrologic Unit 10150004, 1.2 mi east of junction of U.S. Highway 20 and Route 7 in Ainsworth. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 52 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 2,511.44 ft. Measuring point: Top of casing 0.20 ft above land-surface datum.

REMARKS.--Water levels in well are affected by pumpage of ground water for irrigation and seepage losses from nearby irrigation project.

PERIOD OF RECORD.--November 1947 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 31.20 ft below land-surface datum, Sept. 30, 1988; lowest, 40.96 ft below land-surface datum, Sept. 7, 1965.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	31.88	31.91	32.05	32.38	32.67	32.79	32.88	32.90	32.64	32.29	31.66	31.26
10	31.91	31.96	32.09	32.36	32.69	32.74	32.90	32.86	32.59	32.18	31.50	31.28
15	31.85	31.91	32.17	32.37	32.65	32.85	32.89	32.80	32.52	32.02	31.41	31.28
20	31.88	32.00	32.21	32.47	32.72	32.83	32.84	32.78	32.38	31.85	31.39	31.28
25	31.87	32.05	32.28	32.57	32.75	32.86	32.89	32.77	32.39	31.72	31.36	31.23
EOM	31.89	32.02	32.33	32.61	32.78	32.88	32.88	32.68	32.37	31.68	31.27	31.20

WTR YEAR 1988 MAX 31.20 SEP 30, 1988 MIN 32.90 APR 10 AND MAY 5, 1988

BUFFALO COUNTY

404618098504401. Local number 9N-14W-1DC.

LOCATION.--Lat 40°46'18", long 98°50'44", SW1/4SE1/4 sec.1, T.9 N., R.14 W., Hydrologic Unit 10200102, 1.3 mi north of the intersection of Route 30 and the North-South range-line road on the east side of Gibbon, then 0.5 mi west on section-line road. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 38 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 2,060.43 ft. Measuring point: Top of casing 0.80 ft above land-surface datum.

REMARKS.--Water levels in well are affected by pumpage from nearby irrigation wells.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.36 ft below land-surface datum, June 11, 1952; lowest, 29.22 ft below land-surface datum, Aug. 10, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	19.88	19.69	19.43	19.46	19.43	19.08	19.03	18.94	18.77	22.03	23.19	23.17
10	19.91	19.68	19.42	19.42	19.35	18.96	19.08	18.95	18.82	22.27	22.68	23.05
15	19.73	19.48	19.44	19.30	19.29	19.17	18.95	18.83	18.89	22.47	22.82	22.92
20	19.74	19.61	19.45	19.34	19.15	19.00	18.84	18.77	20.10	21.92	22.80	22.78
25	19.71	19.56	19.47	19.41	19.18	19.03	18.89	18.82	21.12	22.43	23.49	22.65
EOM	19.60	19.44	19.46	19.35	19.13	19.07	18.87	18.77	21.66	22.93	23.19	22.55

WTR YEAR 1988 MAX 18.64 JUN 7-8, 1988 MIN 23.60 AUG 27, 1988

GROUND-WATER LEVELS

BUFFALO COUNTY

404345098560001. Local number 9N-14W-19DD.

LOCATION.--Lat 40°43'45", long 98°56'00", SE1/4SE1/4 sec.19, T.9 N., R.14 W., Hydrologic Unit 10200102, 4.7 mi west-southwest of Gibbon on U.S. Highway 30. Owner: Robert D. Lewis.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 24 in, depth 54 ft, casing perforated below water table.

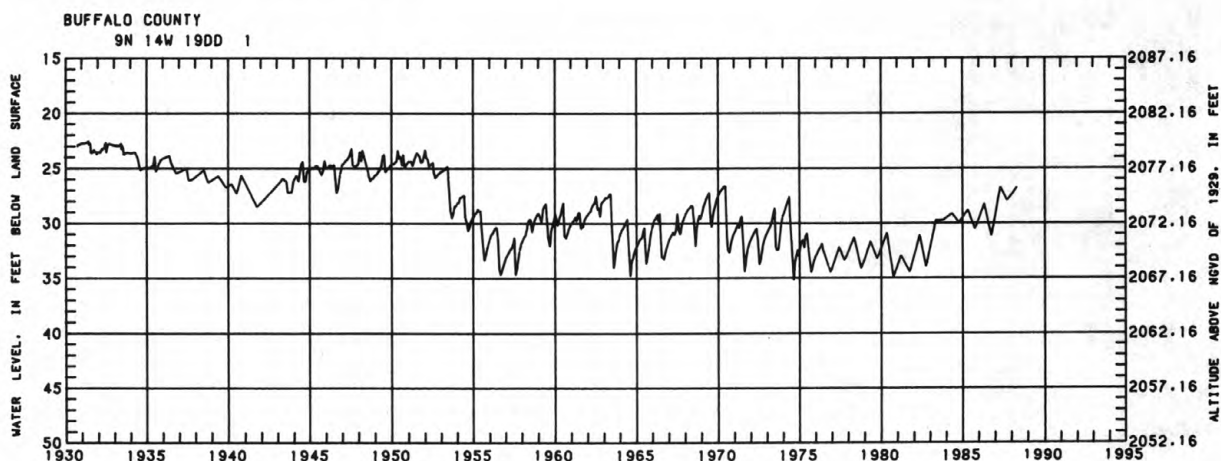
DATUM.--Altitude of land-surface datum is 2,102.16 ft. Measuring point: Hole in pump base 0.70 ft above land-surface datum.

REMARKS.--Water levels in well are affected by pumping of well and of nearby wells for irrigation supplies.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 22.55 ft below land-surface datum, June 9, 1931; lowest, 35.20 ft below land-surface datum, Aug. 30, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988	
DATE	WATER LEVEL
OCT 2	27.96
MAY 6	26.76



BUTLER COUNTY

411420097173002. Local number 15N-1E-27DD2.

LOCATION.--Lat 41°14'20", long 97°17'30", SE1/4SE1/4 sec.27, T.15 N., R.1 E., Hydrologic Unit 10270201, 2 mi north of the northeast corner of Rising City. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 5 in, depth 210.0 ft, perforated 199 to 210 ft.

DATUM.--Altitude of land-surface datum is 1,618 ft. Measuring point: Top of platform, at land-surface datum.

REMARKS.--Replacement for 411420097173001, local number 15N-1E-27DD, period of record June 1958 to January 1977. Water levels in well affected by pumping from nearby wells during irrigation season.

PERIOD OF RECORD.--February 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 96.49 ft below land-surface datum, May 10, 1988; lowest, 174.50 ft below land-surface datum, Aug. 3, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	.....	99.32	.....	.....	.....	97.05	96.57	96.56	97.10	.....	.....	.....
10	.....	99.23	98.05	97.52	.....	96.92	96.69	96.49	96.98	.....	.....	.....
15	99.34	98.83	98.02	97.32	.....	96.90	96.69	.....	103.65	.....	.....	.....
20	99.56	98.82	97.91	.....	.....	96.88	96.59	99.45	.....	.....	.....	.....
25	.....	98.60	97.89	.....	.....	96.74	96.50	97.75	149.25	.....	.....	.....
EOM	.....	98.39	97.77	.....	.....	96.81	96.60	96.96	.....	.....	.....	.....

WTR YEAR 1988 MAX 96.49 MAY 10, 1988 MIN 155.80 AUG 8, 1988

GROUND-WATER LEVELS

327

CHASE COUNTY

403220101384001. Local number 7N-38W-28CC.

LOCATION.--Lat 40°32'20", long 101°38'40", SW1/4SW1/4 sec.28, T.7 N., R.38 W., Hydrologic Unit 10250005, about 0.5 mi north of Imperial. Owner: Roy Hust.

AQUIFER.--Ogallala Formation of Pliocene age.

WELL CHARACTERISTICS.--Drilled unused observation water-table well, diameter 18 in, depth 143 ft, casing perforated below water table.

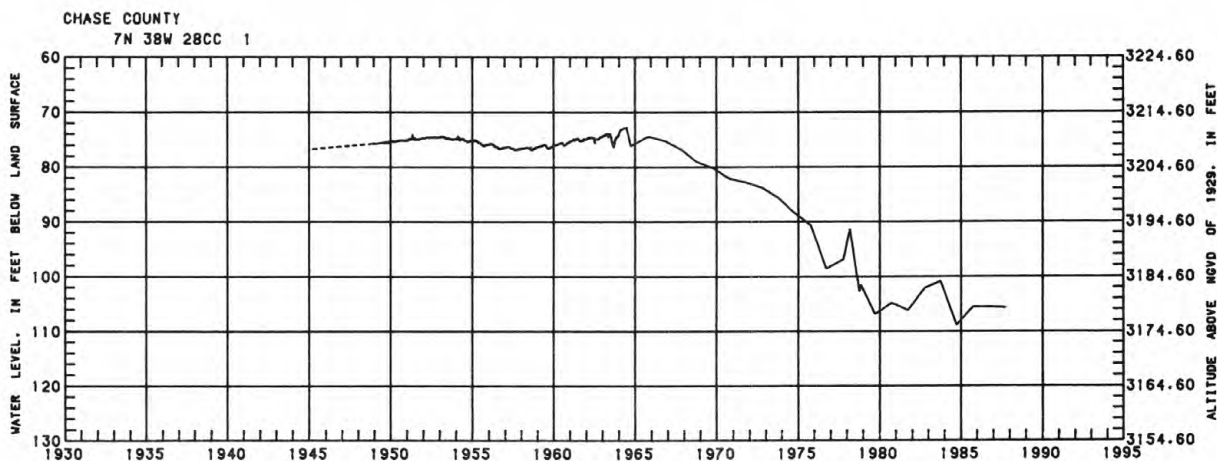
DATUM.--Altitude of land-surface datum is 3,284.6 ft. Measuring point: Top of casing 0.30 ft above land-surface datum.

REMARKS.--Recording gage was installed on this well from December 1948 to December 1963. Water levels in well are affected by irrigation pumpage in area.

PERIOD OF RECORD.--December 1944; December 1948 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 72.82 ft below land-surface datum, June 29, 1964; lowest measured, 108.91 ft below land-surface datum, Oct. 3, 1984.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988									
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	105.74								



GROUND-WATER LEVELS

CHASE COUNTY

403235101395501. Local number 7N-38W-29CBB.

LOCATION.--Lat 40°32'35", long 101°39'55", NW1/4NW1/4SW1/4 sec.29, T.7 N., R.38 W., Hydrologic Unit 10250005, 0.5 mi north and 1 mi west of Imperial on U.S. Highway 6, then 0.5 mi north on gravel road. Owner: U.S. Geological Survey.

AQUIFER.--Ogallala Formation of Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 5.50 in, depth 230 ft, perforated 190 to 230 ft.

DATUM.--Altitude of land-surface datum is 3,290.30 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

REMARKS.--Water levels in well are affected by irrigation pumpage in area.

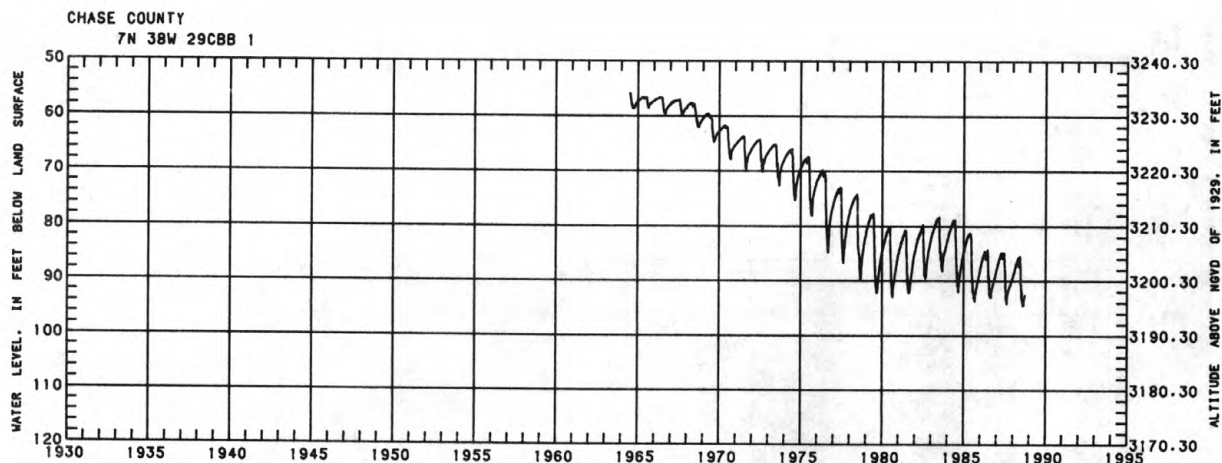
PERIOD OF RECORD.--June 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 55.87 ft below land-surface datum, July 4, 1964; lowest, 94.83 ft below land-surface datum, Aug. 11, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	91.55	90.91	89.92	89.07	88.26	87.31	86.60	85.73	85.42	92.04	93.95	93.41
10	91.43	90.65	89.80	88.88	88.13	86.92	86.48	85.73	85.82	92.65	94.62	93.20
15	91.18	90.54	89.65	88.68	87.88	87.01	86.30	87.49	87.01	93.34	93.25	93.04
20	91.15	90.37	89.63	88.73	87.69	86.79	86.10	86.50	87.55	92.07	94.43	92.93
25	90.91	90.23	89.46	88.60	87.56	86.79	85.95	85.96	90.56	93.78	94.15	92.81
EOM	90.87	90.07	89.36	88.41	87.45	86.62	85.77	85.70	90.85	93.54	94.56	92.63

WTR YEAR 1988 MAX 85.28 MAY 6, 1988 MIN 94.83 AUG 11, 1988



GROUND-WATER LEVELS

329

CHERRY COUNTY

423205100321501. Local number 30N-28W-36AAA.

LOCATION.--Lat 42°32'05", long 100°32'15", NE1/4NE1/4NE1/4 sec.36, T.30 N., R.28 W., Hydrologic Unit 10150004, 8 mi south of the intersection of U.S. Highway 83 and State Highway 483, south of Valentine.
Owner: U.S. Geological Survey.

AQUIFER.--Sand deposits of Pleistocene age.

WELL CHARACTERISTICS.--Bored observation water-table well, diameter 1.25 in, depth 12 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 2,897.26 ft. Measuring point: Top of casing 3.00 ft above land-surface datum.

REMARKS.--Water levels affected by evapotranspiration.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.30 ft above land-surface datum, Feb. 6, 1985. Lowest, 1.99 ft below land-surface datum, Oct. 4, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	0.29	FEB	0.00
		FEB 24	0.00
		AUG 9	1.00

CLAY COUNTY

402940098154001. Local number 6N-8W-17BB.

LOCATION.--Lat 40°29'40", long 98°15'40", NW1/4NW1/4 sec.17, T.6 N., R.8 W., Hydrologic Unit 10270206, 0.7 mi south of Glenville. Owner: Willard W. Kissinger.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 18 in, depth 151 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 1,846 ft. Measuring point: Hole in turbine base at land-surface datum.

REMARKS.--Water levels affected by pumping during irrigation season.

PERIOD OF RECORD.--October 1952; June 1954 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 95.53 ft below land-surface datum, June 24, 1954; lowest, 108.85 ft below land-surface datum, Oct. 18, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988			
DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 6	106.00	MAR 20	104.00
		APR 8	103.80

COLFAX COUNTY

412810097054501. Local number 17N-3E-4CC.

LOCATION.--Lat 41°28'10", long 97°05'45", SW1/4SW1/4 sec.4, T.17 N., R.3 E., Hydrologic Unit 10200201, 2 mi west and 1 mi north of intersection of U.S. Highway 30 and State Highway 15 in Schuyler. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.25 in, depth 16 ft, screened 14 to 16 ft.

DATUM.--Altitude of land-surface datum is 1,370.58 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.15 ft below land-surface datum, Apr. 1, 1952; lowest, 10.68 ft below land-surface datum, Oct. 29, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	6.73		

GROUND-WATER LEVELS

DAWES COUNTY

424100103243501. Local number 31N-52W-3DC.

LOCATION.--Lat 42°41'00", long 103°24'35", SW1/4SE1/4 sec.3, T.31 N., R.52 W., Hydrologic Unit 10140201, behind house at 312 Annin Street in Crawford. Owner: T. P. Moody.

AQUIFER.--Sand and gravel deposits, undifferentiated, of Quaternary age.

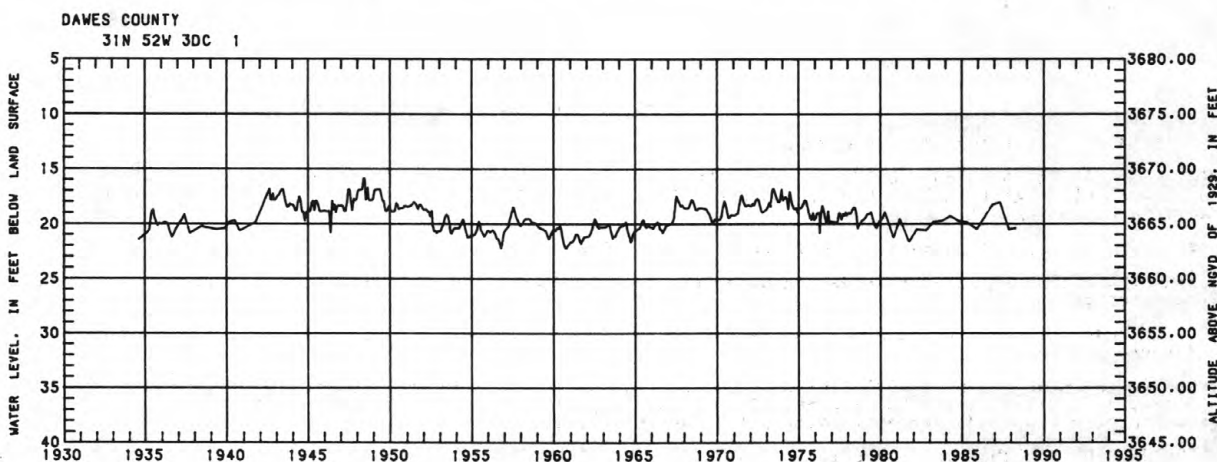
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 39 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 3,685 ft. Measuring point: Edge of iron plate 1.07 ft above land-surface datum.

PERIOD OF RECORD.--August 1934 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.87 ft below land-surface datum, May 30, 1948; lowest, 22.28 ft below land-surface datum, Oct. 31, 1956.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988			
DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 23	20.54	APR 27	20.40



DAWSON COUNTY

405250099445501. Local number 10N-21W-18DDD.

LOCATION.--Lat 40°52'50", long 99°44'55", SE1/4SE1/4 sec.18, T.10 N., R.21 W., Hydrologic Unit 10200101, 3.5 mi north of the intersection of Route 21 and U.S. Highway 30 in Lexington. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 120 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 2,420.58 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

REMARKS.--Water levels in well affected by pumpage from nearby irrigation wells and by seepage from irrigation canals.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 7.06 ft below land-surface datum, June 18, 1984; lowest, 21.50 ft below land-surface datum, July 16, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	10.34	10.91	11.19	11.50	11.74	11.27	11.45	11.80	11.91	14.61	9.71	9.27
10	10.52	11.00	11.24	11.52	11.78	11.19	11.53	11.85	11.75	10.22	9.14	9.44
15	10.53	10.99	11.32	11.51	11.75	11.35	11.57	11.99	11.57	10.92	8.61	9.52
20	10.67	11.10	11.37	11.61	11.37	11.31	11.64	12.03	11.42	9.93	8.62	9.71
25	10.71	11.16	11.41	11.67	11.31	11.37	11.67	11.96	12.07	9.92	9.44	9.85
EOY	10.81	11.18	11.47	11.69	11.28	11.43	11.71	12.08	12.38	14.20	9.55	9.93

WTR YEAR 1988 MAX 8.15 AUG 15, 1988 MIN 14.81 JUL 7, 1988

GROUND-WATER LEVELS

331

DAWSON COUNTY

404850099503501. Local number 10N-22W-29AA.

LOCATION.--Lat 40°48'50", long 99°50'35", NE1/4NE1/4 sec.29, T.10 N., R.22 W., Hydrologic Unit 10200101, 2 mi east of Dorr. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1 in, depth 12 ft, screened 10 to 12 ft.

DATUM.--Altitude of land-surface datum is 2,435.14 ft. Measuring point: Top of casing 1.80 ft above land-surface datum.

REMARKS.--Water levels in well affected by pumping from nearby wells during irrigation season. No well reading was made in 1983 water year.

