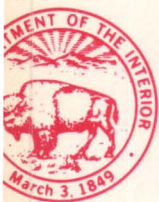
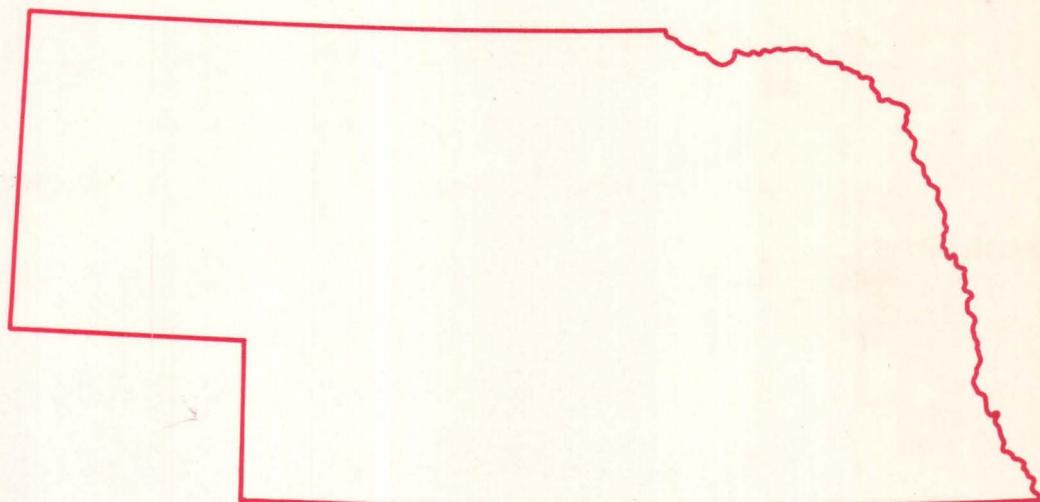
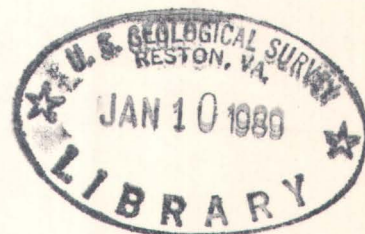


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Water Resources Data Nebraska Water Year 1987



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NE-87-1

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 1987

1986

OCTOBER							NOVEMBER							DECEMBER							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
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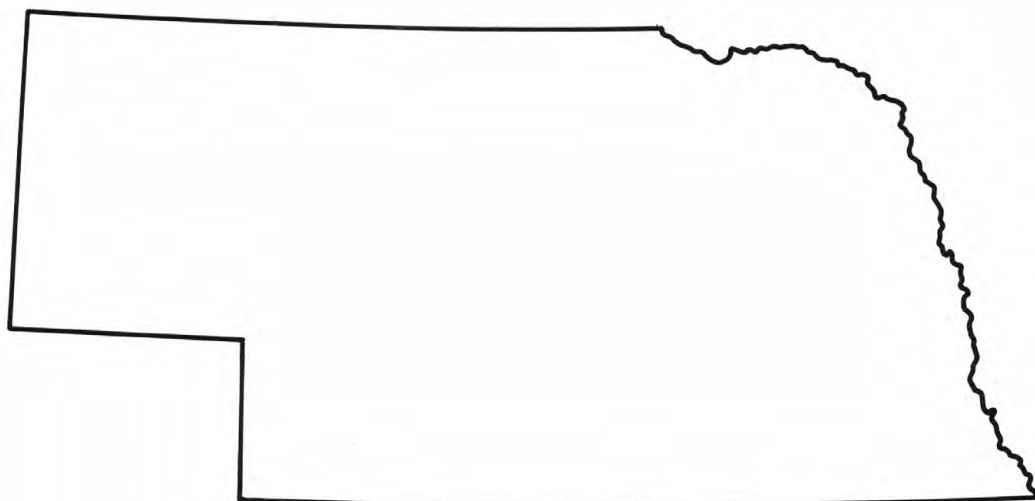
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Water Resources Data Nebraska Water Year 1987

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NE-87-1
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

DONALD PAUL HODEL, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

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

District Chief
Water Resources Division
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 dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had 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, D.E. Schild, J.C. Beard, and
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M. Kubicek, S.H. Hull, D.M. Schwartz, G.V. Steele, and
V.C. Walczyk 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 W. M. Kastner, District Chief, Nebraska.

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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 7 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 35 streamflow-gaging stations, for 8 ungaged streamsites, and for 144 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-87-1." 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 District 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 6 streamflow-gaging stations, 1 partial-record station, 2 lake stations, and in providing elevations or capacity tables for 8 reservoir stations.

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 1987

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. Locations of the divisions are shown in figure 1. Precipitation and departures from normal are shown for each quarter and for the entire water year, in order to emphasize the precipitation distribution during water year 1987.

Precipitation in all divisions was greater than normal during the first quarter of the water year (greater than 100 percent but less than 170 percent of the normal). Precipitation during the second quarter was much greater than normal in six of the eight divisions (between 108 and 213 percent greater than normal). These six divisions include the central and eastern part of the State. The other two divisions, the northwestern and southwestern part of the State, also had greater than normal precipitation, although not to the same extent (both divisions were 80 percent greater than normal). The third quarter indicated less than normal precipitation in the five northern divisions; whereas, the three southern divisions showed only small increases compared to the normal (less than 30 percent greater than normal). The fourth quarter did not show a great increase or decrease from the third quarter. The percentages of normal precipitation for each of the four quarters and for the entire water year are shown in figure 1 for the eight divisions.

Table 1.--Precipitation and departures from normal, in inches

National Weather Service Division	October-December		January-March		April-June		July-September		1987 water year October-September	
	Departure		Departure		Departure		Departure		Departure	
	Precipi- tation	from normal	Precipi- tation	from normal	Precipi- tation	from normal	Precipi- tation	from normal	Precipi- tation	from normal
Panhandle	2.45	.74	3.07	1.36	7.82	-.09	5.01	-.27	18.35	1.74
North Central	2.64	.40	6.24	4.07	6.67	-2.49	8.21	.96	23.76	2.94
Northeast	4.30	1.22	7.52	4.51	7.12	-3.41	9.31	.62	28.25	2.97
Central	3.04	.50	8.05	5.48	8.65	-1.24	8.49	.41	28.23	5.15
East Central	6.28	2.52	7.80	4.37	9.24	-1.87	12.57	2.63	35.89	7.65
Southwest	2.80	.85	3.51	1.56	9.32	1.04	5.81	-.88	21.44	2.57
South Central	4.02	1.39	7.93	5.33	10.49	.64	7.42	-1.13	29.86	6.23
Southeast	7.03	2.81	7.81	4.06	14.21	3.06	11.93	.75	40.98	10.68

Streamflow

Monthly mean discharges during water year 1987 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. The individual graphs demonstrate the varied conditions in the State during the year.

Three of the stations, 06686000, North Platte River at Lisco; 06454500, Niobrara River above Box Butte; and 06461500, Niobrara River near Sparks, show a more or less normal pattern of streamflow throughout the water year. The yearly mean flows did not vary much from the normal. The streamflow at station 06686000, North Platte River at Lisco, is determined more by reservoir releases than by precipitation patterns. Reservoir releases that were greater than normal continued to be made during the first part of the water year because of substantial storage of the runoff during water year 1986, which can be seen in the graph in figure 1. Large releases were not necessary for the rest of the water year because snowmelt runoff from the Rocky Mountains was less than normal. Mean flow for the water year 1987 at this station (Lisco) was only 10 percent greater than normal compared to 44 percent greater than normal for water year 1968.

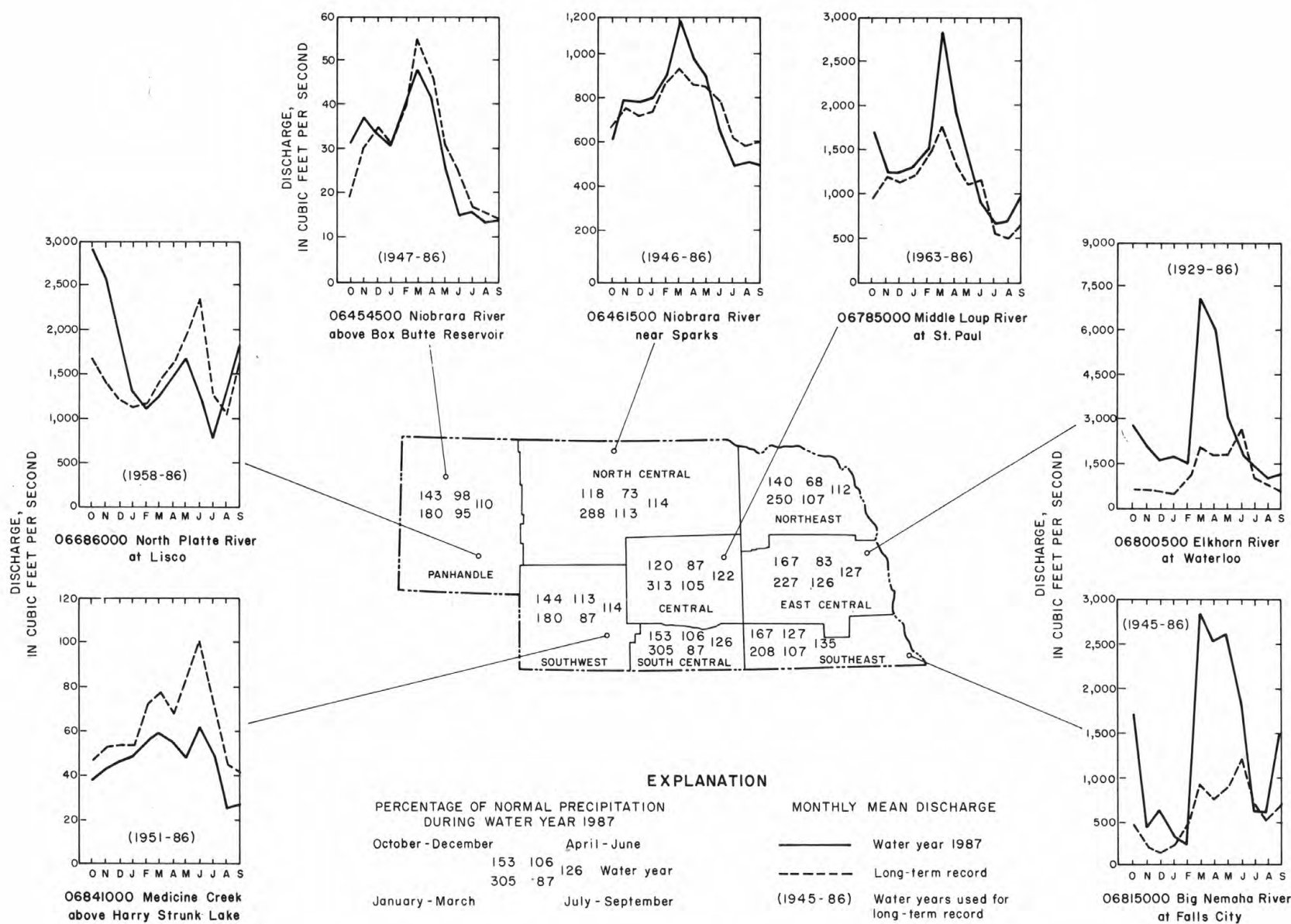


Figure 1.--Comparison of precipitation and streamflow during water year 1987 to long-term means.

One station, 06841000, Medicine Creek above Harry Strunk Lake, in the southwestern part of the State, indicated a streamflow pattern that was less than normal throughout the water year. Mean flow at this station for water year 1987 was 35 percent less than normal. This was quite different from the streams in the central and eastern parts of the State. The representative stream in the central part of the State, 06785000, Middle Loup River at St. Paul, and the two representative streams in the easternmost part, 06800500, Elkhorn River at Waterloo, and 06815000, Big Nemaha River at Falls City, showed a streamflow pattern that was generally greater than normal throughout the water year, but with a much greater than normal pattern starting in February-March and ending in May-June. Precipitation in the divisions in which these three stations are located ranged from 122 to 135 percent greater than normal for water year 1987.

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 1987 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 1987 was equal to the mean for the period of record. The Mann-Whitney technique is simpler to use, requiring less 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 "W" value (W_t), the hypothesis that the means are equal is accepted; if not (W_c is greater than W_t), the hypothesis is rejected.

Results of the Mann-Whitney test are shown in table 2. Comparison of the mean specific conductance for water year 1987 with the period-of-record mean shows that the means are not statistically different (null hypotheses are accepted) for all the stations, with the exception of 06853020, Republican River at Guide Rock.

The mean specific conductance for the Guide Rock station during water year 1987 once again indicated that it was statistically different from that of the period of record (null hypothesis is rejected). This difference has been present since water year 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 at this station 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. This accounts for a greater mean specific conductance during past years when the precipitation pattern was less than normal.

Table 2.--Results of ranked Mann-Whitney test comparing mean specific conductance for water year 1987 with the mean for the period of record for streamflow leaving Nebraska
[Specific conductance, in micromhos per centimeter at 25 degrees Celsius; A = accepted;
R = rejected]

Station identification	Specific conductance				Mann-Whitney test			
	1987 water year		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-----	11	290	160	270	1973-86	1207.3	1187.0	A
06805500 Platte River at Louisville-----	10	655	139	702	1972-86	966.8	671.0	A
06815000 Big Nemaha River at Falls City-----	11	630	165	625	1973-86	1242.6	972.5	A
06853020 Republican River at Guide Rock-----	11	707	325	593	1962-86	2374.7	2953.5	R
06884025 Little Blue River at Hollenberg-----	16	441	176	474	1973-86	1894.1	1321.0	A

Although precipitation for water year 1987 was greater by 40 percent in one division and by 19 percent in the upstream division than was reported for water year 1986 (the Guide Rock station drainage area is located in two divisions), streamflow during water year 1987 was 39 percent less than the 36-year average. Streamflow during water year 1987 was greater than that during water year 1986 when streamflow was 60 percent less than the 35-year average, but still shows that there is a statistical difference between the annual and period-of-record means.

Ground-Water Levels

Water-level changes during water year 1987 were determined from a statewide network of observation wells measured by 38 Federal, State, and local agencies. The network consists of about 3,600 wells measured annually, semiannually, or monthly and 77 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 different parts of the State, are shown in figure 2.

Probably the most significant changes in ground-water levels during water year 1987 were the marked water-level rises that occurred throughout most of the east-central and southeastern parts of the State. These water-level rises probably are the result of a continuation of a trend for greater than normal precipitation during the growing season that started in water year 1983. At the end of water year 1987, water levels in most observation wells were about 1.0 foot higher than they were at the end of water year 1986. The hydrograph for an observation well in Seward County is a representative example of the water-level fluctuations that have occurred in this part of the State during water years 1986 and 1987. Water levels in the Seward County well have risen 9.21 feet in the vicinity of the well during the past 5 water years, and, at the end of water year 1987, they were higher than at the end of any of the past 29 water years; at the end of water year 1987, the water level was 0.94 foot higher than at the end of the water year 1986.

Throughout much of the central and south-central parts of Nebraska, precipitation generally was greater than normal. Water levels measured in 1,048 observation wells in these parts of Nebraska averaged about 0.2 foot higher at the end of the water year 1987 than at the end of water year 1986. The most significant recharge from precipitation occurred in March, when precipitation ranged from 400 to 500 percent greater than normal. A distinct water-level rise of almost 2 feet is shown on the hydrograph for the Buffalo County well. At the end of water year 1987, water levels in the Buffalo County well were 3.10 feet higher than at the end of water year 1986 and were the highest they have been at the end of any of the past 35 water years.

In the southwestern part of the State, where precipitation during most of the water year was greater than normal, water levels in 55 percent of the observation wells measured were higher at the end of water year 1987 than at the end of water year 1986. However, water-level declines occurred in areas where the large amounts of ground water used for irrigation usually exceed the recharge to the aquifer. 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 located in Chase County are representative of those that occurred in irrigated areas during water years 1986 and 1987. The hydrograph shows that the water level at the end of water year 1987 was 0.44 foot lower than at the end of water year 1986, and water levels during the spring of 1987 were 0.38 foot lower than they were during the spring of 1986.

Precipitation in the north-central and northeastern parts of State generally was slightly greater than normal during water year 1987, and water levels rose slightly in areas where precipitation during the 1987 growing season was near normal. The hydrograph for an observation well in Holt County is a representative example of water-level fluctuations that occurred in these areas during water years 1986 and 1987. Water level in the well at the end of water year 1987 was 1.49 feet higher than at the end of water year 1986, and it was the third highest water level recorded at the end of a water year during the past 22 water years. Water levels in areas where the 1987 growing season precipitation was less than normal generally declined slightly.

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; water levels 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.

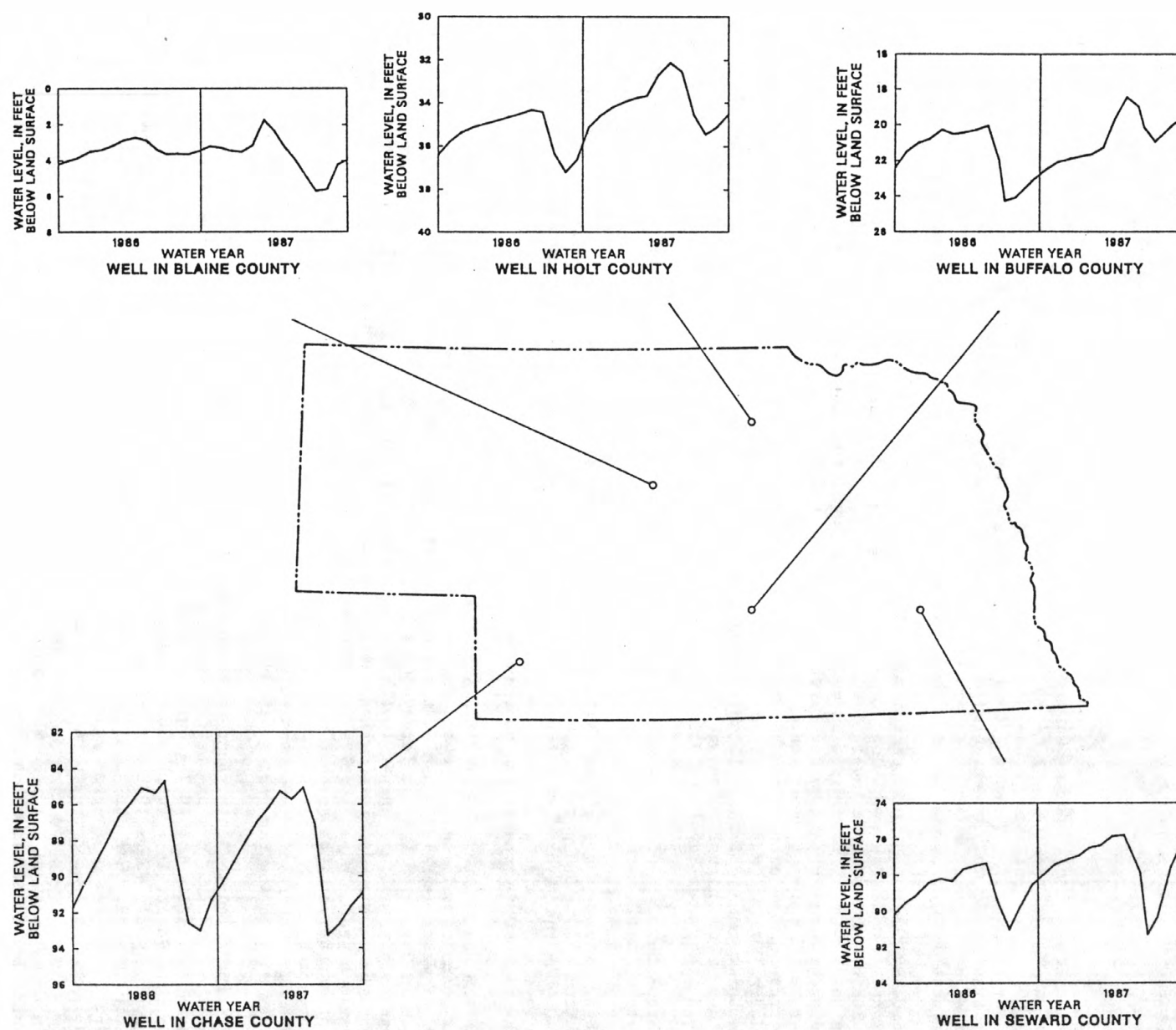


Figure 2.--Representative observation wells, water years 1986 and 1987.

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 1987 water year that began October 1, 1986, and ended September 30, 1987. 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 3, 4, and 5. 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.

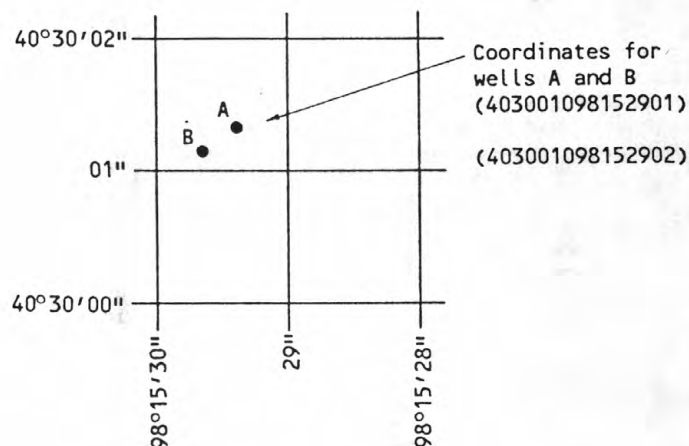
Downstream Order System

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 3.

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.

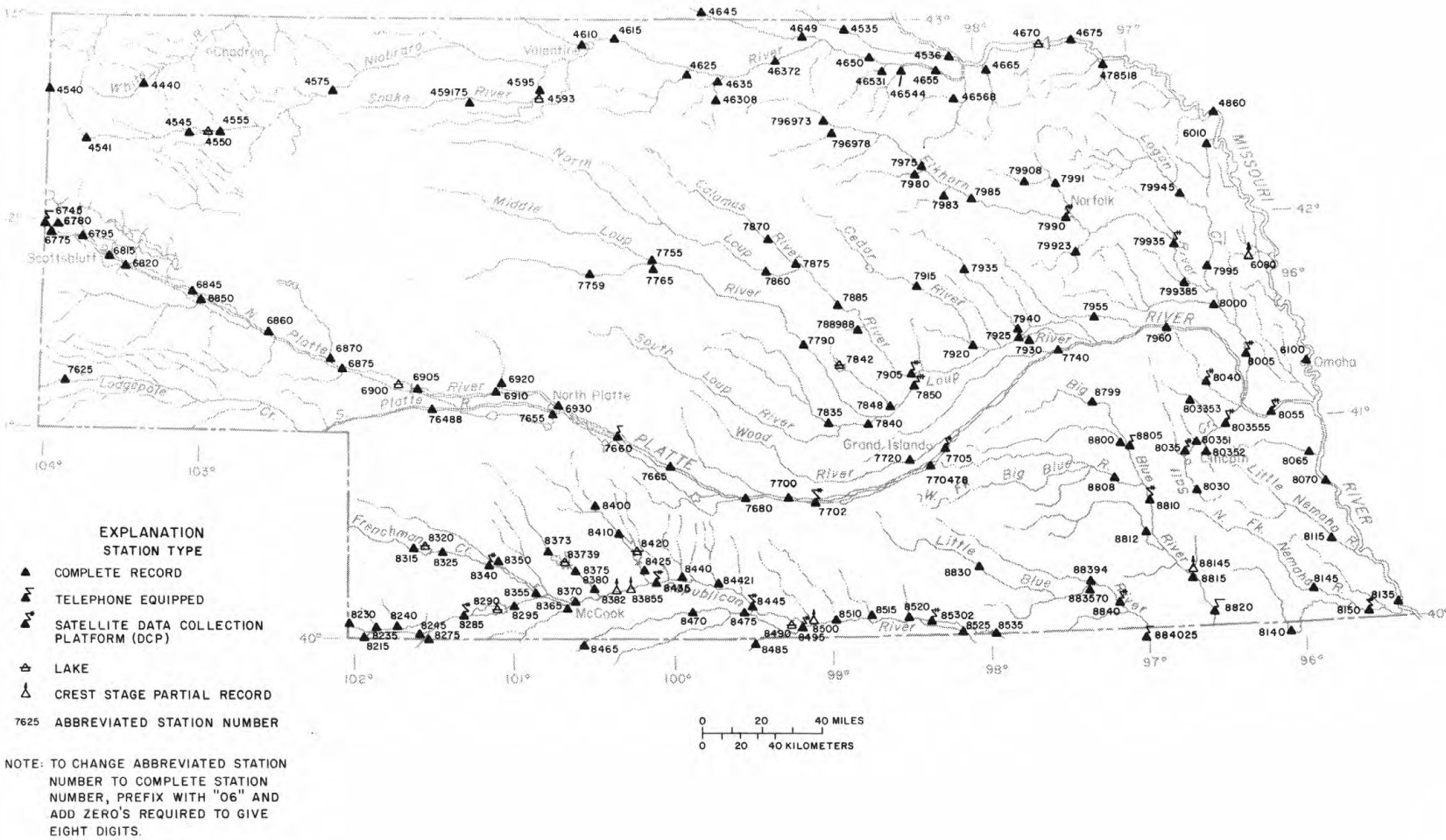


Figure 3.--Location of active surface-water gaging stations.

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 4.

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.

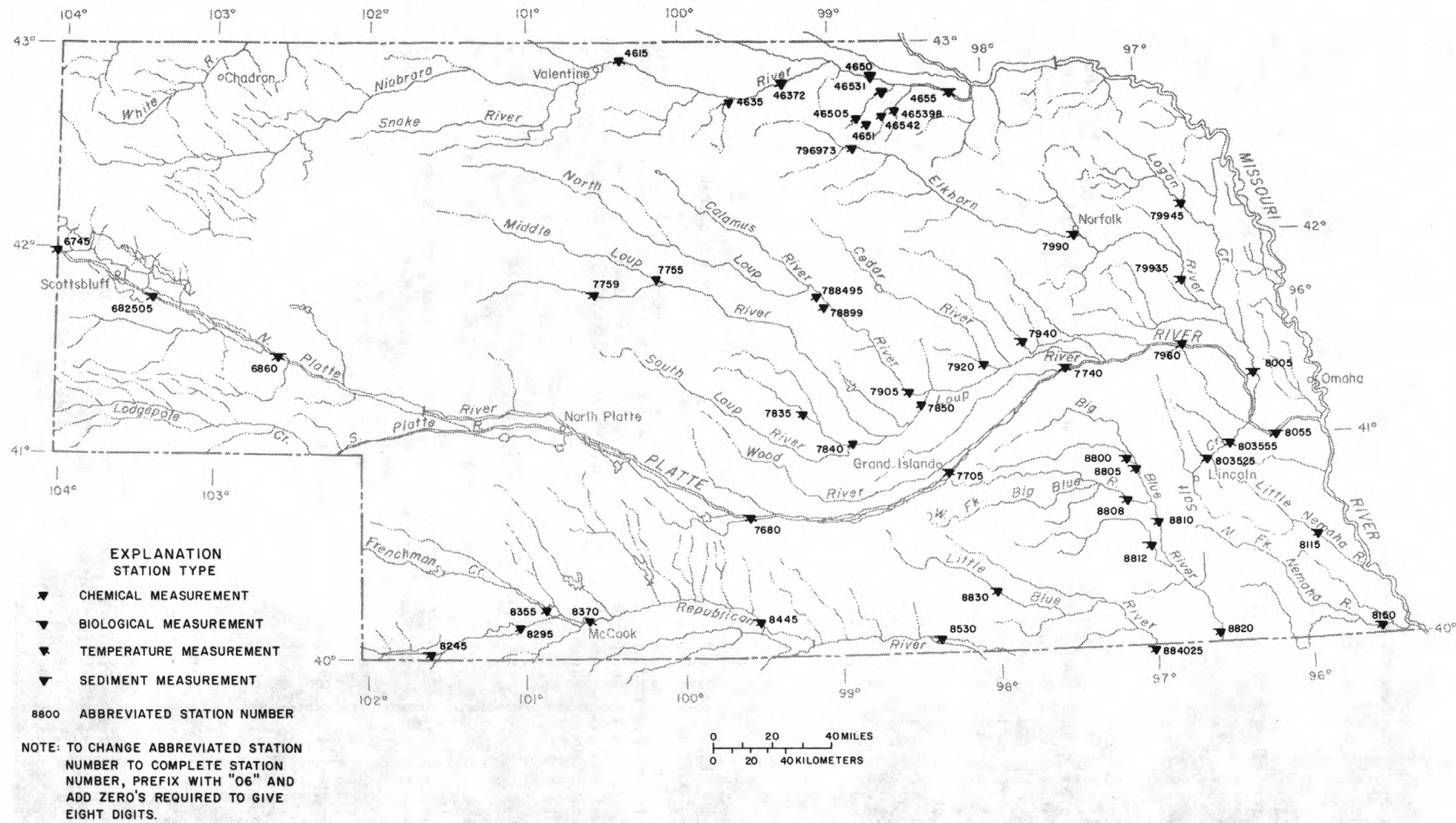


Figure 4.--Location of active surface-water-quality stations.

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 5.

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 usefull 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.)

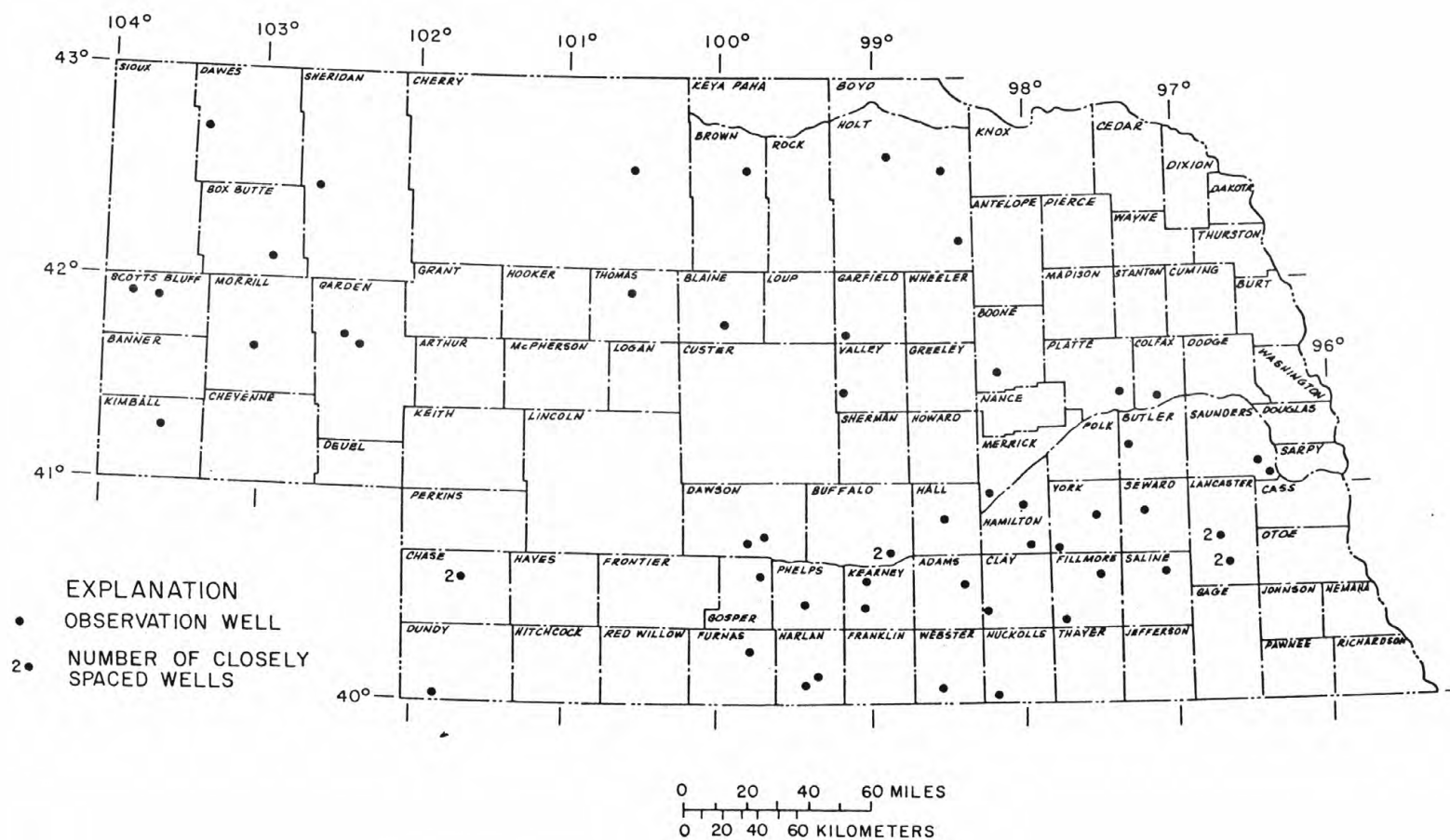


Figure 5.--Location of selected observation wells.

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/m³), and periphyton and benthic organisms in grams per square meter (g/m²).

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 emersed 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, 1987, is called the "1987 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.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 Pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-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.
- 3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-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-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

- 3-C1. *Fluvial sediment concepts* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*. by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. *Computation of rate and volume of stream depletion by wells* by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments* by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*. by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*. edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*. by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. *Laboratory theory and methods for sediment analysis*. by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*. by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 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.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers* by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*. by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

STATION RECORDS, SURFACE WATER

29

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. 10-12, Dec. 10-12, 18-22, Jan. 10, 15-17, 20, 22-24, 26, and Feb. 27 to Mar. 2. 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.--52 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)
June 19	1200	*473	*5.31	No other peak greater than base discharge.			
Minimum daily discharge, 9.7 ft ³ /s Aug. 12, 15, 21.							

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	21	22	27	25	24	20	27	27	21	15	10	12
2	24	22	27	26	24	24	26	26	20	15	10	11
3	31	23	27	26	24	26	26	27	20	15	10	11
4	27	24	26	26	24	26	26	30	20	20	10	11
5	24	24	27	26	24	28	26	26	20	16	11	12
6	24	24	27	26	24	40	26	24	19	14	10	12
7	23	25	27	26	24	36	26	23	19	15	11	12
8	22	24	27	26	24	31	26	22	21	16	12	13
9	22	23	26	25	24	27	26	21	18	16	11	12
10	22	23	20	25	24	26	26	21	20	16	11	12
11	23	23	24	21	24	26	26	21	18	16	10	12
12	23	23	26	20	23	26	27	21	17	14	9.7	12
13	23	23	26	20	24	27	28	21	16	15	10	12
14	23	27	26	20	24	28	28	19	16	14	9.9	12
15	28	26	26	20	25	27	27	19	16	13	9.7	12
16	26	26	26	20	24	27	27	19	15	13	10	13
17	23	26	26	22	23	27	27	20	15	13	9.9	12
18	23	27	22	24	23	27	27	21	15	13	9.9	13
19	23	26	22	24	23	27	26	21	98	13	10	13
20	26	26	22	20	22	28	27	22	32	13	9.8	13
21	25	26	21	20	22	29	28	24	21	13	9.7	13
22	26	26	18	20	22	28	28	22	19	13	11	15
23	29	26	21	22	22	26	28	22	19	14	13	13
24	26	26	25	24	22	26	28	22	17	14	12	12
25	25	26	25	25	22	27	28	24	18	15	13	14
26	24	26	25	25	22	28	28	24	16	14	13	12
27	24	26	25	24	21	28	29	24	16	13	13	12
28	24	27	25	24	20	27	29	21	15	11	12	13
29	22	27	25	25	---	26	28	24	16	11	12	13
30	23	27	26	24	---	26	28	24	15	11	11	13
31	23	---	26	24	---	27	---	23	---	11	11	---
TOTAL	752	750	769	725	648	852	813	705	628	435	335.6	372
MEAN	24.3	25.0	24.8	23.4	23.1	27.5	27.1	22.7	20.9	14.0	10.8	12.4
MAX	31	27	27	26	25	40	29	30	98	20	13	15
MIN	21	22	18	20	20	20	26	19	15	11	9.7	11
AC-FT	1490	1490	1530	1440	1290	1690	1610	1400	1250	863	666	738

CAL YR 1986 TOTAL 9572.0 MEAN 26.2 MAX 178 MIN 14 AC-FT 18990
WTR YR 1987 TOTAL 7784.6 MEAN 21.3 MAX 98 MIN 9.7 AC-FT 15440

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. 8 to Feb. 22. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--38 years, 46.9 ft³/s, 33,980 acre-ft/yr; median of yearly mean discharge, 34 ft³/s, 24,600 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. 18	0330	653	5.26	Apr. 6	0830	*1190	*6.46
Mar. 22	1700	675	5.32	Apr. 14	0100	1110	6.30

Minimum daily discharge, 3.1 ft³/s Sept. 4.

DISCHARGE, 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	24	20	19	22	25	146	425	73	47	7.6	3.4	4.2
2	22	19	19	21	27	134	472	69	40	7.4	3.2	3.6
3	21	20	18	21	28	118	457	66	33	7.6	3.7	3.3
4	21	20	18	20	30	122	678	70	30	6.9	3.6	3.1
5	22	22	18	20	32	126	992	81	28	6.3	3.5	4.4
6	21	23	19	19	34	140	1130	83	26	6.0	6.8	5.1
7	20	23	20	19	36	128	1090	82	25	6.8	5.3	9.9
8	19	23	20	18	37	112	809	77	23	11	4.6	13
9	18	19	21	18	39	94	602	71	22	15	4.4	10
10	17	15	22	17	41	82	399	65	24	22	3.7	7.4
11	16	15	23	17	42	70	293	60	26	46	3.6	6.2
12	16	15	24	16	43	66	233	54	26	25	4.4	6.4
13	16	16	25	16	45	65	369	51	24	15	4.8	5.8
14	16	16	26	16	46	62	658	47	16	25	4.3	4.8
15	17	17	26	16	47	57	504	45	10	20	4.2	7.9
16	16	17	27	15	48	59	418	43	11	13	3.8	64
17	17	18	27	15	48	250	322	40	15	11	3.8	146
18	16	18	27	15	49	543	245	38	14	12	4.3	99
19	16	19	27	15	49	301	200	39	23	9.9	5.2	62
20	17	19	27	16	48	286	171	40	20	8.4	7.3	42
21	16	19	26	16	47	594	149	41	18	7.8	5.6	31
22	20	20	26	17	46	647	135	42	16	7.2	5.1	24
23	27	20	26	17	39	641	125	43	17	6.9	14	19
24	32	20	26	18	42	541	116	41	16	8.0	18	15
25	32	20	25	18	52	350	108	41	14	14	14	12
26	29	20	25	19	87	227	102	44	11	8.4	12	11
27	27	20	24	20	100	202	95	60	11	6.9	11	9.0
28	26	20	24	21	144	197	86	59	10	5.6	10	7.6
29	23	19	23	22	---	166	82	47	8.4	4.6	8.2	6.6
30	23	19	23	23	---	176	76	43	7.8	4.1	6.4	6.4
31	21	---	23	24	---	215	---	46	---	3.8	5.0	---
TOTAL	644	571	724	567	1351	6917	11541	1701	612.2	359.2	197.2	649.7
MEAN	20.8	19.0	23.4	18.3	48.2	223	385	54.9	20.4	11.6	6.36	21.7
MAX	32	23	27	24	144	647	1130	83	47	46	18	146
MIN	16	15	18	15	25	57	76	38	7.8	3.8	3.2	3.1
AC-FT	1280	1130	1440	1120	2680	13720	22890	3370	1210	712	391	1290

CAL YR 1986 TOTAL 24904.3 MEAN 68.2 MAX 741 MIN 2.1 AC-FT 49400
WTR YR 1987 TOTAL 25834.3 MEAN 70.8 MAX 1130 MIN 3.1 AC-FT 51240

PONCA CREEK BASIN

31

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: Nov. 11 to Feb. 5, Feb. 19-21, and July 14 to Aug. 4. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--30 years, 80 ft³/s, 58,000 acre-ft/yr; median of yearly mean discharges, 62 ft³/s, 44,900 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. 19	0900	1100	6.12	Apr. 5	1130	*1840	*7.75
Mar. 21	2030	1070	6.03	Apr. 14	1030	1590	7.58
Mar. 27	1000	1190	6.33	July 12	0300	1430	7.28
Apr. 2	1100	1300	6.59				

Minimum daily discharge, 13 ft³/s Aug. 2, 19, Sept. 4.

DISCHARGE, 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	66	60	50	45	52	255	1090	160	87	28	14	17
2	64	57	50	45	55	248	1110	150	81	26	13	15
3	67	58	50	45	62	227	1010	143	75	25	14	14
4	72	55	49	45	70	201	1150	143	69	27	14	13
5	69	54	49	45	72	202	1470	163	65	34	14	15
6	65	55	49	45	75	213	1490	181	59	39	18	15
7	62	55	48	45	75	239	1430	174	54	50	19	14
8	57	56	47	45	82	217	1260	160	50	68	21	16
9	57	54	47	45	72	182	1080	147	54	107	21	17
10	58	44	46	45	76	148	880	134	59	178	18	20
11	58	43	46	45	82	130	682	123	57	355	15	17
12	60	42	46	45	80	113	560	111	70	1130	15	18
13	57	42	46	45	82	103	548	103	125	714	15	17
14	56	43	46	45	85	104	1230	96	70	380	17	16
15	56	43	46	45	70	102	870	90	47	500	16	27
16	55	43	46	45	57	101	806	85	38	350	17	51
17	53	44	46	45	61	484	726	82	60	250	16	58
18	52	44	46	45	57	812	614	80	50	170	14	167
19	50	45	46	45	60	881	509	83	42	130	13	132
20	51	45	46	45	62	678	423	82	44	100	17	86
21	51	45	46	45	62	865	361	86	45	85	18	62
22	60	46	46	45	62	985	323	88	39	75	18	49
23	83	47	46	45	61	812	297	86	35	70	18	41
24	88	48	46	45	62	704	277	90	33	70	20	37
25	83	49	46	45	65	686	255	128	37	75	23	33
26	82	49	45	45	80	827	237	151	36	100	26	29
27	76	49	45	46	137	943	218	132	34	60	26	27
28	69	50	45	47	204	857	201	128	33	35	24	25
29	68	50	45	48	---	707	190	117	29	20	23	24
30	65	50	45	49	---	624	172	106	28	16	20	23
31	63	---	45	50	---	680	---	97	---	14	18	---
TOTAL	1973	1465	1445	1410	2120	14330	21469	3699	1605	5281	555	1095
MEAN	63.6	48.8	46.6	45.5	75.7	462	716	119	53.5	170	17.9	36.5
MAX	88	60	50	50	204	985	1490	181	125	1130	26	167
MIN	50	42	45	45	52	101	172	80	28	14	13	13
AC-FT	3910	2910	2870	2800	4210	28420	42580	7340	3180	10470	1100	2170

CAL YR 1986 TOTAL 49156 MEAN 135 MAX 1800 MIN 11 AC-FT 97500
WTR YR 1987 TOTAL 56447 MEAN 155 MAX 1490 MIN 13 AC-FT 112000

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: Dec. 25 to Jan. 21 and Feb. 3. Records fair. Diversions for irrigation of about 4,700 acres above station.

AVERAGE DISCHARGE.--32 years, 3.79 ft³/s, 2,750 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. 25	0930	*80	*3.28				
June 19	0315	29	3.15				

Minimum daily discharge, 1.1 ft³/s Aug. 17, 20, 21.

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	3.4	3.7	3.7	3.0	1.9	2.5	6.5	4.4	3.9	3.4	1.6	1.3
2	3.8	3.8	3.7	3.0	1.9	2.6	5.8	4.2	3.5	3.2	1.6	1.4
3	4.4	3.8	3.7	2.9	1.9	2.7	6.0	3.7	3.2	3.2	1.5	1.4
4	4.0	3.8	3.5	2.9	1.9	2.6	5.8	3.7	3.1	3.2	1.5	1.5
5	4.0	3.8	3.5	2.9	1.9	2.6	5.8	3.5	3.0	3.0	1.5	1.7
6	4.0	3.8	3.5	2.8	2.0	2.9	5.4	3.7	2.8	3.0	1.5	1.6
7	3.8	3.8	3.5	2.8	2.7	2.6	5.6	3.5	2.7	2.9	1.8	1.7
8	3.8	3.8	3.5	2.8	3.1	2.4	5.4	3.5	4.5	2.9	1.9	1.8
9	3.7	3.8	3.5	2.8	2.9	1.9	5.6	3.5	4.6	2.7	1.7	1.8
10	3.7	3.8	3.4	2.7	2.9	1.8	4.6	3.5	5.3	2.7	1.5	1.9
11	3.8	3.7	3.4	2.7	3.7	2.1	4.4	3.5	3.6	2.6	1.3	1.9
12	3.8	3.7	3.4	2.7	3.6	2.7	4.8	2.9	3.1	2.6	1.4	2.0
13	4.0	3.7	3.4	2.6	3.8	6.7	5.6	2.7	3.1	2.4	1.3	2.0
14	4.0	3.7	3.4	2.6	4.2	6.7	5.3	2.7	3.0	2.5	1.3	2.0
15	3.8	3.7	3.4	2.6	4.0	6.9	5.0	2.9	2.7	2.4	1.2	2.0
16	5.0	3.8	3.4	2.5	4.0	7.2	4.8	3.5	2.2	2.2	1.2	2.0
17	4.0	3.8	3.4	2.5	3.9	6.8	4.6	5.6	2.1	2.1	1.1	2.0
18	4.0	3.8	3.2	2.5	3.6	6.4	4.6	5.2	2.7	1.9	1.2	2.1
19	3.8	4.0	3.2	2.4	3.4	7.6	4.6	4.2	16	2.0	1.2	2.2
20	4.6	4.0	3.2	2.4	3.4	7.7	4.4	4.6	11	1.8	1.1	2.2
21	4.6	4.0	3.2	2.3	3.2	4.8	4.8	4.8	5.1	1.8	1.1	2.3
22	4.4	4.0	3.2	2.3	3.2	6.7	5.0	4.4	3.8	1.8	1.4	2.4
23	6.5	3.8	3.2	1.9	3.0	6.5	5.0	4.4	3.9	1.8	1.4	2.4
24	4.6	4.0	3.2	1.6	2.7	5.2	4.8	4.4	3.8	1.8	1.4	2.4
25	4.4	3.9	3.2	1.6	2.6	32	4.8	4.6	3.7	1.7	1.4	2.4
26	3.7	3.8	3.2	1.7	2.6	6.0	4.8	5.0	3.7	1.7	1.3	2.4
27	3.7	3.8	3.1	1.7	2.7	9.8	4.8	4.9	3.7	1.7	1.3	2.4
28	3.8	3.7	3.1	1.8	2.6	5.8	4.8	3.6	3.5	1.7	1.3	2.4
29	3.8	3.7	3.1	1.8	---	5.6	4.8	3.3	3.5	1.7	1.2	2.3
30	8.6	3.7	3.0	1.9	---	5.8	4.6	4.8	3.4	1.6	1.2	2.4
31	3.8	---	3.0	1.8	---	6.5	---	4.4	---	1.6	1.3	---
TOTAL	131.3	114.2	103.4	74.5	83.3	180.1	152.8	123.6	124.2	71.6	42.7	60.3
MEAN	4.24	3.81	3.34	2.40	2.97	5.81	5.09	3.99	4.14	2.31	1.38	2.01
MAX	8.6	4.0	3.7	3.0	4.2	32	6.5	5.6	16	3.4	1.9	2.4
MIN	3.4	3.7	3.0	1.6	1.9	1.8	4.4	2.7	2.1	1.6	1.1	1.3
AC-FT	260	227	205	148	165	357	303	245	246	142	85	120

CAL YR 1986 TOTAL 1419.9 MEAN 3.89 MAX 20 MIN 1.2 AC-FT 2820
WTR YR 1987 TOTAL 1262.0 MEAN 3.46 MAX 32 MIN 1.1 AC-FT 2500

NIOBRARA RIVER BASIN

33

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.--No estimated daily discharges. Records good. Diversions for irrigation of about 6,700 acres above station.

AVERAGE DISCHARGE.--30 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; minimum daily, 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. 21	2245	*29	*4.11	No peaks greater than base discharge.			

Minimum daily discharge, 3.7 ft³/s Sept. 21, 26.

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	14	20	19	15	18	18	24	15	8.1	7.9	6.2	7.2
2	14	20	20	16	19	19	24	15	7.7	8.7	5.4	7.1
3	15	20	19	16	19	24	24	17	7.4	8.7	6.0	6.8
4	16	20	17	16	18	25	24	20	6.9	8.9	5.8	6.9
5	15	20	19	17	18	23	23	20	6.3	8.9	6.0	8.0
6	15	19	20	17	18	22	23	17	6.4	8.1	5.4	7.7
7	15	19	19	17	19	22	23	14	6.6	11	5.6	7.7
8	15	19	15	17	19	24	23	13	8.4	12	6.9	7.9
9	15	17	16	17	19	22	22	12	9.3	11	6.0	7.7
10	15	14	16	14	20	23	22	11	8.3	9.6	5.7	7.6
11	15	16	13	17	20	24	21	9.7	7.2	9.8	6.2	7.5
12	15	16	16	17	20	25	19	9.9	6.4	9.3	5.9	7.6
13	15	14	17	18	20	22	19	10	6.0	9.7	6.2	7.5
14	13	15	18	18	21	22	19	9.8	6.8	9.2	5.9	7.7
15	15	18	19	16	22	23	19	8.9	6.7	8.8	5.8	8.8
16	19	19	18	15	22	23	18	7.1	6.5	8.3	5.6	9.2
17	19	23	18	15	21	23	18	7.2	6.2	8.0	6.1	9.1
18	19	23	17	16	21	24	18	7.3	5.3	7.8	5.3	8.9
19	19	22	14	17	21	24	18	7.6	7.0	7.6	6.0	5.8
20	19	21	16	15	20	25	19	9.7	8.8	7.4	6.2	4.3
21	20	21	16	14	20	26	21	11	8.9	7.0	5.9	3.7
22	20	21	16	15	20	25	20	11	8.9	6.6	7.0	3.8
23	21	20	16	14	20	25	20	12	8.8	6.9	8.2	3.8
24	22	21	16	16	18	22	19	10	9.1	7.9	7.7	3.8
25	24	21	16	17	17	20	18	11	9.7	7.4	7.8	3.8
26	23	20	15	17	17	21	17	11	8.4	6.6	7.9	3.7
27	22	20	15	17	12	24	16	12	7.9	6.5	7.7	3.8
28	23	20	16	18	15	23	16	10	7.9	6.3	7.5	3.9
29	21	20	16	18	---	21	16	9.3	8.2	6.3	7.2	3.9
30	21	20	16	17	---	21	15	9.6	7.7	6.4	7.1	3.9
31	20	---	17	17	---	25	---	9.3	---	6.3	7.2	---
TOTAL	554	579	521	506	534	710	598	357.4	227.8	254.9	199.4	189.1
MEAN	17.9	19.3	16.8	16.3	19.1	22.9	19.9	11.5	7.59	8.22	6.43	6.30
MAX	24	23	20	18	22	26	24	20	9.7	12	8.2	9.2
MIN	13	14	13	14	12	18	15	7.1	5.3	6.3	5.3	3.7
AC-FT	1100	1150	1030	1000	1060	1410	1190	709	452	506	396	375

CAL YR 1986 TOTAL 5943.5 MEAN 16.3 MAX 46 MIN 5.7 AC-FT 11790
WTR YR 1987 TOTAL 5230.5 MEAN 14.3 MAX 26 MIN 3.7 AC-FT 10370

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: Nov. 11-19, Dec. 4, 8-10, 18-20, 26, Jan. 1, 9, 10, 14-16, 18-25, Feb 10, and Feb. 27 to Mar. 1. Records good except for periods of estimated record, which are fair. Diversions for irrigation of about 12,800 acres above station.

AVERAGE DISCHARGE.--41 years, 29.5 ft³/s, 21,370 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)
Feb. 28	0830	(a)	*4.75	Mar. 21	1530	*63	3.73

No peak greater than base discharge.

a Backwater from ice.

Minimum daily discharge, 10 ft³/s Sept. 23, 29.

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	26	34	38	31	36	30	49	34	20	14	14	15
2	32	37	38	31	37	28	45	37	19	11	12	15
3	34	37	38	29	36	32	45	38	18	12	12	15
4	33	37	37	30	31	44	45	42	17	14	11	14
5	33	37	36	30	31	45	44	44	16	15	11	14
6	32	37	38	31	32	51	44	45	15	14	12	15
7	32	37	38	31	34	57	43	45	15	16	12	15
8	30	37	34	31	36	53	42	42	16	19	12	15
9	29	36	35	31	38	50	42	26	18	19	12	14
10	29	33	32	28	39	48	42	16	18	18	12	14
11	29	30	34	27	40	50	42	20	16	17	12	13
12	29	29	32	29	41	50	42	20	12	16	12	13
13	29	28	31	32	42	48	42	17	12	17	12	13
14	29	30	32	32	44	48	42	16	13	16	12	13
15	29	32	33	31	42	50	42	17	13	16	12	13
16	29	33	34	31	43	50	41	15	12	16	13	14
17	29	36	36	28	44	50	40	15	12	16	14	14
18	30	36	32	30	44	50	40	15	11	16	14	14
19	30	37	30	30	43	51	40	14	17	16	14	15
20	30	39	29	30	43	52	39	14	16	15	13	18
21	30	41	30	29	42	53	39	14	13	15	12	18
22	32	43	31	29	42	55	38	19	14	18	13	14
23	33	41	31	29	42	51	38	20	15	16	14	10
24	33	40	32	28	40	50	38	20	16	17	15	12
25	33	40	30	27	37	49	38	22	15	18	15	12
26	33	40	29	31	37	49	38	27	14	17	15	12
27	33	39	29	33	30	52	37	31	14	15	15	12
28	34	40	30	33	34	50	36	26	12	15	15	11
29	34	40	29	33	---	44	36	24	12	15	15	10
30	34	39	32	32	---	43	36	26	12	15	15	17
31	34	---	31	36	---	45	---	24	---	15	15	---
TOTAL	966	1095	1021	943	1080	1478	1225	785	443	489	407	414
MEAN	31.2	36.5	32.9	30.4	38.6	47.7	40.8	25.3	14.8	15.8	13.1	13.8
MAX	34	43	38	36	44	57	49	45	20	19	15	18
MIN	26	28	29	27	30	28	36	14	11	11	11	10
AC-FT	1920	2170	2030	1870	2140	2930	2430	1560	879	970	807	821

CAL YR 1986 TOTAL 12356 MEAN 33.9 MAX 108 MIN 14 AC-FT 24510
WTR YR 1987 TOTAL 10346 MEAN 28.3 MAX 57 MIN 10 AC-FT 20520

NIOBRARA RIVER BASIN

35

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, 19,000 acre-ft May 20, elevation, 3,998.40 ft; minimum observed, 1,880 acre-ft Aug. 31, elevation, 3,975.10 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Elevation (feet)a/	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	3,980.28	3,850	-
Oct. 31	3,984.80	6,370	+2,520
Nov. 30	3,987.83	8,480	+2,110
Dec. 31	3,989.99	10,260	+1,780
CAL YR 1986	-	-	+4,090
Jan. 31	3,991.50	11,630	+1,370
Feb. 28	3,993.77	13,840	+2,210
Mar. 31	3,996.20	16,420	+2,580
Apr. 30	3,997.63	18,070	+1,650
May 31	3,998.35	18,940	+870
June 30	3,995.90	16,090	-2,850
July 31	3,984.46	6,160	-9,930
Aug. 31	3,975.10	1,880	-4,280
Sept. 30	3,977.71	2,720	+840
WTR YR 1987	-	-	-1,130

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.--No estimated daily discharges. Records good. Flow completely regulated by Box Butte Reservoir (station 06455000).

AVERAGE DISCHARGE.--41 years, 25.4 ft³/s, 18,400 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, 236 ft³/s July 2, gage height, 4.52 ft; minimum daily, 0.71 ft³/s Nov. 9, Sept. 14.

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	.83	.80	.77	.92	.86	.89	1.0	.89	1.0	169	169	36
2	.83	.80	.77	.92	.86	.86	1.0	.89	1.0	180	169	.86
3	.95	.80	.77	.92	.95	.83	1.0	.92	1.0	201	161	.83
4	.86	.74	.77	.92	.92	.80	1.0	.98	1.0	195	143	.80
5	.83	.74	.77	.95	.92	.80	1.0	.92	1.0	177	129	.83
6	.83	.74	.77	1.0	.92	.83	1.0	.89	1.0	166	125	.80
7	.80	.77	.83	1.0	.92	.86	1.0	.89	1.0	161	92	.77
8	.80	.77	.83	1.0	.89	.86	1.0	.86	1.1	143	1.2	.77
9	.80	.71	.83	1.0	.92	.89	.98	.86	1.1	131	.95	.74
10	.83	.74	.83	1.0	.92	.89	.98	.86	1.1	127	.89	.74
11	.83	.74	.83	1.0	.95	.89	.98	.83	1.1	127	42	.74
12	.86	.74	.86	1.0	.95	.92	1.0	.83	1.0	134	78	.74
13	.83	.74	.86	1.0	.95	.98	1.0	.83	1.0	141	94	.74
14	.83	.74	.89	1.1	.98	.95	1.0	.83	1.0	146	103	.71
15	.83	.74	.95	.95	1.0	1.0	.95	.83	1.1	151	103	.74
16	.83	.74	.95	.92	1.0	1.0	.95	.83	1.1	164	110	.74
17	.89	.77	.95	.92	1.0	1.0	.95	.86	1.1	166	121	.74
18	.89	.77	.92	.92	1.0	1.0	.95	.92	1.1	153	121	.74
19	.89	.77	.92	.86	1.0	1.0	.95	.92	1.2	151	121	.74
20	.92	.77	.92	.86	1.0	1.1	.95	1.2	1.1	153	114	.77
21	.92	.77	.92	.92	1.0	1.1	.95	1.2	1.1	153	106	.77
22	.92	.74	.92	1.0	.98	1.1	.95	1.1	1.1	156	104	.77
23	.92	.74	1.4	1.0	1.0	1.0	.95	1.1	1.1	156	99	.80
24	.92	.74	.92	1.0	1.0	1.1	.95	1.2	7.8	146	85	.77
25	.89	.86	.92	.89	1.0	1.1	.92	1.2	49	141	81	.77
26	.89	.77	.92	.86	.98	1.1	.89	1.2	49	139	84	.77
27	.92	.77	.92	.86	.95	1.1	.98	1.1	48	153	92	.74
28	.92	.77	.92	.86	.92	1.0	.98	1.1	69	172	87	.77
29	.83	.77	.95	.86	---	1.1	.86	1.2	136	183	72	.77
30	.83	.77	.95	.86	---	1.1	.89	1.2	164	192	69	.74
31	.80	---	.92	.86	---	1.1	---	1.1	---	177	65	---
TOTAL	26.72	22.83	27.65	29.13	26.74	30.25	28.96	30.54	547.2	4904	2942.04	58.21
MEAN	.86	.76	.89	.94	.95	.98	.97	.99	18.2	158	94.9	1.94
MAX	.95	.86	1.4	1.1	1.0	1.1	1.0	1.2	164	201	169	36
MIN	.80	.71	.77	.86	.86	.80	.86	.83	1.0	127	.89	.71
AC-FT	53	45	55	58	53	60	57	61	1090	9730	5840	115

CAL YR 1986 TOTAL 9100.81 MEAN 24.9 MAX 180 MIN .71 AC-FT 18050
WTR YR 1987 TOTAL 8674.23 MEAN 23.8 MAX 201 MIN .71 AC-FT 17210

37

LOCATION.--Lat 42°38'00", long 102°12'40", in NE1/4 sec.26, T.31 N., R.42 W., Sheridan County, Hydrologic Unit 101500003, 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.--41 years, (water years 1947-87) 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, 333 ft³/s May 4, gage height, 2.00 ft; maximum recorded gage height, 3.12 ft on Feb. 27. backwater from ice: minimum daily discharge, 38 ft³/s July 17.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	97	105	100	126	85	115	98	97	70	43	52
2	94	99	110	105	98	90	123	100	83	82	53	52
3	151	98	95	120	95	100	135	168	71	73	54	47
4	156	101	85	120	88	120	138	270	65	92	62	48
5	128	103	104	110	91	130	148	242	59	98	75	69
6	104	101	100	90	82	140	142	173	52	68	69	74
7	96	110	90	95	85	150	136	136	48	54	128	64
8	86	104	96	95	95	160	131	117	63	91	181	65
9	81	75	74	100	95	140	123	108	124	74	111	70
10	83	55	50	110	106	120	114	104	151	58	77	64
11	95	50	100	118	111	135	113	93	129	56	62	62
12	99	40	130	119	123	149	123	90	89	52	55	65
13	102	50	135	122	123	187	150	83	76	56	63	72
14	107	75	130	80	120	175	135	99	59	56	62	75
15	102	100	130	50	130	181	123	115	61	49	53	88
16	100	110	125	60	133	159	120	117	52	42	54	91
17	98	125	120	70	132	141	131	115	52	38	53	82
18	99	115	100	75	120	156	156	120	52	40	54	78
19	96	95	105	80	117	172	133	130	62	47	57	82
20	102	99	115	80	109	198	118	150	69	49	56	85
21	99	87	120	90	103	165	137	170	83	51	51	85
22	105	90	120	90	102	123	129	150	85	46	42	82
23	112	84	120	90	94	137	126	130	78	43	57	75
24	118	83	120	100	93	116	120	120	74	42	73	72
25	107	82	110	110	90	107	121	120	73	49	84	78
26	105	82	100	120	80	127	117	120	67	40	76	91
27	106	75	120	125	80	149	110	125	64	38	71	85
28	103	94	110	125	85	125	107	126	67	42	63	81
29	99	95	120	125	---	90	106	115	74	44	58	85
30	101	89	120	130	---	90	104	133	69	43	53	80
31	100	---	120	130	---	92	---	114	---	40	53	---
TOTAL	3228	2663	3379	3134	2906	4209	3784	4051	2248	1723	2103	2199
MEAN	104	88.8	109	101	104	136	126	131	74.9	55.6	67.8	73.3
MAX	156	125	135	130	133	198	156	270	151	98	181	91
MIN	81	40	50	50	80	85	104	83	48	38	42	47
AC-FT	6400	5280	6700	6220	5760	8350	7510	8040	4460	3420	4170	4360
CAL YR 1986	TOTAL	40955	MEAN	112	MAX	280	MIN	40	AC-FT	81230		
WTR YR 1987	TOTAL	35627	MEAN	97.6	MAX	270	MIN	38	AC-FT	70670		

NIOBRARA RIVER BASIN

39

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, 70,230 acre-ft Nov. 6, elevation, 2,944.5 ft; minimum observed, 37,490 acre-ft Aug. 24-27, elevation, 2,929.7 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,938.1	53,910	-
Oct. 31	2,943.9	68,560	+14,650
Nov. 30	2,943.9	68,560	0
Dec. 31	2,944.0	68,830	+270
CAL YR 1986	-	-	0
Jan. 31	2,944.0	68,830	0
Feb. 28	2,944.0	68,830	0
Mar. 31	2,944.0	68,830	0
Apr. 30	2,944.0	68,830	0
May 31	2,944.0	68,830	0
June 30	2,942.6	65,060	-3,770
July 31	2,935.3	47,830	-17,230
Aug. 31	2,929.9	37,820	-10,010
Sept. 30	2,935.8	48,870	+11,050
WTR YR 1987	-	-	-5,040

NIOBRARA RIVER BASIN

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.--24 years (1963-87), 154 ft³/s, 111,600 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, 450 ft³/s May 10, gage height, 2.47 ft; minimum daily discharge, 12 ft³/s Sept. 19.

DISCHARGE, 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	17	95	199	250	266	324	304	219	199	40	39	40
2	18	95	211	234	266	324	306	206	162	40	39	40
3	19	95	221	223	266	324	300	210	114	40	39	40
4	19	95	221	223	266	324	297	316	121	40	40	40
5	19	132	223	223	266	321	296	370	121	40	40	40
6	19	282	223	223	266	314	299	367	121	40	40	40
7	19	305	223	223	266	313	359	367	100	40	40	40
8	20	305	226	242	266	310	388	367	30	41	40	32
9	20	305	227	254	266	310	388	369	80	41	40	14
10	20	305	227	254	266	316	276	421	81	41	39	13
11	20	305	227	254	266	319	223	450	113	41	39	13
12	41	305	227	254	298	319	224	399	114	41	40	13
13	58	286	227	254	298	319	227	373	85	41	40	14
14	58	243	227	254	266	319	273	311	85	40	40	14
15	58	242	227	254	266	307	317	237	86	40	40	14
16	58	242	227	254	266	303	319	193	95	39	40	13
17	58	242	227	254	298	305	322	139	137	39	40	13
18	37	242	241	254	314	316	324	92	39	40	40	13
19	20	277	250	254	286	321	271	95	40	39	40	12
20	20	301	250	239	270	322	203	152	40	39	40	13
21	20	296	250	231	270	323	185	185	41	38	40	13
22	22	296	250	231	270	356	186	182	41	38	40	13
23	23	263	250	211	270	379	225	208	42	38	40	13
24	23	242	250	218	270	383	247	270	42	39	40	13
25	23	242	250	231	270	383	249	294	42	38	39	13
26	23	242	250	248	270	383	251	282	41	38	39	14
27	23	242	250	258	270	382	254	273	41	38	39	14
28	23	242	250	258	303	287	234	266	41	38	39	14
29	23	245	250	292	---	227	258	265	41	39	39	14
30	34	218	250	282	---	223	251	222	40	39	39	14
31	95	---	250	266	---	271	---	199	---	39	34	---
TOTAL	950	7227	7281	7600	7681	9927	8256	8299	2375	1224	1223	606
MEAN	30.6	241	235	245	274	320	275	268	79.2	39.5	39.5	20.2
MAX	95	305	250	292	314	383	388	450	199	41	40	40
MIN	17	95	199	211	266	223	185	92	30	38	34	12
AC-FT	1880	14330	14440	15070	15240	19690	16380	16460	4710	2430	2430	1200
CAL YR 1986	TOTAL	67972	MEAN	186	MAX	393	MIN	15	AC-FT	134800		
WTR YR 1987	TOTAL	62649	MEAN	172	MAX	450	MIN	12	AC-FT	124300		

NIOBRARA RIVER BASIN

41

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.--No estimated daily discharges. Records good. Flow regulated by powerplant 500 ft above station.

AVERAGE DISCHARGE.--39 years (1948-87), 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, 197 ft³/s Mar. 23, gage height, 3.01 ft; minimum daily, 2.4 ft³/s June 27 and July 17.

DISCHARGE, 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	28	33	40	31	36	42	75	26	50	15	4.2	19
2	29	34	39	27	36	51	98	17	41	17	4.4	18
3	28	33	36	30	38	46	102	38	38	2.6	28	18
4	29	33	29	34	41	48	120	73	36	5.2	33	17
5	36	43	33	33	44	55	123	73	32	16	34	4.0
6	41	39	41	32	46	64	116	78	21	28	32	10
7	35	35	37	30	44	68	102	76	27	27	30	16
8	35	35	36	28	46	84	83	60	37	20	7.4	33
9	36	33	31	28	47	109	63	57	32	5.1	21	18
10	37	25	19	28	47	84	64	57	30	30	37	19
11	27	27	28	29	54	84	54	56	28	15	28	15
12	32	33	34	37	53	64	58	45	26	25	29	12
13	40	28	34	35	53	66	70	42	7.5	37	13	20
14	32	31	33	34	51	52	67	38	18	26	18	35
15	39	33	34	29	57	54	64	35	35	28	5.5	24
16	21	35	34	22	60	62	62	10	24	24	14	30
17	32	38	34	27	53	58	55	25	25	2.4	36	23
18	23	39	28	28	51	59	60	44	25	7.3	29	24
19	30	37	27	34	48	60	56	37	33	20	18	6.8
20	38	43	26	28	47	69	59	29	18	37	19	19
21	32	43	26	32	41	101	48	33	22	19	16	35
22	31	42	32	26	45	102	43	39	33	20	7.8	23
23	35	42	32	30	51	145	41	34	25	17	16	23
24	40	44	32	29	45	156	42	41	22	20	35	23
25	26	45	31	32	45	109	32	50	24	4.5	31	23
26	36	44	28	32	46	92	37	71	16	7.2	20	4.7
27	44	44	29	35	39	91	44	50	2.4	29	19	17
28	41	43	33	35	35	82	34	57	5.7	20	20	33
29	36	42	32	36	---	63	34	25	19	12	9.0	9.1
30	25	41	30	35	---	63	28	35	27	4.9	17	29
31	31	---	32	34	---	70	---	45	---	21	36	---
TOTAL	1025	1117	990	960	1299	2353	1934	1396	779.6	562.2	667.3	600.6
MEAN	33.1	37.2	31.9	31.0	46.4	75.9	64.5	45.0	26.0	18.1	21.5	20.0
MAX	44	45	41	37	60	156	123	78	50	37	37	35
MIN	21	25	19	22	35	42	28	10	2.4	2.4	4.2	4.0
AC-FT	2030	2220	1960	1900	2580	4670	3840	2770	1550	1120	1320	1190

CAL YR 1986 TOTAL 15974.0 MEAN 43.8 MAX 138 MIN 5.2 AC-FT 31680
WTR YR 1987 TOTAL 13683.7 MEAN 37.5 MAX 156 MIN 2.4 AC-FT 27140

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 Minnehadaza Creek, and 6.5 mi southwest of Sparks.

WATER-DISCHARGE RECORDS

REMARKS.--Estimated daily discharges: Nov. 7-23, 26-30 and Dec. 1-6, 9-24. 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).

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.

DISCHARGE, 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	556	758	800	837	865	882	1180	852	928	520	456	551
2	574	751	830	869	859	950	1220	829	871	518	457	553
3	627	747	800	831	875	1040	1220	870	805	504	670	547
4	668	746	840	803	884	1090	1210	1070	767	534	609	544
5	639	751	800	797	913	1120	1210	1090	767	558	551	533
6	647	864	820	810	885	1090	1230	1070	740	580	511	535
7	623	820	891	825	880	1140	1220	1040	739	548	498	552
8	618	830	901	833	901	1180	1230	1010	707	579	520	586
9	612	830	850	869	919	1210	1210	953	713	548	536	565
10	604	880	850	846	908	1140	1210	966	801	555	574	536
11	586	830	800	864	927	1150	1080	1020	800	661	545	531
12	615	770	780	835	920	1160	1080	980	878	560	532	527
13	659	800	780	834	986	1150	1180	932	771	553	517	528
14	654	780	780	876	961	1160	1120	903	726	532	524	550
15	646	800	770	863	974	1200	1100	873	722	524	507	576
16	637	830	770	862	978	1230	1070	836	698	510	516	645
17	655	840	800	796	958	1250	1050	819	851	490	752	591
18	639	850	790	782	1010	1210	1040	774	704	547	534	561
19	639	860	790	803	1010	1190	1040	797	643	538	516	525
20	641	860	820	882	930	1240	971	814	577	529	524	527
21	627	830	840	812	915	1390	866	863	566	509	522	547
22	673	850	790	813	919	1390	821	846	587	501	502	528
23	733	860	780	811	918	1430	848	834	568	496	518	525
24	690	954	800	811	935	1470	898	875	574	506	570	523
25	643	948	870	837	939	1330	878	954	559	489	584	518
26	666	860	896	845	937	1190	865	1010	533	486	569	489
27	677	840	882	850	999	1240	881	961	523	494	590	491
28	656	830	851	852	822	1240	858	993	531	475	576	519
29	645	850	841	857	---	1170	861	902	530	465	559	491
30	637	840	867	916	---	1150	847	998	524	446	556	530
31	673	---	833	850	---	1110	---	948	---	480	584	---
TOTAL	19859	24859	25512	25971	25927	36892	31494	28682	20703	16235	16979	16224
MEAN	641	829	823	838	926	1190	1050	925	690	524	548	541
MAX	733	954	901	916	1010	1470	1230	1090	928	661	752	645
MIN	556	746	770	782	822	882	821	774	523	446	456	489
AC-FT	39390	49310	50600	51510	51430	73180	62470	56890	41060	32200	33680	32180
CAL YR 1986	TOTAL 299861 MEAN 822 MAX 1420 MIN 453 AC-FT 594800											
WTR YR 1987	TOTAL 289337 MEAN 793 MAX 1470 MIN 446 AC-FT 573900											

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, 31.0°C July 17, 1986, July 20, 28-30, and Aug. 1, 1987; minimum daily, 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 287 microsiemens Apr. 21; minimum daily, 214 microsiemens Feb. 27.