PERIOD OF RECORD.--October 1931 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.52 ft below land-surface datum, July 12, 1947; lowest, 8.88 ft below land-surface datum, Oct. 19, 1972.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 19	4.94	APR 16	3.73								

DUNDY COUNTY

400155101521302. Local number 1N-40W-29BB2.

LOCATION.--Lat 40°01'55", long 101°52'13", NW1/4NW1/4 sec.29, T.1 N., R.40 W., Hydrologic Unit 10250002, 3.5 mi east of Haigler on U.S. Highway 34 and 0.5 mi north. Well is within 0.5 mi of Republican River. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits, undifferentiated, of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 48.8 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 3,205 ft. Measuring point: South side of casing 1.6 ft above land-surface datum.

REMARKS.--Replacement for well 400155101521301, local number 1N-40W-29BB1 with period of record from May 1946 to June 1975. Water levels in well are affected by pumping from nearby irrigation wells, evapotranspiration, and changes in stage of Republican River.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.41 ft below land-surface datum, June 21, 1984; lowest, 20.97 ft below land-surface datum, Sept. 12, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	17.87	17.54	17.26	17.02	16.76	16.60	16.44	16.31	16.26	17.12	18.28	19.25
10	17.81	17.49	17.23	16.98	16.72	16.58	16.42	16.31	16.23	17.33	18.50	19.27
15	17.74	17.43	17.19	16.92	16.68	16.56	16.37	16.29	16.21	17.49	18.66	18.96
20	17.70	17.38	17.15	16.88	16.65	16.53	16.33	16.40	16.44	17.69	18.80	18.82
25	17.64	17.34	17.11	16.83	16.64	16.50	16.33	16.30	16.60	17.96	18.97	18.69
EOM	17.58	17.30	17.07	16.79	16.63	16.47	16.33	16.31	16.86	18.14	19.13	18.59

WTR YEAR 1988 MAX 16.19 JUN 17, 1988 MIN 19.27 SEP 9 AND 10, 1988

GROUND-WATER LEVELS

FILLMORE COUNTY

402504097432201. Local number 5N-4W-12BDC.

LOCATION.--Lat 40°25'04", long 97°43'22", SW1/4SE1/4NW1/4 sec.12, T.5 N., R.4 W., Hydrologic Unit 10270206, one-half block south of fire station on principal north-south street in Shickley. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 5 in, depth 260.0 ft, perforated 100 to 260 ft.

DATUM.--Altitude of land-surface datum is 1651 ft. Measuring point: Top of casing 1.5 ft above land-surface datum.

REMARKS.--Replacement for 402450097434001, local number 5N-4W-12BC, period of record October 1956 to September 1977. Water levels in well affected by pumping from nearby municipal and irrigation wells.

PERIOD OF RECORD.--June 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 90.85 ft below land-surface datum, June 8, 1978; lowest, 98.69 ft below land-surface datum, Sept. 14, 1984.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	94.88	94.49	93.80	93.44	93.17	92.55	92.37	91.83	91.57	93.41	95.42	96.42
10	94.87	94.36	93.74	93.12	93.08	92.24	92.29	91.92	92.03	93.88	95.73	96.42
15	94.60	94.16	93.79	92.99	92.91	92.44	92.07	91.79	92.51	94.44	95.98	96.32
20	94.66	94.19	93.85	93.24	92.82	92.25	91.93	91.85	91.87	94.56	95.99	96.37
25	94.50	94.10	93.73	93.25	92.86	92.35	91.95	91.65	93.31	94.80	96.16	96.35
EOM	94.42	93.96	93.66	93.23	92.68	92.36	91.91	91.65	93.32	95.17	96.23	96.33

WTR YEAR 1988 MAX 91.57 JUN 5, 1988 MIN 96.42 SEP 5 AND 10, 1988

FILLMORE COUNTY

403800097300701. Local number 8N-2W-26AD.

LOCATION.--Lat 40°38'00", long 97°30'07", SE1/4NE1/4 sec.26, T.8 N., R.2 W., Hydrologic Unit 10270203, 2.5 mi west on Route 6 from the principal street of Exeter, then 0.4 mi south. Owner: U.S. Geological Survey.

AQUIFER.--Loess of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 40 ft, perforated 25 to 40 ft.

DATUM.--Altitude of land-surface datum is 1,610 ft. Measuring point: Top of casing at land-surface datum.

REMARKS.--Perched aquifer, water levels affected by infiltration and deep percolation of applied irrigation water pumped from deeper aquifer.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.03 ft below land-surface datum, Mar. 24, 1987; lowest, 24.16 ft below land-surface datum, July 10, 1958.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	6.53	6.89	7.00	7.20	.....	7.55	7.45	7.62	8.02	8.72	9.13	10.45
10	6.70	6.92	6.91	.....	.....	7.50	7.50	7.62	8.19	8.75	9.39	10.69
15	6.63	6.78	6.98	7.23	.....	7.61	7.46	7.67	8.37	8.85	9.57	10.92
20	6.75	7.02	6.99	7.17	.....	7.55	7.43	7.78	8.50	8.83	9.70	11.08
25	6.77	7.02	7.08	.....	.....	7.56	7.50	7.84	8.67	8.69	9.91	11.21
EOM	6.76	7.08	7.10	.....	.....	7.66	7.58	7.91	8.76	8.91	10.16	10.16

WTR YEAR 1988 MAX 6.53 OCT 5, 1987 MIN 11.21 SEP 25, 1988

GROUND-WATER LEVELS

333

FURNAS COUNTY

401718099491001. Local number 4N-22W-29AD.

LOCATION.--Lat 40°17'18", long 99°49'10", SE1/4NE1/4 sec.29, T.4 N., R.22 W., Hydrologic Unit 10250009, 2 mi west and 0.5 mi north of Edison. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in, depth 23 ft, screened 21 to 23 ft.

DATUM.--Altitude of land-surface datum is 2,134 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.60 ft below land surface datum, Aug. 22, 1978; lowest, 17.69 ft below land-surface datum, Feb. 8, 1946.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	11.90	MAR 15	11.40	JUN 6	11.30	AUG 22	11.60				

GARDEN COUNTY

414124102230101. Local number 20N-44W-22CB.

LOCATION.--Lat 41°41'24", long 102°23'01", NW1/4SW1/4 sec.22, T.20 N., R.44 W., Hydrologic Unit 10180009, 5.8 mi southeast of refuge headquarters. Owner: Crescent Lake Migratory Bird Refuge.

AQUIFER.--Sand deposits of Pleistocene age.

WELL CHARACTERISTICS.--Driven observation water-table well, diameter 1.50 in, depth 22.1 ft below land-surface datum.

DATUM.--Altitude of land-surface datum is 3783.16 ft. Measuring point: Top of casing 1.61 ft above land-surface datum.

PERIOD OF RECORD.--August 1934-39; 1943 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.57 ft below land-surface datum, Oct. 7, 1934; lowest, 20.92 ft below land-surface datum, Mar. 27, 1978.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 2	18.25										

HALL COUNTY

405315098304302. Local number 11N-11W-25CC2.

LOCATION.--Lat 40°53'15", long 98°30'43", SW1/4SW1/4 sec.25, T.11 N., R.11 W., Hydrologic Unit 10200103, 1.0 mi north and 2.0 mi west of Alda. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 65 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 1,924.0 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

REMARKS.--Replacement for 405315098304301, local number 11N-11W-25CC, period of record October 1946 to November 1977. Water levels in wells affected by pumping from nearby wells during irrigation season.

PERIOD OF RECORD.-- April 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 13.83 ft below land-surface datum, June 27, 1987; lowest, 25.98 ft below land-surface datum, Aug. 31, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	15.70	15.57	15.66	15.68	15.48	15.55	15.56	15.56	16.30	17.07	17.72
10	15.72	15.56	15.58	15.63	15.42	15.60	15.57	15.61	16.41	17.25	17.75
15	15.58	15.60	15.56	15.57	15.55	15.56	15.55	15.66	16.56	17.37	17.78
20	15.67	15.60	15.60	15.49	.....	15.48	15.52	15.72	16.69	17.45	17.77
25	15.65	15.63	15.64	15.54	15.53	15.51	15.58	15.87	16.75	17.55	17.74
ECM	15.65	15.57	15.64	15.62	15.51	15.57	15.52	15.54	16.10	16.87	17.64	17.74

WTR YEAR 1988 MAX 15.37 MAR 11, 1988 MIN 17.80 SEP 12 AND 13, 1988

HAMILTON COUNTY

404836097584101 Local number 10N-6W-27ACAA.

LOCATION.--Lat 40°48'36", long 97°58'41", SE1/4NE1/4 sec.27, T.10 N., R.6 W., Hydrologic Unit 10270203, 4.0 mi south of junction of Route 14 and U.S. Highway 34 in Aurora, then 1.0 mi east and 0.3 mi south. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of the Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 170 ft, casing perforated below water-table.

DATUM.--Altitude of land surface datum is 1791.3 ft. Measuring point: Top of casing 1.5 ft above land surface datum.

REMARKS.--Replacement for well 404825097583301. Local number 10N-6W-26BC with period of record March 1956 to March 1982 located across the county road to the east.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 91.31 ft below land-surface datum, June 5, 1988; lowest, 107.40 ft below land-surface datum, Aug. 24, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	96.05	95.07	94.09	.....	.....	92.40	92.03	91.60	91.31	94.14	97.46	99.13
10	95.94	94.93	94.01	.....	92.93	92.19	91.98	91.59	91.44	94.47	98.07	98.91
15	95.62	94.64	93.93	93.08	92.80	92.32	91.86	91.57	91.53	95.32	98.17	98.75
20	95.54	94.59	93.89	93.18	92.67	92.15	91.72	91.43	92.38	95.63	98.78	98.66
25	95.32	94.43	93.78	93.06	92.58	92.15	91.66	91.43	93.58	95.87	99.13	98.50
ECM	95.17	94.25	93.67	93.04	92.52	92.07	91.61	91.36	94.18	96.74	99.15	98.37

WTR YEAR 1988 MAX 91.31 JUN 5, 1988 MIN 99.15 AUG 31, 1988

GROUND-WATER LEVELS

HAMILTON COUNTY

405514097573901. Local number 11N-6W-13CB.

LOCATION.--Lat 40°55'14", long 97°57'39", NW1/4SW1/4 sec.13, T.11 N., R.6 W., Hydrologic Unit 10270201, 2 mi east and 3.5 mi north of Aurora. Owner: O. S. Swedberg.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 24 in, depth 194 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 1,812.2 ft. Measuring point: Hole in south side turbine base at land-surface datum.

REMARKS.--Water levels affected by pumping during irrigation season.

PERIOD OF RECORD.--September 1934 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 90.04 ft below land-surface datum, Sept. 29, 1934; lowest, 117.18 ft below land-surface datum, Nov. 15, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 5	98.31	APR 21	94.82								

HARLAN COUNTY

400920099215501. Local number 2N-18W-9BCC.

LOCATION.--Lat 40°09'20", long 99°21'55", SW1/4SW1/4NW1/4 sec.9, T.2 N., R.18 W., Hydrologic Unit 10250009, 3.5 mi north of the junction of Route 3 and U.S. Highway 183 in Alma. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 5.50 in, depth 170 ft, perforated from 140 to 170 ft.

DATUM.--Altitude of land-surface datum is 2,120 ft. Measuring point: Top of casing 0.50 ft above land-surface datum.

REMARKS.--Water levels affected by pumping from nearby wells during irrigation season.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 84.39 ft below land-surface datum, May 11, 1966; lowest, 109.96 ft below land-surface datum, Sept. 15, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	90.78	90.50	90.10	89.98	89.83	89.53	89.44	89.30	89.27	98.18	102.93	92.20
10	90.83	90.46	90.10	89.83	89.78	89.37	89.61	89.33	89.43	96.67	100.93	92.83
15	90.60	90.19	90.04	89.77	89.69	89.51	89.55	89.32	92.97	103.61	92.87	92.75
20	91.48	90.31	90.10	89.88	89.60	89.36	89.29	89.27	98.78	95.13	98.31	92.76
25	90.64	90.23	90.09	89.89	89.60	89.43	89.28	89.23	102.31	101.18	98.58	91.70
EOM	90.45	90.12	90.03	89.82	89.61	89.42	89.27	89.28	102.62	103.75	94.55	91.60

WTR YEAR 1988 MAX 89.04 MAY 7, 1988 MIN 104.71 AUG 3, 1988

GROUND-WATER LEVELS

337

HARLAN COUNTY

400620099274001. Local number 2N-19W-28DD.

LOCATION.--Lat 40°06'20", long 99°27'40", SE1/4SE1/4 sec.28, T.2 N., R.19 W., Hydrologic Unit 10250009,
1.8 mi south of Orleans. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

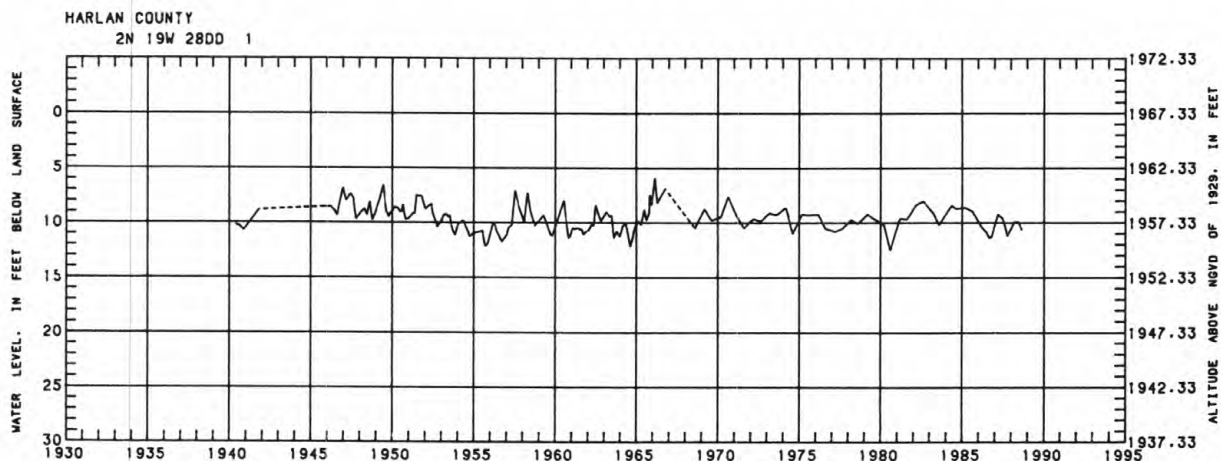
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1 in, depth 22 ft, screened 20 to 22 ft.

DATUM.--Altitude of land-surface datum is 1,967.53 ft. Measuring point: Top of casing 1.20 ft above land-surface datum.

PERIOD OF RECORD.--May 1940 to October 1941; March 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.9 ft below land-surface datum, Feb. 15, 1966;
lowest, 12.50 ft below land-surface datum, Aug. 5, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	11.20	MAR 15	9.90	JUN 6	9.90	AUG 22	10.60				



GROUND-WATER LEVELS

HOLT COUNTY

421605098203001. Local number 27N-9W-34DA.

LOCATION.--Lat 42°16'05", long 98°20'30", NE1/4SE1/4 sec.34, T.27 N., R.9 W., Hydrologic Unit 10220001, 0.5 mi north of Ewing. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

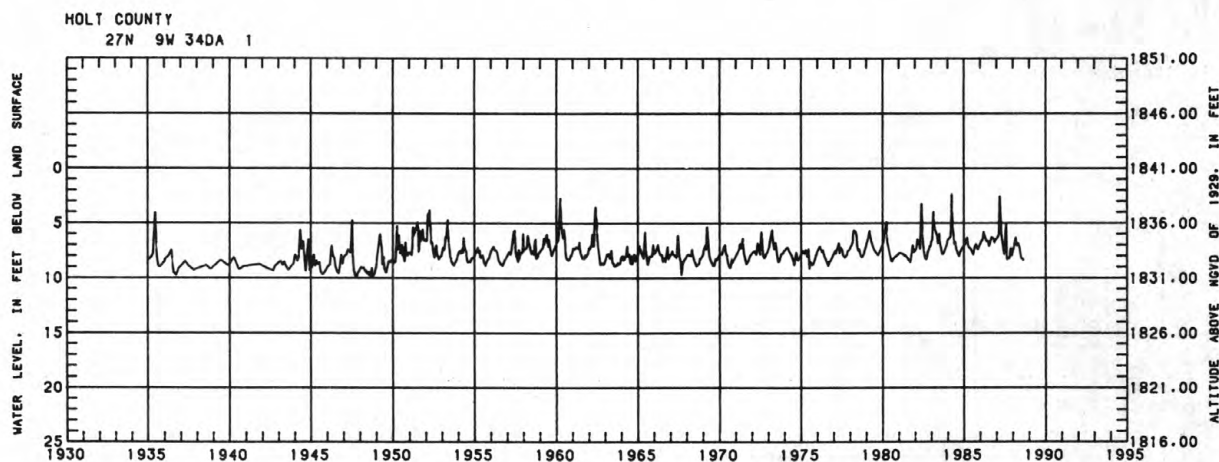
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1 in, depth 17 ft, screened 15 to 17 ft.

DATUM.--Altitude of land-surface datum is 1,841 ft. Measuring point: Top of casing 1.10 ft above land-surface datum.

PERIOD OF RECORD.--December 1934 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.34 ft below land-surface datum, Apr. 9, 1984; lowest, 9.90 ft below land-surface datum, Sept. 1, 1948.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	8.22	DEC 15	8.00	FEB 9	7.12	APR 5	7.07	JUN 7	7.30	AUG 4	8.25
OCT 22	8.20	JAN 14	7.46	MAR 9	6.30	MAY 3	6.81	JUL 6	8.15	AUG 30	8.36
NOV 18	7.26										



HOLT COUNTY

423148098300601. Local number 30N-10W-32DAA.

LOCATION.--Lat 42°31'48", long 98°30'06", NE1/4NE1/4SE1/4 sec.32, T.30 N., R.10 W., Hydrologic Unit 10150007, 2 mi east on paved road from O'Neill, then 2 mi north, 4 mi east, 2 mi north, 2 mi east, and 0.5 mi north. Owner: William J. Murphy.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 85 ft, perforated 25.5 to 85 ft.

DATUM.--Altitude of land-surface datum is 1,952 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

REMARKS.--Water levels in this well affected by withdrawals by nearby irrigation wells completed in this aquifer and withdrawals from a deeper aquifer which has resulted in water movement from the upper aquifer to the deeper aquifer.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 35.41 ft below land-surface datum, Oct. 21, 1966; lowest, 53.73 ft below land-surface datum, Sept. 17, 1982.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	43.17	43.21	43.00	43.02	42.93	42.72	42.57	42.46	42.39	42.87	43.90	44.54
10	43.26	43.20	42.98	42.87	42.88	42.60	42.60	42.46	42.42	43.07	44.00	44.57
15	43.14	43.06	43.02	42.86	42.80	42.72	42.53	42.40	42.42	43.25	44.13	44.61
20	43.21	43.17	43.00	42.89	42.77	42.61	42.46	42.40	42.41	43.45	44.24	44.67
25	43.18	43.14	43.02	42.93	42.78	42.58	42.45	42.44	42.57	43.61	44.39	44.71
EOM	43.15	43.03	43.01	42.88	42.76	42.63	42.41	42.39	42.72	43.78	44.45	44.75

WTR YEAR 1988 MAX 42.30 JUN 7 AND 12 1988 MIN 44.75 SEP 29 AND 30, 1988

GROUND-WATER LEVELS

339

HOLT COUNTY

423730098560001. Local number 31N-14W-27DDD.

LOCATION.--Lat 42°37'30", long 98°56'00", SE1/4SE1/4 sec.27, T.31 N., R.14 W., Hydrologic Unit 10150007, 6 mi north from Atkinson on Route 11, then 2 mi east. Owner: Elmer Goldfuss.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 72 ft, perforated 32 to 72 ft.

DATUM.--Altitude of land-surface datum is 2,080 ft. Measuring point: Top of casing at land-surface datum.

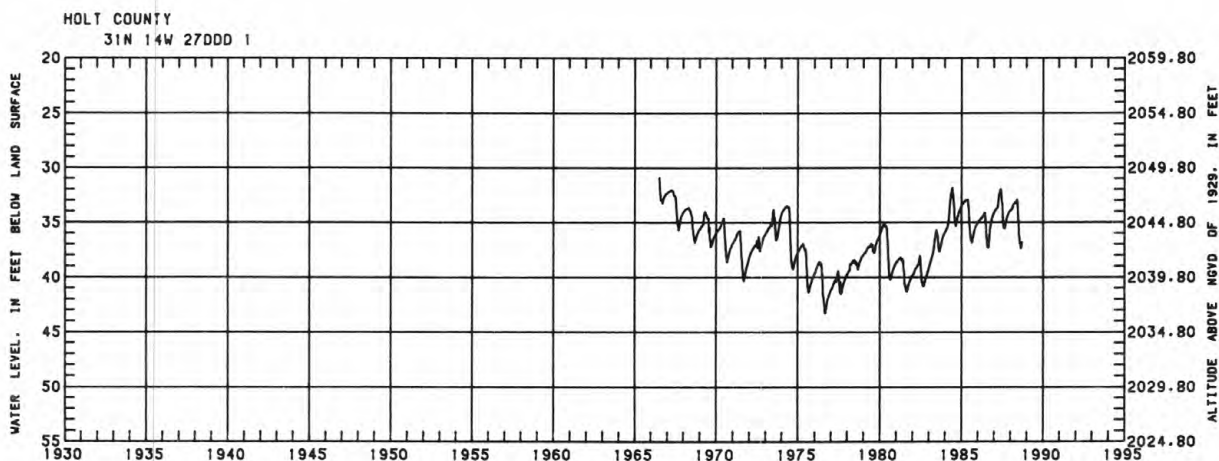
REMARKS.--Water levels in well affected by pumping of nearby wells during irrigation season.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 30.91 ft below land-surface datum, July 7, 1966; lowest, 43.30 ft below land-surface datum, Sept. 10, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	35.01	34.49	34.16	33.96	33.85	33.51	33.29	33.19	33.04	34.32	36.52	37.33
10	34.91	34.46	34.09	33.90	33.80	33.42	33.31	33.18	32.92	34.74	36.62	37.42
15	34.79	34.35	34.07	33.89	33.75	33.45	33.25	33.12	33.01	34.93	36.84	37.32
20	34.71	34.34	34.01	33.85	33.71	33.36	33.21	33.20	33.18	35.37	36.98	37.11
25	34.64	34.28	34.01	33.86	33.76	33.32	33.20	33.23	33.50	35.81	36.97	36.96
EOY	34.54	34.20	33.98	33.83	33.70	33.34	33.17	33.12	33.96	36.31	37.16	36.83
WTR YEAR 1988	MAX	32.86	JUN 12 AND 14, 1988	MIN	37.43	SEP 11, 1988						



GROUND-WATER LEVELS

KEARNEY COUNTY

402625098594501. Local number 6N-15W-34DC.

LOCATION.--Lat 40°26'25", long 98°59'45", SW1/4SE1/4 sec.34, T.6 N., R.15 W., Hydrologic Unit 10270206, 4.5 mi south and 2.5 mi west of the junction of Route 10 and U.S. Highway 34 near Minden. Owner: Conservation and Survey Division, University of Nebraska-Lincoln.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 210 ft, cased with steel, perforated 190 to 210 ft.

DATUM.--Altitude of land-surface datum is 2,210 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

REMARKS.--Replacement for 402615099000001, local number 5N-15W-3BA1, period of record August 1947 to September 1967. Water levels in well affected by seepage losses from nearby canals and by pumping of nearby wells during irrigation season.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 70.91 ft below land-surface datum, June 8, 1988; lowest, 119.43 ft below land-surface datum, Aug. 27, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	76.53	75.46	74.32	73.84	.....	.....	.....	71.66	71.56	113.50	112.08	82.04
10	76.68	75.36	74.13	73.42	.....	71.98H	.....	71.69	71.34	100.17	105.15	80.53
15	75.98	74.55	74.10	73.24	.....	.....	.....	71.38	82.05	114.94	82.78	79.68
20	76.04	74.98	73.97	73.20	.....	.....	71.50	71.39	103.76	89.20	89.49	79.04
25	75.87	74.70	74.02	73.29	.....	.....	71.55	71.37	111.74	101.75	108.41H	78.70
EOY	75.33	74.30	73.83	.....	.....	.....	71.55	71.13	103.83	104.46	88.20	78.38

WTR YEAR 1988 MAX 70.91 JUN 8, 1988 MIN 115.95 JUL 8, 1988

H TAPE MEASUREMENT

KEARNEY COUNTY

403354098553702. Local number 7N-14W-20BA2.

LOCATION.--Lat 40°33'54", long 98°55'37", NE1/4NW1/4 sec.20, T.7 N., R.14 W., Hydrologic Unit 10270206, 1.4 mi east and 4.5 mi north of intersection of U.S. Highway 6 and State Highway 10 in Minden. Owner: Gary Dornhoff.

AQUIFER.--Sand deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 16 in, depth 214 ft.

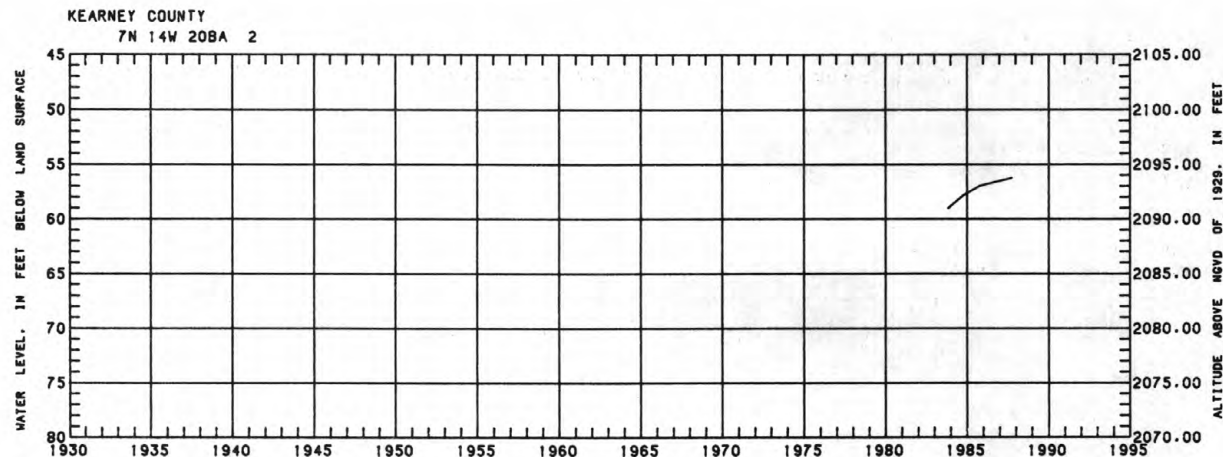
DATUM.--Altitude of land-surface datum is 2,150 ft. Measuring point: 0.30 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 56.27 ft below land-surface datum, Oct. 2, 1987; lowest, 59.06 ft below land surface datum, Oct. 24, 1983.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	56.27										



GROUND-WATER LEVELS

343

LANCASTER COUNTY

404706096413001. Local number 10N-6E-36CDD.

LOCATION.--Lat 40°47'06", long 96°41'30", SE1/4SE1/4SW1/4 sec.36, T.10 N., R.6 E., Hydrologic Unit 10200203, in Irvingdale Park on the north side of Van Dorn Street between 19th and 20th Streets in Lincoln. Owner: City of Lincoln.

AQUIFER.--Dakota Formation of Lower Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in, depth 170 ft, casing perforated below water table.

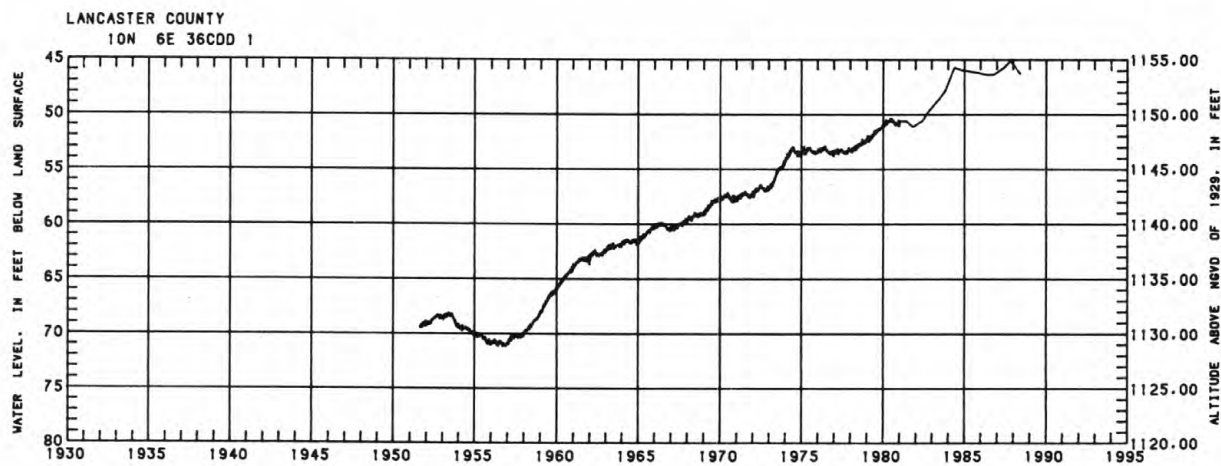
DATUM.--Altitude of land-surface datum is 1,200 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

REMARKS.--Recorder removed in January 1983. Well measured in spring and fall thereafter.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 45.07 ft below land-surface datum, Oct. 26, 1987; lowest 71.19 ft below land-surface datum, Sept. 5, 1956.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988									
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	45.07	MAY 25	46.25						



GROUND-WATER LEVELS

MERRICK COUNTY

410143098090301. Local number 12N-7W-7AA.

LOCATION.--Lat 41°01'43", long 98°09'03", NE1/4NE1/4 sec.7, T.12 N., R.7 W., Hydrologic Unit 10200103, 0.5 mi north and 0.5 mi west of Chapman. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in, depth 13 ft, screened 11 to 13 ft.

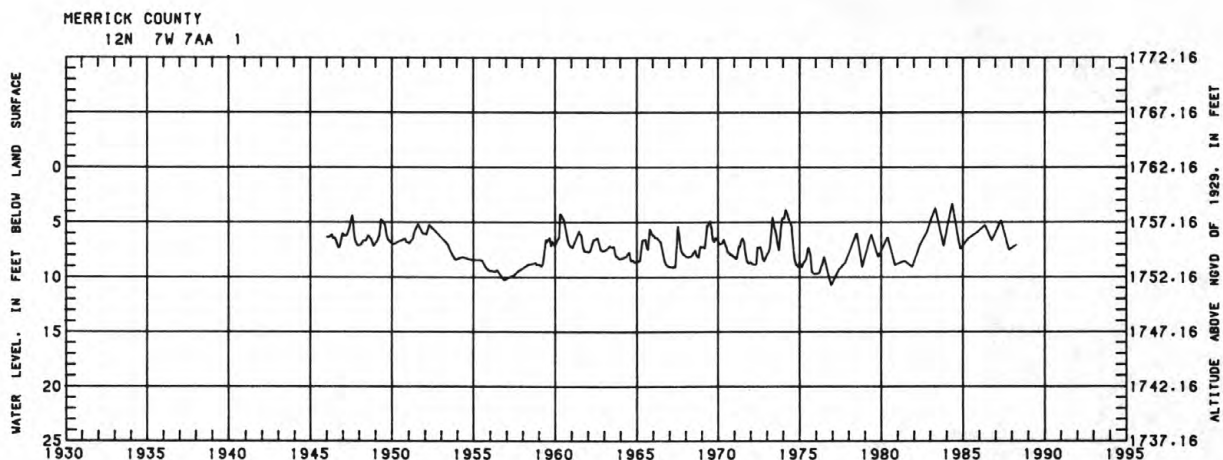
DATUM.--Altitude of land-surface datum is 1,762.16 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

REMARKS.--Water levels in well affected by pumping of nearby wells during irrigation season and by evapotranspiration.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.31 ft below land-surface datum, May 4, 1984; lowest, 10.75 ft below land-surface datum, Dec. 3, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988	
DATE	WATER LEVEL
OCT 21	7.52
APR 7	7.09



MORRILL COUNTY

414058103054001. Local number 20N-50W-28BBC.

LOCATION.--Lat 41°40'58", long 103°05'40", SW1/4NW1/4NW1/4 sec.28, T.20 N., R.50 W., Hydrologic unit 10180009, 0.1 mi west of Northport. Owner: Fred Smith.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 1.25 in, depth 28 ft, screened 25 to 28 ft.

DATUM.--Altitude of land-surface datum is 3,675 ft. Measuring point: Top of casing 2.0 ft above land-surface datum.

REMARKS.--Replacement for well 414107103054501, local number 20N-50W-28BB with period of record September 1934 to November 1942; November 1944 to November 1980.

PERIOD OF RECORD.--October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.88 ft below land-surface datum, May 10, 1983; lowest, 15.68 ft below land-surface datum, Mar. 18, 1982, and Mar. 22, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988	
DATE	WATER LEVEL
OCT 20	15.42
MAR 22	15.68

GROUND-WATER LEVELS

SALINE COUNTY

403855097072501. Local number 8N-3E-19ADA.

LOCATION.--Lat 40°38'55", long 97°07'25", NE1/4SE1/4NE1/4 sec.19, T.8 N., R.3 E., Hydrologic Unit 10270202, west edge of Dorchester, on west side of Route 15 between U.S. Highway and Route 33. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 5 in, depth 151 ft, perforated 142 to 151 ft.

DATUM.--Altitude of land-surface datum is 1,496 ft. Measuring point: Top of casing at land-surface datum.

REMARKS.--Water levels in well affected by pumping of nearby wells during irrigation season.

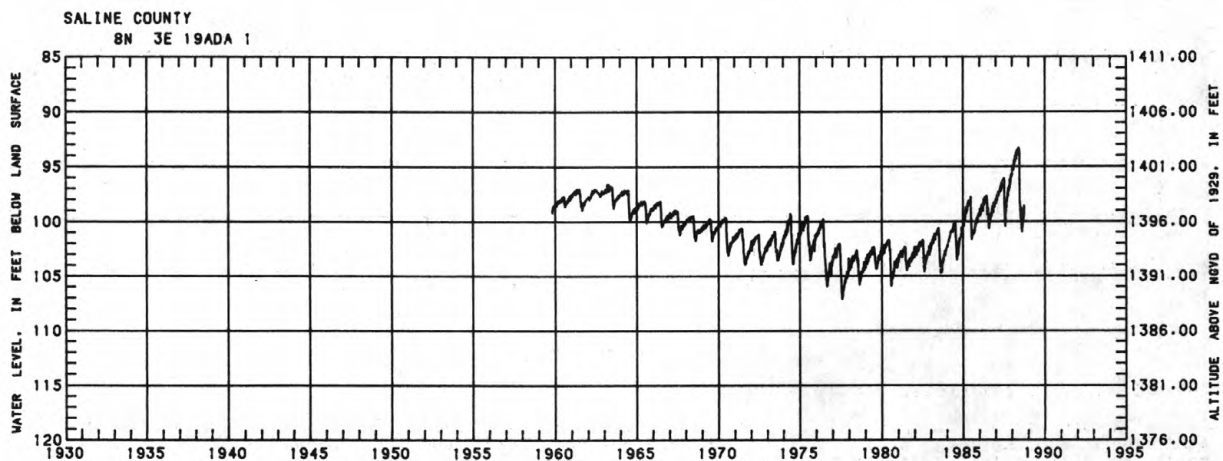
PERIOD OF RECORD.--October 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 93.32 ft below land-surface datum, May 31, 1988; lowest, 107.15 ft below land-surface datum, Aug. 25, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	97.25	97.00	96.14	95.78	95.37	94.46	93.99	93.81	93.38	98.76	100.32	100.03
10	97.72	96.97	95.81	95.27	94.82	94.05	94.31	93.70	93.54	99.05	100.72	99.86
15	96.96	96.10	95.80	95.06	94.45	94.53	93.94	93.40	93.70	99.60	100.62	99.60
20	97.25	96.68	95.70	95.16	94.52	93.91	93.53	93.35	96.26	99.74	100.98	99.53
25	97.15	96.39	95.90	94.98	94.80	93.92	93.69	93.59	98.25	98.71	100.57	99.34
EOM	96.74	.....	95.66	95.01	94.59	94.19	93.67	93.32	98.76	98.76	100.18	99.22

WTR YEAR 1988 MAX 93.32 MAY 31, 1988 MIN 100.98 AUG 20, 1988



GROUND-WATER LEVELS

347

SAUNDERS COUNTY

410426096220401. Local number 13N-9E-24CC.

LOCATION.--Lat 41°04'26", long 96°22'04", SW1/4SW1/4 sec.24, T.13 N., R.9 E., Hydrologic Unit 10200202, 2 mi north of Ashland. Owner: City of Lincoln.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in, depth 12 ft, screened 10 to 12 ft.

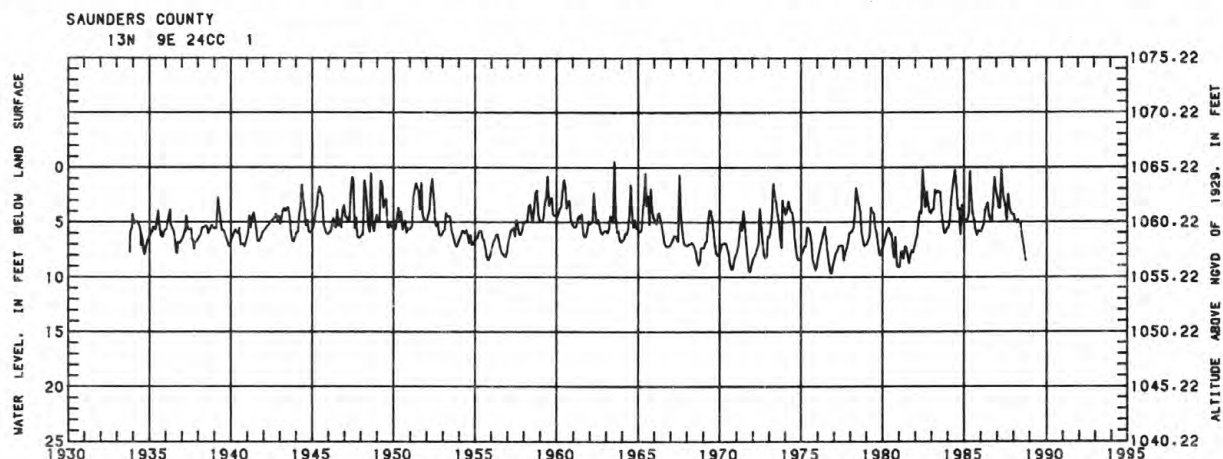
DATUM.--Altitude of land-surface datum is 1,065.22 ft. Measuring point: Top of casing 4.50 ft above land-surface datum.

REMARKS.--Water levels affected by pumping of nearby wells in City of Lincoln well field and high water in the Platte River.

PERIOD OF RECORD.--October 1933 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +0.30 ft above land-surface datum, Apr. 25, 1985; lowest, 9.65 ft below land-surface datum, Oct. 18, 1976.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	4.15	DEC 25	4.25	FEB 25	5.08	APR 25	5.07	JUN 25	6.10	SEP 25	8.49
NOV 25	4.30	JAN 25	4.85	MAR 25	4.76	MAY 25	4.95	JUL 25	6.88		



SAUNDERS COUNTY

411005096281502. Local number 14N-8E-24ACD2.

LOCATION.--Lat 41°10'05", long 96°28'15", SE1/4SW1/4NE1/4 sec.24, T.14 N., R.8 E., Hydrologic Unit 10200203, 4 mi south from the intersection of Routes 92 and 692 near Mead, then 0.65 mi east and 0.4 mi south to the south end of load line 2 of the Mead Field Station. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 80 ft, screened 60 to 80 ft.

DATUM.--Altitude of land-surface datum is 1,171 ft. Measuring point: Top of casing 0.5 ft above land-surface datum.

REMARKS.--Replacement for well 411005096281501, local number 14N-8E-24ACD1, with period of record July 1964 to November 1970. Water levels in well affected by pumping of nearby wells during irrigation season.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 39.26 ft below land-surface datum, Apr. 4, 1988; lowest, 46.98 ft below land-surface datum, Sept. 25, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	39.84	39.73	39.56	39.60	.....	.....	.....	.....	.....	.....	.....	.....
10	39.83	39.74	39.51	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	39.79	39.63	39.53	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	39.79	39.68	39.55	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	39.78	39.66	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
EOM	39.73	39.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
WTR YEAR 1988	MAX	39.26	APR 4, 1988	MIN	40.52	SEP 1, 1988						

GROUND-WATER LEVELS

SCOTTS BLUFF COUNTY

415325103392801. Local number 22N-55W-11DDC.

LOCATION.--Lat 41°53'25", long 103°39'28", SW1/4NE1/4NE1/4 sec.11, T.22 N., R.55 W., Hydrologic Unit 10180009, 0.5 mi north of the west intersection of Routes 71 and 26 in Scottsbluff, then 0.8 mi east.
 Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits, undifferentiated, of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 32 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 3,953 ft. Measuring point: Top of casing 0.00 ft above land-surface datum.