WATER TEMPERATURES: Maximum daily, 31.0°C July 20, 28, 29, 30, and Aug. 1; minimum daily, 0.0°C Jan. 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT 16...	0945	611	226	7.90	6.0	4	92	0	30
NOV 13...	1610	799	243	7.92	0.5	4	96	0	31
DEC 11...	0905	800	233	8.11	0.5	7	93	0	30
JAN 06...	1515	833	224	8.08	1.0	4	90	0	29
FEB 04...	0940	886	218	7.68	1.5	4	89	0	29
MAR 05...	1205	1190	228	7.96	7.5	13	89	0	29
APR 02...	0940	1220	253	7.73	2.5	21	100	0	33
MAY 29...	1010	911	242	8.01	20.5	12	96	0	31
JUN 24...	0930	556	--	8.12	20.5	6	91	0	29
JUL 22...	0940	488	223	8.43	23.0	2	95	0	31
AUG 19...	1445	526	238	7.87	19.5	12	86	0	28
SEP 16...	0950	584	210	7.91	16.0	27	86	0	28

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 16...	4.2	8.7	0.4	5.9	111	8.0	1.5	0.40	53
NOV 13...	4.5	9.1	0.4	6.1	111	8.6	1.4	0.40	57
DEC 11...	4.4	9.3	0.4	5.9	110	9.2	1.5	0.40	55
JAN 06...	4.2	9.0	0.4	6.0	104	8.0	1.3	0.30	55
FEB 04...	4.1	8.5	0.4	5.8	102	7.9	1.4	0.60	54
MAR 05...	4.1	9.0	0.4	6.4	107	8.2	1.6	0.40	50
APR 02...	5.2	13	0.6	7.0	125	12	2.4	0.40	48
MAY 29...	4.6	9.9	0.5	7.3	117	5.0	1.5	0.40	49
JUN 24...	4.6	9.9	0.5	7.0	116	8.1	1.5	0.50	53
JUL 22...	4.2	9.8	0.5	6.7	113	6.9	1.3	0.40	57
AUG 19...	4.0	8.3	0.4	6.3	106	11	1.0	0.30	52
SEP 16...	4.0	8.7	0.4	6.4	106	6.9	1.0	0.30	53

NIOBRARA RIVER BASIN

06461500 NIOBRARA RIVER NEAR SPARKS, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, 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 16...	180	0.24	294	0.490	--	--	30	13	2
NOV 13...	180	0.25	398	0.510	--	--	30	13	3
DEC 11...	180	0.25	392	0.610	--	--	30	17	3
JAN 06...	180	0.24	394	0.620	0.080	0.080	30	14	2
FEB 04...	170	0.23	413	0.540	0.130	0.070	30	20	4
MAR 05...	170	0.24	556	0.460	0.260	0.060	40	50	6
APR 02...	200	0.27	646	0.370	0.130	0.080	30	27	3
MAY 29...	180	0.24	440	0.260	0.100	0.080	30	13	4
JUN 24...	180	0.25	275	<0.100	0.120	0.020	30	8	1
JUL 22...	190	0.25	244	<0.100	0.150	--	40	10	3
AUG 19...	170	0.24	248	0.390	0.170	0.100	30	23	2
SEP 16...	170	0.23	271	0.300	0.070	<0.010	30	12	3

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	237	240	232	232	223	216	280	249	253	247	227	225
2	237	242	232	231	222	218	272	246	250	235	226	233
3	240	239	226	231	222	223	269	241	263	236	223	227
4	235	242	231	228	225	229	271	246	257	---	222	229
5	233	243	229	229	223	228	274	---	254	---	229	225
6	244	243	232	233	222	230	278	251	251	226	233	227
7	240	227	235	229	235	233	282	254	---	224	231	231
8	244	226	232	223	228	244	276	255	256	226	229	230
9	246	229	234	225	234	244	277	248	260	227	234	223
10	249	231	246	232	230	240	279	254	235	229	228	224
11	245	219	236	228	231	248	282	253	238	216	226	228
12	252	234	235	228	228	247	276	248	238	---	229	228
13	242	225	225	231	225	251	274	256	242	243	233	232
14	244	238	228	228	221	242	274	248	240	235	232	240
15	237	231	228	223	223	250	267	244	247	233	229	228
16	248	231	231	223	225	255	265	247	244	239	230	230
17	236	231	229	231	230	243	261	260	233	238	234	233
18	235	234	233	222	221	245	262	265	232	221	253	234
19	237	233	233	228	223	241	258	261	253	229	224	236
20	239	228	230	228	227	243	275	250	250	225	232	243
21	241	229	231	229	224	246	287	250	245	233	231	248
22	238	228	229	237	222	253	279	250	247	240	237	238
23	240	229	233	230	230	261	275	244	243	233	236	240
24	246	233	229	229	229	---	268	245	244	233	235	239
25	246	235	229	228	228	---	262	254	248	228	235	236
26	249	234	229	235	225	245	259	253	242	---	228	239
27	251	231	235	230	214	244	264	251	245	237	231	244
28	249	229	230	228	216	251	258	243	237	236	234	238
29	246	233	228	226	---	262	254	246	237	234	228	245
30	246	233	230	226	---	270	252	238	238	247	231	242
31	247	---	245	231	---	272	---	242	---	234	239	---
MEAN	243	233	232	229	225	---	270	---	---	---	231	234

NIOBRARA RIVER BASIN

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06461500 NIOBRARA RIVER NEAR SPARKS, NE--Continued

WATER TEMPERATURE (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.0	9.0	3.0	1.0	7.0	2.0	9.0	27.0	23.0	27.0	31.0	23.0
2	15.0	8.0	4.0	2.0	6.0	6.0	8.0	21.0	19.0	26.0	28.0	23.0
3	12.0	10.0	3.0	3.0	5.0	8.0	10.0	16.0	22.0	25.0	25.0	24.0
4	19.0	9.0	1.0	2.0	5.0	9.0	10.0	17.0	23.0	---	25.0	22.0
5	10.0	10.0	3.0	4.0	4.0	10.0	13.0	---	25.0	---	28.0	26.0
6	15.0	8.0	2.0	3.0	6.0	12.0	12.0	19.0	26.0	30.0	27.0	22.0
7	17.0	5.0	4.0	3.0	8.0	13.0	13.0	20.0	---	29.0	25.0	19.0
8	13.0	5.0	3.0	3.0	4.0	5.0	14.0	21.0	22.0	23.5	23.0	19.0
9	12.0	4.0	1.0	2.0	7.0	2.0	13.0	23.0	19.0	28.0	22.0	21.0
10	14.0	2.0	1.0	2.0	7.0	5.0	10.0	20.0	24.5	29.0	26.0	20.0
11	9.0	1.0	2.0	2.0	8.0	7.0	10.0	21.0	27.0	26.0	27.0	15.0
12	7.0	1.0	1.0	5.0	8.0	7.0	10.0	21.0	29.0	---	20.0	16.0
13	5.0	1.0	2.0	6.0	9.0	10.0	9.0	24.0	29.0	23.0	22.0	15.0
14	7.0	2.0	2.0	4.0	8.0	7.0	12.0	21.0	30.0	25.0	25.0	20.0
15	10.0	2.0	3.0	1.0	5.0	6.0	15.0	24.0	28.0	27.0	27.0	19.0
16	11.0	3.0	3.0	1.0	7.0	5.0	16.0	25.0	29.0	27.0	23.0	19.0
17	13.0	5.0	2.0	1.0	6.0	6.0	18.0	21.0	27.0	28.0	24.0	18.0
18	14.0	2.0	1.0	.0	6.0	5.0	20.0	19.0	26.0	28.0	23.0	17.0
19	13.0	4.0	2.0	1.0	4.0	8.0	18.0	24.0	25.0	26.0	19.5	16.0
20	15.0	5.0	1.0	2.0	7.0	10.0	12.0	21.0	27.0	31.0	23.0	14.0
21	14.0	8.0	1.0	1.0	6.0	8.0	12.0	15.0	30.0	30.0	25.0	16.0
22	13.0	7.0	2.0	1.0	7.0	5.0	15.0	17.0	29.0	29.0	19.0	17.0
23	12.0	4.0	2.0	1.0	5.0	6.0	18.0	19.0	25.0	30.0	17.0	18.0
24	12.0	7.0	3.0	2.0	3.0	---	19.0	17.0	29.0	24.0	17.0	18.0
25	12.0	6.0	1.0	1.0	4.0	---	19.0	17.0	25.0	29.0	14.0	19.0
26	12.0	5.0	2.0	3.0	3.0	8.0	18.0	18.0	24.0	---	18.0	20.0
27	14.0	5.0	3.0	5.0	2.0	5.0	19.0	21.0	25.0	30.0	20.0	20.0
28	13.0	6.0	3.0	4.0	3.0	2.0	20.0	23.0	26.0	31.0	21.0	14.0
29	12.0	5.0	2.0	6.0	---	4.0	21.0	23.0	24.0	31.0	23.0	16.0
30	13.0	4.0	4.0	5.0	---	5.0	20.0	22.0	24.0	31.0	24.0	16.0
31	10.0	---	2.0	6.0	---	10.0	---	21.0	---	30.0	21.0	---
MEAN	12.5	5.1	2.2	2.7	5.7	---	14.4	---	---	---	23.0	18.7

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.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--38 years (1948-75, 1976-87), 116 ft³/s, 84,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,070 ft³/s Sept. 18, 1967, gage height, 5.98 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)
Mar. 7	1730	409	2.57	Apr. 3	1700	1050	4.21
Mar. 22	2400	*1140	*4.36	Apr. 16	2030	392	2.86

Minimum daily discharge, 92 ft³/s Jan. 23, 24.

DISCHARGE, 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	144	176	166	145	119	247	539	167	163	121	126	116
2	139	167	157	145	124	253	849	165	155	122	125	123
3	143	160	156	142	126	278	981	176	150	123	135	122
4	146	157	148	140	130	320	936	204	151	126	141	120
5	138	148	151	138	137	363	781	218	151	135	134	133
6	135	150	153	135	144	372	625	224	149	136	122	140
7	131	149	153	133	153	387	514	226	148	139	116	125
8	130	150	154	132	158	403	460	223	140	151	113	124
9	135	144	152	130	161	395	416	214	140	164	111	134
10	135	138	140	130	162	337	354	205	148	182	109	131
11	131	134	150	130	170	327	313	197	146	180	108	128
12	131	145	142	122	181	326	285	188	140	206	113	136
13	129	126	139	114	187	329	300	182	135	184	103	134
14	131	181	139	107	194	320	333	176	133	187	106	140
15	129	143	138	106	196	320	368	166	128	180	107	153
16	129	125	137	115	198	314	377	158	129	166	113	162
17	130	136	134	107	195	340	366	154	133	157	107	148
18	129	147	135	106	192	334	334	149	138	161	106	138
19	126	135	133	101	196	334	296	147	144	157	106	132
20	129	121	132	97	202	420	266	145	141	152	109	129
21	129	144	133	95	211	585	245	147	136	151	110	127
22	141	190	134	93	207	1010	233	139	134	146	104	129
23	165	172	136	92	207	1050	220	140	131	143	105	129
24	182	171	138	92	211	870	211	143	133	151	113	133
25	193	172	139	93	222	563	201	151	127	145	116	135
26	197	171	140	95	227	361	195	163	122	137	117	138
27	205	172	141	101	254	327	186	163	123	132	114	140
28	205	169	146	105	255	388	177	164	128	129	114	135
29	196	166	152	111	---	415	172	165	123	124	115	135
30	189	167	149	114	---	432	168	164	120	121	112	131
31	181	---	147	117	---	474	---	166	---	127	115	---
TOTAL	4653	4626	4464	3583	5119	13194	11701	5389	4139	4635	3545	4000
MEAN	150	154	144	116	183	426	390	174	138	150	114	133
MAX	205	190	166	145	255	1050	981	226	163	206	141	162
MIN	126	121	132	92	119	247	168	139	120	121	103	116
AC-FT	9230	9180	8850	7110	10150	26170	23210	10690	8210	9190	7030	7930

CAL YR 1986 TOTAL 58352 MEAN 160 MAX 462 MIN 90 AC-FT 115700
WTR YR 1987 TOTAL 69048 MEAN 189 MAX 1050 MIN 92 AC-FT 137000

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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.

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

REMARKS.--No estimated daily discharges. Records good. Minor diversions for irrigation above station.

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.--Maximum discharge, 360 ft³/s Mar. 20, gage height, 3.61 ft; minimum daily, 80 ft³/s Oct.2.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	90	103	101	101	154	182	106	102	94	90	98
2	88	90	103	100	101	148	242	106	100	94	92	98
3	91	92	103	101	100	147	240	112	98	94	99	99
4	93	92	102	101	99	139	232	122	98	98	99	99
5	91	92	103	101	100	130	209	126	98	100	98	107
6	90	91	103	103	100	122	174	130	98	99	100	100
7	91	94	104	101	102	116	153	122	100	98	98	101
8	89	94	105	100	101	112	136	115	99	109	99	100
9	93	91	103	101	101	107	130	111	102	102	97	113
10	92	91	103	101	102	106	124	107	107	106	93	103
11	92	91	104	101	102	106	120	105	101	130	92	99
12	91	92	103	103	102	106	118	104	99	108	113	102
13	90	91	103	105	103	107	164	103	98	102	99	102
14	92	94	103	103	102	107	236	101	100	101	97	101
15	91	94	103	101	103	107	179	101	99	100	99	113
16	92	96	102	99	102	110	146	101	100	98	97	120
17	92	99	102	101	102	117	136	100	100	96	96	113
18	92	101	102	101	102	129	130	102	101	101	96	106
19	91	99	101	101	103	145	124	104	118	98	97	104
20	90	101	100	99	103	288	117	103	110	96	97	99
21	91	103	101	101	103	314	113	103	104	93	97	102
22	100	105	101	100	103	198	112	103	102	93	95	101
23	113	103	101	100	104	172	111	102	100	93	94	97
24	106	103	102	100	108	145	110	102	99	93	95	98
25	104	103	102	100	115	122	108	105	99	93	97	99
26	103	101	101	100	119	116	108	107	95	92	99	98
27	99	101	101	100	165	116	106	106	97	93	100	98
28	95	101	102	100	180	115	107	105	98	93	100	99
29	93	101	102	101	---	115	107	103	98	94	100	98
30	93	102	101	101	---	115	106	103	96	94	98	97
31	93	---	101	101	---	123	---	103	---	92	98	---
TOTAL	2912	2898	3170	3128	3028	4254	4380	3323	3016	3047	3021	3064
MEAN	93.9	96.6	102	101	108	137	146	107	101	98.3	97.5	102
MAX	113	105	105	105	180	314	242	130	118	130	113	120
MIN	88	90	100	99	99	106	106	100	95	92	90	97
AC-FT	5780	5750	6290	6200	6010	8440	8690	6590	5980	6040	5990	6080
CAL YR 1986	TOTAL 36369	MEAN 99.6	MAX 251	MIN 85	AC-FT 72140							
WTR YR 1987	TOTAL 39241	MEAN 108	MAX 314	MIN 88	AC-FT 77830							

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.--No estimated daily discharges. Records good. Flow includes return water from Ainsworth Irrigation District since 1965.

AVERAGE DISCHARGE.--38 years (1948-53, 1954-87), 144 ft³/s, 104,300 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. 21	0630	*1260	*6.17	Apr. 14	1300	437	4.34
Apr. 2	0700	554	4.63				

Minimum daily discharge, 146 ft³/s Feb. 17, 18.

DISCHARGE, 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	167	152	169	166	160	261	335	157	185	153	188	201
2	164	152	167	157	163	251	521	157	175	156	188	221
3	163	152	166	168	160	267	497	169	174	155	222	216
4	166	150	167	166	160	261	442	192	174	158	249	219
5	161	151	167	172	160	241	371	191	178	171	219	262
6	163	149	167	170	158	220	290	191	177	171	204	232
7	166	153	166	163	163	195	246	179	178	162	186	225
8	171	154	165	160	161	177	221	172	174	180	188	227
9	180	150	162	161	159	166	207	167	174	181	195	279
10	173	148	170	159	156	160	188	164	199	189	191	242
11	170	157	170	160	155	162	178	162	195	209	196	226
12	170	166	161	166	156	163	174	161	186	175	215	219
13	170	166	166	169	154	164	234	163	182	169	196	207
14	169	171	164	168	151	164	392	165	188	172	202	203
15	166	172	164	160	150	165	301	166	182	181	209	267
16	169	173	164	152	147	174	223	166	182	183	205	312
17	171	176	159	156	146	203	200	166	170	180	203	228
18	168	182	157	153	146	232	191	167	169	189	195	187
19	167	182	159	158	147	266	179	173	239	187	189	181
20	166	183	159	155	147	565	168	195	221	182	215	175
21	165	189	159	158	148	969	165	184	200	172	217	175
22	181	193	161	150	150	492	164	183	187	163	196	179
23	211	193	161	153	151	393	165	182	172	167	192	178
24	216	184	157	152	157	310	165	190	166	176	184	178
25	205	177	166	152	169	187	160	200	155	185	191	176
26	190	173	161	152	191	196	161	209	152	181	196	176
27	179	174	164	156	260	204	158	196	154	181	193	173
28	171	171	166	154	328	191	158	192	157	179	207	169
29	166	169	161	156	---	187	156	190	155	188	213	169
30	161	171	161	156	---	190	155	189	153	193	196	170
31	155	---	168	159	---	201	---	194	---	177	196	---
TOTAL	5360	5033	5074	4937	4653	7977	7165	5532	5353	5465	6236	6272
MEAN	173	168	164	159	166	257	239	178	178	176	201	209
MAX	216	193	170	172	328	969	521	209	239	209	249	312
MIN	155	148	157	150	146	160	155	157	152	153	184	169
AC-FT	10630	9980	10060	9790	9230	15820	14210	10970	10620	10840	12370	12440

CAL YR 1986 TOTAL 66252 MEAN 182 MAX 1090 MIN 142 AC-FT 131400
WTR YR 1987 TOTAL 69057 MEAN 189 MAX 969 MIN 146 AC-FT 137000

NIOBRARA RIVER BASIN

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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 1986 TO SEPTEMBER 1987

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 (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	
OCT 17...	1110	167	197	7.60	8.5	4	75	0	24	
NOV 14...	1240	173	194	7.89	3.5	4	78	0	25	
DEC 11...	1145	174	195	7.64	4.5	8	77	0	25	
JAN 07...	1025	169	197	7.72	4.5	3	75	0	24	
FEB 05...	1205	164	192	7.63	5.5	6	77	0	25	
MAR 06...	0930	223	232	7.61	9.5	46	84	0	27	
APR 02...	1400	538	223	7.48	3.5	65	80	0	25	
MAY 29...	1435	195	198	7.69	21.5	15	69	0	22	
JUN 25...	1010	158	186	7.88	15.5	7	72	0	23	
JUL 23...	0930	149	190	8.28	19.5	3	72	0	23	
AUG 18...	1810	198	196	8.01	23.0	3	72	0	23	
SEP 17...	1120	217	200	7.78	13.0	18	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 17...	3.6	7.8	0.4	6.1	86	7.3	2.6	0.30	55	
NOV 14...	3.7	8.0	0.4	5.8	85	6.5	2.5	0.30	55	
DEC 11...	3.6	7.8	0.4	5.3	83	6.2	2.6	0.30	56	
JAN 07...	3.6	7.7	0.4	5.2	82	5.8	2.4	0.20	55	
FEB 05...	3.5	7.5	0.4	5.1	82	6.0	2.6	0.30	54	
MAR 06...	4.1	12	0.6	6.4	101	11	4.2	0.30	47	
APR 02...	4.2	14	0.7	6.1	104	8.2	4.3	0.30	31	
MAY 29...	3.3	7.1	0.4	5.7	83	<5.0	2.1	0.30	55	
JUN 25...	3.6	7.3	0.4	5.3	84	6.1	2.0	0.30	55	
JUL 23...	3.6	8.0	0.4	5.6	86	6.1	2.3	0.30	53	
AUG 18...	3.5	7.8	0.4	5.6	84	7.1	1.8	0.30	54	
SEP 17...	3.9	8.7	0.5	8.6	91	11	3.0	0.30	51	

NIOBRARA RIVER BASIN

06463500 LONG PINE CREEK NEAR RIVERVIEW, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, 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 17...	160	0.22	71	1.80	--	--	30	31	4
NOV 14...	160	0.21	74	2.00	--	--	20	25	3
DEC 11...	160	0.21	74	2.10	--	--	20	27	3
JAN 07...	150	0.21	70	2.10	0.160	0.150	20	17	2
FEB 05...	150	0.21	68	2.00	0.400	0.140	20	25	4
MAR 06...	170	0.23	104	1.50	0.410	0.120	20	110	6
APR 02...	160	0.21	226	0.580	0.190	0.140	10	89	6
MAY 29...	--	--	--	1.50	0.180	0.160	20	14	2
JUN 25...	150	0.21	65	1.50	0.200	0.160	20	18	1
JUL 23...	150	0.21	62	1.30	0.230	0.020	30	19	3
AUG 18...	150	0.21	82	1.30	0.030	0.170	20	7	2
SEP 17...	170	0.22	97	1.30	0.240	0.040	30	35	3

LOCATION.--Lat 42°46'56", long 99°20'04", in NE1/4NW1/4 sec.5, T.32 N., R.17 W., Keya Paha County, Hydrologic Unit 101500004, on left bank 15 ft upstream from bridge on State Highway 137, 13 mi north of Newport and 20.5 mi upstream from mouth of Keya Paha River.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Elevation of gage is 1,797 ft above National Geodetic Vertical Datum of 1929, from topographic map.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,560 ft³/s Apr. 3, gage height, 3.05 ft, observed; maximum gage height, 5.12 ft Jan. 24, backwater from ice; minimum daily discharge 760 ft³/s Nov. 13.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1070	1470	1460	1350	1550	1500	2500	1590	1600	942	944	1240
2	1290	1560	1380	1350	1500	1500	2800	1760	1580	1000	969	1220
3	1470	1510	1300	1350	1450	1620	3100	1930	1410	1110	1010	1250
4	1510	1480	1190	1350	1450	1660	2900	2000	1510	1160	1140	1230
5	1470	1400	1240	1350	1450	1810	2800	1970	1590	1190	1110	1430
6	1480	1220	1330	1350	1520	1800	2700	1840	1540	1200	1080	1280
7	1450	1340	1280	1300	1500	1810	2500	1730	1490	1220	1020	1260
8	1380	1440	1310	1300	1540	2000	2250	1840	1540	1330	1020	1240
9	1350	1490	1460	1300	1530	1900	2150	1690	1360	1390	1040	1430
10	1530	1440	1270	1300	1610	1920	2050	1650	1450	1510	991	1350
11	1650	1300	1350	1300	1610	1890	2000	1620	1470	1300	982	1260
12	1390	1000	1400	1300	1560	2040	1900	1610	1440	1180	1080	1140
13	1420	760	1410	1300	1580	2100	2000	1600	1410	1070	1050	1320
14	1410	800	1390	1300	1590	2070	2100	1540	1330	1090	1020	1420
15	1160	1000	1500	1300	1630	2150	2310	1460	1410	1090	1010	1620
16	1420	1200	1400	1300	1610	2190	2290	1400	1340	1130	1050	1560
17	1390	1500	1350	1300	1590	2530	2390	1330	1310	982	1030	1480
18	1550	1400	1300	1300	1580	2180	2080	1290	1310	1010	1140	1210
19	1370	1350	1300	1300	1540	2040	2210	1500	1480	1010	1080	1230
20	1290	1350	1300	1300	1520	2570	1910	1460	1520	994	1050	1270
21	1360	1450	1350	1300	1510	2970	1570	1560	1380	1130	1040	1180
22	1520	1520	1350	1350	1480	3230	1440	1470	1380	1010	1080	1280
23	1430	1290	1350	1350	1510	3020	1450	1410	1220	985	1080	1310
24	1400	1360	1300	1350	1520	2860	1540	1360	999	1010	1080	1310
25	1450	1300	1300	1350	1620	2560	1640	1530	946	1010	1100	1260
26	1390	1200	1300	1350	1560	2050	1870	1600	885	1020	1150	1210
27	1560	1260	1300	1400	1530	2020	1790	1640	847	1030	1180	1330
28	1480	1410	1300	1450	1520	2240	1630	1670	845	1030	1200	1440
29	1530	1420	1300	1500	---	2240	1570	1720	839	1010	1150	1220
30	1520	1420	1350	1450	---	2100	1510	1690	857	988	1180	1220
31	1450	---	1350	1500	---	2150	---	1610	---	962	1170	---
TOTAL	44140	39640	41470	41650	43160	66720	62950	50070	39288	34093	33226	39200
MEAN	1424	1321	1338	1344	1541	2152	2098	1615	1310	1100	1072	1307
MAX	1650	1560	1500	1500	1630	3230	3100	2000	1600	1510	1200	1620
MIN												

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 1986 TO SEPTEMBER 1987

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 (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)
OCT 15...	1635	1300	238	8.00	14.0	9.6	110	0	35	4.6	9.3	0.4
MAY 21...	1105	1660	249	8.72	13.0	9.9	98	0	31	4.9	10	0.5
JUN 24...	1400	968	233	8.21	24.0	8.3	95	0	31	4.3	9.4	0.4
JUL 22...	1125	953	228	8.20	26.0	8.4	95	0	31	4.3	9.3	0.4
AUG 18...	1320	1230	--	8.86	22.5	9.6	85	0	28	3.7	9.9	0.5
SEP 16...	1115	1470	215	8.44	17.5	9.2	85	0	28	3.9	11	0.5

DATE	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)	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- PHORUS, TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)
OCT 15...	5.9	113	8.6	1.9	0.800	<0.010	--	0.80	1.6	0.110	5
MAY 21...	6.8	120	12	1.7	0.200	0.010	1.8	1.8	2.0	0.250	6
JUN 24...	6.9	113	11	1.7	<0.100	0.020	1.5	1.5	--	0.230	6
JUL 22...	7.1	113	7.7	1.6	<0.100	<0.010	--	1.4	--	0.170	6
AUG 18...	6.4	114	7.5	1.6	<0.100	0.020	2.0	2.0	--	0.310	7
SEP 16...	7.6	99	9.6	1.5	0.500	0.030	0.57	0.60	1.1	0.220	6

DATE	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 15...	100	<10	<1	10	7	6	2	<0.10	<1	20	2.8
MAY 21...	200	<10	<1	<10	16	<5	5	<0.10	<1	10	4.2
JUN 24...	100	<10	<1	<10	2	16	<1	0.10	<1	10	3.7
JUL 22...	200	<10	<1	<10	6	<5	3	0.10	<1	10	4.5
AUG 18...	300	<10	<1	20	5	<5	10	<0.10	<1	40	1.4
SEP 16...	200	<10	<1	<10	6	<5	3	<0.10	1	70	2.7

06463720 NIOBRARA RIVER AT MARIAVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 15...	1635	<0.10	--	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
MAY 21...	1105	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
JUN 24...	1400	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
JUL 22...	1125	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
AUG 18...	1320	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
SEP 16...	1115	<0.10	<0.10	<0.1	<2.0	<2.0	<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 15...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
MAY 21...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
JUN 24...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
JUL 22...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
AUG 18...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
SEP 16...	<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 15...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	0.02	<2.0
MAY 21...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.01	0.05	<2.0
JUN 24...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.01	0.03	<2.0
JUL 22...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.01	0.07	<2.0
AUG 18...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.03	0.05	<2.0
SEP 16...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	0.01	<2.0

NIOBRARA RIVER BASIN

06463720 NIOBRARA RIVER AT MARIAVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 (82184)	METRI- BUZIN WATER WHOLE TOT.REC (UG/L) (82611)	METOLA- CHLOR WATER WHOLE TOT.REC (UG/L) (82612)
OCT 15...	<0.01	<0.01	<0.01	<0.01	--	<0.10	<0.01	<0.01	<0.10	--	--
MAY 21...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	0.02	<0.01	<0.10	<0.1	<0.1
JUN 24...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
JUL 22...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
AUG 18...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
SEP 16...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1

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. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70339)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)
OCT 15...	1635	1300	14.0	894	3140	5	6	8	10	22
MAY 21...	1105	1660	13.0	822	3680	4	6	--	9	18
JUN 24...	1400	968	24.0	355	928	--	--	--	--	26
JUL 22...	1125	953	26.0	277	713	--	--	--	--	34
AUG 18...	1320	1230	22.5	459	1520	--	--	--	--	--
SEP 16...	1115	1470	17.5	543	2160	--	--	--	--	32

DATE	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)	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)
OCT 15...	43	91	100	--	0	1	28	93	99
MAY 21...	41	89	100	--	0	2	35	95	99
JUN 24...	42	85	97	99	0	1	32	92	99
JUL 22...	58	94	100	--	0	2	34	88	96
AUG 18...	--	--	--	--	0	1	27	86	97
SEP 16...	57	96	100	--	0	1	35	95	99

NIOBARA RIVER BASIN

55

06464500 KEWA 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 for periods of estimated record, which are poor. Estimated daily discharges during water year: Nov. 10 to Feb. 15 and Feb. 27, 28. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--42 years (water years 1939-40, 1948-87), 71.3 ft³/s, 51,660 acre-ft/yr; median of yearly mean discharges, 59 ft³/s, 42,700 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. 8	0145	278	2.50	Apr. 14	0230	644	3.71
Mar. 21	1300	*1,400	*5.59	July 11	1845	292	2.56
Apr. 5	unknown	1,170	5.05				

Minimum daily discharge, 30 ft³/s, Sept. 29, 30.

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	77	69	55	61	65	119	435	108	120	47	39	34
2	62	69	55	61	65	130	487	110	110	44	39	32
3	64	70	54	61	65	157	554	110	102	44	50	32
4	77	71	52	63	63	215	687	136	95	43	55	31
5	74	71	52	65	62	243	961	160	90	43	51	33
6	76	71	54	65	65	241	787	193	81	43	47	32
7	79	72	54	64	75	245	691	209	76	44	45	34
8	67	72	52	62	85	259	537	193	75	48	46	35
9	63	66	52	62	90	193	454	171	81	54	50	35
10	63	60	50	62	95	155	409	149	94	111	47	35
11	62	55	52	65	90	143	343	130	96	219	46	37
12	60	50	52	65	90	138	319	117	98	227	54	37
13	58	50	52	70	85	130	387	108	95	185	51	36
14	59	53	55	68	85	126	504	101	77	138	49	35
15	60	55	55	55	85	121	473	93	70	115	49	35
16	60	57	57	50	86	124	399	89	68	92	48	45
17	60	57	60	50	84	142	328	84	71	73	45	45
18	62	57	60	51	84	173	283	80	74	64	42	43
19	64	60	58	52	85	190	248	80	77	70	41	40
20	64	61	58	54	86	457	216	80	73	62	40	39
21	67	63	60	54	86	1170	186	80	68	58	39	38
22	78	65	63	52	83	1120	171	87	64	51	37	37
23	103	65	65	50	81	969	163	92	60	49	37	36
24	113	65	65	50	84	702	154	89	58	49	39	34
25	104	65	65	52	86	280	145	91	54	58	44	33
26	93	62	65	53	100	182	139	104	51	59	44	32
27	85	62	63	55	110	236	132	115	49	55	43	32
28	80	62	63	55	115	240	125	123	46	50	40	31
29	76	60	63	55	---	245	120	122	45	46	39	30
30	76	57	63	58	---	268	112	135	47	43	36	30
31	74	---	63	62	---	300	---	132	---	40	35	---
TOTAL	2260	1872	1787	1802	2335	9413	10949	3671	2265	2324	1367	1058
MEAN	72.9	62.4	57.6	58.1	83.4	304	365	118	75.5	75.0	44.1	35.3
MAX	113	72	65	70	115	1170	961	209	120	227	55	45
MIN	58	50	50	50	62	119	112	80	45	40	35	30
AC-FT	4480	3710	3540	3570	4630	18670	21720	7280	4490	4610	2710	2100
CAL YR 1986	TOTAL	39226		MEAN	107	MAX	700	MIN	24	AC-FT	77800	
WTR YR 1987	TOTAL	41103		MEAN	113	MAX	1170	MIN	30	AC-FT	81530	

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: Nov. 9 to Dec. 3, Dec. 5, 7 to Feb. 8, and Feb. 27 to Mar. 1. Records good except for period of estimated record, which is poor. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--30 years, 139 ft³/s, 100,700 acre-ft/yr; median of yearly mean discharges, 120 ft³/s, 86,900 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. 21	1830	*3410	*8.55	Apr. 14	1230	961	7.00
Apr. 6	1800	1210	7.26				

Minimum daily discharge, 50 ft³/s Aug. 2, Sept. 3.

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	103	117	145	130	190	290	894	177	193	59	52	55
2	99	112	145	130	200	347	982	165	174	128	50	53
3	108	110	145	125	200	333	880	170	161	73	57	50
4	127	110	136	120	190	350	955	215	150	65	76	51
5	125	111	135	120	185	357	1110	284	140	64	75	78
6	129	110	135	130	230	326	1170	291	129	60	78	76
7	126	107	125	125	270	315	1070	294	117	61	67	62
8	124	107	120	120	260	316	864	283	102	89	66	56
9	126	106	120	120	243	311	661	261	99	93	65	58
10	122	100	110	120	244	265	518	238	126	213	65	58
11	116	96	115	120	257	231	412	214	133	251	61	64
12	116	90	120	125	247	216	340	189	130	314	61	68
13	117	90	120	130	210	217	441	171	126	353	71	67
14	116	94	120	135	231	214	828	155	111	278	72	63
15	111	100	125	140	199	214	769	143	101	207	66	84
16	109	100	125	135	212	254	542	133	98	173	63	166
17	104	96	130	130	207	428	396	119	97	144	60	131
18	100	96	120	120	218	526	320	116	102	123	58	116
19	97	100	130	120	220	560	389	127	146	109	66	109
20	99	100	120	120	215	938	313	127	169	99	64	95
21	100	106	125	125	213	2650	227	149	130	90	61	85
22	124	106	130	120	209	2110	198	141	130	85	57	80
23	160	112	130	115	205	1370	237	134	102	79	61	77
24	179	116	135	115	231	1100	273	143	94	85	61	74
25	200	122	135	115	265	648	251	152	88	96	68	71
26	183	130	135	120	245	340	233	160	79	76	71	69
27	160	135	130	120	240	383	221	164	73	76	71	63
28	146	140	130	130	260	452	209	176	70	70	66	60
29	136	140	130	140	---	368	198	183	67	65	62	57
30	139	145	135	160	---	339	189	209	62	58	59	59
31	131	---	135	180	---	397	---	222	---	54	57	---
TOTAL	3932	3304	3991	3955	6296	17165	16090	5705	3499	3790	1987	2255
MEAN	127	110	129	128	225	554	536	184	117	122	64.1	75.2
MAX	200	145	145	180	270	2650	1170	294	193	353	78	166
MIN	97	90	110	115	185	214	189	116	62	54	50	50
AC-FT	7800	6550	7920	7840	12490	34050	31910	11320	6940	7520	3940	4470

CAL YR 1986 TOTAL 83613 MEAN 229 MAX 2200 MIN 37 AC-FT 165800
WTR YR 1987 TOTAL 71969 MEAN 197 MAX 2650 MIN 50 AC-FT 142800

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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.

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.

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.

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.

DISCHARGE, 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	1330	1540	1610	1620	2310	2290	3320	1760	1820	923	700	936
2	1390	1530	1740	1590	2410	2090	3920	1680	1720	1030	694	898
3	1460	1560	1550	1550	2140	2200	4040	1760	1660	905	789	901
4	1600	1530	1240	1560	2030	2410	4030	2090	1410	951	1040	894
5	1490	1550	1160	1650	2100	2490	3880	2370	1270	904	1130	1050
6	1520	1550	1670	1670	2110	2540	3880	2380	1210	913	1230	1240
7	1380	1550	1830	1620	2410	2520	3710	2480	1230	1050	1010	1070
8	1420	1900	1860	1510	2470	2520	3430	2400	1170	1390	1030	1120
9	1540	2170	1160	1450	2170	2370	3190	2240	1370	1500	1010	1060
10	1510	1060	600	1400	2330	2300	3110	2080	1520	2040	960	1310
11	1450	534	646	1330	2310	2130	2940	2010	1340	2980	912	1180
12	1720	819	1370	1620	2140	2250	2750	1980	1250	2300	937	1120
13	1790	753	1200	1800	2200	2300	3020	1850	1190	2080	1080	1050
14	1470	868	1300	2110	2050	2270	3690	1810	1240	1660	963	1020
15	4110	970	1540	1810	2020	2410	3500	1720	1100	1560	973	3710
16	4370	1330	1580	1350	1990	2520	3140	1580	1130	1290	971	3260
17	1670	1920	1660	1070	1910	4620	2880	1430	1260	1170	964	2380
18	1540	2210	1570	1110	1910	5720	2680	1550	1150	1100	957	2320
19	1370	2240	1530	1320	1940	4120	2550	1620	2000	1080	1260	1690
20	1360	2360	1320	1350	2060	3050	2550	1450	1420	1090	1220	1310
21	1390	2600	1190	1400	1990	4890	2450	1800	1210	1020	1000	989
22	1640	2870	1360	1490	1890	6410	2150	1750	1090	1020	986	1090
23	2090	2730	1460	1310	2370	6560	1960	1690	1080	936	1040	1080
24	1970	2410	1520	1160	2250	6150	1720	1810	1090	941	1000	1050
25	1920	2530	1570	1180	2530	4800	2140	1980	1170	1260	1110	1050
26	1930	2830	1580	1320	2090	3320	2240	2010	1040	979	1210	1020
27	1470	1990	1570	1520	2510	3010	1780	2040	936	867	1170	1020
28	1670	2360	1570	1630	2740	3030	1890	1880	902	825	1080	1060
29	1540	3280	1570	2010	---	2460	1830	1830	936	800	1020	1050
30	1540	1630	1630	2180	---	2580	1780	1970	992	787	990	1050
31	1520	---	1570	2320	---	2670	---	1920	---	733	996	---
TOTAL	54170	55174	44726	48010	61380	101000	86150	58920	37906	38084	31432	39978
MEAN	1747	1839	1443	1549	2192	3258	2872	1901	1264	1229	1014	1333
MAX	4370	3280	1860	2320	2740	6560	4040	2480	2000	2980	1260	3710
MIN	1330	534	600	1070	1890	2090	1720	1430	902	733	694	894
AC-FT	107400	109400	88710	95230	121700	200300	170900	116900	75190	75540	62350	79300
CAL YR 1986	TOTAL 674197		MEAN 1847	MAX 5640	MIN 534	AC-FT 1337000						
WTR YR 1987	TOTAL 656930		MEAN 1800	MAX 6560	MIN 534	AC-FT 1303000						

NIOBRARA RIVER BASIN
06465000 NIOBRARA RIVER NEAR SPENCER, NE--Continued
WATER-QUALITY RECORDS

PERIOD OF RECORD.--May to September 1987.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)
MAY 21...	1545	1900	280	8.78	13.5	10.1	110	0	34	5.9	12	0.5
JUL 23...	0845	861	256	8.31	23.0	7.2	100	0	33	5.0	11	0.5
SEP 22...	1720	1230	254	7.85	20.0	7.4	110	0	34	5.1	9.4	0.4

DATE	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)	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- PHORUS, TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)
MAY 21...	7.6	126	19	2.2	<0.100	0.010	1.8	1.8	--	0.220	6
JUL 23...	7.9	121	10	2.0	<0.100	<0.010	--	1.9	--	0.180	8
SEP 22...	6.5	117	13	3.1	0.700	0.030	0.47	0.50	1.2	0.100	6

DATE	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 (UG/L AS SE) (01147)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
MAY 21...	100	<10	<1	<10	7	<5	5	<0.10	<1	<10	4.3
JUL 23...	300	<10	<1	20	5	6	8	<0.10	1	<10	5.8
SEP 22...	100	<10	<1	<10	7	<5	5	<0.10	<1	10	3.1

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)
MAY 21...	1545	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
JUL 23...	0845	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010
SEP 22...	1720	<0.10	<0.10	<0.1	<2.0	<2.0	<0.1	<0.10	<0.1	<0.1	<0.10	<0.010

NIOBRARA RIVER BASIN

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06465000 NIOBRARA RIVER NEAR SPENCER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
MAY 21...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
JUL 23...	<0.010	<0.1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010
SEP 22...	<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)
MAY 21...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.04	<0.01	<2.0
JUL 23...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.01	0.03	<2.0
SEP 22...	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.01	0.05	<2.0

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)
MAY 21...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
JUL 23...	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
SEP 22...	<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

06465310 EAGLE CREEK NEAR REDBIRD, NE

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.

DRAINAGE AREA.--206 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,463.90 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Nov. 10-23 and Jan. 16 to Feb. 1. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--9 years, 54.7 ft³/s, 39,630 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, 923 ft³/s July 10, gage height, 6.23 ft; minimum daily, 23 ft³/s Aug. 1.

DISCHARGE, 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	69	58	64	55	60	67	189	84	68	41	23	43
2	71	56	63	52	68	64	159	82	65	41	26	41
3	79	56	64	59	60	62	142	83	62	38	32	41
4	86	58	55	58	59	64	150	88	59	37	31	39
5	76	60	62	60	57	65	154	97	58	38	30	41
6	72	61	64	60	57	63	155	97	57	36	35	41
7	71	61	65	61	60	64	157	84	59	36	35	42
8	71	57	65	53	61	61	147	81	57	51	38	40
9	79	54	64	59	62	57	142	77	60	57	39	46
10	72	54	51	53	59	59	140	77	70	390	36	44
11	71	54	77	53	57	58	129	75	65	140	31	39
12	70	55	67	67	59	58	122	71	60	83	34	39
13	68	55	58	61	59	58	181	70	59	63	36	39
14	67	56	65	60	58	57	173	67	56	59	33	38
15	66	56	68	60	57	57	107	66	53	54	32	89
16	64	56	68	58	59	62	92	66	66	48	41	119
17	62	57	62	58	54	339	92	65	75	44	42	68
18	61	58	53	58	59	274	93	69	61	41	38	51
19	60	58	54	59	52	159	96	73	139	42	52	51
20	62	60	48	60	57	126	97	71	90	39	63	50
21	58	61	52	61	57	145	94	78	72	33	49	53
22	70	62	54	62	55	118	92	75	65	34	45	55
23	88	62	54	62	55	147	89	75	57	30	45	56
24	72	63	53	61	57	163	89	76	58	42	48	56
25	64	62	54	60	60	177	88	104	58	49	50	56
26	62	60	51	59	61	160	88	145	44	35	50	56
27	61	63	55	58	69	179	87	96	45	30	51	56
28	61	62	53	58	77	150	86	83	41	28	50	56
29	60	63	57	58	---	120	86	79	41	28	48	56
30	61	63	56	59	---	129	85	72	42	27	45	57
31	61	---	58	60	---	160	---	70	---	26	43	---
TOTAL	2115	1761	1834	1822	1665	3522	3601	2496	1862	1740	1251	1558
MEAN	68.2	58.7	59.2	58.8	59.5	114	120	80.5	62.1	56.1	40.4	51.9
MAX	88	63	77	67	77	339	189	145	139	390	63	119
MIN	58	54	48	52	52	57	85	65	41	26	23	38
AC-FT	4200	3490	3640	3610	3300	6990	7140	4950	3690	3450	2480	3090
CAL YR 1986	TOTAL 22712		MEAN 62.2	MAX 747	MIN 18	AC-FT 45050						
WTR YR 1987	TOTAL 25227		MEAN 69.1	MAX 390	MIN 23	AC-FT 50040						

NIOBRARA RIVER BASIN

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06465310 EAGLE CREEK NR REDBIRD, NE--Continued

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT 22...	1610	77	366	7.82	13.0	7	160	40	50
NOV 24...	1615	62	331	7.81	2.0	9	150	34	49
DEC 17...	0945	57	340	7.71	0.5	9	150	40	50
JAN 13...	1245	59	334	7.65	6.5	25	150	38	48
FEB 11...	1700	59	353	7.80	10.0	9	150	39	49
MAR 12...	0940	57	350	7.81	4.0	22	150	30	48
APR 09...	1020	140	390	7.71	10.0	50	170	53	52
MAY 06...	1210	93	408	7.74	21.0	22	180	47	55
JUN 05...	1020	60	380	7.74	21.5	40	170	46	56
JUL 30...	1345	28	352	7.67	34.0	7	150	22	47
AUG 27...	1540	51	314	7.68	23.5	6	140	22	45
SEP 22...	1445	55	330	7.62	22.0	27	140	25	47

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 22...	7.6	9.1	0.3	6.2	116	44	3.9	0.20	38
NOV 24...	7.2	9.5	0.3	5.6	118	37	4.2	0.30	41
DEC 17...	7.3	9.6	0.4	5.3	115	34	4.6	0.20	42
JAN 13...	7.2	9.2	0.3	5.0	112	33	4.5	0.20	41
FEB 11...	7.3	9.4	0.3	5.4	113	38	4.2	0.20	39
MAR 12...	7.3	9.5	0.4	5.1	117	35	4.6	0.30	38
APR 09...	9.0	9.4	0.3	5.8	114	57	3.2	0.30	30
MAY 06...	9.8	11	0.4	6.2	131	62	4.2	0.30	38
JUN 05...	8.2	10	0.3	5.6	128	48	4.3	0.20	44
JUL 30...	7.2	9.7	0.4	6.1	125	36	3.9	0.30	44
AUG 27...	6.5	9.0	0.3	5.6	117	29	3.9	0.30	45
SEP 22...	6.6	9.4	0.4	6.1	120	29	5.6	0.30	44

NIOBRARA RIVER BASIN

06465310 EAGLE CREEK NR REDBIRD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, TOTAL, (MG/L AS P) (00665)	PHOS- PHORUS, 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 22...	230	0.31	48	3.70	--	0.010	40	23	9
NOV 24...	220	0.31	38	5.10	--	0.090	30	22	11
DEC 17...	220	0.30	34	5.60	0.210	0.090	30	17	17
JAN 13...	220	0.29	34	5.70	0.250	0.010	20	22	9
FEB 11...	220	0.30	35	5.80	0.210	0.070	30	29	7
MAR 12...	220	0.30	34	5.50	0.230	0.070	20	23	5
APR 09...	240	0.32	89	3.40	0.400	0.110	30	65	300
MAY 06...	270	0.36	66	4.20	0.200	0.120	40	23	5
JUN 05...	250	0.34	41	4.30	--	0.100	40	9	4
JUL 30...	230	0.31	18	2.90	0.200	0.100	40	5	4
AUG 27...	210	0.29	29	4.20	--	--	--	4	5
SEP 22...	220	0.30	33	4.30	0.100	0.090	30	10	9

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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.

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

REMARKS.--Estimated daily discharges: Nov. 12, Dec. 14-19, and Jan. 17, 19, 21, 25-30. Records good except for periods of estimated record, which are poor.

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, 1,340 ft³/s July 10, gage height, 4.76 ft; minimum daily, 11 ft³/s July 30 to Aug. 1.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	38	40	35	44	53	194	52	47	21	11	23
2	47	38	39	35	47	49	166	51	39	19	13	20
3	54	39	37	37	45	47	139	50	36	16	14	21
4	64	39	34	38	43	46	141	52	37	22	13	20
5	56	39	37	38	45	44	142	60	37	29	15	23
6	50	39	36	39	45	45	130	65	35	30	16	22
7	48	40	36	38	47	45	118	58	29	27	15	22
8	47	37	35	36	47	40	110	53	29	28	18	23
9	51	35	33	44	45	34	103	51	32	36	20	28
10	52	33	25	41	46	36	94	50	52	392	17	29
11	48	30	40	40	47	37	86	47	54	82	16	25
12	50	29	44	49	45	38	82	44	44	46	12	25
13	48	29	37	48	47	38	128	44	39	35	16	25
14	47	45	49	47	45	37	155	41	35	33	17	27
15	45	49	50	40	42	36	113	40	32	30	17	45
16	45	52	48	32	41	37	95	39	42	28	33	115
17	45	56	38	40	40	311	87	37	60	22	27	90
18	45	55	36	44	41	412	81	38	61	23	23	61
19	45	54	35	46	39	199	76	46	67	23	37	44
20	46	56	35	48	39	130	68	40	93	22	68	39
21	45	54	36	50	39	132	63	38	71	20	56	36
22	51	54	38	53	39	108	63	39	52	16	39	34
23	71	51	36	52	40	133	64	40	37	15	32	34
24	65	48	37	52	41	136	66	41	29	15	30	34
25	54	47	36	52	43	207	64	86	30	32	31	35
26	50	43	35	52	45	182	61	102	27	26	33	37
27	48	43	36	50	50	219	59	77	25	19	33	37
28	47	43	36	49	62	168	56	71	26	14	35	37
29	43	42	36	46	---	113	55	56	24	14	32	37
30	43	41	36	45	---	110	51	56	23	11	27	39
31	41	---	36	43	---	132	---	52	---	11	25	---
TOTAL	1538	1298	1162	1359	1239	3354	2910	1616	1244	1157	791	1087
MEAN	49.6	43.3	37.5	43.8	44.2	108	97.0	52.1	41.5	37.3	25.5	36.2
MAX	71	56	50	53	62	412	194	102	93	392	68	115
MIN	41	29	25	32	39	34	51	37	23	11	11	20
AC-FT	3050	2570	2300	2700	2460	6650	5770	3210	2470	2290	1570	2160
CAL YR 1986	TOTAL	18353	MEAN	50.3	MAX	668	MIN	18	AC-FT	36400		
WTR YR 1987	TOTAL	18755	MEAN	51.4	MAX	412	MIN	11	AC-FT	37200		

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.--30 years, 1,580 ft³/s, 1,145,000 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, 7,040 ft³/s Mar. 23; maximum gage height, 4.40 ft Mar. 24; minimum daily discharge, 711 ft³/s Dec. 10.

DISCHARGE, 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	1410	1660	1710	1740	2400	2630	3460	1960	2000	1030	749	1040
2	1500	1640	1910	1730	2590	2320	4310	1880	1860	1030	747	993
3	1600	1710	1780	1680	2330	2250	4400	1850	1850	1060	801	1010
4	1790	1660	1430	1670	2210	2500	4400	2150	1640	1040	1020	964
5	1720	1690	1290	1770	2210	2620	4300	2490	1470	1010	1140	1060
6	1690	1680	1620	1820	2220	2660	4350	2630	1340	990	1340	1280
7	1620	1670	1920	1760	2410	2710	4120	2660	1350	1090	1140	1230
8	1540	1900	2070	1670	2740	2650	3950	2630	1240	1310	1100	1190
9	1660	2060	1650	1600	2320	2500	3540	2470	1410	1670	1110	1190
10	1710	1800	711	1540	2430	2570	3480	2390	1670	2890	1050	1300
11	1620	752	806	1470	2480	2250	3280	2110	1620	3130	986	1310
12	1660	821	1300	1670	2360	2340	3100	2170	1370	2680	966	1260
13	1750	893	1400	1860	2180	2370	3280	2070	1310	2290	1120	1170
14	1580	953	1370	2230	2320	2430	3970	1990	1390	1910	1090	1100
15	1550	1050	1670	2070	2230	2480	3940	1900	1260	1740	1030	2600
16	1410	1340	1680	1620	2130	2580	3480	1810	1240	1460	1070	4210
17	1340	1910	1830	1270	2030	4790	3220	1600	1410	1270	1060	2910
18	1360	2290	1690	1220	2070	6340	2960	1570	1330	1190	1050	2410
19	1480	2380	1680	1390	2070	5570	2830	1850	1930	1190	1210	1860
20	1520	2470	1490	1480	2250	3370	2790	1600	2020	1130	1510	1730
21	1520	2650	1340	1590	2070	4130	2730	1840	1420	1130	1180	1160
22	1650	2960	1410	1510	2060	6760	2590	1970	1300	1100	1090	1220
23	2210	3110	1550	1650	2260	7040	2110	1840	1200	1030	1150	1190
24	2230	2440	1640	1330	2440	6640	1960	1920	1180	969	1120	1170
25	2080	2770	1670	1330	2630	5890	2250	2090	1310	1380	1190	1180
26	2110	2380	1690	1390	2410	4210	2380	2410	1170	1090	1270	1170
27	1930	2180	1720	1620	2540	3540	2110	2310	1080	968	1310	1150
28	1850	2450	1690	1720	2840	3490	2110	2150	1010	878	1250	1170
29	1700	2240	1690	2010	---	2850	2030	2040	1010	883	1150	1190
30	1680	1800	1740	2320	---	2960	2020	2080	1050	846	1100	1180
31	1670	---	1720	2410	---	3080	---	2160	---	800	1090	---
TOTAL	52140	57309	48867	52140	65230	110520	95450	64590	42440	42184	34189	43597
MEAN	1682	1910	1576	1682	2330	3565	3182	2084	1415	1361	1103	1453
MAX	2230	3110	2070	2410	2840	7040	4400	2660	2020	3130	1510	4210
MIN	1340	752	711	1220	2030	2250	1960	1570	1010	800	747	964
AC-FT	103400	113700	96930	103400	129400	219200	189300	128100	84180	83670	67810	86470

CAL YR 1986 TOTAL 721864 MEAN 1978 MAX 5910 MIN 711 AC-FT 1432000
WTR YR 1987 TOTAL 708656 MEAN 1942 MAX 7040 MIN 711 AC-FT 1406000

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 1986 TO SEPTEMBER 1987

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 (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT 22...	0950	1600	276	7.89	12.5	721	--	9.6	16	170
NOV 24...	1155	2510	268	7.83	2.0	721	77	12.8	40	180
DEC 16...	1120	1910	310	7.69	0.5	724	--	13.2	10	K31
JAN 13...	1030	1960	273	7.91	0.5	718	--	14.2	5	54
FEB 11...	1025	2570	261	7.65	4.5	721	130	11.6	34	78
MAR 11...	1410	2620	--	7.89	7.5	726	--	11.6	47	41
APR 07...	1435	5090	394	8.02	15.5	727	--	9.5	45	K67
MAY 08...	1030	2760	335	7.74	17.5	728	58	9.4	32	400
JUN 03...	1320	2330	298	8.16	21.0	731	--	8.8	33	50
JUL 28...	1700	918	248	8.26	32.0	718	--	7.1	33	96
AUG 26...	1125	1460	254	8.09	16.0	727	26	10.2	15	140
SEP 23...	1035	1190	270	7.75	16.5	724	--	9.7	26	260

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 1986 TO SEPTEMBER 1987

DATE	STREP- TOCOCI FECAL KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)
OCT 22...	420	110	0	36	5.1	9.1	0.4	--	--
NOV 24...	580	120	7	38	5.6	9.8	0.4	5.4	111
DEC 16...	240	120	0	40	6.0	11	0.4	--	--
JAN 13...	120	110	0	34	4.9	10	0.4	--	--
FEB 11...	220	99	1	31	5.1	9.0	0.4	5.5	98
MAR 11...	370	130	0	43	5.7	11	0.4	--	--
APR 07...	1500	150	0	46	8.1	15	0.6	--	--
MAY 08...	350	140	8	43	7.5	13	0.5	8.4	131
JUN 03...	120	120	0	39	5.9	13	0.5	--	--
JUL 28...	120	100	0	33	4.3	9.0	0.4	--	--
AUG 26...	600	110	0	34	5.2	9.3	0.4	6.1	--
SEP 23...	1400	110	0	34	5.2	9.8	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 CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L) (00530)
OCT 22...	6.4	<5.0	--	--	--	--	--	--	200
NOV 24...	21	2.2	0.40	43	165	190	0.22	1120	186
DEC 16...	22	<5.0	--	--	--	--	--	--	57
JAN 13...	19	<5.0	--	--	--	--	--	--	92
FEB 11...	19	2.1	0.30	44	191	180	0.26	1330	398
MAR 11...	18	<5.0	--	--	--	--	--	--	324
APR 07...	20	<5.0	--	--	--	--	--	--	50
MAY 08...	34	2.8	0.40	45	241	230	0.33	1800	208
JUN 03...	36	<5.0	--	--	--	--	--	--	153
JUL 28...	16	<5.0	--	--	--	--	--	--	89
AUG 26...	12	1.8	0.30	48	189	190	0.26	745	79
SEP 23...	13	<5.0	--	--	--	--	--	--	131

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: Oct. 28 to Nov. 16, Dec. 4, 5, 11-15, 18-21, 26, 27, 30, Jan. 2, 4, 8-11, 16-29, Feb. 18, and Mar. 27, 28. Records good except for periods of estimated record, which are poor. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--8 years, 26.4 ft³/s, 19,130 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, 315 ft³/s July 10, gage height, 4.93 ft; minimum daily, 12 ft³/s Aug. 11.

DISCHARGE, 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	26	31	27	26	30	31	70	39	32	24	16	20
2	27	31	27	25	29	30	69	38	31	19	14	19
3	30	31	26	26	29	29	63	38	31	14	20	20
4	30	31	26	26	29	29	61	38	31	15	20	20
5	28	30	25	26	29	29	58	38	30	17	18	25
6	28	30	26	26	29	28	55	36	28	21	22	25
7	27	30	26	26	29	28	52	35	27	18	21	26
8	28	30	26	25	29	27	50	33	27	18	24	26
9	30	30	25	26	29	27	48	34	32	23	23	27
10	29	30	23	26	29	27	48	34	39	159	20	26
11	29	28	22	26	29	27	47	33	29	97	12	25
12	27	29	21	27	28	27	47	33	27	57	13	26
13	28	28	25	27	29	27	56	31	27	49	20	26
14	28	31	30	26	28	27	56	31	26	45	20	25
15	28	30	35	26	28	28	51	31	24	40	23	42
16	28	32	28	24	29	31	49	30	25	38	20	54
17	28	31	27	24	28	85	48	29	37	31	19	34
18	29	31	27	25	28	99	47	32	32	36	19	27
19	28	30	27	25	29	71	46	32	43	35	16	25
20	29	30	27	26	28	59	44	32	40	34	24	25
21	29	30	26	27	29	56	44	33	32	28	24	25
22	33	30	26	25	28	52	44	32	30	19	25	25
23	41	29	27	23	28	57	44	32	29	16	25	26
24	34	29	27	22	29	64	43	33	29	22	27	26
25	32	28	26	23	29	88	42	39	29	33	29	26
26	31	28	26	27	29	71	41	42	27	28	30	26
27	31	28	26	29	32	66	41	37	22	25	28	25
28	31	28	27	32	35	60	40	34	19	16	27	25
29	30	27	26	37	---	56	40	34	18	13	28	25
30	30	27	25	30	---	61	39	34	25	16	26	24
31	30	---	26	30	---	63	---	32	---	17	25	---
TOTAL	917	888	814	819	814	1460	1483	1059	878	1023	678	796
MEAN	29.6	29.6	26.3	26.4	29.1	47.1	49.4	34.2	29.3	33.0	21.9	26.5
MAX	41	32	35	37	35	99	70	42	43	159	30	54
MIN	26	27	21	22	28	27	39	29	18	13	12	19
AC-FT	1820	1760	1610	1620	1610	2900	2940	2100	1740	2030	1340	1580

CAL YR 1986 TOTAL 10337.0 MEAN 28.3 MAX 99 MIN 9.1 AC-FT 20500
WTR YR 1987 TOTAL 11629 MEAN 31.9 MAX 159 MIN 12 AC-FT 23070

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.

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.

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.

AVERAGE DISCHARGE.--35 years, 84.8 ft³/s, 61,440 acre-ft/yr; median of yearly mean discharges, 79.8 ft³/s, 57.800 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 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)
Mar. 25	1100	*1180	*14.91	No peaks greater than base discharge.			

DISCHARGE, 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	68	76	84	80	70	108	413	111	92	51	20	45
2	66	75	84	78	75	104	319	111	82	48	21	43
3	76	75	78	84	70	95	270	210	77	48	23	42
4	85	75	76	86	70	91	243	137	76	50	28	40
5	86	75	70	86	70	90	218	136	76	55	30	53
6	82	75	74	80	70	91	205	133	71	50	53	47
7	78	74	76	74	74	93	210	127	67	51	57	43
8	74	74	80	74	74	91	201	114	65	46	50	43
9	71	70	74	72	74	84	193	105	71	47	47	53
10	69	65	64	78	82	78	180	99	98	185	43	50
11	73	54	74	85	94	81	176	97	88	186	38	47
12	81	58	80	90	82	81	179	91	84	118	35	49
13	85	50	76	86	73	85	205	84	78	79	43	48
14	85	64	84	80	75	88	267	80	65	64	44	45
15	81	68	90	74	79	91	256	80	59	62	42	99
16	75	74	90	60	77	96	207	75	58	56	39	225
17	75	74	90	62	56	309	192	72	84	52	40	104
18	70	74	90	64	50	615	182	76	91	52	43	87
19	70	80	84	66	55	477	170	87	102	48	45	66
20	73	80	84	66	58	328	157	89	107	41	47	59
21	73	90	90	60	67	303	139	107	94	35	46	58
22	77	98	90	55	69	263	140	97	74	32	46	58
23	122	105	90	52	67	328	143	89	64	30	44	54
24	111	110	84	55	75	493	143	89	59	49	43	52
25	101	103	86	60	77	982	136	117	80	112	46	51
26	90	99	90	64	82	864	136	177	71	91	50	51
27	86	95	90	66	88	702	132	183	63	53	50	49
28	85	90	90	68	108	493	126	151	57	40	49	45
29	79	86	90	70	---	276	118	128	54	30	51	45
30	77	84	90	70	---	288	115	116	53	26	48	47
31	77	---	84	70	---	336	---	100	---	24	46	---
TOTAL	2501	2370	2576	2215	2061	8504	5771	3468	2260	1911	1307	1798
MEAN	80.7	79.0	83.1	71.5	73.6	274	192	112	75.3	61.6	42.2	59.9
MAX	122	110	90	90	108	982	413	210	107	186	57	225
MIN	66	50	64	52	50	78	115	72	53	24	20	40
AC-FT	4960	4700	5110	4390	4090	16870	11450	6880	4480	3790	2590	3570
CAL YR 1986	TOTAL	44657	MEAN	122	MAX	1360	MIN	32	AC-FT	88580		
WTR YR 1987	TOTAL	36742	MEAN	101	MAX	982	MIN	20	AC-FT	72880		

MISSOURI RIVER MAIN STEM

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06467000 LEWIS AND CLARK LAKE NEAR YANKTON, SD

LOCATION.--Lat 42°50'56", long 97°28'54", in SW 1/4 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, 462,000 acre-ft, Oct. 15; minimum, 327,000 acre-ft, Apr. 9.

MONTHEND ELEVATION AND CONTENTS AT 2400 HOURS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	1,208.14	446,000	-
Oct. 31	1,208.24	449,000	+3,000
Nov. 1	1,208.24	439,000	-10,000
Nov. 30	1,207.09	406,000	-33,000
Dec. 31	1,208.15	436,000	+30,000
CAL YR 1986	-	-	-6,000
Jan. 31	1,208.16	436,000	0
Feb. 28	1,205.93	374,000	-62,000
Mar. 31	1,205.76	372,000	-2,000
Apr. 30	1,204.97	351,000	-21,000
May 31	1,205.52	369,000	+18,000
June 30	1,206.19	384,000	+15,000
July 31	1,207.28	411,000	+27,000
Aug. 31	1,207.77	427,000	+16,000
Sept. 30	1,208.06	435,000	+8,000
WTR YR 1987	-	-	-11,000

NOTE.--Lake frozen over Dec. 15 to Feb. 27.

MISSOURI RIVER MAIN STEM

06467500 MISSOURI RIVER AT YANKTON, SD

LOCATION.--Lat 42°51'58", long 97°23'37", in SWSSW 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.--No estimated daily discharges. Records good. 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.--57 years, 26,640 ft³/s, 19,300,000 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, 50,500 ft³/s at 1015 hours, Oct. 21, gage height, 18.73 ft; minimum daily discharge, 17,300 ft³/s, May 29.

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	37300	46200	46900	32000	23000	22300	27900	29500	21100	29600	31900	29600
2	37400	46200	43400	32200	22800	22600	27100	29800	24900	30000	32100	29600
3	37200	46200	42800	32200	23000	22500	27000	29600	23600	30100	32200	29800
4	37200	46400	42800	32300	22900	22200	26800	29600	23800	30300	32100	29700
5	37100	46300	43000	32300	22900	22500	26600	29100	28100	30100	32100	29700
6	37300	46300	40900	32100	22800	22500	26400	28400	28400	30100	32400	29900
7	37700	46300	38500	32100	22700	22400	27000	28500	28500	30300	32400	29900
8	37000	46100	38500	32400	22700	22100	28900	28500	28500	30400	31800	29700
9	37500	45900	38400	32400	22900	22300	30700	28500	28400	30200	31100	29800
10	39900	45900	38500	32200	23100	22400	31700	28500	28300	29300	31200	29800
11	39700	46100	38900	32200	22600	22200	33200	29400	28200	29200	31200	29700
12	39600	45700	39900	29900	22900	22400	33300	29600	28700	29700	31000	29700
13	39800	45700	44300	25300	22700	22300	33100	29500	28900	29900	31000	29900
14	39700	45600	41000	22900	22900	22300	33500	29400	28900	30000	30900	29900
15	39700	45600	39800	23000	22900	22100	33800	29400	28800	30000	30900	30000
16	43400	46400	39800	23200	22800	22400	33400	29400	28900	29900	30700	29800
17	46200	47900	39700	22900	22600	22500	32500	29400	29000	30000	30600	29700
18	47300	48000	35600	23300	22800	22900	30800	29300	28900	30200	30500	29800
19	48200	48700	30600	22900	22800	23400	29600	29400	28700	30600	30500	29700
20	49300	48000	32400	23100	22500	25200	28100	29400	28800	30800	30400	29700
21	50200	46800	32500	22800	22500	25100	27900	29100	28700	31400	30300	29800
22	50300	46700	32600	22800	22700	24200	26000	29100	28700	31800	30100	29900
23	50300	46700	32600	23000	22700	21500	25800	29200	28600	32000	30100	30000
24	50200	46700	31800	23200	23000	19500	25800	29300	28800	32100	30700	29900
25	50100	47000	30100	23000	22600	19800	25800	29200	28700	32000	29700	29900
26	48300	47100	30100	23000	23000	19800	25800	26700	28500	31400	28100	30000
27	46300	46900	30100	22500	22900	19900	25700	20700	29000	31400	29100	30000
28	46200	47000	30000	22600	22400	24300	27400	19000	29100	31800	29600	29900
29	46300	47000	30800	22200	---	25300	28700	17300	29100	31800	29500	30000
30	46400	47300	32100	22400	---	25800	28700	19400	29300	31700	29500	30000
31	46200	---	32100	22900	---	26500	---	21100	---	31600	29600	---
TOTAL	1339300	1398700	1140500	821300	638100	703200	869000	854300	840000	949700	953300	894800
MEAN	43200	46620	36790	26490	22790	22680	28970	27560	28000	30640	30750	29830
MAX	50300	48700	46900	32400	23100	26500	33800	29800	29300	32100	32400	30000
MIN	37000	45600	30000	22200	22400	19500	25700	17300	21100	29200	28100	29600
AC-FT	2657000	2774000	2262000	1629000	1266000	1395000	1724000	1695000	1666000	1884000	1891000	1775000
CAL YR 1986	TOTAL	11490500		MEAN	31480	MAX	50300	MIN	15700	AC-FT22791000		
WTR YR 1987	TOTAL	11402200		MEAN	31240	MAX	50300	MIN	17300	AC-FT22616000		

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.

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

REMARKS.--Estimated daily discharges: Nov. 8-23, Dec. 10 to Feb. 7, and Feb. 18-23. Records good except for periods of estimated record, which are poor.

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, 1,210 ft³/s July 24, gage height, 4.57 ft; minimum daily, 40 ft³/s Sept. 11.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	74	90	62	64	70	271	83	129	58	48	51
2	70	72	79	64	64	64	210	87	91	63	47	45
3	103	70	71	66	62	61	176	89	77	62	48	43
4	104	77	74	66	60	64	152	75	75	66	53	42
5	91	80	84	64	62	67	143	91	74	68	54	41
6	84	77	99	60	62	69	132	102	73	69	59	46
7	79	85	91	58	60	68	136	106	72	75	64	45
8	69	78	90	54	59	66	131	106	79	64	81	45
9	67	68	77	64	58	64	116	106	96	69	72	43
10	66	62	42	68	62	66	116	96	100	97	64	44
11	70	54	45	62	60	69	119	75	92	291	65	40
12	91	58	49	70	55	69	112	72	80	79	63	41
13	78	62	45	72	60	69	131	75	76	64	68	42
14	77	68	50	65	58	66	143	68	72	58	66	41
15	72	72	54	66	58	69	141	67	61	59	69	41
16	77	74	56	68	56	72	138	73	64	59	72	72
17	68	78	58	70	48	84	138	72	136	56	72	75
18	64	80	58	68	49	142	135	73	112	59	74	42
19	69	80	57	66	50	142	131	74	207	55	74	49
20	73	81	58	64	52	113	130	93	143	50	77	50
21	77	82	58	62	54	138	121	95	87	49	69	46
22	76	80	60	60	58	125	111	78	70	50	60	43
23	87	78	62	52	61	360	112	76	58	48	56	42
24	76	93	64	54	64	386	103	82	68	143	47	48
25	76	92	64	56	60	380	100	113	531	499	55	49
26	76	86	66	58	60	284	95	144	131	82	55	51
27	71	98	66	58	65	229	93	156	81	53	58	44
28	68	91	68	60	71	202	103	115	72	46	63	42
29	67	90	68	60	---	128	95	110	69	52	60	42
30	73	94	66	60	---	167	77	102	63	63	55	44
31	75	---	64	62	---	194	---	547	---	52	51	---
TOTAL	2358	2334	2033	1939	1652	4147	3911	3301	3139	2658	1919	1389
MEAN	76.1	77.8	65.6	62.5	59.0	134	130	106	105	85.7	61.9	46.3
MAX	104	98	99	72	71	386	271	547	531	499	81	75
MIN	64	54	42	52	48	61	77	67	58	46	47	40
AC-FT	4680	4630	4030	3850	3280	8230	7760	6550	6230	5270	3810	2760
CAL YR 1986	TOTAL 40407		MEAN 111	MAX 3530	MIN 35	AC-FT 80150						
WTR YR 1987	TOTAL 30780		MEAN 84.3	MAX 547	MIN 40	AC-FT 61050						

LOCATION.--Lat. 42°29'09", Long 96°24'49", in NW1/4 SE1/4 sec.16 T.29 N., R.9 E., sixth principal meridian, Dakota County, Nebraska, Hydrologic Unit 10230001, 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 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.--90 years. 32,090 ft³/s. 23,250,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57,000 ft³/s Oct. 1, gage-height, 23.19 ft; minimum daily discharge, 22,800 ft³/s May 30; minimum gage height, 13.66 ft, May 30.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55600	46300	47400	31200	24300	24600	43000	34200	25500	30700	31000	31000
2	52500	46100	46800	30700	24300	24300	43500	34500	25200	30900	31200	30900
3	50200	45900	44100	31400	24100	24500	41000	34800	27300	31000	31300	30800
4	48300	45700	43200	31600	24100	24600	40600	35000	28700	30800	31800	30400
5	46300	45800	42000	30900	24200	24600	40100	35100	27100	31300	31800	30100
6	45100	45800	41800	31100	24100	24700	39400	34700	30900	31600	32000	29800
7	44400	45900	39700	31200	24200	25000	38400	34000	31500	31900	32700	30500
8	43900	46700	38000	31200	24200	24800	38000	33900	31200	31700	33000	31100
9	42700	46200	37500	31600	24100	24700	39300	33500	31100	31900	32300	30700
10	42300	45200	35800	31200	24300	24400	40600	33200	31500	32100	31400	30900
11	44700	45300	36100	31000	24500	24500	41300	32600	31700	30700	31300	30800
12	44200	44700	37800	33000	24400	24600	41600	32700	31500	30600	31500	30900
13	43000	44000	36200	31200	24600	24600	41600	32600	31600	31000	31800	30700
14	42800	44300	35700	28100	24600	24600	41100	32500	31500	31700	31600	30700
15	42700	44100	41200	27000	24500	24500	40400	32200	31000	31900	31500	30800
16	42400	44100	39300	26000	24400	24300	40500	32100	30700	32300	31500	31400
17	43900	45200	38300	25500	24200	24300	40000	32100	31000	32000	31400	32500
18	46000	46700	38200	26500	24000	25000	39300	32200	31300	32000	31200	31600
19	47200	47200	34800	26000	24200	25600	37300	32100	31100	31700	30900	31500
20	48100	48600	32600	25500	24500	26200	36100	32000	31200	31900	31000	31700
21	49200	47500	33400	25000	24400	29400	34500	31900	30800	31600	30700	31600
22	50400	46500	34400	24500	24400	31300	33500	32000	30700	31300	30700	31600
23	51300	46100	34300	24000	24400	33700	32100	31400	30800	31400	30800	31500
24	51700	45500	33900	23500	24400	34900	31600	31200	31000	32000	30800	31400
25	51500	45100	33000	24000	24700	34500	31800	32000	31700	32700	31600	31400
26	51200	46500	31100	24500	24500	36400	31800	33900	31600	31800	31600	31400
27	49400	47600	30900	24600	24700	38700	31400	32300	31100	30900	29900	31400
28	46800	48600	30500	24700	24700	40400	31400	26400	31400	30700	30500	31500
29	46800	48500	30200	24300	---	46600	32800	24300	31400	31000	31200	31500
30	46600	47900	30400	24300	---	46100	33900	22800	31000	31200	30900	31200
31	46600	---	31300	23900	---	44200	---	24700	---	31100	31100	

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.

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

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.

AVERAGE DISCHARGE.--42 years, 38.3 ft³/s, 27,750 acre-ft/yr; median of yearly mean discharges, 33.2 ft³/s, 24,000 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 FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Minimum daily discharge, 25 ft³/s Sept. 9, 28.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	38	36	38	40	39	183	70	71	42	38	31
2	28	38	37	38	40	37	165	68	67	41	36	29
3	34	38	37	40	35	36	156	102	67	41	33	28
4	51	38	36	38	34	36	152	87	68	41	32	28
5	38	38	35	40	34	36	147	91	68	43	31	27
6	32	37	33	38	34	36	141	76	67	42	31	28
7	31	37	33	35	35	35	137	72	65	41	33	28
8	29	63	33	33	34	37	131	70	64	41	55	27
9	29	45	32	31	29	36	124	63	65	41	41	25
10	29	33	30	28	34	34	116	63	67	299	37	28
11	66	29	33	35	34	34	117	60	72	71	36	27
12	73	28	35	40	35	33	110	58	67	43	35	26
13	46	28	35	40	35	33	117	58	64	39	36	26
14	42	32	35	40	35	34	114	59	62	36	35	26
15	38	34	40	34	36	34	114	58	60	34	36	27
16	37	36	40	34	30	34	103	58	58	32	40	38
17	36	38	40	35	29	33	98	57	66	31	40	39
18	33	40	40	35	31	57	93	58	63	71	47	33
19	34	40	38	34	35	56	90	61	67	47	38	29
20	33	41	35	33	36	45	85	68	64	37	39	28
21	34	39	34	32	32	58	85	66	63	30	38	28
22	35	42	40	30	34	52	86	63	61	31	33	27
23	40	41	44	29	33	370	85	62	57	30	33	27
24	41	39	42	29	32	222	83	64	64	28	32	27
25	52	38	41	30	32	201	80	75	59	29	38	27
26	48	37	37	33	32	173	77	111	53	37	45	26
27	43	36	49	35	34	156	74	153	47	44	37	26
28	42	37	45	41	34	136	74	82	44	41	37	25
29	39	36	43	41	---	90	72	75	43	38	36	26
30	38	36	35	45	---	139	71	73	43	37	33	27
31	38	---	38	40	---	166	---	74	---	37	32	---
TOTAL	1216	1132	1161	1104	948	2518	3280	2255	1846	1495	1143	844
MEAN	39.2	37.7	37.5	35.6	33.9	81.2	109	72.7	61.5	48.2	36.9	28.1
MAX	73	63	49	45	40	370	183	153	72	299	55	39
MIN	27	28	30	28	29	33	71	57	43	28	31	25
AC-FT	2410	2250	2300	2190	1880	4990	6510	4470	3660	2970	2270	1670
CAL YR 1986	TOTAL 24480		MEAN 67.1	MAX 1860	MIN 22	AC-FT 48560						
WTR YR 1987	TOTAL 18942		MEAN 51.9	MAX 370	MIN 25	AC-FT 37570						

LOCATION.--Lat 41°15'32", long 95°55'20", in SE1/4 NW1/4 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 National Geodetic Vertical Datum of 1929. 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.--59 years, 30,900 ft³/s, 22,387,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 396,000 ft³/s Apr. 18, 1952, gage height, 40.20 ft, present datum; minimum, about 2,200 ft³/s Jan. 6, 1937; minimum gage height observed, 7.23 ft, present datum, Jan. 10, 1957, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 66,000 ft³/s Oct. 12, gage-height, 22.57 ft; minimum daily discharge, 26,700 ft³/s Mar. 14, 15; minimum gage height 14.64 ft Jan. 27.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61700	54300	56000	37000	28800	28400	55100	39700	35000	36200	35400	34200
2	61100	53300	56300	37000	29000	28800	56900	39700	36400	35500	35300	33600
3	58500	52800	55300	36000	29700	28100	58500	40500	34500	35300	35800	33800
4	56000	52800	52000	36600	29400	27900	55300	40700	34300	35400	36600	33900
5	53800	53100	50200	36900	28500	28100	52700	40700	38200	35000	35800	34400
6	50700	53800	49700	37600	28200	28200	51300	40100	33100	37000	36100	35300
7	49900	54700	48200	37900	28100	28100	50900	38700	34700	38200	36500	36300
8	48600	56400	45900	37700	28100	28200	49800	37200	37800	38500	43700	35800
9	47800	57800	44400	37800	28300	28100	48800	37400	36800	38700	44000	35900
10	46500	57400	43200	37400	28000	27800	49300	38200	35800	41900	38600	36100
11	52900	56000	41300	36500	27800	27400	50600	38000	36100	47200	36500	35500
12	65400	54300	42300	36700	28000	27000	51000	37400	36600	51700	36000	34800
13	60200	52000	43100	37700	28300	27000	51200	37500	36100	46800	40000	34000
14	54400	51000	41500	35600	28300	26700	52100	38300	36600	40800	40300	33700
15	52100	50000	41800	34300	28600	26700	55500	38400	37300	39700	36400	33500
16	51900	49400	45900	33300	28700	26800	53200	37900	37400	41000	38700	34200
17	52600	50300	45000	31400	28500	27000	51400	38100	37200	40100	40600	36400
18	52400	52300	44400	30700	28400	27700	50000	38600	37500	40100	36400	40100
19	53200	53800	43700	32200	27900	29000	49500	37900	38700	40400	37700	42400
20	53900	54600	39700	31400	27400	30000	47900	37400	38300	42800	36700	41000
21	55200	54400	36900	30900	27800	30800	46300	37600	37900	43700	36400	39700
22	56500	52600	37500	29800	27900	33800	44700	38900	37800	41000	36400	39200
23	59400	51900	37800	29500	27900	40300	43300	37800	36500	41600	35600	38900
24	60200	52600	36900	28200	27600	50900	41300	36800	36100	39600	35500	39300
25	61000	53000	36300	27700	27400	51500	39400	36200	39700	41200	37800	38900
26	61300	53800	35800	28700	27600	51000	40300	44900	38600	43000	44000	37700
27	60200	54200	35100	29200	27700	51300	40600	55200	37200	39500	43300	37000
28	57800	55000	35100	29500	27700	54400	40000	49500	36100	37100	37300	37000
29	55500	55000	34600	28900	---	56800	38900	39100	37000	35900	34800	36800
30	54500	55400	34800	28200	---	56800	38800	35500	36500	35600	35600	36600
31	54800	---	36100	28600	---	58000	---	33100	---	35700	35000	

CAL YR 1986	TOTAL	16468700	MEAN	45120	MAX	76300	MIN	17000	AC-FT	32670000
WTR YR 1987	TOTAL	14844300	MEAN	40670	MAX	65400	MIN	26700	AC-FT	29440000

PLATTE RIVER BASIN

75

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. 22 to Jan. 7. Records fair except those 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.--Five 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, 2,040 ft³/s, Aug. 4, gage height, 3.66 ft; minimum daily, 228 ft³/s Feb. 22-25, 27.