REMARKS.--Recorder removed in January 1984. Well measured monthly thereafter.

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

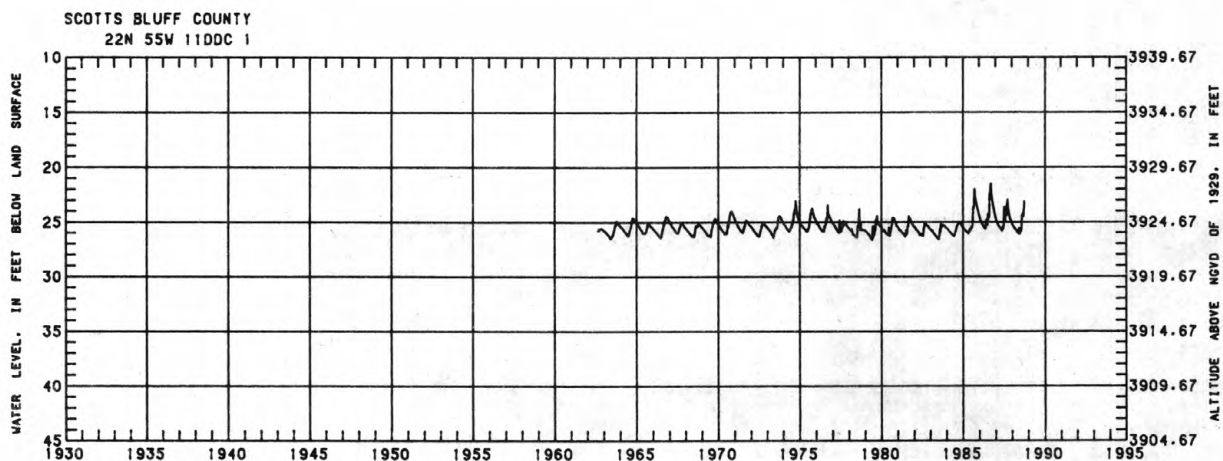
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.27 ft below land-surface datum, Sept. 9, 1986;
 lowest, 26.72 ft below land-surface datum, May 31, 1979.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
 LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	23.97	24.60	24.94	.....	.....	25.65	25.83	25.97	25.59	25.84	24.44	24.42
10	24.10	24.66	25.00	.....	25.52	25.67	25.85	26.00	25.89	.....	.....	24.52
15	24.20	24.70	25.07	.....	25.55	25.69	25.89	26.04	26.06	25.90	.....	23.94
20	24.32	24.79	25.10	.....	25.57	25.72	25.91	26.09	26.14	25.89	.....	23.88
25	24.38	24.85	25.17	.....	25.60	25.77	25.94	26.11	25.90	25.86	24.29	23.12
EOM	24.50	24.90	.....	.....	25.62	25.78	25.94	25.65	25.75	25.37	24.16	23.31

WTR YEAR 1988 MAX 23.12 SEP 25, 1988 MIN 26.14 JUNE 20, 1988

H TAPE MEASUREMENT



SCOTTS BLUFF COUNTY

420000103511501. Local number 23N-56W-6ABB.

LOCATION.--Lat 42°00'01", long 103°51'51", NW1/4NW1/4NE1/4 sec.6, T.23 N., R.56 W., Hydrologic Unit 10180009, 4 mi north and 2 mi west of intersection of U.S. Highway 26 and State Highway 29 in Mitchell. Owner: Carl Gompert.

AQUIFER.--Sand and gravel deposits, undifferentiated, of Quaternary age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 6 in, depth 118 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 4,087.7 ft. Measuring point: Hole in pump base 0.7 ft above land-surface datum.

REMARKS.--Local number formerly listed as 23N-56W-6AA. Water levels affected by withdrawals during irrigation season.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.24 ft below land-surface datum, Oct. 26, 1949; lowest, 41.72 ft below land-surface datum, Mar. 14, 1983.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	37.30	MAR 23	38.91								

SEWARD COUNTY

405406097115001. Local number 11N-2E-21DD.

LOCATION.--Lat 40°54'06", long 97°11'50", SE1/4SE1/4 sec.21, T.11 N., R.2 E., Hydrologic Unit 10270201, 4.5 mi west of Seward. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 5 in, depth 123 ft, perforated 112 to 123 ft.

DATUM.--Altitude of land-surface datum is 1,550 ft. Measuring point: Top of casing 0.00 ft above land-surface datum.

REMARKS.--Water levels in well affected by withdrawals from nearby irrigation wells.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 73.25 ft below land-surface datum, May 31 1988; lowest, 90.17 ft below land-surface datum, Aug. 5, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
 LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	77.15	76.30	.....	75.20	74.85	74.08	73.58	73.56	73.36	.....	81.73	81.00
10	77.31	76.32	75.20	74.85	74.47	73.79	73.89	.....	73.38	79.30	81.72	80.39
15	76.74	75.72	75.31	74.69	.....	74.10	73.69	.....	73.49	79.85	82.20	80.06
20	76.75	75.99	75.07	74.48	.....	73.83	73.42	73.27	.....	80.96	81.89	79.41
25	76.64	75.79	75.21	74.64	74.28	73.61	73.43	73.38	73.79	80.51	81.82	79.20
EOM	76.20	.....	75.00	74.45	74.12	73.83	73.54	73.25	.....	80.60	81.13	.....

WTR YEAR 1988 MAX 73.25 MAY 31, 1988 MIN 82.20 AUG 15, 1988

GROUND-WATER LEVELS

SHERIDAN COUNTY

423034102415001. Local number 29N-46W-10AA.

LOCATION.--Lat 42°30'34", long 102°41'50" NE1/4NE1/4 sec.10, T.29 N., R.46 W., Hydrologic Unit 10150003, at Mirage Flats project headquarters, 11.5 mi south of Hay Springs. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in, depth 100 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 3,794.5 ft. Measuring point: Top of casing 1.5 ft above land-surface datum.

REMARKS.--Water levels affected by seepage losses from nearby irrigation canal and laterals and by withdrawals from nearby irrigation wells.

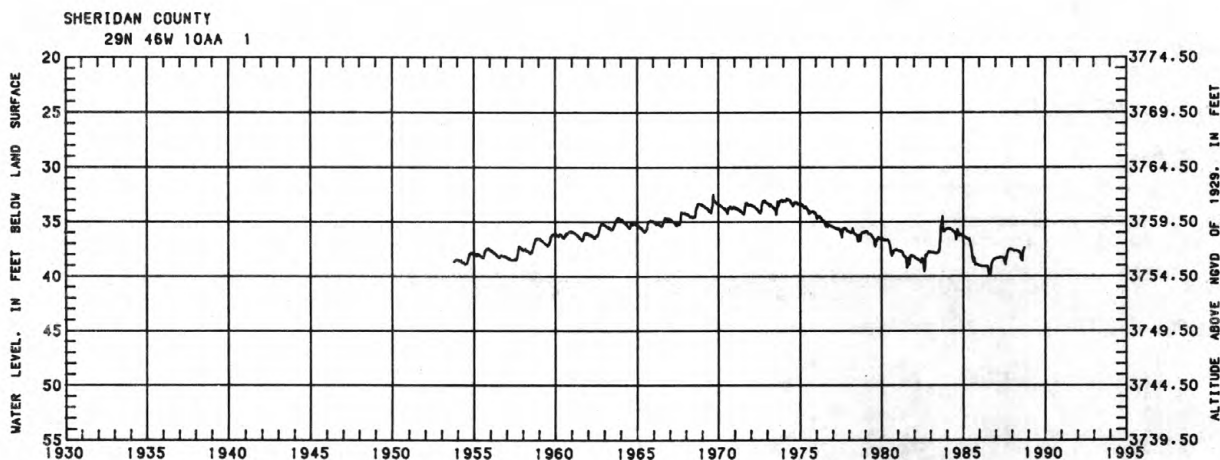
PERIOD OF RECORD.--September 1953 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 32.47 ft below land-surface datum, Aug. 25, 1969; lowest, 39.95 ft below land-surface datum, Aug. 8 and 9, 1986.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	37.58	37.52	37.52	37.57	37.67	37.63	37.66	37.70	37.75	38.13	38.01	37.66
10	37.57	37.51	37.51	37.55	37.67	37.59	37.67	37.70	37.81	38.40	38.32	37.58
15	37.55	37.51	37.56	37.55	37.61	.....	37.63	37.69	37.80	38.30	38.62	37.52
20	37.53	37.55	37.56	37.59	37.64	.....	37.67	37.73	37.79	38.15	38.25	37.42
25	37.50	37.54	37.58	37.61	37.66	37.66	37.67	37.76	37.83	38.19	37.77	37.39
EOM	37.50	37.51	37.58	37.61	37.65	37.68	37.65	37.80	37.92	38.55	37.76	37.39

WTR YEAR 1988 MAX 37.39 SEP 25 AND 30, 1988 MIN 38.62 AUG 15, 1988



THOMAS COUNTY

415845100334001. Local number 23N-28W-9DA.

LOCATION.--Lat 41°58'45", long 100°33'40", NE1/4SE1/4 sec.9, T.23 N., R.28 W., Hydrologic Unit 10210001, 1 mi east of courthouse in Thedford. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits, undifferentiated, of Quaternary age.

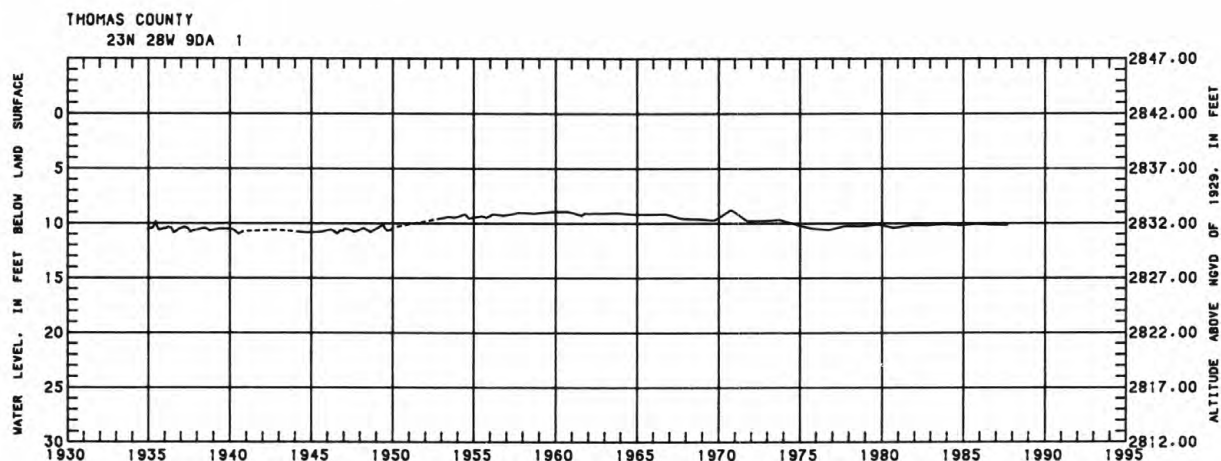
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in, depth 15 ft, screened from 13 to 15 ft.

DATUM.--Altitude of land-surface datum is 2,842 ft. Measuring point: Top of pipe 2.3 ft above land-surface datum.

PERIOD OF RECORD.--December 1934 to November 1942; August 1944 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.73 ft below land-surface datum, Oct. 16, 1970; lowest, 10.98 ft below land-surface datum, July 23, 1940.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988									
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	10.19								



GROUND-WATER LEVELS

VALLEY COUNTY

412955099123201. Local number 18N-16W-30CC.

LOCATION.--Lat 41°29'55", long 99°12'32", SW1/4SW1/4 sec.30, T.18 N., R.16 W., Hydrologic Unit 10210003, 4 mi west and 5 mi north of Arcadia. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 0.75 in, depth 15 ft, screened from 13 to 15 ft.

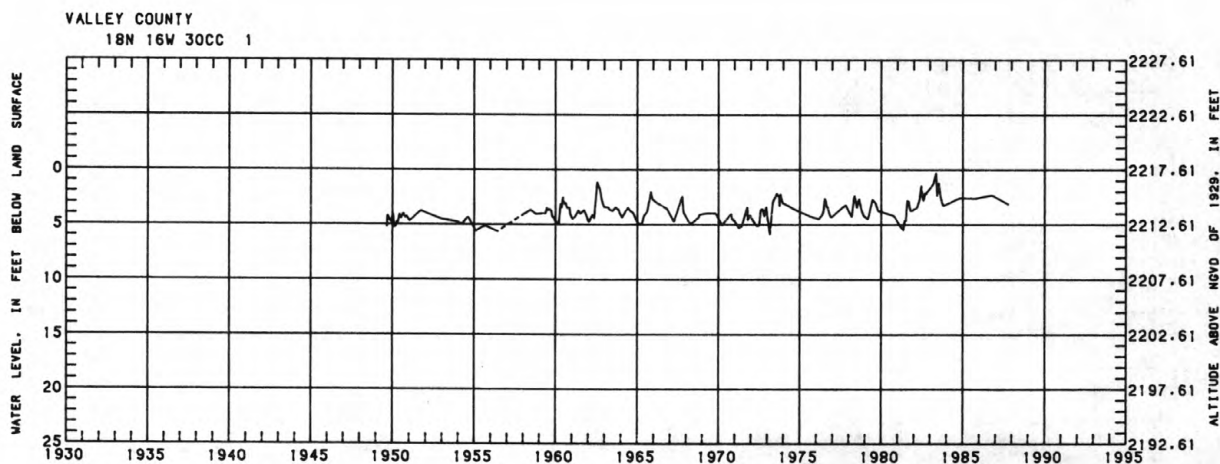
DATUM.--Altitude of land-surface datum is 2,217.61 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

REMARKS.--Water levels in well affected by evapotranspiration.

PERIOD OF RECORD.--August 1949 to June 1956; June 1958 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.25 ft below land-surface datum, May 3, 1983; lowest, 5.90 ft below land-surface datum, Mar. 1, 1973.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988									
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	3.12								



WEBSTER COUNTY

400423098314001. Local number 1N-11W-11AB.

LOCATION.--Lat 40°04'23", long 98°31'40", NW1/4NE1/4 sec.11, T.1 N., R.11 W., Hydrologic Unit 10250016, 1 mi south and 0.25 mi west of intersection of U.S. Highways 136 and 281 in Red Cloud. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 16.9 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 1,686 ft. Measuring point: Top of casing 1.1 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.34 ft below land-surface datum, July 11, 1951; lowest, 10.56 ft below land-surface datum, Apr. 5, 1957.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	7.34	MAY 10	6.85

YORK COUNTY

404618097482201. Local number 9N-4W-5CCC.

LOCATION.--Lat 40°46'18", long 97°48'22", SW1/4SW1/4SW1/4 sec.5, T.9 N., R.4 W., Hydrologic Unit 10270203, 0.5 mi south of Henderson. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 5 in, depth 170 ft, casing perforated below water table.

DATUM.--Altitude of land-surface datum is 1,708 ft. Measuring point: Top of casing 1.50 ft above land-surface datum.

REMARKS.--Replacement for well 404620097482501, local number 9N-4W-6DD with period of record May 1959 to September 1981 located on east side of highway across from old well.

PERIOD OF RECORD.--April 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 75.74 ft below land-surface datum, May 18, 1988; lowest, 87.52 ft below land-surface datum, Aug. 20, 1982.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988												
LOWEST WATER LEVEL FOR THE DAY												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	75.80	.....	.....	.....
10	77.61H	.....	.....	76.64	76.00	75.82	.....	.....	.....	81.10	81.47
15	76.54	76.16	.....	75.84	.....	.....	79.36	81.05	81.33
20	75.81	75.80	.....	79.53	81.45	81.35
25	75.97	.....	75.80	.....	79.64	.....	81.23
EOY	75.79	.....	80.25	.....	81.13

WTR YEAR 1988 MAX 75.74 MAY 18, 1988 MIN 81.47 SEP 5, 1988

H TAPE MEASUREMENT

YORK COUNTY

405305097351503. Local number 11N-2W-31BA3.

LOCATION.--Lat 40°53'05", long 97°35'15", NE1/4NW1/4 sec.31, T.11 N., R.2 W., Hydrologic Unit 10270203, south edge of York County Fairgrounds on the north side of York. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits of Pleistocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 165 ft, perforated below water table.

DATUM.--Altitude of land-surface datum is 1,659 ft. Measuring point: Top of casing 1.6 ft above land-surface datum.

REMARKS.--Replacement for well 405305097351501, local number 11N-2W-31BA1, with period of record October 1957 to January 1969. Water levels in well affected by withdrawals from nearby municipal well and by withdrawals from nearby irrigation wells.

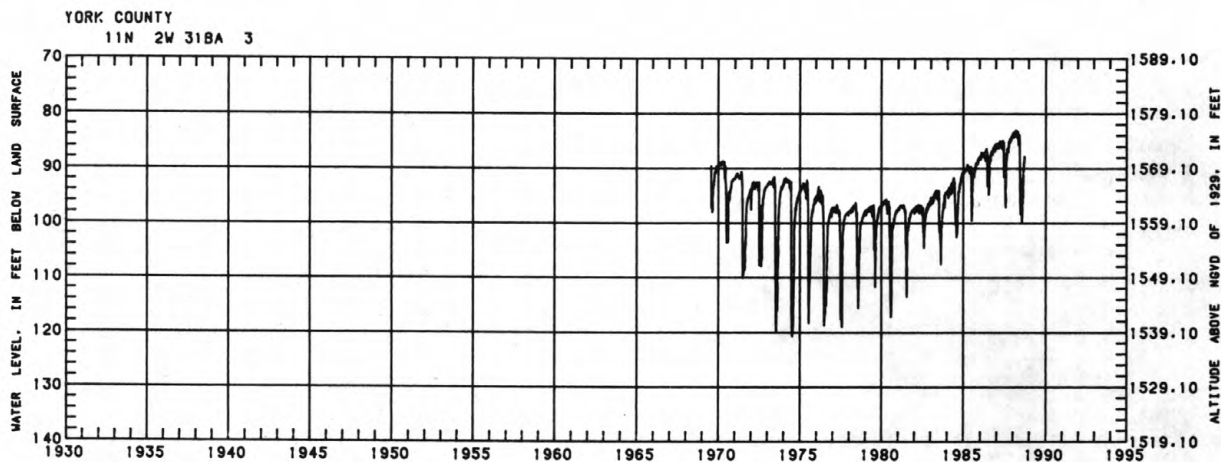
PERIOD OF RECORD.--May 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 83.00 ft below land-surface datum, Apr. 10, 1988; lowest, 120.81 ft below land-surface datum, July 15, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	86.97	85.34	84.04	84.16	84.34	83.22	83.92	83.22	83.83	91.71	99.85	90.28
10	85.09	84.51	84.56	84.43	83.42	83.08	83.00	84.12	84.72	93.64	97.67	89.70
15	85.82	85.03	84.10	83.96	84.18	83.25	83.91	84.27	90.08	94.04	95.72	88.77
20	85.00	84.41	84.08	83.71	83.33	83.02	84.37	85.75	93.45	93.41	96.33	88.84
25	84.90	84.88	84.03	83.57	84.06	83.05	83.36	83.66	95.93	94.16	95.24	88.64
EOY	84.73	84.76	83.72	83.40	83.39	83.30	83.85	83.90	98.40	95.79	91.92	87.72

WTR YEAR 1988 MAX 83.00 APR 10, 1988 MIN 99.85 AUG 5, 1988



(Local identifier: indicates location by township, range, and section. Geologic unit: 112 SDGV, sand and gravel deposits; 211 DKOT, Dakota Sandstone; 110 SDGV, sand and gravel deposits, undifferentiated; 111 ALVM, Holocene alluvium; 121 OGLL, Ogallala Formation)

CORRECTIONS.--The parameter column headed DEF (parameter code 39040), page 351 of Water Year 1986 report was not a natural constituent, but was an "added test spike" and should not have been published.

The parameter column headed Picloram (parameter code 39720), pages 350, 357, 367, 378, 386, and 388 of Water Year 1987 report should be labeled Propachlor.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	LOCAL IDENT- I- FIER	LAT- I- TUDE	LONG- I- TUDE	GEO- LOGIC UNIT	DATE	TIME	DEPTH OF WELL, TOTAL (FEET) (72008)
ADAMS COUNTY								
403508098182601	7N 9W11CDA 1		40 35 08 N	098 18 26 W	112SDGV	08-30-88	1620	203.00
ANTELOPE COUNTY								
415955098061901	23N 7W 3AADD1		41 59 55 N	098 06 19 W	112SDGV	08-16-88	0930	260.00
420100097563401	24N 5W31BAAB1		42 01 00 N	097 56 34 W	112SDGV	08-16-88	0840	120.00
BUFFALO COUNTY								
404538098430101	9N 13W12DDB 1		40 45 38 N	098 43 01 W	112SDGV	12-04-87	--	60.00
					112SDGV	12-04-87	1405	60.00
					112SDGV	04-06-88	--	60.00
					112SDGV	04-06-88	1000	60.00
					112SDGV	05-25-88	--	60.00
					112SDGV	05-25-88	1030	60.00
					112SDGV	06-20-88	--	60.00
					112SDGV	06-20-88	0915	60.00
					112SDGV	07-14-88	1300	60.00
					112SDGV	07-14-88	1305	60.00
					112SDGV	08-19-88	--	60.00
					112SDGV	08-19-88	0700	60.00
404538098430102	9N 13W12DDB 2				112SDGV	12-04-87	--	42.00
					112SDGV	12-04-87	1205	42.00
					112SDGV	04-06-88	--	42.00
					112SDGV	04-06-88	0900	42.00
					112SDGV	05-25-88	--	42.00
					112SDGV	05-25-88	0900	42.00
					112SDGV	06-20-88	1300	42.00
					112SDGV	06-20-88	1305	42.00
					112SDGV	07-14-88	1230	42.00
					112SDGV	07-14-88	1235	42.00
					112SDGV	08-19-88	--	42.00
					112SDGV	08-19-88	0600	42.00
					112SDGV	08-29-88	1330	42.00
404538098430103	9N 13W12DDB 3				112SDGV	12-04-87	--	24.00
					112SDGV	12-04-87	1445	24.00
					112SDGV	04-06-88	--	24.00
					112SDGV	04-06-88	0800	24.00
					112SDGV	05-25-88	--	24.00
					112SDGV	05-25-88	0800	24.00
					112SDGV	06-20-88	1330	24.00
404536098430101	9N 13W12DDBC1		40 45 36 N	098 43 01 W	112SDGV	12-04-87	--	60.00
					112SDGV	12-04-87	1535	60.00
					112SDGV	04-06-88	--	60.00
					112SDGV	04-06-88	1245	60.00
					112SDGV	05-25-88	--	60.00
					112SDGV	05-25-88	1300	60.00
					112SDGV	06-20-88	1630	60.00
					112SDGV	06-20-88	1635	60.00
					112SDGV	07-14-88	1530	60.00
					112SDGV	07-14-88	1535	60.00
					112SDGV	08-19-88	--	60.00
					112SDGV	08-19-88	1230	60.00
404536098430102	9N 13W12DDBC2				112SDGV	12-04-87	--	42.00
					112SDGV	12-04-87	0905	42.00
					112SDGV	04-06-88	--	42.00
					112SDGV	04-06-88	1155	42.00
					112SDGV	05-25-88	--	42.00

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CaCO3) (00900)	HARD- NESS NONCARB. WH WAT TOT FLD MG/L AS CaCO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS Ca) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS- SOLVED (MG/L AS Na) (00930)
ADAMS COUNTY											
403508098182601		08-30-88	515	7.22	14.5	--	190	17	59	9.4	26
ANTELOPE COUNTY											
415955098061901		08-16-88	473	7.44	15.0	--	220	0	68	12	8.0
420100097563401		08-16-88	451	7.33	14.0	--	210	0	65	12	9.0
BUFFALO COUNTY											
404538098430101		12-04-87	1100	6.61	12.0	1.0	--	--	--	--	--
		12-04-87	--	--	--	--	--	--	--	--	--
		04-06-88	1060	6.98	11.5	--	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--	--
		05-25-88	1150	7.23	11.0	0	--	--	--	--	--
		05-25-88	--	--	--	--	--	--	--	--	--
		06-20-88	1170	6.94	12.0	0.5	--	--	--	--	--
		06-20-88	--	--	--	--	--	--	--	--	--
		07-14-88	1080	7.09	12.0	0.3	--	--	--	--	--
		07-14-88	--	--	--	--	--	--	--	--	--
404538098430102		08-19-88	1160	6.93	12.0	0.1	--	--	--	--	--
		08-19-88	--	--	--	--	--	--	--	--	--
		12-04-87	1100	6.65	12.0	5.0	--	--	--	--	--
		12-04-87	--	--	--	--	--	--	--	--	--
		04-06-88	1070	7.03	11.5	--	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--	--
		05-25-88	1180	7.05	11.0	2.7	--	--	--	--	--
		05-25-88	--	--	--	--	--	--	--	--	--
		06-20-88	1150	7.02	12.0	4.6	--	--	--	--	--
		06-20-88	--	--	--	--	--	--	--	--	--
404538098430103		07-14-88	1030	7.23	11.5	8.5	--	--	--	--	--
		07-14-88	--	--	--	--	--	--	--	--	--
		08-19-88	1080	7.04	11.5	7.4	--	--	--	--	--
		08-19-88	--	--	--	--	--	--	--	--	--
		08-29-88	--	--	--	--	--	--	--	--	--
		12-04-87	1010	6.67	13.0	--	--	--	--	--	--
		12-04-87	--	--	--	--	--	--	--	--	--
		04-06-88	1030	7.14	11.0	--	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--	--
		05-25-88	1050	7.10	10.0	9.6	--	--	--	--	--
404536098430101		05-25-88	--	--	--	--	--	--	--	--	--
		06-20-88	1140	7.05	11.0	10.0	--	--	--	--	--
		06-20-88	--	--	--	--	--	--	--	--	--
		12-04-87	1020	6.58	12.0	3.0	--	--	--	--	--
		12-04-87	--	--	--	--	--	--	--	--	--
		04-06-88	1090	6.97	13.5	--	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--	--
		05-25-88	1090	6.99	11.5	2.7	--	--	--	--	--
		05-25-88	--	--	--	--	--	--	--	--	--
		06-20-88	1190	6.98	12.5	4.5	--	--	--	--	--
404536098430102		06-20-88	--	--	--	--	--	--	--	--	--
		07-14-88	981	7.12	12.0	5.3	--	--	--	--	--
		07-14-88	--	--	--	--	--	--	--	--	--
		08-19-88	1250	6.95	12.0	5.2	--	--	--	--	--
		08-19-88	--	--	--	--	--	--	--	--	--
		12-04-87	1080	6.61	12.0	6.9	--	--	--	--	--
		12-04-87	--	--	--	--	--	--	--	--	--
		04-06-88	1070	7.10	11.5	--	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--	--
		05-25-88	1090	7.03	11.0	6.7	--	--	--	--	--

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CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	PROME- TONE TOTAL (UG/L) (39056)	PROME- TRYNE TOTAL (UG/L) (39057)	ATRA- ZINE TOTAL (UG/L) (39630)	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	CYAN- AZINE TOTAL (UG/L) (81757)	AME- TRYNE TOTAL (82184)	METRI- BUZIN WATER WHOLE TOT. REC (UG/L) (82611)	METOLA- CHLOR WATER WHOLE TOT. REC (UG/L) (82612)
ADAMS COUNTY										
403508098182601		08-30-88	--	--	--	--	--	--	--	--
ANTELOPE COUNTY										
415955098061901		08-16-88	--	--	--	--	--	--	--	--
420100097563401		08-16-88	--	--	--	--	--	--	--	--
BUFFALO COUNTY										
404538098430101		12-04-87	<0.10	<0.10	1.0	<0.10	<0.10	<0.10	<0.1	<0.1
		12-04-87	--	--	0.90	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--
		04-06-88	<0.02	<0.02	0.51	--	<0.02	--	--	--
		05-25-88	--	--	--	--	--	--	--	--
		05-25-88	<0.02	<0.02	1.3	--	<0.02	--	--	--
		06-20-88	--	--	--	--	--	--	--	--
		06-20-88	<0.02	<0.02	2.1	--	<0.02	--	--	--
		07-14-88	--	--	--	--	--	--	--	--
		07-14-88	<0.02	<0.02	1.7	--	<0.02	--	--	--
404538098430102		08-19-88	--	--	--	--	--	--	--	--
		08-19-88	<0.02	<0.02	1.5	--	<0.02	--	--	--
		12-04-87	<0.10	<0.10	0.50	<0.10	<0.10	<0.10	<0.1	<0.1
		12-04-87	--	--	0.43	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--
		04-06-88	<0.02	<0.02	0.81	--	<0.02	--	--	--
		05-25-88	--	--	--	--	--	--	--	--
		05-25-88	<0.02	<0.02	0.67	--	<0.02	--	--	--
		06-20-88	--	--	--	--	--	--	--	--
		06-20-88	<0.02	<0.02	1.5	--	<0.02	--	--	--
404538098430103		07-14-88	--	--	--	--	--	--	--	--
		07-14-88	<0.02	<0.02	0.70	--	<0.02	--	--	--
		08-19-88	--	--	--	--	--	--	--	--
		08-19-88	<0.02	<0.02	1.7	--	<0.02	--	--	--
		08-29-88	--	--	--	--	--	--	--	--
		12-04-87	<0.10	<0.10	0.20	0.20	<0.10	<0.10	<0.1	<0.1
		12-04-87	--	--	0.41	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--
		04-06-88	<0.02	<0.02	0.67	--	<0.02	--	--	--
		05-25-88	--	--	--	--	--	--	--	--
404536098430101		05-25-88	<0.02	<0.02	0.29	--	<0.02	--	--	--
		06-20-88	--	--	--	--	--	--	--	--
		06-20-88	<0.02	<0.02	0.68	--	<0.02	--	--	--
		12-04-87	--	--	--	--	--	--	--	--
		12-04-87	--	--	0.82	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--
		04-06-88	<0.02	<0.02	0.63	--	<0.02	--	--	--
		05-25-88	--	--	--	--	--	--	--	--
		05-25-88	<0.02	<0.02	1.4	--	<0.02	--	--	--
		06-20-88	--	--	--	--	--	--	--	--
404536098430102		06-20-88	<0.02	<0.02	1.9	--	<0.02	--	--	--
		07-14-88	--	--	--	--	--	--	--	--
		07-14-88	<0.02	<0.02	1.4	--	<0.02	--	--	--
		08-19-88	--	--	--	--	--	--	--	--
		08-19-88	<0.02	<0.02	1.9	--	<0.02	--	--	--
		12-04-87	--	--	--	--	--	--	--	--
		12-04-87	--	--	0.71	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--
		04-06-88	<0.02	<0.02	0.56	--	<0.02	--	--	--
		05-25-88	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	LOCAL IDENT- I- FIER	LAT- I- TUDE	LONG- I- TUDE	GEO- LOGIC UNIT	DATE	TIME	DEPTH OF WELL, TOTAL (FEET) (72008)
BUFFALO COUNTY								
404536098430102	9N 13W12DDBC2		40 45 36 N	098 43 01 W	112SDGV	05-25-88	1200	42.00
					112SDGV	06-20-88	1700	42.00
					112SDGV	06-20-88	1705	42.00
					112SDGV	07-14-88	1600	42.00
					112SDGV	07-14-88	1605	42.00
					112SDGV	08-19-88	--	42.00
404536098430103	9N 13W12DDBC3				112SDGV	08-19-88	1120	42.00
					112SDGV	12-04-87	--	24.00
					112SDGV	12-04-87	1405	24.00
					112SDGV	04-06-88	--	24.00
					112SDGV	04-06-88	1100	24.00
					112SDGV	05-25-88	--	24.00
					112SDGV	05-25-88	1110	24.00
					112SDGV	06-20-88	1730	24.00
					112SDGV	07-14-88	1500	24.00
					112SDGV	07-14-88	1505	24.00
					112SDGV	08-19-88	1045	24.00
404539098430101	9N 13W12DO 1		40 45 39 N	098 43 01 W	112SDGV	08-19-88	1050	24.00
					112SDGV	07-27-88	--	60.00
					112SDGV	07-27-88	0800	60.00
					112SDGV	08-19-88	--	60.00
					112SDGV	08-19-88	0800	60.00
404430098495601	9N 13W19BBA 1		40 44 30 N	098 49 56 W	112SDGV	08-11-88	--	55.00
404446098554901	9N 14W17CCBB1		40 44 46 N	098 55 49 W	112SDGV	08-11-88	--	60.00
404241099002501	9N 15W34BCCC1		40 42 41 N	099 00 25 W	112SDGV	08-12-88	--	59.00
404226098591501	9N 15W35BCCC1		40 42 26 N	098 59 15 W	112SDGV	08-11-88	--	80.00
BURT COUNTY								
414714096302801	21N 8E28CCDB1		41 47 14 N	096 30 28 W	211DKOT	08-17-88	0257	307.00
415710096283101	23N 8E24BD 1		41 57 10 N	096 28 31 W	112SDGV	08-17-88	0840	86.00
BUTLER COUNTY								
412026097174701	16N 1E22DADB1		41 20 26 N	097 17 47 W	112SDGV	04-11-88	--	18.00
					112SDGV	04-11-88	0730	18.00
					112SDGV	05-20-88	--	18.00
					112SDGV	05-27-88	--	18.00
					112SDGV	05-27-88	1130	18.00
					112SDGV	06-22-88	1930	18.00
					112SDGV	06-22-88	1935	18.00
					112SDGV	07-22-88	--	18.00
					112SDGV	07-22-88	0805	18.00
					112SDGV	08-26-88	1400	18.00
					112SDGV	08-26-88	1405	18.00
412026097163801	16N 1E23DAAC1		41 20 26 N	097 16 38 W	112SDGV	04-11-88	--	18.00
					112SDGV	04-11-88	0910	18.00
					112SDGV	05-20-88	--	18.00
					112SDGV	05-27-88	--	18.00
					112SDGV	05-27-88	1300	18.00
					112SDGV	06-22-88	1830	18.00
					112SDGV	06-22-88	1835	18.00
					112SDGV	07-22-88	--	18.00
					112SDGV	07-22-88	0910	18.00
					112SDGV	08-26-88	1500	18.00
					112SDGV	08-26-88	1505	18.00

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STATION	NUMBER	DATE	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
BUFFALO COUNTY											
404536098430102	05-25-88	--	--	--	--	--	--	--	--	--	--
	06-20-88	1160	7.03	12.0	6.3	--	--	--	--	--	--
	06-20-88	--	--	--	--	--	--	--	--	--	--
	07-14-88	943	7.04	11.5	7.3	--	--	--	--	--	--
	07-14-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	1250	6.96	11.5	6.2	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
404536098430103	12-04-87	1190	6.75	13.0	10.6	--	--	--	--	--	--
	12-04-87	--	--	--	--	--	--	--	--	--	--
	04-06-88	1080	7.11	10.0	--	--	--	--	--	--	--
	04-06-88	--	--	--	--	--	--	--	--	--	--
	05-25-88	1160	7.12	10.0	11.1	--	--	--	--	--	--
	05-25-88	--	--	--	--	--	--	--	--	--	--
	06-20-88	1260	7.10	11.0	9.4	--	--	--	--	--	--
	07-14-88	1110	7.17	11.0	--	--	--	--	--	--	--
	07-14-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	1270	7.12	11.5	8.9	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
404539098430101	07-27-88	1090	6.84	11.5	1.5	--	--	--	--	--	--
	07-27-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	1140	6.89	11.5	0.4	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
404430098495601	08-11-88	1400	6.54	12.5	5.7	--	--	--	--	--	--
404446098554901	08-11-88	2040	6.78	13.0	7.0	--	--	--	--	--	--
404241099002501	08-12-88	1450	6.91	13.0	6.7	--	--	--	--	--	--
404226098591501	08-11-88	1390	6.47	12.0	6.2	--	--	--	--	--	--
BURT COUNTY											
414714096302801	08-17-88	1980	7.28	14.0	--	680	500	190	49	190	20
415710096283101	08-17-88	633	7.24	13.0	--	300	--	83	22	--	--
BUTLER COUNTY											
412026097174701	04-11-88	934	6.92	--	--	--	--	--	--	--	--
	04-11-88	--	--	--	--	--	--	--	--	--	--
	05-20-88	663	6.34	10.5	--	--	--	--	--	--	--
	05-27-88	588	6.64	12.5	7.4	--	--	--	--	--	--
	05-27-88	--	--	--	--	--	--	--	--	--	--
	06-22-88	533	6.49	13.5	7.4	--	--	--	--	--	--
	06-22-88	--	--	--	--	--	--	--	--	--	--
	07-22-88	490	6.67	20.5	4.8	--	--	--	--	--	--
	07-22-88	--	--	--	--	--	--	--	--	--	--
	08-26-88	473	6.40	16.5	4.7	--	--	--	--	--	--
412026097163801	08-26-88	--	--	--	--	--	--	--	--	--	--
	04-11-88	715	6.64	--	--	--	--	--	--	--	--
	04-11-88	--	--	--	--	--	--	--	--	--	--
	05-20-88	690	6.16	10.5	--	--	--	--	--	--	--
	05-27-88	603	6.53	12.0	6.7	--	--	--</			

STATION	NUMBER	DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CAC03) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
BUFFALO COUNTY											
404536098430102	05-25-88	--	--	--	--	--	--	--	--	--	--
	06-20-88	--	--	--	--	--	--	--	--	--	--
	06-20-88	--	--	--	--	--	--	--	--	--	--
	07-14-88	--	--	--	--	--	--	--	--	--	--
	07-14-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
404536098430103	12-04-87	--	--	--	--	--	--	--	--	--	--
	12-04-87	--	--	--	--	--	--	--	--	--	--
	04-06-88	--	--	--	--	--	--	--	--	--	--
	04-06-88	--	--	--	--	--	--	--	--	--	--
	05-25-88	--	--	--	--	--	--	--	--	--	--
	05-25-88	--	--	--	--	--	--	--	--	--	--
	06-20-88	--	--	--	--	--	--	--	--	--	--
	07-14-88	--	--	--	--	--	--	--	--	--	--
	07-14-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
404539098430101	08-19-88	--	--	--	--	--	--	--	--	--	--
	07-27-88	--	--	--	--	--	--	--	--	--	--
	07-27-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
	08-19-88	--	--	--	--	--	--	--	--	--	--
404430098495601	08-11-88	--	--	--	--	--	--	--	--	--	--
404446098554901	08-11-88	--	--	--	--	--	--	--	--	--	--
404241099002501	08-12-88	--	--	--	--	--	--	--	--	--	--
404226098591501	08-11-88	--	--	--	--	--	--	--	--	--	--
BURT COUNTY											
414714096302801	08-17-88	3	23	179	830	120	1.6	7.4	1530	2.07	
415710096283101	08-17-88	0.5	3.8	--	40	4.1	0.20	26	202	0.27	
BUTLER COUNTY											
412026097174701	04-11-88	--	--	--	--	--	--	--	--	--	--
	04-11-88	--	--	--	--	--	--	--	--	--	--
	05-20-88	--	--	--	--	--	--	--	--	--	--
	05-27-88	--	--	--	--	--	--	--	--	--	--
	05-27-88	--	--	--	--	--	--	--	--	--	--
	06-22-88	--	--	--	--	--	--	--	--	--	--
	06-22-88	--	--	--	--	--	--	--	--	--	--
	07-22-88	--	--	--	--	--	--	--	--	--	--
	07-22-88	--	--	--	--	--	--	--	--	--	--
	08-26-88	--	--	--	--	--	--	--	--	--	--
412026097163801	08-26-88	--	--	--							