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	1480	1510	1520	468	259	229	260	793	460	1310	1330	858
2	1550	1510	1510	463	259	232	257	665	451	1280	1330	821
3	1680	1480	1500	456	255	235	254	788	462	1310	1310	822
4	1660	1490	1490	450	252	239	251	733	535	1330	1710	838
5	1670	1460	1460	444	249	239	250	646	513	1350	1390	874
6	1700	1450	1240	440	246	238	248	595	484	1320	946	846
7	1710	1480	911	430	243	236	246	552	462	1300	772	818
8	1710	1460	817	422	244	240	294	527	633	1340	764	785
9	1800	1450	735	404	243	244	387	533	633	1370	657	771
10	1770	1430	669	392	236	244	410	625	794	1330	578	717
11	1800	1420	647	392	239	245	441	646	706	1290	495	714
12	1770	1410	646	388	236	243	527	519	645	1340	448	803
13	1790	1400	635	384	236	246	575	487	619	1360	454	844
14	1760	1440	630	379	243	250	680	456	605	1320	560	847
15	1740	1420	624	359	246	248	769	574	562	1260	730	857
16	1740	1440	613	344	246	254	711	541	527	1230	1100	864
17	1720	1430	602	340	243	258	680	637	553	1230	1300	877
18	1690	1430	592	336	240	261	700	721	695	1280	1340	896
19	1690	1430	586	336	238	266	734	740	765	1310	1250	892
20	1700	1440	576	327	232	276	787	748	800	1320	1190	890
21	1710	1430	570	314	230	276	883	729	871	1320	1150	910
22	1740	1420	555	306	228	285	1090	701	943	1320	1140	934
23	1690	1440	545	303	228	284	1320	708	1030	1330	1180	962
24	1630	1470	530	299	228	281	1390	660	1150	1340	1170	831
25	1590	1470	522	296	228	276	1490	606	1250	1360	1140	643
26	1550	1470	515	292	230	273	1630	506	1240	1330	1030	553
27	1530	1470	507	285	228	276	1610	465	1260	1330	918	496
28	1530	1470	492	278	229	269	1490	468	1170	1310	889	457
29	1520	1480	490	275	---	262	1310	479	1230	1320	885	447
30	1520	1520	487	265	---	260	1020	495	1340	1330	881	541
31	1520	---	480	262	---	260	---	474	---	1320	881	---
TOTAL	51660	43620	23696	11129	6714	7925	22694	18817	23388	40790	30918	23408
MEAN	1666	1454	764	359	240	256	756	607	780	1316	997	780
MAX	1800	1520	1520	468	259	285	1630	793	1340	1370	1710	962
MIN	1480	1400	480	262	228	229	246	456	451	1230	448	447
AC-FT	102500	86520	47000	22070	13320	15720	45010	37320	46390	80910	61330	46430
CAL YR 1986	TOTAL	615476		MEAN	1686	MAX	6170	MIN	212	AC-FT	1221000	
WTR YR 1987	TOTAL	304759		MEAN	835	MAX	1800	MIN	228	AC-FT	604500	

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 1986 TO SEPTEMBER 1987

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 HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT 29...	0900	1530	730	8.4	10.0	660	8.9	91	K24
JAN 08...	1245	424	890	8.2	4.0	654	11.2	100	24
APR 01...	1700	263	945	7.8	7.0	660	11.6	111	K9
MAY 27	1445	441	820	--	17.5	--	--	--	--
JUN 25...	0700	1230	840	--	16.0	--	--	--	--
JUL 21...	1430	1340	800	8.3	24.0	650	6.8	95	130
AUG 26...	1100	1050	750	--	18.0	--	--	--	--
SEP 30...	1545	573	885	--	16.0	--	--	--	--

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

DATE	TIME	STREAM- FLOW INSTAN- TANEOUS (CFS) (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	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)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)
MAY 27...	1445	441	820	17.5	0.800	0.040	0.56	0.60	0.070
JUN 24...	2030	1190	--	20.5	0.300	0.030	2.1	2.1	0.180

PLATTE RIVER BASIN

77

06677500 HORSE CREEK NEAR LYMAN, NE

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.

DRAINAGE AREA.--1,570 mi², approximately, of which about 40 mi² is noncontributing.

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

REVISED RECORDS.--WSP 926: 1940(M). WDR NE-67: Drainage area.

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.

REMARKS.--Estimated daily discharges: Nov. 10-13, Dec. 10, 11, Jan. 10, 11, Jan. 15-18, 20-23, and Mar. 30. 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.--56 years, 75.3 ft³/s, 54,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,110 ft³/s June 6, 1967, gage height, 10.82 ft, from rating curve extended above 1,900 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 0.4 ft³/s Feb. 1, 2, 1949.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,380 ft³/s May 23, gage height, 7.88 ft; minimum daily, 20 ft³/s Jan. 20.

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	255	66	40	35	30	33	143	58	347	177	93	267
2	229	66	41	34	32	34	150	53	329	152	98	270
3	265	66	39	33	30	38	145	49	321	147	91	253
4	202	65	39	34	30	52	135	98	304	147	216	259
5	136	64	38	33	27	50	133	76	298	158	196	292
6	118	61	39	34	27	42	133	67	278	156	155	331
7	111	60	37	34	28	38	130	60	264	157	151	330
8	106	57	37	34	27	37	117	53	630	180	208	310
9	102	55	36	31	27	34	106	48	401	181	184	292
10	99	52	36	30	27	39	106	38	544	152	166	302
11	105	50	36	32	27	39	95	33	456	126	158	264
12	102	50	37	32	27	40	92	44	397	129	158	276
13	100	52	36	31	27	45	101	34	376	152	171	262
14	96	52	37	31	29	39	107	31	357	164	170	241
15	92	55	35	31	32	37	106	29	362	149	165	251
16	82	54	35	25	32	39	102	28	380	129	162	269
17	77	55	35	25	29	40	99	27	446	122	146	294
18	73	53	35	22	29	45	96	28	421	110	152	298
19	70	51	35	21	29	102	89	80	402	102	150	289
20	70	48	35	20	28	137	99	206	348	99	149	282
21	69	48	34	22	28	145	104	276	330	99	156	288
22	101	47	34	24	28	162	113	403	287	96	160	358
23	108	45	34	28	28	153	121	569	218	97	181	356
24	94	45	35	29	26	151	113	616	280	94	212	305
25	83	44	35	30	26	141	105	460	303	106	244	202
26	77	43	35	33	25	143	101	364	356	109	266	149
27	74	42	33	36	25	141	102	353	316	118	269	128
28	68	41	35	35	33	146	83	336	303	112	283	114
29	66	40	33	31	---	146	71	323	285	102	286	104
30	66	41	35	30	---	140	65	369	229	97	283	103
31	66	---	33	31	---	140	---	380	---	91	264	---
TOTAL	3362	1568	1114	931	793	2568	3262	5589	10568	4010	5743	7739
MEAN	108	52.3	35.9	30.0	28.3	82.8	109	180	352	129	185	258
MAX	265	66	41	36	33	162	150	616	630	181	286	358
MIN	66	40	33	20	25	33	65	27	218	91	91	103
AC-FT	6670	3110	2210	1850	1570	5090	6470	11090	20960	7950	11390	15350

CAL YR 1986 TOTAL 46365 MEAN 127 MAX 800 MIN 23 AC-FT 91960
WTR YR 1987 TOTAL 47247 MEAN 129 MAX 630 MIN 20 AC-FT 93710

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. 11-14 and Mar. 23 to Apr. 13. 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.--56 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, 497 ft³/s Aug. 5, gage height, 6.30 ft; minimum daily, 5.1 ft³/s May 7, 8.

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	122	109	96	90	82	80	76	66	6.3	7.5	7.0	7.5
2	122	109	96	90	82	80	75	68	6.3	7.5	7.3	7.3
3	135	107	95	90	81	79	75	71	6.3	7.0	7.5	7.3
4	126	106	95	89	81	81	75	82	6.0	7.0	208	7.3
5	121	104	97	89	80	81	75	72	6.0	6.8	267	7.0
6	118	104	97	88	79	81	74	25	6.3	6.8	125	7.3
7	116	104	96	88	79	80	74	5.1	6.3	7.3	115	7.3
8	112	101	96	88	79	79	74	5.1	7.3	7.5	113	7.3
9	112	98	93	88	79	79	74	5.6	6.5	7.5	107	7.3
10	112	98	93	87	79	79	74	5.8	6.3	8.1	105	7.0
11	114	100	94	87	78	79	73	5.8	6.0	8.4	106	6.8
12	113	99	94	87	78	79	73	5.8	6.5	8.4	94	6.8
13	113	100	94	87	79	79	73	5.8	6.5	9.0	9.0	6.8
14	110	103	94	86	82	79	73	6.0	6.5	8.4	8.7	6.5
15	110	104	94	85	82	78	74	6.0	6.5	8.4	8.7	6.5
16	109	104	94	86	82	80	74	6.3	6.5	8.7	8.7	6.5
17	109	104	94	86	81	79	75	6.3	7.0	8.7	9.0	6.3
18	108	104	94	86	80	80	75	6.5	7.0	8.4	9.0	6.3
19	108	104	94	85	78	81	74	6.5	6.8	8.4	9.0	6.0
20	111	104	93	84	78	83	81	7.0	7.0	8.4	9.0	6.5
21	110	103	94	84	78	84	77	7.0	6.8	8.1	9.0	6.5
22	122	100	93	85	78	83	75	7.5	6.5	8.7	9.3	6.3
23	121	98	93	85	78	83	74	8.7	7.0	8.4	9.3	6.3
24	115	98	93	85	78	82	74	49	8.4	8.1	9.3	6.5
25	113	95	92	85	78	82	73	57	8.1	7.8	9.0	79
26	110	94	92	83	79	81	73	7.3	7.8	7.8	8.7	105
27	110	94	91	83	80	80	73	6.8	7.8	7.8	8.4	106
28	110	94	91	83	80	79	71	6.5	7.5	7.8	8.1	107
29	109	94	91	83	---	78	70	6.8	7.8	7.5	8.1	107
30	109	95	90	83	---	78	69	6.8	7.8	7.3	8.1	105
31	109	---	90	82	---	77	---	6.5	---	7.0	7.8	---
TOTAL	3539	3031	2903	2667	2228	2483	2220	637.5	205.4	244.5	1428.0	772.2
MEAN	114	101	93.6	86.0	79.6	80.1	74.0	20.6	6.85	7.89	46.1	25.7
MAX	135	109	97	90	82	84	81	82	8.4	9.0	267	107
MIN	108	94	90	82	78	77	69	5.1	6.0	6.8	7.0	6.0
AC-FT	7020	6010	5760	5290	4420	4930	4400	1260	407	485	2830	1530

CAL YR 1986 TOTAL 21435.9 MEAN 58.7 MAX 135 MIN 4.0 AC-FT 42520
WTR YR 1987 TOTAL 22358.4 MEAN 61.3 MAX 267 MIN 5.1 AC-FT 44350

PLATTE RIVER BASIN

79

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.--Estimated daily discharges: April 23-29. 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).--30 years (water years 1958-87), 886 ft³/s, 641,900 acre-ft/yr; median of yearly mean discharges, 546 ft³/s, 396,000 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, 2,480 ft³/s Aug. 5, gage height, 4.25 ft; minimum daily, 273 ft³/s May 17.

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	2090	1950	1790	731	560	452	636	1230	618	563	349	537
2	2110	1960	1790	737	554	455	642	1060	547	484	356	551
3	2330	1950	1790	734	544	464	646	1060	530	379	349	535
4	2370	1960	1790	735	532	498	629	1170	548	384	1630	513
5	2320	1970	1810	732	530	512	623	1060	563	512	2190	594
6	2340	1940	1710	731	520	508	616	855	531	484	1680	668
7	2320	1940	1360	721	516	504	611	568	488	394	1460	687
8	2300	1930	1190	712	509	500	618	490	1040	490	1470	670
9	2330	1870	1080	693	507	494	694	432	850	518	1370	662
10	2310	1870	990	678	506	492	744	443	1220	512	1250	626
11	2320	1840	939	691	497	500	746	478	1040	463	891	559
12	2320	1800	911	695	490	510	810	426	904	425	702	610
13	2360	1790	890	679	490	529	890	440	820	518	580	673
14	2360	1790	876	667	491	541	960	350	767	568	511	717
15	2330	1800	862	640	501	529	1120	322	712	518	466	760
16	2340	1800	848	605	496	544	1140	300	598	445	470	816
17	2330	1820	834	604	485	551	1100	273	614	394	466	864
18	2280	1790	814	610	476	551	1120	299	613	380	550	910
19	2250	1800	814	605	465	589	1150	306	592	390	593	924
20	2250	1790	792	593	463	649	1170	464	547	404	512	926
21	2260	1800	788	581	458	653	1240	553	538	393	491	944
22	2300	1770	786	583	462	687	1390	643	551	374	449	1030
23	2290	1750	785	583	463	675	1700	754	526	356	484	1110
24	2190	1780	781	583	452	671	1750	1110	586	361	564	1060
25	2160	1750	772	579	447	660	1800	1120	616	386	613	819
26	2090	1750	761	577	454	659	1850	884	658	389	627	723
27	2050	1760	748	575	445	655	1950	811	646	387	551	727
28	2020	1740	747	567	461	640	1990	699	634	385	542	845
29	1990	1750	738	567	---	627	1720	644	592	361	550	900
30	1980	1770	741	561	---	622	1560	682	604	361	549	928
31	1980	---	740	565	---	634	---	674	---	346	536	---
TOTAL	69270	54980	32267	19914	13774	17555	33615	20600	20093	13324	23801	22888
MEAN	2235	1833	1041	642	492	566	1120	665	670	430	768	763
MAX	2370	1970	1810	737	560	687	1990	1230	1220	568	2190	1110
MIN	1980	1740	738	561	445	452	611	273	488	346	349	513
AC-FT	137400	109100	64000	39500	27320	34820	66680	40860	39850	26430	47210	45400

CAL YR 1986 TOTAL 671511 MEAN 1840 MAX 6120 MIN 447 AC-FT 1332000
WTR YR 1987 TOTAL 342081 MEAN 937 MAX 2370 MIN 273 AC-FT 678500

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).

GAGE.--Water-stage recorder. Datum of gage is 3,850.62 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). See WSP 1918 for history of changes prior to June 27, 1958. June 27, 1958, to Oct. 27, 1970, at datum 6.0 ft higher, Oct. 28, 1970, to Dec. 8, 1975, at datum 4.0 ft higher, Dec. 9, 1975, to Sept. 30, 1980, at datum 3.0 ft higher, all at site 200 ft upstream. Oct. 1, 1980 to Sept. 30, 1986, at datum 2.0 ft higher.

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, 2,870 ft³/s May 23, gage height, 10.77 ft; minimum daily, 23 ft³/s Apr. 29 to May 1.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	36	33	32	28	25	26	23	119	164	89	193
2	44	36	32	32	28	25	25	24	138	160	91	184
3	51	36	32	32	28	25	25	45	131	171	91	175
4	45	36	32	32	28	27	25	48	134	158	235	201
5	42	36	32	32	27	26	25	34	128	147	186	255
6	42	37	33	33	27	26	26	32	117	135	174	267
7	41	38	33	33	27	26	26	31	118	132	180	258
8	41	36	32	33	27	26	26	30	169	150	192	249
9	40	36	32	32	27	25	26	29	111	130	183	235
10	41	36	32	31	27	25	27	28	119	116	176	220
11	44	36	33	31	26	25	27	27	99	121	154	223
12	42	35	33	32	27	25	27	27	96	133	147	215
13	42	35	33	32	27	25	26	27	95	137	150	215
14	41	35	33	31	27	25	25	26	93	126	145	206
15	40	35	33	31	28	25	26	39	93	115	141	193
16	40	35	33	30	27	27	26	69	92	101	148	189
17	40	37	32	29	26	26	26	37	102	94	147	194
18	39	35	32	30	26	27	27	41	93	96	134	191
19	38	35	32	30	26	27	26	76	91	95	123	193
20	38	34	32	29	26	28	24	89	91	96	123	206
21	38	34	32	29	26	27	26	133	91	95	126	212
22	42	34	32	29	25	27	26	198	110	95	126	202
23	39	34	32	29	25	26	26	591	287	102	152	199
24	38	34	33	29	26	26	26	303	237	100	161	146
25	38	34	32	29	26	26	25	363	208	95	154	80
26	37	33	32	29	26	26	26	351	186	94	166	86
27	37	33	32	28	25	26	24	202	169	94	169	80
28	37	33	32	28	25	26	25	115	188	92	170	79
29	37	33	32	28	---	25	23	115	173	91	178	79
30	37	33	32	28	---	25	23	147	166	90	195	66
31	36	---	32	28	---	25	---	136	---	88	201	---
TOTAL	1262	1050	1002	941	744	801	767	3436	4044	3613	4807	5491
MEAN	40.7	35.0	32.3	30.4	26.6	25.8	25.6	111	135	117	155	183
MAX	55	38	33	33	28	28	27	591	287	171	235	267
MIN	36	33	32	28	25	25	23	23	91	88	89	66
AC-FT	2500	2080	1990	1870	1480	1590	1520	6820	8020	7170	9530	10890
CAL YR 1986	TOTAL 28039	MEAN 76.8	MAX 1030	MIN 23	AC-FT 55620							
WTR YR 1987	TOTAL 27958	MEAN 76.6	MAX 591	MIN 23	AC-FT 55450							

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).--30 years (water years 1958-87), 1,125 ft³/s, 815,100 acre-ft/yr; median of yearly mean discharges, 802 ft³/s, 581,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,580 ft³/s May 23: minimum daily, 475 ft³/s July 22.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2570	2380	2150	964	796	672	839	1600	1140	925	482	906
2	2490	2370	2150	963	795	674	841	1370	1080	784	484	904
3	2620	2370	2140	957	795	684	842	1280	1020	758	492	890
4	2670	2340	2130	952	795	700	833	1450	987	691	2370	903
5	2610	2330	2100	945	790	731	811	1430	985	712	3100	1030
6	2630	2320	2090	944	780	742	796	1240	946	709	2540	1140
7	2660	2300	1890	943	761	742	785	994	904	652	2190	1230
8	2660	2290	1650	944	755	741	769	753	1120	723	2180	1240
9	2670	2260	1480	942	754	742	771	648	1360	715	2020	1250
10	2710	2220	1360	943	754	740	832	663	1420	682	1920	1240
11	2710	2200	1300	938	740	725	856	664	1430	634	1560	1190
12	2710	2190	1250	944	723	727	891	670	1300	600	1220	1110
13	2710	2170	1240	944	715	737	962	631	1190	643	1080	1120
14	2690	2180	1210	942	705	741	1010	628	1100	679	929	1130
15	2670	2210	1200	936	722	740	1100	625	1060	657	839	1170
16	2670	2220	1160	914	713	759	1180	564	977	576	819	1220
17	2630	2280	1160	900	715	783	1180	540	929	508	836	1260
18	2600	2250	1140	897	714	790	1170	533	904	489	863	1320
19	2590	2230	1120	862	712	801	1170	532	861	478	847	1370
20	2600	2190	1090	847	704	852	1180	663	767	484	772	1400
21	2640	2180	1080	830	698	884	1220	787	709	480	709	1440
22	2660	2180	1070	847	684	903	1300	992	829	475	668	1480
23	2740	2140	1060	818	684	918	1470	1370	960	494	701	1560
24	2650	2160	1060	810	678	913	1660	2120	1090	487	791	1570
25	2590	2180	1040	804	677	897	1780	2220	988	489	868	1330
26	2520	2140	1030	801	675	878	1890	1750	999	503	932	1160
27	2490	2150	1010	800	694	876	2070	1780	1020	508	896	1100
28	2440	2150	1000	799	687	864	2110	1290	1010	508	871	1120
29	2410	2150	987	793	---	850	1970	1210	997	507	883	1240
30	2410	2150	981	789	---	848	1850	1320	939	500	889	1300
31	2400	---	972	792	---	835	---	1270	---	491	912	---
TOTAL	80820	66880	42300	27504	20415	24489	36138	33587	31021	18541	36663	36323
MEAN	2607	2229	1365	887	729	790	1205	1083	1034	598	1183	1211
MAX	2740	2380	2150	964	796	918	2110	2220	1430	925	3100	1570
MIN	2400	2140	972	789	675	672	769	532	709	475	482	890
AC-FT	160300	132700	83900	54550	40490	48570	71680	66620	61530	36780	72720	72050
CAL YR 1986	TOTAL 763501 MEAN 2092 MAX 6240 MIN 669 AC-FT 1514000											
WTR YR 1987	TOTAL 454681 MEAN 1246 MAX 3100 MIN 475 AC-FT 901900											

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 1986 TO SEPTEMBER 1987

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...	1215	2730	842	7.90	13.0	9.5	8	83	21000
NOV 17...	1045	2080	832	7.40	8.0	9.8	36	300	17000
DEC 15...	1000	1320	805	8.30	5.0	11.2	5	130	3000
JAN 13...	0945	1170	978	8.00	5.0	11.2	11	140	820
FEB 17...	1000	817	982	8.30	6.5	11.2	7	260	850
MAR 17...	1030	855	990	8.40	5.0	11.1	17	180	8300
APR 13...	0850	1040	949	8.40	7.0	10.5	9	370	920
MAY 18...	1330	503	990	8.40	21.0	8.0	19	450	470
JUN 15...	1400	1150	900	8.40	22.5	8.2	8	270	480
JUL 13...	1330	857	941	7.90	21.0	8.2	8	K2300	2300
AUG 17...	1345	1070	962	8.30	18.0	8.0	21	470	9200
SEP 14...	1330	1300	--	8.60	16.5	8.8	17	640	7400

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 20...	290	0	77	23	80	2	210	19
NOV 17...	280	0	75	23	82	2	180	22
DEC 15...	310	0	85	24	95	2	210	20
JAN 13...	300	0	85	22	100	3	220	20
FEB 17...	300	0	84	23	96	2	260	22
MAR 17...	320	0	92	23	100	3	200	22
APR 13...	280	0	77	22	99	3	220	17
MAY 18...	280	0	77	22	100	3	190	18
JUN 15...	290	0	78	23	100	3	220	22
JUL 13...	300	0	82	24	100	3	210	19
AUG 17...	290	0	82	21	95	3	240	24
SEP 14...	290	0	82	21	90	2	210	17

PLATTE RIVER BASIN

83

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 20...	72	1.60	0.050	0.83	0.88	2.5	0.300	4.0
NOV 17...	36	2.00	0.120	0.98	1.1	3.1	0.170	9.4
DEC 15...	30	3.60	0.200	0.25	0.45	4.1	0.140	3.6
JAN 13...	23	3.50	0.180	0.92	1.1	4.6	0.070	3.6
FEB 17...	24	3.70	0.190	0.36	0.55	4.3	0.120	3.8
MAR 17...	31	3.40	0.180	1.4	1.6	5.0	0.110	5.3
APR 13...	83	2.30	0.120	0.78	0.90	3.2	0.090	3.8
MAY 18...	64	2.00	0.250	1.9	2.2	4.2	0.220	4.2
JUN 15...	186	1.80	0.030	0.72	0.75	2.6	0.190	7.2
JUL 13...	446	1.90	0.170	5.8	6.0	7.9	0.500	8.8
AUG 17...	249	2.70	0.120	0.98	1.1	3.8	0.150	6.8
SEP 14...	215	2.20	0.050	0.85	0.90	3.1	0.310	4.6

PLATTE RIVER BASIN

85

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: Nov. 10-13, Dec. 1, 9-11, Jan. 5, 10-12, 15-18, 20-23, Feb. 26 to Mar. 1, and Mar. 29, 30. 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.--56 years, 27.4 ft³/s, 19,850 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, 65 ft³/s May 4, gage height, 1.99 ft; maximum gage height, 2.43 ft Jan. 22, backwater from ice; minimum daily discharge, 0.29 ft³/s July 29-31.

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	14	13	15	15	19	18	31	19	36	2.2	.35	29
2	14	14	15	16	17	16	32	23	35	2.4	.35	28
3	14	13	14	16	17	18	31	53	33	3.4	.54	27
4	14	14	13	16	17	24	30	61	37	4.9	8.8	28
5	14	14	15	16	17	27	30	55	45	5.4	12	28
6	14	14	16	17	18	28	29	50	46	5.1	9.4	28
7	8.9	14	17	17	20	29	28	45	45	3.5	18	28
8	7.5	14	16	17	20	30	28	39	44	2.4	26	29
9	7.7	14	16	16	20	30	27	28	46	1.3	23	29
10	7.9	13	16	15	20	30	27	23	48	1.3	16	29
11	8.5	15	13	16	20	29	27	22	48	1.4	9.6	31
12	9.2	14	14	16	20	31	29	28	43	1.4	9.5	32
13	12	14	14	17	20	30	31	45	23	1.3	9.4	31
14	12	16	16	17	21	30	29	43	16	1.1	8.5	31
15	12	16	16	16	21	29	28	38	15	.91	7.6	30
16	12	15	17	15	21	29	28	33	13	.66	4.5	32
17	12	16	16	16	20	30	28	35	12	.71	1.9	32
18	12	16	16	17	20	31	28	34	9.7	.88	1.9	31
19	13	13	17	18	20	31	26	33	8.4	.69	1.7	31
20	12	11	17	17	20	31	27	35	8.3	.63	1.6	30
21	12	12	16	17	20	30	27	35	9.1	.56	1.6	31
22	12	13	17	17	21	31	26	34	8.1	.50	1.7	30
23	13	13	17	16	21	30	26	33	4.4	.54	1.7	29
24	12	14	17	17	21	30	25	39	2.0	.54	8.7	28
25	12	14	17	18	21	28	25	39	1.5	.47	22	28
26	13	14	16	18	21	29	25	36	1.7	.41	23	27
27	12	14	17	18	21	31	25	36	2.1	.41	26	24
28	13	14	17	17	20	29	21	36	1.4	.41	29	23
29	12	15	16	17	---	28	21	36	2.0	.29	30	23
30	13	15	17	18	---	23	22	36	2.6	.29	30	24
31	13	---	15	19	---	29	---	37	---	.29	30	---
TOTAL	367.7	421	491	518	554	874	817	1139	646.3	46.29	374.34	861
MEAN	11.9	14.0	15.8	16.7	19.8	28.2	27.2	36.7	21.5	1.49	12.1	28.7
MAX	14	16	17	19	21	31	32	61	48	5.4	30	32
MIN	7.5	11	13	15	17	16	21	19	1.4	.29	.35	23
AC-FT	729	835	974	1030	1100	1730	1620	2260	1280	92	743	1710

CAL YR 1986 TOTAL 5752.98 MEAN 15.8 MAX 54 MIN .03 AC-FT 11410
WTR YR 1987 TOTAL 7109.60 MEAN 19.5 MAX 61 MIN .29 AC-FT 14100

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.--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).--30 years (water years 1958-87), 1,490 ft³/s, 1,080,000 acre-ft/yr; median of yearly mean discharges, 1,200 ft³/s, 869,400 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, 4,420 ft³/s May 25, gage height, 3.35 ft; minimum daily discharge, 456 ft³/s Aug. 2.

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	2830	2660	2480	1360	1130	1180	1240	1860	1620	1060	464	1370
2	2790	2620	2510	1320	1130	1110	1240	1690	1500	1040	456	1330
3	2790	2640	2500	1290	1110	1130	1210	1740	1390	1060	482	1280
4	2950	2660	2500	1320	1110	1160	1200	1990	1330	982	1100	1300
5	2930	2660	2500	1340	1110	1140	1200	2040	1300	947	3280	1590
6	2890	2640	2550	1400	1080	1200	1170	1900	1280	923	3430	1790
7	2930	2640	2550	1390	1090	1220	1130	1750	1200	877	2740	1910
8	2930	2640	2320	1370	1110	1320	1080	1500	1180	877	2590	1990
9	2930	2680	2110	1340	1120	1260	1110	1260	1360	1070	2370	1980
10	2950	2620	1820	1280	1140	1170	1140	1220	1880	1030	2140	1880
11	3130	2610	1820	1320	1120	1170	1180	1170	1880	1010	1990	1850
12	3090	2530	1820	1360	1170	1160	1260	1090	1830	959	1800	1830
13	3110	2350	1820	1390	1170	1210	1390	1160	1650	935	1590	1710
14	3030	2440	1750	1340	1130	1250	1360	1170	1470	947	1530	1690
15	2930	2480	1720	1300	1140	1250	1370	1140	1370	912	1320	1750
16	2890	2510	1710	1360	1090	1200	1440	1080	1330	854	1220	1830
17	2850	2610	1680	1360	1070	1240	1540	1090	1220	777	1170	1860
18	2790	2620	1650	1360	1080	1250	1530	1080	1120	755	1210	1980
19	2790	2570	1630	1410	1060	1280	1470	1060	1030	702	1170	2030
20	2810	2570	1570	1280	1060	1300	1460	1090	1020	702	1170	2040
21	2830	2590	1530	1280	1060	1340	1430	1220	1110	671	1120	2130
22	2930	2590	1500	1140	1060	1390	1440	1360	1010	661	1140	2060
23	2970	2590	1470	1210	1040	1370	1500	1500	923	631	1180	1990
24	3030	2610	1480	1360	1040	1360	1690	2680	947	583	1260	1990
25	2930	2590	1480	1330	1060	1320	1950	3870	1180	583	1360	1980
26	2850	2510	1470	1200	1160	1300	2040	3320	1160	554	1410	1800
27	2830	2510	1500	1200	1160	1300	2130	2500	1180	536	1390	1650
28	2770	2480	1530	1160	1300	1170	2200	2260	1200	554	1360	1600
29	2720	2460	1540	1210	---	1120	2160	1910	1180	518	1360	1560
30	2740	2460	1540	1170	---	1170	2010	1710	1120	473	1340	1660
31	2660	---	1460	1170	---	1240	---	1740	---	464	1340	---
TOTAL	89600	77140	57510	40320	31100	38280	44270	52150	38970	24647	47482	53410
MEAN	2890	2571	1855	1301	1111	1235	1476	1682	1299	795	1532	1780
MAX	3130	2680	2550	1410	1300	1390	2200	3870	1880	1070	3430	2130
MIN	2660	2350	1460	1140	1040	1110	1080	1060	923	464	456	1280
AC-FT	177700	153000	114100	79970	61690	75930	87810	103400	77300	48890	94180	105900

CAL YR 1986 TOTAL 864399 MEAN 2368 MAX 5940 MIN 900 AC-FT 1715000
WTR YR 1987 TOTAL 594879 MEAN 1630 MAX 3870 MIN 456 AC-FT 1180000

PLATTE RIVER BASIN

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06686000 NORTH PLATTE RIVER AT LISCO, NE--Continued

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 1986 TO SEPTEMBER 1987

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 (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS. / 100 ML) (31625)
OCT										
21...	0925	2830	820	8.20	11.0	--	--	9.6	14	25
NOV										
18...	0930	2620	832	8.20	5.5	671	22	11.3	12	40
DEC										
16...	0945	1750	800	8.30	2.5	--	--	11.8	7	30
JAN										
12...	0930	1340	919	8.30	1.5	669	6.5	12.2	14	K10
FEB										
17...	1345	1070	938	8.20	8.0	667	--	10.4	7	K3
MAR										
18...	1000	1250	940	8.60	4.5	657	26	11.3	23	K4
APR										
13...	1115	1390	846	8.60	8.0	672	--	10.3	9	200
MAY										
18...	0930	1080	909	8.40	17.0	665	18	8.6	19	250
JUN										
15...	0900	1320	762	8.10	22.0	668	--	8.2	36	440
JUL										
13...	0915	935	912	8.40	17.0	675	90	8.4	25	1000
AUG										
17...	0900	1010	932	8.10	16.0	670	--	8.6	29	350
SEP										
14...	0930	1680	--	8.30	18.0	667	58	8.7	23	150

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

DATE	STREP- TOCOCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)
OCT									
21...	490	280	0	76	22	81	2	--	--
NOV									
18...	930	290	59	80	21	78	2	8.4	228
DEC									
16...	340	290	0	80	23	94	2	--	--
JAN									
12...	200	290	100	84	20	86	2	9.4	189
FEB									
17...	340	290	0	81	22	89	2	--	--
MAR									
18...	5500	290	23	81	21	95	3	9.6	267
APR									
13...	2700	280	0	78	21	92	2	--	--
MAY									
18...	290	280	36	74	22	89	2	9.4	240
JUN									
15...	1500	290	0	78	22	98	3	--	--
JUL									
13...	3500	290	62	81	22	88	2	9.6	232
AUG									
17...	1600	280	0	79	21	99	3	--	--
SEP									
14...	2000	280	64	78	21	86	2	10	217

PLATTE RIVER BASIN

06686000 NORTH PLATTE RIVER AT LISCO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO ₄) (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 SiO ₂) (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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)
OCT 21...	220	18	--	--	--	--	--	--	120
NOV 18...	220	15	0.40	28	593	590	0.81	4190	32
DEC 16...	220	20	--	--	--	--	--	--	29
JAN 12...	220	20	0.50	36	734	590	1.0	2660	26
FEB 17...	240	23	--	--	--	--	--	--	35
MAR 18...	210	23	0.50	37	639	640	0.87	2160	38
APR 13...	220	23	--	--	--	--	--	--	85
MAY 18...	230	18	0.40	30	616	620	0.84	1800	64
JUN 15...	210	21	--	--	--	--	--	--	309
JUL 13...	220	18	0.50	31	620	610	0.84	1570	324
AUG 17...	220	24	--	--	--	--	--	--	191
SEP 14...	200	19	0.50	34	600	580	0.82	2720	231

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO ₂ +NO ₃ 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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 21...	1.40	--	<0.020	--	0.52	1.9	0.130	--	--
NOV 18...	1.90	2.00	0.010	0.69	0.70	2.6	0.070	<0.010	0.010
DEC 16...	3.00	--	0.140	0.46	0.60	3.6	0.140	--	--
JAN 12...	3.00	3.10	0.110	0.29	0.40	3.4	0.110	0.030	0.030
FEB 17...	3.30	--	0.120	0.37	0.49	3.8	0.050	--	--
MAR 18...	2.90	2.90	0.020	0.58	0.60	3.5	0.120	0.040	0.030
APR 13...	2.40	--	0.090	0.81	0.90	3.3	0.110	--	--
MAY 18...	2.00	1.90	0.070	0.93	1.0	3.0	0.120	0.010	<0.010
JUN 15...	1.30	--	<0.020	--	1.4	2.7	0.260	--	--
JUL 13...	2.00	1.80	0.140	2.2	2.3	4.3	0.310	0.060	0.040
AUG 17...	2.00	--	0.090	1.2	1.3	3.3	0.100	--	--
SEP 14...	2.00	2.00	0.030	1.7	1.7	3.7	0.040	0.020	<0.010

PLATTE RIVER BASIN

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06686000 NORTH PLATTE RIVER AT LISCO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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...	0930	30	6	91	<0.5	<1	<1	<3	5	35	<5
MAR 18...	1000	20	9	100	<0.5	<1	10	<3	6	13	<5
MAY 18...	0930	20	7	86	<0.5	<1	<1	<3	7	9	<5
JUL 13...	0915	30	7	110	<0.5	<1	5	<3	4	10	<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 18...	38	4	<0.1	<10	<1	4	<1	770	8	8	4.7
MAR 18...	42	3	<0.1	<10	2	4	<1	840	9	11	3.4
MAY 18...	40	2	<0.1	10	<1	<1	<1	810	9	4	4.2
JUL 13...	42	3	<0.1	<10	<1	4	<1	800	8	13	9.6

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...	0930	2620	5.5	518	3660	19
JAN 12...	0930	1340	1.5	272	984	16
MAR 18...	1000	1250	4.5	138	466	36
MAY 18...	0930	1080	17.0	145	423	74
JUL 13...	0915	935	17.0	433	1090	84
SEP 14...	0930	1680	18.0	407	1850	72

PLATTE RIVER BASIN

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. 2, Nov. 11-14, Dec. 11, Jan. 10, 11, 16-24, Feb. 19, 20, Feb. 25 to Mar. 1, and Mar. 26-30. 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, 69.2 ft³/s, 50,140 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, 394 ft³/s May 3, gage height, 5.38 ft; maximum gage height, 5.83 ft. Mar. 1, backwater from ice; minimum daily discharge, 0.12 ft³/s July 26.

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	40	88	83	91	88	88	96	81	82	1.4	.24	27
2	43	90	85	91	89	85	86	83	80	.59	.24	15
3	43	90	86	91	89	85	97	248	81	1.9	.23	6.3
4	56	90	85	92	88	87	92	201	81	6.8	.36	4.2
5	55	91	85	92	88	91	91	140	80	4.4	.39	11
6	53	91	85	93	88	98	90	112	75	3.6	.27	13
7	51	90	86	93	89	100	90	98	69	3.7	.28	11
8	50	87	88	94	88	96	90	94	59	5.6	.31	8.1
9	51	87	88	92	87	85	88	91	64	7.4	1.3	7.5
10	51	86	81	88	88	83	88	90	73	11	2.0	9.7
11	62	84	88	90	86	85	87	89	76	8.6	1.3	9.1
12	68	86	94	95	88	86	90	90	71	12	.26	12
13	68	88	91	96	86	87	99	87	66	11	.44	15
14	79	90	91	95	88	87	96	87	64	9.1	.48	16
15	90	91	91	92	89	87	90	85	61	7.3	3.9	17
16	91	91	90	86	88	88	88	84	49	2.9	3.4	17
17	90	91	90	84	87	88	87	83	52	.23	3.4	16
18	90	91	89	86	87	87	87	85	58	.22	.29	10
19	91	90	88	88	86	92	86	85	46	.21	.25	10
20	91	89	89	86	86	91	80	100	35	.22	.93	11
21	92	89	91	86	85	87	80	101	37	.23	1.7	11
22	98	88	91	84	86	89	73	98	32	.21	4.7	8.3
23	102	87	91	84	86	88	82	92	22	.21	12	7.3
24	97	87	90	86	85	83	81	109	20	.21	16	7.4
25	92	88	89	85	84	78	80	127	18	.19	24	7.0
26	90	86	89	85	82	82	80	114	11	.12	32	6.7
27	89	87	89	86	82	80	81	102	2.3	.17	32	6.5
28	89	88	90	87	80	86	81	96	2.1	.69	37	6.8
29	89	89	91	85	---	80	81	83	1.4	3.5	40	8.2
30	89	85	90	88	---	94	81	86	.89	.25	39	13
31	89	---	92	87	---	95	---	84	---	.24	32	---
TOTAL	2329	2655	2746	2758	2423	2718	2598	3205	1468.69	104.19	290.67	328.1
MEAN	75.1	88.5	88.6	89.0	86.5	87.7	86.6	103	49.0	3.36	9.38	10.9
MAX	102	91	94	96	89	100	99	248	82	12	40	27
MIN	40	84	81	84	80	78	73	81	.89	.12	.23	4.2
AC-FT	4620	5270	5450	5470	4810	5390	5150	6360	2910	207	577	651

CAL YR 1986 TOTAL 23373.09 MEAN 64.0 MAX 140 MIN .17 AC-FT 46360
WTR YR 1987 TOTAL 23623.52 MEAN 64.7 MAX 248 MIN .12 AC-FT 46860

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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.

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

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.

AVERAGE DISCHARGE (since Glendo project).--30 years (water years 1958-87), 1,591 ft³/s, 1,153,000 acre-ft/yr; median of yearly mean discharges, 1,310 ft³/s, 949,000 acre-ft/yr. Figures are unadjusted for storage and diversions.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,060 ft³/s May 25, gage height, 6.72 ft; maximum gage height, 7.27 ft, Jan. 20, backwater from ice; minimum daily discharge, 387 ft³/s Aug. 3.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3000	2590	2570	1460	1300	1250	1330	2060	1820	1050	428	1380
2	2980	2610	2570	1480	1300	1300	1320	1970	1690	966	407	1400
3	2910	2570	2530	1510	1300	1400	1300	2220	1600	1000	387	1320
4	2950	2570	2450	1490	1250	1350	1290	2290	1520	1060	470	1260
5	3020	2570	2470	1450	1240	1280	1280	2350	1460	955	1280	1380
6	2950	2530	2490	1420	1240	1350	1290	2140	1400	890	3500	1600
7	2930	2550	2490	1400	1240	1480	1290	1850	1380	880	3300	1710
8	2950	2530	2470	1400	1240	1560	1290	1680	1300	1000	2670	1820
9	2930	2530	2200	1400	1250	1520	1280	1450	1330	1000	2530	1800
10	2950	2490	1950	1350	1260	1400	1260	1350	1900	1080	2180	1880
11	3060	2390	1750	1290	1290	1360	1250	1320	2040	1020	1970	1850
12	3160	2450	1750	1300	1290	1360	1380	1290	1970	944	1830	1770
13	3060	2310	1750	1360	1290	1420	1600	1240	1800	944	1660	1710
14	2980	2330	1750	1380	1280	1480	1540	1200	1660	912	1480	1630
15	2910	2510	1720	1350	1280	1520	1510	1170	1510	901	1390	1640
16	2840	2510	1710	1300	1290	1490	1540	1120	1460	901	1220	1750
17	2800	2510	1690	1300	1290	1490	1600	1080	1480	839	1140	1780
18	2740	2610	1630	1300	1250	1480	1630	1130	1350	810	1100	1800
19	2720	2570	1610	1250	1260	1520	1580	1140	1180	800	1110	1870
20	2650	2490	1580	1250	1260	1520	1540	1180	1120	739	1110	1900
21	2650	2470	1540	1250	1210	1560	1540	1240	1140	690	1070	1900
22	2760	2470	1520	1300	1200	1570	1560	1300	1130	592	978	1970
23	2780	2450	1460	1350	1180	1580	1610	1420	989	559	1000	2020
24	2820	2430	1450	1350	1200	1540	1690	1800	933	543	1060	2060
25	2820	2410	1450	1350	1210	1520	1900	3930	978	484	1170	2060
26	2760	2430	1450	1350	1200	1520	2070	4330	1180	457	1450	1980
27	2780	2450	1460	1350	1250	1500	2160	3440	1130	443	1460	1780
28	2780	2490	1460	1300	950	1400	2280	2760	1160	443	1430	1630
29	2760	2530	1460	1300	---	1300	2370	2330	1160	457	1400	1520
30	2720	2550	1450	1300	---	1280	2260	2060	1100	457	1400	1540
31	2650	---	1460	1300	---	1330	---	1820	---	443	1380	---
TOTAL	88770	74900	57290	41940	34800	44630	47540	57660	41870	24259	44960	51710
MEAN	2864	2497	1848	1353	1243	1440	1585	1860	1396	783	1450	1724
MAX	3160	2610	2570	1510	1300	1580	2370	4330	2040	1080	3500	2060
MIN	2650	2310										

PLATTE RIVER BASIN

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, 1,679,000 acre-ft June 18-23, elevation, 3,262.9 ft; minimum observed, 1,436,000 acre-ft Sept. 6-7, 9-11, elevation, 3,254.3 ft.

MONTHEND ELEVATION AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	3,255.3	1,512,000	-
Oct. 31	3,255.8	1,526,000	+14,000
Nov. 30	3,256.7	1,551,000	+25,000
Dec. 31	3,257.4	1,570,000	+19,000
CAL YR 1986	-	-	+22,000
Jan. 31	3,257.5	1,573,000	+3,000
Feb. 28	3,258.4	1,598,000	+25,000
Mar. 31	3,259.6	1,583,000	-15,000
Apr. 30	3,259.9	1,591,000	+8,000
May 31	3,261.8	1,647,000	+56,000
June 30	3,262.2	1,659,000	+12,000
July 31	3,257.9	1,534,000	-125,000
Aug. 31	3,254.5	1,441,000	-93,000
Sept. 30	3,255.5	1,468,000	+27,000
WTR YR 1987	-	-	-44,000

PLATTE RIVER BASIN

9 3

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.--Estimated daily discharges: Jan. 6 to 8. 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. 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.--45 years (water years 1943-87), 540 ft³/s, 391,200 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, 20,300 ft³/s June 30, 1917, from graph based on daily gage readings; no flow for many days in 1975-87.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,150 ft³/s Oct. 7, gage height, 5.60 ft; no flow for many days.

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	2740	1480	500	.00	.00	.00	.00	173	179	679	1840	410
2	2710	1380	515	.00	.00	.00	.00	120	179	850	1870	352
3	2760	896	318	.00	.00	.00	.00	117	183	987	1940	236
4	2780	860	85	.00	.00	6.0	.00	108	179	1190	2000	241
5	2780	860	61	.00	.00	.00	.00	91	182	1280	1970	222
6	2780	789	6.0	125	7.1	.00	.50	78	196	1280	1850	227
7	2760	670	1.6	200	9.3	.00	.00	74	179	1040	1750	231
8	2740	606	.30	200	1.8	.00	.00	68	183	752	1720	191
9	2760	606	.00	246	.00	.00	.00	68	179	600	1660	159
10	2760	615	.00	241	.00	.00	1.2	78	179	614	1660	152
11	2740	624	.00	246	.00	.00	.00	114	218	646	1690	159
12	2780	633	.00	157	.00	.00	.00	137	246	742	1730	152
13	2780	633	.00	66	.10	.00	.00	137	250	751	1540	148
14	2780	624	.00	63	.00	.00	.00	137	248	742	1480	148
15	2780	589	.00	57	.00	.00	.00	137	246	883	1460	96
16	2760	572	.00	55	.00	.00	.00	137	236	1210	1460	309
17	2480	278	.00	59	.00	.00	.00	141	236	1420	1460	134
18	2480	75	.00	61	1.1	.00	.00	160	246	1160	1460	130
19	2480	55	.00	42	.00	.00	.00	159	271	889	1540	111
20	2520	157	.00	.10	7.1	.00	75	167	353	880	1550	128
21	2520	471	.00	.00	.00	.00	108	167	372	982	1590	84
22	2520	508	.00	.00	.00	.00	111	163	423	1030	1590	1.2
23	2460	471	.00	.00	.00	.00	117	167	510	1150	1570	.00
24	2420	486	.00	.00	.00	.00	121	175	695	1510	1290	30
25	2440	486	.00	.00	.00	5.4	117	179	890	1630	876	29
26	2430	493	.00	5.1	.00	.00	117	132	1070	1620	542	3.6
27	1690	486	.00	.00	.00	.00	121	85	1160	1720	478	.00
28	1690	471	.00	.00	.00	.00	117	135	1010	1780	539	3.9
29	1630	493	.00	.00	---	.00	124	163	892	1860	589	.00
30	1660	486	.00	.00	---	.00	138	183	766	1940	547	.00
31	1590	---	.00	.00	---	.00	---	175	---	1860	450	---
TOTAL	77200	17853	1486.90	1823.20	26.50	11.40	1267.70	4125	12156	35677	43691	4087.70
MEAN	2490	595	48.0	58.8	.95	.37	42.3	133	405	1151	1409	136
MAX	2780	1480	515	246	9.3	6.0	138	183	1160	1940	2000	410
MIN	1590	55	.00	.00	.00	.00	.00	68	179	600	450	.00
AC-FT	153100	35410	2950	3620	53	23	2510	8180	24110	70770	86660	8110

CAL YR 1986 TOTAL 418620.75 MEAN 1147 MAX 3350 MIN .00 AC-FT 830300
WTR YR 1987 TOTAL 199405.28 MEAN 546 MAX 2780 MIN .00 AC-FT 395500

PLATTE RIVER BASIN

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. 12 to Jan. 6, Jan. 17-26, Feb. 27, 28 and Mar. 28-30. 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.--45 years (water years 1943-87), 544 ft³/s, 394,100 acre-ft/yr; median of yearly mean discharges, 364 ft³/s, 264,000 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, 3,110 ft³/s Oct. 17, gage height, 4.66 ft; minimum daily discharge, 68 ft³/s June 7, 8.

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	2760	1600	612	145	168	163	186	172	96	453	1400	299
2	2860	1580	619	145	181	163	181	232	94	426	1410	226
3	2830	1400	619	145	181	168	181	261	83	646	1450	186
4	2850	1080	447	145	176	168	181	221	78	849	1570	133
5	2770	1060	267	145	176	163	181	190	74	1070	1640	137
6	2730	997	243	145	176	163	181	155	72	1080	1660	133
7	2770	939	210	190	172	151	168	130	68	1160	1580	148
8	2780	806	195	345	172	144	144	144	68	874	1550	130
9	2820	764	186	410	163	155	137	137	83	581	1480	119
10	2890	764	200	391	159	172	133	101	159	462	1410	95
11	2970	772	190	404	140	172	133	82	156	446	1400	79
12	3000	790	170	385	130	172	163	85	110	457	1420	77
13	3000	799	170	320	140	172	255	87	104	549	1410	75
14	2980	781	165	238	140	181	280	82	104	515	1200	72
15	2950	764	165	216	151	181	216	87	125	448	1130	155
16	3020	736	165	195	151	186	195	79	110	504	1120	207
17	3040	764	165	180	151	195	181	79	107	777	1120	299
18	2810	495	160	180	148	195	181	98	104	1060	1100	224
19	2730	352	160	180	148	200	181	77	100	779	1090	185
20	2660	306	160	175	151	190	181	79	106	575	1170	169
21	2660	358	155	175	144	181	181	91	145	523	1230	180
22	2710	590	155	170	144	172	232	85	119	566	1290	166
23	2660	634	155	170	144	181	249	83	107	513	1330	140
24	2600	627	155	165	148	181	249	92	103	648	1410	135
25	2570	627	150	160	155	190	238	128	229	994	1220	132
26	2540	627	150	155	155	176	232	162	456	1090	891	134
27	2320	619	150	159	155	181	200	117	623	1130	582	133
28	1770	605	150	163	155	175	216	77	703	1260	391	128
29	1660	597	150	148	---	180	163	72	802	1300	385	127
30	1700	619	150	144	---	200	148	106	616	1410	391	123
31	1700	---	145	148	---	210	---	109	---	1430	352	---
TOTAL	82110	23452	6933	6436	4374	5481	5747	3700	5904	24575	36782	4546
MEAN	2649	782	224	208	156	177	192	119	197	793	1187	152
MAX	3040	1600	619	410	181	210	280	261	802	1430	1660	299
MIN	1660	306	145	144	130	144	133	72	68	426	352	72
AC-FT	162900	46520	13750	12770	8680	10870	11400	7340	11710	48740	72960	9020

CAL YR 1986 TOTAL 418772 MEAN 1147 MAX 3040 MIN 78 AC-FT 830600
WTR YR 1987 TOTAL 210040 MEAN 575 MAX 3040 MIN 68 AC-FT 416600

PLATTE RIVER BASIN

95

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: Dec. 10, 11. 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.--56 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 ft³/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, 267 ft³/s July 18, gage height, 1.71 ft; minimum daily, 102 ft³/s June 26.

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	143	151	158	154	151	149	164	142	146	139	105	120
2	143	152	153	155	158	163	157	147	145	148	107	114
3	142	154	168	160	151	166	158	167	141	159	107	119
4	143	156	162	159	149	166	164	155	137	149	108	120
5	141	160	164	164	156	165	165	150	139	135	105	124
6	140	168	180	154	151	168	165	154	140	128	105	121
7	142	167	177	149	145	167	164	153	139	151	107	155
8	139	156	184	170	154	168	168	146	142	149	108	138
9	136	163	171	166	147	156	168	144	157	149	104	135
10	135	170	170	155	157	156	166	143	171	147	103	140
11	143	156	170	159	149	162	168	145	151	139	102	142
12	136	143	169	167	156	167	217	136	139	135	106	135
13	140	148	170	170	151	169	213	140	133	141	107	136
14	144	163	170	168	154	170	184	143	131	133	111	146
15	137	163	163	154	145	155	187	143	136	131	114	177
16	138	160	175	156	144	167	182	138	125	130	110	164
17	137	187	176	144	154	174	171	143	134	129	109	159
18	135	169	165	156	151	168	166	162	123	212	109	167
19	136	165	162	157	153	173	164	146	122	155	106	172
20	138	160	165	161	153	175	153	150	121	131	108	171
21	140	157	162	161	144	172	144	151	113	122	109	165
22	162	166	157	161	146	171	149	141	108	120	108	164
23	152	153	148	159	153	158	149	144	105	120	108	163
24	149	150	140	156	155	143	148	144	106	117	118	166
25	145	160	152	161	157	142	146	149	104	115	119	164
26	147	159	154	161	145	155	145	150	102	113	113	163
27	150	151	153	159	166	159	142	146	104	113	129	158
28	148	154	150	166	140	130	142	145	123	110	123	154
29	148	166	148	160	---	130	144	143	155	105	121	154
30	149	162	148	150	---	136	141	142	139	107	119	157
31	151	---	155	152	---	145	---	142	---	108	118	---
TOTAL	4429	4789	5039	4924	4235	4945	4894	4544	3931	4140	3426	4463
MEAN	143	160	163	159	151	160	163	147	131	134	111	149
MAX	162	187	184	170	166	175	217	167	171	212	129	177
MIN	135	143	140	144	140	130	141	136	102	105	102	114
AC-FT	8780	9500	9990	9770	8400	9810	9710	9010	7800	8210	6800	8850

CAL YR 1986 TOTAL 55187 MEAN 151 MAX 204 MIN 102 AC-FT 109500
WTR YR 1987 TOTAL 53759 MEAN 147 MAX 217 MIN 102 AC-FT 106600

PLATTE RIVER BASIN

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: Jan. 16-30 and Mar. 28 to Apr. 1. 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.--45 years (water years 1943-87), 784 ft³/s, 568,000 acre-ft/yr; median of yearly mean discharges, 600 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, 3,460 ft³/s Oct. 12, gage height, 5.14 ft; minimum daily discharge, 251 ft³/s June 8.

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	2980	2280	902	396	367	464	410	393	278	808	1480	635
2	3170	2200	901	397	365	469	393	408	280	728	1550	573
3	3310	2090	914	391	363	458	365	466	279	851	1600	504
4	3390	1700	849	375	360	434	370	495	273	1010	1680	481
5	3350	1470	600	365	357	407	366	471	267	1190	1740	475
6	3280	1450	515	361	344	409	359	458	255	1310	1750	462
7	3250	1370	475	356	348	407	339	405	255	1550	1750	481
8	3230	1240	463	428	348	404	342	330	251	1440	1680	472
9	3200	1120	440	504	352	396	349	278	296	1110	1710	443
10	3200	1100	407	505	357	396	353	273	346	867	1610	420
11	3300	1090	431	489	351	400	352	278	367	738	1530	411
12	3370	1140	426	497	358	402	386	278	325	687	1530	419
13	3260	1130	409	509	359	398	570	278	316	794	1670	428
14	3270	1160	404	464	355	411	620	273	320	789	1590	423
15	3260	1140	414	450	355	535	530	273	378	690	1440	474
16	3290	1120	420	400	359	529	473	269	364	595	1400	530
17	3290	1120	423	350	356	567	455	269	365	703	1390	464
18	3260	952	419	350	357	541	439	296	359	1150	1400	497
19	3150	637	418	360	357	537	420	304	349	1340	1390	452
20	3120	545	402	360	356	592	414	299	350	962	1410	458
21	3130	519	388	360	346	556	403	316	358	761	1490	444
22	3280	717	383	340	340	538	422	332	378	740	1580	454
23	3250	844	382	320	351	537	453	329	331	754	1740	436
24	3150	898	373	320	356	524	453	341	325	713	1890	421
25	3070	901	377	370	367	502	448	357	308	890	1880	416
26	3030	902	376	390	388	475	448	378	347	1110	1470	415
27	3020	913	396	420	476	471	415	353	477	1150	1130	410
28	2680	927	397	450	502	460	372	310	682	1170	827	405
29	2340	917	396	430	---	450	386	286	895	1250	709	402
30	2310	932	406	400	---	460	395	297	954	1310	701	396
31	2330	---	401	369	---	450	---	284	---	1470	690	---
TOTAL	96520	34524	14907	12476	10250	14579	12500	10377	11328	30630	45407	13701
MEAN	3114	1151	481	402	366	470	417	335	378	988	1465	457
MAX	3390	2280	914	509	502	592	620	495	954	1550	1890	635
MIN	2310	519	373	320	340	396	339	269	251	595	690	396
AC-FT	191400	68480	29570	24750	20330	28920	24790	20580	22470	60750	90060	27180

CAL YR 1986 TOTAL 527677 MEAN 1446 MAX 3390 MIN 250 AC-FT 1047000
WTR YR 1987 TOTAL 307199 MEAN 842 MAX 3390 MIN 251 AC-FT 609300

97

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.

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.

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.

AVERAGE DISCHARGE.--56 years, 10.7 ft³/s, 7,750 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 281 ft³/s Aug. 4, gage height, 2.52 ft; minimum daily, 2.3 ft³/s July 29-31.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	3.8	4.2	4.4	4.8	5.3	8.9	5.5	6.2	3.9	2.8	3.2
2	3.1	3.9	4.1	4.4	5.3	5.3	7.7	6.0	5.7	3.9	2.8	3.2
3	3.4	3.9	3.9	4.2	6.0	5.3	7.7	6.9	5.5	4.1	2.8	3.1
4	3.1	4.1	3.9	4.4	6.2	5.6	7.7	7.2	5.2	4.1	7.9	3.2
5	2.9	4.1	4.1	4.4	6.0	6.2	7.5	6.9	5.0	3.9	7.0	3.3
6	2.9	4.1	4.1	4.4	5.5	7.0	7.2	6.5	5.0	3.9	13	3.3
7	2.9	4.1	4.1	4.4	5.5	8.0	7.1	6.2	5.0	3.9	17	3.1
8	2.9	4.2	4.1	4.4	6.2	7.7	6.9	5.8	4.8	4.1	5.0	3.2
9	2.9	4.2	4.1	4.4	7.0	6.4	6.7	5.7	4.8	4.0	4.7	3.2
10	3.2	3.9	4.0	4.4	6.7	6.7	6.4	5.7	5.0	3.8	4.4	3.0
11	3.5	4.2	4.4	4.4	7.0	9.2	6.3	5.4	5.2	3.7	4.1	3.0
12	3.7	4.1	4.2	4.5	7.0	8.3	7.4	5.5	5.2	4.0	3.3	2.9
13	3.7	3.9	4.2	4.5	7.0	7.7	8.1	5.5	5.2	4.1	3.4	3.0
14	3.7	4.1	4.2	4.5	7.0	7.2	7.8	5.2	5.2	3.9	3.4	2.9
15	3.7	3.9	4.4	4.4	6.4	7.2	7.4	5.2	5.2	3.8	3.2	2.9
16	3.7	4.4	4.4	4.4	6.4	7.5	6.5	5.2	4.8	3.7	2.9	3.0
17	3.7	4.5	4.4	4.4	6.0	7.5	6.2	5.2	4.6	3.8	2.9	3.3
18	3.8	4.5	4.4	4.4	6.2	7.5	6.2	5.2	4.5	4.4	2.9	3.2
19	3.9	4.7	4.4	4.2	6.2	8.6	6.0	6.3	4.2	3.8	2.8	3.3
20	3.9	4.5	4.4	4.2	5.7	7.7	6.2	10	4.1	3.8	3.1	3.3
21	3.7	4.5	4.4	4.2	5.7	7.3	6.3	7.5	4.3	3.6	2.9	3.2
22	4.2	4.5	4.4	4.2	5.7	8.6	6.1	7.5	4.0	3.5	3.1	3.2
23	4.4	4.4	4.4	4.4	6.0	9.1	5.8	8.2	3.8	3.1	3.2	3.2
24	3.9	4.4	4.4	4.5	6.0	8.0	5.7	9.2	3.8	2.9	3.3	3.1
25	3.9	4.4	4.4	4.7	5.3	6.4	5.8	12	3.8	2.9	3.2	3.2
26	3.8	4.4	4.2	4.4	5.0	7.7	6.2	10	3.7	2.9	3.4	3.2
27	3.8	4.2	4.2	4.4	5.0	9.8	6.3	8.9	3.7	2.7	3.2	3.2
28	3.8	4.4	4.2	4.8	5.3	7.2	6.1	8.0	3.7	2.4	3.2	3.2
29	3.7	4.5	4.2	4.4	---	7.0	5.7	7.5	3.9	2.3	3.2	3.3
30	3.7	4.4	4.4	5.0	---	7.0	5.5	7.2	3.9	2.3	3.2	3.4
31	3.8	---	4.2	4.8	---	7.5	---	6.7	---	2.3	3.2	---
TOTAL	110.4	127.2	131.4	137.5	168.1	227.5	201.4	213.8	139.0	109.5	205.6	94.8
MEAN	3.56	4.24	4.24	4.44	6.00	7.34	6.71	6.90	4.63	3.53	6.63	3.16
MAX	4.4	4.7	4.4	5.0	7.0	9.8	8.9	12	6.2	4.4	7.9	3.4
MIN	2.9	3.8	3.9	4.2	4.8	5.3	5.5	5.2	3.7	2.3	2.8	2.9
AC-FT	219	252	261	273	333	451	399	424	276	217	408	279

CAL YR 1986	TOTAL 1928.2	MEAN 5.28	MAX 22	MIN 1.6	AC-FT 3820
WTR YR 1987	TOTAL 1866.2	MEAN 5.11	MAX 79	MIN 2.3	AC-FT 3700

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.

GAGE.--Water-stage recorder. Elevation of gage is 3.150 ft. from topographic map.

REMARKS.--Estimated daily discharges: Nov. 12-18, Dec. 10 to Feb. 6. 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.

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, 6,540 ft³/s June 1, gage height, 7.47 ft; maximum gage height, 8.09 ft May 28; minimum daily discharge, 5.0 ft³/s Aug. 22.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1010	455	722	1000	1100	313	1200	960	6370	211	24	651
2	955	476	658	1000	1060	558	1160	875	5750	200	20	683
3	782	497	637	1000	1000	1280	1170	1010	4900	184	21	643
4	673	497	601	1020	980	1510	1140	1110	4370	156	35	577
5	597	505	584	1040	960	1340	1090	1180	3960	176	29	563
6	581	519	551	1040	950	1310	1060	1240	3480	392	18	585
7	558	699	560	1040	941	1370	1030	1510	3000	589	15	586
8	519	773	614	1020	886	1390	987	2340	2660	530	15	564
9	469	792	653	980	969	1380	965	2630	2520	403	12	570
10	462	745	600	960	968	1390	968	2860	2360	299	11	567
11	435	717	500	900	952	1380	954	2940	2860	241	12	581
12	402	650	600	840	928	1380	990	2960	2570	193	15	615
13	377	600	700	880	934	1480	1100	3050	4030	202	14	631
14	359	600	800	740	912	1710	1090	2770	5490	216	10	636
15	349	650	860	600	910	1790	1120	2430	4820	199	9.1	660
16	347	750	900	500	802	1850	1130	2130	3810	166	11	660
17	408	850	940	470	698	1830	1120	1940	3160	127	6.4	637
18	462	1000	960	450	655	1780	1200	1890	2640	98	8.8	586
19	462	998	960	420	641	1830	1210	2120	2420	76	7.3	530
20	428	942	980	400	616	1940	1100	2210	2140	67	6.8	470
21	415	965	1000	450	625	2010	1010	2180	1780	76	5.3	418
22	448	1010	1000	500	598	2010	999	2480	1420	72	5.0	404
23	421	1020	1000	500	581	1940	1000	2990	1040	44	9.9	369
24	441	1000	1000	550	581	1800	933	3920	833	34	22	344
25	441	900	1000	600	589	1720	1190	5170	714	33	28	313
26	415	794	1000	820	589	1670	1310	5900	601	32	43	298
27	428	764	1000	1000	699	1630	1370	6160	514	32	49	280
28	428	749	1000	1100	408	1510	1270	6290	415	33	48	257
29	415	743	1000	1200	---	1370	1150	6210	380	36	52	235
30	448	714	1000	1300	---	1360	1060	6220	315	28	80	217
31	469	---	1000	1200	---	1270	---	6140	---	25	315	---
TOTAL	15404	22374	25380	25520	22532	47101	33076	93815	81322	5170	957.6	15130
MEAN	497	746	819	823	805	1519	1103	3026	2711	167	30.9	504
MAX	1010	1020	1000	1300	1100	2010	1370	6290	6370	589	315	683
MIN	347	455	500	400	408	313	933	875	315	25	5.0	217
AC-FT	30550	44380	50340	50620	44690	93420	65610	186100	161300	10250	1900	30010
CAL YR 1986	TOTAL 338578.7 MEAN 928 MAX 6730 MIN 3.9 AC-FT 671600											
WTR YR 1987	TOTAL 387781.3 MEAN 1062 MAX 6370 MIN 5.0 AC-FT 769200											

PLATTE RIVER BASIN

99

06765500 SOUTH PLATTE RIVER AT NORTH PLATTE, NE

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.

DRAINAGE AREA.--24,300 mi², approximately.

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.

REVISED RECORDS.--WSP 1390: 1932-33, 1935.

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.

REMARKS.--Estimated daily discharges: Jan. 1-5, 14-26. 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. South Platte canal diverts around station; diversion began Nov. 13, 1946.

AVERAGE DISCHARGE.--41 years (water years 1947-87, since Sutherland Canal diversion), 461 ft³/s, 334,000 acre-ft/yr; median of yearly mean discharges, 283 ft³/s, 205,000 acre-ft/yr. Figures are unadjusted for storage or diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 37,100 ft³/s June 3, 1935, gage height, 14.02 ft, present datum; no flow at times in summers of most years prior to 1938.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,280 ft³/s May 28, gage height, 6.03 ft; minimum daily, 134 ft³/s Aug. 21, 22.

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	1000	173	323	740	996	238	970	919	4570	345	179	252
2	1040	173	318	750	1010	250	846	919	4370	290	182	443
3	1040	170	332	760	983	346	732	957	3710	311	174	728
4	941	161	351	770	894	514	637	1120	3360	365	185	773
5	843	161	345	760	732	668	462	1300	3270	317	191	702
6	795	188	331	759	578	532	332	1420	3130	324	172	662
7	804	176	291	683	487	454	262	1230	2500	551	172	692
8	798	220	297	613	406	413	211	1360	2070	656	194	655
9	726	328	322	570	361	421	200	1850	1910	506	192	673
10	671	340	297	491	353	462	211	1960	1850	390	177	687
11	610	363	283	479	326	496	190	1910	1690	372	148	677
12	548	340	247	390	292	550	238	1800	1930	384	151	618
13	475	340	233	381	292	588	353	1750	1660	385	167	519
14	402	317	249	380	306	637	470	1710	2750	326	165	468
15	314	312	285	350	280	743	541	1610	3440	271	170	478
16	263	424	345	330	274	834	532	1310	3270	247	163	392
17	236	625	437	310	256	919	559	1080	2760	226	152	288
18	233	751	541	300	286	932	578	996	2320	278	146	245
19	235	725	633	250	244	894	699	907	1980	263	147	219
20	229	674	633	225	216	1040	721	919	1720	221	141	193
21	214	666	666	260	232	1080	689	1140	1310	212	134	180
22	212	625	760	280	262	1130	597	1330	957	243	134	182
23	202	563	742	300	268	1200	550	1620	627	225	152	175
24	202	563	742	380	262	1280	550	2100	406	225	181	168
25	188	570	742	560	280	1190	523	3220	346	208	246	169
26	182	498	760	750	280	1160	559	4280	319	195	239	167
27	185	484	708	754	353	1220	754	4960	324	195	229	169
28	185	491	699	858	326	1230	919	5060	356	190	209	166
29	182	450	699	944	---	1170	957	5060	377	187	225	163
30	179	369	760	1020	---	1380	957	5040	341	186	230	159
31	173	---	734	1050	---	1230	---	4800	---	180	241	---
TOTAL	14307	12240	15105	17447	11835	25201	16799	65637	59623	9274	5588	12062
MEAN	462	408	487	563	423	813	560	2117	1987	299	180	402
MAX	1040	751	760	1050	1010	1380	970	5060	4570	656	246	773
MIN	173	161	233	225	216	238	190	907	319	180	134	159
AC-FT	28380	24280	29960	34610	23470	49990	33320	130200	118300	18390	11080	23920

CAL YR 1986 TOTAL 276181 MEAN 757 MAX 6700 MIN 122 AC-FT 547800
WTR YR 1987 TOTAL 265118 MEAN 726 MAX 5060 MIN 134 AC-FT 525900

PLATTE RIVER BASIN

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.--Estimated daily discharge: Dec. 11. 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 records are computed; figures given herein represent combined discharge.

AVERAGE DISCHARGE.--46 years (water years 1942-87, since storage in Lake McConaughy), 806 ft³/s, 583,900 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, 5,720 ft³/s May 30; minimum daily, 153 ft³/s Sept. 14.

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	2940	1620	946	819	1060	407	1640	1030	5070	587	1110	333
2	2910	1580	996	796	1040	388	1090	1020	4700	506	1140	340
3	2740	1460	952	812	1000	389	868	1070	3660	430	1210	340
4	2680	1210	879	828	958	407	816	1250	3390	537	1280	370
5	2510	873	794	842	900	464	825	1760	3010	614	1310	354
6	2340	756	654	835	713	475	717	1860	2520	700	1310	320
7	2140	723	573	857	566	387	639	1740	2070	1100	1230	321
8	2060	721	567	841	556	337	583	1570	1620	1420	1210	323
9	2020	721	545	881	489	299	547	1790	1680	1060	1100	299
10	1980	676	463	834	463	304	485	2120	1570	947	1060	247
11	1940	678	966	758	424	323	440	2160	1810	643	968	221
12	1950	726	1220	751	364	325	471	1950	1500	627	941	208
13	1840	747	1120	688	351	322	693	1810	1310	699	952	192
14	1710	1250	915	655	354	336	892	1740	1320	776	980	153
15	1580	1220	747	617	318	546	903	1700	2560	716	944	199
16	1540	897	657	567	303	736	797	1500	2780	652	884	340
17	1500	1040	631	1260	291	906	730	1090	2290	722	834	319
18	1460	1220	664	1330	295	1170	721	1050	1870	886	818	224
19	1350	1160	748	1230	290	1120	698	945	2150	1300	779	196
20	1260	965	754	1020	262	1160	698	896	1190	1030	794	205
21	1210	863	732	928	246	1200	697	1370	977	776	890	205
22	1260	816	797	941	242	1160	689	1010	625	780	879	209
23	1310	902	859	1100	234	1150	689	980	387	753	941	224
24	1390	985	876	879	228	779	726	1320	290	722	1070	209
25	1260	1000	832	1120	228	687	701	2020	255	799	1220	181
26	1170	952	878	1120	243	1100	665	3350	242	843	1160	181
27	1120	927	852	1060	310	913	739	4620	265	873	841	180
28	1720	987	836	1060	457	998	856	5200	399	888	600	180
29	1130	987	868	1050	---	1530	956	5310	616	919	434	314
30	1690	963	859	990	---	2670	986	5610	699	935	369	312
31	1670	---	875	1040	---	2240	---	5390	---	1020	325	---
TOTAL	55380	29625	25055	28509	13185	25228	22957	66231	52825	25260	29583	7699
MEAN	1786	987	808	920	471	814	765	2136	1761	815	954	257
MAX	2940	1620	1220	1330	1060	2670	1640	5610	5070	1420	1310	370
MIN	1120	676	463	567	228	299	440	896	242	430	325	153
AC-FT	109800	58760	49700	56550	26150	50040	45540	131400	104800	50100	58680	15270

CAL YR 1986 TOTAL 644628 MEAN 1766 MAX 7280 MIN 190 AC-FT 1279000
WTR YR 1987 TOTAL 381537 MEAN 1045 MAX 5610 MIN 153 AC-FT 756800

PLATTE RIVER BASIN

101

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: Jan. 16, 18, 20, 22. Records good except for periods of estimated record and Oct. 1 to Nov. 4, 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.--46 years (water years 1942-87, since storage in Lake McConaughy), 717 ft³/s, 519,500 acre-ft/yr; median of yearly mean discharges, 325 ft³/s, 235,000 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, 5,520 ft³/s May 31; minimum daily, 25 ft³/s July 15.

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	3330	1940	1010	957	1230	670	2580	1190	4970	286	42	94
2	3600	1990	1060	933	1230	583	1940	1190	4480	236	83	88
3	3590	1930	1090	927	1190	533	1430	1270	4120	138	139	100
4	3420	1840	1020	920	1180	551	1230	1350	3530	33	57	139
5	3110	1610	990	939	1160	587	1190	1520	3060	53	81	212
6	2750	1330	856	945	1070	690	1100	1920	2630	93	109	165
7	2470	1220	749	951	913	680	993	1710	2180	213	91	150
8	2310	1110	696	939	819	540	905	1610	1800	437	411	150
9	2400	1100	646	952	757	470	763	1580	2770	437	255	194
10	2290	1070	544	971	704	455	750	1830	2780	156	181	234
11	2280	1050	498	915	648	468	734	1940	2250	78	125	304
12	2280	1040	1080	856	562	493	741	1850	2120	142	76	282
13	2290	935	1140	808	539	498	898	1670	1670	146	64	276
14	2160	986	1060	774	512	494	1130	1590	1420	46	97	329
15	2200	1390	908	737	507	524	1240	1570	1850	25	88	357
16	2010	1210	762	695	465	835	1140	1560	2860	27	49	399
17	1930	1140	686	635	445	1170	1100	1410	2830	44	59	443
18	1880	1240	671	1220	426	1470	1100	1290	2220	216	83	399
19	1820	1360	722	1310	433	1580	1080	1170	1840	88	83	345
20	1690	1190	793	1220	429	1550	1020	1080	1950	216	97	321
21	1620	1020	798	1090	388	1650	1020	1050	1150	49	88	304
22	1660	894	810	968	356	1590	1010	1420	785	115	31	292
23	1700	923	890	1060	342	1620	965	1120	439	57	42	293
24	1770	1010	927	1030	337	1490	970	1180	233	32	132	303
25	1700	1090	914	1000	334	1230	972	1580	186	27	339	309
26	1630	1060	939	1090	338	1220	916	2430	117	35	587	292
27	1600	1020	964	1070	420	1480	880	3540	119	55	561	280
28	1830	1060	958	1080	528	1420	990	4470	136	44	374	279
29	2020	1070	977	1130	---	1430	1100	4940	177	49	221	274
30	1670	1020	964	1140	---	2430	1160	5200	274	71	128	349
31	1970	---	976	1190	---	3260	---	5400	---	73	103	---
TOTAL	68980	36848	27098	30452	18262	33661	33047	62630	56946	3717	4876	7956
MEAN	2225	1228	874	982	652	1086	1102	2020	1898	120	157	265
MAX	3600	1990	1140	1310	1230	3260	2580	5400	4970	437	587	443
MIN	1600	894	498	635	334	455	734	1050	117	25	31	88
AC-FT	136800	73090	53750	60400	36220	66770	65550	124200	113000	7370	9670	15780

CAL YR 1986 TOTAL 546960 MEAN 1499 MAX 6090 MIN 60 AC-FT 1085000
WTR YR 1987 TOTAL 384473 MEAN 1053 MAX 5400 MIN 25 AC-FT 762600

PLATTE RIVER BASIN

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.--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.--46 years (water years 1942-87, since storage in Lake McConaughy), 1,659 ft³/s, 1,202,000 acre-ft per year; median of yearly mean discharges, 1,224 ft³/s, 887,000 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, 6,890 ft³/s May 31, gage height, 4.82 ft; minimum daily discharge, 185 ft³/s July 31.