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PRO- PAZINE TOTAL (UG/L) (39024)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)	SIME- TRYNE TOTAL (UG/L) (39054)	SIMA- ZINE TOTAL (UG/L) (39055)
BUFFALO COUNTY											
404536098430102		05-25-88	--	--	--	--	--	<0.02	--	--	<0.02
		06-20-88	36.0	--	--	--	--	--	--	--	--
		06-20-88	--	--	--	--	--	<0.02	--	--	<0.02
		07-14-88	52.0	--	--	--	3.5	--	--	--	--
		07-14-88	--	--	--	--	--	0.06	--	--	<0.02
		08-19-88	--	--	--	--	4.2	--	--	--	--
404536098430103		08-19-88	--	--	--	--	--	<0.02	--	--	<0.02
		12-04-87	52.0	--	--	--	--	--	--	--	--
		12-04-87	--	--	--	--	--	<0.02	--	--	<0.02
		04-06-88	53.0	--	--	--	--	--	--	--	--
		04-06-88	--	--	--	--	--	<0.02	--	--	<0.02
		05-25-88	48.0	--	--	--	--	--	--	--	--
		05-25-88	--	--	--	--	--	<0.02	--	--	<0.02
		06-20-88	52.0	--	--	--	--	--	--	--	--
		07-14-88	42.0	--	--	--	3.9	--	--	--	--
		07-14-88	--	--	--	--	--	<0.02	--	--	<0.02
		08-19-88	--	--	--	--	3.8	--	--	--	--
		08-19-88	--	--	--	--	--	<0.02	--	--	<0.02
404539098430101		07-27-88	29.0	--	--	--	2.8	--	--	--	--
		07-27-88	--	--	--	--	--	<0.02	--	--	<0.02
		08-19-88	28.0	--	--	--	2.8	--	--	--	--
		08-19-88	--	--	--	--	--	<0.02	--	--	<0.02
404430098495601		08-11-88	27.0	--	--	--	--	<0.10	<0.10	<0.1	<0.10
404446098554901		08-11-88	44.0	--	--	--	--	<0.10	<0.10	<0.1	<0.10
404241099002501		08-12-88	43.0	--	--	--	--	0.10	<0.10	<0.1	<0.10
404226098591501		08-11-88	31.0	--	--	--	--	0.10	<0.10	<0.1	0.10
BURT COUNTY											
414714096302801		08-17-88	0.190	560	9200	160	--	--	--	--	--
415710096283101		08-17-88	--	50	2600	610	--	--	--	--	--
BUTLER COUNTY											
412026097174701		04-11-88	34.0	--	--	--	--	--	--	--	--
		04-11-88	--	--	--	--	--	<0.02	--	--	<0.02
		05-20-88	29.0	--	--	--	--	--	--	--	--
		05-27-88	30.0	--	--	--	--	--	--	--	--
		05-27-88	--	--	--	--	--	<0.02	--	--	<0.02
		06-22-88	28.0	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	<0.02	--	--	<0.02
		07-22-88	30.0	--	--	--	1.7	--	--	--	--
		07-22-88	--	--	--	--	--	<0.02	--	--	<0.02
		08-26-88	28.0	--	--	--	2.5	--	--	--	--
		08-26-88	--	--	--	--	--	<0.02	--	--	<0.02
412026097163801		04-11-88	52.0	--	--	--	--	<0.02	--	--	<0.02
		04-11-88	--	--	--	--	--	--	--	--	--
		05-20-88	40.0	--	--	--	--	--	--	--	--
		05-27-88	38.0	--	--	--	--	--	--	--	--
		05-27-88	--	--	--	--	--	0.09	--	--	<0.02
		06-22-88	47.0	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	<0.02	--	--	<0.02
		07-22-88	49.0	--	--	--	3.9	--	--	--	--
		07-22-88	--	--	--	--	--	0.07	--	--	<0.02
		08-26-88	43.0	--	--	--	4.1	--	--	--	--
		08-26-88	--	--	--	--	--	<0.02	--	--	<0.02

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	PROMETONE TOTAL (UG/L) (39056)	PROMETRYNE TOTAL (UG/L) (39057)	ATRAZINE TOTAL (UG/L) (39630)	ALACHLOR TOTAL RECOVER (UG/L) (77825)	CYANAZINE TOTAL (UG/L) (81757)	AME- TRYNE TOTAL (82184)	METRI- BUZIN WATER WHOLE TOT. REC (UG/L) (82611)	METOLACHLOR WATER WHOLE TOT. REC (UG/L) (82612)
BUFFALO COUNTY										
404536098430102		05-25-88	<0.02	<0.02	0.94	--	<0.02	--	--	--
		06-20-88	--	--	--	--	--	--	--	--
		06-20-88	<0.02	<0.02	1.5	--	<0.02	--	--	--
		07-14-88	--	--	--	--	--	--	--	--
		07-14-88	<0.02	<0.02	0.83	--	<0.02	--	--	--
		08-19-88	--	--	--	--	--	--	--	--
404536098430103		08-19-88	<0.02	<0.02	0.42	--	<0.02	--	--	--
		12-04-87	--	--	--	--	--	--	--	--
		12-04-87	--	--	0.08	--	--	--	--	--
		04-06-88	--	--	--	--	--	--	--	--
		04-06-88	<0.02	<0.02	0.14	--	<0.02	--	--	--
		05-25-88	--	--	--	--	--	--	--	--
		05-25-88	<0.02	<0.02	0.30	--	<0.02	--	--	--
		06-20-88	--	--	--	--	--	--	--	--
		07-14-88	--	--	--	--	--	--	--	--
		07-14-88	<0.02	<0.02	0.16	--	<0.02	--	--	--
		08-19-88	--	--	--	--	--	--	--	--
404539098430101		08-19-88	<0.02	<0.02	0.29	--	<0.02	--	--	--
		07-27-88	--	--	--	--	--	--	--	--
		07-27-88	<0.02	<0.02	1.5	--	<0.02	--	--	--
		08-19-88	--	--	--	--	--	--	--	--
		08-19-88	<0.02	<0.02	0.90	--	<0.02	--	--	--
404430098495601		08-11-88	<0.10	<0.10	2.3	<0.10	<0.10	<0.10	<0.1	<0.1
404446098554901		08-11-88	<0.10	<0.10	1.7	<0.10	<0.10	<0.10	<0.1	<0.1
404241099002501		08-12-88	<0.10	<0.10	3.2	<0.10	<0.10	<0.10	<0.1	<0.1
404226098591501		08-11-88	<0.10	<0.10	6.2	<0.10	<0.10	<0.10	<0.1	<0.1
BURT COUNTY										
414714096302801		08-17-88	--	--	--	--	--	--	--	--
415710096283101		08-17-88	--	--	--	--	--	--	--	--
BUTLER COUNTY										
412026097174701		04-11-88	--	--	--	--	--	--	--	--
		04-11-88	0.17	<0.02	0.26	--	<0.02	--	--	--
		05-20-88	--	--	--	--	--	--	--	--
		05-27-88	--	--	--	--	--	--	--	--
		05-27-88	<0.02	<0.02	0.19	--	<0.02	--	--	--
		06-22-88	--	--	--	--	--	--	--	--
		06-22-88	<0.02	<0.02	0.34	--	<0.02	--	--	--
		07-22-88	--	--	--	--	--	--	--	--
		07-22-88	<0.02	<0.02	0.16	--	<0.02	--	--	--
		08-26-88	--	--	--	--	--	--	--	--
412026097163801		08-26-88	<0.02	<0.02	0.53	--	<0.02	--	--	--
		04-11-88	--	--	--	--	--	--	--	--
		04-11-88	<0.02	<0.02	0.43	--	<0.02	--	--	--
		05-20-88	--	--	--	--	--	--	--	--
		05-27-88	--	--	--	--	--	--	--	--
		05-27-88	<0.02	<0.02	1.5	--	<0.02	--	--	--
		06-22-88	--	--	--	--	--	--	--	--
		06-22-88	<0.02	<0.02	1.2	--	<0.02	--	--	--
		07-22-88	--	--	--	--	--	--	--	--
		07-22-88	<0.02	<0.02	1.1	--	<0.02	--	--	--
		08-26-88	--	--	--	--	--	--	--	--
		08-26-88	<0.02	<0.02	3.2	--	<0.02	--	--	--

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	LOCAL IDENT- IFIER	LAT- ITUDE	LONG- ITUDE	GEO- LOGIC UNIT	DATE	TIME	DEPTH OF WELL, TOTAL (FEET) (72008)
CLAY COUNTY								
403634097504301	7N	5W 2AA 1	40 36 34 N	097 50 43 W	112SDGV	08-30-88	1331	215.00
403739098054801	8N	7W27DC 1	40 37 39 N	098 05 48 W	112SDGV	08-30-88	1509	204.00
COLFAX COUNTY								
412556097074401	17N	3E19BCDC1	41 25 56 N	097 07 44 W	112SDGV	04-12-88	--	16.00
					112SDGV	04-12-88	0700	16.00
					112SDGV	05-20-88	--	16.00
					112SDGV	05-27-88	--	16.00
					112SDGV	05-27-88	1500	16.00
					112SDGV	06-22-88	1700	16.00
					112SDGV	06-22-88	1705	16.00
					112SDGV	07-22-88	--	16.00
					112SDGV	07-22-88	1030	16.00
					112SDGV	08-26-88	1100	16.00
412609097074401	17N	3E19BDDC1	41 26 09 N	097 07 44 W	112SDGV	08-26-88	1105	16.00
					112SDGV	04-12-88	--	16.00
					112SDGV	04-12-88	0800	16.00
					112SDGV	05-20-88	--	16.00
					112SDGV	05-20-88	1100	16.00
					112SDGV	05-27-88	--	16.00
					112SDGV	06-22-88	1500	16.00
					112SDGV	06-22-88	1505	16.00
					112SDGV	07-22-88	--	16.00
					112SDGV	07-22-88	1200	16.00
					112SDGV	08-26-88	0930	16.00
					112SDGV	08-26-88	0935	16.00
CUMING COUNTY								
414956096445101	22N	6E33CCB 1	41 49 56 N	096 44 51 W	112SDGV	08-17-88	0850	80.00
415752096585101	23N	4E16CB 1	41 57 52 N	096 58 51 W	112SDGV	08-16-88	1437	75.00
414646096483001	21N	5E23AD 1	41 46 46 N	096 48 30 W	112SDGV	08-17-88	1030	90.00
415442096501301	22N	5E 3BDDB1	41 54 42 N	096 50 13 W	112SDGV	08-16-88	1555	80.00
DODGE COUNTY								
412629096224201	17N	9E14CA 1	41 26 29 N	096 22 42 W	110SDGV	08-18-88	1202	24.00
412958096273501	18N	9E30CB 1	41 29 58 N	096 27 35 W	110SDGV	08-18-88	1000	37.00
413844096482501	19N	5E 1CB 1	41 38 44 N	096 48 25 W	112SDGV	08-17-88	1134	70.00
413857096405301	19N	6E 1AC 1	41 38 57 N	096 40 53 W	112SDGV	08-17-88	1220	86.00
413909096334001	19N	7E 1AA 1	41 39 09 N	096 33 40 W	112SDGV	08-18-88	0833	100.00
414424096373801	20N	7E 4BB 1	41 44 24 N	096 37 38 W	112SDGV	08-17-88	1406	90.00
414147096325501	20N	8E20ABBD1	41 41 47 N	096 32 55 W	112SDGV	08-17-88	1615	127.00
DOUGLAS COUNTY								
412236096185801	16N	10E 8AB 1	41 22 36 N	096 18 58 W	112SDGV	08-18-88	1325	15.00
FILLMORE COUNTY								
403145097360901	7N	3W36DB 1	40 31 45 N	097 36 09 W	112SDGV	08-30-88	1144	196.00
403843097270602	8N	1W20DB 2	40 38 43 N	097 27 06 W	112SDGV	08-30-88	1043	306.00

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)
CLAY COUNTY											
403634097504301		08-30-88	538	7.15	15.0	--	210	0	67	10	28
403739098054801		08-30-88	470	7.10	14.5	--	170	28	54	9.5	18
COLFAX COUNTY											
412556097074401		04-12-88	1080	7.26	10.0	--	--	--	--	--	--
		04-12-88	--	--	--	--	--	--	--	--	--
		05-20-88	1190	6.97	10.0	--	--	--	--	--	--
		05-27-88	1040	7.38	11.0	6.2	--	--	--	--	--
		05-27-88	--	--	--	--	--	--	--	--	--
		06-22-88	1090	7.28	14.5	7.1	--	--	--	--	--
		06-22-88	--	--	--	--	--	--	--	--	--
		07-22-88	1000	7.31	17.5	4.7	--	--	--	--	--
		07-22-88	--	--	--	--	--	--	--	--	--
		08-26-88	926	7.10	17.5	3.8	--	--	--	--	--
412609097074401		08-26-88	--	--	--	--	--	--	--	--	--
		04-12-88	918	6.91	11.0	--	--	--	--	--	--
		04-12-88	--	--	--	--	--	--	--	--	--
		05-20-88	880	6.95	10.5	--	--	--	--	--	--
		05-20-88	--	--	--	--	--	--	--	--	--
		05-27-88	806	7.40	12.0	3.0	--	--	--	--	--
		06-22-88	888	7.51	19.5	2.4	--	--	--	--	--
		06-22-88	--	--	--	--	--	--	--	--	--
		07-22-88	965	7.41	19.5	4.2	--	--	--	--	--
		07-22-88	--	--	--	--	--	--	--	--	--
		08-26-88	1030	7.10	17.0	4.5	--	--	--	--	--
		08-26-88	--	--	--	--	--	--	--	--	--
CUMING COUNTY											
414956096445101		08-17-88	676	7.33	15.0	--	310	--	87	22	29
415752096585101		08-16-88	554	7.59	16.5	--	250	120	73	17	9.0
414646096483001		08-17-88	830	6.79	18.0	--	350	25	96	26	27
415442096501301		08-16-88	931	7.16	16.0	--	460	--	130	32	29
DODGE COUNTY											
412629096224201		08-18-88	779	7.31	14.5	--	380	53	110	26	27
412958096273501		08-18-88	383	6.97	13.0	--	160	2	43	12	16
413844096482501		08-17-88	1020	7.33	16.5	--	400	150	110	31	59
413857096405301		08-17-88	533	7.16	14.0	--	220	0	65	14	25
413909096334001		08-18-88	555	7.17	14.0	--	250	4	73	16	19
414424096373801		08-17-88	836	7.42	14.0	--	410	410	110	32	24
414147096325501		08-17-88	757	7.28	16.0	--	330	8	98	21	32
DOUGLAS COUNTY											
412236096185801		08-18-88	729	7.21	14.5	--	350	350	110	19	21
FILLMORE COUNTY											
403145097360901		08-30-88	509	7.30	14.0	--	190	1	58	11	29
403843097270602		08-30-88	590	7.26	14.0	--	250	30	75	16	22

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)
CLAY COUNTY											
403634097504301		08-30-88	0.9	5.4	238	26	11	0.30	31	338	0.46
403739098054801		08-30-88	0.6	6.9	146	54	16	0.20	29	287	0.39
COLFAX COUNTY											
412556097074401		04-12-88	--	--	--	--	--	--	--	--	--
		04-12-88	--	--	--	--	--	--	--	--	--
		05-20-88	--	--	--	--	--	--	--	--	--
		05-27-88	--	--	--	--	--	--	--	--	--
		05-27-88	--	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	--	--	--	--
		07-22-88	--	--	--	--	--	--	--	--	--
		07-22-88	--	--	--	--	--	--	--	--	--
		08-26-88	--	--	--	--	--	--	--	--	--
412609097074401		08-26-88	--	--	--	--	--	--	--	--	--
		04-12-88	--	--	--	--	--	--	--	--	--
		04-12-88	--	--	--	--	--	--	--	--	--
		05-20-88	--	--	--	--	--	--	--	--	--
		05-20-88	--	--	--	--	--	--	--	--	--
		05-27-88	--	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	--	--	--	--
		07-22-88	--	--	--	--	--	--	--	--	--
		07-22-88	--	--	--	--	--	--	--	--	--
		08-26-88	--	--	--	--	--	--	--	--	--
		08-26-88	--	--	--	--	--	--	--	--	--
CUMING COUNTY											
414956096445101		08-17-88	0.7	5.6	--	49	5.5	0.30	26	225	0.31
415752096585101		08-16-88	0.3	6.7	131	110	15	0.20	34	345	0.47
414646096483001		08-17-88	0.7	4.1	322	75	4.4	0.20	27	493	0.67
415442096501301		08-16-88	0.6	11	--	53	11	0.30	32	312	0.42
DODGE COUNTY											
412629096224201		08-18-88	0.6	5.0	329	85	6.0	0.40	14	490	0.67
412958096273501		08-18-88	0.6	5.9	155	24	2.6	0.20	32	250	0.34
413844096482501		08-17-88	1	13	252	240	8.8	0.60	13	627	0.85
413857096405301		08-17-88	0.8	4.3	293	4.0	1.2	0.30	27	319	0.43
413909096334001		08-18-88	0.5	10	245	38	7.0	0.50	43	354	0.48
414424096373801		08-17-88	0.5	9.0	--	40	6.9	0.50	28	317	0.43
414147096325501		08-17-88	0.8	9.2	324	45	2.7	0.50	24	430	0.58
DOUGLAS COUNTY											
412236096185801		08-18-88	0.5	4.3	--	140	15	0.30	16	328	0.44
FILLMORE COUNTY											
403145097360901		08-30-88	1	4.5	189	52	13	0.30	27	313	0.43
403843097270602		08-30-88	0.6	4.7	224	81	8.0	0.30	30	373	0.51

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PRO- PAZINE TOTAL (UG/L) (39024)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)	SIME- TRYNE TOTAL (UG/L) (39054)	SIMA- ZINE TOTAL (UG/L) (39055)
CLAY COUNTY											
403634097504301		08-30-88	3.70	40	<3	<1	--	--	--	--	--
403739098054801		08-30-88	2.70	30	<3	<1	--	--	--	--	--
COLFAX COUNTY											
412556097074401		04-12-88	19.0	--	--	--	--	--	--	--	--
		04-12-88	--	--	--	--	--	<0.02	--	--	<0.02
		05-20-88	17.0	--	--	--	--	--	--	--	--
		05-27-88	17.0	--	--	--	--	<0.10	<0.10	<0.1	<0.10
		05-27-88	--	--	--	--	--	0.04	--	--	<0.02
		06-22-88	20.0	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	<0.02	--	--	<0.02
		07-22-88	26.0	--	--	--	2.0	<0.02	--	--	<0.02
		07-22-88	--	--	--	--	--	--	--	--	--
		08-26-88	23.0	--	--	--	2.1	--	--	--	--
412609097074401		08-26-88	--	--	--	--	--	<0.02	--	--	<0.02
		04-12-88	18.0	--	--	--	--	--	--	--	--
		04-12-88	--	--	--	--	--	<0.02	--	--	0.07
		05-20-88	11.0	--	--	--	--	--	--	--	--
		05-20-88	--	--	--	--	--	<0.02	--	--	<0.02
		05-27-88	12.0	--	--	--	--	--	--	--	--
		06-22-88	15.0	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	<0.02	--	--	<0.02
		07-22-88	21.0	--	--	--	2.2	<0.02	--	--	<0.02
		07-22-88	--	--	--	--	--	--	--	--	--
		08-26-88	19.0	--	--	--	2.0	--	--	--	--
		08-26-88	--	--	--	--	--	<0.02	--	--	<0.02
CUMING COUNTY											
414956096445101		08-17-88	0.100	80	130	66	--	--	--	--	--
415752096585101		08-16-88	<0.100	20	810	550	--	--	--	--	--
414646096483001		08-17-88	9.10	70	<3	27	--	--	--	--	--
415442096501301		08-16-88	3.20	70	<3	11	--	--	--	--	--
DODGE COUNTY											
412629096224201		08-18-88	4.20	50	6	390	--	--	--	--	--
412958096273501		08-18-88	4.90	50	<3	11	--	--	--	--	--
413844096482501		08-17-88	<0.100	350	540	73	--	--	--	--	--
413857096405301		08-17-88	<0.100	70	1300	1000	--	--	--	--	--
413909096334001		08-18-88	--	80	360	490	--	--	--	--	--
414424096373801		08-17-88	15.0	60	4	50	--	--	--	--	--
414147096325501		08-17-88	<0.100	120	2300	850	--	--	--	--	--
DOUGLAS COUNTY											
412236096185801		08-18-88	<0.100	30	1400	610	--	--	--	--	--
FILLMORE COUNTY											
403145097360901		08-30-88	1.20	40	<3	8	--	--	--	--	--
403843097270602		08-30-88	0.130	50	11	650	--	--	--	--	--