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	4500	3640	2960	2980	3260	2540	4290	2630	6420	1910	196	1760
2	4850	3640	2960	2900	3310	2680	3740	2680	5710	1700	196	2100
3	5200	3530	3010	2940	3290	2700	3690	2780	5520	1120	207	2170
4	5120	3220	3080	3010	3260	2630	3480	2830	5020	724	261	1850
5	4920	3170	3010	3030	3310	2700	3290	3050	4410	605	342	2100
6	4630	3120	2940	3050	3290	2740	3170	3310	3890	669	402	2150
7	4320	2240	2850	3030	3220	2760	3010	3440	3610	1070	430	2190
8	4120	2980	2830	3010	3050	2720	2650	3340	3310	1640	643	2100
9	4140	3030	2210	2960	2960	2650	2540	3260	3920	1950	1070	2020
10	4090	2940	2540	2940	2830	2430	2390	3310	4950	2100	1010	2040
11	4200	2920	2480	2960	2720	2370	2280	3310	4500	1520	768	1970
12	4060	2810	2520	2870	2610	2370	2340	3240	4120	1330	630	2280
13	3980	2740	2900	2810	2560	2370	2560	3220	3760	1340	738	2390
14	3890	2700	3010	2630	2590	2320	2780	3260	3610	1330	828	2320
15	3790	2650	2980	2610	2650	2300	2870	3260	3360	930	798	1820
16	3710	2940	2900	2500	2720	2560	2980	3050	3890	375	828	1640
17	3640	2780	2680	2590	2650	3290	3080	2920	4470	318	768	1780
18	3360	2870	2780	2780	2560	3710	2980	2960	4060	568	696	2000
19	3390	3030	2760	3190	2520	3740	2920	2650	3220	710	557	2120
20	3410	3120	2810	3220	2540	3640	2850	2700	3100	844	375	1950
21	3390	2960	2760	3150	2500	3560	2810	2650	2780	1050	366	1910
22	3440	2740	2740	2780	2480	3530	2780	2850	2500	646	350	1870
23	3410	2830	2740	2170	2480	3460	2480	3010	1800	411	350	1700
24	3510	2610	2920	2460	2370	3510	1750	2810	1360	326	411	1410
25	3530	2980	2940	2390	2150	3310	2740	3030	783	196	940	1340
26	3530	3010	2940	2280	2300	3260	2810	3440	630	207	1640	1680
27	3440	3080	2940	2480	2560	3440	2720	4090	568	196	2260	1830
28	3220	3030	2980	2850	2560	3310	2610	4990	942	196	2170	2100
29	3610	3050	3050	3010	---	3100	2700	5860	1450	196	1760	2240
30	3660	3030	3100	3100	---	3660	2540	6300	1830	190	1470	2260
31	3560	---	3050	3220	---	4060	---	6470	---	185	1310	---
TOTAL	121620	89390	88370	87900	77300	93420	85830	106700	99493	26552	24770	59090
MEAN	3923	2980	2851	2835	2761	3014	2851	3442	3316	857	799	1970
MAX	5200	3640	3100	3220	3310	4060	4290	6470	6420	2100	2260	2390
MIN	3220	2240	2210	2170	2150	2300	1750	2630	568	185	196	1340
AC-FT	241200	177300	175300	174300	153300	185300	170200	211600	197300	52670	49130	117200

CAL YR 1986 TOTAL 1110730 MEAN 3043 MAX 7240 MIN 449 AC-FT 2203000
WTR YR 1987 TOTAL 960435 MEAN 2631 MAX 6470 MIN 185 AC-FT 1905000

PLATTE RIVER BASIN

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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 Apr. 9 (south chan.); minimum daily, 764 microsiemens Mar. 17 (north chan.).

WATER TEMPERATURES: Maximum daily, 34.0°C Aug. 2 (north chan.); minimum daily, 1.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 (MG/L AS CACO3) (00900)
OCT 21...	1015	4330	830	7.80	13.0	700	9.6	14	240	230	260
NOV 12...	1230	2480	835	8.75	0.5	--	--	27	20	190	280
DEC 12...	0945	2480	985	8.98	0.5	--	13.2	7	36	180	350
JAN 06...	1445	3230	--	8.69	1.5	--	12.9	7	37	120	340
FEB 02...	1500	3690	1060	8.57	6.0	--	13.1	13	K4	59	430
MAR 05...	1330	2600	920	8.68	11.0	705	11.9	16	K11	1500	360
APR 01...	0945	4530	1240	8.52	4.5	699	11.7	31	180	6700	420
29...	1245	2180	930	8.71	21.5	675	11.5	20	K23	58	330
MAY 28...	1440	6550	881	7.84	22.0	693	7.3	60	670	2200	240
JUN 23...	1445	1470	865	8.33	28.5	705	12.4	24	110	K33	300
JUL 16...	1500	265	968	8.14	30.5	696	7.7	8	18	520	340
AUG 17...	1445	1040	870	8.62	26.5	701	8.1	34	180	110	280
SEP 15...	1545	2180	864	8.53	20.0	693	10.2	20	80	280	260

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

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	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 21...	62	69	22	75	2	11	200	21	0.50	27	550
NOV 12...	0	69	25	83	2	--	190	23	--	--	--
DEC 12...	150	87	32	94	2	10	300	35	0.60	24	700
JAN 06...	140	88	30	91	2	11	300	33	0.60	25	710
FEB 02...	0	120	31	87	2	--	320	34	--	--	--
MAR 05...	160	96	30	88	2	10	290	34	0.60	22	690
APR 01...	200	110	36	99	2	11	350	44	0.60	23	800
29...	0	78	34	100	2	--	250	40	--	--	--
MAY 28...	0	52	26	75	2	--	200	35	--	--	--
JUN 23...	160	72	30	84	2	10	220	36	0.60	19	560
JUL 16...	120	90	27	84	2	13	230	36	0.50	26	630
AUG 17...	0	69	25	84	2	--	240	29	--	--	--
SEP 15...	100	62	25	84	2	2.9	240	25	0.60	23	550

PLATTE RIVER BASIN

06768000 PLATTE RIVER NEAR OVERTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)
OCT 21...	0.74	6370	20	--	0.640	<0.020	--	0.38	--	0.100	0.040
NOV 12...	--	--	17	0.430	--	0.040	0.51	0.55	0.98	0.160	--
DEC 12...	0.95	4700	<4	1.30	1.20	0.090	0.36	0.45	1.7	0.060	0.040
JAN 06...	0.96	6160	22	1.90	1.70	0.100	0.70	0.80	2.7	0.140	0.070
FEB 02...	--	--	17	1.90	--	0.120	0.88	1.0	2.9	0.120	--
MAR 05...	0.94	4850	9	1.70	1.70	0.140	0.81	0.95	2.7	0.120	0.060
APR 01...	1.1	9840	129	2.80	2.70	0.120	7.7	7.8	11	0.510	0.190
29...	--	--	49	0.910	--	0.090	1.1	1.2	2.1	0.080	--
MAY 28...	--	--	274	2.10	--	0.090	3.5	3.6	5.7	0.540	--
JUN 23...	0.77	2240	92	0.240	0.330	0.050	0.70	0.75	0.99	0.200	0.040
JUL 16...	0.86	453	10	1.20	1.40	0.020	1.8	1.8	3.0	0.130	0.140
AUG 17...	--	--	43	0.430	--	0.040	0.71	0.75	1.2	0.100	--
SEP 15...	0.75	3260	34	--	0.400	0.090	0.71	0.80	--	0.100	<0.010

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 21...	1015	--	130	--	--	--	5
NOV 12...	1230	10	--	<15	<10	20	--
DEC 12...	0945	--	160	--	--	--	<3
JAN 06...	1445	--	170	--	--	--	10
FEB 02...	1500	13	--	<15	<10	<10	--
MAR 05...	1330	--	160	--	--	--	9
APR 01...	0945	--	180	--	--	--	12
29...	1245	13	--	<15	<10	30	--
MAY 28...	1440	20	--	<15	<10	20	--
JUN 23...	1445	--	160	--	--	--	3
JUL 16...	1500	--	160	--	--	--	5
AUG 17...	1445	10	--	<15	<10	10	--
SEP 15...	1545	--	140	--	--	--	<3

PLATTE RIVER BASIN

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06768000 PLATTE RIVER NEAR OVERTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 21...	--	8	--	--	--	--	3.8
NOV 12...	<20	--	<0.10	<2	<1	<30	6.7
DEC 12...	--	3	--	--	--	--	5.9
JAN 06...	--	4	--	--	--	--	4.1
FEB 02...	<20	--	<0.10	14	<1	<3	5.6
MAR 05...	--	10	--	--	--	--	5.2
APR 01...	--	3	--	--	--	--	5.0
MAY 29...	<20	--	0.10	5	<1	50	6.1
JUN 28...	40	--	<0.10	9	1	40	8.3
JUL 23...	--	2	--	--	--	--	5.0
AUG 16...	--	11	--	--	--	--	4.7
SEP 17...	<20	--	<0.10	8	<1	<30	4.8
SEP 15...	--	2	--	--	--	--	8.6

PLATTE RIVER BASIN

06767998 PLATTE RIVER NEAR OVERTON, NE (NORTH CHANNEL)

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	871	801	852	1050	1020	1080	1120	1020	981	913	916	984
2	862	814	850	1040	1040	900	1140	989	986	868	921	913
3	863	807	861	1030	1030	937	1150	1030	1040	955	910	886
4	808	797	867	1030	1030	941	1170	1000	1010	948	911	---
5	794	806	866	1010	990	927	1050	991	1020	955	967	886
6	804	808	871	1020	1000	913	1050	1010	1030	957	968	887
7	803	823	938	1020	1030	916	1060	1070	1040	892	945	878
8	801	818	872	1020	970	925	1040	1090	988	844	957	918
9	798	840	819	1030	975	952	1030	1090	881	875	900	885
10	801	818	964	993	964	950	1040	1110	884	846	889	897
11	778	831	968	961	978	969	1040	1160	939	906	917	890
12	800	862	926	960	965	964	1030	1100	953	910	925	895
13	803	894	943	950	982	973	973	1090	921	927	958	890
14	800	844	926	946	981	963	971	1070	930	941	945	896
15	818	840	887	959	960	951	905	1060	910	960	964	904
16	804	866	900	1000	964	840	981	1060	1010	887	951	871
17	829	805	904	1050	973	764	963	1020	886	908	950	845
18	833	829	924	1060	977	859	978	995	932	906	967	844
19	821	868	923	1090	969	909	1000	988	953	873	882	913
20	827	891	950	1030	978	943	1010	954	982	918	970	897
21	815	876	975	985	985	939	1010	987	975	899	976	905
22	819	881	972	1000	993	983	1020	990	933	968	956	907
23	818	896	968	987	1000	961	1020	993	905	892	990	882
24	786	869	985	981	996	977	1010	976	926	864	950	904
25	836	867	985	965	998	965	975	964	945	970	899	891
26	821	873	1000	906	932	981	993	945	939	914	902	893
27	820	887	1020	893	932	955	989	1050	917	992	879	897
28	819	864	1030	875	939	1040	958	924	914	886	863	878
29	793	864	1030	896	---	1030	974	982	970	890	935	885
30	810	859	1030	940	---	1100	1010	1000	975	901	965	886
31	789	---	1000	972	---	1230	---	996	---	885	992	---
MEAN	814	847	936	989	984	959	1020	1020	956	911	936	---

06767999 PLATTE RIVER NEAR OVERTON, NE (SOUTH CHANNEL)

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	866	919	1060	1080	1120	1080	1190	1150	1050	981	917	858
2	901	902	1070	1120	1100	900	1190	1130	1050	976	935	---
3	900	901	1080	1110	1110	1060	1200	1140	993	952	904	---
4	902	896	1080	1110	1110	1060	1210	1130	1040	966	889	---
5	900	870	1050	1120	1110	1060	1210	1140	1040	971	922	849
6	935	875	1010	1110	1100	1060	1220	1130	1040	957	946	844
7	914	828	1080	1110	1090	1080	1220	1130	1030	948	912	835
8	947	884	1010	1110	1090	1080	1240	1130	1020	877	949	838
9	987	903	987	1110	1100	1070	1250	1130	985	881	884	843
10	966	904	1080	1110	1120	1080	1240	1140	958	929	887	842
11	974	914	1090	1120	1120	1110	1240	1130	893	940	908	849
12	985	921	1020	1120	1130	1080	1220	1150	952	931	942	849
13	979	904	1010	1100	1110	1080	1220	1140	1000	985	879	846
14	1000	935	1080	1110	1120	1090	1200	1130	1010	937	897	867
15	1000	932	1050	1120	1110	1080	1180	1140	1010	946	885	866
16	1010	946	1000	1020	1120	1040	1160	1140	1000	949	874	873
17	1000	950	1070	1090	1100	1060	1190	1140	989	963	874	882
18	1010	964	1060	1100	1090	1070	1180	1120	995	907	871	882
19	1000	980	1070	1110	1100	1100	1180	1100	1010	917	886	900
20	989	992	1050	1090	1100	1110	1160	1090	1000	939	922	892
21	992	997	1060	1080	1100	1090	1160	1110	998	924	919	882
22	963	1010	1050	1080	1090	1150	1150	1090	993	880	866	877
23	956	1020	1010	1070	1090	1170	1150	1100	1000	929	880	897
24	951	1030	1020	1080	1080	1140	1010	1080	974	875	861	879
25	932	1030	1030	1100	1080	1160	1160	1080	992	930	850	884
26	913	1050	1060	1090	1060	1160	1140	1080	950	967	842	902
27	888	1060	1080	1100	1060	1150	1160	957	954	881	841	855
28	883	1060	1010	1090	1070	1180	1150	1030	959	965	843	885
29	917	1030	1100	1100	---	1090	1140	1050	987	972	881	874
30	904	1070	1110	1090	---	1170	1150	1060	985	961	889	864
31	896	---	1100	1100	---	1220	---	1040	---	930	837	---
MEAN	947	956	1050	1100	1100	1100	1180	1110	995	938	890	---

CAL YR 1986 TOTAL 361870 MEAN 991 MAX 1310 MIN 718

PLATTE RIVER BASIN

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06767998 PLATTE RIVER NEAR OVERTON, NE (NORTH CHANNEL)

WATER TEMPERATURE (DEG. C) , WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	7.0	2.0	2.0	6.0	5.0	10.0	26.0	27.0	28.0	23.0	26.0
2	15.0	11.0	5.0	2.0	7.0	7.0	10.0	23.0	27.0	31.0	34.0	---
3	15.0	12.0	2.0	2.0	5.0	11.0	12.0	17.0	24.0	30.0	25.0	---
4	18.0	11.0	2.0	3.0	3.0	11.0	12.0	15.0	25.0	32.0	21.0	---
5	18.0	11.0	2.0	2.0	4.0	13.0	13.0	15.0	27.0	32.0	30.0	25.0
6	18.0	12.0	3.0	3.0	6.0	15.0	13.0	21.0	27.0	32.0	30.0	27.0
7	19.0	10.0	2.0	2.0	8.0	9.0	15.0	24.0	26.0	30.0	24.0	25.0
8	19.0	9.0	3.0	2.0	6.0	7.0	16.0	26.0	26.0	30.0	22.0	25.0
9	15.0	7.0	2.0	2.0	7.0	5.0	13.0	25.0	26.0	26.0	26.0	24.0
10	16.0	2.0	2.0	2.0	7.0	6.0	13.0	29.0	26.0	32.0	26.0	20.0
11	10.0	2.0	2.0	3.0	4.0	8.0	14.0	27.0	27.0	31.0	20.0	19.0
12	10.0	2.0	2.0	5.0	8.0	12.0	9.0	25.0	31.0	21.0	22.0	21.0
13	10.0	1.0	2.0	6.0	10.0	13.0	7.0	---	32.0	27.0	23.0	21.0
14	12.0	3.0	2.0	4.0	5.0	7.0	8.0	22.0	31.0	29.0	28.0	22.0
15	15.0	4.0	3.0	1.0	4.0	6.0	12.0	28.0	32.0	30.0	26.0	20.0
16	16.0	6.0	3.0	1.0	3.0	4.0	13.0	27.0	28.0	26.0	26.0	21.0
17	16.0	8.0	4.0	1.0	3.0	5.0	21.0	27.0	28.0	24.0	26.0	21.0
18	14.0	6.0	4.0	1.0	6.0	5.0	23.0	24.0	30.0	32.0	27.0	21.0
19	18.0	5.0	3.0	1.0	5.0	11.0	18.0	24.0	29.0	32.0	29.0	21.0
20	16.0	8.0	2.0	1.0	6.0	14.0	13.0	20.0	30.0	32.0	30.0	21.0
21	15.0	9.0	3.0	1.0	7.0	13.0	14.0	20.0	31.0	30.0	30.0	21.0
22	14.0	7.0	3.0	1.0	3.0	10.0	18.0	22.0	33.0	28.0	21.0	21.0
23	14.0	9.0	3.0	1.0	7.0	6.0	18.0	18.0	28.0	30.0	19.0	22.0
24	15.0	3.0	3.0	1.0	4.0	4.0	21.0	15.0	25.0	29.0	16.0	23.0
25	14.0	4.0	2.0	1.0	6.0	3.0	23.0	21.0	29.0	32.0	18.0	23.0
26	15.0	6.0	3.0	1.0	5.0	9.0	24.0	20.0	29.0	30.0	18.0	23.0
27	12.0	2.0	4.0	2.0	5.0	8.0	23.0	17.0	29.0	33.0	21.0	23.0
28	12.0	10.0	4.0	2.0	3.0	2.0	23.0	18.0	24.0	32.0	25.0	21.0
29	15.0	9.0	4.0	4.0	---	2.0	24.0	23.0	24.0	32.0	18.0	20.0
30	15.0	5.0	4.0	4.0	---	2.0	24.0	26.0	27.0	33.0	19.0	20.0
31	13.0	---	1.0	2.0	---	2.0	---	25.0	---	33.0	25.0	---
MEAN	15.0	6.7	2.8	2.1	5.5	7.6	15.9	---	27.9	30.0	24.1	---

06767999 PLATTE RIVER NEAR OVERTON, NE (SOUTH CHANNEL)

WATER TEMPERATURE (DEG. C) , WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	9.0	2.0	3.0	4.0	5.0	6.0	22.0	24.0	28.0	22.0	24.0
2	16.0	9.0	4.0	2.0	5.0	7.0	6.0	20.0	24.0	29.0	33.0	---
3	16.0	11.0	3.0	3.0	4.0	8.0	8.0	18.0	23.0	29.0	23.0	---
4	18.0	11.0	4.0	3.0	3.0	8.0	9.0	16.0	23.0	30.0	17.0	---
5	18.0	12.0	4.0	2.0	4.0	10.0	8.0	16.0	24.0	31.0	28.0	23.0
6	18.0	12.0	3.0	2.0	5.0	11.0	7.0	19.0	25.0	32.0	28.0	24.0
7	18.0	10.0	2.0	2.0	6.0	7.0	9.0	21.0	24.0	29.0	24.0	23.0
8	18.0	9.0	3.0	2.0	4.0	5.0	11.0	21.0	24.0	28.0	22.0	23.0
9	15.0	8.0	2.0	2.0	5.0	5.0	10.0	23.0	24.0	25.0	27.0	23.0
10	16.0	2.0	2.0	2.0	5.0	6.0	10.0	24.0	25.0	31.0	26.0	22.0
11	11.0	6.0	2.0	3.0	3.0	8.0	12.0	24.0	26.0	30.0	19.0	21.0
12	11.0	2.0	2.0	3.0	7.0	10.0	8.0	23.0	28.0	21.0	20.0	22.0
13	12.0	1.0	2.0	4.0	7.0	10.0	7.0	---	28.0	27.0	25.0	20.0
14	12.0	3.0	3.0	3.0	3.0	6.0	8.0	21.0	27.0	28.0	27.0	21.0
15	14.0	5.0	2.0	1.0	3.0	5.0	12.0	25.0	29.0	30.0	25.0	20.0
16	15.0	6.0	2.0	1.0	3.0	4.0	10.0	25.0	26.0	26.0	24.0	20.0
17	15.0	5.0	4.0	1.0	3.0	5.0	14.0	24.0	26.0	23.0	27.0	22.0
18	16.0	5.0	3.0	1.0	5.0	4.0	18.0	23.0	29.0	32.0	25.0	22.0
19	15.0	5.0	3.0	1.0	5.0	9.0	13.0	22.0	28.0	31.0	27.0	21.0
20	14.0	5.0	2.0	1.0	6.0	12.0	12.0	20.0	27.0	32.0	29.0	21.0
21	13.0	6.0	3.0	1.0	6.0	10.0	13.0	20.0	30.0	30.0	32.0	21.0
22	14.0	5.0	3.0	1.0	2.0	8.0	16.0	21.0	30.0	26.0	20.0	21.0
23	14.0	6.0	4.0	1.0	6.0	6.0	16.0	19.0	27.0	28.0	19.0	24.0
24	14.0	4.0	4.0	1.0	4.0	4.0	21.0	16.0	26.0	30.0	17.0	23.0
25	14.0	3.0	2.0	2.0	5.0	3.0	19.0	21.0	28.0	32.0	20.0	23.0
26	14.0	5.0	3.0	4.0	4.0	8.0	18.0	21.0	28.0	29.0	20.0	23.0
27	12.0	3.0	3.0	4.0	4.0	5.0	18.0	18.0	29.0	31.0	23.0	22.0
28	12.0	8.0	3.0	4.0	3.0	2.0	21.0	18.0	24.0	32.0	25.0	21.0
29	14.0	7.0	3.0	4.0	---	2.0	19.0	22.0	24.0	31.0	19.0	19.0
30	14.0	4.0	4.0	4.0	---	2.0	21.0	24.0	27.0	31.0	20.0	19.0
31	13.0	---	2.0	2.0	---	4.0	---	23.0	---	31.0	23.0	---
MEAN	14.7	6.2	2.8	2.3	4.4	6.4	12.7	---	26.2	29.1	23.7	---

PLATTE RIVER BASIN

06770000 PLATTE RIVER NEAR ODESSA, NE

LOCATION.--Lat 40°39'44", long 99°15'03", in NE1/4SW1/4 sec.16, T.8 N., R.17 W., Phelps County, Hydrologic Unit 10200101, on right bank 1,500 ft downstream from county bridge, 2.5 mi south of Odessa and 5 mi downstream from Elm Creek.

DRAINAGE AREA.--58,100 mi², approximately, of which about 53,300 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--March 1937 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 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 site 1,500 ft upstream.

REMARKS.--Estimated daily discharges: Sept. 28-30. 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 1942-87, since storage in Lake McConaughy), 1,575 ft³/s, 1,141,000 acre-ft per year; median of yearly mean discharges, 1,220 ft³/s, 884,000 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,900 ft³/s June 29, 1983, gage height, 5.82 ft, datum then in use; maximum gage height, 5.90 ft June 22, 1983, datum and site then in use; no flow for periods in each year prior to 1947 and in 1953-57, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,370 ft³/s June 2, gage height, 4.62 ft; minimum daily discharge, 239 ft³/s Aug. 5.

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	4150	2970	2860	2830	3120	2580	4500	2930	5190	1990	251	1830
2	4810	3060	2860	2720	3150	2660	4280	2910	4920	1670	251	2080
3	5050	3150	2830	2640	3210	2690	4040	2990	4440	1500	251	2170
4	5100	2860	2920	2690	3150	2640	3750	2840	4220	992	245	2000
5	4930	2770	2920	2690	3210	2690	3980	2970	3830	942	239	2040
6	4730	2720	2920	2690	3210	2720	3620	3180	3480	823	245	2150
7	4530	2510	2890	2690	3240	2770	3480	3410	3080	1000	251	2270
8	4340	2160	2860	2720	3180	2750	3240	3460	2900	2450	271	2290
9	4260	2510	2430	2770	2970	2580	3150	3270	3650	2880	436	2230
10	4340	2560	2350	2770	2890	2450	3080	3220	4500	2800	629	2170
11	4810	2640	2530	2830	2830	2400	2990	3220	4670	2240	652	2190
12	4530	2720	2510	3030	2830	2450	2950	2990	4330	1710	496	2100
13	4380	2580	2770	3030	2830	2430	3150	2930	3960	1560	578	2060
14	4340	2660	2940	2910	2770	2430	3340	2910	3750	1500	649	1990
15	4150	2510	3030	2800	2720	2480	3360	2970	3480	1380	680	1840
16	4080	2640	2940	2610	2720	2690	3360	2800	3530	870	670	1720
17	3970	2610	2690	2640	2640	3630	3380	2820	4040	734	664	1680
18	3660	2690	2640	2660	2640	3870	3360	2930	4200	789	732	1780
19	3690	2750	2660	3090	2640	3690	3340	2800	3750	930	609	2060
20	3630	3180	2640	3150	2750	3560	3200	2840	3500	882	436	1880
21	3560	3090	2640	3270	2750	3500	3130	2860	3410	1000	395	1830
22	3430	2720	2690	2890	2610	3560	3060	2800	2760	1080	387	1830
23	3370	2770	2750	2580	2580	3900	2930	2950	2240	411	387	1910
24	3300	2450	2690	2380	2480	3760	2820	2930	1800	379	403	1710
25	3240	2690	2750	2560	2090	3590	2710	2970	1180	348	860	1720
26	3210	2770	2660	2560	2160	3460	3110	3240	882	341	1440	1500
27	3060	2770	2610	2330	2430	3650	3040	4040	846	319	1950	1710
28	2660	2750	2640	2720	2560	3800	2970	4440	1040	312	2080	1800
29	2720	2750	2580	2970	---	3580	3040	5010	1500	312	1930	1900
30	3000	2800	2660	3060	---	3880	2950	5250	1930	298	1760	2000
31	2940	---	2800	3090	---	4250	---	5220	---	271	1680	---
TOTAL	121970	81810	84660	86370	78360	97090	99310	102100	97008	34713	22507	58440
MEAN	3935	2727	2731	2786	2799	3132	3310	3294	3234	1120	726	1948
MAX	5100	3180	3030	3270	3240	4250	4500	5250	5190	2880	2080	2290
MIN	2660	2160	2350	2330	2090	2400	2710	2800	846	271	239	1500
AC-FT	241900	162300	167900	171300	155400	192600	197000	202500	192400	68850	44640	115900

CAL YR 1986 TOTAL 1095580 MEAN 3002 MAX 6470 MIN 534 AC-FT 2173000
WTR YR 1987 TOTAL 964338 MEAN 2642 MAX 5250 MIN 239 AC-FT 1913000

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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.

PERIOD OF RECORD.--January 1982 to current year.

REMARKS.--Estimated daily discharges: Jan. 5, 6. 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft³/s June 29, 1983, gage height, 7.42 ft; minimum daily discharge, 61 ft³/s July 25, Sept. 11, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,960 ft³/s June 1, gage height, 4.95 ft, minimum daily, 311 ft³/s Aug. 4.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4000	3240	2740	2830	2900	2350	5070	2620	6670	1720	362	1290
2	4540	3340	2570	2890	2900	2480	5060	2680	6320	1570	343	1630
3	4910	3340	2440	2920	2940	2510	4800	3060	5420	1430	322	1850
4	5040	3030	2630	2900	2990	2460	4500	2690	4990	886	311	1830
5	4780	2860	2610	2900	3030	2460	4040	2890	4490	804	317	1800
6	4490	2780	2720	2900	2920	2400	3880	3180	4070	720	344	2000
7	4260	2670	2710	2790	2890	2450	3580	3570	3830	862	395	2170
8	4160	1830	2500	2870	2750	2510	3160	3550	3550	2230	429	2130
9	4110	2420	2100	2930	2650	2480	2900	3430	4660	3210	516	2100
10	4220	2490	1970	2760	2730	2350	2760	3330	5930	3020	715	1960
11	4730	2590	2360	2820	2670	2290	2420	3400	6030	2350	806	1950
12	4600	2790	2410	2960	2600	2420	2420	2950	5120	1790	697	2010
13	4290	2520	2690	2870	2540	2560	2820	3000	4310	1680	692	2090
14	4100	2690	3110	3020	2550	2650	3250	2890	3820	1660	747	1980
15	3900	2530	3140	2840	2630	2610	3160	2880	3410	1550	789	1780
16	3790	2640	2970	2600	2630	2890	3310	2660	3290	1130	792	1410
17	3670	2600	2610	2570	2620	4730	3190	2610	4100	888	801	1380
18	3480	2650	2400	2350	2560	4860	3220	2840	4400	965	812	1610
19	3530	2850	2330	2710	2420	4310	3130	2680	3850	1040	767	1850
20	3510	3380	2370	2730	2360	4020	3020	2650	3440	1020	669	1860
21	3430	3380	2570	2870	2420	3760	2960	2670	3490	1070	551	1740
22	3500	2810	2730	2420	2370	3710	2820	2370	2640	1150	492	1710
23	3440	2830	2830	2130	2340	4410	2730	2420	2070	851	475	1820
24	3390	2380	2750	1700	2330	4070	2630	2270	1630	726	484	1360
25	3400	2670	2800	2200	2040	3780	2000	2200	1240	656	594	1370
26	3370	2720	2760	2300	1940	3480	2600	2680	761	595	939	1190
27	3270	2850	2740	2110	2220	3690	2520	3470	622	543	1490	1470
28	2890	3000	2730	2550	2440	3990	2570	4280	683	507	1850	1620
29	2710	3030	2780	2760	---	3500	2630	5140	1360	471	1720	1860
30	3090	2910	2920	2840	---	3570	2500	6200	1670	429	1440	1950
31	3030	---	2880	2840	---	4100	---	6560	---	397	1330	---
TOTAL	119630	83820	81870	82880	72380	99850	95650	99820	107866	37920	22991	52770
MEAN	3859	2794	2641	2674	2585	3221	3188	3220	3596	1223	742	1759
MAX	5040	3380	3140	3020	3030	4860	5070	6560	6670	3210	1850	2170
MIN	2710	1830	1970	1700	1940	2290	2000	2200	622	397	311	1190
AC-FT	237300	166300	162400	164400	143600	198100	189700	198000	214000	75210	45600	104700
CAL YR 1986	TOTAL		1083650	MEAN	2969	MAX	6360	MIN	502	AC-FT 2149000		
WTR YR 1987	TOTAL		957447	MEAN	2623	MAX	6670	MIN	311	AC-FT 1899000		

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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.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 956: 1935. WSP 1390: 1942. WDR NE-76-1: Drainage area.

REMARKS.--Estimated daily discharges: Jan. 17 to Jan. 24. 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.

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, 7,970 ft³/s Apr. 1, gage height, 3.96 ft; minimum daily, 181 ft³/s Aug. 5.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2840	3240	2840	2930	3820	2530	6630	2620	5980	1890	182	1350
2	3490	3320	2740	2830	3650	2460	5810	2540	6120	1970	190	1250
3	3940	3470	2740	2730	3200	2500	5910	3400	5660	1820	190	1540
4	4370	3600	2680	2650	3100	2650	5670	3780	5120	1610	200	1730
5	4340	3410	2680	2600	3050	2620	5300	3950	4920	1190	181	1740
6	4110	3150	2820	2570	3060	2620	4660	3890	4490	991	216	1620
7	4020	3050	3030	2580	3010	2560	4170	3680	3900	961	273	1770
8	3880	2860	3040	2640	2980	2510	3860	3610	3550	1160	465	1810
9	3870	2170	2690	2640	2800	2550	3470	3430	4250	2090	456	1830
10	3750	2780	1970	2520	2680	2410	3270	3240	5060	3250	469	1810
11	4700	2590	1770	2370	2670	2220	3050	3130	5980	3190	748	1710
12	4950	2590	2360	2410	2630	2050	2890	3190	5910	2580	1050	1790
13	4540	2710	2500	2560	2550	2140	3430	3020	5120	2000	992	1780
14	4330	2480	2560	2640	2400	2150	4020	3180	4470	1730	897	1910
15	4240	2990	3110	2470	2330	2150	4070	3080	3990	1680	930	1960
16	4140	3030	2860	1950	2370	2280	3710	3030	3600	1590	858	2060
17	4010	2750	2800	1630	2340	4750	3540	2850	3740	1240	787	1630
18	3720	2650	2470	1500	2280	6560	3490	3110	4360	1240	789	1500
19	3390	2590	2360	1700	2230	5930	3340	3110	4620	1110	789	1550
20	3350	2660	2380	2100	2130	5070	3120	2990	4220	1080	764	1670
21	3470	2930	2290	2300	2110	4650	3000	2980	3770	1090	676	1640
22	3730	2980	2460	2250	2240	4410	2900	2940	3710	1070	515	1570
23	3980	2690	2420	2200	2350	6270	2900	2720	3010	1170	431	1580
24	3850	2670	2410	2100	2350	6490	2820	2890	2520	843	462	1600
25	3650	2520	2410	1730	2430	5460	2740	2930	2190	578	754	1440
26	3580	2500	2480	1580	2350	4900	2280	2830	1770	508	759	1320
27	3580	2620	2480	2730	2260	4660	2850	2970	1270	421	1050	1190
28	3490	2700	2450	3520	2530	4860	2850	3400	1000	329	1440	1310
29	3130	2770	2510	3600	---	2760	2830	4180	1050	255	1790	1390
30	3010	2710	2640	4260	---	3000	2800	5070	1570	211	1700	1620
31	3360	---	2840	3840	---	5280	---	5670	---	187	1460	---
TOTAL	118810	85180	79790	78130	73900	113450	111380	103410	116920	41034	22463	48670
MEAN	3833	2839	2574	2520	2639	3660	3713	3336	3897	1324	725	1622
MAX	4950	3600	3110	4260	3820	6560	6630	5670	6120	3250	1790	2060
MIN	2840	217										

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 1986 TO SEPTEMBER 1987

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 08...	0955	3910	841	8.20	16.0	9.5	25	150	94
NOV 19...	1130	2600	913	8.16	0.5	13.0	22	K8	110
DEC 12...	1020	2320	1060	8.26	0.5	12.8	5	K7	44
JAN 22...	0950	2240	1160	8.47	0.5	12.6	15	K26	66
FEB 10...	1140	2720	1040	8.30	3.0	12.2	16	K18	220
MAR 26...	1105	4920	993	8.13	3.5	12.6	25	240	6000
APR 15...	0850	4250	1040	8.49	7.5	11.4	12	230	1800
MAY 27...	0950	3120	1000	8.25	18.5	9.0	41	180	270
JUN 17...	0940	3710	877	8.18	25.0	8.6	47	250	270
JUL 07...	0840	986	852	8.06	22.0	8.5	30	350	580
AUG 18...	0920	742	935	8.48	22.0	9.8	39	190	210
SEP 09...	0820	1840	810	8.03	18.0	9.2	37	260	1400

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 08...	280	0	73	24	84	2	230	26
NOV 19...	290	0	72	26	84	2	170	26
DEC 12...	350	0	88	31	100	3	290	32
JAN 22...	400	0	96	40	92	2	280	35
FEB 10...	360	0	92	31	86	2	340	34
MAR 26...	340	0	90	29	88	2	250	32
APR 15...	340	0	87	30	100	2	250	31
MAY 27...	340	0	88	30	94	2	210	38
JUN 17...	260	0	57	28	90	3	260	36
JUL 07...	240	0	48	28	90	3	250	34
AUG 18...	280	0	70	26	98	3	290	34
SEP 09...	230	0	55	23	86	3	220	27

PLATTE RIVER BASIN

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06770500 PLATTE RIVER NEAR GRAND ISLAND, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 08...	58	0.450	<0.020	--	0.23	0.68	0.080	12
NOV 19...	26	0.930	0.070	0.38	0.45	1.4	0.190	4.4
DEC 12...	10	1.40	0.110	0.48	0.59	2.0	0.110	5.5
JAN 22...	10	1.20	0.160	0.69	0.85	2.1	0.080	5.1
FEB 10...	30	1.90	0.190	2.1	2.3	4.2	0.170	4.2
MAR 26...	43	1.70	0.090	2.1	2.2	3.9	0.190	4.4
APR 15...	42	1.60	0.120	0.61	0.73	2.3	0.160	4.6
MAY 27...	116	1.40	0.070	1.4	1.5	2.9	0.310	4.1
JUN 17...	189	0.020	0.060	2.3	2.4	2.4	0.330	8.3
JUL 07...	73	0.020	0.050	1.5	1.6	1.6	0.160	7.6
AUG 18...	93	0.170	0.090	1.9	2.0	2.2	0.270	7.9
SEP 09...	191	0.020	0.040	1.6	1.6	1.6	0.330	5.4

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: Jan. 1-23 and Mar. 26-29. Records good except for periods of estimated record, which are fair. Numerous small pump diversions for irrigation above station.

AVERAGE DISCHARGE.--34 years, 10.7 ft³/s, 7,750 acre-ft/yr; median of yearly mean discharges, 8.1 ft³/s, 5,900 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)
June 13	0300	*369	*8.64	No other peak greater than base discharge.			
No flow for many days.							

DISCHARGE, 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	.00	.00	.00	.26	3.7	3.5	22	2.7	7.2	17	23	3.3
2	.00	.00	.00	.25	3.6	3.6	17	2.6	110	16	23	1.6
3	.00	.00	.00	.25	3.8	2.3	11	7.7	112	17	25	.94
4	.00	.00	.00	.24	2.6	1.2	3.7	9.3	31	17	23	.50
5	.00	.00	.00	.24	1.2	.84	3.6	146	16	21	22	.20
6	.00	.00	.00	.24	1.4	.57	3.1	147	11	20	21	.13
7	.00	.00	.00	.24	1.7	.49	5.7	54	8.9	20	21	.00
8	.00	.00	.00	.24	1.9	.99	41	30	8.0	19	20	.00
9	.00	.00	.00	.24	1.6	.86	79	20	11	22	23	.00
10	.00	.00	.00	.25	2.2	.67	83	14	22	24	17	.00
11	.00	.00	.00	.26	1.4	.25	52	11	28	54	14	.00
12	3.6	.00	.00	.27	1.5	.07	37	8.5	252	78	11	.00
13	6.0	.00	.00	.35	1.3	.05	39	6.7	256	33	11	.00
14	7.0	.00	.00	1.0	.50	.04	40	6.3	69	25	13	.00
15	27	.00	.00	.30	.24	.05	33	6.3	32	22	13	.00
16	29	.00	.00	.00	.27	.45	30	5.7	20	21	21	.00
17	18	.00	.00	.00	.12	9.9	35	6.7	15	21	21	.00
18	11	.00	.00	.00	.22	83	30	15	16	29	17	1.9
19	5.8	.00	.00	.00	.08	86	20	12	13	33	16	6.1
20	1.9	.00	.00	.00	.82	82	14	10	23	27	15	3.0
21	.75	.00	.00	.00	.46	67	11	39	42	20	13	.49
22	.39	.00	.04	.00	.66	43	8.8	46	50	20	11	.13
23	16	.00	.40	.00	.48	44	7.4	56	134	16	10	.03
24	24	.00	.65	.09	.20	45	5.9	75	61	15	8.2	.00
25	11	.00	.43	2.4	.08	35	4.7	33	37	19	9.8	.00
26	3.7	.00	.20	4.1	.11	35	4.0	17	29	23	9.4	.00
27	.41	.00	.26	2.4	.88	30	3.5	11	23	30	8.3	.00
28	.05	.00	.33	4.8	2.6	30	3.0	7.5	19	27	8.7	.00
29	.0	.00	.34	7.9	---	25	3.2	7.3	19	23	14	.00
30	.00	.00	.24	5.6	---	22	3.0	6.0	18	22	14	.00
31	.00	---	.43	5.0	---	21	---	5.4	---	21	7.0	---
TOTAL	165.60	0.00	3.32	36.92	35.62	673.83	653.6	824.7	1493.1	772	483.4	18.32
MEAN	5.34	.00	.11	1.19	1.27	21.7	21.8	26.6	49.8	24.9	15.6	.61
MAX	29	.00	.65	7.9	3.8	86	83	147	256	78	25	6.1
MIN	.00	.00	.00	.00	.08	.04	3.0	2.6	7.2	15	7.0	.00
AC-FT	328	.0	6.6	73	71	1340	1300	1640	2960	1530	959	36
CAL YR 1986	TOTAL 1220.89	MEAN 3.34	MAX 85	MIN .00	AC-FT 2420							
WTR YR 1987	TOTAL 5160.41	MEAN 14.1	MAX 256	MIN .00	AC-FT 10240							

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: Nov. 9-19, Jan. 16 to Feb. 1. 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.--46 years (water years 1942-87, since storage in Lake McConaughy), 1,791 ft³/s, 1,298,000 acre-ft/yr; median of yearly mean discharges, 1,370 ft³/s, 993,000 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, 15,800 ft³/s Mar. 24, gage height, 6.78 ft, minimum daily, 108 ft³/s Aug. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2700	2890	820	2700	3100	5350	3370	6150	2690	3400	1540	2160
2	2680	2880	840	2800	3100	4270	3350	5870	2620	3200	2040	2400
3	2640	2800	880	2700	3200	3360	3690	5560	2500	3000	2260	2560
4	2600	2680	940	2600	3400	3330	3850	5330	2390	2700	2180	2710
5	2710	2480	1000	2400	3100	3160	3430	4710	2260	2400	2330	3010
6	2520	2530	1100	2100	3000	3030	3270	4850	2030	2300	2310	3570
7	2450	2510	1100	1900	2800	2890	3170	4890	1680	2200	2920	4230
8	2490	2330	1150	1900	2600	2870	3590	4790	1420	2100	3230	4230
9	2530	2210	1200	2000	2400	2840	4310	4960	1290	2000	3100	3850
10	2580	2060	1200	2200	2000	2850	4330	4660	1260	2100	3060	3640
11	2740	2040	1150	2200	1700	3010	4270	5330	1230	2200	2960	3720
12	2930	2270	1150	2300	1600	3840	4180	5270	1230	2400	3090	3970
13	2930	2360	1100	2400	1500	3870	4140	4550	1240	2500	3030	4110
14	2930	2350	1100	2500	1400	3780	4480	3930	1350	2500	2980	4250
15	2960	2350	1100	2600	1400	3420	5850	3290	1440	2400	2960	4380
16	2960	2640	1150	2600	1500	3300	4590	3410	1770	2200	2920	5190
17	2930	2980	1300	2800	1800	3440	4600	3580	2810	2160	2740	5690
18	3520	2500	1400	3000	2100	4140	5350	3110	3900	2030	2600	5420
19	3660	1900	1500	3200	2500	4740	4920	2820	4800	1530	2910	6430
20	3490	1500	1700	3400	2700	4710	4820	2820	5580	1320	2620	5900
21	3340	1200	1900	3200	2800	4420	4610	2830	6000	1180	2550	5260
22	3310	1000	2000	3300	3000	4240	4620	2680	5640	1030	2430	5060
23	3530	980	2100	3300	3500	4070	4590	2590	5310	866	2320	5140
24	3650	880	2000	3400	4500	3990	4680	2580	5010	684	2190	5270
25	3810	800	1900	3500	6000	3840	4930	2470	4600	631	2040	4670
26	3760	780	2000	3500	8100	3670	5060	2370	4300	552	1940	4230
27	3630	780	2100	3400	9380	3630	6560	2360	4000	506	2060	3820
28	3620	800	2300	3000	6110	3660	6870	2470	3800	473	2150	3730
29	3270	800	2500	2800	---	3660	6360	2680	3700	480	2270	3650
30	2970	800	2700	2900	---	3600	6210	2740	3600	884	2180	3740
31	2910	---	2700	3000	---	3460	---	2630	---	1330	2140	---
TOTAL	94750	57080	47080	85600	90290	114440	138050	118280	91450	55256	78050	125990
MEAN	3056	1903	1519	2761	3225	3692	4602	3815	3048	1782	2518	4200
MAX	3810	2980	2700	3500	9380	5350	6870	6150	6000	3400	3230	6430
MIN	2450	780	820	1900	1400	2840	3170	2360	1230	473	1540	2160
AC-FT	187900	113200	93380	169800	179100	227000	273800	234600	181400	109600	154800	249900
CAL YR 1985	TOTAL	963801		MEAN	2641	MAX	10000	MIN	290	AC-FT 1912000		
WTR YR 1986	TOTAL	1096316		MEAN	3004	MAX	9380	MIN	473	AC-FT 2175000		

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 1986 TO SEPTEMBER 1987

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 (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)
NOV 06...	1040	4930	872	8.47	7.0	727	14	11.3	K9	K4	290
JAN 07...	1000	3010	983	8.26	0.0	733	11	14.2	K42	100	360
MAR 04...	0915	3170	1000	8.46	5.0	730	14	11.1	K5	84	330
MAY 13...	0840	3840	923	8.87	19.5	718	28	12.7	K110	190	260
JUL 01...	0910	1240	897	8.68	23.5	733	8.5	10.6	--	--	250
SEP 23...	0915	1920	924	8.29	19.0	740	34	10.5	K43	170	220

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

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
NOV 06...	74	76	23	77	2	10	211	220	25	0.60	24
JAN 07...	150	95	30	93	2	12	214	300	39	0.60	24
MAR 04...	120	89	27	81	2	10	218	260	38	0.60	23
MAY 13...	150	54	29	95	3	12	106	320	48	0.50	--
JUL 01...	120	56	27	83	2	14	135	270	37	0.60	16
SEP 23...	76	51	23	79	2	14	146	210	22	0.50	17

DATE	SOLIDS, RESIDUE AT 180 DEG C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV 06...	587	580	0.80	7810	1.10	--	--	0.60	0.100	0.050	0.060
JAN 07...	736	720	1.0	5980	2.00	0.090	0.81	0.90	0.160	0.110	0.090
MAR 04...	676	660	0.92	5790	2.40	0.070	1.0	1.1	0.770	0.120	0.110
MAY 13...	645	--	--	--	<0.100	0.050	2.8	2.8	0.280	0.010	<0.010
JUL 01...	600	590	0.82	2010	<0.100	0.050	1.7	1.7	0.280	0.020	<0.010
SEP 23...	560	500	0.76	2900	<0.100	0.020	2.2	2.2	0.060	0.010	<0.010

PLATTE RIVER BASIN

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06774000 PLATTE RIVER NEAR DUNCAN, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
NOV 06...	1040	10	5	77	<0.5	--	2	<1	<3	4	8
MAR 04...	0915	20	4	91	<0.5	--	<1	<1	<3	5	4
MAY 13...	0840	20	3	83	<0.5	170	<1	<1	<3	4	7
JUL 01...	0910	20	3	69	--	--	<1	<1	<3	3	14

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)
NOV 06...	<5	35	1	0.1	<10	3	2	<1	700	<6	20
MAR 04...	<5	38	2	<0.1	<10	5	2	<1	800	<6	16
MAY 13...	9	38	4	<0.1	<10	<1	2	<1	700	<6	4
JUL 01...	<5	35	<1	<0.1	<10	5	1	1	670	7	34

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. 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)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)
NOV 06...	1040	4930	7.0	197	2620	50	66	94	100	--	--
JAN 07...	1000	3010	0.0	235	1910	27	46	80	99	100	--
MAR 04...	0915	3170	5.0	402	3440	3	3	33	60	95	--
MAY 13...	0840	3840	19.5	377	3910	--	--	--	--	--	53
JUL 01...	0910	1240	23.5	140	469	--	--	--	--	--	64
SEP 23...	0915	1920	19.0	198	1030	--	--	--	--	--	81

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, 30.0°C Aug. 2; minimum, 0.5°C on many days during winter period.

WATER TEMPERATURE (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	18.5	14.0	9.0	7.0	4.0	2.5	3.5	.5	6.5	2.5	6.0	.5
2	16.0	14.0	11.0	7.0	5.0	2.5	1.5	.5	6.5	5.0	8.5	2.5
3	14.0	11.5	10.0	7.0	3.5	1.5	3.5	.5	5.5	3.5	10.0	4.5
4	15.0	11.0	11.0	7.0	2.0	1.0	4.0	1.0	4.5	3.5	11.0	6.0
5	14.5	11.5	12.0	7.5	4.0	1.0	4.5	2.5	6.5	3.5	12.5	4.5
6	16.5	10.5	10.5	8.5	3.5	1.5	4.5	2.0	6.5	2.0	13.5	7.5
7	17.5	12.0	8.5	5.0	2.5	1.5	4.5	2.0	8.5	4.0	14.0	9.0
8	17.0	12.5	5.5	2.5	2.5	2.0	3.5	2.0	7.0	4.0	12.0	3.5
9	14.0	11.5	4.5	2.0	2.0	.5	3.5	1.0	6.5	2.0	4.0	1.0
10	15.0	11.0	4.0	2.0	.5	.5	1.0	.5	7.5	3.5	6.0	1.5
11	12.5	5.5	2.0	2.0	1.0	.5	5.0	.5	6.5	4.5	8.5	2.5
12	7.5	4.5	2.0	2.0	1.5	1.0	6.5	2.5	9.0	4.5	10.5	4.5
13	8.5	4.0	2.0	2.0	2.0	1.0	7.0	4.0	9.5	5.5	12.5	6.0
14	10.5	5.5	2.0	2.0	4.0	1.0	5.5	3.5	7.5	4.5	11.0	5.5
15	12.0	7.0	3.5	2.0	4.5	2.0	2.5	.5	4.5	2.5	5.5	5.0
16	14.5	9.0	6.5	3.5	5.0	2.5	.5	.5	4.5	4.0	5.0	2.0
17	14.5	10.0	7.5	6.0	4.5	2.0	.5	.5	5.0	2.5	2.0	1.5
18	15.5	11.0	7.0	4.0	3.5	5.0	.5	.5	6.5	2.5	5.5	1.5
19	16.5	12.0	5.0	2.0	3.5	.5	1.5	.5	6.5	3.5	10.5	4.0
20	16.0	13.5	7.0	3.5	3.5	.5	.5	.5	7.0	4.0	11.5	6.5
21	15.0	13.5	9.0	5.0	3.5	.5	1.0	.5	6.5	3.5	8.5	5.0
22	13.5	12.5	8.5	6.0	4.5	1.0	.5	.5	6.5	1.5	7.0	5.5
23	12.5	12.0	7.0	5.0	4.5	1.0	.5	.5	6.0	2.0	5.5	2.0
24	14.0	12.0	7.5	4.0	4.0	1.5	.5	.5	5.5	4.5	1.5	.5
25	14.5	11.0	7.0	5.0	4.5	1.0	2.5	.5	4.5	4.0	1.0	.5
26	14.5	11.0	5.5	2.5	4.0	1.0	4.5	1.0	4.5	4.5	7.5	.5
27	14.5	10.5	6.5	3.5	3.5	1.0	6.0	2.5	4.5	1.5	6.5	1.5
28	14.0	11.0	7.0	5.0	5.0	2.0	5.0	2.0	3.5	1.0	1.5	.5
29	13.5	10.0	7.5	6.0	4.0	1.0	5.5	3.5	---	---	.5	.5
30	13.5	10.0	6.5	4.0	4.0	1.0	5.5	1.5	---	---	5.5	.5
31	12.5	9.0	---	---	3.5	1.5	6.0	2.5	---	---	11.0	3.5
MONTH	18.5	4.0	12.0	2.0	5.0	.5	7.0	.5	9.5	1.0	14.0	.5

PLATTE RIVER BASIN

06775500 MIDDLE LOUP RIVER AT DUNNING, NE--Continued

WATER TEMPERATURE (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	9.0	5.5	22.0	14.5	23.5	17.5	25.0	17.0	29.5	21.5	22.5	16.0
2	9.0	3.5	20.0	16.0	20.5	16.0	25.5	19.0	30.0	22.0	21.5	16.0
3	11.5	4.5	16.5	14.5	20.5	14.5	25.0	19.0	25.5	20.5	22.5	16.5
4	11.5	5.5	14.5	12.0	22.5	15.0	26.0	19.0	25.0	18.5	21.0	17.5
5	13.5	6.5	12.0	11.0	24.0	16.5	27.0	19.5	25.5	18.5	21.5	16.5
6	12.5	7.0	19.0	12.0	24.0	17.0	27.5	20.5	26.0	20.0	22.0	16.0
7	15.5	8.5	20.5	13.5	26.0	17.5	25.5	19.0	24.0	20.0	20.0	16.0
8	15.5	9.5	21.0	14.5	24.0	19.5	24.5	20.0	22.5	20.0	19.5	13.5
9	12.5	9.5	22.0	14.5	19.5	16.0	27.0	20.0	25.5	17.0	21.5	15.0
10	11.0	7.5	24.5	16.5	24.0	16.0	28.5	21.0	24.0	17.5	20.5	16.0
11	13.5	6.5	22.0	17.0	26.0	17.5	26.5	21.0	26.0	18.5	16.5	14.5
12	11.0	7.5	21.0	15.0	29.0	20.0	22.5	16.0	21.5	17.5	19.0	11.5
13	7.5	6.5	24.0	16.5	29.0	20.5	21.5	13.5	20.5	17.0	19.0	13.5
14	12.5	5.5	23.5	17.5	28.5	21.0	24.0	16.0	22.5	18.5	20.5	16.0
15	16.0	7.5	24.0	17.0	27.5	21.0	26.5	18.5	27.0	20.0	19.5	15.0
16	17.0	11.0	24.0	16.5	27.0	21.0	26.0	19.5	24.0	19.5	17.0	15.0
17	20.5	12.5	24.0	17.5	28.5	19.5	22.5	19.5	24.5	18.5	16.5	13.5
18	20.5	14.5	21.5	16.0	27.5	21.5	26.5	19.5	24.0	17.0	16.5	12.5
19	20.0	15.5	22.5	17.0	26.0	19.0	28.5	20.5	21.5	17.0	16.0	12.0
20	16.5	10.5	20.0	17.0	27.5	20.0	29.0	21.5	23.5	18.5	16.0	12.0
21	14.0	9.0	17.0	11.5	27.0	20.0	27.5	21.5	24.0	20.5	16.5	15.0
22	16.5	6.0	18.5	12.0	27.5	20.5	26.5	20.0	21.5	16.5	17.0	12.0
23	20.0	11.0	16.5	14.5	25.5	18.5	26.0	21.0	19.5	15.5	19.0	13.5
24	19.0	13.5	15.5	13.5	22.5	19.0	27.5	21.5	16.5	14.5	19.0	13.5
25	20.0	13.5	17.0	14.0	23.5	17.0	26.5	16.5	16.0	14.5	19.0	14.0
26	21.5	14.5	18.5	14.5	25.0	17.0	27.0	21.0	17.0	15.0	19.5	15.0
27	20.0	14.0	21.0	15.0	25.5	17.5	27.5	21.0	17.0	14.5	17.5	15.0
28	21.0	13.5	24.0	16.0	24.0	19.0	28.5	21.0	20.0	14.0	16.0	12.5
29	21.0	15.0	21.0	17.0	22.0	19.0	28.5	21.5	21.5	15.5	16.0	11.5
30	19.5	14.0	22.0	15.0	24.0	16.5	28.5	21.5	20.5	16.0	16.5	11.0
31	---	---	23.5	16.5	---	---	29.0	21.5	21.5	14.5	---	---
MONTH	21.5	3.5	24.5	11.0	29.0	14.5	29.0	13.5	30.0	14.0	22.5	11.0

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DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	220	228	206	228	222	224	217	231	225	184	189	179
2	221	225	197	219	221	218	204	239	210	190	188	176
3	219	228	194	221	215	225	210	279	205	193	190	177
4	220	213	202	230	219	229	215	316	200	222	187	178
5	205	215	201	238	212	229	214	274	205	203	182	182
6	210	220	212	233	206	240	214	272	200	198	197	179
7	213	212	212	227	230	252	217	271	200	238	195	181
8	209	198	211	230	226	239	214	251	205	213	204	178
9	205	186	221	230	207	208	218	245	210	208	202	195
10	201	158	212	228	229	203	214	244	240	199	202	187
11	218	153	194	223	232	212	210	244	230	197	204	183
12	204	150	209	226	226	214	229	237	220	198	217	176
13	198	153	206	232	225	220	224	242	210	188	209	189
14	197	156	215	230	230	220	193	238	210	187	194	195
15	210	186	227	223	215	207	231	234	205	184	201	258
16	203	184	222	206	211	205	245	230	200	183	198	241
17	212	215	219	204	226	212	234	229	205	189	195	209
18	213	212	224	210	218	190	232	231	210	217	190	198
19	223	191	204	211	220	215	233	220	225	196	178	198
20	223	192	195	222	217	232	227	226	215	195	186	192
21	224	199	186	223	210	229	219	239	210	195	186	187
22	245	193	214	216	206	237	215	221	205	192	182	193
23	255	180	215	203	220	212	218	217	196	194	172	197
24	247	195	227	204	223	199	223	219	230	196	181	194
25	251	213	232	214	228	189	226	235	202	196	185	195
26	246	203	238	224	225	186	227	231	187	190	179	198
27	229	187	227	211	234	210	233	227	190	190	183	197
28	233	207	230	202	201	184	228	226	199	188	178	193
29	235	220	215	222	---	159	233	222	194	187	179	181
30	234	221	223	219	---	179	231	225	185	189	176	191
31	232	---	235	212	---	200	---	225	---	193	179	---
TOTAL	6855	5893	6625	6821	6154	6578	6648	7440	6228	6092	5888	5777
MEAN	221	196	214	220	220	212	222	240	208	197	190	193
MAX	255	228	238	238	234	252	245	316	240	238	217	258
MIN	197	150	186	202	201	159	193	217	185	183	172	176
AC-FT	13600	11690	13140	13530	12210	13050	13190	14760	12350	12080	11680	11460
CAL YR 1986	TOTAL 77373	MEAN 212	MAX 298	MIN 149	AC-FT 153500							
WTR YR 1987	TOTAL 76999	MEAN 211	MAX 316									

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 1986 TO SEPTEMBER 1987

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 (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)
NOV 05...	1045	215	171	7.78	10.0	681	9.2	9.2	83	71	70
FEB 24...	1420	214	179	7.58	7.5	682	6.6	11.3	K24	90	69
MAY 20...	0940	227	182	7.64	18.5	677	23	7.8	340	640	72
AUG 11...	0940	200	184	7.47	17.5	679	5.9	8.4	140	640	70

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

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
NOV 05...	0	22	3.5	6.8	0.4	5.0	79	7.6	1.0	0.30	56
FEB 24...	0	22	3.4	6.7	0.4	5.0	78	7.2	0.60	0.30	55
MAY 20...	0	23	3.6	6.9	0.4	4.7	78	9.0	1.0	0.30	57
AUG 11...	0	22	3.5	7.1	0.4	4.9	--	8.3	0.80	0.40	58

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- PHORUS, DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
NOV 05...	153	150	0.21	89	0.500	<0.010	0.79	0.80	0.190	0.130	0.110
FEB 24...	152	150	0.21	88	0.540	<0.010	0.79	0.80	0.160	0.150	0.130
MAY 20...	153	150	0.21	94	0.410	0.030	0.97	1.0	0.220	0.130	0.130
AUG 11...	148	160	0.20	80	0.330	0.010	0.49	0.50	0.180	0.120	0.110

PLATTE RIVER BASIN

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06776500 DISMAL RIVER AT DUNNING, NE

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.

DRAINAGE AREA.--2,040 mi², approximately, of which about 45 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--March to June 1932, September 1945 to current year.

REVISED RECORDS.--WSP 2118: Drainage area.

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.

REMARKS.--Estimated daily discharges: Dec. 6-9 and Jan. 23-26. Records good.

AVERAGE DISCHARGE.--42 years (1945-87), 325 ft³/s, 235,500 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, 841 ft³/s Sept. 15, gage height, 1.74 ft; minimum daily, 288 ft³/s Nov. 11.

DISCHARGE, 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	324	351	354	344	375	322	419	340	346	334	321	341
2	328	342	351	344	389	349	401	349	337	344	319	343
3	347	352	351	337	366	362	398	391	332	354	318	346
4	356	366	350	348	357	353	392	405	326	391	312	345
5	337	368	327	353	362	376	391	376	332	366	313	361
6	323	366	326	353	373	385	394	372	326	349	320	350
7	322	372	326	336	362	379	387	370	326	388	324	360
8	328	346	323	343	371	400	388	369	330	378	331	348
9	321	328	322	341	367	353	373	361	340	357	323	383
10	315	316	337	330	357	342	359	357	400	354	317	364
11	324	288	345	338	368	348	355	353	379	347	319	347
12	325	292	331	353	357	355	387	348	368	337	438	339
13	311	295	337	361	370	363	433	350	364	331	371	345
14	310	305	341	352	371	374	409	348	361	324	373	358
15	308	308	343	337	352	351	396	350	355	326	369	563
16	317	324	343	332	349	374	395	347	351	331	357	428
17	329	359	352	336	341	376	385	347	357	326	353	373
18	335	366	334	342	340	352	373	386	359	373	350	361
19	348	350	327	349	338	360	376	350	388	361	347	358
20	355	358	326	353	332	447	345	341	382	333	356	359
21	353	366	329	359	347	449	314	354	363	319	357	358
22	367	364	345	347	339	428	315	337	352	309	345	359
23	368	357	350	347	344	408	324	337	348	308	340	356
24	365	350	349	354	348	383	334	342	363	309	344	358
25	373	348	345	365	355	364	332	366	372	313	351	358
26	372	346	333	372	350	359	334	378	349	310	350	358
27	370	347	344	380	387	389	335	363	341	309	346	358
28	360	351	340	383	355	348	336	372	351	323	347	362
29	357	360	338	391	---	319	341	355	353	326	349	366
30	362	355	336	371	---	329	337	355	340	317	338	362
31	369	---	343	376	---	362	---	344	---	322	340	---
TOTAL	10579	10296	10498	10927	10022	11459	11058	11113	10591	10469	10638	10967
MEAN	341	343	339	352	358	370	369	358	353	338	343	366
MAX	373	372	354	391	389	449	433	405	400	391	438	563
MIN	308	288	322	330	332	319	314	337	326	308	312	339
AC-FT	20980	20420	20820	21670	19880	22730	21930	22040	21010	20770	21100	21750

CAL YR 1986 TOTAL 128928 MEAN 353 MAX 517 MIN 288 AC-FT 255700
WTR YR 1987 TOTAL 128617 MEAN 352 MAX 563 MIN 288 AC-FT 255100

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.

PERIOD OF RECORD.--July 1937 to current year.

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.

AVERAGE DISCHARGE.--25 years (1962-87), 695 ft³/s, 503,500 acre-ft/yr since diversion to Farwell Irrigation District canal.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,430 ft³/s Mar. 17, release from Farwell Irrigation District diversion dam, gage height, 4.17 ft, from floodmark; minimum daily, 60 ft³/s July 31.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	771	1220	887	980	1150	1050	1490	504	649	98	65	431
2	804	1120	911	1000	1100	954	1540	541	634	89	77	409
3	779	818	1070	1000	980	1230	1480	768	665	119	83	399
4	650	1330	1100	1000	940	1050	1590	1100	547	645	114	399
5	663	1550	1050	1050	1000	1060	1510	1070	423	232	122	420
6	573	1510	1000	1000	1150	1300	1530	958	371	215	171	470
7	847	1700	1000	960	1230	1270	1260	951	362	259	149	565
8	908	1800	950	1000	1340	1410	1260	1090	392	386	233	502
9	992	1460	900	1000	1280	1540	1100	915	581	387	343	508
10	946	960	800	1050	1320	1360	1110	860	930	275	326	775
11	835	385	830	1100	1310	1320	565	830	943	254	297	927
12	731	173	900	1150	1210	1200	580	812	639	229	289	967
13	516	223	1000	1230	1360	1060	1450	839	599	282	528	997
14	628	539	1050	1280	1330	1060	1270	822	578	302	390	1260
15	615	1310	1100	1030	1430	1360	694	732	499	174	328	1470
16	833	1730	1100	797	1030	1150	846	707	368	104	256	1760
17	816	1900	1100	668	1210	2520	1040	690	325	100	230	1440
18	749	1810	1100	640	1020	2410	981	1330	327	382	230	1240
19	676	1300	1050	700	1030	1930	860	738	249	656	173	1140
20	955	1730	940	680	954	2010	1010	561	298	459	147	1080
21	1100	1520	1000	660	780	2430	687	635	264	319	118	1030
22	1310	1380	1050	620	727	2300	572	634	195	238	136	1020
23	1150	668	1100	600	871	2420	673	534	172	193	160	1030
24	1120	910	1150	620	1250	2490	680	636	155	88	180	1160
25	1080	821	1150	660	1190	2110	674	711	211	74	383	1230
26	1240	845	1150	720	1180	2130	706	880	158	63	420	1260
27	1200	837	1100	780	1510	1820	779	652	115	65	404	1250
28	1160	623	1050	860	1710	1020	742	1380	118	70	362	1210
29	1090	720	1000	940	---	385	638	657	128	67	348	1150
30	958	597	960	1000	---	940	562	605	111	66	355	1090
31	1080	---	960	1100	---	1800	---	691	---	60	383	---
TOTAL	27775	33489	31508	27875	32592	48089	29879	24833	12006	6950	7800	28589
MEAN	896	1116	1016	899	1164	1551	996	801	400	224	252	953
MAX	1310	1900	1150	1280	1710	2520	1590	1380	943	656	528	1760
MIN	516	173	800	600	727	385	562	504	111	60	65	399
AC-FT	55090	66430	62500	55290	64650	95380	59260	49260	23810	13790	15470	56710

CAL YR 1986	TOTAL 290683	MEAN 796	MAX 3200	MIN 73	AC-FT 576600
WTR YR 1987	TOTAL 311385	MEAN 853	MAX 2520	MIN 60	AC-FT 617600

PLATTE RIVER BASIN

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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: Nov. 11, Dec. 25, Jan. 21-23, and Mar. 28. Records good. Minor irrigation developments above station.

AVERAGE DISCHARGE.--41 years, 38.9 ft³/s, 28,180 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)
June 10	0800	*339	*10.48	No peaks greater than base discharge.			
Minimum daily discharge, 12 ft ³ /s Aug. 3.							

DISCHARGE, 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	17	19	25	28	32	33	99	38	70	25	15	18
2	17	19	25	23	42	32	114	38	60	25	13	18
3	19	19	27	29	36	31	72	40	47	25	12	17
4	19	19	25	27	33	28	74	44	41	24	14	17
5	21	19	23	30	33	28	81	45	37	23	14	18
6	21	18	29	33	31	27	75	44	34	32	16	18
7	22	18	26	27	33	27	71	43	33	36	18	18
8	21	18	25	26	31	26	74	41	34	37	86	18
9	21	17	22	29	26	26	83	39	176	78	43	18
10	21	17	20	21	27	25	80	37	218	68	29	18
11	31	18	23	22	27	25	73	36	73	38	21	19
12	33	20	28	32	26	25	70	35	67	36	19	18
13	28	21	27	36	26	25	69	34	46	33	17	20
14	25	22	24	30	27	25	77	34	37	31	18	18
15	24	24	25	25	27	26	80	33	40	27	19	19
16	22	24	25	19	26	29	84	32	36	25	17	19
17	20	25	25	26	28	119	70	33	95	24	20	19
18	19	26	21	36	28	148	65	34	55	29	17	19
19	19	25	22	35	29	130	60	35	38	25	17	19
20	19	27	25	28	27	96	56	35	35	75	16	19
21	18	29	22	28	26	84	52	42	34	76	17	19
22	19	26	32	28	26	64	49	37	32	52	17	18
23	20	25	29	27	25	88	50	34	32	33	16	18
24	20	24	27	27	25	78	47	34	31	25	18	18
25	20	24	25	30	25	62	44	34	34	24	28	18
26	27	24	24	30	26	60	44	34	33	19	29	18
27	21	24	25	32	28	59	42	33	30	20	23	18
28	19	24	26	35	33	47	41	49	32	19	22	18
29	19	24	26	38	---	53	40	49	27	16	23	18
30	19	24	22	37	---	73	39	85	26	14	19	18
31	19	---	27	38	---	76	---	119	---	13	18	---
TOTAL	660	663	777	912	809	1675	1975	1300	1583	1027	671	548
MEAN	21.3	22.1	25.1	29.4	28.9	54.0	65.8	41.9	52.8	33.1	21.6	18.3
MAX	33	29	32	38	42	148	114	119	218	78	86	20
MIN	17	17	20	19	25	25	39	32	26	13	12	17
AC-FT	1310	1320	1540	1810	1600	3320	3920	2580	3140	2040	1330	1090

CAL YR 1986 TOTAL 10268.6 MEAN 28.1 MAX 202 MIN 4.4 AC-FT 20370
WTR YR 1987 TOTAL 12600 MEAN 34.5 MAX 218 MIN 12 AC-FT 24990

PLATTE RIVER BASIN

06783500 MUD CREEK NEAR SWEETWATER, NE--Continued

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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									
22...	1400	20	635	7.93	12.0	8.1	22	330	2100
NOV									
20...	0920	26	632	7.84	0.5	12.2	17	150	2700
DEC									
17...	1025	25	656	7.90	0.5	12.0	5	K30	680
JAN									
13...	1030	37	647	7.96	0.5	12.2	5	130	840
FEB									
11...	0935	26	644	8.14	0.5	12.2	18	K85	740
MAR									
11...	1040	25	639	8.06	1.0	12.8	20	31	130
APR									
08...	1330	69	686	8.00	9.5	9.0	39	K110	7000
MAY									
07...	0950	43	714	8.12	13.0	8.4	35	370	420
JUN									
02...	1105	57	540	7.95	19.0	6.6	110	K8200	3800
JUL									
29...	0925	17	597	8.04	23.5	6.5	33	1400	1600
AUG									
24...	1410	19	597	8.35	15.5	8.2	24	7000	8400
SEP									
22...	1435	18	610	8.28	13.0	9.3	19	370	420

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT								
22...	310	0	96	16	15	0.4	38	9.9
NOV								
20...	290	0	91	16	15	0.4	16	7.1
DEC								
17...	290	0	87	17	15	0.4	28	8.3
JAN								
13...	320	0	100	16	17	0.4	24	16
FEB								
11...	310	0	96	16	14	0.4	25	9.4
MAR								
11...	330	0	110	16	16	0.4	27	12
APR								
08...	290	0	88	18	17	0.4	41	14
MAY								
07...	310	0	97	17	19	0.5	35	20
JUN								
02...	250	0	76	14	14	0.4	25	5.1
JUL								
29...	290	0	94	14	13	0.3	20	5.2
AUG								
24...	280	0	90	14	12	0.3	24	<5.0
SEP								
22...	290	0	92	15	15	0.4	22	8.5

PLATTE RIVER BASIN

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06783500 MUD CREEK NEAR SWEETWATER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 22...	60	0.750	0.020	1.2	1.2	2.0	0.670	7.1
NOV 20...	26	1.00	0.050	0.40	0.45	1.5	0.410	3.6
DEC 17...	33	1.40	0.160	0.27	0.43	1.8	0.320	3.2
JAN 13...	51	1.30	0.180	1.0	1.2	2.5	0.350	2.7
FEB 11...	54	1.20	0.180	0.35	0.53	1.7	0.400	5.6
MAR 11...	38	1.20	0.180	0.72	0.90	2.1	0.270	4.0
APR 08...	268	1.20	0.490	1.8	2.3	3.5	0.920	6.3
MAY 07...	264	1.70	0.610	1.4	2.0	3.7	0.900	6.7
JUN 02...	810	2.70	0.140	5.5	5.6	8.3	0.600	15
JUL 29...	188	1.40	0.060	3.1	3.2	4.6	0.670	5.3
AUG 24...	145	1.50	0.090	1.1	1.2	2.7	0.750	6.6
SEP 22...	64	1.10	0.070	0.79	0.86	2.0	0.510	3.2

PLATTE RIVER BASIN

06784000 SOUTH LOUP RIVER AT ST. MICHAEL, NE

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.

DRAINAGE AREA.--2,350 mi², approximately, of which about 1,610 mi² contributes directly to surface runoff.

WATER-DISCHARGE RECORDS

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

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.

REMARKS.--Estimated daily discharges: Nov. 11-16, Dec. 10-12, 30, 31, Jan. 17, 18, 21-25, 30, 31, and Feb. 1, 2, 7, 9, 10. Records good except for periods of estimated record, which are poor. Minor irrigation developments above station.

AVERAGE DISCHARGE.--44 years, 239 ft³/s, 173,200 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, 3,960 ft³/s May 31, gage height, 7.03 ft; minimum daily, 43 ft³/s Jan. 17.