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	PROME- TONE TOTAL (UG/L) (39056)	PROME- TRYNE TOTAL (UG/L) (39057)	ATRA- ZINE TOTAL (UG/L) (39630)	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	CYAN- AZINE TOTAL (UG/L) (81757)	AME- TRYNE TOTAL (82184)	METRI- BUZIN WATER WHOLE TOT. REC (UG/L) (82611)	METOLA- CHLOR WATER WHOLE TOT. REC (UG/L) (82612)
CLAY COUNTY										
403634097504301		08-30-88	--	--	--	--	--	--	--	--
403739098054801		08-30-88	--	--	--	--	--	--	--	--
COLFAX COUNTY										
412556097074401		04-12-88	--	--	--	--	--	--	--	--
		04-12-88	<0.02	<0.02	0.13	--	<0.02	--	--	--
		05-20-88	--	--	--	--	--	--	--	--
		05-27-88	<0.10	<0.10	0.10	<0.10	<0.10	<0.10	<0.1	<0.1
		05-27-88	<0.02	<0.02	0.17	--	<0.02	--	--	--
		06-22-88	--	--	--	--	--	--	--	--
		06-22-88	<0.02	<0.02	0.46	--	<0.02	--	--	--
		07-22-88	--	--	--	--	--	--	--	--
		07-22-88	<0.02	<0.02	0.53	--	<0.02	--	--	--
		08-26-88	--	--	--	--	--	--	--	--
412609097074401		08-26-88	<0.02	<0.02	2.8	--	<0.02	--	--	--
		04-12-88	--	--	--	--	--	--	--	--
		04-12-88	<0.02	<0.02	0.20	--	<0.02	--	--	--
		05-20-88	--	--	--	--	--	--	--	--
		05-20-88	<0.02	<0.02	0.13	--	<0.02	--	--	--
		05-27-88	--	--	--	--	--	--	--	--
		06-22-88	--	--	--	--	--	--	--	--
		06-22-88	<0.02	<0.02	0.29	--	<0.02	--	--	--
		07-22-88	--	--	--	--	--	--	--	--
		07-22-88	<0.02	<0.02	0.21	--	<0.02	--	--	--
		08-26-88	--	--	--	--	--	--	--	--
		08-26-88	<0.02	<0.02	0.59	--	<0.02	--	--	--
CUMING COUNTY										
414956096445101		08-17-88	--	--	--	--	--	--	--	--
415752096585101		08-16-88	--	--	--	--	--	--	--	--
414646096483001		08-17-88	--	--	--	--	--	--	--	--
415442096501301		08-16-88	--	--	--	--	--	--	--	--
DODGE COUNTY										
412629096224201		08-18-88	--	--	--	--	--	--	--	--
412958096273501		08-18-88	--	--	--	--	--	--	--	--
413844096482501		08-17-88	--	--	--	--	--	--	--	--
413857096405301		08-17-88	--	--	--	--	--	--	--	--
413909096334001		08-18-88	--	--	--	--	--	--	--	--
414424096373801		08-17-88	--	--	--	--	--	--	--	--
414147096325501		08-17-88	--	--	--	--	--	--	--	--
DOUGLAS COUNTY										
412236096185801		08-18-88	--	--	--	--	--	--	--	--
FILLMORE COUNTY										
403145097360901		08-30-88	--	--	--	--	--	--	--	--
403843097270602		08-30-88	--	--	--	--	--	--	--	--

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	LOCAL IDENT- I- FIER	LAT- I- TUDE	LONG- I- TUDE	GEO- LOGIC UNIT	DATE	TIME	DEPTH OF WELL, TOTAL (FEET) (72008)
HALL COUNTY								
404536098430701	9N 12W 7CCAB1		40 45 36 N	098 43 07 W	112SDGV	07-27-88	--	55.00
404947098322701	10N 11W15CDDDD1		40 49 47 N	098 32 27 W	112SDGV	07-27-88	--	90.00
404759098351001	10N 11W32BBBA1		40 47 59 N	098 35 10 W	112SDGV	08-11-88	--	42.00
404842098373301	10N 12W25BCBB1		40 48 42 N	098 37 33 W	112SDGV	08-11-88	--	65.00
404832098391501	10N 12W27ACCB1		40 48 32 N	098 39 15 W	112SDGV	08-11-88	--	65.00
405436098245801	11N 10W23BCCC1		40 54 36 N	098 24 58 W	112SDGV	07-27-88	--	85.00
HAMILTON COUNTY								
404633098091202	9N 7W 6DAD 2		40 46 33 N	098 09 12 W	112SDGV	08-31-88	0837	190.00
405147098004501	10N 6W 4CB 1		40 51 47 N	098 00 45 W	112SDGV	08-31-88	1558	248.00
KEARNEY COUNTY								
403747098521401	8N 14W26CO 1		40 37 47 N	098 52 14 W	112SDGV	08-19-88	--	110.00
MADISON COUNTY								
414518097313401	21N 2W34AA 1		41 45 18 N	097 31 34 W	112SDGV	08-15-88	1158	108.00
414901097395801	21N 3W 4DCCA1		41 49 01 N	097 39 58 W	112SDGV	08-15-88	1243	160.00
415125097285702	22N 1W30BB 2		41 51 25 N	097 28 57 W	112SDGV	08-17-88	1359	166.00
420010097314501	23N 2W 3ABAA1		42 00 10 N	097 31 45 W	112SDGV	08-15-88	1550	73.00
420205097322601	24N 2W22CC 1		42 02 05 N	097 32 26 W	111ALVM	08-15-88	1508	40.00
420046097442201	24N 4W35AD 1		42 00 46 N	097 44 22 W	112SDGV	08-15-88	1700	105.00
MERRICK COUNTY								
410512098023801	13N 6W19AACCC1		41 05 12 N	098 02 38 W	112SDGV	08-25-88	1430	119.00
410511098024001	13N 6W19ADAD1		41 05 11 N	098 02 40 W	112SDGV	04-17-88	--	16.00
					112SDGV	04-17-88	0930	16.00
					112SDGV	05-26-88	--	16.00
					112SDGV	05-26-88	0915	16.00
					112SDGV	06-21-88	0900	16.00
					112SDGV	06-21-88	0905	16.00
					112SDGV	07-26-88	--	16.00
					112SDGV	07-26-88	1615	16.00
					112SDGV	08-25-88	1130	16.00
410445098024001	13N 6W19DAAB1		41 04 45 N	098 02 40 W	112SDGV	08-25-88	1135	16.00
					112SDGV	04-17-88	--	16.00
					112SDGV	04-17-88	1015	16.00
					112SDGV	05-26-88	--	16.00
					112SDGV	05-26-88	1030	16.00
					112SDGV	06-21-88	1000	16.00
					112SDGV	06-21-88	1005	16.00
					112SDGV	07-18-88	1700	16.00
					112SDGV	07-18-88	1705	16.00
					112SDGV	08-25-88	1315	16.00
410446098025401	13N 6W19DBCC1		41 04 46 N	098 02 54 W	112SDGV	08-25-88	1320	16.00
410655098070901	13N 7W 9AADD1		41 06 55 N	098 07 09 W	112SDGV	08-25-88	1400	135.00
					112SDGV	04-16-88	--	21.00
					112SDGV	04-16-88	0900	21.00
					112SDGV	05-26-88	--	21.00
					112SDGV	05-26-88	0810	21.00
					112SDGV	06-21-88	1740	21.00
					112SDGV	06-21-88	1745	21.00
					112SDGV	07-26-88	--	21.00
					112SDGV	07-26-88	0645	21.00

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CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	NITRO- GEN NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	BORON, DIS- SOLVED (UG/L AS B) (01020)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PRO- PAZINE TOTAL (UG/L) (39024)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)	SIME- TRYNE TOTAL (UG/L) (39054)	SIMA- ZINE TOTAL (UG/L) (39055)
HALL COUNTY											
404536098430701	07-27-88	27.0	--	--	--	--	--	<0.10	<0.10	<0.1	<0.10
404947098322701	07-27-88	30.0	--	--	--	--	--	0.10	<0.10	<0.1	0.10
404759098351001	08-11-88	22.0	--	--	--	--	--	<0.10	<0.10	<0.1	<0.10
404842098373301	08-11-88	28.0	--	--	--	--	--	0.10	<0.10	<0.1	<0.10
404832098391501	08-11-88	24.0	--	--	--	--	--	<0.10	<0.10	<0.1	<0.10
405436098245801	07-27-88	12.0	--	--	--	--	--	<0.10	<0.10	<0.1	<0.10
HAMILTON COUNTY											
404633098091202	08-31-88	13.0	40	7	7	--	--	--	--	--	--
405147098004501	08-31-88	15.0	40	<3	<1	--	--	--	--	--	--
KEARNEY COUNTY											
403747098521401	08-19-88	11.0	--	--	--	--	--	<0.10	<0.10	<0.1	<0.10
MADISON COUNTY											
414518097313401	08-15-88	0.530	120	1000	150	--	--	--	--	--	--
414901097395801	08-15-88	1.10	40	<3	2	--	--	--	--	--	--
415125097285702	08-17-88	1.20	50	6	3	--	--	--	--	--	--
420010097314501	08-15-88	0.150	20	1200	370	--	--	--	--	--	--
420205097322601	08-15-88	3.20	70	<3	1	--	--	--	--	--	--
420046097442201	08-15-88	1.10	30	<3	4	--	--	--	--	--	--
MERRICK COUNTY											
410512098023801	08-25-88	4.30	--	--	--	--	<0.10	<0.10	<0.1	<0.10	--
410511098024001	04-17-88	24.0	--	--	--	--	--	--	--	--	--
	04-17-88	--	--	--	--	--	0.07	--	--	--	<0.02
	05-26-88	22.0	--	--	--	--	--	--	--	--	--
	05-26-88	--	--	--	--	--	--	--	--	--	<0.02
	06-21-88	22.0	--	--	--	--	--	--	--	--	--
	06-21-88	--	--	--	--	--	<0.02	--	--	--	<0.02
	07-26-88	21.0	--	--	--	2.3	--	--	--	--	--
	07-26-88	--	--	--	--	--	<0.02	--	--	--	<0.02
	08-25-88	22.0	--	--	--	2.8	--	--	--	--	--
410445098024001	08-25-88	--	--	--	--	--	<0.02	--	--	--	<0.02
	04-17-88	24.0	--	--	--	--	--	--	--	--	--
	04-17-88	--	--	--	--	--	0.16	--	--	--	<0.02
	05-26-88	22.0	--	--	--	--	--	--	--	--	--
	05-26-88	--	--	--	--	--	0.07	--	--	--	<0.02
	06-21-88	23.0	--	--	--	--	--	--	--	--	--
	06-21-88	--	--	--	--	--	0.33	--	--	--	<0.02
	07-18-88	25.0	--	--	--	2.0	--	--	--	--	--
	07-18-88	--	--	--	--	--	<0.02	--	--	--	<0.02
	08-25-88	26.0	--	--	--	1.9	--	--	--	--	--
410446098025401	08-25-88	--	--	--	--	--	<0.02	--	--	--	<0.02
410655098070901	08-25-88	21.0	--	--	--	--	<0.10	<0.10	<0.1	<0.10	--
	04-16-88	41.0	--	--	--	--	--	--	--	--	--
	04-16-88	--	--	--	--	--	0.16	--	--	--	<0.02
	05-26-88	35.0	--	--	--	--	--	--	--	--	--
	05-26-88	--	--	--	--	--	--	--	--	--	--
	06-21-88	29.0	--	--	--	--	--	--	--	--	--
	06-21-88	--	--	--	--	--	0.10	--	--	--	0.02
	07-26-88	30.0	--	--	--	2.1	--	--	--	--	--
	07-26-88	--	--	--	--	--	<0.02	--	--	--	<0.02

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	PROMETONE TOTAL (UG/L) (39056)	PROMETRYNE TOTAL (UG/L) (39057)	ATRAZINE TOTAL (UG/L) (39630)	ALACHLOR TOTAL RECOVER (UG/L) (77825)	CYANAZINE TOTAL (UG/L) (81757)	AME- TRYNE TOTAL (82184)	METRI- BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	METOLACHLOR WATER WHOLE TOT.REC (UG/L) (82612)
HALL COUNTY										
404536098430701		07-27-88	<0.10	<0.10	0.70	0.20	<0.10	<0.10	<0.1	<0.1
404947098322701		07-27-88	<0.10	<0.10	6.7	<0.10	<0.10	<0.10	<0.1	<0.1
404759098351001		08-11-88	<0.10	<0.10	1.1	<0.10	<0.10	<0.10	<0.1	<0.1
404842098373301		08-11-88	<0.10	<0.10	3.1	<0.10	<0.10	<0.10	<0.1	<0.1
404832098391501		08-11-88	<0.10	<0.10	2.0	<0.10	<0.10	<0.10	<0.1	<0.1
405436098245801		07-27-88	<0.10	<0.10	0.20	<0.10	<0.10	<0.10	<0.1	<0.1
HAMILTON COUNTY										
404633098081202		08-31-88	--	--	--	--	--	--	--	--
405147098004501		08-31-88	--	--	--	--	--	--	--	--
KEARNEY COUNTY										
403747098521401		08-19-88	<0.10	<0.10	0.40	<0.10	<0.10	<0.10	<0.1	<0.1
MADISON COUNTY										
414518097313401		08-15-88	--	--	--	--	--	--	--	--
414901097395801		08-15-88	--	--	--	--	--	--	--	--
415125097285702		08-17-88	--	--	--	--	--	--	--	--
420010097314501		08-15-88	--	--	--	--	--	--	--	--
420205097322601		08-15-88	--	--	--	--	--	--	--	--
420046097442201		08-15-88	--	--	--	--	--	--	--	--
MERRICK COUNTY										
410512098023801		08-25-88	<0.10	<0.10	0.30	<0.10	<0.10	<0.10	<0.1	<0.1
410511098024001		04-17-88	--	--	--	--	--	--	--	--
		04-17-88	--	--	2.6	--	--	--	--	--
		05-26-88	--	--	--	--	--	--	--	--
		05-26-88	<0.02	<0.02	4.9	--	<0.02	--	--	--
		06-21-88	--	--	--	--	--	--	--	--
		06-21-88	<0.02	<0.02	7.1	--	<0.02	--	--	--
		07-26-88	--	--	--	--	--	--	--	--
		07-26-88	<0.02	<0.02	3.2	--	<0.02	--	--	--
		08-25-88	--	--	--	--	--	--	--	--
410445098024001		08-25-88	<0.02	<0.02	4.9	--	<0.02	--	--	--
		04-17-88	--	--	--	--	--	--	--	--
		04-17-88	--	--	0.72	--	--	--	--	--
		05-26-88	--	--	--	--	--	--	--	--
		05-26-88	<0.02	<0.02	1.5	--	<0.02	--	--	--
		06-21-88	--	--	--	--	--	--	--	--
		06-21-88	<0.02	<0.02	1.9	--	<0.02	--	--	--
		07-18-88	--	--	--	--	--	--	--	--
		07-18-88	<0.02	<0.02	1.4	--	<0.02	--	--	--
		08-25-88	--	--	--	--	--	--	--	--
410446098025401		08-25-88	<0.02	<0.02	3.2	--	<0.02	--	--	--
410655098070901		08-25-88	<0.10	<0.10	1.4	<0.10	<0.10	<0.10	<0.1	<0.1
		04-16-88	--	--	--	--	--	--	--	--
		04-16-88	<0.02	<0.02	1.0	--	<0.02	--	--	--
		05-26-88	--	--	--	--	--	--	--	--
		05-26-88	--	--	--	--	--	--	--	--
		06-21-88	--	--	--	--	--	--	--	--
		06-21-88	<0.02	<0.02	2.9	--	<0.02	--	--	--
		07-26-88	--	--	--	--	--	--	--	--
		07-26-88	<0.02	<0.02	2.3	--	<0.02	--	--	--

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	LOCAL IDENT- IFIER	LAT- ITUDE	LONG- ITUDE	GEO- LOGIC UNIT	DATE	TIME	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)
MERRICK COUNTY									
410655098070901	13N	7W 9AADD1	41 06 55 N	098 07 09 W	112SDGV	08-24-88	1600	21.00	634
					112SDGV	08-24-88	1605	21.00	--
410706098072401	13N	7W 9ABBB1	41 07 06 N	098 07 24 W	112SDGV	08-24-88	1700	40.00	382
410700098055901	13N	7W10AACB1	41 07 00 N	098 05 59 W	112SDGV	08-24-88	1800	117.00	368
410655098063501	13N	7W10ABBA1	41 06 55 N	098 06 35 W	112SDGV	04-16-88	--	21.00	404
					112SDGV	04-16-88	0805	21.00	--
					112SDGV	05-26-88	--	21.00	342
					112SDGV	05-26-88	0700	21.00	--
					112SDGV	06-21-88	1630	21.00	430
					112SDGV	06-21-88	1635	21.00	--
					112SDGV	07-27-88	--	21.00	435
					112SDGV	07-27-88	0600	21.00	--
					112SDGV	08-24-88	1845	21.00	558
					112SDGV	08-24-88	1850	21.00	--
410721098085201	13N	7W11CDBB1	41 06 27 N	098 05 24 W	112SDGV	04-16-88	--	22.00	381
					112SDGV	04-16-88	1130	22.00	--
					112SDGV	05-27-88	--	22.00	369
					112SDGV	05-27-88	1015	22.00	--
					112SDGV	06-21-88	1530	22.00	377
					112SDGV	06-21-88	1535	22.00	--
					112SDGV	07-26-88	--	22.00	373
					112SDGV	07-26-88	0820	22.00	--
					112SDGV	08-25-88	1000	22.00	394
					112SDGV	08-25-88	1005	22.00	--
410624098052401	13N	7W11CDBC1	41 06 24 N	098 05 24 W	112SDGV	08-25-88	1045	62.00	396
410525098060301	13N	7W15DCDD1	41 05 25 N	098 06 03 W	112SDGV	08-25-88	0930	49.00	1240
410629098092701	13N	7W15DDDA1	41 05 28 N	098 05 46 W	112SDGV	04-16-88	--	26.00	1280
					112SDGV	04-16-88	1015	26.00	--
					112SDGV	05-27-88	--	26.00	1230
					112SDGV	05-27-88	0930	26.00	--
					112SDGV	06-21-88	1350	26.00	1330
					112SDGV	06-21-88	1355	26.00	--
					112SDGV	07-26-88	--	26.00	1320
					112SDGV	07-26-88	0730	26.00	--
					112SDGV	08-25-88	0830	26.00	1230
411533097565401	15N	6W24ADBC1	41 15 33 N	097 56 54 W	112SDGV	08-25-88	0835	26.00	--
411538097565601	15N	6W24ADDD1	41 15 38 N	097 56 56 W	112SDGV	08-24-88	1400	32.00	473
					112SDGV	04-15-88	--	16.00	333
					112SDGV	04-15-88	0830	16.00	--
					112SDGV	05-26-88	--	16.00	284
					112SDGV	05-26-88	1615	16.00	--
					112SDGV	06-22-88	0900	16.00	282
					112SDGV	06-22-88	0905	16.00	--
					112SDGV	07-18-88	1400	16.00	348
					112SDGV	07-18-88	1405	16.00	--
					112SDGV	08-24-88	1130	16.00	494
					112SDGV	08-24-88	1135	16.00	--
411512097565601	15N	6W24DADB1	41 15 12 N	097 56 56 W	112SDGV	04-16-88	--	18.00	458
					112SDGV	04-16-88	1300	18.00	--
					112SDGV	05-26-88	--	18.00	416
					112SDGV	05-26-88	1400	18.00	--
					112SDGV	06-22-88	1000	18.00	497
					112SDGV	06-22-88	1005	18.00	--
					112SDGV	07-18-88	1530	18.00	493
					112SDGV	07-18-88	1535	18.00	--
					112SDGV	08-24-88	1230	18.00	562
					112SDGV	08-24-88	1235	18.00	--
411507097564101	15N	6W24DDAD1	41 15 07 N	097 56 41 W	112SDGV	08-24-88	1300	38.00	562