DISCHARGE, 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	142	212	206	217	215	419	658	412	545	193	90	149
2	140	211	206	215	215	389	538	413	367	178	89	136
3	166	208	206	214	212	367	525	669	235	167	84	133
4	226	209	205	214	210	315	480	362	195	164	97	128
5	207	208	204	216	213	305	474	414	178	158	95	123
6	192	206	206	213	214	310	455	385	162	159	95	132
7	180	207	209	210	205	315	437	302	143	187	96	131
8	183	210	205	209	210	340	422	271	131	220	167	133
9	204	210	209	208	195	330	436	251	584	449	366	141
10	211	210	135	205	205	310	434	255	1160	409	227	144
11	278	182	104	200	206	263	422	250	468	258	179	140
12	382	150	145	207	208	249	418	242	397	193	162	138
13	252	185	182	209	212	238	496	233	330	201	157	133
14	213	220	209	206	213	233	531	225	263	192	153	131
15	197	240	213	198	220	229	470	213	222	177	166	160
16	185	300	216	117	229	300	485	208	202	164	151	211
17	177	323	220	43	229	989	526	191	652	160	148	168
18	165	288	221	46	249	1220	586	230	856	219	154	182
19	170	274	214	110	249	753	572	310	410	526	128	172
20	172	223	213	207	234	546	550	242	347	440	123	168
21	174	213	212	210	239	468	557	339	263	380	107	166
22	218	207	213	205	234	437	504	305	220	278	120	166
23	226	195	217	190	229	761	477	259	198	186	118	163
24	226	182	220	195	234	632	469	249	204	163	129	160
25	225	173	230	195	239	586	465	260	219	155	249	156
26	220	176	222	210	263	528	465	256	209	150	291	149
27	219	187	219	212	320	529	464	253	192	138	220	146
28	212	199	218	217	431	504	452	254	181	146	211	142
29	210	201	219	250	---	309	437	277	243	139	208	134
30	209	202	210	215	---	332	420	277	229	112	169	132
31	211	---	210	220	---	519	---	2190	---	96	157	---
TOTAL	6392	6411	6318	5983	6532	14025	14625	10997	10005	6757	4906	4467
MEAN	206	214	204	193	233	452	487	355	333	218	158	149
MAX	382	323	230	250	431	1220	658	2190	1160	526	366	211
MIN	140	150	104	43	195	229	418	191	131	96	84	123
AC-FT	12680	12720	12530	11870	12960	27820	29010	21810	19840	13400	9730	8860

CAL YR 1986 TOTAL 77281 MEAN 212 MAX 800 MIN 67 AC-FT 153300
WTR YR 1987 TOTAL 97418 MEAN 267 MAX 2190 MIN 43 AC-FT 193200

PLATTE RIVER BASIN

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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 1986 TO SEPTEMBER 1987

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						
22...	0955	222	403	7.82	12.0	9.8
NOV						
20...	1055	243	406	7.86	0.5	12.9
DEC						
17...	1400	220	419	8.01	0.5	13.2
JAN						
13...	1400	211	432	8.03	1.0	14.0
FEB						
11...	1045	209	435	8.26	2.0	12.3
MAR						
11...	1530	255	422	8.45	7.0	12.2
APR						
08...	1025	428	477	8.18	10.0	9.5
MAY						
07...	1130	286	477	8.40	17.0	8.8
JUN						
02...	1440	340	360	8.14	22.0	7.4
JUL						
29...	1045	142	364	8.57	26.0	8.5
AUG						
24...	1025	129	347	8.48	16.5	9.8
SEP						
22...	1100	165	403	8.35	13.5	9.4

DATE	TIME	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM 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)
MAR											
11...	1530	29	190	0	62	9.6	13	0.4	8.7	205	21
JUL											
29...	1045	6	170	0	54	7.7	12	0.4	9.7	181	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- PHORUS, 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											
11...	2.1	0.30	45	280	0.39	196	0.800	0.800	40	24	13
JUL											
29...	3.9	0.30	46	260	0.35	100	<0.100	0.160	40	<3	2

PLATTE RIVER BASIN

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, 69,360 acre-ft June 10-15, 19-22, elevation, 2,162.4 ft; minimum observed, 37,740 acre-ft Aug. 7-8, elevation, 2149.2 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,157.8	56,930	-
Oct. 31	2,157.3	55,670	-1,260
Nov. 30	2,156.5	53,700	-1,970
Dec. 31	2,156.1	52,720	-980
CAL YR 1986	-	-	+3,070
Jan. 31	2,155.0	51,290	-1,430
Feb. 28	2,155.2	50,580	-710
Mar. 31	2,155.4	51,060	+480
Apr. 30	2,156.9	54,670	+3,610
May 31	2,161.3	66,250	+11,580
June 30	2,160.8	64,860	-1,390
July 31	2,152.6	44,720	-20,140
Aug. 31	2,155.0	50,110	+5,390
Sept. 30	2,157.0	54,920	+4,810
WTR YR 1987	-	-	+2,010

PLATTE RIVER BASIN

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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: Aug 25-27 and Sept. 16-25. Records good except for periods of estimated record, which are poor. Low flow includes return water from Farwell Irrigation District.

AVERAGE DISCHARGE.--9 years (1979-87), 21.9 ft³/s, 15,870 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, 758 ft³/s Aug. 8, gage height, 13.76 ft; minimum daily, 11.0 ft³/s Jan. 25 and Feb. 17.

DISCHARGE, 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	13	18	14	13	14	19	151	19	22	24	32	19
2	13	17	14	12	14	16	101	19	19	26	28	18
3	23	17	14	13	13	15	62	35	17	27	30	17
4	134	18	12	12	13	14	60	26	17	45	37	17
5	27	18	12	13	12	15	51	23	17	37	41	17
6	18	18	12	14	12	14	44	23	16	36	48	17
7	18	18	14	13	13	14	41	21	16	40	50	21
8	16	17	14	12	14	14	38	20	15	43	536	18
9	18	15	14	13	12	13	34	19	16	36	91	17
10	17	15	15	13	13	13	31	19	64	28	30	18
11	93	15	12	12	13	13	29	18	25	25	23	17
12	95	15	12	14	13	14	28	17	20	26	22	17
13	28	15	12	14	13	14	46	17	19	27	22	17
14	23	13	13	14	14	15	58	22	18	28	24	17
15	20	14	13	13	14	16	34	19	18	30	25	38
16	19	15	13	13	13	20	30	17	17	28	23	190
17	18	16	14	12	11	328	29	17	18	30	30	60
18	17	16	14	13	12	236	28	35	18	44	122	30
19	17	14	14	12	12	76	26	26	18	43	31	20
20	17	14	13	12	12	49	24	19	18	39	26	15
21	17	14	12	12	12	44	23	48	18	38	24	15
22	25	18	13	13	12	36	23	19	17	39	23	14
23	28	14	13	13	13	277	23	17	17	36	24	14
24	21	13	14	12	13	66	22	17	18	37	26	15
25	21	13	13	11	13	71	22	239	23	36	56	14
26	21	13	13	12	14	83	21	81	22	37	42	14
27	21	12	13	12	19	100	20	28	23	36	33	14
28	20	13	13	12	29	76	20	25	25	36	30	14
29	19	13	13	14	---	53	20	23	25	36	25	13
30	18	13	13	13	---	60	19	21	24	36	21	13
31	19	---	13	13	---	72	---	30	---	35	19	---
TOTAL	874	454	408	394	382	1866	1158	979	620	1064	1594	740
MEAN	28.2	15.1	13.2	12.7	13.6	60.2	38.6	31.6	20.7	34.3	51.4	24.7
MAX	134	18	15	14	29	328	151	239	64	45	536	190
MIN	13	12	12	11	11	13	19	17	15	24	19	13
AC-FT	1730	901	809	781	758	3700	2300	1940	1230	2110	3160	1470

CAL YR 1986 TOTAL 8926.3 MEAN 24.5 MAX 447 MIN 9.7 AC-FT 17710
WTR YR 1987 TOTAL 10533 MEAN 28.9 MAX 536 MIN 11 AC-FT 20890

PLATTE RIVER BASIN

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: Nov. 13, Dec. 7 to Jan. 13, Jan. 18 to Feb. 7, and Mar. 24-26, 30, 31. Records poor. Diversions above station for irrigation.

AVERAGE DISCHARGE.--80 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, 7,920 ft³/s Mar. 18, gage height, 4.57 ft; minimum daily, minimum daily, 257 ft³/s Aug. 2.

DISCHARGE, 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	1300	1500	1210	1300	1450	2180	3700	1140	1030	576	272	584
2	1250	1400	1220	1300	1400	1570	3180	1190	1100	576	257	610
3	1330	1300	965	1300	1300	1520	2910	1940	941	551	289	601
4	2200	1450	942	1300	1200	1800	2600	1570	951	681	350	588
5	1650	1600	1070	1250	1450	1690	2460	1790	935	1200	392	588
6	1410	1500	924	1300	1600	1590	2280	1480	758	975	478	627
7	1430	1550	1000	1300	1700	1670	2210	1160	735	875	629	654
8	1610	1450	1000	1400	1640	1660	2360	1080	730	767	2110	715
9	1640	1620	1000	1400	1600	1730	2280	1080	917	850	1660	760
10	1690	1340	920	1450	1540	1750	2430	1080	2110	896	774	738
11	1970	1050	1000	1500	1450	1650	2270	1130	1470	760	582	811
12	2250	750	1100	1650	1350	1500	2360	1140	1260	637	525	1040
13	1870	560	1250	1700	1550	1480	2850	1140	1100	618	511	978
14	1220	610	1350	1710	1550	1820	3230	1310	971	606	574	1030
15	1620	1180	1300	1760	1600	2230	1700	1180	894	600	802	1210
16	2320	1840	1400	1690	1520	2440	1130	1080	810	538	666	2660
17	1840	2850	1400	1010	1450	6030	1270	1050	794	434	627	2090
18	1520	2610	1400	940	1100	6630	1400	1230	2280	557	755	1240
19	1500	2030	1350	1000	1200	4580	1460	1780	894	876	684	1180
20	1500	1610	1250	980	1240	3430	1520	1350	708	1140	552	1010
21	1890	1360	1150	960	1410	3190	1500	1460	604	1080	480	948
22	1950	1250	1250	920	1340	3880	1280	1570	623	743	418	923
23	2410	1140	1350	860	1480	5070	1190	1380	559	602	410	835
24	2250	1200	1400	840	1330	4900	1110	1300	520	510	488	760
25	1860	1110	1450	900	1700	5000	1010	1760	572	489	1260	977
26	1550	1190	1500	1000	1560	6000	1020	1680	485	411	1420	1120
27	1480	1160	1500	1200	1650	2860	1000	1580	495	396	942	1100
28	1590	1150	1500	1400	1800	2480	1120	1490	448	373	738	1090
29	1760	1120	1400	1450	---	1190	1070	1800	427	359	669	1120
30	1870	1230	1350	1500	---	1220	1070	1380	576	341	600	1100
31	1450	---	1300	1500	---	3070	---	2380	---	297	586	---
TOTAL	53180	41710	38201	39770	41160	87810	56970	43680	26697	20314	21500	29687
MEAN	1715	1390	1232	1283	1470	2833	1899	1409	890	655	694	990
MAX	2410	2850	1500	1760	1800	6630	3700	2380	2280	1200	2110	2660
MIN	1220	560	920	840	1100	1190	1000	1050	427	297	257	584
AC-FT	105500	82730	75770	78880	81640	174200	113000	86640	52950	40290	42650	58880

CAL YR 1986 TOTAL 453236 MEAN 1242 MAX 5300 MIN 246 AC-FT 899000
WTR YR 1987 TOTAL 500679 MEAN 1372 MAX 6630 MIN 257 AC-FT 993100

PLATTE RIVER BASIN

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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 1986 TO SEPTEMBER 1987

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						
27...	1500	1410	347	8.02	15.0	9.0
NOV						
20...	1350	1600	278	7.72	0.5	13.9
DEC						
19...	1045	1330	295	7.81	0.5	13.2
JAN						
21...	1050	965	337	7.81	0.5	12.8
FEB						
12...	1440	1310	294	8.44	7.5	10.8
MAR						
03...	1420	1430	307	8.02	9.0	10.8
APR						
14...	1300	3250	348	8.15	7.5	10.6
MAY						
05...	1320	1950	302	8.20	13.0	9.1
JUN						
16...	0945	862	328	8.36	27.5	8.5
JUL						
27...	0945	407	395	8.30	27.0	8.3
AUG						
17...	1325	600	364	8.47	23.0	8.5
SEP						
28...	1220	1050	282	7.96	19.5	8.3

DATE	TIME	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM 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)
MAR											
03...	1420	18	130	0	41	6.6	9.6	0.4	7.4	141	18
JUL											
27...	0945	7	180	0	56	9.1	14	0.5	10	188	20

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- PHORUS, 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											
03...	4.4	0.30	49	220	0.30	853	0.850	0.140	20	15	6
JUL											
27...	4.4	0.40	48	270	0.37	302	0.390	0.030	60	7	4

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.

REMARKS.--Estimated daily discharges: Nov. 13-19, Dec. 6-12, and Mar. 29-30. Records good except for periods of estimated record, which are fair. North Loup Public Power and Irrigation District canal began diversion from river in April 1939 at point 5 mi above station. Several smaller diversions above station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,210 ft³/s June 27, 1983, gage height, 5.94 ft; maximum gage height, 9.5 ft Feb. 25, 1957, ice jam, from floodmarks; minimum daily discharge, 45 ft³/s July 26, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,630 ft³/s Mar. 21, gage height, 5.01 ft, maximum gage height, 6.25 ft Nov. 14, backwater from ice; minimum daily discharge, 180 ft³/s Aug. 1.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	470	656	873	509	603	665	1060	538	444	187	180	377
2	490	635	812	507	609	745	898	547	421	203	191	366
3	519	664	765	542	609	799	835	588	393	226	228	364
4	584	701	790	560	606	776	972	615	417	364	264	369
5	543	688	726	578	628	844	1050	715	465	363	267	386
6	543	723	665	573	626	894	1030	694	446	329	327	430
7	543	729	630	504	642	938	998	639	423	330	346	501
8	541	747	590	514	635	903	952	637	400	356	400	445
9	571	724	550	523	634	770	895	610	404	447	416	490
10	555	650	575	510	591	714	813	582	540	392	415	471
11	577	510	575	525	640	742	735	452	505	376	366	466
12	548	504	600	575	662	695	751	474	451	543	448	437
13	472	550	621	615	682	724	949	512	419	607	526	424
14	507	570	677	558	705	711	945	474	377	507	403	429
15	526	620	733	506	663	766	776	427	357	438	386	512
16	547	670	709	429	631	824	769	415	343	392	383	852
17	562	720	672	436	558	1040	733	446	369	330	365	861
18	585	760	606	467	590	934	695	552	353	418	350	558
19	609	820	563	568	661	958	653	538	421	427	321	486
20	635	862	539	574	689	1150	627	509	451	374	319	433
21	657	909	552	617	659	1420	563	503	420	323	321	407
22	709	869	543	591	682	1230	529	505	355	290	325	402
23	763	831	537	516	707	1290	544	525	287	262	329	414
24	807	842	523	558	729	1110	565	529	310	265	333	413
25	799	839	525	614	772	841	546	621	399	267	386	412
26	771	876	516	815	770	694	559	629	286	241	413	411
27	775	810	475	831	865	727	545	614	219	217	442	415
28	731	803	511	780	844	771	546	563	196	202	430	399
29	684	824	542	616	---	475	549	504	192	190	413	383
30	692	809	519	646	---	480	539	493	196	185	384	385
31	697	---	496	622	---	1010	---	458	---	181	384	---
TOTAL	19012	21915	19010	17779	18692	26640	22621	16908	11259	10232	11061	13698
MEAN	613	730	613	574	668	859	754	545	375	330	357	457
MAX	807	909	873	831	865	1420	1060	715	540	607	526	861
MIN	470	504	475	429	558	475	529	415	192	181	180	364
AC-FT	37710	43470	37710	35260	37080	52840	44870	33540	22330	20300	21940	27170
CAL YR 1986	TOTAL	207346	MEAN	568	MAX	1050	MIN	180	AC-FT	411300		
WTR YR 1987	TOTAL	2										

1 3 5

LOCATION.--Lat 41°56'48", long 99°23'10" in NW1/4SE1/4 sec.22, T.23 N., R.18 W., Loup County, Hydrologic Unit 10210008, on right bank 44 ft upstream from bridge on U.S. Highway 183, 12.2 mi north of Taylor.

PERIOD OF RECORD.--March to July 1932. August 1931 to February 1932, July 1932 to June 1939, 1955-64 and 1977, gage heights or discharge measurements only. June 1978 to current year.

REMARKS.--Estimated daily discharges: Nov. 13-15 and Mar. 29-31. Records good. Diversions for irrigation above station.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 1,170 ft³/s May 4, 1964, gage height, 4.80 ft, datum then in use, from floodmark; maximum gage height, 5.34 ft Mar. 29, 1987, backwater from ice; minimum daily discharge, 90 ft³/s Jan. 7, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 651 ft³/s Mar. 21, gage height, 2.46 ft; maximum gage height, 5.34 ft Mar. 29, backwater from ice; minimum daily discharge, 196 ft³/s July 31 to Aug. 1.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	271	258	263	252	257	341	436	260	255	209	196	215
2	272	255	257	250	261	351	469	258	244	208	197	216
3	279	253	254	250	264	368	495	273	240	208	203	215
4	284	252	249	253	262	374	498	288	236	228	214	213
5	281	249	249	250	265	371	476	288	233	235	209	219
6	275	252	247	255	262	370	459	292	231	230	212	223
7	267	252	248	256	262	360	450	284	229	226	212	232
8	264	253	253	251	263	342	436	281	227	226	227	231
9	270	246	249	250	260	316	423	277	229	226	222	234
10	269	240	239	250	260	302	396	272	267	222	217	229
11	267	235	241	249	263	299	358	265	266	221	211	228
12	270	236	247	254	265	299	351	262	250	224	231	227
13	262	240	248	257	266	299	426	258	240	238	241	227
14	263	240	241	253	267	301	430	256	233	236	229	228
15	261	245	248	254	261	303	437	251	223	219	222	250
16	258	247	250	250	261	317	462	248	221	212	217	263
17	258	262	252	251	256	399	443	247	223	210	215	262
18	258	280	249	251	255	430	396	258	224	235	214	268
19	260	276	247	253	252	445	357	262	232	235	213	256
20	256	274	245	245	256	535	337	255	238	229	216	242
21	258	281	249	251	253	616	306	253	240	219	217	237
22	278	282	250	241	252	565	284	251	248	212	215	236
23	305	280	250	245	251	533	282	251	237	207	217	236
24	302	275	252	241	262	516	284	253	241	209	218	229
25	307	275	250	247	281	472	281	264	246	211	227	228
26	313	274	253	247	294	472	279	275	229	206	230	227
27	302	270	251	245	324	474	267	270	221	202	227	223
28	289	271	250	248	345	465	261	273	217	199	225	222
29	277	266	253	250	---	440	264	272	214	199	223	218
30	267	264	254	250	---	430	260	275	211	197	216	216
31	264	---	251	252	---	435	---	269	---	196	216	---
TOTAL	8507	7783	7739	7751	7480	12540	11303	8241	7045	6734	6749	6950
MEAN	274	259	250	250	267	405	377	266	235	217	218	232
MAX	313	282	263	257	345	616	498	292	267	238	241	268
MIN	256	235	239	241	251	299	260	247	211	196	196	213
AC-FT	16870	15440	15350	15370	14840	24870	22420	16350	13970	13360	13390	13790
CAL YR 1986	TOTAL 95417				MEAN 261	MAX 487	MIN 188	AC-FT 189300				

PLATTE RIVER BASIN

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, 93,330 acre-ft May 29, elevation, 36.66 ft; minimum observed, 44,510 acre-ft Oct. 1, elevation, 2222.24 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	2,222.25	44,540	-
Oct. 31	2,227.20	58,880	+14,340
Nov. 30	2,231.16	72,140	+13,260
Dec. 31	2,231.28	72,570	+430
CAL YR 1986	-	-	+61,350
Jan. 31	2,231.32	72,720	+150
Feb. 28	2,231.77	74,330	+1,610
Mar. 31	2,235.65	89,180	+14,850
Apr. 30	2,235.98	90,520	+1,340
May 31	2,236.60	93,080	+2,560
June 30	2,236.45	92,460	-620
July 31	2,236.24	91,590	-870
Aug. 31	2,235.66	89,220	-2,370
Sept. 30	2,235.25	87,570	-1,650
WTR YR 1987	-	-	+43,030

PLATTE RIVER BASIN

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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 north 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: Dec. 10. Record good. Diversions for irrigation above station, and since Oct. 1, 1985, flow regulated by the Calamus Dam.

AVERAGE DISCHARGE.--2 years (water years 1986-1987), 270 ft³/s, 149,500 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, 600 ft³/s Mar. 26, gage height, 3.43 ft; maximum gage height, 3.82 ft Dec. 10, backwater from ice; minimum daily discharge, 13 ft³/s Oct. 8-10, due to temporary closure of Calamus Dam.

DISCHARGE, 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	313	57	331	331	330	305	337	278	358	235	266	278
2	303	59	328	330	327	193	330	262	352	233	263	278
3	291	59	325	327	323	99	374	270	325	221	264	280
4	299	59	325	321	321	118	464	274	273	221	262	276
5	233	57	333	321	317	141	466	270	244	227	258	275
6	21	57	333	321	314	134	531	270	247	230	252	279
7	21	59	330	323	309	134	575	258	251	235	256	275
8	13	59	330	314	303	125	577	251	254	242	271	274
9	13	59	339	282	305	120	561	252	255	244	276	296
10	13	61	330	279	311	121	538	255	250	239	283	308
11	55	61	333	304	300	121	517	247	254	237	283	324
12	137	65	344	317	305	121	541	251	271	232	274	332
13	161	64	352	319	318	97	560	256	279	245	276	334
14	170	65	352	317	325	66	566	250	279	258	286	335
15	179	65	347	313	314	64	572	251	282	264	299	338
16	140	65	335	316	303	73	575	256	282	266	299	335
17	99	67	331	317	296	430	571	260	275	265	297	334
18	98	65	340	319	308	494	573	260	271	267	295	336
19	96	66	343	315	317	471	563	263	267	263	298	345
20	95	65	343	314	318	441	541	273	244	258	299	347
21	94	64	338	289	318	423	539	255	220	258	295	354
22	66	61	325	315	323	443	539	250	220	257	291	337
23	47	60	325	317	325	509	519	251	230	254	294	293
24	52	90	323	318	321	548	463	253	239	251	273	272
25	58	112	319	317	321	558	438	249	242	250	245	269
26	57	183	321	312	315	573	446	247	240	254	239	272
27	60	249	323	312	312	541	395	288	246	262	255	270
28	59	273	328	319	304	527	339	312	251	266	273	270
29	59	316	330	311	---	522	335	342	248	268	274	270
30	62	336	331	312	---	490	313	362	243	264	274	228
31	59	---	334	326	---	409	---	362	---	265	277	---
TOTAL	3423	2978	10321	9748	8803	9411	14658	8378	7892	7731	8547	9014
MEAN	110	99.3	333	314	314	304	489	270	263	249	276	300
MAX	313	336	352	331	330	573	577	362	358	268	299	354
MIN	13	57	319	279	296	64	313	247	220	221	239	228
AC-FT	6790	5910	20470	19340	17460	18670	29070	16620	15650	15330	16950	17880
CAL YR 1986	TOTAL	87188	MEAN	239	MAX	436	MIN	13	AC-FT	172900		
WTR YR 1987	TOTAL	100904	MEAN	276	MAX	577	MIN	13	AC-FT	200100		

PLATTE RIVER BASIN

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: Nov. 11-20. 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.--36 years (1937-38, 1952-87), 886 ft³/s, 641,900 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, 2,310 ft³/s Mar. 17, gage height, 3.38 ft; maximum gage height, 4.07 ft Sept. 17; minimum daily discharge, 423 ft³/s July 23 and Aug. 2.

DISCHARGE, 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	1080	776	938	1090	948	1190	1590	851	1010	457	431	768
2	1120	759	934	1060	972	1100	1640	859	998	454	423	769
3	1170	737	903	1060	939	990	1530	1020	953	475	440	765
4	1210	735	899	1050	947	998	1730	1050	863	557	468	762
5	1150	723	907	1030	946	1070	1740	1100	844	584	456	767
6	835	699	917	1030	972	1110	1750	1160	829	582	685	769
7	715	715	977	1040	987	1200	1750	1060	801	623	677	838
8	708	733	956	1060	1030	1230	1720	1040	791	639	802	824
9	725	707	885	1060	1030	1110	1670	1030	786	644	776	865
10	733	677	722	1000	1020	1030	1630	1020	910	694	780	872
11	731	600	773	930	1030	1010	1570	992	922	644	767	825
12	849	550	788	973	1010	999	1520	817	848	735	787	833
13	831	520	938	1030	994	1000	1560	936	806	830	862	814
14	834	540	912	1010	1020	962	1540	942	787	900	848	831
15	840	560	919	916	1020	1000	1480	887	763	785	822	956
16	845	580	967	846	1050	1100	1440	810	741	726	827	1050
17	738	700	931	858	1000	2080	1430	817	737	673	803	1570
18	736	800	919	896	1010	2050	1430	1080	727	820	741	1190
19	745	900	941	989	1050	1620	1410	979	707	841	738	1120
20	757	1060	961	953	1060	1660	1380	960	756	798	715	1050
21	769	869	988	931	1030	1910	1320	967	715	692	696	986
22	888	861	1010	949	1000	2010	1220	920	684	617	689	932
23	876	857	1070	947	1060	1960	1170	914	632	556	687	884
24	958	821	1030	928	1170	2100	1150	947	578	506	710	863
25	977	838	994	938	1290	1780	1070	1010	604	504	765	883
26	934	870	1060	1020	1330	1690	1090	1160	624	487	713	883
27	895	881	1080	1010	1380	1470	1060	1030	641	478	784	878
28	838	885	1090	963	1470	1670	929	1720	492	464	789	884
29	801	907	1100	963	---	1490	906	1060	482	441	780	886
30	808	922	1050	954	---	1420	902	1060	473	424	763	895
31	781	---	1090	957	---	1310	---	1030	---	423	754	---
TOTAL	26877	22782	29649	30441	29765	43319	42327	31228	22504	19053	21978	27212
MEAN	867	759	956	982	1063	1397	1411	1007	750	615	709	907
MAX	1210	1060	1100	1090	1470	2100	1750	1720	1010	900	862	1570
MIN	708	520	722	846	939	962	902	810	473	423	423	762
AC-FT	53310	45190	58810	60380	59040	85920	83960	61940	44640	37790	43590	53970

CAL YR 1986 TOTAL 344871 MEAN 945 MAX 2610 MIN 520 AC-FT 684100
WTR YR 1987 TOTAL 347135 MEAN 951 MAX 2100 MIN 423 AC-FT 688500

PLATTE RIVER BASIN

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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.

REMARKS.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--8 years, 2.10 ft³/s, 1,520 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)
Mar. 17	1400	*40	*2.43	No other peak greater than base discharge.			
Minimum daily discharge, 0.06 ft ³ /s, Sept. 14.							

DISCHARGE, 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	.64	.55	.49	.56	.51	1.9	16	.95	.74	.13	.91	.07
2	.61	.56	.55	.53	.54	1.6	11	1.0	.64	.16	.69	.09
3	.76	.57	.51	.53	.48	1.4	9.3	1.9	.52	.54	.52	.09
4	.63	.63	.47	.54	.52	1.2	7.4	2.3	.46	9.8	.41	.08
5	.69	.68	.50	.60	.55	1.1	6.6	2.2	.41	12	.27	.10
6	.45	.68	.54	.61	.58	1.0	5.3	2.0	.35	5.7	.47	.16
7	.42	.58	.45	.61	.79	.98	4.7	1.9	.33	2.1	.52	.63
8	.42	.57	.49	.55	.83	.86	4.5	1.4	.32	.86	.48	.63
9	.40	.60	.49	.57	.76	.88	4.4	1.2	.30	.50	.39	.21
10	.38	.50	.37	.54	.75	.73	4.0	1.0	.40	.41	.24	.13
11	.98	.49	.38	.55	.78	.72	3.3	.85	.48	.32	.15	.09
12	2.9	.55	.41	.65	.75	.75	3.1	.75	.53	.29	.11	.09
13	2.5	.36	.41	.67	.75	.74	6.0	.69	.43	.59	.09	.07
14	1.7	.43	.43	.67	.71	.76	3.5	.80	.33	.56	.10	.06
15	1.2	.55	.44	.57	.71	.89	1.6	.74	.37	.39	.12	.14
16	.92	.59	.50	.44	.73	1.6	1.3	.64	.38	.27	.25	5.1
17	.77	.61	.52	.41	.69	33	1.2	.60	.40	.25	.37	2.7
18	.75	.73	.51	.38	.77	31	1.1	.95	.42	1.1	.56	.71
19	.67	.86	.50	.37	.73	9.5	1.1	1.1	.36	1.6	.45	.38
20	.75	.78	.44	.33	.71	6.1	1.1	1.0	.26	1.1	.27	.26
21	.69	.78	.44	.37	.71	5.2	1.1	1.0	.22	.52	.18	.25
22	1.0	.74	.48	.36	.71	3.7	1.1	.99	.18	.53	.12	.18
23	1.5	.76	.53	.34	.67	13	1.1	.81	.16	.36	.08	.17
24	1.2	.68	.54	.32	.67	7.5	1.1	.81	.16	.18	.08	.21
25	1.1	.64	.54	.28	.68	4.8	1.0	1.8	.20	.16	.39	.22
26	1.1	.52	.51	.28	.84	6.4	1.0	3.4	.18	.28	.51	.23
27	1.0	.51	.52	.33	1.2	9.2	1.1	2.7	.17	.49	.30	.23
28	.95	.54	.53	.38	1.8	2.4	1.7	1.7	.17	.43	.19	.22
29	.75	.52	.52	.47	---	.49	1.2	1.3	.13	.42	.21	.22
30	.63	.51	.53	.51	---	3.2	1.7	.95	.13	.41	.15	.24
31	.55	---	.52	.50	---	7.5	---	.80	---	.76	.10	---
TOTAL	29.01	18.07	15.06	14.82	20.92	160.10	108.6	40.23	10.13	43.21	9.68	13.96
MEAN	.94	.60	.49	.48	.75	5.16	3.62	1.30	.34	1.39	.31	.47
MAX	2.9	.86	.55	.67	1.8	33	16	3.4	.74	12	.91	5.1
MIN	.38	.36	.37	.28	.48	.49	1.0	.60	.13	.13	.08	.06
AC-FT	58	36	30	29	41	318	215	80	20	86	19	28

CAL YR 1986 TOTAL 421.74 MEAN 1.16 MAX 63 MIN .06 AC-FT 837
WTR YR 1987 TOTAL 483.79 MEAN 1.33 MAX 33 MIN .06 AC-FT 960

PLATTE RIVER BASIN

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: Nov. 7-10, 12, Dec. 2-11, 13-19, 22-25, 27, 31, Jan. 1-10, 12-15, 22-23, 26-30, Feb. 3, 5-6, 9, and Mar. 27-29. 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.--80 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, 3,960 ft³/s Mar. 17, gage height, 4.49 ft; minimum daily, 309 ft³/s July 31.

DISCHARGE, 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	1100	775	1130	1080	902	1500	2170	1090	1100	417	310	800
2	1120	745	1110	1100	882	1240	2010	1050	1060	405	332	794
3	1230	735	1100	1120	885	1100	2100	1240	1050	399	345	786
4	1310	709	1090	1120	886	1020	2160	1390	1000	479	382	764
5	1230	688	1080	1100	885	1080	2140	1200	911	533	404	770
6	1190	694	1080	1060	885	1200	2140	1220	855	561	487	809
7	939	710	1080	1100	881	1270	2310	1160	878	591	695	935
8	841	720	1090	1140	928	1380	2300	1080	869	681	902	1050
9	819	720	1100	1150	940	1510	2230	1040	911	684	830	940
10	804	710	1110	1050	950	1280	2150	1020	1050	675	745	1020
11	984	686	1020	1030	937	1100	2050	991	1080	724	726	1020
12	1100	670	1060	1100	1050	1130	1940	967	1050	675	748	957
13	1060	644	1070	1100	1070	1210	2150	912	978	754	815	960
14	967	437	1080	1150	1030	1240	2260	988	911	793	902	932
15	952	391	1100	1150	1060	1280	2160	953	876	830	889	1050
16	938	722	1100	890	864	1410	2090	922	825	762	815	1520
17	921	940	1090	750	839	3140	2010	889	815	690	805	1290
18	872	910	1090	671	799	3310	1930	953	802	738	869	1830
19	836	927	1080	748	867	2000	1830	1130	788	821	735	1360
20	826	915	1070	919	854	1820	1840	1000	740	794	749	1210
21	816	944	1050	940	899	2040	1750	1110	739	731	731	1100
22	870	1010	1040	950	948	2200	1580	999	690	665	707	1030
23	1060	1010	1030	920	959	3220	1430	947	674	580	708	985
24	1010	1020	1020	875	925	3070	1370	962	643	485	731	951
25	1040	1020	1030	859	959	3050	1310	1700	575	416	1080	923
26	1070	1020	1040	870	1070	2250	1260	1330	543	431	1000	940
27	975	1020	1040	890	1280	1950	1230	1330	586	420	865	949
28	912	1040	1030	930	1690	1750	1160	1740	582	406	809	981
29	872	1050	1030	950	---	1650	1110	1700	454	373	814	978
30	827	1090	1060	940	---	1520	1110	1230	455	340	820	978
31	793	---	1060	927	---	1530	---	1180	---	309	813	---
TOTAL	30284	24672	33160	30579	27124	54450	55280	35423	24490	18162	22563	30612
MEAN	977	822	1070	986	969	1756	1843	1143	816	586	728	1020
MAX	1310	1090	1130	1150	1690	3310	2310	1740	1100	830	1080	1830
MIN	793	391	1020	671	799	1020	1110	889	454	309	310	764
AC-FT	60070	48940	65770	60650	53800	108000	109600	70260	48580	36020	44750	60720

CAL YR 1986 TOTAL 389414 MEAN 1067 MAX 2700 MIN 391 AC-FT 772400
WTR YR 1987 TOTAL 386799 MEAN 1060 MAX 3310 MIN 309 AC-FT 767200

PLATTE RIVER BASIN

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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 1986 TO SEPTEMBER 1987

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						
27...	1105	954	276	7.71	11.5	10.4
NOV						
17...	1125	985	283	7.53	0.5	12.9
DEC						
11...	1100	1120	282	7.68	0.5	12.5
JAN						
21...	1420	980	243	7.60	0.5	12.5
FEB						
12...	1055	1050	236	7.68	4.5	12.2
MAR						
03...	1050	1120	245	7.75	5.0	12.3
APR						
14...	0950	2240	286	8.12	6.5	11.2
MAY						
05...	1010	1200	262	7.96	13.0	10.6
JUN						
16...	1250	808	234	8.60	31.0	8.1
JUL						
27...	1300	434	260	8.92	32.0	8.3
AUG						
17...	1030	755	232	8.84	21.5	7.8
SEP						
28...	0930	987	228	8.15	16.5	8.8

DATE	TIME	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM 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											
03...	1050	17	100	0	32	5.4	8.1	0.4	6.7	114	11
JUL											
27...	1300	3	110	0	36	5.6	9.8	0.4	8.2	132	10

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- PHORUS, 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											
03...	3.2	0.30	47	180	0.25	551	0.900	0.110	20	26	6
JUL											
27...	2.1	0.40	45	200	0.27	230	<0.100	0.820	30	10	6

PLATTE RIVER BASIN

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: Nov. 12-15, Dec. 14, Jan. 23-27, Mar. 29, and Aug. 19, 24, 26. Records good. Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--39 years, 163 ft³/s, 118,100 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)
Oct. 8	2400	315	3.94	Apr. 18	0400	608	4.00
Oct. 11	0700	598	4.73	May 2	2330	449	3.69
Oct. 25	0630	342	4.03	May 5	0900	383	3.70
Mar. 6	1530	327	3.89	May 31	0330	323	3.51
Mar. 19	2400	*2770	6.67	June 10	0400	462	3.92
Apr. 3	1200	1310	5.27	Sept. 16	1200	330	3.57

Minimum daily discharge, 101 ft³/s Aug. 6.

DISCHARGE, 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	274	243	235	197	196	285	621	218	289	173	128	170
2	241	228	233	197	196	275	815	250	252	171	173	168
3	250	214	226	197	195	290	1190	164	223	169	151	172
4	271	197	218	197	199	296	1010	105	201	164	117	172
5	275	211	211	197	204	304	843	350	187	176	114	174
6	277	214	206	196	206	321	724	343	159	169	101	184
7	263	212	204	193	208	318	686	333	165	165	140	200
8	259	210	204	189	203	301	626	294	166	164	204	190
9	271	210	203	189	199	281	552	244	161	164	231	198
10	254	205	199	187	199	257	462	239	306	161	176	212
11	438	191	198	194	200	244	379	220	257	159	132	209
12	294	160	182	176	202	245	328	197	224	155	159	198
13	251	150	202	183	204	242	282	185	201	154	170	190
14	250	170	200	188	206	241	274	170	199	158	170	188
15	250	220	205	190	217	241	400	172	193	160	163	200
16	221	237	214	196	224	246	503	167	189	157	159	292
17	179	225	218	182	225	557	592	140	185	150	157	306
18	149	221	212	190	218	966	582	226	186	155	157	252
19	184	220	213	197	214	1570	501	263	201	160	172	196
20	211	220	215	205	211	2240	373	220	200	152	195	205
21	217	224	215	193	207	1710	309	217	196	142	202	200
22	236	248	212	195	204	1330	267	217	190	137	205	190
23	251	247	207	170	202	1030	267	207	182	137	222	186
24	273	243	206	160	199	879	253	203	178	136	212	181
25	329	257	204	180	205	712	249	223	181	137	195	170
26	311	258	200	220	212	627	246	242	182	139	190	180
27	301	253	200	210	221	541	234	241	186	136	184	177
28	301	246	200	187	261	512	229	245	184	124	177	177
29	288	241	200	188	---	500	230	255	179	132	174	177
30	270	240	200	192	---	519	223	286	175	133	170	175
31	256	---	198	195	---	536	---	320	---	130	168	---
TOTAL	8095	6615	6440	5930	5837	18616	14250	7156	5977	4719	5268	5889
MEAN	261	220	208	191	208	601	475	231	199	152	170	196
MAX	438	258	235	220	261	2240	1190	350	306	176	231	306
MIN	149	150	182	160	195	241	223	105	159	124	101	168
AC-FT	16060	13120	12770	11760	11580	36920	28260	14190	11860	9360	10450	11680

CAL YR 1986 TOTAL 83278 MEAN 228 MAX 612 MIN 147 AC-FT 165200
WTR YR 1987 TOTAL 94792 MEAN 260 MAX 2240 MIN 101 AC-FT 188000

PLATTE RIVER BASIN

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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 bank 400 ft downstream from highway 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

REMARKS.--Estimated daily discharges: Mar. 21-30, Apr. 2-12. 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.--47 years (1940-87), 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)
Mar. 21	unknown	*4960	*a6.99	Apr. 4	unknown	1510	a3.42

a From floodmark.

Minimum daily discharge, 97 ft³/s July 31.

DISCHARGE, 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	423	387	306	268	287	390	834	337	488	199	102	229
2	441	370	309	280	275	378	925	341	472	174	107	214
3	414	361	281	283	275	384	1200	343	393	182	153	209
4	506	350	311	275	282	388	1400	380	347	172	185	182
5	402	335	290	278	299	410	1200	214	320	194	162	224
6	392	334	288	283	296	370	1020	441	287	205	174	226
7	408	333	284	278	280	398	950	487	271	224	177	397
8	387	365	262	287	282	501	885	479	250	250	279	364
9	380	322	279	299	288	418	800	473	269	235	267	286
10	403	340	272	276	296	334	700	390	268	222	326	335
11	482	315	187	268	316	327	640	384	467	223	294	279
12	443	250	271	316	313	323	590	352	423	213	207	300
13	345	173	261	288	320	338	566	331	360	215	167	284
14	315	227	239	272	324	369	516	315	293	212	187	271
15	310	344	278	277	330	360	482	289	294	209	220	296
16	312	415	279	245	332	356	577	279	268	191	205	686
17	289	355	260	193	321	663	672	271	254	174	188	445
18	265	360	243	160	319	1250	664	369	246	192	199	455
19	276	307	241	201	318	1390	720	557	251	213	192	386
20	304	326	245	209	319	2290	666	506	277	182	263	310
21	359	314	241	232	318	4280	576	436	303	168	292	272
22	401	318	252	237	309	2470	519	378	293	145	261	274
23	425	319	246	195	308	1790	388	354	262	124	247	270
24	416	323	255	193	307	1570	349	338	242	126	210	264
25	416	325	245	196	324	1410	350	330	237	155	418	254
26	457	328	243	222	332	1270	362	414	207	131	340	255
27	423	323	245	300	357	1120	366	411	203	131	297	249
28	423	307	245	332	392	970	368	395	229	113	273	252
29	399	311	251	313	---	770	375	385	266	107	248	253
30	402	306	245	293	---	770	374	402	217	99	226	263
31	389	---	258	281	---	810	---	431	---	97	219	---
TOTAL	12007	9743	8112	8030	8719	28867	20034	11812	8957	5477	7085	8984
MEAN	387	325	262	259	311	931	668	381	299	177	229	299
MAX	506	415	311	332	392	4280	1400	557	488	250	418	686
MIN	265	173	187	160	275	323	349	214	203	97	102	182
AC-FT	23820	19330	16090	15930	17290	57260	39740	23430	17770	10860	14050	17820

CAL YR 1986 TOTAL 123769 MEAN 339 MAX 1180 MIN 173 AC-FT 245500
WTR YR 1987 TOTAL 137827 MEAN 378 MAX 4280 MIN 97 AC-FT 273400

PLATTE RIVER BASIN

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 1986 TO SEPTEMBER 1987

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 (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)
OCT 08...	0900	384	280	7.80	14.5	--	40	--	--	--	--	120
NOV 05...	1415	339	328	8.29	8.0	727	25	22	12.2	160	420	140
DEC 03...	0945	297	284	8.23	0.5	725	14	--	13.2	--	--	130
JAN 07...	1445	307	305	8.20	0.0	728	8	21	14.3	380	230	140
FEB 04...	0905	294	293	8.13	1.0	--	8	--	--	--	--	140
MAR 03...	1415	396	283	8.18	8.0	730	17	4.8	12.1	E69	92	120
31...	1455	835	296	7.77	1.0	--	70	--	--	--	--	110
MAY 12...	1230	349	295	8.04	21.0	720	--	22	9.1	250	160	130
JUN 04...	0910	340	290	8.14	19.0	--	36	--	--	--	--	130
30...	1240	183	275	8.75	24.0	730	25	23	9.1	--	--	120
AUG 05...	1110	160	249	8.52	24.5	--	8	--	--	--	--	97
SEP 23...	1430	272	304	8.18	18.5	740	13	25	10.5	3300	K1100	120

E Estimated value.

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

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY WH WAT TOTAL FIELD (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
OCT 08...	0	38	6.7	9.8	0.4	7.2	--	14	2.8	0.20	41
NOV 05...	0	44	7.6	11	0.4	8.4	150	11	3.0	0.30	41
DEC 03...	0	39	6.9	9.6	0.4	7.1	--	12	2.8	0.20	39
JAN 07...	0	44	7.5	9.0	0.3	6.5	148	13	2.5	0.20	44
FEB 04...	0	43	7.0	8.3	0.3	6.5	--	10	2.5	0.20	43
MAR 03...	0	37	6.3	8.5	0.4	6.6	132	9.6	2.8	0.30	37
31...	0	35	6.7	10	0.4	6.4	--	11	3.4	0.20	26
MAY 12...	0	41	7.2	10	0.4	6.7	148	12	2.4	0.20	34
JUN 04...	0	40	6.7	8.9	0.4	6.2	--	10	2.0	0.20	36
30...	0	38	6.3	7.7	0.3	6.9	139	14	1.9	0.30	42
AUG 05...	0	30	5.4	7.1	0.3	6.0	--	11	1.4	0.30	38
SEP 23...	0	36	6.1	7.6	0.3	7.8	134	11	1.6	0.30	39

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

PLATTE RIVER BASIN

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.--Estimated daily discharges: Aug. 8-20. Records good except for period of estimated record, which is fair. 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.--50 years (water years 1938-87), 1,597 ft³/s, 1,157,000 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, 3,010 ft³/s Sept. 20; minimum daily, 16 ft³/s Jan. 19.

DISCHARGE, 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	2730	2760	2700	732	1900	2340	2030	1030	1450	1080	451	1640
2	2820	2800	2760	133	2300	2160	2100	1000	1390	994	448	1590
3	2840	2790	2480	119	2940	2000	2030	1060	1460	887	496	1640
4	2860	2560	398	150	2770	1880	1880	1380	1460	863	697	1580
5	2850	2740	74	1150	2780	1840	1810	1340	1470	978	702	1520
6	2870	2590	95	2280	2730	1760	1640	1420	1470	1370	850	1540
7	2880	2500	83	1350	2570	1670	1620	1220	1400	1460	976	1910
8	2520	2700	60	145	2530	1620	1640	1110	1410	1480	2000	1900
9	2600	2680	51	913	2560	1760	1700	1110	1500	1570	2700	1950
10	2780	1390	47	170	2460	1890	1700	1130	1730	1590	2300	1940
11	2790	77	44	47	2380	1960	1700	1100	1740	1720	1900	1890
12	2780	42	23	949	2270	1860	1700	1100	1710	1690	1700	1990
13	2840	48	45	2370	2240	1760	1800	1160	1700	1540	1650	2020
14	2870	54	55	2360	2260	1710	2210	1150	1750	1560	1600	2080
15	2910	61	267	798	2380	1800	2250	1220	1750	1590	1700	2170
16	2800	84	421	247	2520	1820	1870	1190	1790	1620	1900	2970
17	2780	707	393	42	1680	2320	1620	1150	1760	1410	1750	2750
18	2640	2170	196	17	1900	2370	1350	1130	1870	1310	1700	2900
19	2570	1760	349	16	2380	2300	1230	1240	1940	1370	1600	2890
20	2560	2430	64	17	2420	2330	1150	1240	1790	1760	1350	3010
21	2620	1670	39	23	2400	2400	1160	1110	1810	1930	1160	2660
22	2850	2630	459	28	2380	2340	1110	1220	1720	1830	1160	2590
23	2840	2630	607	29	2330	2460	1000	1170	1610	1490	1040	2590
24	2760	2630	646	36	2240	2300	899	1150	1500	1260	1160	2400
25	2780	2620	658	38	2350	2290	815	1220	1510	1080	1950	2270
26	2760	2570	768	102	2290	2120	791	1530	1400	996	2970	2310
27	2890	2570	735	727	2220	2090	751	1370	1210	889	2860	2200
28	2820	2710	987	721	2310	1140	872	1350	1220	821	2280	2170
29	1510	2610	1500	1630	---	19	850	1450	1250	682	1970	2260
30	2810	2510	948	1980	---	161	1010	1300	1060	614	1800	2270
31	2700	---	1100	1580	---	1200	---	1340	---	555	1700	---
TOTAL	84630	58093	19052	20899	66490	57670	44288	37690	46830	39989	48520	65600
MEAN	2730	1936	615	674	2375	1860	1476	1216	1561	1290	1565	2187
MAX	2910	2800	2760	2370	2940	2460	2250	1530	1940	1930	2970	3010
MIN	1510	42	23	16	1680	19	751	1000	1060	555	448	1520
AC-FT	167900	115200	37790	41450	131900	114400	87850	74760	92890	79320	96240	130100

CAL YR 1986 TOTAL 702556 MEAN 1925 MAX 3120 MIN 23 AC-FT 1394000
WTR YR 1987 TOTAL 589751 MEAN 1616 MAX 3010 MIN 16 AC-FT 1170000

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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.

PERIOD OF RECORD.--August 1928 to June 1932, October 1943 to current year (October 1953 to April 1955, monthly discharge only).

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.

AVERAGE DISCHARGE.--44 years (water years 1944-87). 670 ft³/s. 485,400 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, 17,900 ft³/s Mar. 18, gage height, 8.50 ft; minimum daily discharge, 23 ft³/s July 27 and 28.

DISCHARGE, 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	72	214	210	2500	3000	1810	4440	1410	1550	28	75	82
2	78	334	300	3100	2580	1160	4810	1820	593	30	85	80
3	154	157	450	3000	401	934	4000	2390	673	33	84	79
4	1590	85	2000	3100	425	914	3620	3430	1010	33	57	80
5	1840	97	3000	2000	454	967	3470	2670	995	32	75	77
6	1000	83	2900	617	555	1250	3290	2870	780	44	74	72
7	269	78	2800	1930	595	1310	3130	2810	628	54	66	47
8	78	251	3000	2980	645	1620	2880	2640	496	51	154	48
9	57	356	3100	2000	668	1660	2480	1900	420	41	1160	94
10	106	1500	3300	2730	597	1240	2300	1940	689	55	339	80
11	632	3000	3100	2500	794	1120	2220	1960	2240	48	82	84
12	1400	3500	2900	1380	855	1030	2800	1830	1350	46	90	69
13	1770	2900	3000	174	983	1060	3580	1700	1200	44	73	70
14	855	2400	3100	143	1060	1050	4890	1830	653	43	64	42
15	313	2000	3000	2690	1270	1330	3710	2450	385	38	54	46
16	216	2500	2900	3000	1310	1470	2800	1810	288	36	47	231
17	111	2800	2900	2300	1920	4630	2630	1020	175	40	43	1180
18	70	1400	2900	1850	1200	12300	2500	1120	129	42	38	1240
19	51	2000	3200	1800	506	7170	2430	1420	1460	33	41	506
20	72	1100	3000	3140	584	4100	2690	1680	397	35	38	244
21	74	1900	3000	3500	640	4060	2960	885	168	35	39	163
22	202	500	2600	3300	640	3850	2400	863	87	33	30	114
23	583	330	2600	3000	634	7180	1830	498	75	28	66	50
24	1140	250	2600	2700	591	8690	1600	557	72	27	84	38
25	1010	214	2500	2900	642	6270	1490	1030	54	26	172	33
26	1030	182	2400	3200	690	4720	1350	1100	38	24	541	30
27	585	284	2500	3500	1050	4230	1390	967	34	23	367	29
28	294	164	2300	3700	1610	4430	1520	933	33	23	64	27
29	719	147	2000	3600	---	4260	1430	927	37	38	68	26
30	260	157	2400	3400	---	3330	1320	948	34	26	83	24
31	165	---	2200	3500	---	3520	---	748	---	34	83	---
TOTAL	16796	30883	78160	79234	26899	102665	81960	50156	16743	1123	4336	4985
MEAN	542	1029	2521	2556	961	3312	2732	1618	558	36.2	140	166
MAX	1840	3500	3300	3700	3000	12300	4890	3430	2240	55	1160	1240
MIN	51	78	210	143	401	914	1320	498	33	23	30	24
AC-FT	33310	61260	155000	157200	53350	203600	162600	99480	33210	2230	8600	9890
CAL YR 1986	TOTAL 362683		MEAN 994	MAX 6360	MIN 21	AC-FT 719400						
WTR YR 1987	TOTAL 493940		MEAN 1353	MAX 12300	MIN 23	AC-FT 979700						

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: Nov. 10-16, Dec. 4 to Jan. 12, Jan. 15-26, and Feb. 17-20. 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.--17 years (water years 1945-53, 1980-87), 84.8 ft³/s, 61,440 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. 19	1030	*1600	*9.42	Apr. 13	0645	546	5.94
Mar. 28	0630	776	6.82				

Minimum daily discharge, 30 ft³/s Aug. 1.

DISCHARGE, 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	104	97	93	72	95	178	428	83	72	46	30	50
2	100	95	95	70	96	160	506	81	70	43	32	49
3	109	92	96	70	98	150	533	79	70	43	31	48
4	148	90	88	70	97	144	471	81	68	46	34	48
5	148	88	80	74	96	140	445	92	65	47	37	49
6	130	88	84	74	95	134	387	98	64	45	42	50
7	121	87	86	74	97	130	323	99	61	44	46	51
8	112	88	86	73	102	120	290	95	59	46	52	51
9	109	89	80	71	101	113	260	93	57	43	50	55
10	111	86	60	70	99	109	235	88	96	44	47	64
11	123	70	58	70	106	106	215	82	113	42	43	59
12	167	72	60	80	111	105	199	77	91	45	42	58
13	160	70	64	89	101	106	210	76	77	46	43	58
14	141	70	60	92	106	104	256	73	70	44	44	59
15	125	80	66	88	105	106	256	70	65	40	42	66
16	124	90	74	80	103	110	246	68	61	38	43	94
17	117	96	74	76	90	347	223	64	59	37	42	78
18	112	108	70	74	88	873	190	137	60	39	48	68
19	112	110	74	75	90	1470	167	113	59	40	50	65
20	104	104	72	77	92	1210	145	84	62	39	54	63
21	96	105	66	80	94	882	130	77	71	35	54	62
22	107	120	64	80	93	611	121	76	75	33	50	61
23	160	117	72	78	94	569	116	76	80	32	49	61
24	157	102	72	74	100	566	110	74	85	32	49	60
25	148	97	72	74	107	563	103	78	78	36	53	60
26	139	94	72	80	112	503	100	87	64	37	60	60
27	135	94	72	88	126	583	96	95	55	33	56	59
28	127	94	72	90	163	707	92	91	53	34	54	57
29	116	94	72	93	---	530	90	84	51	35	53	56
30	108	94	72	98	---	313	85	83	48	35	50	56
31	103	---	72	94	---	355	---	78	---	31	50	---
TOTAL	3873	2781	2298	2448	2857	12097	7028	2632	2059	1230	1430	1775
MEAN	125	92.7	74.1	79.0	102	390	234	84.9	68.6	39.7	46.1	59.2
MAX	167	120	96	98	163	1470	533	137	113	47	60	94
MIN	96	70	58	70	88	104	85	64	48	31	30	48
AC-FT	7680	5520	4560	4860	5670	23990	13940	5220	4080	2440	2840	3520

CAL YR 1986 TOTAL 37818 MEAN 104 MAX 571 MIN 49 AC-FT 75010
WTR YR 1987 TOTAL 42508 MEAN 116 MAX 1470 MIN 30 AC-FT 84310

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: Nov. 11-20, Dec. 10-23, and Jan. 16-31. Records fair except for periods of estimated record, which are poor. Natural flow affected slightly by ground-water and surface-water withdrawals for irrigation.

AVERAGE DISCHARGE.--47 years, 128 ft³/s, 92,740 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)
Mar. 21	0830	1540	9.59	May 18	2100	1060	8.17
Mar. 24	0230	*1800	*10.10				

Minimum daily discharge, 29 ft³/s Aug. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	100	82	114	155	236	157	147	147	1340	90	105
2	112	100	84	114	150	229	152	141	142	564	95	101
3	111	98	86	116	140	221	170	133	129	260	96	99
4	107	97	92	118	130	213	195	130	121	200	94	95
5	106	97	96	116	120	206	217	130	120	167	102	97
6	107	98	98	112	120	196	206	124	141	143	193	109
7	108	98	100	110	120	182	204	118	128	130	683	110
8	112	98	102	112	118	174	185	117	117	122	324	100
9	106	99	104	118	114	169	170	119	110	118	176	101
10	108	100	104	120	110	166	157	117	111	160	145	100
11	115	101	106	114	120	167	146	120	114	327	132	99
12	124	102	106	112	140	186	138	118	108	755	168	99
13	120	103	102	114	160	260	135	119	102	474	133	97
14	122	109	104	116	170	254	134	115	101	245	124	94
15	116	114	109	120	170	228	178	151	109	194	118	95
16	115	116	110	130	200	229	195	177	138	168	111	96
17	114	118	108	140	240	241	200	244	119	148	105	112
18	112	121	108	140	230	621	217	190	106	134	105	110
19	108	114	110	135	220	1260	217	194	98	122	134	413
20	122	114	110	140	230	498	204	172	94	112	101	190
21	122	116	108	135	250	430	182	155	111	105	100	176
22	117	110	104	135	270	350	161	144	103	100	99	282
23	118	110	102	135	290	314	145	139	94	99	98	660
24	119	112	102	135	300	269	137	134	91	93	97	284
25	127	108	110	120	376	232	131	135	88	480	91	230
26	119	100	120	130	273	211	131	132	87	248	95	202
27	116	98	118	140	242	199	133	130	92	124	164	185
28	109	94	116	145	242	186	130	137	96	103	157	171
29	103	82	114	155	---	179	134	147	99	93	123	165
30	101	78	114	160	---	174	147	165	1470	89	116	159
31	99	---	114	160	---	166	---	159	---	85	110	---
TOTAL	3506	3105	3243	3961	5400	8646	5008	4453	4686	7502	4479	4936
MEAN	113	104	105	128	193	279	167	144	156	242	144	165
MAX	127	121	120	160	376	1260	217	244	1470	1340	683	660
MIN	99	78	82	110	110	166	130	115	87	85	90	94
AC-FT	6950	6160	6430	7860	10710	17150	9930	8830	9290	14880	8880	9790
CAL YR 1985	TOTAL	50171		MEAN	137	MAX	1110	MIN	52	AC-FT	99510	
WTR YR 1986	TOTAL	58925		MEAN	161	MAX	1470	MIN	78	AC-FT	116900	

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 1986 TO SEPTEMBER 1987

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 08...	1350	172	360	7.90	15.0	9.1	38	11000	5400
NOV 06...	1500	144	400	8.17	9.5	10.6	24	420	1500
DEC 03...	1115	137	371	8.16	1.0	11.0	40	220	K18000
JAN 06...	1245	126	376	8.16	1.0	14.1	34	200	2600
FEB 03...	1330	128	328	8.23	1.5	13.4	32	490	3400
MAR 05...	0815	197	360	8.14	5.5	10.7	54	1200	760
APR 01...	1445	515	353	7.90	0.5	11.4	66	2500	45000
MAY 12...	1640	145	412	8.17	17.5	11.1	35	3700	740
JUN 03...	1430	137	418	8.40	21.0	10.8	41	K2100	1500
30...	1645	90	392	8.16	26.0	8.4	71	--	--
AUG 05...	1540	27	421	9.03	31.0	10.5	64	330	3700
SEP 24...	0905	82	--	8.17	15.0	9.3	23	4000	8000

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 08...	160	0	51	8.2	10	0.4	<2.0	<5.0
NOV 06...	170	0	54	8.3	10	0.3	<2.0	<5.0
DEC 03...	150	0	48	7.8	9.8	0.4	2.0	<5.0
JAN 06...	160	0	51	8.3	9.7	0.3	12	<5.0
FEB 03...	140	0	44	7.6	8.0	0.3	18	<5.0
MAR 05...	150	0	49	7.5	14	0.5	<2.0	9.8
APR 01...	140	0	43	7.5	11	0.4	11	6.0
MAY 12...	180	0	56	8.9	7.6	0.3	17	6.8
JUN 03...	200	0	62	9.8	12	0.4	15	5.6
30...	170	0	55	8.7	10	0.3	10	<5.0
AUG 05...	200	0	65	9.9	10	0.3	20	<5.0
SEP 24...	160	0	51	8.6	9.9	0.4	10	<5.0

PLATTE RIVER BASIN

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06794000 BEAVER CREEK AT GENOA, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 08...	344	0.810	0.020	1.6	1.6	2.4	0.210	18
NOV 06...	99	0.830	0.060	0.77	0.83	1.7	0.500	5.5
DEC 03...	94	0.850	0.120	2.5	2.6	3.5	0.420	5.4
JAN 06...	113	1.20	0.170	0.53	0.70	1.9	0.380	3.8
FEB 03...	225	0.850	0.070	1.5	1.6	2.5	0.500	5.7
MAR 05...	331	0.760	0.130	2.5	2.6	3.4	0.830	13
APR 01...	928	0.690	0.200	11	11	12	0.800	12
MAY 12...	67	0.510	0.060	1.4	1.5	2.0	0.400	6.4
JUN 03...	200	0.860	0.060	1.5	1.6	2.5	0.440	6.4
30...	1080	1.20	0.100	4.7	4.8	6.0	0.380	6.6
AUG 05...	132	0.020	0.040	4.8	4.8	4.8	0.210	9.8
SEP 24...	145	0.830	0.030	0.40	0.43	1.3	0.610	2.9

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: Nov. 9 to Feb 2. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--38 years, 44.5 ft³/s, 32,240 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)
Mar. 24	1100	*1850	*14.83	May 27	1730	1010	10.26

Minimum daily discharge, 10 ft³/s Dec. 4, 5, 10-12, Jan. 9.

DISCHARGE, 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	25	52	22	17	38	49	349	39	107	26	14	21
2	26	45	18	15	35	38	223	39	52	24	15	20
3	33	44	15	14	29	33	155	41	45	23	15	20
4	100	46	10	13	25	31	135	45	42	22	15	19
5	123	48	10	13	25	31	126	43	41	41	15	20
6	86	48	11	12	26	31	98	42	40	39	16	19
7	43	51	12	12	27	30	85	40	38	28	16	29
8	33	59	12	11	27	28	76	38	37	39	31	47
9	28	45	11	10	27	26	67	37	36	30	45	22
10	28	30	10	11	25	25	62	36	36	44	22	21
11	49	20	10	13	27	25	58	36	37	25	16	51
12	249	21	10	15	28	25	56	45	36	32	15	25
13	104	23	11	16	29	26	61	35	36	23	16	21
14	54	22	12	16	30	27	74	50	32	23	16	19
15	42	23	12	14	30	28	67	79	32	22	16	20
16	35	25	13	12	28	30	59	37	30	20	16	119
17	35	28	14	13	30	128	55	35	31	21	16	118
18	36	30	15	14	30	367	52	35	31	24	17	36
19	35	30	15	14	28	236	50	279	36	21	18	25
20	34	32	15	13	27	115	48	193	31	19	23	21
21	36	30	16	13	27	76	46	286	34	18	31	20
22	43	30	17	14	28	63	46	93	33	16	25	19
23	85	30	18	13	28	681	46	56	28	14	20	19
24	101	30	18	13	27	1690	44	50	26	15	20	19
25	120	30	19	14	28	718	43	64	28	16	53	19
26	97	27	20	20	30	307	42	373	27	16	171	20
27	69	28	20	32	34	157	42	890	25	15	55	19
28	53	28	20	37	45	120	40	389	25	14	34	19
29	53	27	18	40	---	145	40	108	82	14	27	18
30	48	25	18	40	---	126	39	69	59	14	23	18
31	48	---	18	40	---	200	---	89	---	15	22	---
TOTAL	1951	1007	460	544	818	5612	2384	3691	1173	713	854	883
MEAN	62.9	33.6	14.8	17.5	29.2	181	79.5	119	39.1	23.0	27.5	29.4
MAX	249	59	22	40	45	1690	349	890	107	44	171	119
MIN	25	20	10	10	25	25	39	35	25	14	14	18
AC-FT	3870	2000	912	1080	1620	11130	4730	7320	2330	1410	1690	1750

CAL YR 1986 TOTAL 24958 MEAN 68.4 MAX 1560 MIN 10 AC-FT 49500
WTR YR 1987 TOTAL 20090 MEAN 55.0 MAX 1690 MIN 10 AC-FT 39850

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DRAINAGE AREA.--77,100 mi², approximately, of which about 63,300 mi² contributes directly to surface runoff.

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

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

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.

REMARKS.--Estimated daily discharges: Nov. 6, Dec. 14 to Jan. 7 and Jan. 16 to Feb. 1. 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.--38 years, 4,534 ft³/s, 3,285,000 acre-ft/yr.

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 54,000 ft³/s Mar. 24, gage height, 8.17 ft; minimum daily, 551 ft³/s July 31.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8080	7830	7200	6000	8000	8470	13400	4740	13100	2530	1020	3510
2	7160	7070	7410	5800	7930	8750	20600	5340	11700	2700	566	3590
3	8290	7670	7530	6000	7830	8020	19100	5030	9700	2830	721	2950
4	8720	7860	6640	6400	7730	6830	18500	5920	10100	2950	819	3170
5	10800	8370	6320	6400	7210	7400	17200	9730	8940	3150	1190	3060
6	11000	8930	6430	6600	7000	6880	17600	7760	8630	2910	987	3460
7	9860	7280	6860	7000	6930	6880	15300	10200	7980	3490	1200	3780
8	9100	8320	7450	7080	7170	6690	14100	8000	7250	2970	3160	4150
9	8520	8000	7170	7010	6700	6650	12600	7800	6680	2990	3210	4420
10	8390	7770	6810	6940	7210	7220	12300	7110	7080	2950	3000	4230
11	9770	6780	6420	6860	6970	7030	10900	7300	8610	3240	3260	4240
12	10300	6690	6010	6740	7160	7220	11000	6640	10700	4500	2310	4100
13	11900	5870	5500	7150	7280	7080	10200	5880	9630	5210	2150	4120
14	10900	5910	5200	7660	6860	6320	11800	6080	9390	4550	2100	4280
15	9830	6450	5200	7110	7610	6650	14600	6100	8070	4020	2260	4780
16	9400	5830	5400	5800	7350	6550	13000	6000	7950	3810	2290	8150
17	8330	7120	6000	5000	8470	7370	12300	6110	6620	3330	2180	6850
18	8700	8320	7000	4500	7080	22200	12100	5550	6050	3250	2240	8200
19	8490	9030	7000	4000	7000	26300	9860	6360	6770	2970	2410	7640
20	7960	8820	6800	4300	6900	22800	10000	8490	8060	2690	2370	6180
21	7830	8620	6600	4500	6000	23100	8830	8850	7090	2980	2520	7360
22	7750	8690	6200	4300	6930	22400	8960	7710	6220	2660	2150	4210
23	8570	8720	6000	4000	6690	34500	8160	6540	5500	2600	1760	5270
24	8660	7840	6400	4500	6430	43700	6520	6830	5910	2750	1800	5180
25	10300	7430	6800	4700	6400	43600	6580	6890	5190	2020	4880	5190
26	9110	7240	6400	5000	6540	30100	5730	7570	5090	2010	8090	4670
27	8190	6850	6200	5400	6810	23600	6420	11400	3940	2000	5820	4660
28	8600	6770	6400	5300	6050	21200	5190	9320	3390	765	5350	4430
29	7690	7310	6200	6000	---	16400	5700	8170	2690	1030	3470	3830
30	6930	7070	6000	7000	---	11600	4720	9190	3110	967	3710	4460
31	7460	---	6000	7500	---	10600	---	9300	---	551	3390	---
TOTAL	276590	226460	199550	182550	198240	474110	343270	227910	221140	87373	82383	144120
MEAN	8922	7549	6437	5889	7080	15290	11440	7352	7371	2818	2658	4804
MAX	11900	9030	7530	7660	8470	43700	20600	11400	13100	5210	8090	8200
MIN	6930	5830	5200	4000	6000	6320	4720	4740	2690	551	566	2950
AC-FT	548600	449200	395800	362100	393200	940400	680900	452100	438600	173300	163400	285900
CAL YR 1986	TOTAL 2638810		MEAN 7230	MAX 19000		MIN 2070		AC-FT 5234000				
WTR YR 1987	TOTAL 2663696		MEAN 7298	MAX 43700		MIN 551		AC-FT 5283000				

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 1986 TO SEPTEMBER 1987

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									
07...	1330	10700	450	8.00	15.5	10.8	30	K8800	1800
NOV									
07...	1050	7380	548	8.37	8.5	11.4	19	K190	420
DEC									
04...	1100	7330	540	8.35	0.5	18.0	29	110	2400
JAN									
08...	1300	7610	486	8.02	0.0	14.2	13	K35	100
FEB									
03...	1100	6950	596	8.29	0.0	13.7	13	500	K260
MAR									
05...	1310	6600	575	8.43	9.0	12.4	14	120	270
APR									
01...	1215	12800	477	8.06	4.5	12.3	31	K1100	15000
MAY									
14...	1000	8020	533	8.73	19.0	9.4	59	K150	160
JUN									
03...	1040	9120	574	8.42	21.0	9.8	68	130000	37000
29...	1045	3800	545	8.85	26.0	9.0	36	560	120
AUG									
04...	1135	1110	466	8.76	24.0	10.3	22	2600	2300
SEP									
22...	1340	3200	--	8.14	18.0	10.0	--	12000	1200

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT								
07...	170	0	48	11	27	0.9	89	12
NOV								
07...	200	0	56	14	36	1	110	10
DEC								
04...	190	0	52	14	41	1	120	15
JAN								
08...	170	0	49	12	31	1	74	9.8
FEB								
03...	210	0	56	16	40	1	150	11
MAR								
05...	230	0	65	16	44	1	110	--
APR								
01...	180	0	52	12	24	0.8	43	9.5
MAY								
14...	170	0	44	15	38	1	120	15
JUN								
03...	210	0	60	14	40	1	100	22
29...	180	0	47	15	39	1	89	16
AUG								
04...	180	0	51	12	24	0.8	65	8.8
SEP								
22...	140	0	42	9.3	27	1	62	10

PLATTE RIVER BASIN

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06796000 PLATTE RIVER AT NORTH BEND, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 07...	198	0.790	<0.020	--	0.95	1.7	0.240	12
NOV 07...	102	0.940	0.040	0.96	1.0	1.9	0.270	5.4
DEC 04...	65	1.00	0.050	1.2	1.3	2.3	0.230	4.0
JAN 08...	73	1.50	0.090	0.43	0.52	2.0	0.250	3.6
FEB 03...	76	1.40	0.060	0.37	0.43	1.8	0.210	4.3
MAR 05...	66	1.50	0.220	0.78	1.0	2.5	0.260	4.0
APR 01...	228	1.40	0.240	3.3	3.5	4.9	0.430	6.7
MAY 14...	180	0.020	0.040	2.5	2.5	2.5	0.330	6.3
JUN 03...	687	1.60	0.070	6.3	6.4	8.0	0.380	14
JUN 29...	107	0.020	0.050	4.3	4.4	4.4	0.310	5.4
AUG 04...	118	0.020	<0.020	--	1.5	1.5	0.220	6.9
SEP 22...	933	0.810	0.810	2.8	3.6	4.4	0.240	10

PLATTE RIVER BASIN

06796973 ELKHORN RIVER NEAR ATKINSON, NE

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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,042 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 31 to Dec. 4, Dec. 10-14, and Jan. 17-21. Records good except for periods of estimated daily discharges, which are poor. Minor diversions for irrigation above station.

COOPERATION.--Discharge record furnished by Nebraska Department of Water Resources.

AVERAGE DISCHARGE.--5 years (water years 1983-87), 138 ft³/s, 99,980 acre-ft/year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,500 ft³/s Apr. 8, 1984, gage height, 8.41 ft; minimum daily, 5.8 ft³/s Dec. 30, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,350 ft³/s Apr. 1, gage height, 8.24 ft; minimum daily, 15 ft³/s Aug. 2, 3, 5, 6.

DISCHARGE, 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	227	200	155	67	68	274	2160	87	50	28	16	19
2	202	180	145	67	77	310	2050	78	47	28	15	17
3	190	160	135	65	82	357	1950	73	45	28	15	16
4	199	150	120	65	85	375	1750	78	44	29	16	17
5	196	145	112	67	86	355	1540	102	44	29	15	19
6	185	142	106	67	87	321	1280	127	42	30	15	19
7	174	140	102	66	91	285	1040	140	40	30	16	19
8	160	140	101	67	96	238	847	131	37	31	16	19
9	165	130	96	65	97	192	673	114	35	30	17	21
10	169	135	95	62	98	157	519	104	42	30	17	20
11	163	110	90	66	102	146	409	93	42	37	16	18
12	163	90	85	65	103	145	329	83	39	33	16	19
13	165	80	80	70	103	141	371	76	37	31	17	20
14	165	90	75	75	99	134	621	67	35	30	18	20
15	162	120	72	73	95	129	728	61	32	29	18	26
16	156	115	71	63	90	137	640	57	32	27	19	33
17	150	110	69	58	86	639	552	53	31	24	17	28
18	143	120	69	69	85	1790	462	52	31	26	17	25
19	138	130	68	84	85	2010	371	53	39	24	18	24
20	134	134	66	98	85	1970	303	51	36	22	20	24
21	128	150	65	90	87	1890	262	49	35	22	19	22
22	144	145	65	96	85	1780	235	48	33	21	18	22
23	261	160	65	91	85	1630	209	46	30	21	19	23
24	356	170	66	91	88	1210	185	46	29	20	18	22
25	401	180	66	91	102	606	163	53	29	20	19	23
26	401	180	65	95	121	416	144	59	29	19	20	22
27	378	180	65	94	147	880	125	56	29	18	20	23
28	339	175	66	77	223	1080	113	54	29	18	20	22
29	303	170	67	63	---	1030	103	51	28	17	20	22
30	274	160	68	62	---	1270	93	50	29	17	20	21
31	215	---	67	65	---	1650	---	51	---	16	19	---
TOTAL	6606	4291	2637	2294	2738	23547	20227	2243	1080	785	546	645
MEAN	213	143	85.1	74.0	97.8	760	674	72.4	36.0	25.3	17.6	21.5
MAX	401	200	155	98	223	2010	2160	140	50	37	20	33
MIN	128	80	65	58	68	129	93	46	28	16	15	16
AC-FT	13100	8510	5230	4550	5430	46710	40120	4450	2140	1560	1080	1280
CAL YR 1986	TOTAL	53118	MEAN	146	MAX	1500	MIN	21	AC-FT	105400		
WTR YR 1987	TOTAL	67639	MEAN	185	MAX	2160	MIN	15	AC-FT	134200		

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 1986 TO SEPTEMBER 1987

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 24...	1225	359	308	7.35	11.0	8.8	54	1300	1700
NOV 20...	1125	134	300	7.43	2.5	12.6	34	580	400
DEC 18...	0925	69	289	7.54	0.5	12.6	13	1900	1100
JAN 14...	1345	81	255	7.51	3.5	12.0	8	2400	980
FEB 13...	1230	106	244	7.71	5.5	11.3	10	1600	300
MAR 13...	1335	147	328	7.71	9.0	10.6	100	1600	1300
APR 08...	1205	862	--	7.68	14.5	9.2	15	81	2100
MAY 07...	1325	150	297	7.63	19.5	8.7	49	1000	290
JUN 04...	1445	46	246	7.98	23.5	10.7	6	140	820
JUL 02...	1120	29	254	7.72	24.0	8.4	55	580	330
AUG 25...	1520	20	240	7.96	18.0	9.7	7	2400	4100
SEP 24...	1105	25	246	7.75	16.0	11.7	15	580	K42000

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 24...	120	0	39	5.7	15	0.6	<2.0	5.9
NOV 20...	120	0	37	5.6	16	0.7	<2.0	<5.0
DEC 18...	110	0	35	5.3	15	0.7	8.9	<5.0
JAN 14...	91	0	29	4.4	12	0.6	5.9	<0.15
FEB 13...	87	0	28	4.2	9.9	0.5	--	<5.0
MAR 13...	140	0	46	6.0	19	0.7	2.7	6.6
APR 08...	120	0	37	5.7	16	0.7	<2.0	7.5
MAY 07...	110	0	35	5.3	11	0.5	3.9	<5.0
JUN 04...	94	0	31	4.1	11	0.5	9.3	<5.0
JUL 02...	97	0	32	4.2	10	0.5	7.4	<5.0
AUG 25...	97	0	32	4.2	8.7	0.4	11	<5.0
SEP 24...	90	0	29	4.2	11	0.5	9.2	<5.0

PLATTE RIVER BASIN

06796973 ELKHORN RIVER NEAR ATKINSON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 24...	10	0.230	<0.020	--	2.1	2.3	0.230	17
NOV 20...	5	0.880	0.040	2.2	2.2	3.1	0.150	10
DEC 18...	4	2.10	0.090	1.5	1.6	3.7	0.130	7.4
JAN 14...	4	1.50	0.060	0.41	0.47	2.0	0.150	5.9
FEB 13...	8	0.940	0.170	0.37	0.54	1.5	0.090	6.8
MAR 13...	5	0.730	0.190	0.31	0.50	1.2	0.090	14
APR 08...	7	0.050	0.550	0.45	1.0	1.0	0.050	4.0
MAY 07...	13	0.920	0.150	1.3	1.5	2.4	0.140	13
JUN 04...	18	2.60	<0.020	--	1.0	3.6	1.90	4.2
JUL 02...	7	1.70	0.020	0.65	0.67	2.4	0.200	3.4
AUG 25...	7	1.90	0.090	0.91	1.0	2.9	0.190	2.8
SEP 24...	10	2.00	0.050	0.54	0.59	2.6	0.280	4.1

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: Nov. 11-21, Dec. 2-28, Jan. 1-12, Jan. 16 to Feb. 1, Mar. 20 to Apr. 1 and Apr. 21 to May 7. Records good except for period of estimated record which is poor.

AVERAGE DISCHARGE.--9 years, 38.6 ft³/s, 27,970 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, 948 ft³/s Mar. 19, gage height, 6.83 ft, from floodmark; minimum daily, 3.3 ft³/s Sept. 4.

DISCHARGE, 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	93	106	73	32	34	130	500	68	19	11	3.8	3.6
2	91	96	67	30	35	146	574	62	17	10	3.7	3.5
3	99	87	60	28	36	160	554	58	15	8.8	3.8	3.4
4	106	80	56	29	42	161	515	58	15	9.7	4.7	3.3
5	106	79	52	30	46	153	474	60	13	10	4.6	3.6
6	103	70	45	32	44	150	379	61	14	9.3	4.1	3.7
7	102	69	40	34	50	139	315	60	13	9.6	4.3	3.7
8	100	69	35	32	56	127	280	51	14	9.9	6.1	3.8
9	104	69	25	29	57	109	185	48	15	9.5	6.3	4.9
10	101	82	24	23	52	88	167	46	22	8.3	5.2	4.1
11	98	70	37	25	58	82	162	40	21	9.0	4.1	3.5
12	96	46	35	29	59	75	159	39	18	8.9	5.1	3.8
13	95	54	38	50	57	73	227	37	16	8.8	5.9	3.9
14	92	76	42	36	58	76	285	34	13	7.7	5.2	4.0
15	89	78	42	30	59	77	310	29	11	7.0	4.3	9.0
16	88	76	41	25	59	90	264	27	16	6.2	4.9	17
17	86	72	40	20	54	577	205	24	18	5.4	4.5	12
18	85	76	42	29	50	803	186	25	18	8.0	4.4	11
19	85	74	40	33	48	900	174	26	35	7.0	4.9	10
20	83	76	42	36	48	783	162	23	39	6.6	6.8	8.6
21	79	76	38	37	48	650	150	23	30	6.2	6.6	7.8
22	101	94	37	36	46	560	140	20	26	6.0	6.9	8.0
23	212	108	38	35	45	493	130	19	22	5.6	6.6	8.6
24	214	107	39	34	46	400	120	18	22	5.6	6.4	9.6
25	228	106	42	35	50	350	110	28	27	5.5	6.4	9.9
26	225	108	39	33	55	300	100	41	24	4.9	6.0	10
27	209	93	40	32	69	320	92	29	21	4.4	5.2	9.8
28	188	86	37	32	108	350	84	28	19	3.9	5.4	9.1
29	158	79	42	33	---	430	78	24	16	3.9	4.6	8.7
30	142	77	47	34	---	380	72	23	13	3.9	3.9	8.9
31	126	---	43	36	---	410	---	24	---	3.8	3.7	---
TOTAL	3784	2439	1318	989	1469	9542	7153	1153	582	224.4	158.4	210.8
MEAN	122	81.3	42.5	31.9	52.5	308	238	37.2	19.4	7.24	5.11	7.03
MAX	228	108	73	50	108	900	574	68	39	11	6.9	17
MIN	79	46	24	20	34	73	72	18	11	3.8	3.7	3.3
AC-FT	7510	4840	2610	1960	2910	18930	14190	2290	1150	445	314	418
CAL YR 1986	TOTAL	28839	MEAN	79.0	MAX	614	MIN	14	AC-FT	57200		
WTR YR 1987	TOTAL	29022.6	MEAN	79.5	MAX	900	MIN	3.3	AC-FT	57570		

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. 10 to Jan. 5. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--40 years, 187 ft³/s, 135,500 acre-ft/yr; median of yearly mean discharges, 120 ft³/s, 86,900 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)
Oct. 26	1500	1020	6.34	Apr. 3	0100	6350	10.13
Mar. 6	1800	692	5.60	Apr. 16	1858	1850	6.95
Mar. 20	0500	*6750	*10.31				

Minimum daily discharge, 30 ft³/s July 31 to Aug. 6.

DISCHARGE, 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	799	622	378	200	212	426	4260	288	129	73	30	37
2	680	539	354	195	223	503	5830	270	125	69	30	35
3	622	482	331	205	227	613	6260	258	120	66	30	34
4	597	436	302	230	219	641	5810	246	115	63	30	32
5	572	407	271	205	222	659	5300	254	111	60	30	36
6	546	385	267	183	229	665	4460	281	104	59	30	34
7	511	366	272	178	229	664	3690	289	99	59	32	34
8	477	346	259	152	232	620	2980	285	93	59	37	36
9	463	320	262	149	243	549	2390	274	93	59	35	40
10	460	301	116	149	249	444	1850	259	107	60	34	44
11	470	243	140	123	249	411	1430	243	114	62	31	45
12	490	172	205	163	252	380	1120	224	112	64	32	45
13	488	160	200	202	258	347	1110	209	103	67	32	44
14	476	246	220	202	264	344	1380	194	95	66	32	45
15	465	249	230	185	264	336	1600	182	88	61	32	57
16	451	272	250	115	258	357	1780	170	86	56	31	83
17	433	267	235	112	258	1270	1810	161	91	52	31	91
18	412	300	210	154	258	2840	1590	159	93	55	35	87
19	398	345	220	187	240	4900	1320	156	125	53	45	78
20	378	345	210	225	240	6570	1080	154	129	51	58	72
21	354	392	210	220	240	6280	896	156	126	46	52	69
22	369	423	215	199	240	5630	763	151	116	42	50	67
23	497	420	225	202	243	5230	669	145	106	40	45	65
24	657	452	230	204	243	4550	594	141	100	40	43	63
25	839	461	240	206	243	3730	531	147	117	40	45	61
26	995	468	240	204	249	2960	473	150	100	38	45	60
27	1010	454	230	206	272	3080	424	184	95	36	47	58
28	1000	437	220	219	350	2920	382	176	90	33	48	54
29	923	418	210	218	---	2790	347	158	87	31	45	52
30	826	395	210	217	---	2790	309	143	79	31	42	51
31	720	---	205	218	---	2960	---	134	---	30	40	---
TOTAL	18378	11123	7367	5827	6906	66459	62438	6241	3148	1621	1179	1609
MEAN	593	371	238	188	247	2144	2081	201	105	52.3	38.0	53.6
MAX	1010	622	378	230	350	6570	6260	289	129	73	58	91
MIN	354	160	116	112	212	336	309	134	79	30	30	32
AC-FT	36450	22060	14610	11560	13700	131800	123800	12380	6240	3220	2340	3190

CAL YR 1986 TOTAL 128820 MEAN 353 MAX 2460 MIN 63 AC-FT 255500
WTR YR 1987 TOTAL 192296 MEAN 527 MAX 6570 MIN 30 AC-FT 381400

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: Nov. 10-17, Dec. 9-12, and Jan. 10-26. Records fair except for periods of estimated record, which are poor.

COOPERATION.--Records were furnished by Nebraska Department of Water Resources.

AVERAGE DISCHARGE.--28 years (water years 1948-53, 1961-72, 1978-87) 71.4 ft³/s, 51,730 acre-ft/yr; median of yearly mean discharges, 52.9 ft³/s, 38,300 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)
Oct. 26	1500	311	1.62	Apr. 2	1900	1880	3.73
Mar. 18	2000	*5640	*7.59	Apr. 16	0800	577	2.00

Minimum daily discharge, 28 ft³/s July 31, Aug. 1.

DISCHARGE, 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	160	149	111	62	68	119	631	59	70	52	28	34
2	150	125	115	62	72	149	1330	64	65	49	31	34
3	133	117	116	58	77	157	1510	64	65	47	31	35
4	133	112	104	61	76	160	1190	61	64	46	30	36
5	131	104	106	62	79	158	939	64	64	44	30	38
6	130	105	107	61	76	149	764	66	64	44	29	34
7	133	106	101	63	76	148	602	69	60	41	31	33
8	125	98	96	62	76	116	472	71	59	39	34	34
9	113	86	70	62	82	100	400	74	53	39	31	34
10	101	82	61	93	86	91	340	74	57	37	30	34
11	90	76	62	108	83	88	270	68	51	36	31	32
12	78	74	66	100	85	90	230	64	51	34	31	34
13	91	74	91	101	91	89	230	62	48	34	32	31
14	111	70	96	105	88	91	334	63	45	34	33	32
15	116	80	68	105	82	87	524	60	46	34	34	44
16	113	86	71	93	77	90	561	58	45	34	37	44
17	109	90	74	89	79	733	435	60	46	35	33	37
18	113	92	79	104	78	3560	332	65	49	33	32	39
19	113	84	81	90	76	4180	256	58	62	34	41	37
20	108	101	73	95	74	1780	180	55	99	36	40	39
21	107	124	63	99	76	1050	127	53	120	36	38	40
22	118	145	69	81	71	772	94	52	120	34	37	39
23	140	156	69	71	68	741	98	54	98	35	38	36
24	203	163	67	82	67	730	109	53	93	34	39	32
25	293	161	63	90	71	700	94	59	108	34	37	30
26	311	149	61	70	76	673	84	60	82	36	37	31
27	301	131	65	42	94	663	76	62	74	35	38	31
28	267	131	68	47	96	653	63	59	79	36	38	29
29	230	130	66	51	---	639	70	60	77	30	37	31
30	202	119	62	59	---	627	58	60	61	29	34	33
31	177	---	56	64	---	613	---	68	---	28	34	---
TOTAL	4700	3320	2457	2392	2200	19996	12403	1919	2075	1149	1056	1047
MEAN	152	111	79.3	77.2	78.6	645	413	61.9	69.2	37.1	34.1	34.9
MAX	311	163	116	108	96	4180	1510	74	120	52	41	44
MIN	78	70	56	42	67	87	58	52	45	28	28	29
AC-FT	9320	6590	4870	4740	4360	39660	24600	3810	4120	2280	2090	2080

CAL YR 1986 TOTAL 39108 MEAN 107 MAX 792 MIN 28 AC-FT 77570
WTR YR 1987 TOTAL 54714 MEAN 150 MAX 4180 MIN 28 AC-FT 108500

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: Nov. 10-16, Dec. 4, 5, 10-14, and Jan. 8-11, 15-28. Records fair except for periods of estimated record, which are poor.

COOPERATION.--Records were furnished by Nebraska Department of Water Resources.

AVERAGE DISCHARGE.--13 years (water years 1962-64, 1978-87), 45.5 ft³/s, 32,960 acre-ft/yr; median of yearly mean discharges, 41 ft³/s, 29,700 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)
Oct. 24	0700	104	4.43	Apr. 14	2000	184	4.61
Mar. 1	0400	104	4.39	May 18	0030	178	4.58
Mar. 18	0930	*1510	*9.00	June 19	0600	209	4.74
Mar. 27	1500	933	7.25	June 25	0030	232	4.85
Apr. 1	1700	785	6.61				

Minimum daily discharge, 18 ft³/s Nov. 13, July 29 to Aug. 1.

DISCHARGE, 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	50	52	41	36	46	102	657	39	40	43	18	28
2	48	52	38	40	49	98	712	39	37	37	20	28
3	68	52	37	34	50	92	512	45	34	34	21	29
4	70	46	35	35	50	84	432	58	35	31	21	30
5	75	46	30	35	50	83	355	69	34	31	22	31
6	75	45	32	35	49	78	284	71	32	30	22	32
7	68	43	32	35	50	73	229	71	30	28	23	31
8	56	41	32	33	52	64	196	61	31	29	35	31
9	56	42	34	32	53	58	158	50	31	26	26	34
10	54	39	22	25	55	55	124	45	75	25	25	33
11	57	30	20	35	54	52	106	41	78	23	25	29
12	65	25	23	42	53	51	97	37	75	23	25	29
13	72	18	19	43	54	50	122	35	51	23	25	27
14	72	26	30	47	55	51	169	34	40	21	25	27
15	71	30	33	38	54	53	164	34	34	19	25	37
16	63	40	31	35	53	58	141	32	35	19	25	49
17	57	46	29	33	48	272	127	42	39	19	25	40
18	50	52	31	31	46	1210	114	114	38	19	25	34
19	48	53	31	31	44	978	95	69	150	22	25	30
20	49	52	32	32	42	797	84	52	151	21	30	30
21	46	53	34	29	43	622	74	46	158	21	25	28
22	55	62	31	27	46	504	67	41	116	21	25	29
23	84	57	32	25	49	458	65	41	85	20	25	27
24	101	54	34	25	48	424	61	42	102	20	25	25
25	94	48	34	25	52	349	53	46	151	19	31	25
26	79	47	33	30	55	427	52	56	91	20	32	25
27	71	45	33	33	68	791	47	61	77	19	30	25
28	63	43	37	35	80	795	46	53	61	19	29	23
29	61	40	34	37	---	365	44	46	57	18	29	24
30	59	41	36	40	---	337	40	41	44	18	26	25
31	55	---	36	42	---	410	---	40	---	18	26	---
TOTAL	1992	1320	986	1055	1448	9841	5427	1551	2012	736	791	895
MEAN	64.3	44.0	31.8	34.0	51.7	317	181	50.0	67.1	23.7	25.5	29.8
MAX	101	62	41	47	80	1210	712	114	158	43	35	49
MIN	46	18	19	25	42	50	40	32	30	18	18	23
AC-FT	3950	2620	1960	2090	2870	19520	10760	3080	3990	1460	1570	1780
CAL YR 1986	TOTAL 19766	MEAN 54.2	MAX 304	MIN 13	AC-FT 39210							
WTR YR 1987	TOTAL 28054	MEAN 76.9	MAX 1210	MIN 18	AC-FT 55650							

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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.

PERIOD OF RECORD.--October 1930 to September 1958, August 1960 to current year. Monthly discharge only for some periods, published in WSP 1310.

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. 9 to Jan 11, May 6-15, June 4-23, July 7-26, 28. Records good except for period of estimated record, which are poor.

AVERAGE DISCHARGE.--55 years, 309 ft³/s, 223,900 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)
Oct. 27	1430	1550	5.55	Mar. 28	1000	6090	8.88
Mar. 6	1030	1110	5.12	Apr. 3	1300	8960	10.45
Mar. 19	1830	*14100	*11.99	Apr. 16	0730	2550	6.34

Minimum daily discharge, 81 ft³/s Aug. 2, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

[illegible]

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. 12-14. Records fair except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--42 years, 522 ft³/s, 378,200 acre-ft/yr; median of yearly mean discharges, 433 ft³/s, 314,000 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)
Mar. 20	2200	*13100	*9.96	Apr. 16	1445	3190	4.36
Apr. 4	1300	7960	7.77				

Minimum daily discharge, 102 ft³/s Aug. 4.

DISCHARGE, 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	1510	1120	735	454	525	1150	5300	792	618	338	121	204
2	1360	973	678	444	528	1190	6230	746	540	309	114	195
3	1350	935	607	448	548	1240	7130	742	497	297	107	180
4	1440	1020	515	459	549	1280	7780	745	468	316	102	176
5	1320	925	455	463	534	1220	6960	730	437	294	104	177
6	1310	873	506	496	522	1210	6050	714	412	285	121	180
7	1180	954	627	503	573	1240	5210	706	394	303	122	178
8	1160	956	775	483	609	1200	4490	710	381	297	149	183
9	1150	888	606	473	628	1130	3850	698	361	273	171	192
10	1020	758	440	420	649	994	3480	684	359	299	188	194
11	1110	637	265	322	670	1020	3100	663	414	278	177	188
12	1300	530	340	485	676	1030	2720	633	470	255	176	195
13	1230	319	375	688	684	985	2540	589	442	260	180	193
14	1140	350	375	948	777	981	2580	550	426	262	182	200
15	1120	636	536	844	748	1040	2830	521	376	258	185	622
16	1010	749	662	316	723	1100	3120	490	352	255	171	428
17	1060	706	659	182	666	2200	3080	463	340	237	165	378
18	974	720	621	144	653	4150	2760	499	347	234	180	349
19	974	775	589	195	598	5880	2420	704	367	228	193	312
20	1020	785	573	288	602	11000	2150	757	387	235	231	295
21	1320	903	534	407	715	12100	1830	705	568	221	251	277
22	1350	860	519	408	862	9340	1560	553	592	204	250	266
23	1550	863	502	379	887	9960	1410	505	602	182	230	260
24	1400	871	500	368	924	9200	1320	476	527	183	215	256
25	1520	959	498	405	949	6890	1340	592	451	212	242	247
26	1520	987	478	450	974	5240	1290	881	569	207	248	237
27	1580	948	479	509	1040	4660	1180	993	501	195	242	231
28	1480	921	482	497	1110	5390	1040	787	423	184	240	228
29	1470	804	464	522	---	5210	937	786	394	162	238	221
30	1340	749	442	491	---	4410	868	707	369	146	222	221
31	1220	---	466	520	---	4750	---	676	---	127	206	---
TOTAL	39488	24474	16303	14011	19923	118390	96555	20797	13384	7536	5723	7463
MEAN	1274	816	526	452	712	3819	3218	671	446	243	185	249
MAX	1580	1120	775	948	1110	12100	7780	993	618	338	251	622
MIN	974	319	265	144	522	981	868	463	340	127	102	176
AC-FT	78320	48540	32340	27790	39520	234800	191500	41250	26550	14950	11350	14800

CAL YR 1986 TOTAL 314157 MEAN 861 MAX 4290 MIN 265 AC-FT 623100
WTR YR 1987 TOTAL 384047 MEAN 1052 MAX 12100 MIN 102 AC-FT 761800

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 1986 TO SEPTEMBER 1987

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)
NOV									
06...	1310	839	350	7.93	9.0	11.0	30	K280	480
19...	1620	652	355	8.14	1.0	--	31	470	K2100
DEC									
09...	1440	639	313	8.16	0.0	14.4	23	K110	460
JAN									
13...	1545	431	366	7.96	5.0	13.3	16	K21	110
FEB									
10...	1405	597	291	7.98	4.0	14.1	18	100	K26
MAR									
10...	1715	1040	--	8.10	5.0	12.1	40	K78	120
31...	1500	4840	311	7.88	3.0	12.5	57	K11000	--
MAY									
11...	1700	715	327	8.83	25.0	12.7	49	K78	K64
JUN									
02...	1410	536	334	8.48	18.0	11.5	38	700	370
JUL									
08...	1530	287	343	8.82	27.5	10.2	19	530	1500
AUG									
18...	1500	186	341	8.73	26.0	9.6	26	K430	580
SEP									
01...	1600	200	340	8.74	25.0	10.6	12	K110	350

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
NOV								
06...	150	0	47	7.1	14	0.5	<2.0	<5.0
19...	130	0	42	7.0	12	0.5	2.4	5.1
DEC								
09...	140	0	44	7.1	13	0.5	<2.0	<5.0
JAN								
13...	150	0	46	7.5	12	0.5	11	<5.0
FEB								
10...	130	0	41	6.9	9.3	0.4	8.6	<5.0
MAR								
10...	160	0	51	7.4	19	0.7	<2.0	6.1
31...	120	0	37	6.2	13	0.5	<2.0	5.5
MAY								
11...	140	0	46	6.8	8.6	0.3	9.5	4.7
JUN								
02...	160	0	52	7.8	12	0.4	8.4	<5.0
JUL								
08...	150	0	48	7.6	10	0.4	12	<5.0
AUG								
18...	160	0	50	8.9	9.3	0.3	9.7	<5.0
SEP								
01...	160	0	52	8.0	8.7	0.3	10	<5.0

PLATTE RIVER BASIN

06799000 ELKHORN RIVER AT NORFOLK, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV								
06...	49	0.460	0.040	1.2	1.2	1.7	0.240	9.8
19...	48	0.760	0.100	1.1	1.2	2.0	0.270	7.6
DEC								
09...	43	0.790	0.070	1.9	2.0	2.8	0.260	7.2
JAN								
13...	47	1.20	0.110	1.3	1.4	2.6	0.210	4.4
FEB								
10...	47	0.850	0.110	0.48	0.59	1.4	0.210	6.8
MAR								
10...	40	0.320	0.130	0.37	0.50	0.82	0.160	13
31...	--	0.310	0.110	9.2	9.3	9.6	0.470	14
MAY								
11...	31	0.020	0.040	1.3	1.3	1.3	0.180	9.2
JUN								
02...	81	0.300	0.040	4.2	4.2	4.5	0.360	6.7
JUL								
08...	56	0.020	0.060	1.3	1.4	1.4	0.250	6.2
AUG								
18...	26	<0.020	0.060	1.0	1.1	--	0.430	4.6
SEP								
01...	24	<0.020	0.060	1.2	1.3	--	0.290	5.7

PLATTE RIVER BASIN

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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: Nov. 9-17, Dec. 4-14, Jan. 8-11, 16-29, and Feb. 15-18. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--12 years, 15.6 ft³/s, 11,300 acre-ft/yr; median of yearly mean discharges, 9.8 ft³/s, 7,100 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)
Mar. 18	1400	*574	*7.94	Apr. 1	1230	139	5.53
Mar. 26	1000	567	7.93				

Minimum daily discharge, 6.0 ft³/s Aug. 1-3.

DISCHARGE, 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	12	19	20	13	13	25	113	15	21	9.9	6.0	9.9
2	12	19	20	14	13	27	126	14	17	9.8	6.0	9.7
3	16	18	19	13	13	28	82	15	15	9.4	6.0	9.7
4	28	17	18	13	13	26	63	15	13	9.5	6.2	9.6
5	28	17	19	13	13	25	51	16	12	9.5	6.1	9.3
6	26	17	16	13	14	26	42	16	11	9.4	6.3	9.3
7	24	16	16	13	14	26	36	15	10	9.2	6.6	9.2
8	21	16	16	12	14	25	32	14	9.6	9.2	9.1	9.3
9	21	15	16	12	15	23	29	13	9.7	9.3	7.8	9.9
10	19	14	17	14	15	20	27	12	11	11	7.2	10
11	21	11	18	16	15	20	26	11	11	9.9	6.8	9.6
12	27	9.0	17	15	15	19	25	11	10	9.3	6.7	9.5
13	25	11	15	13	16	19	40	11	9.7	9.8	7.1	9.6
14	24	13	17	13	16	18	62	11	9.4	9.3	7.3	9.7
15	24	15	18	13	15	18	80	10	9.1	9.0	7.1	12
16	22	17	17	13	15	20	59	9.8	9.2	8.6	7.2	18
17	20	18	16	12	14	113	43	9.3	9.6	8.3	7.5	15
18	18	19	16	12	15	420	34	17	9.8	8.6	8.9	14
19	17	19	15	12	15	392	28	15	11	8.4	15	13
20	15	19	14	12	15	250	24	13	11	8.0	22	12
21	15	20	14	13	14	173	22	12	11	7.5	13	12
22	17	21	14	12	14	112	21	12	9.9	7.2	10	12
23	35	23	14	11	15	183	20	13	9.8	7.2	10	12
24	46	24	14	12	15	273	19	17	9.8	7.5	10	11
25	62	24	14	13	16	446	18	24	11	8.8	12	11
26	56	24	14	14	17	516	17	34	10	7.6	13	11
27	45	22	13	14	18	311	16	32	9.8	7.1	12	11
28	35	22	13	15	23	211	16	29	10	6.9	11	10
29	28	21	13	15	---	78	16	28	9.9	6.7	11	10
30	25	21	14	16	---	93	15	26	9.9	6.4	10	11
31	22	---	13	14	---	101	---	26	---	6.1	9.9	---
TOTAL	806	541.0	490	410	420	4037	1202	516.1	330.2	264.4	284.8	329.3
MEAN	26.0	18.0	15.8	13.2	15.0	130	40.1	16.6	11.0	8.53	9.19	11.0
MAX	62	24	20	16	23	516	126	34	21	11	22	18
MIN	12	9.0	13	11	13	18	15	9.3	9.1	6.1	6.0	9.2
AC-FT	1600	1070	972	813	833	8010	2380	1020	655	524	565	653

CAL YR 1986 TOTAL 7649.7 MEAN 21.0 MAX 156 MIN 7.8 AC-FT 15170
WTR YR 1987 TOTAL 9630.8 MEAN 26.4 MAX 516 MIN 6.0 AC-FT 19100

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: Nov. 10-14, 17-19; Dec. 5-14, Jan. 16-19, 23-26, Mar. 11-15, June 5-17, and Aug. 2, 5, 10-12. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--27 years, 93.3 ft³/s, 67,600 acre-ft/yr; median of yearly mean discharges, 75 ft³/s, 54,300 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)
Mar. 19	1200	1330	10.48	Mar. 25	1330	*2470	*12.90

Minimum daily discharge, 27 ft³/s Aug. 16.

DISCHARGE, 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	58	103	97	70	70	124	740	108	409	52	33	32
2	58	101	94	65	72	119	592	106	191	45	31	32
3	70	100	89	73	73	117	439	106	133	42	29	33
4	129	99	76	65	73	116	394	123	117	45	29	33
5	144	98	70	68	74	117	345	132	100	46	28	32
6	119	97	78	71	73	117	305	129	88	42	28	32
7	99	97	80	70	77	119	277	122	72	46	33	31
8	88	98	80	68	79	120	254	110	62	52	31	31
9	84	94	76	73	81	117	234	102	54	50	35	32
10	83	80	70	64	81	107	217	96	56	138	30	31
11	92	85	84	78	84	106	207	88	58	203	32	30
12	125	96	82	76	89	96	209	83	54	221	31	30
13	133	90	76	71	91	90	234	80	56	126	32	31
14	125	84	74	72	93	92	369	78	58	91	30	30
15	111	78	78	70	90	98	390	77	66	85	28	35
16	102	80	77	68	86	106	300	76	78	78	27	63
17	98	106	77	66	80	379	255	76	98	69	33	85
18	94	157	77	62	82	1030	225	77	115	64	55	95
19	92	138	76	64	84	1280	200	97	120	55	45	74
20	90	90	75	67	82	938	181	100	126	51	44	57
21	88	91	75	68	83	734	166	105	149	41	41	48
22	90	99	72	64	83	678	162	97	133	36	39	43
23	176	108	71	60	84	1200	154	93	117	36	38	41
24	176	107	73	56	88	2180	147	88	116	37	37	40
25	147	102	74	58	95	2400	139	109	129	476	40	39
26	133	101	72	60	94	2250	134	229	149	289	42	38
27	128	95	72	61	97	1620	125	370	139	119	43	37
28	124	96	71	63	113	1040	119	259	81	72	41	36
29	116	98	72	65	---	628	116	193	64	48	37	35
30	113	97	69	67	---	544	111	155	58	37	33	35
31	108	---	71	68	---	592	---	227	---	35	32	---
TOTAL	3393	2965	2378	2071	2351	19254	7740	3891	3246	2827	1087	1241
MEAN	109	98.8	76.7	66.8	84.0	621	258	126	108	91.2	35.1	41.4
MAX	176	157	97	78	113	2400	740	370	409	476	55	95
MIN	58	78	69	56	70	90	111	76	54	35	27	30
AC-FT	6730	5880	4720	4110	4660	38190	15350	7720	6440	5610	2160	2460

CAL YR 1986 TOTAL 49881 MEAN 137 MAX 1800 MIN 32 AC-FT 98940
WTR YR 1987 TOTAL 52444 MEAN 144 MAX 2400 MIN 27 AC-FT 104000

PLATTE RIVER BASIN

169

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.--9 years, 42.2 ft³/s, 30,570 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)
Mar. 24	0200	2070	18.03	Sept. 15	0700	*3440	*20.82
May 27	1530	1800	17.55				

Minimum daily discharge, 5.7 ft³/s Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	22	15	19	22	29	30	34	35	873	21	15
2	25	21	14	20	23	30	40	31	31	143	20	14
3	21	21	15	20	23	28	52	31	28	54	18	16
4	21	21	15	20	38	26	47	28	63	41	17	16
5	20	22	15	20	63	26	39	28	245	39	20	18
6	20	20	15	20	79	25	35	26	62	36	26	21
7	20	20	15	18	46	23	31	24	37	30	283	22
8	20	21	16	19	31	23	28	23	28	29	234	23
9	19	20	16	21	25	26	27	28	26	28	48	19
10	21	20	16	24	22	27	26	23	27	35	29	18
11	23	20	16	28	21	27	26	22	25	62	24	18
12	25	22	16	30	21	196	27	20	24	75	22	17
13	24	22	16	27	22	434	32	19	23	56	22	16
14	25	22	16	28	22	149	37	18	669	42	21	17
15	22	23	16	29	22	73	39	596	113	31	19	20
16	25	24	17	30	22	58	43	671	78	27	19	21
17	21	23	17	30	27	72	40	859	63	24	19	42
18	23	25	16	31	50	1160	42	67	36	22	18	42
19	22	21	16	30	95	844	40	43	27	20	32	51
20	23	18	16	30	51	79	34	37	31	18	45	92
21	23	18	16	28	38	54	31	33	37	15	23	42
22	23	18	19	24	32	46	29	30	52	15	17	93
23	26	18	25	25	28	42	29	32	32	14	15	189
24	23	18	26	25	29	41	26	29	24	149	13	53
25	23	19	20	25	67	41	25	28	21	391	13	35
26	24	19	19	22	222	39	34	29	24	139	39	29
27	21	17	18	21	101	37	78	32	67	40	47	25
28	22	16	18	22	38	36	91	38	77	33	33	22
29	21	16	18	22	---	36	58	39	157	23	22	20
30	21	15	18	22	---	35	40	38	1820	23	16	22
31	22	---	18	22	---	33	---	40	---	20	15	---
TOTAL	698	602	529	752	1280	3795	1156	2996	3982	2547	1210	1048
MEAN	22.5	20.1	17.1	24.3	45.7	122	38.5	96.6	133	82.2	39.0	34.9
MAX	29	25	26	31	222	1160	91	859	1820	873	283	189
MIN	19	15	14	18	21	23	25	18	21	14	13	14
AC-FT	1380	1190	1050	1490	2540	7530	2290	5940	7900	5050	2400	2080
CAL YR 1985	TOTAL	12420		MEAN	34.0	MAX	1030	MIN	13	AC-FT	24640	
WTR YR 1986	TOTAL	20595		MEAN	56.4	MAX	1820	MIN	13	AC-FT	40850	

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: Nov. 13 to Nov. 22 and Dec. 2 to Feb. 2. Records fair except for periods of estimated record, which are poor. Some small diversions above station for irrigation.

AVERAGE DISCHARGE.--19 years (water years 1969-87), 898 ft³/s, 650,600 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 19.09 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)
Mar. 24	1600	*18900	*11.65	May 26	2400	8700	9.73
Apr. 5	0300	8570	9.70				

Minimum daily discharge, 267 ft³/s Aug. 5 and 6.

DISCHARGE, 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	1870	1520	978	820	1100	1740	5470	1310	1620	618	323	402
2	1720	1390	940	840	1030	1780	5890	1200	1820	603	299	394
3	1520	1350	880	820	815	1800	6990	1630	1440	554	288	391
4	1900	1350	800	840	775	1760	7960	1380	1080	514	276	394
5	1900	1320	740	840	784	1740	8300	1450	1020	518	267	386
6	1510	1570	800	860	801	1880	6900	1350	942	545	267	377
7	1330	1690	880	860	800	2340	5700	1250	879	505	283	375
8	1140	2070	1000	840	799	2530	5000	1220	818	539	344	363
9	1140	1670	920	800	822	2090	4830	1190	772	530	354	397
10	1120	1550	740	760	820	1580	4380	1140	764	734	353	506
11	1190	1200	780	640	835	1190	3960	1090	792	797	358	569
12	1860	1020	840	700	863	1190	3510	1060	792	794	356	469
13	1760	700	860	760	941	1210	3300	1020	850	779	336	453
14	1570	740	840	900	968	1250	3410	988	817	761	332	422
15	1500	900	860	860	1020	1290	3850	947	766	617	326	418
16	1330	1000	900	800	1110	1370	4220	909	721	536	324	2880
17	1180	1080	940	700	1160	1600	4160	884	684	499	315	1290
18	1120	1060	980	600	1090	5460	4040	861	734	486	326	1000
19	1110	1000	960	600	1050	6750	3660	1030	814	489	342	780
20	1130	1120	940	700	1030	9490	3160	1390	759	481	419	660
21	1160	1200	920	800	1050	12600	2650	2210	759	461	461	583
22	1200	1300	900	780	1120	12900	2300	2720	998	445	443	535
23	1270	1320	880	760	1110	14700	1820	1370	1010	412	440	512
24	1490	1310	860	840	1120	17900	1720	1140	989	394	409	489
25	2000	1280	840	800	1130	16800	1750	1200	1000	555	416	485
26	2340	1210	840	800	1140	10100	1680	4280	864	695	506	478
27	2510	1150	820	840	1200	7400	1670	5950	914	862	527	465
28	2500	1110	800	850	1380	6090	1590	3410	1020	622	495	445
29	2400	1030	780	900	---	5590	1550	1870	867	462	476	436
30	2190	968	780	900	---	4440	1420	1550	694	387	440	425
31	1840	---	800	1000	---	4390	---	1440	---	348	416	---
TOTAL	49800	37178	26798	24810	27863	162950	116840	50439	27999	17542	11517	17779
MEAN	1606	1239	864	800	995	5256	3895	1627	933	566	372	593
MAX	2510	2070	1000	1000	1380	17900	8300	5950	1820	862	527	2880
MIN	1110	700	740	600	775	1190	1420	861	684	348	267	363
AC-FT	98780	73740	53150	49210	55270	323200	231800	100000	55540	34790	22840	35260

CAL YR 1986 TOTAL 521097 MEAN 1428 MAX 8990 MIN 420 AC-FT 1034000
WTR YR 1987 TOTAL 571515 MEAN 1566 MAX 17900 MIN 267 AC-FT 1134000

PLATTE RIVER BASIN

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 1986 TO SEPTEMBER 1987

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)
NOV									
06...	1025	1610	415	7.98	7.0	11.5	36	730	1600
19...	1215	986	--	8.20	0.5	12.7	39	1800	2800
DEC									
09...	1045	1250	432	8.10	0.0	18.3	29	K150	K430
JAN									
13...	1130	750	523	8.07	0.5	15.0	11	K160	220
FEB									
10...	1040	834	410	8.28	1.0	14.5	20	K44	110
MAR									
10...	1225	1680	--	8.02	4.0	12.8	43	210	200
31...	1200	5450	383	7.45	2.0	13.9	74	22000	24000
MAY									
11...	1120	1080	455	8.60	22.5	10.5	32	K120	110
JUN									
07...	0850	2010	516	7.71	18.5	8.4	120	6400	7200
JUL									
08...	1120	567	--	8.81	25.5	11.8	640	K490	1800
AUG									
18...	1020	308	425	8.60	21.5	10.2	32	1700	1500
SEP									
01...	1015	408	439	8.72	19.5	12.3	25	970	960

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
NOV								
06...	200	0	60	11	17	0.6	3.2	5.9
19...	200	0	59	13	17	0.5	19	8.1
DEC								
09...	200	0	59	12	17	0.5	26	8.1
JAN								
13...	210	0	64	13	19	0.6	95	8.4
FEB								
10...	190	0	57	12	13	0.4	29	7.9
MAR								
10...	200	0	60	11	22	0.7	<2.0	8.6
31...	150	0	46	9.0	14	0.5	24	6.5
MAY								
11...	200	0	61	12	13	0.4	36	6.2
JUN								
07...	250	0	76	14	20	0.6	55	6.6
JUL								
08...	170	0	47	13	18	0.6	41	9.0
AUG								
18...	200	0	52	16	17	0.5	42	9.6
SEP								
01...	200	0	55	14	15	0.5	38	7.9

PLATTE RIVER BASIN

06799350 ELKHORN RIVER AT WEST POINT, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV								
06...	104	1.00	0.100	1.3	1.4	2.4	0.340	9.0
19...	--	1.50	0.160	1.4	1.6	3.1	0.280	6.6
DEC								
09...	48	1.30	0.080	1.3	1.4	2.7	0.290	6.4
JAN								
13...	87	2.00	0.240	1.3	1.5	3.5	0.280	3.9
FEB								
10...	63	1.50	0.150	0.48	0.63	2.1	0.260	5.2
MAR								
10...	113	0.710	0.120	1.3	1.4	2.1	0.280	11
31...	812	1.00	0.360	--	--	--	1.30	12
MAY								
11...	52	0.440	0.880	1.0	1.9	2.3	0.100	6.8
JUN								
07...	1260	2.60	0.160	3.6	3.8	6.4	0.270	15
JUL								
08...	147	0.150	<0.020	--	2.5	2.7	0.320	6.2
AUG								
18...	41	<0.020	0.060	1.0	1.1	--	0.290	5.5
SEP								
01...	84	<0.020	0.070	2.0	2.1	--	0.360	5.6

PLATTE RIVER BASIN

173

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: Oct. 8-22, Nov. 11-17, Dec. 10-17, Jan. 16-30, Mar. 29 to Apr. 7, and Aug. 11 to Sept. 1. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--9 years, 71.6 ft³/s, 51,870 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)
Oct. 11	unknown	unknown	unknown	July 4	2400	*3870	*16.63
Oct. 25	0330	877	8.64	July 5	2200	1910	11.90
Mar. 23	1000	3390	15.63	July 9	1530	1050	9.23
Mar. 25	0230	1060	9.28	Aug. 25	unknown	1240	a9.87
May 3	1030	993	9.03	Sept. 15	2400	1970	12.14
May 26	1330	2000	12.22				

a From floodmark.

Minimum daily discharge, 21 ft³/s Jan. 10.

DISCHARGE, 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	27	37	41	30	30	44	170	51	69	34	27	32
2	26	35	41	29	30	39	350	51	61	34	26	31
3	29	36	41	32	28	35	250	368	55	33	27	30
4	86	37	33	29	26	33	230	128	53	708	29	29
5	47	36	38	31	26	42	250	148	53	1430	26	29
6	36	37	41	33	25	35	210	105	51	663	27	30
7	35	40	41	31	27	35	180	78	49	80	35	32
8	34	154	41	26	30	33	162	68	47	55	269	29
9	33	59	35	32	28	30	134	62	46	414	50	35
10	33	43	32	21	32	31	115	59	49	229	34	58
11	700	35	37	35	31	31	103	56	55	98	31	49
12	450	37	35	34	31	31	96	53	51	73	30	36
13	100	35	33	33	30	31	133	51	52	61	29	35
14	60	44	40	33	32	32	126	50	44	55	29	35
15	50	48	39	27	32	33	123	48	42	54	29	211
16	42	50	39	25	27	33	98	47	56	50	28	865
17	39	50	40	23	28	37	87	47	70	45	28	111
18	37	54	37	22	28	141	80	50	55	46	32	63
19	35	49	37	24	31	151	75	55	184	47	60	50
20	34	51	36	26	28	74	68	59	78	42	48	44
21	33	49	34	28	31	81	64	66	64	60	40	41
22	50	52	34	25	32	67	63	70	56	42	35	40
23	80	52	34	23	28	2010	70	55	46	37	30	38
24	164	44	35	23	32	710	66	56	42	36	35	37
25	472	44	35	24	31	674	61	75	43	35	450	35
26	107	43	33	25	30	261	61	949	41	35	150	34
27	66	40	34	27	30	181	57	772	39	33	70	34
28	54	41	34	28	40	129	52	157	37	30	45	32
29	46	41	35	30	---	90	54	106	51	30	39	31
30	42	40	31	30	---	70	51	88	37	28	35	32
31	41	---	33	28	---	90	---	76	---	28	33	---
TOTAL	3088	1413	1129	867	834	5314	3639	4104	1676	4645	1856	2188
MEAN	99.6	47.1	36.4	28.0	29.8	171	121	132	55.9	150	59.9	72.9
MAX	700	154	41	35	40	2010	350	949	184	1430	450	865
MIN	26	35	31	21	25	30	51	47	37	28	26	29
AC-FT	6130	2800	2240	1720	1650	10540	7220	8140	3320	9210	3680	4340
CAL YR 1986	TOTAL 31180	MEAN 85.4	MAX 3500	MIN 15	AC-FT 61850							
WTR YR 1987	TOTAL 30753	MEAN 84.3	MAX 2010	MIN 21	AC-FT 61000							

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: Nov. 10 to Dec. 24, Jan. 16 to Feb. 1, Feb. 15. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--22 years, 165 ft³/s, 119,500 acre-ft/yr; median of yearly mean discharges, 132 ft³/s, 95,600 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)
Mar. 23	2045	2420	8.79	July 10	2115	1710	7.46
May 27	0315	*4350	*11.68				

Minimum daily discharge, 96 ft³/s Aug. 7.

DISCHARGE, 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	127	169	165	151	155	145	919	193	402	170	100	107
2	127	169	160	151	152	145	577	196	320	159	100	105
3	138	168	155	152	149	141	468	324	291	152	98	105
4	256	168	145	147	146	140	438	252	275	149	102	104
5	294	167	140	147	146	140	397	269	266	150	102	103
6	194	166	145	148	142	141	369	250	255	160	100	103
7	171	174	150	148	148	140	348	226	243	144	96	104
8	161	282	150	144	153	141	329	212	229	163	120	104
9	158	226	140	146	143	140	318	205	222	149	138	104
10	156	170	130	147	148	137	300	197	227	601	130	104
11	190	130	145	153	148	137	294	188	234	713	119	104
12	364	145	140	171	146	136	294	180	231	279	117	104
13	257	135	155	158	146	136	309	177	217	220	116	104
14	218	140	165	154	147	136	367	173	204	205	117	104
15	200	145	170	150	135	142	353	167	194	193	117	108
16	191	145	175	135	132	146	314	161	191	181	117	137
17	185	150	180	140	133	150	292	159	194	171	114	185
18	181	145	177	125	132	333	278	160	303	171	237	171
19	176	142	175	130	136	437	258	180	580	168	148	142
20	172	145	170	125	137	299	247	187	610	154	130	131
21	170	150	165	130	135	277	234	340	289	144	128	126
22	171	155	160	120	134	278	231	240	249	132	122	124
23	192	160	160	106	134	1510	237	197	227	125	117	122
24	200	165	160	112	137	1990	236	190	212	117	113	124
25	207	165	160	118	136	1620	222	230	242	286	116	122
26	208	170	154	125	136	915	214	1100	237	329	124	120
27	195	170	155	130	136	611	210	2370	204	161	123	120
28	186	165	156	135	138	469	199	624	195	134	121	117
29	178	165	156	140	---	218	199	471	191	119	120	116
30	174	160	149	145	---	284	198	404	180	115	116	115
31	171	---	152	150	---	496	---	420	---	107	110	---
TOTAL	5968	4906	4859	4333	3960	12130	9649	10642	7914	6221	3728	3539
MEAN	193	164	157	140	141	391	322	343	264	201	120	118
MAX	364	282	180	171	155	1990	919	2370	610	713	237	185
MIN	127	130	130	106	132	136	198	159	180	107	96	103
AC-FT	11840	9730	9640	8590	7850	24060	19140	21110	15700	12340	7390	7020

CAL YR 1986 TOTAL 108946 MEAN 298 MAX 11400 MIN 90 AC-FT 216100
WTR YR 1987 TOTAL 77849 MEAN 213 MAX 2370 MIN 96 AC-FT 154400

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 1986 TO SEPTEMBER 1987

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)
NOV									
06...	1125	189	908	8.00	6.5	11.5	16	K300	1600
19...	1420	142	930	8.17	1.0	12.1	28	2700	14000
DEC									
09...	1145	189	838	8.13	0.0	14.0	18	K86	240
JAN									
13...	1345	160	925	8.11	4.5	14.2	5	K33	K140
FEB									
10...	1150	149	853	8.09	2.0	13.0	13	K110	2000
MAR									
10...	1500	139	780	8.23	0.5	12.4	8	K86	150
31...	1250	532	925	7.83	2.0	14.0	39	K14000	31000
MAY									
11...	1325	186	850	8.29	23.0	9.1	16	96	320
JUN									
02...	1015	296	881	7.98	16.0	8.7	38	4000	6000
JUL									
08...	1330	164	--	8.30	24.5	7.7	55	K33000	19000
AUG									
18...	1200	350	620	7.95	21.0	6.6	120	K28000	E50000
SEP									
01...	1300	108	885	8.25	21.0	9.1	9	530	1300

E Estimated value.

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

DATE	HARD- NESS (MG/L AS CaCO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CaCO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS Ca) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg) (00925)	SODIUM, DIS- SOLVED (MG/L AS Na) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl) (00940)
NOV								
06...	460	0	120	36	34	0.7	140	9.9
19...	460	0	120	36	30	0.6	120	9.8
DEC								
09...	460	0	120	35	35	0.7	140	15
JAN								
13...	460	0	130	33	30	0.6	160	15
FEB								
10...	460	0	130	34	27	0.6	190	11
MAR								
10...	470	0	130	36	36	0.8	110	12
31...	450	0	120	36	29	0.6	150	10
MAY								
11...	430	0	120	33	23	0.5	150	8.3
JUN								
02...	480	0	140	35	30	0.6	140	12
JUL								
08...	420	0	110	33	30	0.7	150	9.4
AUG								
18...	290	0	78	22	22	0.6	110	7.6
SEP								
01...	440	0	130	31	26	0.6	170	6.4

PLATTE RIVER BASIN

06799450 LOGAN CREEK AT PENDER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEDE (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- PHORUS, TOTAL (MG/L AS P) (00663)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
NOV								
06...	90	3.70	0.040	0.54	0.58	4.3	0.320	3.5
19...	110	3.20	0.150	1.1	1.3	4.5	0.370	4.9
DEC								
09...	61	3.30	0.050	0.40	0.45	3.8	0.270	3.2
JAN								
13...	44	4.30	0.110	0.24	0.35	4.7	0.170	3.4
FEB								
10...	53	3.80	0.390	0.21	0.60	4.4	0.470	7.6
MAR								
10...	55	3.00	0.210	0.39	0.60	3.6	0.190	2.9
31...	534	6.50	0.360	7.4	7.8	14	0.470	6.5
MAY								
11...	89	3.50	0.120	0.86	0.98	4.5	0.110	2.6
JUN								
02...	265	5.20	0.130	2.9	3.0	8.2	0.140	7.1
JUL								
08...	633	3.20	0.130	3.3	3.4	6.6	0.240	6.3
AUG								
18...	1660	2.10	0.190	0.91	1.1	3.2	0.120	9.2
SEP								
01...	88	2.60	0.150	0.32	0.47	3.1	0.340	3.7

PLATTE RIVER BASIN

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06799500 LOGAN CREEK NEAR UEHLING, NE

LOCATION.--Lat 41°42'50", long 96°31'15", on south line of SE1/4SE1/4 sec.9, 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: Nov. 10-21, Dec. 10-28, Jan. 11-14, and Jan. 16 to Feb. 2. Records good except for period of estimated record, which is poor.

AVERAGE DISCHARGE.--46 years, 204 ft³/s, 147,800 acre-ft/yr; median of yearly mean discharges, 174 ft³/s, 126,000 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)
Mar. 24	0100	3460	9.16	May 27	1030	*5560	*12.27
Apr. 1	2230	1860	6.71	July 11	1330	1740	6.50

Minimum daily discharge, 139 ft³/s Aug. 6.

DISCHARGE, 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	194	252	259	217	200	238	1290	297	631	239	155	159
2	192	250	263	212	205	234	1600	296	542	227	146	156
3	197	251	256	221	211	221	1310	463	455	220	145	154
4	259	249	236	218	195	218	1240	560	419	215	144	154
5	378	251	230	211	193	219	1090	492	394	254	140	153
6	328	250	256	223	190	225	886	462	377	314	139	154
7	250	254	253	217	192	232	743	398	360	242	149	160
8	229	362	248	208	193	234	631	362	341	230	443	153
9	222	406	239	206	188	233	558	343	329	243	214	172
10	216	200	220	198	185	223	507	329	332	506	200	210
11	342	190	240	190	195	224	479	314	345	1240	179	171
12	526	200	240	200	193	224	466	302	337	640	171	162
13	501	225	220	200	195	225	503	309	318	343	168	153
14	344	240	230	210	195	226	567	294	299	292	166	152
15	299	290	230	215	194	227	752	287	283	277	164	155
16	276	280	240	200	186	239	561	279	274	258	160	178
17	262	290	235	210	182	245	478	270	286	242	155	216
18	252	290	235	220	181	351	434	272	312	246	164	237
19	246	290	230	220	187	612	403	306	428	241	257	209
20	239	300	230	215	192	560	378	633	896	223	191	182
21	236	310	225	210	192	477	362	432	526	219	176	170
22	238	314	225	200	195	480	356	524	348	201	168	167
23	274	311	230	190	193	2540	368	369	313	186	164	163
24	330	295	230	195	194	3220	360	340	293	177	160	162
25	429	278	240	200	198	2780	346	397	280	278	214	158
26	363	270	230	200	200	1890	331	1590	306	435	228	156
27	318	263	220	195	203	1320	319	3810	285	295	206	156
28	295	266	220	185	219	1010	310	1630	263	203	189	152
29	276	265	227	185	---	911	303	944	264	180	179	147
30	264	261	215	190	---	925	298	711	254	167	171	145
31	259	---	213	195	---	609	---	602	---	163	164	---
TOTAL	9034	8153	7265	6356	5446	21572	18229	18617	11090	9196	5669	5016
MEAN	291	272	234	205	194	696	608	601	370	297	183	167
MAX	526	406	263	223	219	3220	1600	3810	896	1240	443	237
MIN	192	190	213	185	181	218	298	270	254	163	139	145
AC-FT	17920	16170	14410	12610	10800	42790	36160	36930	22000	18240	11240	9950

CAL YR 1986 TOTAL 146751 MEAN 402 MAX 7780 MIN 110 AC-FT 291100
WTR YR 1987 TOTAL 125643 MEAN 344 MAX 3810 MIN 139 AC-FT 249200

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: Nov. 11-20, Dec. 6-21, Jan. 6-11, 16-30, and Feb. 18 to 22. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--36 years, 68.1 ft³/s, 49,340 acre-ft/yr; median of yearly mean discharges, 53 ft³/s, 38,400 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)
Mar. 23	1330	*3540	*14.70	July 4	2230	806	8.98
Apr. 1	2400	1770	11.11	Aug. 26	0115	1150	9.75
May 27	0430	2710	13.08				

Minimum daily discharge, 29 ft³/s July 31, Aug. 1, 2.

DISCHARGE, 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	45	74	74	52	54	64	540	97	144	64	29	48
2	44	68	74	47	55	59	664	98	131	59	29	45
3	43	68	72	50	55	52	416	96	117	59	33	44
4	59	70	49	53	52	50	384	117	111	130	35	45
5	115	69	44	56	49	51	397	125	108	257	32	45
6	64	68	47	56	45	52	401	139	106	165	32	43
7	54	71	50	52	51	53	386	120	99	76	37	40
8	50	170	50	47	54	52	331	105	93	69	236	39
9	47	186	50	48	47	51	278	97	89	120	127	42
10	46	76	46	50	47	47	242	94	91	148	66	97
11	83	62	58	47	52	48	206	93	101	104	50	112
12	467	66	56	50	52	48	189	87	131	76	47	56
13	145	62	60	62	49	49	209	83	102	65	46	48
14	89	68	64	60	49	48	258	81	91	65	46	47
15	77	70	64	55	52	50	214	78	86	63	45	49
16	66	76	60	56	48	51	190	76	82	61	45	391
17	62	80	57	44	43	55	173	76	81	56	42	163
18	59	84	57	47	40	176	160	78	87	56	40	93
19	55	82	58	44	40	237	149	89	114	59	42	71
20	55	80	60	46	40	150	141	110	155	56	80	62
21	54	83	64	46	40	122	127	153	93	53	85	57
22	55	94	57	42	42	126	122	224	86	53	52	54
23	71	94	57	40	45	2040	125	104	81	42	45	53
24	82	82	61	44	50	1290	124	100	79	40	44	52
25	437	78	61	47	50	1000	119	108	74	40	233	50
26	215	78	59	50	48	341	118	916	75	37	596	49
27	125	71	57	52	50	251	112	1490	69	37	139	48
28	100	75	56	53	58	225	105	326	64	36	81	47
29	87	74	56	54	---	319	104	226	85	35	64	45
30	79	73	54	54	---	415	102	212	85	34	56	45
31	77	---	53	54	---	390	---	159	---	29	51	---
TOTAL	3107	2452	1785	1558	1357	7962	7086	5957	2910	2244	2585	2080
MEAN	100	81.7	57.6	50.3	48.5	257	236	192	97.0	72.4	83.4	69.3
MAX	467	186	74	62	58	2040	664	1490	155	257	596	391
MIN	43	62	44	40	40	47	102	76	64	29	29	39
AC-FT	6160	4860	3540	3090	2690	15790	14060	11820	5770	4450	5130	4130

CAL YR 1986 TOTAL 38675 MEAN 106 MAX 1400 MIN 28 AC-FT 76710
WTR YR 1987 TOTAL 41083 MEAN 113 MAX 2040 MIN 29 AC-FT 81490

PLATTE RIVER BASIN

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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: Nov. 12-14, Dec. 10-16, and Dec. 24 to Jan. 29. Records good except for period of estimated record, which is poor. Some small diversions above station for irrigation.

AVERAGE DISCHARGE.--67 years, 1,226 ft³/s, 888,200 acre-ft/yr; median of yearly mean discharges, 1,010 ft³/s, 732,000 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)
Mar. 25	0700	*23500	*13.24	May 27	1700	14000	10.13
Apr. 5	1815	13000	9.72				

Minimum daily discharge, 538 ft³/s Aug. 6.

DISCHARGE, 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	2830	2860	1920	1400	1640	1600	8720	2370	2780	1290	640	916
2	2570	2680	2060	1400	1780	1830	11800	2280	2800	1130	572	865
3	2440	2560	2180	1350	2030	2040	11600	2260	2640	1070	539	824
4	2400	2410	1940	1350	1850	2310	12100	3330	2300	1030	596	797
5	2940	2300	1710	1400	1660	2280	12600	2980	1950	2250	559	780
6	2930	2270	1740	1450	1680	2330	12200	2870	1860	2920	538	766
7	2480	2220	1870	1450	1810	2260	10400	2620	1780	2260	550	787
8	2280	2520	1840	1400	1610	2270	8800	2360	1670	1390	1900	804
9	2030	3120	1830	1300	1470	2480	7330	2240	1600	1270	2350	748
10	2020	2410	1500	1250	1440	2570	6190	2150	1580	2960	1230	905
11	2900	1900	1250	1200	1480	2570	5420	2080	1600	2770	943	1170
12	5090	1600	1400	1250	1490	2410	4800	2010	1700	3040	878	1110
13	3760	1100	1300	1300	1480	2360	4260	1910	2050	2030	870	939
14	3010	1000	1200	1350	1510	2290	4440	1820	1850	1590	824	830
15	2690	1180	1500	1150	1520	2320	5180	1710	1700	1430	824	807
16	2510	1370	1400	940	1510	2280	4900	1640	1590	1330	824	1800
17	2290	1680	1590	880	1480	1900	4820	1580	1560	1150	809	4060
18	2110	2130	1700	860	1450	3200	4600	1550	1710	1070	678	2520
19	1980	2130	1730	880	1450	6470	4270	1570	1840	1090	700	1870
20	1910	2300	1670	900	1420	8290	3910	2000	2160	1080	824	1480
21	1860	2400	1590	900	1390	10500	3860	2560	2370	999	878	1270
22	1850	2740	1550	920	1360	14800	3660	2750	1880	956	886	1130
23	2280	2760	1590	940	1330	18900	3440	3110	1680	906	840	1070
24	2700	2320	1500	900	1320	21700	3270	2320	1690	814	817	999
25	4090	2260	1500	880	1320	22900	3170	2010	1620	774	1090	959
26	3780	2120	1450	880	1330	21800	3040	4170	1520	948	3060	924
27	3450	2120	1500	1040	1340	16900	2870	12500	1540	1320	2310	887
28	3440	2080	1550	1200	1430	12600	2750	8510	1380	1260	1530	876
29	3300	2130	1500	1400	---	9900	2640	5360	1510	1230	1230	856
30	3190	2020	1470	1520	---	8460	2470	3740	1480	889	1090	830
31	3070	---	1450	1560	---	7850	---	3170	---	737	993	---
TOTAL	86180	64690	49980	36600	42580	222370	179510	93530	55390	44983	32372	34579
MEAN	2780	2156	1612	1181	1521	7173	5984	3017	1846	1451	1044	1153
MAX	5090	3120	2180	1560	2030	22900	12600	12500	2800	3040	3060	4060
MIN	1850	1000	1200	860	1320	1600	2470	1550	1380	737	538	748
AC-FT	170900	128300	99140	72600	84460	441100	356100	185500	109900	89220	64210	68590

CAL YR 1986 TOTAL 911753 MEAN 2498 MAX 20000 MIN 720 AC-FT 1808000
WTR YR 1987 TOTAL 942764 MEAN 2583 MAX 22900 MIN 538 AC-FT 1870000

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 1986 TO SEPTEMBER 1987

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 (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT 29...	1200	3290	545	7.82	12.5	753	87	9.7	87	5600
NOV 26...	1100	2120	602	8.28	2.5	747	--	12.6	42	1000
DEC 30...	1045	1470	593	8.06	0.0	737	--	15.3	13	1700
JAN 27...	1210	1040	687	8.40	0.5	741	15	13.4	11	K660
FEB 23...	1030	1340	635	8.23	1.0	737	--	15.5	15	350
MAR 31...	1200	7840	450	8.25	2.5	744	380	13.3	82	9700
APR 29...	1120	2620	598	8.31	16.0	730	41	9.2	6	K300
MAY 29...	1130	5600	415	7.79	19.0	737	--	6.8	240	K70000
JUN 30...	0945	1460	587	8.42	23.0	748	--	8.0	44	1200
JUL 30...	1030	924	553	8.30	28.0	738	53	6.5	33	12000
AUG 31...	1105	1000	532	8.62	19.5	751	--	10.1	28	3000
SEP 29...	1115	855	601	8.72	18.0	750	37	12.1	39	4300

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

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)
OCT 29...	8600	250	10	73	16	23	0.7	9.6	--
NOV 26...	4400	240	0	70	17	22	0.6	--	--
DEC 30...	840	260	0	76	18	22	0.6	--	--
JAN 27...	380	340	31	99	23	28	0.7	7.2	311
FEB 23...	380	280	0	83	18	22	0.6	--	--
MAR 31...	44000	200	9	58	13	19	0.6	8.2	190
APR 29...	1500	260	17	73	19	25	0.7	7.5	244
MAY 29...	K210000	190	0	56	13	16	0.5	--	--
JUN 30...	580	270	0	77	19	23	0.6	--	--
JUL 30...	2800	230	31	64	17	22	0.7	9.7	199
AUG 31...	880	250	0	68	19	23	0.7	--	--
SEP 29...	480	270	21	75	20	26	0.7	8.1	249

PLATTE RIVER BASIN

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06800500 ELKHORN RIVER AT WATERLOO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO ₄) (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 SiO ₂) (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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)
OCT 29...	44	9.4	0.40	29	372	350	0.51	3300	436
NOV 26...	58	10	--	--	--	--	--	--	234
DEC 30...	59	10	--	--	--	--	--	--	75
JAN 27...	68	12	0.40	34	483	460	0.66	1360	48
FEB 23...	53	12	--	--	--	--	--	--	108
MAR 31...	37	8.0	0.30	21	292	280	0.40	6180	1510
APR 29...	62	11	0.40	19	371	360	0.50	2620	258
MAY 29...	21	13	--	--	--	--	--	--	3460
JUN 30...	62	11	--	--	--	--	--	--	215
JUL 30...	64	11	0.40	22	348	330	0.47	868	352
AUG 31...	65	12	--	--	--	--	--	--	120
SEP 29...	70	12	<0.10	25	387	390	0.53	893	148

DATE	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO ₂ +NO ₃ 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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 29...	--	2.20	<0.020	--	1.8	--	<0.730	0.260	0.250
NOV 26...	2.20	--	0.140	1.5	1.6	3.8	0.690	--	--
DEC 30...	3.30	--	0.180	1.6	1.8	5.1	0.310	--	--
JAN 27...	--	4.10	0.260	0.94	1.2	--	0.340	0.250	0.240
FEB 23...	2.60	--	0.190	0.71	0.90	3.5	0.290	--	--
MAR 31...	--	2.00	0.510	1.7	2.2	--	0.690	0.130	0.100
APR 29...	2.60	2.60	0.060	1.9	2.0	4.6	0.450	0.210	0.170
MAY 29...	3.80	--	0.320	7.7	8.0	12	1.80	--	--
JUN 30...	2.80	--	0.070	1.6	1.7	4.5	0.550	--	--
JUL 30...	--	2.70	0.030	3.2	3.2	--	0.530	0.370	0.300
AUG 31...	1.70	--	0.080	2.2	2.3	4.0	0.550	--	--
SEP 29...	1.60	1.60	0.010	1.7	1.7	3.3	0.220	0.160	--

PLATTE RIVER BASIN

06800500 ELKHORN RIVER AT WATERLOO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
OCT 29...	1200	20	21	5	190	<0.5	<15	<1	<10	1	<3
FEB 23...	1030	--	10	--	--	--	<15	--	<10	--	--
MAR 31...	1200	210	--	<1	180	<0.5	--	<1	--	<1	<3
APR 29...	1120	10	14	3	170	<0.5	<15	<1	<10	<1	<3
JUL 30...	1030	20	--	8	160	0.6	--	1	--	<1	<3
AUG 31...	1105	--	14	--	--	--	<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)
OCT 29...	40	6	11	40	<5	26	7	--	0.6	<10
FEB 23...	<10	--	--	<20	--	--	--	<0.10	--	--
MAR 31...	--	8	320	--	<5	15	49	--	0.2	<10
APR 29...	20	5	8	30	<5	22	9	--	0.6	<10
JUL 30...	--	6	9	--	<5	22	6	--	0.1	<10
AUG 31...	10	--	--	<20	--	--	--	<0.10	--	--

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)
OCT 29...	6	<2	3	<1	<1	360	<6	60	11	22
FEB 23...	--	7	--	<1	--	--	--	<30	--	5.1
MAR 31...	3	--	4	--	<1	290	<6	--	22	12
APR 29...	1	--	4	<1	<1	400	6	60	3	9.7
JUL 30...	3	--	4	--	<1	370	9	--	17	6.5
AUG 31...	--	6	--	<1	--	--	--	<30	--	5.9

PLATTE RIVER BASIN

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06800500 ELKHORN RIVER AT WATERLOO, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
OCT 29...	1200	3290	12.5	912	8100	16	20
JAN 27...	1210	1040	0.5	365	1020	--	--
MAR 31...	1200	7840	2.5	3390	71700	20	23
APR 29...	1120	2620	16.0	191	1350	--	--
JUL 30...	1030	924	28.0	551	1370	--	--
SEP 29...	1115	855	18.0	238	549	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70339)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 29...	24	28	56	77	99	100	--
JAN 27...	--	--	47	59	97	100	--
MAR 31...	26	31	56	74	96	100	--
APR 29...	--	--	--	--	--	--	--
JUL 30...	--	--	--	--	--	--	82
SEP 29...	--	--	--	--	--	--	73

PLATTE RIVER BASIN

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: Nov. 11-14 and Jan. 17-27. Records good except for periods of estimated record, which are poor. Flood flow affected by several detention dams.

AVERAGE DISCHARGE.--36 years, 49.0 ft³/s, 35,500 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)
Oct. 2	2245	1260	11.82	Apr. 1	2300	1090	10.33
Oct. 11	1230	*6060	*20.18	Apr. 14	2015	2560	15.55
Oct. 25	0945	1580	13.10	May 27	0145	3320	17.62
Mar. 18	2045	1480	12.58	June 2	1800	1910	14.09
Mar. 23	1300	3200	16.81	June 9	1700	1070	10.68
Mar. 25	0200	3220	16.64	June 18	0515	4410	19.17

Minimum daily discharge, 8.5 ft³/s Sept. 7.

DISCHARGE, 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	280	83	106	49	34	64	917	47	363	86	16	12
2	469	113	187	46	34	44	767	44	1060	63	20	10
3	645	126	156	45	32	35	535	43	702	200	27	10
4	584	89	107	43	31	33	459	53	377	328	39	9.9
5	280	77	81	43	33	32	414	85	266	152	54	10
6	162	71	73	46	34	31	350	82	195	105	83	8.8
7	109	72	331	42	36	30	285	63	151	80	116	8.5
8	82	314	342	39	36	29	242	56	141	311	147	9.2
9	176	153	230	41	32	28	199	49	714	264	45	11
10	98	103	147	42	32	25	169	39	487	157	25	51
11	3900	85	148	40	31	25	137	34	267	98	20	18
12	3520	65	103	39	31	25	112	31	188	68	20	15
13	1220	45	90	39	30	24	116	26	159	50	28	13
14	862	52	73	41	31	25	1760	24	114	39	22	12
15	673	48	67	40	31	28	1340	22	88	36	24	12
16	553	47	77	34	29	28	656	20	65	31	22	32
17	484	47	90	32	27	211	471	19	55	27	16	25
18	400	47	112	30	24	1040	356	21	2570	24	14	18
19	346	45	90	30	24	858	269	23	775	22	13	15
20	278	52	84	29	23	508	216	26	416	20	14	14
21	216	50	71	28	24	492	162	33	296	18	14	13
22	179	51	67	28	24	322	133	33	232	16	11	12
23	214	48	65	25	24	2720	113	27	181	16	11	12
24	152	43	68	23	23	2620	97	26	145	14	11	12
25	1080	44	65	23	29	2370	85	32	214	13	18	12
26	523	40	59	25	25	956	76	981	179	13	41	11
27	340	38	57	27	26	741	66	1660	120	13	30	11
28	252	38	56	30	38	689	57	815	87	14	19	11
29	291	36	54	33	---	503	55	542	106	13	17	12
30	222	36	50	34	---	510	51	452	139	13	14	11
31	180	---	50	34	---	540	---	679	---	15	12	---
TOTAL	18770	2158	3356	1100	828	15586	10665	6087	10852	2319	963	431.4
MEAN	605	71.9	108	35.5	29.6	503	355	196	362	74.8	31.1	14.4
MAX	3900	314	342	49	38	2720	1760	1660	2570	328	147	51
MIN	82	36	50	23	23	24	51	19	55	13	11	8.5
AC-FT	37230	4280	6660	2180	1640	30910	21150	12070	21520	4600	1910	856

CAL YR 1986 TOTAL 38899.0 MEAN 107 MAX 3900 MIN 8.2 AC-FT 77160
WTR YR 1987 TOTAL 73115.4 MEAN 200 MAX 3900 MIN 8.5 AC-FT 145000

PLATTE RIVER BASIN

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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.--38 years, 238 ft³/s, 172,400 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)
Oct. 11	1600	*18200	*20.94	Apr. 2	0045	3780	9.38
Oct. 25	1500	3550	9.18	Apr. 14	1330	7180	12.97
Mar. 18	2130	4540	10.13	May 27	0930	3700	9.24
Mar. 23	1000	17400	a20.41	June 18	2400	4860	10.22
Mar. 24	2300	10500	15.20	Aug. 25	1700	7780	12.72

a From floodmark.

Minimum daily discharge, 93 ft³/s Aug. 5.

DISCHARGE, 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	984	415	353	239	195	237	3060	452	1000	281	108	620
2	763	348	456	226	199	226	3000	432	1370	244	106	555
3	1480	352	426	234	194	203	2090	456	1690	341	109	507
4	1110	321	354	224	185	186	1820	569	763	452	107	487
5	730	288	296	227	190	184	1720	526	573	340	106	444
6	472	267	313	231	186	184	1560	492	466	277	330	415
7	379	322	608	227	190	181	1350	464	397	285	269	394
8	340	814	806	212	193	175	1200	416	352	426	752	397
9	528	458	587	219	183	177	1010	389	602	774	307	711
10	385	335	394	221	183	168	873	367	1020	464	216	730
11	10900	365	366	184	185	163	759	374	516	319	167	448
12	8780	321	393	227	179	163	669	356	431	270	169	391
13	4190	192	299	219	179	164	701	352	408	241	216	353
14	2000	240	334	219	179	164	5120	341	352	218	182	338
15	1520	253	322	212	180	164	4490	288	313	207	187	407
16	1240	237	315	160	173	183	1980	250	279	201	159	1020
17	1050	236	314	189	166	628	1420	240	281	187	144	682
18	919	252	327	183	158	3140	1150	244	2790	180	134	537
19	763	275	319	195	164	2950	977	239	2340	171	206	426
20	633	280	305	184	167	1490	844	266	828	167	171	355
21	531	281	290	194	164	1340	749	281	560	158	159	319
22	528	285	280	177	163	1130	668	240	453	150	148	291
23	733	276	281	173	162	14200	631	215	395	142	136	272
24	621	264	280	172	161	9010	596	226	613	141	137	257
25	2390	257	271	169	159	8220	573	243	681	131	4950	240
26	1660	252	261	169	167	4560	530	589	427	127	5870	224
27	871	237	257	175	177	3070	522	3020	332	130	2260	214
28	651	229	252	181	225	2660	488	1490	283	126	1370	275
29	555	234	256	199	---	1910	492	909	313	122	1020	206
30	504	231	250	198	---	1870	460	1470	296	115	892	180
31	446	---	245	192	---	2020	---	1480	---	111	736	---
TOTAL	48656	9117	10810	6231	5006	61120	41502	17676	21124	7498	21823	12695
MEAN	1570	304	349	201	179	1972	1383	570	704	242	704	423
MAX	10900	814	806	239	225	14200	5120	3020	2790	774	5870	1020
MIN	340	192	245	160	158	163	460	215	279	111	106	180
AC-FT	96510	18080	21440	12360	9930	121200	82320	35060	41900	14870	43290	25180

CAL YR 1986 TOTAL 164761 MEAN 451 MAX 10900 MIN 72 AC-FT 326800
WTR YR 1987 TOTAL 263258 MEAN 721 MAX 14200 MIN 106 AC-FT 522200

PLATTE RIVER BASIN

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: Nov. 12-14, Dec. 11, and Jan. 16-26, Mar. 29. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--18 years, 16.0 ft³/s, 11,590 acre-ft/yr; median of yearly mean discharges, 17 ft³/s, 12,300 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)
Oct. 11	1100	2340	14.77	Apr. 14	0730	746	8.40
Mar. 23	0300	3640	16.82	Aug. 25	1200	*7640	*20.02

Minimum daily discharge, 3.2 ft³/s Aug. 5.

DISCHARGE, 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	29	16	19	13	12	18	181	17	28	8.9	3.8	22
2	49	18	23	13	12	12	142	17	80	8.6	3.7	20
3	56	18	21	13	11	11	100	18	21	8.8	3.4	18
4	79	17	16	13	11	12	95	21	16	8.6	3.3	17
5	32	16	14	14	11	11	89	23	14	8.8	3.2	15
6	26	16	15	15	12	11	79	20	13	8.2	55	13
7	24	27	37	13	12	11	68	17	12	11	19	12
8	22	115	25	12	12	9.8	58	15	12	9.4	107	11
9	18	24	22	13	10	9.3	48	15	13	14	13	72
10	12	17	17	12	11	9.2	43	14	14	10	8.5	51
11	1340	14	16	13	12	9.6	37	13	13	8.6	6.8	15
12	309	15	14	13	11	9.8	35	12	21	10	8.2	11
13	61	16	15	15	11	10	44	12	20	8.4	10	10
14	39	14	14	15	13	10	442	11	12	7.9	8.4	10
15	33	15	14	12	12	11	173	10	11	8.7	12	15
16	29	15	15	8.0	10	11	61	10	10	8.4	7.2	91
17	27	17	16	8.0	9.4	46	45	10	10	7.9	6.4	22
18	25	17	16	9.0	9.2	107	38	10	18	8.1	6.5	13
19	23	15	15	10	9.5	69	33	11	11	8.4	16	11
20	22	17	15	12	9.6	38	28	14	10	7.7	15	9.9
21	21	16	14	8.0	9.9	66	26	13	11	6.9	8.5	9.1
22	36	18	15	14	9.9	35	26	11	9.5	6.4	7.0	9.3
23	51	15	15	12	9.8	1610	26	10	9.0	6.2	7.2	10
24	31	13	16	10	11	386	24	12	58	5.6	7.4	10
25	164	14	15	10	11	260	23	14	30	5.5	2480	11
26	50	13	14	10	11	104	21	95	12	5.5	349	11
27	29	13	15	10	13	78	19	67	11	5.2	83	11
28	23	13	15	9.7	18	65	18	32	9.9	4.7	49	13
29	19	14	14	12	---	50	18	19	11	4.5	37	11
30	18	14	14	12	---	83	17	83	9.4	4.2	29	9.9
31	17	---	14	11	---	114	---	54	---	3.8	24	---
TOTAL	2714	582	520	364.7	314.3	3286.7	2057	700	529.8	238.9	3397.5	564.2
MEAN	87.5	19.4	16.8	11.8	11.2	106	68.6	22.6	17.7	7.71	110	18.8
MAX	1340	115	37	15	18	1610	442	95	80	14	2480	91
MIN	12	13	14	8.0	9.2	9.2	17	10	9.0	3.8	3.2	9.1
AC-FT	5380	1150	1030	723	623	6520	4080	1390	1050	474	6740	1120

CAL YR 1986 TOTAL 10075.0 MEAN 27.6 MAX 1340 MIN 4.4 AC-FT 19980
WTR YR 1987 TOTAL 15269.1 MEAN 41.8 MAX 2480 MIN 3.2 AC-FT 30290

PLATTE RIVER BASIN

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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 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.--Estimated daily discharges: Nov. 10-16, Jan. 16-20, Mar. 25, and Apr. 2-8. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--19 years, 18.9 ft³/s, 13,690 acre-ft/yr; median of yearly mean discharges, 20 ft³/s, 14,500 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)
Oct. 11	1630	*4140	*18.50	May 26	2330	2980	14.52
Mar. 23	0300	1620	10.75	June 19	0100	925	8.21
Mar. 24	1830	1580	10.61	Aug. 25	1330	1170	11.54
Apr. 1	1930	533	6.42	Aug. 26	0930	1180	11.52
Apr 14	1100	1880	11.58				

Minimum daily discharge, 3.7 ft³/s Aug. 2-4.