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PRO- PAZINE TOTAL (UG/L) (39024)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)	SIME- TRYNE TOTAL (UG/L) (39054)
MERRICK COUNTY											
410655098070901		08-24-88	6.29	18.5	5.3	--	46.0	1.8	--	--	--
		08-24-88	--	--	--	--	--	--	<0.02	--	--
410706098072401		08-24-88	6.90	12.5	3.0	--	8.80	--	<0.10	<0.10	<0.1
410700098055901		08-24-88	6.79	12.5	5.4	--	16.0	--	--	--	--
410655098063501		04-16-88	6.05	11.0	--	--	31.0	--	--	--	--
		04-16-88	--	--	--	--	--	--	<0.02	--	--
		05-26-88	5.92	14.5	7.2	--	32.0	--	--	--	--
		05-26-88	--	--	--	--	--	--	0.16	--	--
		06-21-88	5.75	16.5	5.0	--	36.0	--	--	--	--
		06-21-88	--	--	--	--	--	--	0.22	--	--
		07-27-88	5.89	19.0	4.4	--	34.0	1.1	--	--	--
		07-27-88	--	--	--	--	--	--	<0.02	--	--
		08-24-88	5.87	21.0	4.9	--	52.0	1.4	--	--	--
		08-24-88	--	--	--	--	--	--	<0.02	--	--
410721098085201		04-16-88	6.42	11.5	--	--	17.0	--	--	--	--
		04-16-88	--	--	--	--	--	--	.17	--	--
		05-27-88	6.32	11.5	7.4	--	17.0	--	--	--	--
		05-27-88	--	--	--	--	--	--	<0.02	--	--
		06-21-88	6.03	15.0	6.8	--	17.0	--	--	--	--
		06-21-88	--	--	--	--	--	--	<0.02	--	--
		07-26-88	6.15	21.5	4.2	--	17.0	1.8	--	--	--
		07-26-88	--	--	--	--	--	--	<0.02	--	--
		08-25-88	6.24	18.0	5.2	--	20.0	1.6	--	--	--
		08-25-88	--	--	--	--	--	--	<0.02	--	--
410624098052401		08-25-88	6.58	13.0	6.2	--	16.0	--	<0.10	<0.10	<0.1
410525098060301		08-25-88	6.82	14.5	2.7	--	18.0	--	<0.10	<0.10	<0.1
410629098092701		04-16-88	6.84	12.5	--	--	17.0	--	--	--	--
		04-16-88	--	--	--	--	--	--	<0.02	--	--
		05-27-88	6.79	12.0	1.9	--	15.0	--	--	--	--
		05-27-88	--	--	--	--	--	--	0.06	--	--
		06-21-88	6.72	15.0	1.4	--	19.0	--	--	--	--
		06-21-88	--	--	--	--	--	--	0.05	--	--
		07-26-88	6.75	22.0	1.1	--	16.0	3.4	--	--	--
		07-26-88	--	--	--	--	--	--	<0.02	--	--
		08-25-88	6.76	15.0	2.4	--	13.0	2.9	--	--	--
		08-25-88	--	--	--	--	--	--	<0.02	--	--
411533097565401		08-24-88	6.45	14.0	4.7	--	21.0	--	<0.10	<0.10	<0.1
411538097565601		04-15-88	6.78	9.0	--	--	7.10	--	--	--	--
		04-15-88	--	--	--	--	--	--	<0.02	--	--
		05-26-88	6.71	12.5	1.7	--	3.40	--	--	--	--
		05-26-88	--	--	--	--	--	--	0.07	--	--
		06-22-88	6.38	16.5	0.5	--	1.80	--	--	--	--
		06-22-88	--	--	--	--	--	--	<0.02	--	--
		07-18-88	6.83	22.5	0.7	--	4.70	3.5	--	--	--
		07-18-88	--	--	--	--	--	--	<0.02	--	--
		08-24-88	6.60	21.5	1.9	--	16.0	2.6	--	--	--
		08-24-88	--	--	--	--	--	--	<0.02	--	--
411512097565601		04-16-88	6.40	9.0	--	--	20.0	--	--	--	--
		04-16-88	--	--	--	--	--	--	<0.02	--	--
		05-26-88	6.37	11.5	9.7	--	17.0	--	--	--	--
		05-26-88	--	--	--	--	--	--	<0.02	--	--
		06-22-88	6.04	17.5	6.1	--	17.0	--	--	--	--
		06-22-88	--	--	--	--	--	--	<0.02	--	--
		07-18-88	6.24	22.5	5.7	--	23.0	2.1	--	--	--
		07-18-88	--	--	--	--	--	--	<0.02	--	--
		08-24-88	6.13	19.5	5.4	--	27.0	2.0	--	--	--
		08-24-88	--	--	--	--	--	--	<0.02	--	--
411507097564101		08-24-88	6.13	19.5	5.4	--	28.0	--	<0.10	<0.10	<0.1

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	SIMA- ZINE TOTAL (UG/L) (39055)	PROME- TONE TOTAL (UG/L) (39056)	PROME- TRYNE TOTAL (UG/L) (39057)	ATRA- ZINE TOTAL (UG/L) (39630)	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	CYAN- AZINE TOTAL (UG/L) (81757)	AME- TRYNE TOTAL (82184)	METRI- BUZIN WATER WHOLE TOT. REC (UG/L) (82611)	METOLA- CHLOR WATER WHOLE TOT. REC (UG/L) (82612)
MERRICK COUNTY											
410655098070901		08-24-88	--	--	--	--	--	--	--	--	--
		08-24-88	<0.02	<0.02	<0.02	3.4	--	<0.02	--	--	--
410706098072401		08-24-88	<0.10	<0.10	<0.10	0.50	<0.10	<0.10	<0.10	<0.1	0.3
410700098055901		08-24-88	--	--	--	--	--	--	--	--	--
410655098063501		04-16-88	--	--	--	--	--	--	--	--	--
		04-16-88	<0.02	0.20	<0.02	1.0	--	<0.02	--	--	--
		05-26-88	--	--	--	--	--	--	--	--	--
		05-26-88	<0.02	<0.02	<0.02	2.1	--	<0.02	--	--	--
		06-21-88	--	--	--	--	--	--	--	--	--
		06-21-88	<0.02	<0.02	<0.02	1.9	--	<0.02	--	--	--
		07-27-88	--	--	--	--	--	--	--	--	--
		07-27-88	<0.02	<0.02	<0.02	3.6	--	<0.02	--	--	--
		08-24-88	--	--	--	--	--	--	--	--	--
		08-24-88	<0.02	<0.02	<0.02	14	--	<0.02	--	--	--
410721098085201		04-16-88	--	--	--	--	--	--	--	--	--
		04-16-88	0.38	<0.02	<0.02	1.1	--	<0.02	--	--	--
		05-27-88	--	--	--	--	--	--	--	--	--
		05-27-88	<0.02	<0.02	<0.02	2.4	--	<0.02	--	--	--
		06-21-88	--	--	--	--	--	--	--	--	--
		06-21-88	<0.02	<0.02	<0.02	2.9	--	<0.02	--	--	--
		07-26-88	--	--	--	--	--	--	--	--	--
		07-26-88	<0.02	<0.02	<0.02	--	--	<0.02	--	--	--
		08-25-88	--	--	--	--	--	--	--	--	--
		08-25-88	<0.02	<0.02	<0.02	6.4	--	<0.02	--	--	--
410624098052401		08-25-88	<0.10	<0.10	<0.10	0.60	<0.10	<0.10	<0.10	<0.1	<0.1
410525098060301		08-25-88	<0.10	<0.10	<0.10	0.60	<0.10	<0.10	<0.10	<0.1	<0.1
410629098092701		04-16-88	--	--	--	--	--	--	--	--	--
		04-16-88	<0.02	<0.02	<0.02	0.62	--	<0.02	--	--	--
		05-27-88	--	--	--	--	--	--	--	--	--
		05-27-88	<0.02	<0.02	<0.02	0.68	--	<0.02	--	--	--
		06-21-88	--	--	--	--	--	--	--	--	--
		06-21-88	<0.02	<0.02	<0.02	1.3	--	<0.02	--	--	--
		07-26-88	--	--	--	--	--	--	--	--	--
		07-26-88	<0.02	<0.02	<0.02	0.45	--	<0.02	--	--	--
		08-25-88	--	--	--	--	--	--	--	--	--
411533097565401		08-25-88	<0.02	<0.02	<0.02	0.85	--	<0.02	--	--	--
411538097565601		08-24-88	<0.10	<0.10	<0.10	0.30	<0.10	<0.10	<0.10	<0.1	<0.1
		04-15-88	--	--	--	--	--	--	--	--	--
		04-15-88	<0.02	<0.02	<0.02	--	--	<0.02	--	--	--
		05-26-88	--	--	--	--	--	--	--	--	--
		05-26-88	<0.02	<0.02	<0.02	1.6	--	<0.02	--	--	--
		06-22-88	--	--	--	--	--	--	--	--	--
		06-22-88	<0.02	<0.02	<0.02	1.9	--	<0.02	--	--	--
		07-18-88	--	--	--	--	--	--	--	--	--
		07-18-88	<0.02	<0.02	<0.02	1.2	--	<0.02	--	--	--
		08-24-88	--	--	--	--	--	--	--	--	--
		08-24-88	<0.02	<0.02	<0.02	2.0	--	<0.02	--	--	--
411512097565601		04-16-88	<0.02	<0.02	<0.02	0.09	--	<0.02	--	--	--
		04-16-88	--	--	--	--	--	--	--	--	--
		05-26-88	--	--	--	--	--	--	--	--	--
		05-26-88	<0.02	<0.02	<0.02	0.71	--	<0.02	--	--	--
		06-22-88	--	--	--	--	--	--	--	--	--
		06-22-88	<0.02	<0.02	<0.02	1.2	--	<0.02	--	--	--
		07-18-88	--	--	--	--	--	--	--	--	--
		07-18-88	<0.02	<0.02	<0.02	0.81	--	<0.02	--	--	--
		08-24-88	--	--	--	--	--	--	--	--	--
411507097564101		08-24-88	<0.02	<0.02	<0.02	0.85	--	<0.02	--	--	--
		08-24-88	<0.10	<0.10	<0.10	0.60	<0.10	0.10	<0.10	<0.1	<0.1

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	LOCAL IDENT- I- FIER	LAT- I- TUDE	LONG- I- TUDE	GEO- LOGIC UNIT	DATE	TIME	DEPTH OF WELL TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)
PHELPS COUNTY									
402854099285901	6N 19W16DCCC1		40 28 54 N	099 28 59 W	121OGLL	08-12-88	--	400.00	623
403933099312801	8N 19W18CDEB1		40 39 33 N	099 31 28 W	112SDGV	08-12-88	--	50.00	957
PLATTE COUNTY									
414005097312401	20N 2W34AAD 1		41 40 05 N	097 31 24 W		08-15-88	1107	--	973
413230097221001	18N 1W12DD 1		41 32 30 N	097 22 10 W	112SDGV	08-15-88	1000	120.00	685
POLK COUNTY									
410434097471102	13N 4W21CCD 2		41 04 34 N	097 47 11 W	112SDGV	08-31-88	1058	150.00	628
411145097254601	14N 1W 9DAC 1		41 11 45 N	097 25 46 W	112SDGV	09-01-88	0925	270.00	498
ROCK COUNTY									
424728099182201	33N 17W34BDDD1		42 47 28 N	099 18 22 W		10-05-87	1300	14.00	315
						12-02-87	1105	14.00	305
					110SDGV	03-28-88	1115	14.00	311
					110SDGV	06-20-88	1500	14.00	324
					110SDGV	07-21-88	1045	14.00	309
424728099182202	33N 17W34BDDD2				110SDGV	08-15-88	1140	14.00	276
						10-05-87	1230	29.00	297
						12-02-87	1040	29.00	287
						03-28-88	1045	29.00	295
					110SDGV	06-20-88	1430	29.00	294
					110SDGV	07-21-88	1020	29.00	298
					110SDGV	08-15-88	1230	29.00	294
SALINE COUNTY									
403902097064901	8N 3E20BAD 1		40 39 02 N	097 06 49 W	112SDGV	08-30-88	0915	190.00	522
SEWARD COUNTY									
405330097204801	11N 1E29BC 1		40 53 30 N	097 20 48 W	112SDGV	09-01-88	1137	254.00	670
405343097093906	11N 2E26AD 6		40 53 43 N	097 09 39 W	112SDGV	09-01-88	1355	117.00	660
STANTON COUNTY									
415735097190201	23N 1E21ABAB1		41 57 35 N	097 19 02 W		08-16-88	1215	--	857
415928097024501	23N 3E 2DC 1		41 59 28 N	097 02 45 W	111ALVM	08-16-88	1303	30.00	426
THURSTON COUNTY									
420604096412201	25N 6E26DAD 1		42 06 04 N	096 41 22 W	112SDGV	08-16-88	1720	--	666

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)
PHELPS COUNTY												
402854099285901		08-12-88	7.23	17.0	6.1	--	--	--	--	--	--	--
403933099312801		08-12-88	7.18	14.0	2.4	--	--	--	--	--	--	--
PLATTE COUNTY												
414005097312401		08-15-88	7.24	14.0	--	420	--	110	35	56	1	10
413230097221001		08-15-88	7.06	15.0	--	320	11	100	16	17	0.4	6.5
POLK COUNTY												
410434097471102		08-31-88	7.28	15.0	--	250	0	79	13	33	0.9	7.3
411145097254601		09-01-88	7.15	13.5	--	200	1	62	11	23	0.7	7.7
ROCK COUNTY												
424728099182201		10-05-87	7.92	16.0	--	130	0	44	4.8	10	0.4	2.2
		12-02-87	7.92	13.0	--	130	0	45	4.9	10	0.4	8.9
		03-28-88	7.94	8.0	--	140	0	49	5.2	9.3	0.4	4.5
		06-20-88	7.96	11.0	--	140	0	47	5.3	9.2	0.4	9.0
		07-21-88	7.87	14.0	--	130	0	43	4.9	8.2	0.3	9.8
424728099182202		08-15-88	7.82	16.0	--	110	0	37	4.2	8.2	0.4	9.2
		10-05-87	7.84	13.0	--	130	0	42	5.0	9.9	0.4	3.5
		12-02-87	7.82	13.0	--	130	0	43	5.0	9.8	0.4	5.8
		03-28-88	7.80	12.0	--	130	0	44	5.3	9.9	0.4	8.6
		06-20-88	7.77	11.0	--	130	0	42	5.4	10	0.4	5.3
		07-21-88	7.76	11.5	--	130	0	42	5.3	9.3	0.4	5.3
		08-15-88	7.72	11.0	--	120	0	41	5.3	9.3	0.4	5.0
SALINE COUNTY												
403902097064901		08-30-88	7.42	14.0	--	220	0	68	11	25	0.8	4.7
SEWARD COUNTY												
405330097204801		09-01-88	7.15	14.5	--	260	10	82	14	39	1	5.7
405343097093906		09-01-88	7.15	13.0	--	230	14	72	12	51	2	7.2
STANTON COUNTY												
415735097190201		08-16-88	7.35	15.0	--	370	77	100	30	27	0.6	10
415928097024501		08-16-88	7.59	16.0	--	190	0	58	12	7.6	0.2	6.3
THURSTON COUNTY												
420604096412201		08-16-88	7.23	17.0	--	320	--	90	22	17	0.4	4.2

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	ALKA- LINIT LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)
PHELPS COUNTY											
402854099285901	08-12-88	--	--	--	--	--	--	--	--	--	4.00
403933099312801	08-12-88	--	--	--	--	--	--	--	--	--	7.30
PLATTE COUNTY											
414005097312401	08-15-88	--	220	5.9	0.30	33	477	0.65	--	1.20	--
413230097221001	08-15-88	305	57	6.1	0.20	44	430	0.58	--	--	--
POLK COUNTY											
410434097471102	08-31-88	270	35	12	0.30	44	403	0.55	--	3.90	--
411145097254601	09-01-88	199	25	12	0.30	41	341	0.46	--	9.00	--
ROCK COUNTY											
424728099182201	10-05-87	158	6.2	2.0	--	--	164	0.22	<0.100	--	--
	12-02-87	156	6.7	2.2	--	--	171	0.23	<0.100	--	--
	03-28-88	167	8.6	2.3	--	--	179	0.24	<0.100	--	--
	06-20-88	164	3.1	2.1	--	--	174	0.24	<0.100	--	--
	07-21-88	150	8.9	2.2	--	--	167	0.23	<0.100	--	--
	08-15-88	126	11	2.3	--	--	147	0.20	<0.100	--	--
424728099182202	10-05-87	148	5.0	1.9	--	--	156	0.21	<0.100	--	--
	12-02-87	147	6.3	7.7	--	--	166	0.23	<0.100	--	--
	03-28-88	153	6.7	1.6	--	--	168	0.23	<0.100	--	--
	06-20-88	149	14	1.8	--	--	168	0.23	<0.100	--	--
	07-21-88	151	3.5	1.7	--	--	158	0.21	<0.100	--	--
	08-15-88	151	2.9	1.6	--	--	156	0.21	<0.100	--	--
SALINE COUNTY											
403902097064901	08-30-88	229	44	10	0.30	29	329	0.45	--	<0.100	--
SEWARD COUNTY											
405330097204801	09-01-88	253	34	14	0.30	37	444	0.60	--	15.0	--
405343097093906	09-01-88	216	95	6.2	0.20	34	447	0.61	--	9.00	--
STANTON COUNTY											
415735097190201	08-16-88	297	140	20	0.30	29	537	0.73	--	0.180	--
415928097024501	08-16-88	194	32	2.3	0.20	32	268	0.36	--	0.190	--
THURSTON COUNTY											
420604096412201	08-16-88	--	44	2.0	0.20	25	206	0.28	--	0.100	--

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CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY, TOTAL RECOVERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	SELENIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
PHELPS COUNTY											
402854099285901		08-12-88	--	--	--	--	--	--	--	--	--
403933099312801		08-12-88	--	--	--	--	--	--	--	--	--
PLATTE COUNTY											
414005097312401		08-15-88	--	--	550	--	170	--	--	--	--
413230097221001		08-15-88	--	--	6	--	<1	--	--	--	--
POLK COUNTY											
410434097471102		08-31-88	--	--	6	--	<1	--	--	--	--
411145097254601		09-01-88	--	--	<3	--	16	--	--	--	--
ROCK COUNTY											
424728099182201		10-05-87	<10	9	--	<5	--	0.20	1	1	<10
		12-02-87	<1	16	--	<5	--	1.0	1	<1	<10
		03-28-88	4	24	--	<5	--	<0.10	1	1	<10
		06-20-88	--	--	--	--	--	--	--	--	--
		07-21-88	1	27	--	<5	--	<0.10	1	<1	<10
424728099182202		08-15-88	2	12	--	<5	--	<0.10	2	<1	<10
		10-05-87	<10	13	--	<5	--	<0.10	3	<1	10
		12-02-87	<1	9	--	<5	--	0.10	6	<1	<10
		03-28-88	3	31	--	<5	--	<0.10	1	<1	<10
		06-20-88	6	8	--	<5	--	<0.10	18	<1	<10
		07-21-88	1	31	--	<5	--	<0.10	2	<1	<10
		08-15-88	2	7	--	<5	--	<0.10	6	<1	<10
SALINE COUNTY											
403902097064901		08-30-88	--	--	6	--	3	--	--	--	--
SEWARD COUNTY											
405330097204801		09-01-88	--	--	3	--	7	--	--	--	--
405343097093906		09-01-88	--	--	<3	--	<1	--	--	--	--
STANTON COUNTY											
415735097190201		08-16-88	--	--	180	--	1200	--	--	--	--
415928097024501		08-16-88	--	--	120	--	63	--	--	--	--
THURSTON COUNTY											
420604096412201		08-16-88	--	--	480	--	500	--	--	--	--

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WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

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[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

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[illegible]

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION	NUMBER	LOCAL IDENT- I- FIER	LAT- I- TUDE	LONG- I- TUDE	GEO- LOGIC UNIT	DATE	TIME	DEPTH OF WELL, TOTAL (FEET) (72008)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)			
WASHINGTON COUNTY												
413315096211601	18N 9E 1DC 1		41 33 15 N	096 21 16 W	110SDGV	08-18-88	1108	70.00	897			
YORK COUNTY												
404646097485101	9N 4W 6AC 1		40 46 46 N	097 48 51 W	112SDGV	08-31-88	1213	171.00	605			
405242097352403	11N 2W31CA 3		40 52 42 N	097 35 24 W	112SDGV	08-31-88	1430	368.00	587			
410137097241302	12N 1W11BC 2		41 01 37 N	097 24 13 W	112SDGV	09-01-88	1031	156.00	654			
STATION	NUMBER	DATE	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)
WASHINGTON COUNTY												
413315096211601	08-18-88	7.09	14.0	400	41	110	31	45	1	5.5	362	
YORK COUNTY												
404646097485101	08-31-88	7.17	14.0	240	10	76	12	29	0.9	6.0	230	--
405242097352403	08-31-88	7.40	15.0	250	--	79	13	30	0.9	5.8		
410137097241302	09-01-88	7.08	14.5	260	0	81	13	37	1	6.0	285	
STATION	NUMBER	DATE	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	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)
WASHINGTON COUNTY												
413315096211601	08-18-88	120	6.8	0.40	13	552	0.75	0.470	130	790	230	
YORK COUNTY												
404646097485101	08-31-88	32	22	0.30	32	374	0.51	6.10	30	<3	1	
405242097352403	08-31-88	34	11	0.20	36	223	0.30	3.20	40	7	130	
410137097241302	09-01-88	22	14	0.30	38	415	0.56	7.40	40	<3	1	

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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