DISCHARGE, 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	27	24	41	19	16	18	375	19	36	8.6	3.8	8.4
2	53	25	56	17	16	19	200	18	44	8.4	3.7	8.0
3	58	26	39	19	16	15	110	18	38	11	3.7	7.7
4	162	26	26	18	14	13	96	24	23	9.8	3.7	7.4
5	30	24	22	18	14	13	90	30	21	9.8	3.9	7.1
6	20	23	24	19	14	12	80	26	18	9.1	5.0	6.4
7	17	21	132	18	15	12	66	19	16	8.3	12	6.3
8	16	140	63	16	16	12	54	18	16	36	54	6.8
9	41	30	39	18	15	11	48	16	16	30	11	12
10	22	23	24	18	14	11	39	15	16	14	7.5	105
11	2530	22	26	14	14	12	35	14	17	11	6.5	15
12	439	21	25	17	14	12	31	13	17	9.9	6.5	11
13	88	20	26	18	13	12	36	13	28	9.5	11	9.8
14	64	20	23	18	14	12	1190	12	16	9.2	7.9	8.8
15	48	20	24	17	14	12	485	11	13	9.1	7.0	8.6
16	37	20	27	13	13	12	115	11	12	8.4	6.2	17
17	37	21	27	13	12	112	79	11	11	7.9	5.3	14
18	34	21	29	12	11	396	59	14	202	7.8	5.1	10
19	26	20	25	13	11	122	51	15	181	8.0	6.0	9.1
20	24	20	24	13	12	47	42	57	16	7.4	11	8.0
21	24	19	22	15	12	33	37	86	13	6.8	7.2	7.2
22	25	19	22	14	12	172	32	17	11	6.5	5.7	7.2
23	32	18	22	13	12	951	33	16	9.9	6.8	5.2	7.2
24	34	18	23	12	11	762	29	15	24	6.3	5.5	7.2
25	216	19	22	11	11	450	26	17	34	6.1	423	6.9
26	66	18	20	12	11	93	25	844	11	5.9	418	6.7
27	33	18	20	12	12	67	22	650	9.2	5.7	37	7.0
28	32	18	20	13	13	65	21	113	8.8	5.4	17	9.6
29	28	18	20	15	---	36	21	40	9.1	5.0	12	8.1
30	25	18	19	17	---	89	19	193	9.0	4.4	10	6.7
31	24	---	20	15	---	129	---	93	---	4.2	9.0	---
TOTAL	4312	750	952	477	372	3732	3546	2458	896.0	296.3	1130.4	360.2
MEAN	139	25.0	30.7	15.4	13.3	120	118	79.3	29.9	9.56	36.5	12.0
MAX	2530	140	132	19	16	951	1190	844	202	36	423	105
MIN	16	18	19	11	11	11	19	11	8.8	4.2	3.7	6.3
AC-FT	8550	1490	1890	946	738	7400	7030	4880	1780	588	2240	714

CAL YR 1986 TOTAL 14410.3 MEAN 39.5 MAX 2530 MIN 3.9 AC-FT 28580
WTR YR 1987 TOTAL 19281.9 MEAN 52.8 MAX 2530 MIN 3.7 AC-FT 38250

PLATTE RIVER BASIN

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 1986 TO SEPTEMBER 1987

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 FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)
OCT 29...	1135	676	1800	7.90	11.5	9.6	E10000	K14000	250	17
DEC 15...	1135	380	2720	7.94	2.5	11.1	K50000	K22000	360	58
JAN 21...	1040	260	--	7.98	1.0	11.6	K48000	K23000	400	65
FEB 18...	1100	200	3850	7.92	1.0	11.9	E35000	K19000	370	46
MAR 17...	1100	390	1650	7.70	6.5	11.3	K32000	--	180	2
APR 22...	1345	792	1890	8.25	11.0	9.8	K14	K24	270	14
MAY 20...	1215	360	--	8.10	19.0	6.7	--	E33000	250	14
JUN 17...	1550	340	3100	8.02	27.0	6.2	K50000	310	320	43
JUL 16...	1445	250	4140	7.87	28.0	5.8	K640	K20	340	53
AUG 11...	1130	250	4160	7.87	23.5	5.6	--	1900	300	46
SEP 10...	1220	1000	1060	7.58	16.0	7.2	5700	51000	140	16

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 29...	69	19	270	8	8.6	234	110	400	0.40	18
DEC 15...	100	27	420	10	7.1	303	160	610	0.40	22
JAN 21...	110	31	760	17	9.4	337	210	1100	0.50	23
FEB 18...	100	29	770	18	8.8	323	240	1100	0.50	20
MAR 17...	50	14	330	11	5.8	181	110	470	0.30	8.4
APR 22...	78	19	250	7	7.0	259	120	370	0.40	15
MAY 20...	70	19	390	11	6.9	239	130	530	0.40	16
JUN 17...	88	24	580	15	9.1	276	150	850	0.70	19
JUL 16...	93	27	820	20	9.9	290	280	1100	0.50	22
AUG 11...	80	24	800	21	13	253	220	1200	0.60	23
SEP 10...	37	11	150	6	8.6	122	85	200	0.40	9.9

PLATTE RIVER BASIN

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06803525 SALT CREEK BELOW STEVENS CREEK, NEAR WAVERLY, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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- PHORUS, TOTAL (MG/L AS P) (00665)
OCT 29...	1000	1.4	1890	1.50	--	0.510	1.4	1.9	3.4	0.580
DEC 15...	1500	2.1	1570	1.90	1.90	1.40	1.4	2.8	4.7	1.10
JAN 21...	2400	3.3	1720	2.00	2.00	2.60	0.50	3.1	5.1	1.40
FEB 18...	2500	3.3	1330	1.60	0.580	2.60	1.1	3.7	5.3	1.30
MAR 17...	1100	1.5	1160	1.40	1.40	1.30	2.8	4.1	5.5	1.40
APR 22...	1000	1.4	2170	1.90	1.80	0.540	1.2	1.7	3.6	0.490
MAY 20...	1300	1.8	1270	--	2.10	0.960	4.5	5.5	--	1.90
JUN 17...	1900	2.6	1730	2.50	2.40	1.00	1.5	2.5	5.0	1.20
JUL 16...	2500	3.4	1710	--	2.20	--	--	--	--	--
AUG 11...	2500	3.4	1700	2.00	1.90	2.30	1.5	3.8	5.8	2.00
SEP 10...	580	0.78	1550	1.30	--	0.450	2.4	2.8	4.1	0.450

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)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)
OCT 29...	5	200	<1	<10	19	5700	6
DEC 15...	--	--	--	--	--	--	--
JAN 21...	--	--	--	--	--	--	--
FEB 18...	3	<100	<1	<10	16	350	7
MAR 17...	6	200	<1	<10	40	8600	63
APR 22...	--	--	--	--	--	--	--
MAY 20...	7	600	<1	20	28	30000	16
JUN 17...	--	--	--	--	--	--	--
JUL 16...	--	--	--	--	--	--	--
AUG 11...	6	300	1	90	9	5100	<5
SEP 10...	--	--	--	--	--	--	--

PLATTE RIVER BASIN

06803525 SALT CREEK BELOW STEVENS CREEK, NEAR WAVERLY, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 29...	250	<0.10	1	<1	40	7.9
DEC 15...	--	--	--	--	--	0.9
JAN 21...	--	--	--	--	--	7.9
FEB 18...	370	<0.10	2	<1	10	6.3
MAR 17...	1000	0.20	2	1	140	16
APR 22...	--	--	--	--	--	7.9
MAY 20...	1600	0.10	2	<1	130	27
JUN 17...	--	--	--	--	--	8.2
JUL 16...	--	--	--	--	--	8.4
AUG 11...	350	0.20	2	1	20	10
SEP 10...	--	--	--	--	--	42

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: Nov. 10-14, Dec. 9-14, Jan. 1, 10, 15-24, and Feb. 16-18. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--17 years, 41.0 ft³/s, 29,700 acre-ft/yr; median of yearly mean discharges, 38 ft³/s, 27,500 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)
Oct. 11	2330	4610	15.96	May 26	1800	2470	11.81
Mar. 23	0930	6470	17.19	June 2	0700	2400	11.64
Mar. 24	2400	1450	9.07	June 13	0200	1830	10.29
Apr. 15	0100	1120	8.25	Aug. 25	1400	*23300	*a19.60

a From floodmark.

Minimum daily discharge, 7.4 ft³/s Aug. 1.

DISCHARGE, 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	50	38	34	26	28	46	369	35	165	18	7.4	27
2	130	39	41	29	28	32	347	35	1280	19	8.6	25
3	139	39	40	27	27	29	219	35	104	19	9.3	24
4	125	38	33	27	25	28	211	40	49	18	10	24
5	47	36	32	28	25	27	198	57	39	18	14	22
6	35	36	31	30	26	26	169	46	35	18	43	22
7	32	41	48	28	27	26	135	36	32	21	40	44
8	30	244	46	27	27	25	113	33	30	21	199	27
9	28	51	38	28	24	23	83	31	77	20	27	23
10	28	35	27	28	25	22	69	29	57	20	17	26
11	2450	32	29	36	26	22	59	29	40	18	16	23
12	1280	32	27	27	26	23	53	27	224	21	17	22
13	118	33	28	29	26	24	64	26	650	18	24	21
14	73	33	28	30	29	25	668	25	56	17	17	21
15	57	34	29	26	28	27	471	22	33	17	36	21
16	50	36	31	23	24	27	115	22	29	16	17	71
17	46	37	32	21	23	79	88	22	28	16	14	34
18	42	37	32	20	22	226	74	23	31	16	17	23
19	40	34	31	22	23	142	65	24	30	16	172	20
20	39	36	30	23	24	65	56	76	108	15	164	19
21	37	36	29	22	24	77	53	44	58	13	23	18
22	46	40	29	21	25	54	53	29	29	12	17	18
23	123	36	31	22	24	3790	55	25	25	12	16	19
24	82	31	33	22	25	648	50	27	26	11	16	18
25	446	32	32	23	26	496	45	33	25	11	11400	17
26	115	31	30	23	27	141	44	1310	22	11	3580	17
27	63	28	30	24	32	106	40	743	21	11	243	17
28	52	30	30	25	41	95	37	144	21	11	68	19
29	43	30	30	27	---	28	38	69	21	10	44	17
30	41	31	29	27	---	101	36	102	20	8.0	33	16
31	40	---	28	26	---	168	---	175	---	7.8	29	---
TOTAL	5927	1266	998	797	737	6648	4077	3374	3365	479.8	16338.3	715
MEAN	191	42.2	32.2	25.7	26.3	214	136	109	112	15.5	527	23.8
MAX	2450	244	48	36	41	3790	668	1310	1280	21	11400	71
MIN	28	28	27	20	22	22	36	22	20	7.8	7.4	16
AC-FT	11760	2510	1980	1580	1460	13190	8090	6690	6670	952	32410	1420

CAL YR 1986 TOTAL 24950.1 MEAN 68.4 MAX 2450 MIN 8.7 AC-FT 49490
WTR YR 1987 TOTAL 44722.1 MEAN 123 MAX 11400 MIN 7.4 AC-FT 88710

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: Nov. 11-14, Jan. 16-26, June 10-16, and June 18 to July 13. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--35 years (water years 1953-87), 346 ft³/s, 250,700 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 geater 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)
Oct. 11	1515	30400	22.77	Apr. 2	0145	4480	8.83
Oct. 25	1900	3770	8.08	Apr. 14	2130	9890	13.43
Mar. 19	0330	4480	8.79	May 26	2300	8320	12.32
Mar. 23	1545	27000	21.65	Aug. 8	0830	4510	8.90
Mar. 25	0500	12000	14.85	Aug. 25	1845	*40000	*25.25

Minimum daily discharge, 205 ft³/s Aug. 3.

DISCHARGE, 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	1260	656	415	362	312	424	3660	616	1710	320	214	815
2	1020	629	566	349	313	384	3880	602	2210	310	214	746
3	1790	605	575	348	307	347	2860	597	2140	310	205	705
4	1840	594	477	348	291	326	2550	680	1410	560	206	682
5	974	543	398	348	293	318	2410	726	979	450	206	648
6	596	501	398	356	296	311	2210	724	803	360	240	609
7	474	481	690	359	296	304	1930	670	681	350	394	601
8	401	1440	969	347	301	303	1720	617	586	700	2150	580
9	512	822	752	338	286	302	1480	584	532	1000	662	589
10	517	581	533	341	282	302	1280	545	1150	600	419	1450
11	17500	450	442	320	285	298	1130	511	900	450	334	696
12	14200	425	498	331	280	300	1000	485	580	370	301	605
13	4720	365	417	348	273	302	974	457	800	350	354	543
14	2200	385	438	348	277	303	5780	443	1150	330	317	505
15	1710	405	431	349	277	313	6270	422	460	300	340	476
16	1420	406	427	295	270	315	2690	409	380	304	276	1150
17	1220	401	431	280	259	517	1910	395	400	293	248	923
18	1070	407	447	270	249	2710	1540	394	3500	284	238	694
19	940	383	448	285	247	3520	1320	417	3000	283	689	586
20	850	380	433	295	252	1800	1140	500	1500	269	732	495
21	765	379	412	290	262	1590	1020	606	700	258	328	448
22	750	383	399	275	264	1230	923	446	560	248	267	412
23	995	374	397	255	263	18700	896	397	520	239	249	380
24	983	349	395	280	265	11000	855	382	650	238	235	363
25	2600	332	391	290	271	9270	800	414	740	236	20900	349
26	2340	326	383	335	273	4650	756	3580	500	230	15500	327
27	1200	312	375	471	284	3170	717	5120	450	226	3060	309
28	935	305	370	294	330	2790	670	2240	400	227	1670	390
29	784	317	371	316	---	2150	651	1330	360	226	1240	317
30	743	318	371	321	---	2040	636	1630	340	227	1070	270
31	677	---	365	308	---	2420	---	2220	---	221	935	---
TOTAL	67986	14254	14414	10052	7858	72709	55658	29159	30091	10769	54193	17663
MEAN	2193	475	465	324	281	2345	1855	941	1003	347	1748	589
MAX	17500	1440	969	471	330	18700	6270	5120	3500	1000	20900	1450
MIN	401	305	365	255	247	298	636	382	340	221	205	270
AC-FT	134900	28270	28590	19940	15590	144200	110400	57840	59690	21360	107500	35030
CAL YR 1986	TOTAL 249701											
WTR YR 1987	TOTAL 384806											
	MEAN 684	MEAN 1054	MEAN 1054	MAX 17500	MAX 20900	MIN 160	MIN 205	AC-FT 495300	AC-FT 763300			

PLATTE RIVER BASIN

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06803555 SALT CREEK AT GREENWOOD, NE--Continued

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 1986 TO SEPTEMBER 1987

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)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT												
01...	1440	1150	840	7.20	16.0	7.1	110	E73000	E54000	120	0	35
29...	0955	778	1580	7.75	11.5	8.6	41	E10000	K16000	260	0	70
DEC												
15...	1030	448	2440	8.01	2.5	12.2	27	K34000	K21000	310	0	82
JAN												
21...	0945	296	3100	8.03	0.5	11.5	25	K50000	K27000	350	0	94
FEB												
18...	0930	246	3300	7.88	1.0	10.8	42	E18000	K12000	350	0	91
MAR												
17...	0915	375	--	7.78	6.5	11.8	41	K35000	--	310	0	86
APR												
22...	1145	918	1700	8.26	11.0	8.5	9	K50	140	270	0	75
MAY												
20...	1040	457	2410	8.04	19.5	6.7	80	E13000	6700	290	0	80
JUN												
17...	1445	375	2620	7.76	27.5	6.1	50	K60000	540	320	0	89
JUL												
16...	1345	311	3390	7.90	28.0	6.0	25	1100	K220	330	0	89
AUG												
11...	1030	348	3110	7.87	23.5	6.8	32	--	1900	280	0	79
SEP												
10...	1030	1520	1060	7.60	16.5	5.8	220	K17000	K320000	130	0	38

E Estimated value.

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

DATE	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, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)
OCT												
01...	8.8	120	5	65	150	1290	1.50	0.180	6.2	6.4	7.9	0.770
29...	20	260	7	130	320	188	1.70	1.00	0.60	1.6	3.3	0.890
DEC												
15...	25	400	10	160	600	52	2.50	1.10	1.5	2.6	5.1	0.270
JAN												
21...	28	610	15	210	840	13	2.50	1.60	0.60	2.2	4.7	0.900
FEB												
18...	29	640	15	240	1000	11	2.10	2.30	1.5	3.8	5.9	1.40
MAR												
17...	24	500	13	160	620	42	1.90	1.40	0.60	2.0	3.9	1.30
APR												
22...	21	240	7	110	450	200	2.20	0.420	1.1	1.5	3.7	0.630
MAY												
20...	23	470	12	140	660	344	1.80	0.900	5.5	6.4	8.2	0.480
JUN												
17...	24	530	13	150	660	159	3.30	0.500	1.2	1.7	5.0	0.970
JUL												
16...	27	670	17	160	930	82	2.60	0.860	4.6	5.5	8.1	1.50
AUG												
11...	20	620	17	170	710	156	2.00	1.20	1.3	2.5	4.5	0.990
SEP												
10...	9.0	170	7	63	240	2780	1.50	0.380	6.8	7.2	8.7	0.110

PLATTE RIVER BASIN

06803555 SALT CREEK AT GREENWOOD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
OCT 29...	0955	22	<15	20	20	60	<0.10	20	<1	50	9.7
FEB 18...	0930	36	<15	<10	30	<20	<0.10	31	<1	<30	7.7
MAY 20...	1040	27	<15	<10	20	40	0.10	<3	<1	50	43
AUG 11...	1030	23	<15	20	20	30	<0.10	<2	<1	100	6.2

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: Nov. 10-24, Dec. 2 to Jan. 29, and Feb. 15-17. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--38 years, 88.6 ft³/s, 64,190 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)
Oct. 12	0600	4900	20.42	Aug. 8	1800	3320	18.53
Mar. 23	1545	*14200	a21.92	Aug. 26	0730	10500	*22.12
May 27	0245	1630	13.84	Sept. 16	1200	2790	17.47
June 2	0400	1530	13.45				

a From floodmark.

Minimum daily discharge, 48 ft³/s Jan. 18, 23, 24.

CORRECTIONS.--The peak discharge reported in the 1986 water year report for Sept. 23, 1986, has been corrected to 3,750 ft³/sec; the previously published figure was a typographical error.

DISCHARGE, 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	148	123	106	76	82	91	728	117	216	75	58	94
2	131	127	100	70	83	83	933	120	811	76	58	88
3	260	124	98	72	80	77	634	122	160	77	58	86
4	171	119	90	76	77	75	608	141	123	69	84	83
5	114	115	88	74	77	75	638	201	116	67	63	81
6	88	114	94	66	76	74	599	158	112	67	63	81
7	82	132	94	72	78	75	537	138	109	82	68	90
8	78	319	90	72	79	73	465	128	107	77	1750	91
9	72	135	82	68	75	71	349	122	104	85	489	82
10	72	94	80	62	78	70	292	112	104	97	126	104
11	1780	84	84	58	79	71	262	110	110	67	100	92
12	2530	90	82	64	79	70	230	102	260	72	88	83
13	418	92	84	68	77	71	235	89	278	71	90	81
14	279	94	86	62	78	72	385	97	105	72	86	79
15	246	96	88	58	75	74	746	95	95	74	87	79
16	206	98	90	54	70	75	308	97	92	73	75	1640
17	186	98	92	52	68	88	249	97	90	70	71	315
18	177	100	90	48	70	305	220	102	99	71	71	136
19	152	96	90	50	78	280	201	111	143	73	196	110
20	142	96	88	54	75	156	183	279	96	69	502	97
21	142	94	88	54	74	171	167	152	93	67	94	90
22	130	94	86	52	75	143	167	113	88	65	75	86
23	692	92	86	48	72	6790	180	101	85	65	69	84
24	601	94	84	48	76	2140	164	101	82	64	68	82
25	738	96	84	52	74	1330	143	113	85	63	1890	79
26	286	96	80	56	74	587	140	508	81	63	6220	77
27	185	92	84	62	77	443	130	772	79	63	532	77
28	150	98	84	66	88	427	122	229	78	62	237	78
29	134	103	92	75	---	146	124	153	77	61	152	74
30	131	107	76	83	---	257	121	135	76	60	117	73
31	122	---	78	80	---	466	---	216	---	59	102	---
TOTAL	10643	3312	2718	1952	2144	14926	10260	5131	4154	2176	13739	4392
MEAN	343	110	87.7	63.0	76.6	481	342	166	138	70.2	443	146
MAX	2530	319	106	83	88	6790	933	772	811	97	6220	1640
MIN	72	84	76	48	68	70	121	89	76	59	58	73
AC-FT	21110	6570	5390	3870	4250	29610	20350	10180	8240	4320	27250	8710
CAL YR 1986	TOTAL 58657	MEAN 161	MAX 2960	MIN 37	AC-FT 116300							
WTR YR 1987	TOTAL 75547	MEAN 207	MAX 6790	MIN 48	AC-FT 149800							

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 103,000 ft³/s Mar. 24, gage height, 9.72 ft; minimum daily discharge, 1.400 ft³/s Aug. 4.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12800	12900	9970	8700	10400	8780	23400	9220	16100	5470	1950	5470
2	11600	11800	10300	8580	10900	10700	32900	9480	25500	4940	1610	5290
3	12700	11200	10500	7910	10100	11100	33900	9720	18400	4940	1680	4830
4	14200	11300	10700	8330	9950	10500	33400	10500	15500	4830	1400	4630
5	13400	11300	9620	8620	9790	9950	33000	12200	13800	4940	1440	4460
6	15600	11400	9230	8510	9590	10700	34000	15600	12100	6320	1570	4390
7	14600	11100	9830	9180	9390	10300	33000	13500	11200	6420	2770	4700
8	13200	12100	10800	8660	9370	10300	28500	15200	10500	6430	6990	4870
9	12200	13300	10900	8440	9220	10400	25300	12400	9550	6050	8550	5150
10	11800	12300	10200	8480	8700	10500	22900	11900	9540	5760	6610	6050
11	25300	11200	8700	8290	9060	11200	21300	11400	10400	7120	5620	6220
12	46500	9530	8370	8020	8740	10500	19600	10900	10900	6700	5400	5840
13	27000	8750	7390	8310	8700	10500	18500	10400	17100	7360	5060	5630
14	20000	7450	6820	8950	8750	10400	24600	9390	13400	7310	4500	5610
15	16000	7530	6990	8950	8390	9470	33100	9240	12500	6540	3850	5520
16	14100	7920	7500	8810	9170	9900	28400	9130	10800	6010	3770	6970
17	12700	7760	9170	7560	8870	10500	23200	8770	10400	5420	4100	14300
18	11600	8800	10100	6850	9830	20100	21500	9120	10600	5010	3540	11000
19	11500	10200	10100	6150	8730	43700	19400	8680	13500	4860	4100	10400
20	11400	11400	9850	5660	8710	33200	19000	9810	10800	4460	5720	9170
21	10800	11500	9360	5800	8540	34000	17000	13100	12200	3890	4880	7930
22	10500	11400	8950	6120	8050	33400	18000	12700	11000	4150	4300	7730
23	11800	12000	9140	6180	8420	67700	16000	12200	9580	4170	4060	6460
24	13600	11900	8320	6390	8210	98600	15000	10900	9120	4010	3310	6220
25	16400	10900	9230	6640	8060	91700	14000	10800	11100	3820	19800	6310
26	20900	10500	9000	6930	8130	63900	13000	26100	8510	3330	39100	6230
27	16700	10200	8760	6980	8310	42600	11800	40000	8110	3270	26700	5670
28	14800	9800	8680	7210	8830	30300	11000	33200	6840	3490	13100	5950
29	15200	9770	8910	7520	---	27000	9950	22700	6170	3050	9330	5590
30	13600	10100	8490	8080	---	22200	10300	20000	5860	2440	6810	5310
31	12100	---	8570	10300	---	20500	---	18300	---	2300	5610	---
TOTAL	484600	317310	284450	241110	252910	804600	664950	436560	351080	154810	217230	193900
MEAN	15630	10580	9176	7778	9032	25950	22160	14080	11700	4994	7007	6463
MAX	46500	13300	10900	10300	10900	98600	34000	40000	25500	7360	39100	14300
MIN	10500	7450	6820	5660	8050	8780	9950	8680	5860	2300	1400	4390
AC-FT	961200	629400	564200	478200	501600	1596000	1319000	865900	696400	307100	430900	384600
CAL YR 1986	TOTAL 4160400		MEAN 11400	MAX 46500		MIN 3550		AC-FT 8252000				
WTR YR 1987	TOTAL 4403510		MEAN 12060	MAX 98600		MIN 1400		AC-FT 8734000				

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 1986 TO SEPTEMBER 1987

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 (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT 14...	1200	19900	--	7.30	7.5	750	--	12.1	49	K73000
NOV 20...	1050	12300	--	8.26	0.5	747	50	13.3	52	1900
DEC 10...	1000	13800	646	8.41	0.0	747	--	15.0	28	670
JAN 06...	1045	8680	680	8.13	1.0	740	--	15.3	24	K140
FEB 03...	1040	10400	--	8.14	3.5	750	40	13.2	120	580
MAR 02...	1215	11800	543	8.17	4.5	735	--	13.1	32	K160
APR 06...	1045	34000	436	7.43	6.0	742	--	12.3	78	1800
APR 28...	1115	11600	803	8.36	16.0	742	37	12.0	48	K35
JUN 04...	1215	13800	641	8.40	23.0	754	--	8.5	82	3200
JUL 06...	0920	6740	648	8.30	25.0	740	--	7.1	93	3500
AUG 03...	1030	1870	985	8.66	28.5	744	38	8.4	36	K10
AUG 31...	0855	--	624	8.52	20.0	752	--	9.5	41	K1900
SEP 30...	1020	5290	547	8.83	16.0	754	--	11.1	50	K370

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 (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD MG/L AS CACO3 (00410)
OCT 14...	63000	200	0	56	14	31	1	--	--
NOV 20...	1200	240	37	66	18	70	2	6.3	203
DEC 10...	3400	220	0	60	18	40	1	--	--
JAN 06...	880	240	0	67	17	42	1	--	--
FEB 03...	180	230	41	65	17	78	2	8.1	192
MAR 02...	1000	250	0	72	17	40	1	--	--
APR 06...	K66000	170	0	50	12	21	0.7	--	--
APR 28...	310	240	66	64	19	67	2	9.7	173
JUN 04...	1900	260	0	74	19	38	1	--	--
JUL 06...	1500	210	0	55	18	54	2	--	--
AUG 03...	130	210	35	55	18	120	4	12	177
AUG 31...	980	180	0	53	12	65	2	--	--
SEP 30...	K120	180	0	48	15	44	1	--	--

PLATTE RIVER BASIN

06805500 PLATTE RIVER AT LOUISVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SULFATE DIS- SOLVED (MG/L AS SO ₄) (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 SiO ₂) (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)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED, (MG/L) (00530)
OCT 14...	94	12	--	--	--	--	--	--	530
NOV 20...	110	55	0.40	33	486	480	0.66	16100	144
DEC 10...	99	14	--	--	--	--	--	--	76
JAN 06...	120	16	--	--	--	--	--	--	98
FEB 03...	130	63	0.40	33	508	510	0.69	14300	173
MAR 02...	120	18	--	--	--	--	--	--	422
APR 06...	53	25	--	--	--	--	--	--	952
APR 28...	140	45	0.40	21	487	470	0.66	15300	195
JUN 04...	110	18	--	--	--	--	--	--	650
JUL 06...	74	35	--	--	--	--	--	--	796
AUG 03...	120	130	0.40	27	595	590	0.81	3000	122
AUG 31...	72	78	--	--	--	--	--	--	222
SEP 30...	84	24	--	--	--	--	--	--	132

DATE	NITRO- GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO ₂ +NO ₃ 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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 14...	1.50	--	0.080	0.92	1.0	2.5	0.470	--	--
NOV 20...	1.60	1.60	0.150	1.3	1.5	3.1	0.350	0.170	0.170
DEC 10...	1.80	--	0.030	1.2	1.2	3.0	0.350	--	--
JAN 06...	2.10	--	0.080	0.67	0.75	2.9	0.200	--	--
FEB 03...	1.70	1.80	0.160	1.6	1.8	3.5	0.370	0.140	0.190
MAR 02...	2.10	--	0.100	1.7	1.8	3.9	0.590	--	--
APR 06...	1.90	--	0.150	3.5	3.7	5.6	0.720	--	--
APR 28...	0.850	0.830	0.030	1.3	1.3	2.2	0.370	0.110	0.070
JUN 04...	2.70	--	0.090	2.9	3.0	5.7	0.170	--	--
JUL 06...	0.510	--	0.110	5.3	5.4	5.9	0.220	--	--
AUG 03...	--	<0.100	0.010	1.3	1.3	--	0.850	0.180	0.130
AUG 31...	0.910	--	0.070	2.1	2.2	3.1	0.670	--	--
SEP 30...	0.140	--	0.260	0.94	1.2	1.3	0.260	--	--

PLATTE RIVER BASIN

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06805500 PLATTE RIVER AT LOUISVILLE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 20...	1050	10	16	5	130	<0.5	<15	1	<10	<1	<3
FEB 03...	1040	<10	18	4	120	<0.5	<15	<1	<10	<1	<3
APR 28...	1115	<10	16	3	140	<0.5	<15	<1	<10	<1	<3
AUG 03...	1030	<10	14	8	130	<0.5	<15	<1	20	<1	<3

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 20...	60	8	6	40	<5	30	7	--	0.6	<10
FEB 03...	20	7	6	<20	<5	30	7	--	0.5	<10
APR 28...	20	5	8	<20	<5	24	2	--	0.4	<10
AUG 03...	30	4	6	50	<5	32	4	<0.10	<0.1	<10

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 20...	4	<2	2	<1	<1	460	<6	<30	10	10
FEB 03...	<1	9	2	<1	<1	500	<6	80	5	27
APR 28...	1	--	3	<1	<1	470	9	50	<3	4.6
AUG 03...	3	8	2	<1	<1	460	10	40	<3	7.6

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. 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 .062 MM (70331)
NOV 20...	1050	12300	0.5	1220	40400	--	--	--	--	--
FEB 03...	1040	10400	3.5	609	17100	45	54	91	100	--
APR 28...	1115	11600	16.0	541	16900	--	--	--	--	40
AUG 03...	1030	1870	28.5	160	808	--	--	--	--	79

WEeping WATER CREEK BASIN

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: Oct. 11, 12, Nov. 10-21, Dec. 9-14, and Jan. 9-30. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--37 years, 99.0 ft³/s, 71,730 acre-ft/yr; median of yearly mean discharges, 72 ft³/s, 52,200 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)
Oct. 11	----	11600	a25.56	Aug. 25	----	17000	b27.00
May 26	2300	*20500	*27.45				

a From floodmark.

b Based on partial record.

Minimum daily discharge, 39 ft³/s Aug. 2.

DISCHARGE, 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	329	136	159	105	89	118	626	186	420	130	40	120
2	175	155	195	100	89	98	806	188	436	127	39	113
3	616	155	160	103	86	82	520	181	400	121	42	107
4	334	144	138	101	82	75	453	183	284	139	49	106
5	192	133	119	101	83	74	419	191	265	123	45	101
6	98	131	121	105	85	72	381	208	251	116	62	97
7	84	131	306	102	87	70	318	180	233	135	218	95
8	76	258	310	96	89	68	294	169	219	715	514	95
9	92	214	150	90	81	65	244	163	536	260	275	99
10	106	130	112	80	80	63	228	160	250	145	91	177
11	7200	100	104	75	81	63	205	154	238	121	74	138
12	4700	100	102	80	79	63	201	146	391	107	71	104
13	436	90	104	80	78	64	210	141	713	103	95	97
14	302	100	112	80	82	65	1100	141	211	98	99	92
15	248	100	127	70	84	68	1280	134	180	99	92	151
16	225	100	133	60	78	69	443	132	168	96	82	413
17	208	110	135	55	72	102	343	130	160	90	75	166
18	181	110	134	50	69	300	290	131	257	193	75	117
19	172	112	130	55	72	364	261	141	260	95	119	99
20	156	118	126	50	74	189	244	267	213	79	241	91
21	148	120	121	48	74	167	232	280	237	73	111	90
22	149	133	118	45	73	144	235	204	176	71	76	88
23	228	127	119	42	71	145	248	158	163	70	73	87
24	254	116	119	46	71	370	232	164	166	68	73	83
25	254	116	117	52	69	1040	220	256	491	64	6690	81
26	260	114	112	60	70	424	214	6790	188	62	4870	80
27	172	108	110	70	74	289	204	7230	154	58	704	78
28	154	108	111	75	88	1080	194	906	129	53	245	77
29	139	109	112	80	---	397	196	488	235	52	189	79
30	132	109	108	85	---	381	191	412	140	47	154	75
31	132	---	106	86	---	420	---	797	---	43	130	---
TOTAL	17952	3787	4230	2327	2210	6989	11032	21011	8164	3753	15713	3396
MEAN	579	126	136	75.1	78.9	225	368	678	272	121	507	113
MAX	7200	258	310	105	89	1080	1280	7230	713	715	6690	413
MIN	76	90	102	42	69	63	191	130	129	43	39	75
AC-FT	35610	7510	8390	4620	4380	13860	21880	41680	16190	7440	31170	6740
CAL YR 1986	TOTAL 59530	MEAN 163	MAX 7200	MIN 18	AC-FT 118100							
WTR YR 1987	TOTAL 100564	MEAN 276	MAX 7230	MIN 39	AC-FT 199500							

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LOCATION.--Lat 40°40'55", long 95°50'48", in NW1/4 NE1/4 sec.9, T.8 N., R.14 E., Otoe County, Hydrologic Unit 10240001, on right bank 0.7 mi upstream from Waubonsie Highway Bridge at Nebraska City, and at mile 562.6.

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.

GAGE.--Water-stage recorder. Datum of gage is 905.36 ft above National Geodetic Vertical Datum, supplementary adjustment of 1954. See WSP 1918 or 1919 for history of changes prior to Apr. 1, 1963.

AVERAGE DISCHARGE.--58 years, 37,130 ft³/s, 26,901,000 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, 121,000 ft³/s Mar. 25, gage-height, 20.96 ft; minimum daily discharge, 33,200 ft³/s Jan. 25; minimum gage height, 7.57 ft Jan. 24-26.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73800	63800	63100	45000	37200	36900	84300	48400	51200	39600	37900	41300
2	73300	64000	63900	45100	36000	36600	90100	49000	54000	38900	36800	40200
3	72700	63600	63900	44900	37400	37600	98600	49500	55000	38200	36200	39400
4	71600	63700	61800	44600	37200	37300	94700	51100	49600	38200	36600	38600
5	69700	62500	59400	45300	37000	36200	90700	53100	48800	38200	36100	38000
6	67600	62400	58300	45200	36800	36000	87200	54800	48500	38900	35800	38300
7	66500	61600	58900	45700	36600	35800	83400	54600	45000	40800	36500	39200
8	63400	63100	58000	46400	36500	35400	77800	53000	47000	42400	48700	39400
9	60900	64300	56700	45700	36800	35300	73000	51700	47200	44300	47200	39000
10	58300	64300	54900	45700	36700	35100	70300	51300	46300	42900	43400	40100
11	71000	63000	52200	45300	36600	35500	69700	50900	46500	46800	40300	40400
12	99700	61100	50600	44200	37400	35400	68400	49100	46200	50200	38800	39200
13	91800	59200	50700	44800	37400	35300	68400	48400	50800	51000	40900	38700
14	77500	57200	49400	45000	37800	35500	70600	46700	48800	46000	41500	38500
15	70900	56100	48000	41800	37800	35700	80500	46500	47900	43400	39600	38900
16	67700	56400	52600	40800	37900	35300	76000	46000	46800	43200	39300	40600
17	65900	57300	54400	38600	38100	36500	70400	45500	45500	42000	40800	44600
18	64700	59500	54300	37100	37100	38800	67100	45600	45500	42700	39300	48400
19	64600	62600	54300	36100	36400	58100	66000	45200	48200	42300	37900	47600
20	64500	64100	51000	35700	35400	57600	64400	46400	46500	42600	39700	46800
21	63900	64200	46800	35200	35700	56500	62300	48200	45200	44900	38600	45700
22	63300	63200	45400	34600	35800	58500	61100	49500	45500	42500	37400	43900
23	65300	62800	47100	34600	35300	69400	58900	48300	43600	42900	36500	44100
24	68100	63400	47300	34000	35800	105000	57100	47800	42200	42400	36000	42100
25	69800	63000	47200	33200	35600	119000	53600	47400	44700	41900	51700	42900
26	73800	62700	47700	33300	35700	116000	52200	66900	45000	44500	72200	42500
27	71300	62400	46100	33500	35700	104000	51500	98100	42600	43400	67000	41600
28	68100	62600	45700	33700	36200	95100	50000	85700	41300	42200	52600	41100
29	65100	62200	45600	34300	---	91100	49300	67800	40800	41100	45600	41100
30	64000	62200	45000	34500	---	85300	48000	56600	40300	39500	43400	40600
31	63800	---	44500	35300	---	84600	---	54100	---	38600	4200	

LITTLE NEMAHA RIVER BASIN

06811500 LITTLE NEMAHA 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: Nov. 11-16, Dec. 12-15, Jan. 18-31, May 28-30, June 1-4, 6, and Aug. 8-10, 14-16. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--38 years, 303 ft³/s, 219,500 acre-ft/yr; median of yearly mean discharges, 232 ft³/s, 168,000 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)
Oct. 12	----	*28300	*a24.73	May 27	0900	27000	a24.56
Mar. 19	0400	5430	12.08	June 18	1830	8010	15.09
Mar. 25	0700	12200	17.77	July 8	0400	15800	20.94
Mar. 28	1530	8420	14.90	Sept. 16	0230	6840	14.01
Apr. 15	----	16600	a20.55				

a From floodmark.

Minimum daily discharge, 128 ft³/s Aug. 1, 2.

DISCHARGE, 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	1710	422	496	248	247	317	2000	318	1300	277	128	196
2	715	537	1410	237	233	321	2350	306	3000	246	128	183
3	2840	606	923	234	222	248	1580	320	1000	318	129	176
4	1690	488	573	234	210	218	1100	302	760	487	130	172
5	1040	413	393	231	213	205	944	319	665	306	213	173
6	473	380	369	238	216	198	854	381	540	264	345	169
7	356	373	1170	238	223	193	749	330	462	589	260	165
8	303	601	2320	222	228	187	685	285	453	8670	500	161
9	267	704	1010	225	218	183	606	263	1430	3190	620	184
10	5040	416	564	232	204	181	543	247	1960	1100	320	1040
11	7860	300	403	204	205	176	492	233	738	554	218	466
12	16000	320	350	231	201	174	454	218	576	393	214	263
13	2740	300	330	235	198	176	440	207	543	326	273	217
14	1550	320	330	237	198	176	5390	200	480	307	600	197
15	1070	340	340	233	202	178	8680	191	396	290	1000	551
16	822	370	341	191	201	187	2520	182	355	270	500	3290
17	701	333	356	182	193	250	1360	176	326	257	180	983
18	626	328	361	170	181	2880	958	177	3100	319	214	448
19	576	314	365	200	188	3920	762	190	2930	251	313	314
20	533	315	328	250	191	1180	632	1910	746	219	564	261
21	490	336	310	290	187	833	555	2000	512	202	293	232
22	462	321	294	280	187	690	523	953	409	189	200	219
23	530	310	289	260	187	705	503	461	338	182	172	213
24	640	285	286	220	185	2390	492	346	301	175	163	209
25	2010	268	286	240	182	7570	465	613	439	165	376	199
26	1580	263	275	250	180	1970	431	5230	339	159	2680	191
27	769	251	268	260	181	1070	397	19200	276	152	1060	184
28	579	244	268	250	208	5440	363	4000	254	143	437	186
29	524	244	264	290	---	2030	341	2500	398	139	324	192
30	433	245	256	350	---	1160	331	1600	356	130	254	176
31	413	---	250	290	---	1340	---	1400	---	130	215	---
TOTAL	55342	10947	15778	7452	5669	36746	37500	45058	25382	20399	13023	11610
MEAN	1785	365	509	240	202	1185	1250	1453	846	658	420	387
MAX	16000	704	2320	350	247	7570	8680	19200	3100	8670	2680	3290
MIN	267	244	250	170	180	174	331	176	254	130	128	161
AC-FT	109800	21710	31300	14780	11240	72890	74380	89370	50350	40460	25830	23030
CAL YR 1986	TOTAL 191994	MEAN 526	MAX 16000	MIN 83	AC-FT 380800							
WTR YR 1987	TOTAL 284906	MEAN 781	MAX 19200	MIN 128	AC-FT 565100							

LITTLE NEMAHA RIVER BASIN

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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 1986 TO SEPTEMBER 1987

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 28...	1330	568	533	7.85	14.0	10.4	24	4600	4900
DEC 16...	1330	339	606	8.08	2.5	13.5	21	K300	K1400
JAN 21...	1550	292	628	8.17	0.0	14.6	5	480	780
FEB 19...	1220	192	633	8.32	4.5	14.8	12	K35000	9800
MAR 18...	1400	3810	397	8.48	5.0	10.7	100	350000	K2800000
APR 22...	1545	524	588	8.13	13.0	10.3	15	970	440
MAY 20...	1500	3200	--	7.65	20.5	5.7	270	>2000	>2000
JUN 17...	1640	320	612	8.35	28.0	7.3	26	1400	1600
JUL 15...	1100	303	544	8.22	21.5	8.4	11	3000	1500
AUG 11...	1600	218	468	8.15	28.0	7.6	24	3000	2000
SEP 09...	0815	157	566	8.25	17.0	8.7	5	K75	920

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 28...	220	0	63	16	26	0.8	52	8.9
DEC 16...	260	0	71	19	32	0.9	48	7.8
JAN 21...	270	0	75	19	37	1	58	9.4
FEB 19...	250	0	69	19	22	0.6	59	12
MAR 18...	140	0	42	9.4	22	0.8	37	7.0
APR 22...	250	0	70	18	28	0.8	54	10
MAY 20...	250	0	74	17	42	1	17	5.9
JUN 17...	270	0	79	18	30	0.8	47	8.9
JUL 15...	240	0	70	17	27	0.8	40	6.9
AUG 11...	210	0	62	14	24	0.7	48	6.5
SEP 09...	270	0	79	17	29	0.8	52	9.6

LITTLE NEMAHA RIVER BASIN

06811500 LITTLE NEMAHA RIVER AT AUBURN, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 28...	426	0.210	0.440	0.96	1.4	1.6	0.200	7.0
DEC 16...	236	4.20	0.130	0.40	0.53	4.7	0.430	5.6
JAN 21...	32	6.40	0.080	0.02	0.10	6.5	0.230	3.6
FEB 19...	59	3.20	0.130	1.4	1.5	4.7	0.330	1.6
MAR 18...	8420	3.60	0.740	21	22	26	0.320	24
APR 22...	303	4.30	0.090	0.69	0.78	5.1	0.370	4.7
MAY 20...	4680	2.90	0.610	36	37	40	2.90	13
JUN 17...	309	4.80	0.060	1.0	1.1	5.9	0.320	8.7
JUL 15...	258	2.80	0.550	3.5	4.0	6.8	0.480	6.9
AUG 11...	212	2.30	0.090	1.1	1.2	3.5	0.520	5.8
SEP 09...	56	2.40	0.080	0.05	0.13	2.5	0.320	3.3

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LOCATION.--Lat 40°03'13", long 95°25'19", in NW1/4 NW1/4 sec.17, T.1 N., R.18 E., Richardson County, Hydrologic Unit 10240005, on right bank at downstream side of bridge on U. S. Highway 159 at Rulo, 3.2 mi upstream from Big Nemaha River, and at mile 498.0.

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.

REMARKS.--Estimated daily discharges: Jan. 18-20, 22-31, Mar. 26-31, Apr. 6, 7, 12, 13, 21-23 and Aug. 12-17. 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.

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 FOR CURRENT YEAR.--Maximum discharge, 146,000 ft³/s Mar. 25, gage height, 20.97 ft; maximum gage height 22.93 ft, May 28, (backwater from Big Nemaha River); minimum daily discharge, 35,200 ft³/s Jan. 26; minimum gage-height 8.22 ft. Jan. 21.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80300	66900	64200	46800	38500	40100	87000	50800	70600	44700	41200	47800
2	79000	67400	68100	48100	38700	39900	92000	50300	65300	42300	39700	45900
3	77900	67200	66400	47900	39000	39200	100000	53400	71800	41500	38500	44300
4	75200	66700	63500	47100	39400	39200	96500	53500	61900	41600	38300	43300
5	74900	65800	60300	47500	39100	38800	92000	55800	56800	41900	38300	42700
6	70200	65500	58400	47300	38800	38500	89000	56300	55800	41900	37500	43000
7	67900	65500	59400	46900	39100	39300	85400	56600	51100	44700	38100	43200
8	65200	65900	64800	47800	38700	39000	81500	53300	49900	60100	46700	45400
9	63000	68200	62700	46800	38500	39200	77300	51900	54200	69300	63700	43800
10	61600	67900	59600	46800	38500	39500	73300	50000	58500	69800	50500	49000
11	74300	67000	56900	46400	37800	38900	70200	50000	52200	60400	45600	46800
12	128000	65400	55000	45800	38100	38700	69000	49200	50400	61200	43000	44200
13	127000	61700	55100	45100	38300	38000	69000	48600	54800	68200	46000	42100
14	105000	58900	55200	46500	38300	37900	82600	48400	54500	59600	47000	41700
15	85300	58200	53800	44300	38100	37600	108000	47800	51400	53400	44000	44200
16	76400	58200	55100	41800	38000	37700	92300	47900	51000	50200	41000	73900
17	72700	59200	59700	40700	38200	38300	81700	46800	49700	48800	42700	62700
18	71800	60000	58200	38200	37800	45600	76400	46500	50900	47400	44500	58400
19	71300	63800	57600	37000	37600	66300	73600	46800	62100	49300	41500	55000
20	72200	65700	55200	36000	36400	67800	71200	53600	58300	46900	45100	53600
21	72900	65900	50400	36000	36200	59700	69000	57300	52500	47300	43400	50900
22	72600	65700	46800	36200	36400	63600	67000	54600	52000	47000	41000	48600
23	72100	64400	46400	36000	36300	67300	64000	51500	51000	45900	39800	47300
24	73900	65000	47800	36200	36300	104000	61400	49300	49300	46400	38600	45900
25	78100	66000	47700	36000	36500	140000	57600	57300	49400	45400	42500	45400
26	81000	65200	48600	35200	36500	129000	54100	67400	54500	46500	104000	45400
27	79400	64700	47800	35300	36700	112000	53500	122000	50000	48100	100000	44200
28	74200	64300	46200	35500	37300	100000	52400	132000	47100	46100	77900	43000
29	70700	63900	46700	35800	---	95000	52100	107000	48200	44800	61400	43500
30	69300	63100	47900	36400	---	90000	50700	83800	49000	43900	54500	43000
31	67400	---	46900	37000	---	88000	---	72700	---	421		

MISSOURI RIVER BASIN

BIG NEMAHA RIVER BASIN

06814000 TURKEY CREEK NEAR SENECA, KS

LOCATION.--Lat 39°5'52", long 96°6'30", 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.--27 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: Jan. 17-25 and July 17-28. Records good except those for estimated daily discharge, which are poor.

AVERAGE DISCHARGE.--39 years, 133 ft³/s, 96,360 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)
Oct. 12	0900	7,330	21.80	May 27	1400	3,250	18.03
Mar. 19	0500	5,050	20.81	June 29	2000	7,460	21.85
Mar. 25	0700	9,330	22.47	Sep. 16	1600	3,770	19.48
Apr. 14	2100	*10,500	*22.82				

Minimum discharge, 16 ft³/s Aug. 6.

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	518	91	63	75	74	432	1390	103	170	329	20	40
2	314	116	86	63	64	180	815	101	575	211	19	35
3	249	112	77	78	53	115	465	958	481	150	18	31
4	305	103	60	60	51	99	380	223	188	150	18	30
5	217	94	51	67	53	89	335	385	148	131	18	26
6	131	89	73	69	56	80	298	188	125	101	17	25
7	108	87	170	65	59	74	266	146	109	98	19	28
8	99	109	836	53	61	66	240	125	97	270	32	27
9	85	103	394	69	52	57	218	114	115	339	35	26
10	78	83	171	62	51	55	201	105	467	378	25	185
11	2220	63	145	47	52	53	183	96	248	148	20	88
12	4580	73	179	85	50	53	169	86	150	128	18	50
13	593	48	111	79	49	52	191	79	113	104	29	46
14	370	82	138	82	49	52	5030	75	100	84	29	550
15	275	85	129	71	47	53	5000	68	90	74	596	660
16	225	81	126	37	45	56	804	65	77	66	173	2600
17	193	79	120	35	41	272	513	63	73	61	65	486
18	166	75	109	35	38	3630	396	61	322	55	100	207
19	144	71	102	36	43	3150	328	64	1520	50	121	139
20	129	72	100	38	45	705	268	89	358	46	59	105
21	117	70	89	40	42	625	226	209	349	43	53	84
22	116	67	85	39	40	429	205	135	193	39	207	73
23	131	66	82	37	38	372	194	83	143	36	142	64
24	112	59	82	39	41	2350	173	98	126	34	57	59
25	136	58	78	47	39	6430	156	515	100	32	43	55
26	159	58	71	56	38	1100	142	359	86	30	973	51
27	127	52	76	62	42	578	127	2340	73	28	391	48
28	107	55	76	68	110	883	116	1090	65	26	118	45
29	96	56	76	79	---	654	114	401	4280	25	77	47
30	89	56	66	84	---	515	109	273	1070	23	58	39
31	88	---	72	72	---	654	---	213	---	22	48	---
TOTAL	12277	2313	4093	1829	1428	23913	19052	8910	12011	3311	3598	5944
MEAN	396	77.1	132	59.0	51.0	771	635	287	400	107	116	198
MAX	4580	116	836	85	110	6430	5030	2340	4280	378	973	2600
MIN	78	48	51	35	38	52	109	61	65	22	17	25
AC-FT	24350	4590	8120	3630	2830	47430	37790	17670	23820	6570	7140	11790
CAL YR 1986	TOTAL	73676	MEAN	202	MAX	5090	MIN	17	AC-FT	146100		
WTR YR 1987	TOTAL	98679	MEAN	270	MAX	6430	MIN	17	AC-FT	195700		

BIG NEMAHA RIVER BASIN

207

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: Nov. 11-16, Dec. 10-14, and Jan. 16 to Feb. 1. Records fair except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--35 years, 208 ft³/s, 150,700 acre-ft/yr; median of yearly mean discharges, 201 ft³/s, 146,000 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)
Oct. 11	1600	*27200	*a17.20	June 19	0600	7300	9.59
Mar. 18	2100	8020	9.99	July 8	1230	7000	9.42
Mar. 24	2300	16700	13.80	Aug. 15	0330	6180	8.93
Mar. 28	0600	6080	8.55	Aug. 26	1130	5410	8.44
Apr. 14	1630	20400	15.09	Sept. 16	0230	19000	14.61
May 26	2400	22700	15.85				

a Observer reading

Minimum daily discharge, 56 ft³/s Aug. 1, 2, 5.

DISCHARGE, 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	1240	146	149	124	98	311	3320	185	480	271	56	81
2	412	161	242	112	98	189	2260	183	864	207	56	77
3	542	223	279	122	98	146	1060	255	782	189	59	74
4	763	200	224	116	98	129	740	197	422	790	57	74
5	536	166	170	113	111	121	611	418	296	263	56	72
6	312	152	194	120	96	117	523	269	224	192	76	76
7	211	144	753	117	94	116	422	221	196	185	93	75
8	166	238	1750	107	98	114	348	192	179	2440	179	73
9	148	390	745	114	98	116	309	182	1430	892	273	99.1
10	138	225	250	114	85	117	272	171	2050	901	129	579
11	10600	140	200	110	88	117	247	165	692	286	.96	171
12	5660	130	190	105	86	115	234	157	372	201	83	107
13	1960	130	180	113	83	116	237	146	240	161	106	87
14	1200	140	190	99	83	119	12100	142	194	135	119	114
15	808	140	204	94	85	125	4560	137	163	103	2870	825
16	506	140	180	90	88	136	1850	133	145	107	384	5090
17	355	145	187	84	79	447	1000	135	149	103	174	647
18	274	138	195	78	82	5300	641	133	1900	100	506	253
19	209	129	199	82	67	3150	498	135	3650	94	275	168
20	187	134	178	84	76	1060	400	840	921	87	229	128
21	168	131	165	88	78	919	328	702	1230	89	125	108
22	161	131	153	85	78	725	279	262	403	87	177	98
23	166	126	150	80	78	1260	270	197	232	82	105	93
24	178	119	146	75	80	8030	262	197	172	79	90	88
25	184	115	143	80	82	7700	254	980	154	78	82	85
26	546	118	139	84	83	2210	237	3980	158	73	1880	82
27	291	115	136	88	87	1160	212	8490	147	70	362	77
28	195	118	135	94	135	4390	198	2680	142	69	170	74
29	164	124	132	100	---	1810	192	1180	866	64	124	70
30	149	128	124	92	---	1020	189	682	472	61	102	67
31	141	---	124	96	---	1470	---	454	---	59	89	---
TOTAL	28570	4636	8206	3060	2492	42855	34053	24200	19325	8518	9182	9712.1
MEAN	922	155	265	98.7	89.0	1382	1135	781	644	275	296	324
MAX	10600	390	1750	124	135	8030	12100	8490	3650	2440	2870	5090
MIN	138	115	124	75	67	114	189	133	142	59	56	67
AC-FT	56670	9200	16280	6070	4940	85000	67540	48000	38330	16900	18210	19260

CAL YR 1986 TOTAL 116202 MEAN 318 MAX 10600 MIN 39 AC-FT 230500
WTR YR 1987 TOTAL 194809.1 MEAN 534 MAX 12100 MIN 56 AC-FT 386400

BIG NEMAH RIVER BASIN

06815000 BIG NEMAH 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 and nonrecording gage read twice daily at site 150 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 11-14 and Jan. 15-31. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--43 years, 623 ft³/s, 451,400 acre-ft/yr; median of yearly mean discharges, 534 ft³/s, 387,000 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)
Oct. 11	2200	15300	14.73	May 27	1930	*38200	*22.88
Mar. 19	0300	18200	15.95	Sept. 16	0600	30000	20.51
Apr. 14	2030	31200	20.86				

Minimum daily discharge, 151 ft³/s Aug. 5.

DISCHARGE, 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	4060	509	381	385	342	1920	4700	526	1600	1440	163	264
2	1660	539	446	371	338	1170	3930	507	1400	904	155	243
3	1310	634	513	363	315	622	2350	2850	3300	706	154	227
4	1750	619	461	375	289	470	1750	1370	1450	1120	155	220
5	1660	556	380	363	282	412	1480	2330	971	848	151	218
6	983	516	362	378	290	380	1310	1300	795	634	155	233
7	768	488	491	375	298	353	1180	859	689	651	178	657
8	672	497	2540	340	294	329	1050	691	620	2870	253	651
9	606	716	2030	344	290	302	968	619	1510	2000	437	330
10	559	584	1050	340	265	288	900	568	5280	1460	328	2010
11	5480	450	568	289	268	282	833	533	1970	1030	235	916
12	12500	360	634	342	264	280	757	503	1190	634	194	445
13	5410	320	545	369	253	280	728	474	879	673	328	314
14	2280	330	534	397	247	280	15900	461	696	471	257	796
15	1650	444	560	370	249	287	17900	441	596	403	2990	5300
16	1270	448	558	290	249	303	5430	426	530	374	1480	18500
17	1010	435	543	280	236	482	2680	416	488	348	581	4730
18	870	413	538	280	220	10400	1830	406	1110	333	605	1450
19	764	395	532	290	218	13900	1440	406	8000	330	971	854
20	686	386	508	310	222	4250	1200	743	3090	305	713	626
21	626	386	476	330	234	2350	1020	1280	2020	277	400	506
22	600	379	449	330	226	2040	912	861	1200	260	586	440
23	611	371	437	310	221	1380	862	543	785	249	598	401
24	623	357	431	310	215	7310	816	460	618	237	408	368
25	652	342	426	320	222	12500	753	7900	562	232	291	342
26	896	341	409	340	230	7530	706	3060	490	225	2040	317
27	872	329	397	330	231	2970	648	25500	442	217	2420	294
28	666	316	402	330	353	5110	595	16800	410	212	793	275
29	578	321	392	340	---	5000	570	4270	6840	205	461	259
30	530	326	385	350	---	2170	549	2570	5500	195	357	241
31	498	---	376	370	---	2540	---	1850	---	171	297	---
TOTAL	53100	13107	18754	10511	7361	87890	75747	81523	55031	20014	19134	42427
MEAN	1713	437	605	339	263	2835	2525	2630	1834	646	617	1414
MAX	12500	716	2540	397	353	13900	17900	25500	8000	2870	2990	18500
MIN	498	316	362	280	215	280	549	406	410	171	151	218
AC-FT	105300	26000	37200	20850	14600	174300	150200	161700	109200	39700	37950	84150

CAL YR 1986 TOTAL 367662 MEAN 1007 MAX 15300 MIN 92 AC-FT 729300
WTR YR 1987 TOTAL 484599 MEAN 1328 MAX 25500 MIN 151 AC-FT 961200

BIG NEMAHA RIVER BASIN

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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 1986 TO SEPTEMBER 1987

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)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT 28...	1620	633	650	8.08	15.0	10.8	27	2700	3900	290	0	84
DEC 16...	1530	537	707	8.19	3.0	12.8	86	K64	K2000	330	0	95
JAN 21...	1330	332	803	8.28	0.0	15.1	5	K14	170	370	0	110
FEB 19...	0830	244	722	8.36	2.0	15.5	7	730	K90	320	0	88
MAR 18...	1655	16400	330	7.94	6.0	11.9	76	600000	K3800000	120	0	38
APR 22...	1245	910	694	8.23	13.0	9.8	12	--	1200	320	0	92
MAY 19...	1100	400	702	8.45	24.0	8.4	16	K80	80	300	0	83
JUN 17...	1120	482	639	8.52	29.0	7.8	17	670	450	300	0	88
JUL 15...	0830	410	602	8.30	21.0	8.1	14	2800	510	290	0	83
AUG 11...	1330	234	514	8.30	28.0	7.6	35	4000	950	220	0	62
SEP 08...	1745	429	571	8.16	24.0	8.1	28	700	46000	200	0	57

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

DATE	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, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)
OCT 28...	20	25	0.7	74	14	189	1.60	0.050	0.90	0.95	2.6	0.410
DEC 16...	23	29	0.7	71	13	174	3.30	0.120	0.45	0.57	3.9	0.320
JAN 21...	26	40	0.9	96	20	34	3.00	0.100	0.24	0.34	3.3	0.170
FEB 19...	24	32	0.8	77	19	13	2.10	0.060	0.31	0.37	2.5	0.100
MAR 18...	7.1	12	0.5	33	6.0	--	3.40	0.680	23	24	27	0.040
APR 22...	21	22	0.6	86	8.9	261	3.00	0.100	0.70	0.80	3.8	0.400
MAY 19...	23	22	0.6	66	8.9	67	1.80	0.140	1.7	1.8	3.6	0.210
JUN 17...	20	26	0.7	70	13	218	3.60	0.030	0.77	0.80	4.4	0.130
JUL 15...	19	24	0.6	62	11	166	2.00	0.040	3.6	3.6	5.6	0.380
AUG 11...	17	24	0.7	66	18	260	1.60	0.070	1.7	1.8	3.4	0.380
SEP 08...	13	51	2	50	--	177	1.20	0.050	1.2	1.2	2.4	0.490

BIG NEMAHA RIVER BASIN

06815000 BIG NEMAHA RIVER AT FALLS CITY, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
OCT 28...	1620	17	<15	20	20	40	<0.10	4	<1	50	7.2
FEB 19...	0830	9	<15	<10	<10	<20	<0.10	4	<1	<30	2.9
MAY 19...	1100	13	<15	<10	<10	30	<0.10	<3	<1	30	3.0
SEP 08...	1745	14	<15	<10	10	<20	<0.10	3	<1	<30	5.3

KANSAS RIVER BASIN

211

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. 15 to Dec. 10, Jan. 29 to Feb. 2, Mar. 1, 2, and Mar. 28 to Apr. 21. 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 ft³/s in Colorado and by return flow from Pioneer Canal.

AVERAGE DISCHARGE.--56 years, 20.0 ft³/s, 15,940 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 4	1100	*113	*5.92	No peaks greater than base discharge.			
No flow Aug. 5-7.							

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	3.9	1.6	1.1	.76	4.8	10	17	6.8	2.9	6.1	1.4	12
2	3.9	1.3	1.0	.90	5.2	13	16	7.9	2.9	4.1	2.0	11
3	4.5	1.2	1.0	.88	4.6	12	16	18	5.5	2.4	2.4	11
4	4.3	1.1	.90	1.1	4.1	11	15	77	8.3	3.3	2.8	11
5	4.4	1.1	.80	1.1	3.3	10	15	78	7.4	2.8	.00	13
6	5.1	1.0	1.5	.81	4.6	9.6	14	49	5.5	2.3	.00	12
7	4.2	1.0	1.4	.72	5.5	9.2	14	33	4.6	2.7	.00	13
8	3.2	1.0	1.3	.86	4.6	8.1	14	27	5.1	4.4	.14	12
9	3.4	1.0	1.2	.83	4.1	6.8	13	40	7.1	4.0	.41	12
10	3.6	1.0	1.1	.62	4.9	9.5	13	39	9.2	2.4	.64	12
11	4.0	1.0	1.2	.63	5.7	9.5	13	33	7.9	2.5	1.4	11
12	4.6	1.0	1.2	.87	5.2	9.2	13	26	7.5	4.2	2.5	11
13	4.9	1.0	1.2	.88	5.9	9.0	14	19	7.1	5.4	2.9	11
14	4.8	.79	1.2	.96	5.8	8.7	13	13	6.2	5.7	2.8	10
15	3.9	.90	1.0	.66	6.3	9.1	12	12	5.9	5.3	3.1	11
16	3.7	1.0	.88	.55	6.7	12	12	9.8	6.7	4.5	3.4	11
17	3.6	1.1	.65	.68	6.8	15	12	8.8	8.3	4.3	5.9	11
18	3.6	1.1	.57	.66	6.5	14	12	7.2	9.3	4.2	5.8	12
19	3.6	1.0	.65	.50	7.8	22	11	11	11	3.6	5.4	12
20	3.8	1.0	.66	.24	8.1	21	11	14	9.3	4.1	6.5	12
21	3.7	1.0	.75	.27	7.6	19	11	20	8.9	2.6	6.4	12
22	3.7	1.1	.82	.21	8.6	18	11	8.7	7.1	1.7	9.4	12
23	3.2	1.0	.87	.25	8.7	18	12	6.8	9.8	1.6	12	12
24	3.2	1.0	.91	.32	9.3	12	10	8.8	10	1.0	11	12
25	3.1	1.0	.86	.35	9.6	15	9.8	11	10	1.7	13	12
26	2.9	1.0	.68	.41	10	21	10	9.8	11	2.3	14	11
27	2.6	1.1	.50	.49	10	17	9.5	7.0	9.5	1.4	15	7.7
28	2.6	1.2	.61	2.6	8.3	16	9.4	7.2	6.7	.73	16	11
29	2.4	1.3	.65	5.2	---	15	9.0	5.0	8.4	.47	16	10
30	2.6	1.2	.71	4.0	---	12	7.4	5.2	7.9	.63	16	9.5
31	2.1	---	.78	5.0	---	14	---	4.1	---	.91	15	---
TOTAL	113.1	32.09	28.65	34.31	182.6	405.7	369.1	623.1	227.0	93.34	193.29	340.2
MEAN	3.65	1.07	.92	1.11	6.52	13.1	12.3	20.1	7.57	3.01	6.24	11.3
MAX	5.1	1.6	1.5	5.2	10	22	17	78	11	6.1	16	13
MIN	2.1	.79	.50	.21	3.3	6.8	7.4	4.1	2.9	.47	.00	7.7
AC-FT	224	64	57	68	362	805	732	1240	450	185	383	675

CAL YR 1986 TOTAL 3233.39 MEAN 8.86 MAX 332 MIN .50 AC-FT 6410
WTR YR 1987 TOTAL 2642.46 MEAN 7.24 MAX 78 MIN .00 AC-FT 5240

KANSAS RIVER BASIN

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: Nov. 23 to Dec. 3, Dec. 10, 11, Jan. 16-18, 21-24, Feb. 28, and Mar. 28-31. 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.--57 years, 47.0 ft³/s, 34,050 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)
May 5	1530	*110	*1.40	No peaks greater than base discharge.			

Minimum daily discharge, 6.0 ft³/s, July 20, 25-27.

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	21	53	52	44	53	60	67	48	64	15	7.2	26
2	23	54	50	42	53	64	66	49	56	36	7.8	29
3	27	55	48	41	53	64	63	60	38	45	7.8	29
4	25	54	53	40	53	61	62	90	34	56	7.8	27
5	23	55	55	40	54	56	61	104	33	60	7.8	28
6	29	55	55	41	55	51	60	91	31	57	7.4	28
7	32	55	50	46	55	49	59	79	28	45	9.5	27
8	31	54	49	50	55	55	59	49	23	25	9.8	25
9	31	54	48	55	54	55	57	21	31	26	11	24
10	33	55	47	55	54	56	57	17	39	20	7.1	24
11	33	54	52	54	54	57	57	24	50	15	6.5	20
12	40	55	49	55	54	56	65	24	39	9.9	6.7	15
13	41	56	47	56	52	55	70	47	30	8.6	7.4	13
14	44	54	47	56	48	56	62	51	28	9.1	7.6	12
15	42	55	47	55	50	57	60	38	24	8.6	7.7	12
16	40	56	47	52	51	62	59	12	11	7.9	7.0	12
17	40	55	46	47	48	68	57	11	9.4	7.8	7.7	12
18	38	54	44	49	46	69	56	18	9.7	8.4	7.7	13
19	38	53	43	51	51	71	55	51	15	6.6	7.5	15
20	37	51	43	51	53	68	54	54	24	6.0	8.2	14
21	39	52	43	50	54	63	56	73	27	6.6	8.5	12
22	44	52	42	48	50	62	54	73	23	6.6	7.8	13
23	50	52	44	54	52	63	53	69	21	6.6	11	13
24	47	52	53	52	50	62	52	69	21	7.2	13	13
25	48	54	53	57	51	62	52	74	25	6.0	21	13
26	48	52	53	56	53	64	52	72	26	6.0	26	13
27	50	52	53	57	71	66	52	69	26	6.0	26	14
28	49	56	53	57	64	60	50	65	25	6.6	28	17
29	49	58	52	54	---	54	49	69	14	7.2	29	29
30	51	56	49	51	---	50	48	73	18	7.2	28	30
31	52	---	45	52	---	60	---	66	---	7.2	29	---
TOTAL	1195	1623	1512	1568	1491	1856	1724	1710	843.1	546.1	384.5	572
MEAN	38.5	54.1	48.8	50.6	53.2	59.9	57.5	55.2	28.1	17.6	12.4	19.1
MAX	52	58	55	57	71	71	70	104	64	60	29	30
MIN	21	51	42	40	46	49	48	11	9.4	6.0	6.5	12
AC-FT	2370	3220	3000	3110	2960	3680	3420	3390	1670	1080	763	1130

CAL YR 1986 TOTAL 14855.4 MEAN 40.7 MAX 88 MIN 5.5 AC-FT 29470
WTR YR 1987 TOTAL 15024.7 MEAN 41.2 MAX 104 MIN 6.0 AC-FT 29800

KANSAS RIVER BASIN

213

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: Nov. 11-15, Dec. 8-15, Dec. 18 to Jan. 4, Jan. 9-12, 15-27, Feb. 27 to Mar. 1, and Mar. 24 to Apr. 1. Records fair except for periods of estimated record, which are poor. Natural flow affected by diversion about 1 mi upstream for irrigation of 880 acres.

AVERAGE DISCHARGE.--47 years, 7.39 ft³/s, 5,350 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.

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. 20	1730	21	3.98	Mar. 30	1700	(a)	*4.87
Mar. 23	1745	22	4.01	June 30	0715	*36	4.56

a Backwater from ice.

No flow July 27 to Aug. 5, Aug. 15-21.

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	5.8	5.0	6.9	8.0	6.8	8.6	8.0	6.6	7.2	14	.00	3.7
2	5.8	5.4	7.2	8.0	6.7	8.1	7.4	2.4	7.0	9.3	.00	2.7
3	6.6	5.6	6.4	7.2	6.6	7.4	7.0	6.1	7.0	9.7	.00	3.1
4	7.8	5.8	7.4	7.6	6.7	7.2	6.7	16	4.2	12	.00	2.7
5	7.1	6.8	7.2	7.9	7.1	6.9	6.5	17	2.7	11	.00	2.9
6	6.5	6.8	5.9	7.9	7.4	7.0	6.6	12	2.7	8.7	.01	3.0
7	6.0	7.0	6.0	7.6	7.1	7.0	6.5	9.0	2.8	8.4	.03	3.4
8	5.8	7.0	5.8	7.7	7.0	7.0	6.5	8.5	3.0	9.0	.10	3.0
9	6.3	7.2	5.8	7.6	6.8	6.9	6.5	8.3	3.6	8.6	.15	2.9
10	6.5	6.1	5.0	7.2	7.5	7.5	6.9	7.5	4.8	6.5	.14	2.9
11	8.0	5.2	5.4	6.8	7.6	7.5	6.7	7.5	4.2	2.3	.09	3.1
12	8.4	4.8	7.0	10	6.9	7.3	7.2	7.2	2.8	2.5	.15	4.0
13	7.2	7.0	7.0	9.0	6.8	7.3	10	7.0	2.0	2.8	.12	4.6
14	6.3	8.0	7.4	8.5	6.8	8.5	9.8	6.9	1.8	5.1	.01	4.6
15	6.1	7.0	6.8	8.4	7.1	8.9	8.0	6.6	2.1	5.6	.00	5.7
16	5.6	6.2	6.4	7.6	7.9	10	7.5	6.5	1.7	2.7	.00	6.1
17	5.4	6.3	6.6	7.0	7.3	12	7.5	6.7	1.5	2.6	.00	5.2
18	5.1	6.0	6.4	7.2	7.1	13	7.3	7.2	1.5	3.9	.00	5.8
19	5.0	6.9	6.4	7.8	7.0	12	7.1	11	2.4	5.2	.00	7.0
20	4.8	6.7	6.6	7.6	7.3	15	6.9	16	2.4	4.4	.00	7.0
21	5.1	6.1	6.8	7.6	7.6	19	7.2	14	1.5	1.5	.00	6.3
22	5.3	6.9	7.0	7.4	7.6	19	7.8	11	1.0	1.3	.01	4.7
23	5.6	6.3	7.0	8.6	7.6	21	7.6	9.1	.78	.81	.02	4.8
24	5.4	6.4	6.8	8.4	7.5	16	7.0	9.5	.76	.03	.03	4.7
25	5.3	6.2	6.8	8.0	7.8	13	6.7	10	.74	.01	1.7	4.1
26	5.1	5.8	7.2	9.0	8.1	10	6.6	9.3	.75	.01	5.1	4.1
27	5.1	6.0	7.4	8.0	9.4	8.0	6.9	8.2	.60	.00	5.8	3.9
28	5.1	6.6	7.8	6.7	8.0	6.2	6.8	7.7	1.2	.00	5.2	3.9
29	5.0	6.3	8.2	6.9	---	5.4	6.6	7.5	8.1	.00	4.5	3.9
30	4.7	6.4	8.0	7.2	---	6.4	6.5	7.6	29	.00	4.1	4.0
31	5.1	---	8.4	7.2	---	9.0	---	7.4	---	.00	4.2	---
TOTAL	182.9	189.8	211.0	241.6	205.1	308.1	216.3	277.3	111.83	137.96	31.46	127.8
MEAN	5.90	6.33	6.81	7.79	7.32	9.94	7.21	8.95	3.73	4.45	1.01	4.26
MAX	8.4	8.0	8.4	10	9.4	21	10	17	29	14	5.8	7.0
MIN	4.7	4.8	5.0	6.7	6.6	5.4	6.5	2.4	.60	.00	.00	2.7
AC-FT	363	376	419	479	407	611	429	550	222	274	62	253

CAL YR 1986 TOTAL 1933.74 MEAN 5.30 MAX 10 MIN .08 AC-FT 3840
WTR YR 1987 TOTAL 2241.12 MEAN 6.14 MAX 29 MIN .00 AC-FT 4450

KANSAS RIVER BASIN

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: Nov. 10-15, Dec. 1, 2, 8-11, Jan. 10, 11, 16-26, Feb. 27, 28, and Mar. 25, 29, 30. 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.--47 years, 13.7 ft³/s, 9,930 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)
Mar. 25	0545	(a)	*3.01	June 29	1315	28	2.09
May 5	0430	*34	2.24				

a Backwater from ice.

Minimum daily discharge, 7.4 ft³/s May 1.

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	11	10	11	12	13	14	16	7.4	9.2	17	8.0	9.4
2	11	11	10	12	13	14	14	8.1	9.1	14	8.6	9.8
3	12	10	11	12	12	12	13	12	9.3	14	8.8	9.8
4	13	11	13	12	12	11	12	29	9.3	15	8.7	10
5	12	10	12	12	12	11	12	32	8.8	14	8.0	11
6	12	11	13	12	12	10	12	24	8.8	12	8.1	12
7	11	11	13	11	12	10	11	18	8.6	10	9.2	15
8	11	10	13	12	11	10	9.8	15	8.8	10	9.4	13
9	11	10	12	12	11	11	8.0	14	13	9.7	9.0	11
10	11	10	10	11	11	13	8.2	14	14	9.4	8.8	9.9
11	15	9.4	12	12	11	13	7.9	14	12	9.0	8.6	10
12	14	10	13	11	11	13	9.1	13	11	10	8.7	10
13	13	9.0	13	12	11	12	12	12	10	10	8.8	10
14	11	10	13	12	10	12	11	11	9.4	10	8.8	10
15	10	11	13	12	10	12	13	11	9.0	10	8.7	11
16	11	12	13	11	10	14	12	11	8.7	9.9	8.4	11
17	11	12	13	10	10	16	11	10	8.6	10	8.3	11
18	11	12	13	11	10	17	11	11	9.7	10	8.5	10
19	12	12	12	11	10	16	11	15	12	10	8.6	10
20	13	12	12	12	10	14	11	14	12	9.8	8.5	10
21	13	11	12	12	10	13	10	14	11	9.4	8.6	9.8
22	13	11	12	12	10	12	10	12	10	9.1	8.9	9.8
23	12	11	12	12	10	12	10	12	9.6	9.2	9.6	9.7
24	12	10	12	12	11	15	9.5	12	9.9	9.1	10	9.7
25	12	10	12	11	12	30	9.1	14	10	8.2	12	9.7
26	12	10	12	12	13	12	9.5	13	9.5	8.0	12	9.6
27	11	10	12	13	14	14	9.4	12	9.3	8.1	11	9.6
28	11	10	12	13	15	13	8.9	11	9.0	7.9	11	9.5
29	11	10	12	13	---	25	8.7	11	21	7.6	11	9.4
30	11	11	12	13	---	20	8.2	10	22	7.7	9.9	9.6
31	11	---	12	13	---	18	---	10	---	7.8	9.5	---
TOTAL	365	317.4	377	368	317	439	318.3	426.5	322.6	315.9	286.0	310.3
MEAN	11.8	10.6	12.2	11.9	11.3	14.2	10.6	13.8	10.8	10.2	9.23	10.3
MAX	15	12	13	13	15	30	16	32	22	17	12	15
MIN	10	9.0	10	10	10	10	7.9	7.4	8.6	7.6	8.0	9.4
AC-FT	724	630	748	730	629	871	631	846	640	627	567	615

CAL YR 1986 TOTAL 4083.1 MEAN 11.2 MAX 16 MIN 7.9 AC-FT 8100
WTR YR 1987 TOTAL 4163.0 MEAN 11.4 MAX 32 MIN 7.4 AC-FT 8260

KANSAS RIVER BASIN

215

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: Nov. 12-15, Dec. 9-17, Dec. 20 to Jan. 4, Jan. 16-30, Feb. 27 to Mar. 3, and Mar. 28-31. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--46 years, 85.8 ft³/s, 62,160 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)
Nov. 14	1430	(a)	*4.53	No peaks greater than base discharge.			
May 5	0230	*254	4.15				

a Backwater from ice.

No flow Aug. 17.

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	30	60	89	64	96	78	175	56	87	66	.84	24
2	33	63	90	64	96	84	152	55	78	50	1.1	21
3	38	64	87	62	89	90	138	78	73	70	1.3	18
4	47	63	82	66	89	100	134	189	63	91	1.1	18
5	46	64	83	67	89	97	131	251	65	93	.60	21
6	44	71	79	67	91	94	128	224	62	83	.35	20
7	44	71	88	68	96	92	126	166	58	70	1.4	29
8	44	70	81	71	96	87	125	131	54	64	2.6	29
9	45	68	80	69	90	85	119	106	69	45	1.8	29
10	49	71	72	72	82	84	117	94	80	39	1.1	28
11	69	65	74	73	82	90	117	87	85	27	.20	30
12	66	62	80	76	85	90	125	75	84	28	.05	31
13	70	45	82	75	83	87	160	69	78	30	1.4	32
14	70	64	82	72	86	84	167	67	68	28	.99	32
15	69	100	78	71	84	78	144	65	60	28	.35	34
16	67	88	76	45	86	92	132	61	56	25	.08	37
17	66	81	74	43	90	123	122	53	51	22	.00	33
18	64	81	72	50	85	131	115	50	48	23	.07	33
19	68	80	75	54	82	138	110	60	54	22	.65	33
20	67	79	80	58	86	141	99	91	50	19	.13	35
21	66	78	82	54	87	125	88	120	49	15	.04	35
22	73	76	80	56	80	117	85	127	40	11	.03	34
23	72	77	80	58	80	109	87	112	30	12	1.0	33
24	74	80	78	50	84	97	80	103	32	12	2.1	32
25	67	79	78	54	87	110	76	122	34	7.6	4.4	29
26	65	79	78	64	90	123	74	129	43	4.6	6.7	29
27	67	76	78	68	94	137	73	118	42	3.9	13	31
28	68	79	76	76	76	130	70	104	39	2.4	14	33
29	67	77	74	84	---	125	68	99	65	1.8	18	38
30	64	72	70	100	---	120	63	96	61	1.4	23	37
31	60	---	66	90	---	200	---	99	---	.80	25	---
TOTAL	1839	2183	2444	2041	2441	3338	3400	3257	1758	995.50	123.38	898
MEAN	59.3	72.8	78.8	65.8	87.2	108	113	105	58.6	32.1	3.98	29.9
MAX	74	100	90	100	96	200	175	251	87	93	25	38
MIN	30	45	66	43	76	78	63	50	30	.80	.00	18
AC-FT	3650	4330	4850	4050	4840	6620	6740	6460	3490	1970	245	1780

CAL YR 1986 TOTAL 21914.05 MEAN 60.0 MAX 266 MIN 1.2 AC-FT 43470
WTR YR 1987 TOTAL 24717.82 MEAN 67.7 MAX 251 MIN .00 AC-FT 49030

KANSAS RIVER BASIN
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 1986 TO SEPTEMBER 1987

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									
03...	1330	35	550	9.00	14.0	8.7	14	150	260
NOV									
03...	1440	65	458	8.35	10.0	10.1	14	20	170
DEC									
05...	1115	86	--	--	4.5	--	15	320	97
JAN									
27...	1100	67	490	8.30	0.5	12.0	11	36	250
FEB									
09...	1010	92	--	8.10	3.0	12.4	13	37	88
MAR									
09...	1650	83	559	8.62	3.5	11.9	19	130	2500
APR									
22...	1840	84	555	8.10	17.0	8.7	6	34	69
MAY									
13...	1445	70	640	8.10	28.0	8.0	24	62	190
JUN									
19...	1100	56	530	7.70	25.0	8.6	19	1100	4100
JUL									
13...	1720	28	687	8.25	29.5	8.2	36	270	190
AUG									
05...	1305	0.61	660	7.80	31.0	8.0	6	400	350
SEP									
10...	1205	28	550	7.80	21.0	8.6	15	260	280

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT								
03...	240	0	62	20	29	0.8	120	5.8
NOV								
03...	200	0	52	17	22	0.7	79	6.9
DEC								
05...	200	0	53	17	23	0.7	78	6.1
JAN								
27...	180	0	47	16	18	0.6	58	6.8
FEB								
09...	200	0	53	17	21	0.7	--	<5.0
MAR								
09...	230	0	62	19	28	0.8	84	7.1
APR								
22...	230	0	58	20	27	0.8	83	8.4
MAY								
13...	260	0	66	22	33	0.9	100	5.9
JUN								
19...	240	0	63	21	30	0.9	96	8.9
JUL								
13...	290	0	74	26	38	1	130	6.4
AUG								
05...	240	0	60	22	45	1	170	14
SEP								
10...	210	0	57	16	22	0.7	58	5.3

KANSAS RIVER BASIN

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06824500 REPUBLICAN RIVER AT BENKELMAN, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 03...	56	0.670	<0.020	--	0.43	1.1	0.030	9.9
NOV 03...	22	0.830	0.030	0.34	0.37	1.2	0.100	3.0
DEC 05...	25	1.20	0.030	0.87	0.90	2.1	0.070	3.0
JAN 27...	24	1.90	0.180	0.22	0.40	2.3	0.130	2.6
FEB 09...	49	1.20	0.400	0.10	0.50	1.7	0.130	4.4
MAR 09...	70	0.970	0.070	0.68	0.75	1.7	0.140	3.9
APR 22...	49	0.730	0.070	0.35	0.42	1.2	0.060	4.1
MAY 13...	96	0.500	0.190	2.9	3.1	3.6	0.100	3.6
JUN 19...	163	0.480	0.080	0.82	0.90	1.4	0.240	4.3
JUL 13...	121	0.450	<0.020	--	3.7	4.1	0.180	4.6
AUG 05...	11	0.020	0.090	2.5	2.6	2.6	0.040	4.1
SEP 10...	78	0.380	0.050	0.36	0.41	0.79	0.120	3.4

KANSAS RIVER BASIN

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: Nov. 11-16, Dec. 2 to Feb. 3, Feb. 27 to Mar. 2, and Mar. 29, 30. Records fair except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station, and since July 6, 1950, by storage in Bonny Reservoir.

AVERAGE DISCHARGE.--57 years, 48.1 ft³/s, 34,850 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, 139 ft³/s May 5, gage height, 3.02 ft; no flow for many days.

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	.00	14	19	23	25	31	74	26	24	6.4	.01	.00
2	.00	15	18	23	26	30	85	27	21	5.1	.00	.00
3	.00	16	19	22	27	29	71	50	20	8.3	.00	.00
4	.00	16	18	25	24	28	64	111	19	16	.00	.00
5	.00	16	17	27	25	27	58	121	17	51	.00	.00
6	.00	16	19	26	29	26	53	87	14	39	.00	.00
7	.00	16	19	25	26	24	49	68	12	23	.00	.00
8	.31	16	18	23	23	23	46	55	11	18	.00	.00
9	1.3	15	17	21	24	21	43	48	24	13	.00	.00
10	1.9	12	15	20	23	23	40	41	25	9.6	.00	.00
11	4.7	11	17	19	22	22	38	37	27	17	.00	.00
12	7.5	14	18	25	22	21	40	34	21	16	.00	.00
13	8.0	10	18	30	23	21	55	32	22	17	.00	.00
14	8.0	16	19	29	23	22	56	28	17	12	.00	.00
15	8.3	22	13	23	23	19	46	24	14	9.6	.00	.00
16	8.5	19	14	18	24	22	41	21	12	6.8	.00	.00
17	8.9	19	18	16	24	30	38	19	9.6	5.0	.00	.00
18	9.6	18	20	15	23	32	35	20	8.6	4.2	.00	.00
19	11	19	21	18	23	39	34	29	13	2.4	.00	.00
20	9.8	18	22	19	23	39	34	33	16	1.5	.00	.00
21	11	18	23	20	25	37	32	37	12	1.0	.00	.00
22	14	18	25	19	24	32	31	34	10	.91	.00	.00
23	14	17	23	22	24	31	29	33	7.9	1.0	.00	.00
24	15	19	22	20	22	31	29	34	7.7	.86	.00	.00
25	14	18	23	18	22	26	29	40	7.6	.59	.00	.00
26	14	17	22	25	24	42	29	41	6.4	.34	.00	.00
27	13	20	22	35	25	43	29	36	5.7	.18	.00	.00
28	13	19	21	40	27	15	29	32	5.2	.14	.00	.00
29	13	19	22	32	---	17	28	30	6.9	.09	.00	.00
30	13	20	23	27	---	18	27	29	7.6	.07	.00	.00
31	13	---	24	24	---	27	---	27	---	.01	.00	---
TOTAL	234.81	503	609	729	675	848	1292	1284	424.2	286.09	.01	.00
MEAN	7.57	16.8	19.6	23.5	24.1	27.4	43.1	41.4	14.1	9.23	.0	.00
MAX	15	22	25	40	29	43	85	121	27	51	.01	.00
MIN	.00	10	13	15	22	15	27	19	5.2	.01	.00	.00
AC-FT	466	998	1210	1450	1340	1680	2560	2550	841	567	.0	.0

CAL YR 1986 TOTAL 7159.52 MEAN 19.6 MAX 541 MIN .00 AC-FT 14200
WTR YR 1987 TOTAL 6885.10 MEAN 18.9 MAX 121 MIN .00 AC-FT 13660

KANSAS RIVER BASIN

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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: Nov. 11-16, Dec. 8 to Jan. 31, Mar. 16-18, Mar. 26 to Apr. 1, and June 1, 2. 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.--37 years, 125 ft³/s, 90,560 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, 3,520 ft³/s June 9, gage height, 9.14 ft; no flow for many days.

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	4.7	69	77	86	127	135	240	98	130	46	.00	.00
2	7.7	76	98	84	119	135	226	94	114	48	.00	.00
3	12	75	93	80	116	137	191	126	102	37	.00	.00
4	21	75	88	86	116	134	174	664	95	54	.00	.00
5	20	77	86	90	112	122	168	707	83	63	.00	.00
6	20	78	83	88	110	116	159	401	75	63	.00	.00
7	21	76	85	86	111	113	148	303	67	59	.00	.00
8	21	75	82	76	113	109	137	213	64	52	.00	.00
9	21	72	82	74	112	107	135	178	322	48	.00	.00
10	27	68	70	70	108	109	127	146	118	34	.00	.00
11	52	56	72	70	108	110	122	140	119	22	.00	.00
12	59	54	84	84	108	113	169	128	105	18	.00	.00
13	47	60	86	94	108	112	236	117	105	28	.00	.00
14	45	66	84	90	109	108	186	106	88	26	.00	.00
15	38	86	88	84	115	110	184	98	75	21	.00	.00
16	37	120	86	66	125	120	163	98	52	13	.00	.00
17	36	99	80	60	123	130	143	84	46	10	.00	.00
18	37	81	78	62	124	140	129	80	38	10	.00	.00
19	40	78	78	70	126	153	125	114	34	8.0	.00	.00
20	47	81	80	74	121	161	115	124	43	3.8	.00	.00
21	53	82	78	78	117	147	110	169	51	1.4	.00	.00
22	60	85	80	84	113	140	107	181	46	.28	.00	.00
23	59	87	82	86	110	135	102	208	38	.21	.00	.00
24	62	88	84	84	113	138	105	286	34	.14	.00	.00
25	63	85	76	80	113	109	105	647	34	.03	.00	.00
26	63	72	76	110	115	140	101	223	32	.00	.00	.00
27	63	75	74	130	135	130	102	200	37	.00	.00	.00
28	63	80	74	120	150	76	108	167	34	.00	.00	.00
29	66	80	80	145	---	52	106	147	32	.00	.00	.00
30	68	84	86	150	---	80	102	143	43	.00	.00	.00
31	68	---	88	140	---	150	---	142	---	.00	.00	---
TOTAL	1301.4	2340	2538	2781	3277	3771	4325	6532	2256	665.86	.00	.00
MEAN	42.0	78.0	81.9	89.7	117	122	144	211	75.2	21.5	.00	.00
MAX	68	120	98	150	150	161	240	707	322	63	.00	.00
MIN	4.7	54	70	60	108	52	101	80	32	.00	.00	.00
AC-FT	2580	4640	5030	5520	6500	7480	8580	12960	4470	1320	.0	.0

CAL YR 1986 TOTAL 26378.39 MEAN 72.3 MAX 705 MIN .00 AC-FT 52320
WTR YR 1987 TOTAL 29787.24 MEAN 81.6 MAX 707 MIN .00 AC-FT 59080

KANSAS RIVER BASIN

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, 106,600 acre-ft June 11-15, elevation, 2,750.85 ft; minimum contents, 57,540 acre-ft Oct. 8-10, elevation, 2,738.83 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57680	59670	62980	67380	72210	78300	86560	94680	104000	99940	78020	61620
2	57640	59700	63160	67500	72400	78500	87030	95000	104100	99530	77130	61270
3	57640	59770	63330	67570	72630	78780	87420	95040	104100	99070	76330	61030
4	57640	59840	63410	67720	72830	79110	87810	96260	104200	98840	75580	60920
5	57680	59910	63620	67870	73100	79310	88110	97160	104200	98340	74750	60890
6	57610	60050	63730	68090	73300	79560	88370	97840	104200	97480	73920	60850
7	57610	60190	63840	68240	73490	79760	88670	98430	104300	97020	73530	60920
8	57540	60260	64050	68540	73610	79960	88920	98840	104300	96620	73020	60890
9	57540	60290	64160	68660	73890	80130	89180	99160	106200	96120	72480	60890
10	57540	60400	64230	68770	74000	80290	89440	99480	106500	95530	71940	60850
11	57810	60470	64270	68880	74200	80450	89660	99670	106600	94950	71440	60820
12	57850	60500	64310	69030	74360	80660	90220	99900	106600	94500	70780	60820
13	57880	60540	64450	69300	74590	80820	90790	99990	106600	93970	70100	60780
14	57920	60540	64590	69490	74710	81110	91180	100200	106600	93210	69560	60780
15	57950	60610	64810	69600	74990	81240	91480	100300	106600	92460	68920	60780
16	57980	60890	64950	69680	75140	81610	91800	100400	106400	91660	68240	60820
17	58020	61060	65170	69710	75380	82020	92100	100500	106300	91140	67720	60780
18	58090	61200	65280	69710	75540	82360	92280	100700	106100	90400	67050	60750
19	58190	61340	65430	69790	75780	82690	92640	100900	106000	89620	66420	60710
20	58290	61480	65570	69980	75980	83310	92720	101400	105800	88800	65940	60680
21	58430	61550	65650	70130	76170	83310	92940	101400	105700	87930	65280	60610
22	58640	61700	65870	70210	76290	83600	93170	101600	105500	87070	64770	60570
23	58670	61840	65980	70360	76530	83860	93300	102000	104600	86260	64230	60570
24	58740	61940	66160	70480	76730	84400	93520	102300	104400	85500	63770	60540
25	58980	62090	66310	70630	77010	84480	93650	102700	103700	84610	63370	60500
26	59050	62230	66420	70780	77210	84780	93920	103100	103000	83730	63010	60470
27	59180	62300	66600	70970	77860	84940	94060	103200	102300	82770	62940	60400
28	59290	62440	66720	71200	78060	85450	94150	103500	101700	81860	62690	60360
29	59360	62590	66820	71470	---	85630	94410	103700	101100	80860	62440	60260
30	59460	62730	67050	71630	---	85710	94500	103900	100500	79840	62190	60220
31	59560	---	67160	71940	---	86140	---	103900	---	78860	61940	---
MEAN	58240	61000	65030	69530	74930	82010	91130	100200	104700	90920	68690	60740
MAX	59560	62730	67160	71940	78060	86140	94500	103900	106600	99940	78020	61620
MIN	57540	59670	62980	67380	72210	78300	86560	94680	100500	78860	61940	60220
(+)	2739.42	2740.32	2741.54	2742.80	2744.35	2746.30	2748.22	2750.28	2749.54	2744.55	2740.10	2739.61
(-)	+1850	+3170	+4430	+4780	+6120	+8080	+8360	+9400	-3400	-21640	-16920	-1720
CAL YR 1986 MEAN	81850			106500		57540	(+)	-12400				
WTR YR 1987 MEAN	77260			106600		57540	(-)	+2510				

(+) Elevation, in feet, at end of month.

(-) Change in contents, in acre-feet.

KANSAS RIVER BASIN

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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.

WATER-DISCHARGE RECORDS

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: Jan. 21-30, Mar. 1, 2, 28-30. 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.--34 years (1954-87), 54.1 ft³/s, 39,200 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, 153 ft³/s Aug. 3, gage height, 3.68 ft; minimum daily, 0.24 ft³/s Nov. 9.

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	.87	.41	.75	.49	.59	.80	.95	.55	1.9	100	151	32
2	.87	.26	.71	.49	.61	.84	.95	.53	1.7	100	151	32
3	.90	.25	.66	.52	.58	.86	1.0	.53	1.7	99	151	13
4	1.0	.28	.64	.54	.63	.89	1.3	1.8	1.7	99	139	1.5
5	.81	.29	.64	.48	.63	.84	.89	1.2	1.7	99	125	1.4
6	.74	.29	.53	.62	.66	.79	.95	1.0	1.7	97	123	1.3
7	.74	.27	.60	.58	.68	.76	1.2	1.0	1.6	95	81	1.7
8	.73	.26	.59	.68	.66	.63	1.2	1.2	2.1	94	49	1.4
9	.63	.24	.53	.71	.75	.79	2.3	1.2	22	94	48	1.4
10	.64	.27	.39	.63	.84	1.0	1.6	.87	8.2	95	47	1.5
11	1.7	.31	.43	.69	.88	.97	.67	.87	12	95	46	1.3
12	.96	.29	.42	.72	.64	.97	.78	.89	8.5	95	74	1.2
13	.70	.31	.46	.74	.67	1.0	.94	.74	5.2	94	92	1.2
14	.63	.43	.44	.74	.54	.99	.60	.74	3.0	93	92	1.4
15	.61	.39	.44	.67	.53	.96	.58	1.0	2.5	93	92	1.4
16	.59	.42	.46	.71	.53	1.3	.73	.93	1.9	93	91	1.4
17	.74	.42	.44	.74	.53	1.3	1.0	.87	2.7	109	92	2.8
18	.74	.42	.43	.72	.56	1.2	.76	.95	3.5	116	91	1.1
19	.65	.47	.38	.76	.61	1.2	.65	1.8	3.0	115	90	.91
20	.63	.55	.38	.75	.63	1.3	.53	1.2	2.7	115	90	1.1
21	.63	.60	.37	.80	.65	.96	.69	.91	2.9	114	89	1.2
22	.59	.59	.40	.90	.57	1.0	.74	.87	1.9	114	87	1.1
23	.53	.57	.47	.90	.55	1.0	.74	1.0	101	113	87	1.0
24	.58	.58	.49	.80	.54	1.1	.73	1.2	106	113	87	1.0
25	.55	.57	.49	.80	.62	.97	.63	1.2	105	113	76	.99
26	.45	.48	.48	.90	.72	1.1	.63	1.2	104	113	68	1.1
27	.45	.51	.44	.90	1.1	1.1	.63	1.2	104	134	47	1.1
28	.46	.53	.44	.90	.81	1.0	.63	1.1	102	149	33	1.2
29	.43	.58	.46	.80	---	.80	.63	1.1	102	149	32	1.2
30	.38	.65	.49	.80	---	.84	.63	1.4	101	150	32	1.0
31	.40	---	.50	.63	---	.90	---	1.7	---	150	32	---
TOTAL	21.33	12.49	15.35	22.11	18.31	30.16	26.26	32.75	919.1	3402	2585	111.90
MEAN	.69	.42	.50	.71	.65	.97	.88	1.06	30.6	110	83.4	3.73
MAX	1.7	.65	.75	.90	1.1	1.3	2.3	1.8	106	150	151	32
MIN	.38	.24	.37	.48	.53	.63	.53	.53	1.6	93	32	.91
AC-FT	42	25	30	44	36	60	52	65	1820	6750	5130	222

CAL YR 1986 TOTAL 8778.79 MEAN 24.1 MAX 163 MIN .24 AC-FT 17410
WTR YR 1987 TOTAL 7196.75 MEAN 19.7 MAX 151 MIN .24 AC-FT 14270

KANSAS RIVER BASIN

06829500 REPUBLICAN RIVER AT TRENTON, NE--Continued

WATER QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

		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 03...	1920	1.0	800	7.80	14.0	8.2				
		NOV 03...	1330	0.29	805	8.62	15.5	19.1				
		MAR 09...	1500	0.86	860	8.51	4.5	16.5				
		JUN 16...	1120	2.0	680	7.40	25.0	7.5				
		JUL 15...	1105	94	593	8.21	23.5	8.6				
		SEP 08...	1205	1.2	690	7.60	22.0	10.5				
DATE	TIME	COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM 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)	
MAR 09...	1500	4	280	27	71	25	64	2	14	253	160	
JUL 15...	1105	10	180	3	37	22	47	2	12	180	100	
DATE	TIME	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- PHORUS, 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 09...	24	1.1	36	550	0.74	1.3	0.840	0.010	160	19	59	
JUL 15...	25	1.2	14	370	0.50	93	<0.100	0.030	140	6	2	

KANSAS RIVER BASIN

223

06831500 FRENCHMAN CREEK NEAR IMPERIAL, NE

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.

DRAINAGE AREA.--880 mi², approximately, of which about 720 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1940 to current year. Published as Frenchman River near Imperial October 1965 to September 1972.

REVISED RECORDS.--WSP 976: 1942(M). WSP 2119: Drainage area.

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.

REMARKS.--Estimated daily discharges: Mar. 28-30. Records good. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--47 years, 59.8 ft³/s, 43,320 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)
May 3	1400	*80	*1.77	No peaks greater than base discharge.			

Minimum daily discharge, 18 ft³/s July 29 to Aug. 3 and Aug. 5, 6, 10, 16-22.

DISCHARGE, 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	21	23	29	28	30	35	38	27	28	27	18	21
2	24	24	29	28	29	32	36	30	27	27	18	20
3	25	24	29	29	28	31	34	69	27	29	18	21
4	25	24	29	29	28	31	32	58	27	31	19	21
5	24	24	30	30	29	30	31	50	26	30	18	21
6	23	24	30	32	29	30	31	42	26	28	18	21
7	22	24	30	31	29	29	30	40	25	27	19	21
8	22	24	31	30	29	29	30	38	27	27	21	21
9	22	24	31	32	29	29	29	35	42	26	20	21
10	22	24	27	32	29	30	29	32	52	26	18	22
11	24	25	29	33	29	30	29	31	44	25	19	23
12	25	27	29	33	29	30	30	29	38	25	19	23
13	24	26	29	32	29	30	35	29	34	26	19	23
14	24	27	29	32	29	29	33	28	33	25	19	22
15	24	27	29	32	29	29	32	28	33	24	19	23
16	24	27	29	29	29	31	30	27	33	23	18	23
17	24	27	29	32	29	34	29	27	31	23	18	22
18	23	26	29	29	29	35	29	27	34	24	18	23
19	23	27	29	33	29	33	29	27	46	23	18	23
20	23	27	29	30	29	33	27	28	47	22	18	22
21	24	27	29	31	29	33	28	29	38	21	18	21
22	24	27	29	29	29	31	28	28	35	21	18	21
23	24	26	29	31	29	31	28	28	33	20	20	21
24	25	26	30	32	29	30	28	29	33	20	21	21
25	24	27	29	31	30	26	28	35	33	19	24	21
26	24	26	29	31	31	39	28	34	30	19	26	21
27	23	27	29	31	25	35	28	32	28	19	24	21
28	23	28	28	31	28	23	28	31	27	19	22	20
29	24	29	28	31	---	30	27	30	30	18	21	20
30	24	29	28	30	---	38	27	30	28	18	21	20
31	24	---	28	31	---	40	---	29	---	18	21	---
TOTAL	731	777	901	955	809	976	901	1037	995	730	608	644
MEAN	23.6	25.9	29.1	30.8	28.9	31.5	30.0	33.5	33.2	23.5	19.6	21.5
MAX	25	29	31	33	31	40	38	69	52	31	26	23
MIN	21	23	27	28	25	23	27	27	25	18	18	20
AC-FT	1450	1540	1790	1890	1600	1940	1790	2060	1970	1450	1210	1280

CAL YR 1986 TOTAL 9704 MEAN 26.6 MAX 36 MIN 19 AC-FT 19250
WTR YR 1987 TOTAL 10064 MEAN 27.6 MAX 69 MIN 18 AC-FT 19960

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, 30,280 acre-ft June 21, elevation, 3,102.91 ft; minimum, 12,750 acre-ft Aug. 19, elevation, 3,086.30 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15750	17710	19420	21210	22940	24540	26300	27760	29300	27360	18880	13770
2	15860	17780	19480	21270	22980	24600	26350	27900	29300	27130	18530	13850
3	15950	17840	19530	21310	23020	24700	26430	27880	29290	26980	18140	13900
4	16030	17880	19570	21380	23100	24740	26480	28030	29330	26840	17810	13930
5	16100	17940	19630	21420	23150	24800	26530	28140	29360	26750	17480	13970
6	16150	17990	19680	21480	23210	24880	26590	28250	29360	26640	17100	14030
7	16210	18050	19770	21570	23270	24940	26640	28230	29400	26430	16770	14060
8	16260	18090	19800	21630	23320	24920	26720	28400	29420	26330	16450	14120
9	16300	18140	19860	21660	23370	24970	26720	28480	29730	26170	16160	14250
10	16330	18160	19910	21710	23420	25000	26780	28550	29870	25970	15850	14320
11	16430	18210	19970	21790	23490	25090	26820	28550	29950	25720	15540	14370
12	16500	18280	20020	21860	23550	25130	26880	28620	30070	25350	15170	14450
13	16560	18360	20100	21920	23610	25190	26980	28660	30060	25060	14810	14520
14	16600	18420	20170	21950	23630	25230	27030	28640	30100	24780	14440	14620
15	16680	18480	20220	21970	23690	25260	27110	28710	30120	24520	14000	14670
16	16740	18550	20280	22030	23740	25370	27170	28750	30150	24280	13550	14740
17	16800	18620	20330	22090	23790	25460	27270	28720	30120	24020	13130	14780
18	16850	18660	20390	22140	23860	25530	27320	28760	30120	23790	12760	14840
19	16920	18750	20450	22220	23910	25600	27310	28750	30120	23550	12820	14910
20	17000	18810	20520	22280	23960	25700	27300	28730	30220	23330	12910	14960
21	17070	18870	20590	22300	24020	25710	27310	28750	30280	23050	12990	15090
22	17130	18910	20650	22360	24060	25800	27380	28750	30230	22710	13010	15160
23	17200	18980	20720	22420	24110	25970	27430	28780	30030	22370	13080	15230
24	17260	19060	20770	22480	24170	26040	27510	28840	29850	22000	13190	15290
25	17320	19080	20830	22530	24220	26070	27560	29020	29560	21620	13320	15340
26	17390	19140	20870	22610	24310	26180	27590	29090	29260	21180	13440	15410
27	17450	19220	20940	22670	24400	26180	27590	29130	28870	20780	13440	15450
28	17500	19290	20990	22740	24460	26040	27640	29190	28450	20380	13520	15490
29	17560	19320	21060	22770	---	26080	27690	29200	28070	19980	13600	15510
30	17620	19340	21110	22830	---	26170	27710	29240	27700	19590	13640	15570
31	17640	---	21160	22880	---	26270	---	28020	---	19240	13710	---
MEAN	16750	18530	20280	22050	23670	25420	27070	28600	29590	24000	14810	14690
MAX	17640	19340	21160	22880	24460	26270	27710	29240	30280	27360	18880	15570
MIN	15750	17710	19420	21210	22940	24540	26300	27760	27700	19240	12760	13770
(↑)	3091.94	3093.65	3095.37	3096.93	3098.28	3099.78	3100.93	3101.17	3100.92	3093.55	3087.51	3089.70
(↓)	+1950	+1700	+1820	+1720	+1580	+1810	+1440	+310	-320	-8460	-5530	+1860
CAL YR 1986	MEAN	21940	MAX	29460	MIN	13440	(↑)	+230				
WTR YR 1987	MEAN	22110	MAX	30280	MIN	12760	(↓)	-120				

(↑) Elevation, in feet, at end of month.

(↓) Change in contents, in acre-feet.

KANSAS RIVER BASIN

225

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.--No estimated daily discharges. Records good except those below 5.0 ft³/s, which are poor. Flow regulated by Enders Reservoir (station 06832000).

AVERAGE DISCHARGE.--41 years, 57.9 ft³/s, 41,950 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, 280 ft³/s June 23, gage height, 8.25 ft; minimum daily discharge, 0.02 ft³/s Oct. 1-10.

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	.02	.16	.16	.19	.20	.19	.17	.18	1.1	220	169	.42
2	.02	.16	1.5	.18	.20	.19	.18	.19	1.0	159	171	.48
3	.02	.16	1.2	.18	.20	.19	.18	.17	1.0	118	179	3.4
4	.02	.17	.17	.19	.20	.18	.18	.17	1.1	115	176	5.0
5	.02	.17	.17	.19	.20	.18	.18	.18	.95	94	160	2.3
6	.02	.17	.17	.19	.20	.18	.19	.18	.88	100	177	.68
7	.02	.17	.17	.19	.19	.17	.19	1.1	.98	94	167	.68
8	.02	.16	.17	.19	.20	.17	.19	4.7	1.1	104	165	.68
9	.02	.16	.17	.19	.20	.17	.21	.56	3.9	114	155	.83
10	.02	.16	.17	.19	.20	.17	.24	.33	1.8	127	152	.91
11	.03	.16	.17	.19	.20	.17	.24	.30	1.3	142	164	.55
12	.03	.16	.16	.19	.20	.17	.20	.32	1.0	170	166	.28
13	.03	.16	.17	.19	.19	.17	.20	.32	.90	188	180	.25
14	.03	.16	.17	.19	.19	.17	.20	.38	.81	182	195	.27
15	.02	.16	.17	.19	.19	.17	.20	.43	.86	165	211	.32
16	.03	.15	.17	.19	.19	.17	.20	.41	.91	139	235	.32
17	.03	.15	.17	.19	.19	.17	.20	.37	.88	139	228	.32
18	.03	.15	.17	.19	.19	.17	.20	.48	.62	137	187	.32
19	.10	.15	.17	.19	.19	.17	.20	.54	.66	137	16.8	.32
20	.11	.17	.18	.19	.19	.17	.23	.56	.72	141	.42	.32
21	.11	.18	.18	.19	.19	.17	.20	.61	.91	145	.32	.28
22	.11	.16	.18	.19	.19	.17	.19	.61	50	156	.32	.28
23	.03	.15	.18	.19	.19	.17	.19	.55	107	178	.32	.28
24	.03	.15	.18	.19	.19	.17	.19	.59	131	193	.32	.28
25	.04	.15	.18	.19	.19	.17	.18	1.3	178	204	.42	.29
26	.04	.16	.18	.19	.19	.17	.18	.88	214	217	.42	.31
27	.08	.16	.19	.19	.19	.18	.18	.94	232	202	.42	.28
28	.08	.16	.19	.19	.19	.17	.18	1.1	264	189	.37	.28
29	.15	.16	.19	.19	---	.17	.18	1.2	261	194	.37	.28
30	.15	.16	.19	.19	---	.17	.18	1.3	221	195	.37	.28
31	.16	---	.19	.19	---	.17	---	1.2	---	169	.32	---
TOTAL	1.62	4.80	7.78	5.87	5.43	5.37	5.83	22.15	1681.38	4827	3258.19	21.49
MEAN	.05	.16	.25	.19	.19	.17	.19	.71	56.0	156	105	.72
MAX	.16	.18	1.5	.19	.20	.19	.24	4.7	264	220	235	5.0
MIN	.02	.15	.16	.18	.19	.17	.17	.17	.62	94	.32	.25
AC-FT	3.2	9.5	15	12	11	11	12	44	3340	9570	6460	43

CAL YR 1986 TOTAL 9273.04 MEAN 25.4 MAX 261 MIN .02 AC-FT 18390
WTR YR 1987 TOTAL 9846.87 MEAN 27.0 MAX 264 MIN .02 AC-FT 19530

KANSAS RIVER BASIN

06834000 FRENCHMAN CREEK AT PALISADE, NE

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 Palisade, and 1.5 mi upstream from Stinking Water Creek.

DRAINAGE AREA.--1,110 mi², approximately, of which about 950 mi² contributes directly to surface runoff.

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.

REVISD RECORDS.--WSP 2119: Drainage area.

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.

REMARKS.--Estimated daily discharges: Nov. 10-16, Dec. 4, 5, 9-16, Dec. 18 to Jan. 4, Jan 10-12, 15-28, and Mar. 24-26, 28-31. 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).

AVERAGE DISCHARGE.--39 years, 80.1 ft³/s, 58,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,560 ft³/s June 17, 1956, gage height, 8.79 ft, site and datum then in use; minimum daily, 11 ft³/s Sept. 11, 12, 14, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 240 ft³/s Aug. 17, gage height, 4.99 ft; minimum daily, 16 ft³/s June 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	18	23	26	30	24	31	31	21	24	177	172	25
2	20	24	26	27	24	28	27	21	23	178	172	24
3	21	24	27	26	23	27	26	23	22	151	173	23
4	24	24	27	28	23	26	26	31	21	123	182	22
5	23	24	27	28	24	26	25	34	21	113	186	24
6	22	24	26	27	25	26	25	33	21	96	169	24
7	21	24	27	27	24	25	25	30	20	96	184	24
8	20	24	28	26	24	25	24	28	21	90	182	23
9	24	24	27	26	24	26	24	27	35	92	178	19
10	20	23	26	25	24	27	24	29	51	96	171	18
11	22	22	24	26	24	27	24	27	56	106	167	18
12	23	21	25	27	24	27	25	26	35	111	176	18
13	21	21	30	28	24	26	29	25	27	138	181	19
14	23	22	31	27	23	26	28	24	24	153	191	19
15	23	25	30	27	24	26	26	24	22	155	203	20
16	22	29	32	25	24	27	26	26	21	145	210	22
17	22	26	30	23	24	30	26	24	20	130	232	20
18	22	26	30	26	24	32	25	23	18	130	233	19
19	22	25	30	28	24	30	25	24	17	124	208	19
20	22	25	31	29	24	28	24	26	17	123	108	18
21	22	25	31	28	24	28	24	27	18	124	63	19
22	23	24	31	28	24	27	24	26	17	127	49	18
23	23	24	32	26	24	29	24	26	16	135	43	18
24	23	25	31	25	24	28	23	28	46	154	40	18
25	23	25	31	26	24	27	23	31	84	170	40	18
26	23	24	30	27	24	29	23	34	112	180	39	17
27	23	25	30	29	28	29	23	31	149	195	40	17
28	23	25	30	30	31	27	22	28	157	190	38	17
29	23	25	30	28	---	19	22	27	186	182	32	17
30	23	25	31	25	---	23	21	27	194	183	29	17
31	23	---	32	24	---	24	---	26	---	188	27	---
TOTAL	687	727	899	832	681	836	744	837	1495	4355	4118	594
MEAN	22.2	24.2	29.0	26.8	24.3	27.0	24.8	27.0	49.8	140	133	19.8
MAX	24	29	32	30	31	32	31	34	194	195	233	25
MIN	18	21	24	23	23	19	21	21	16	90	27	17
AC-FT	1360	1440	1780	1650	1350	1660	1480	1660	2970	8640	8170	1180
CAL YR 1986	TOTAL	18430	MEAN	50.5	MAX	382	MIN	14	AC-FT	36560		
WTR YR 1987	TOTAL	16805	MEAN	46.0	MAX	233	MIN	16	AC-FT	33330		

KANSAS RIVER BASIN

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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. 11-15, 26-29, Dec. 3-14, 20, 21, 23, 25-27, 30, Jan. 2, 3, 10-27, Feb. 20-22, Mar. 4-9, 11, 19-24, 29-31, May 6, 7, 9, 10, 12, 14, 16, June 18-26, July 30. Records good Oct. 1 to Feb. 11 and fair Feb. 12 to Sept. 30 except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--38 years, 38.9 ft³/s, 28,180 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)
Jan. 22	0230	(a)	*4.74				
June 12	1400	*60	4.33				

No peaks greater than base discharge.

a Backwater from ice.

Minimum daily discharge, 4.9 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	14	22	26	27	28	37	51	37	27	21	8.8	18
2	15	23	26	24	28	37	51	37	26	21	8.3	17
3	16	23	25	23	29	37	50	36	26	21	9.4	16
4	19	23	23	26	29	37	48	36	26	21	10	15
5	19	23	23	28	30	36	46	38	26	21	10	14
6	19	23	23	29	29	34	43	39	25	21	11	14
7	19	23	24	29	29	33	40	38	24	20	10	14
8	18	23	25	28	31	32	38	37	23	20	11	14
9	18	23	24	29	32	31	37	35	28	19	11	13
10	18	20	20	26	32	32	35	33	40	19	11	13
11	19	19	17	26	31	31	34	32	52	18	10	13
12	20	19	22	26	32	31	34	30	59	17	10	13
13	20	18	28	25	32	32	34	30	49	16	9.8	13
14	20	19	30	25	31	34	39	29	41	17	9.4	13
15	20	23	29	24	31	34	45	28	38	16	9.1	13
16	20	26	29	19	31	34	48	28	35	15	8.4	13
17	21	26	29	18	32	35	48	27	34	18	7.8	15
18	22	26	30	22	31	36	46	26	32	17	7.2	18
19	22	25	25	25	31	35	44	27	31	16	6.6	17
20	22	25	25	24	31	34	43	28	30	15	6.1	17
21	22	25	24	25	31	34	41	29	27	14	5.7	17
22	22	25	24	24	31	35	40	29	28	13	5.3	17
23	23	24	27	23	32	36	39	30	27	11	4.9	17
24	23	24	27	19	33	36	39	30	25	11	9.1	16
25	23	22	25	21	33	34	39	32	24	9.9	15	16
26	23	22	24	23	34	34	38	37	23	9.8	18	16
27	22	24	24	24	35	35	38	43	23	9.1	18	16
28	22	25	25	24	36	38	37	35	22	8.3	19	16
29	22	25	26	27	---	40	37	32	21	7.7	19	16
30	22	25	25	27	---	45	37	31	21	8.8	18	16
31	22	---	25	28	---	50	---	29	---	9.1	18	---
TOTAL	627	693	779	768	875	1099	1239	1008	913	480.7	334.9	456
MEAN	20.2	23.1	25.1	24.8	31.2	35.5	41.3	32.5	30.4	15.5	10.8	15.2
MAX	23	26	30	29	36	50	51	43	59	21	19	18
MIN	14	18	17	18	28	31	34	26	21	7.7	4.9	13
AC-FT	1240	1370	1550	1520	1740	2180	2460	2000	1810	953	664	904

CAL YR 1986 TOTAL 9258.7 MEAN 25.4 MAX 62 MIN 9.8 AC-FT 18360
WTR YR 1987 TOTAL 9272.6 MEAN 25.4 MAX 59 MIN 4.9 AC-FT 18390

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.

WATER-DISCHARGE RECORDS

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.--No estimated daily discharges. Records good. 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.--57 years, 98.7 ft³/s, 71,510 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, 180 ft³/s June 9, gage height, 3.80 ft; minimum daily discharge, 1.3 ft³/s Aug. 15-18.

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	18	50	62	72	65	74	97	30	22	21	4.6	13
2	25	50	62	71	65	73	90	29	21	20	4.3	13
3	39	51	62	68	65	72	88	28	21	23	2.3	13
4	38	51	59	69	64	73	85	29	19	23	1.9	13
5	40	52	62	74	64	74	83	29	18	19	1.5	16
6	39	53	64	73	64	73	80	33	15	16	1.4	18
7	39	53	65	73	65	72	78	34	11	12	1.4	19
8	39	52	65	73	65	70	76	32	12	11	1.5	18
9	38	51	64	74	66	68	75	27	111	11	1.5	17
10	40	51	56	73	66	67	73	26	50	10	1.5	18
11	44	48	45	68	66	68	73	25	52	9.9	1.4	19
12	44	50	55	73	66	68	75	24	61	10	1.4	21
13	45	44	67	78	66	70	82	24	46	9.5	1.6	23
14	44	44	67	76	66	70	83	24	35	11	1.4	20
15	44	52	69	74	66	68	84	23	30	9.5	1.3	26
16	45	66	68	67	66	71	83	23	29	8.6	1.3	30
17	45	67	69	53	65	73	80	22	27	8.5	1.3	32
18	45	63	67	54	66	76	78	27	27	7.6	1.3	44
19	45	63	66	63	66	79	76	24	26	7.4	1.5	45
20	46	62	66	70	66	80	73	23	24	6.3	1.4	42
21	46	62	67	65	66	78	70	23	21	6.4	1.4	35
22	48	61	68	62	65	78	69	22	15	6.1	1.4	36
23	47	61	68	61	66	76	69	23	15	6.4	1.4	36
24	48	60	69	60	66	76	69	23	13	5.8	3.4	37
25	49	60	70	62	66	70	68	24	12	5.0	9.2	37
26	48	60	68	64	67	79	67	24	13	5.0	10	40
27	49	59	68	66	73	74	66	26	13	4.8	11	38
28	49	60	68	67	76	70	44	31	15	4.8	13	33
29	49	60	71	68	---	40	35	25	19	4.2	16	33
30	49	62	72	66	---	64	31	23	25	4.0	14	34
31	49	---	69	64	---	85	---	23	---	3.7	13	---
TOTAL	1333	1678	2018	2101	1853	2229	2200	803	818	310.5	129.6	819
MEAN	43.0	55.9	65.1	67.8	66.2	71.9	73.3	25.9	27.3	10.0	4.18	27.3
MAX	49	67	72	78	76	85	97	34	111	23	16	45
MIN	18	44	45	53	64	40	31	22	11	3.7	1.3	13
AC-FT	2640	3330	4000	4170	3680	4420	4360	1590	1620	616	257	1620

CAL YR 1986 TOTAL 15334.2 MEAN 42.0 MAX 99 MIN .98 AC-FT 30420
WTR YR 1987 TOTAL 16292.1 MEAN 44.6 MAX 111 MIN 1.3 AC-FT 32320

KANSAS RIVER BASIN

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06835500 FRENCHMAN CREEK AT CULBERTSON, NE--Continued

WATER QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

		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 01...	1245	19	550	8.60	16.0	8.2			
		NOV 03...	1200	52	495	8.45	7.5	10.9			
		MAR 09...	1310	68	560	8.41	3.0	11.9			
		JUN 12...	1600	66	479	7.50	28.0	6.4			
		JUL 15...	1150	9.6	718	7.93	21.5	9.2			
		SEP 08...	0930	19	510	7.70	14.0	9.0			
		COLOR (PLAT- INUM- COBALT UNITS) (00080)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM 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 09...	1310	23	220	0	62	17	22	0.7	13	233	42
JUL 15...	1150	8	280	13	71	24	39	1	16	263	77
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- PHORUS, 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 09...	7.7	0.90	49	350	0.48	65	2.30	0.030	100	14	3
JUL 15...	15	1.0	53	450	0.62	12	6.00	0.020	170	5	2

KANSAS RIVER BASIN

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: Nov. 10-14, Dec. 10, 11, Jan. 11, 16-20, 22, 23, Feb. 28 to Mar. 1, and Mar. 27-31. 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.--41 years, 10.2 ft³/s, 7,390 acre-ft/yr; median of yearly mean discharges, 8.2 ft³/s, 5,900 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)
June 10	0530	*126	*5.17	No peaks greater than base discharge.			

Minimum daily discharge, 4.1 ft³/s, June 3.

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	4.5	6.6	6.1	6.0	5.8	6.4	8.9	5.6	4.3	8.6	15	7.3
2	4.7	6.8	6.1	6.0	5.8	6.2	8.8	5.4	4.2	13	15	8.3
3	5.2	6.8	6.0	6.0	5.7	6.0	7.5	6.5	4.1	12	17	7.9
4	5.8	5.8	5.8	5.9	5.4	5.7	7.3	6.0	4.1	13	18	7.7
5	5.5	5.4	5.9	6.0	5.5	5.7	7.4	6.8	4.1	12	13	8.7
6	5.0	5.7	5.8	6.2	5.9	5.7	7.5	6.6	4.1	14	9.8	7.8
7	4.9	5.6	6.0	5.8	5.7	5.7	7.2	6.0	4.1	14	15	6.5
8	4.6	5.5	6.1	5.9	5.9	5.9	7.3	5.7	4.1	14	19	6.1
9	4.8	5.2	5.9	5.9	5.5	5.9	6.9	5.6	16	13	11	7.1
10	5.3	4.8	5.6	5.6	5.7	5.9	6.5	5.2	61	10	11	6.5
11	7.0	4.6	6.6	5.0	5.7	5.9	6.6	5.0	60	9.7	13	6.0
12	10	5.6	6.4	5.3	5.7	5.9	6.5	4.9	44	8.4	13	5.9
13	7.2	5.2	6.3	5.5	5.6	5.9	8.9	4.8	14	9.7	12	5.9
14	6.1	5.6	6.3	5.6	5.6	5.9	8.7	4.8	8.3	9.8	14	5.6
15	5.9	6.1	6.3	5.4	5.7	6.0	7.6	4.5	7.5	9.0	15	5.4
16	5.7	6.2	6.6	4.6	5.7	6.2	7.2	4.5	7.8	10	11	5.4
17	5.6	5.9	7.1	4.7	5.4	7.0	7.0	4.5	11	13	12	5.4
18	5.7	5.9	6.4	5.2	5.4	7.3	6.7	4.4	6.8	16	10	5.3
19	5.7	5.5	6.5	5.6	5.4	6.9	8.8	4.6	6.4	15	8.9	5.3
20	6.1	5.8	6.3	5.4	5.4	6.7	7.3	4.8	5.9	14	9.1	5.1
21	7.0	5.6	6.1	5.3	5.4	6.6	6.4	4.8	5.9	12	9.3	5.0
22	8.7	5.5	6.0	5.0	5.6	6.5	6.1	4.7	5.7	12	9.3	5.0
23	9.0	5.3	6.3	5.8	5.6	6.7	6.1	4.7	5.6	13	10	5.0
24	8.8	5.1	6.3	5.6	5.4	7.0	6.0	4.8	5.9	12	13	4.9
25	7.4	5.5	6.1	5.4	5.5	7.1	5.9	5.0	35	11	14	4.5
26	7.8	5.6	6.0	5.4	5.6	6.7	6.0	5.1	17	9.7	14	4.5
27	7.4	5.6	5.9	5.4	6.8	7.0	5.6	4.8	9.4	10	11	4.4
28	7.2	5.9	5.9	5.6	6.8	6.8	5.5	4.8	8.6	10	8.2	4.4
29	7.1	5.7	6.0	5.8	---	6.6	5.5	4.6	10	10	7.0	4.5
30	7.2	6.0	5.9	5.5	---	6.2	5.6	4.5	10	9.8	6.8	4.5
31	7.0	---	6.0	5.5	---	8.0	---	4.6	---	12	6.9	---
TOTAL	199.9	170.4	190.6	171.9	159.2	198.0	209.3	158.6	394.9	359.7	371.3	175.9
MEAN	6.45	5.68	6.15	5.55	5.69	6.39	6.98	5.12	13.2	11.6	12.0	5.86
MAX	10	6.8	7.1	6.2	6.8	8.0	8.9	6.8	61	16	19	8.7
MIN	4.5	4.6	5.6	4.6	5.4	5.7	5.5	4.4	4.1	8.4	6.8	4.4
AC-FT	397	338	378	341	316	393	415	315	783	713	736	349

CAL YR 1986 TOTAL 2375.9 MEAN 6.51 MAX 37 MIN 3.2 AC-FT 4710
WTR YR 1987 TOTAL 2759.7 MEAN 7.56 MAX 61 MIN 4.1 AC-FT 5470

KANSAS RIVER BASIN

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06837000 REPUBLICAN RIVER AT MCCOOK, NE

LOCATION.--Lat 40°11'15", long 100°37'05", in SW1/4NE1/4 sec.32, T.3 N., R.29 W., Red Willow County, Hydrologic Unit 10250004, on left bank 25 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 325 ft upstream at different datum and October 1954 to Mar. 13, 1959, on highway bridge 25 ft upstream at present datum.

REMARKS.--Estimated daily discharges: Nov. 12-15, Dec. 1-3, 7, Dec. 11 to Jan. 3, Jan. 16-30, and Mar. 28-31. 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.--34 years, 173 ft³/s, 125,300 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, 592 ft³/s June 9, gage height, 5.17 ft; minimum daily, 22 ft³/s June 8.

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	34	66	94	76	109	123	165	68	47	134	148	58
2	41	65	96	76	108	116	155	62	43	136	153	59
3	48	63	94	74	106	111	146	73	39	132	159	54
4	55	66	95	96	105	109	142	69	36	164	160	44
5	54	67	95	99	104	111	137	82	28	141	141	37
6	55	68	94	96	104	114	131	73	26	135	119	40
7	51	66	96	97	105	115	127	74	23	129	132	44
8	51	65	94	100	105	115	125	72	22	120	114	33
9	53	64	91	99	106	111	123	66	267	118	76	30
10	52	66	71	95	108	102	117	60	343	111	65	31
11	77	66	74	90	108	95	113	54	222	104	57	35
12	83	60	80	96	107	93	125	53	167	111	56	40
13	79	37	90	102	105	95	158	52	116	121	75	39
14	74	60	100	103	106	99	152	53	84	115	100	37
15	69	74	108	95	105	103	143	55	70	112	102	37
16	65	95	106	80	104	110	138	50	65	108	94	44
17	61	94	100	84	104	119	134	45	64	106	95	43
18	57	96	94	88	105	116	131	55	59	127	100	47
19	59	96	90	90	107	113	127	68	57	133	102	55
20	55	94	86	90	108	111	122	56	54	136	98	54
21	58	95	82	90	109	108	114	53	52	128	91	52
22	73	92	84	96	107	107	111	52	41	120	100	49
23	75	92	86	94	105	110	110	52	35	120	115	50
24	71	91	84	90	102	111	113	53	74	118	117	48
25	69	91	82	94	103	109	114	62	133	116	129	45
26	69	90	80	96	110	105	114	65	126	115	122	42
27	68	89	78	106	139	116	113	66	123	113	112	47
28	65	88	80	120	139	130	105	65	118	129	87	47
29	62	90	78	118	---	160	83	61	136	139	65	46
30	60	95	76	116	---	145	72	55	132	143	58	47
31	59	---	76	114	---	150	---	52	---	147	60	---
TOTAL	1902	2341	2734	2960	3033	3532	3760	1876	2802	3881	3202	1334
MEAN	61.4	78.0	88.2	95.5	108	114	125	60.5	93.4	125	103	44.5
MAX	83	96	108	120	139	160	165	82	343	164	160	59
MIN	34	37	71	74	102	93	72	45	22	104	56	30
AC-FT	3770	4640	5420	5870	6020	7010	7460	3720	5560	7700	6350	2650
CAL YR 1986	TOTAL 32363	MEAN 88.7	MAX 216	MIN 24	AC-FT 64190							
WTR YR 1987	TOTAL 33357	MEAN 91.4	MAX 343	MIN 22	AC-FT 66160							

KANSAS RIVER BASIN

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, 34.5°C June 22; minimum, 0.0°C on many days during winter period.

WATER TEMPERATURE (DEG. C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	19.0	13.0	9.0	5.5	1.0	.0	4.0	3.5	3.0	1.5	3.0	.0
2	15.5	13.0	9.0	5.5	3.5	.0	3.5	1.5	3.5	2.0	4.0	1.0
3	15.0	11.5	11.0	5.0	2.0	.0	3.0	1.5	3.5	2.0	4.5	1.5
4	20.0	10.0	10.0	6.5	3.5	.0	4.0	2.0	3.0	.5	4.5	3.0
5	19.0	9.5	11.5	4.5	3.5	.5	4.0	3.0	3.0	.5	4.5	3.0
6	20.5	9.5	11.5	5.5	1.0	.0	4.5	3.5	3.5	1.0	6.0	3.0
7	21.5	10.5	9.0	4.5	1.0	.5	4.0	3.0	4.5	2.0	6.0	3.5
8	21.5	11.0	6.5	2.0	3.0	1.0	3.5	3.0	4.5	3.0	5.5	2.0
9	15.0	11.5	5.0	1.0	1.0	.0	3.5	3.0	4.0	2.0	2.0	.5
10	16.0	11.0	3.0	.5	1.5	.5	2.0	1.5	4.5	2.0	1.5	.5
11	13.5	5.5	2.0	.5	1.0	.5	3.0	1.0	5.0	3.0	3.5	.5
12	9.0	4.5	2.0	1.0	1.0	.5	4.0	1.5	4.5	2.0	4.5	2.0
13	11.0	3.5	2.0	.5	1.0	.5	4.0	1.5	5.5	3.5	5.5	3.5
14	14.0	4.0	1.0	.5	.5	.0	3.5	1.5	5.0	3.0	5.5	3.5
15	15.0	6.5	1.0	.5	.5	.0	1.0	.5	3.0	3.0	4.0	3.0
16	16.5	6.5	5.0	.5	.5	.0	3.0	.0	3.0	3.0	3.0	2.0
17	16.5	8.0	5.5	1.5	1.5	.0	.0	.0	3.0	2.0	3.0	1.5
18	18.0	9.0	5.5	1.5	1.0	.0	.0	.0	3.5	2.0	4.0	1.0
19	18.0	11.0	6.0	1.5	1.0	.0	.0	.0	3.5	2.0	8.0	.0
20	16.5	11.5	6.5	1.5	.5	.0	.0	.0	3.0	1.0	10.5	3.5
21	14.0	12.0	8.0	2.0	.5	.0	.0	.0	3.5	.0	9.5	.5
22	16.5	10.5	6.0	3.0	1.0	.0	.5	.0	3.0	.0	5.5	3.5
23	13.5	11.5	6.0	1.0	2.0	.5	.0	.0	3.5	.0	4.5	.0
24	14.0	11.0	6.0	.5	2.0	1.0	.0	.0	3.0	2.0	.0	.0
25	13.5	8.5	6.0	1.5	2.0	1.0	.0	.0	3.5	2.0	.5	.0
26	15.5	8.5	4.5	.5	1.5	1.0	.0	.0	2.0	1.5	9.0	.0
27	15.5	8.0	4.5	.0	1.5	1.0	.5	.0	1.5	.0	6.0	2.0
28	15.5	9.0	5.5	.5	3.5	1.5	1.5	.5	1.5	.0	3.0	.0
29	14.0	7.0	6.0	1.5	3.5	3.0	1.0	.5	---	---	1.0	.5
30	14.0	8.0	4.5	.5	4.5	3.0	3.0	1.0	---	---	---	---
31	13.5	9.5	---	---	4.5	4.0	3.5	2.0	---	---	---	---
MONTH	21.5	3.5	11.5	.0	4.5	.0	4.5	.0	5.5	.0	---	---

KANSAS RIVER BASIN

2 3 3

06837000 REPUBLICAN RIVER AT MC COOK, NE--Continued

WATER TEMPERATURE (DEG C), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	28.0	15.5	30.5	17.0	28.5	18.5	33.0	23.0	29.0	18.5
2	9.0	5.5	29.0	17.0	28.5	16.5	30.0	20.0	30.5	24.5	29.0	19.0
3	12.0	3.5	21.5	15.5	28.5	15.5	30.0	21.0	28.5	23.5	30.5	19.5
4	13.5	4.5	18.0	14.0	29.5	14.0	29.0	20.0	29.5	21.0	28.0	19.5
5	15.0	6.0	14.5	13.0	30.0	15.5	30.0	20.5	30.5	21.0	24.5	19.5
6	14.5	6.0	24.5	13.5	30.5	16.0	31.0	21.0	30.0	22.0	29.5	17.0
7	18.5	8.5	26.5	14.0	31.5	16.5	29.0	20.5	25.5	22.0	27.0	18.5
8	18.5	8.0	28.0	14.5	31.0	19.0	30.0	20.0	28.5	21.5	28.0	15.5
9	13.0	9.0	29.0	15.0	21.0	18.5	30.5	21.0	27.0	19.0	29.0	17.0
10	16.5	6.5	31.0	16.0	25.0	19.0	33.0	22.0	29.5	17.0	24.0	16.5
11	15.0	7.0	30.0	19.0	28.5	18.5	31.5	23.0	32.0	19.5	18.5	14.5
12	11.5	6.0	29.5	17.0	31.0	21.0	26.5	20.0	25.0	20.0	25.5	13.5
13	8.0	5.5	30.5	17.0	31.5	21.0	26.0	15.0	25.5	19.0	28.5	15.0
14	15.5	6.0	25.0	18.5	34.0	21.0	28.0	17.0	30.5	20.5	25.5	19.5
15	19.0	7.0	30.0	17.0	33.0	21.5	31.5	20.0	33.0	21.5	22.0	19.0
16	20.0	10.0	30.5	17.0	31.5	21.0	30.0	20.5	29.5	21.0	23.5	18.0
17	23.5	11.5	31.5	17.0	32.0	20.5	25.0	20.5	31.0	20.5	21.0	15.0
18	24.0	13.5	25.0	18.0	32.0	20.5	31.0	20.5	27.0	20.5	24.0	13.0
19	21.5	14.5	25.0	17.0	28.0	20.0	31.0	21.0	30.5	19.5	23.5	13.5
20	17.0	10.5	26.0	18.0	33.0	19.0	31.5	22.0	31.5	22.0	23.5	11.5
21	14.5	9.5	23.5	12.0	33.5	19.5	31.0	22.0	33.0	23.0	23.0	11.0
22	20.5	8.0	21.5	13.5	34.5	20.0	30.5	21.0	26.5	20.0	23.5	10.5
23	23.0	10.5	17.0	15.5	31.5	19.5	33.0	22.0	20.0	18.0	25.5	12.0
24	24.0	12.0	15.5	14.0	27.0	19.5	33.0	24.0	18.0	16.0	25.5	12.0
25	25.0	14.0	25.0	14.5	28.0	18.0	32.0	23.0	21.0	16.5	25.0	13.0
26	27.0	15.0	21.0	16.5	28.5	19.0	32.0	22.0	22.0	18.0	26.0	14.0
27	25.0	16.0	26.5	16.0	30.0	19.5	31.5	22.0	24.0	18.0	25.0	15.5
28	25.5	14.5	25.5	16.5	30.0	20.0	31.5	22.0	27.0	16.5	23.5	13.5
29	28.5	15.0	26.5	16.5	25.5	21.0	31.5	23.0	30.0	18.0	21.5	10.5
30	26.0	14.5	30.5	15.5	26.5	18.0	31.5	23.0	26.0	18.5	22.0	10.0
31	---	---	31.5	16.0	---	---	32.0	23.0	28.5	18.0	---	---
MONTH	---	---	31.5	12.0	34.5	14.0	33.0	15.0	33.0	16.0	30.5	10.0

KANSAS RIVER BASIN

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. 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: Nov. 10-13, Dec. 4, 5, 9-16, Dec. 18 to Jan. 4, Jan. 10-12, 15-28, and Mar. 25-31. Records good except for periods of estimated record, which are poor. Natural flow affected by pump irrigation development above station.

AVERAGE DISCHARGE.--27 years, 27.2 ft³/s, 19,710 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, 4.0 ft³/s July 4, 5, 1963.

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)
Mar. 31	1315	(a)	*1.53				
Apr. 3	1445	*52	1.28				

No peaks greater than base discharge.

a Backwater from ice.

Minimum daily discharge, 5.6 ft³/s Aug. 2.

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	13	19	22	23	26	45	43	17	19	12	6.2	11
2	13	19	22	20	27	42	48	17	18	13	5.6	8.1
3	15	20	21	21	27	37	51	18	17	14	6.0	6.9
4	18	20	20	25	27	36	47	19	17	16	7.5	8.7
5	19	19	19	22	27	36	39	20	16	16	7.1	9.5
6	20	19	21	22	27	32	37	23	15	15	7.0	9.6
7	19	18	21	22	27	30	34	24	14	13	7.6	10
8	17	18	21	22	26	28	32	25	14	13	8.1	10
9	16	18	20	23	27	27	30	23	29	14	7.4	10
10	16	17	17	22	28	26	28	21	37	16	7.3	9.9
11	18	15	19	21	28	25	27	20	39	15	7.9	10
12	19	15	23	22	28	26	26	19	37	14	7.8	11
13	20	14	22	23	28	26	29	20	31	14	8.0	11
14	20	18	22	24	28	27	35	19	26	12	7.2	11
15	20	20	22	23	27	28	40	18	22	12	7.5	25
16	20	22	23	22	27	28	39	17	19	10	8.3	15
17	20	21	23	20	26	31	32	17	18	8.5	9.3	12
18	19	22	22	21	26	35	28	19	17	12	9.0	12
19	19	23	20	22	26	41	26	19	16	22	8.7	12
20	18	23	19	22	26	43	24	17	15	15	8.0	12
21	18	23	18	21	26	46	23	17	15	13	7.2	11
22	19	22	19	21	26	41	22	17	15	10	6.6	11
23	22	22	22	20	26	34	21	17	15	9.2	7.2	11
24	23	22	21	21	26	34	21	18	14	8.4	8.0	11
25	23	21	21	22	25	29	20	20	15	23	12	11
26	22	21	20	23	26	27	20	21	14	19	13	10
27	21	21	20	25	31	25	19	22	13	14	14	10
28	20	21	21	25	40	23	19	22	12	9.1	14	10
29	20	21	24	26	---	24	18	21	12	7.6	13	10
30	19	21	25	26	---	30	18	20	12	6.9	12	11
31	19	---	24	26	---	38	---	20	---	6.0	11	---
TOTAL	585	595	654	698	765	1000	896	607	573	402.7	269.5	330.7
MEAN	18.9	19.8	21.1	22.5	27.3	32.3	29.9	19.6	19.1	13.0	8.69	11.0
MAX	23	23	25	26	40	46	51	25	39	23	14	25
MIN	13	14	17	20	25	23	18	17	12	6.0	5.6	6.9
AC-FT	1160	1180	1300	1380	1520	1980	1780	1200	1140	799	535	656

CAI. YR 1986 TOTAL 7762.5 MEAN 21.3 MAX 231 MIN 6.8 AC-FT 15400
WTR YR 1987 TOTAL 7375.9 MEAN 20.2 MAX 51 MIN 5.6 AC-FT 14630

KANSAS RIVER BASIN

235

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, 32,910 acre-ft June 14, elevation, 2,578.68 ft; minimum, 23,290 acre-ft Sept. 6, elevation, 2,571.31 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24150	25230	26030	26740	27560	28760	30360	31580	32120	30780	26660	23410
2	24170	25250	26050	26770	27590	28860	30410	31660	32110	30720	26460	23340
3	24200	25290	26060	26790	27610	28920	30480	31590	32060	30640	26280	23300
4	24210	25310	26070	26830	27660	29000	30550	31590	32050	30570	26080	23310
5	24230	25380	26120	26880	27700	29050	30620	31650	32050	30480	25910	23300
6	24270	25410	26130	26890	27720	29110	30680	31690	32030	30430	25720	23340
7	24320	25430	26180	26920	27770	29170	30740	31730	32020	30440	25550	23360
8	24350	25430	26210	26960	27790	29150	30800	31770	32150	30400	25360	23350
9	24340	25430	26220	26980	27840	29150	30830	31820	32640	30340	25180	23350
10	24520	25410	26210	27000	27890	29170	30840	31860	32710	30320	25050	23350
11	24580	25450	26260	27020	27930	29210	30870	31870	32770	30260	24950	23370
12	24580	25440	26280	27060	27980	29260	30980	31860	32850	30150	24830	23360
13	24610	25440	26320	27100	28010	29320	31060	31890	32890	30040	24700	23390
14	24630	25500	26340	27120	28040	29340	31100	31860	32910	29920	24620	23440
15	24670	25540	26370	27130	28060	29340	31200	31860	32820	29690	24520	23500
16	24710	25590	26360	27130	28100	29450	31300	31860	32680	29470	24390	23540
17	24740	25640	26370	27160	28120	29540	31350	31910	32580	29280	24310	23540
18	24760	25620	26380	27200	28170	29580	31410	31900	32490	29150	24190	23530
19	24790	25690	26420	27220	28200	29640	31490	31910	32400	29010	24100	23540
20	24810	25710	26430	27250	28240	29760	31400	31960	32310	28870	24020	23560
21	24880	25760	26460	27270	28280	29770	31370	31870	32240	28660	23950	23560
22	24980	25790	26510	27270	28290	29810	31400	31860	32170	28460	23820	23560
23	25000	25790	26520	27270	28310	29920	31410	31860	31990	28310	23730	23580
24	24040	25840	26550	27300	28350	30020	31450	31890	31820	28160	23640	23590
25	25060	25870	26580	27340	28410	29980	31480	31960	31620	28020	23630	23610
26	25090	25870	26610	27380	28530	30020	31510	32020	31450	27880	23590	23630
27	25150	25910	26630	27400	28660	30090	31480	32030	31300	27660	23570	23630
28	25170	25950	26660	27440	28710	30170	31510	32060	31170	27440	23530	23610
29	25180	25980	26680	27470	---	30130	31520	32080	31030	27220	23530	23580
30	25190	26010	26710	27470	---	30190	31510	32080	30870	27020	23490	23580
31	25220	---	26730	27520	---	30320	---	32090	---	26830	23440	---
MEAN	24660	25600	26370	27140	28050	29520	31100	31860	32140	29250	24610	23470
MAX	25220	26010	26730	27520	28710	30320	31520	32090	32910	30780	26660	23630
MIN	24040	25230	26030	26740	27560	28760	30360	31580	30870	26830	23440	23300
(†)	2572.94	2573.58	2574.16	2574.78	2575.69	2576.88	2577.72	2578.13	2577.27	2574.24	2571.44	2571.56
(‡)	+1070	+790	+720	+790	+1190	+1610	+1190	+580	-1220	-4040	-3390	+140
CAL YR 1986	MEAN	28650	MAX	33610	MIN	23610	(†)	-1850				
WTR YR 1987	MEAN	27810	MAX	32910	MIN	23300	(‡)	-570				

(†) Elevation, in feet, at end of month.
(‡) Change in contents, in acre-feet.

KANSAS RIVER BASIN

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.--26 years (1962-87), 20.3 ft³/s, 14,710 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, 125 ft³/s July 28, gage height, 9.85 ft; minimum daily, 2.6 ft³/s May 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	3.4	3.8	3.8	4.0	3.8	4.3	4.7	4.2	3.3	70	94	29
2	3.5	3.7	3.7	4.0	4.0	4.4	4.7	4.0	3.3	67	95	30
3	3.6	3.8	3.6	4.0	3.8	4.3	4.4	3.7	3.0	63	102	32
4	3.7	3.7	3.6	4.0	3.8	4.4	4.5	3.6	2.9	57	105	9.9
5	3.3	3.7	3.6	4.0	3.7	4.6	4.4	3.5	3.3	53	101	5.7
6	3.4	3.6	3.6	3.9	3.7	4.6	4.3	3.5	2.8	48	97	4.6
7	3.4	3.5	3.6	3.6	3.8	4.5	4.4	3.7	2.7	45	84	4.5
8	3.3	3.6	3.6	3.6	3.8	4.3	4.5	4.2	21	40	74	3.9
9	3.2	3.6	3.6	3.7	3.9	4.1	4.6	4.6	41	38	74	4.4
10	3.4	3.8	3.4	3.7	4.1	4.1	4.5	4.5	24	37	73	4.3
11	4.2	3.8	3.4	3.7	4.1	4.5	4.0	3.8	38	36	67	4.0
12	3.6	3.8	3.4	4.0	4.0	4.6	4.0	3.8	9.9	37	63	3.9
13	3.6	3.7	3.4	3.9	4.1	4.7	4.2	3.8	9.0	54	65	3.7
14	3.6	4.0	3.5	3.8	4.0	4.7	4.0	3.7	20	76	63	4.2
15	3.6	3.9	3.8	3.6	4.0	4.5	4.0	4.1	62	100	58	4.2
16	3.6	3.8	3.8	3.3	3.9	4.7	4.0	3.9	57	102	59	4.3
17	3.6	4.0	3.8	3.5	3.7	4.5	3.7	4.4	49	95	59	4.0
18	3.7	4.1	3.7	3.5	4.1	4.4	5.2	3.9	49	92	61	4.0
19	3.7	4.0	3.7	3.6	3.9	4.7	4.8	3.5	51	93	52	4.6
20	3.7	4.0	3.8	3.3	3.9	4.8	5.3	3.9	51	97	50	4.4
21	4.0	4.1	3.8	3.3	4.1	4.7	5.0	3.2	53	100	46	4.2
22	4.5	4.0	3.8	3.4	4.1	4.7	4.2	3.2	57	105	40	4.2
23	3.8	3.8	3.9	3.4	4.2	4.7	4.1	2.6	73	99	40	4.2
24	4.0	4.0	4.0	3.3	4.3	4.3	4.0	2.8	86	92	35	4.5
25	3.7	4.0	4.0	3.4	4.4	3.9	4.6	3.2	101	89	35	4.2
26	3.7	3.8	4.0	4.0	4.4	4.1	4.8	3.2	97	91	30	4.7
27	3.7	3.9	4.0	3.7	5.0	4.4	4.6	3.2	93	108	26	4.7
28	3.7	3.9	4.0	3.8	4.5	4.1	4.2	3.4	95	123	26	4.2
29	3.6	3.8	4.0	3.8	---	3.8	4.8	3.3	87	112	26	4.2
30	3.7	3.8	4.0	3.9	---	3.6	5.7	3.2	74	100	27	4.2
31	3.7	---	4.0	3.8	---	4.3	---	2.8	---	97	28	---
TOTAL	113.2	115.0	115.9	114.5	113.1	136.3	134.2	112.4	1319.2	2416	1855	212.9
MEAN	3.65	3.83	3.74	3.69	4.04	4.40	4.47	3.63	44.0	77.9	59.8	7.10
MAX	4.5	4.1	4.0	4.0	5.0	4.8	5.7	4.6	101	123	105	32
MIN	3.2	3.5	3.4	3.3	3.7	3.6	3.7	2.6	2.7	36	26	3.7
AC-FT	225	228	230	227	224	270	266	223	2620	4790	3680	422

CAL YR 1986 TOTAL 6630.0 MEAN 18.2 MAX 129 MIN 3.2 AC-FT 13150
WTR YR 1987 TOTAL 6757.7 MEAN 18.5 MAX 123 MIN 2.6 AC-FT 13400

KANSAS RIVER BASIN

237

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: Nov. 11-13, Dec. 3-7, 10-15, Dec. 18 to Jan. 4, Jan. 10-12, 17-29, Feb. 26, 28, Mar. 8-11, 23-26, and Mar. 30 to Apr. 1. 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 Lak (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.--25 years (1963-87), 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, 109 ft³/s June 11, gage height, 5.87 ft; minimum daily, 0.40 ft³/s Aug. 16.

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	5.8	7.5	9.3	7.6	9.1	9.3	10	9.4	7.1	7.8	7.3	10
2	6.3	7.5	9.3	8.0	9.1	8.9	9.1	8.8	7.4	8.2	7.2	10
3	6.7	7.7	8.8	8.0	9.1	8.9	9.0	11	7.1	12	8.7	10
4	7.3	7.7	8.4	8.0	9.1	8.9	8.9	8.8	3.3	15	13	9.5
5	6.6	7.8	8.2	8.4	9.3	9.1	8.8	9.7	1.1	12	12	6.6
6	6.4	7.7	8.8	8.6	9.2	9.1	8.6	8.8	3.7	14	13	6.3
7	6.3	7.6	9.2	8.4	9.2	9.3	8.8	8.4	4.7	18	14	7.1
8	6.4	7.1	8.9	8.5	9.2	9.2	8.7	8.2	4.8	12	7.0	6.0
9	6.7	7.0	9.1	8.5	9.0	9.2	8.8	8.4	47	10	3.6	6.0
10	6.6	7.0	7.0	8.8	9.1	9.0	9.0	8.4	30	9.8	5.7	5.8
11	8.3	6.4	7.4	9.0	9.1	8.8	8.9	8.1	70	10	9.5	6.2
12	8.2	6.6	8.4	8.8	9.1	8.7	9.5	7.6	17	8.5	3.2	6.6
13	7.3	5.4	8.2	8.5	9.5	8.7	11	7.7	11	13	2.4	6.2
14	7.4	9.5	8.4	8.5	9.6	8.7	9.7	7.6	10	15	4.8	6.2
15	7.4	9.1	8.4	8.3	9.5	8.8	9.1	7.7	15	20	2.3	6.5
16	7.5	8.9	8.4	7.9	9.5	9.4	9.2	7.8	32	13	.40	6.8
17	7.3	8.5	8.1	7.0	9.5	9.7	9.0	7.8	23	13	2.3	6.5
18	7.3	15	7.8	7.4	9.3	9.4	9.0	8.0	21	8.6	12	6.3
19	7.3	8.6	7.8	8.4	9.4	9.1	8.9	8.4	21	6.0	12	6.2
20	7.5	8.7	7.6	9.2	8.9	9.1	8.8	8.1	21	8.9	7.6	6.1
21	7.8	8.7	7.4	9.0	8.9	9.1	9.0	8.5	21	9.5	10	6.0
22	8.9	8.7	7.6	9.6	9.1	9.1	9.1	8.2	19	10	7.3	6.0
23	8.8	8.7	8.0	9.0	9.1	9.4	8.6	8.2	17	9.6	7.5	6.2
24	7.8	8.7	7.8	9.0	9.1	9.6	8.5	8.1	13	5.9	9.5	9.0
25	7.7	8.6	7.8	11	9.3	9.8	8.4	8.9	19	5.1	8.8	11
26	7.8	8.5	7.8	12	10	9.6	8.9	8.6	18	4.4	10	6.5
27	7.8	8.7	7.6	12	11	8.9	8.6	8.3	9.5	6.8	5.9	6.2
28	7.8	8.9	8.0	11	10	7.6	8.5	8.0	8.2	20	6.3	6.9
29	7.7	9.1	7.8	10	---	7.0	8.5	7.9	24	22	7.8	6.8
30	7.7	9.1	7.8	9.2	---	20	8.5	8.0	10	9.6	7.4	6.9
31	7.6	---	8.0	9.0	---	15	---	7.7	---	8.0	8.7	---
TOTAL	228.0	249.0	253.1	276.6	261.3	296.4	269.4	259.1	515.9	345.7	237.20	212.4
MEAN	7.35	8.30	8.16	8.92	9.33	9.56	8.98	8.36	17.2	11.2	7.65	7.08
MAX	8.9	15	9.3	12	11	20	11	11	70	22	14	11
MIN	5.8	5.4	7.0	7.0	8.9	7.0	8.4	7.6	1.1	4.4	.40	5.8
AC-FT	452	494	502	549	518	588	534	514	1020	686	470	421

CAL YR 1986 TOTAL 3426.92 MEAN 9.39 MAX 47 MIN .46 AC-FT 6800
WTR YR 1987 TOTAL 3404.07 MEAN 9.33 MAX 70 MIN .40 AC-FT 6750

KANSAS RIVER BASIN

06840000 FOX CREEK AT CURTIS, NE

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.

DRAINAGE AREA.--74 mi², approximately.

PERIOD OF RECORD.--March 1951 to September 1958. Annual maximums, water years 1960-70. October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,519.58 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharge: June 9, 10 and July 18, 19. Records good except for periods of estimated record which are fair.

COOPERATION.--Records were furnished by Nebraska Department of Water Resources.

AVERAGE DISCHARGE.--17 years (1952-58, 1978-87), 6.66 ft³/s, 4,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,340 ft³/s May 31, 1951, gage height, 15.35 ft; minimum daily, 0.71 ft³/s July 26, 1980.

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, 672 ft³/s July 18, gage height, 11.75 ft; minimum daily, 2.4 ft³/s July 30, 31.

DISCHARGE, 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	3.6	4.1	4.9	4.6	5.5	5.6	7.1	5.4	5.4	5.7	2.8	3.8
2	3.8	4.3	4.8	4.6	5.5	5.5	6.7	5.5	5.3	13	2.8	4.0
3	4.1	4.3	4.8	5.1	5.4	5.5	6.3	5.8	5.1	6.3	2.8	4.0
4	4.3	4.3	4.2	5.0	5.4	5.4	6.3	5.9	5.0	8.9	2.9	4.0
5	4.2	4.1	5.0	5.3	5.4	5.4	6.2	6.0	5.0	6.4	3.4	4.3
6	3.8	4.3	4.8	5.3	5.4	5.4	6.1	5.9	5.0	5.5	3.6	4.5
7	3.7	4.2	4.9	5.1	5.5	5.5	6.0	5.8	5.0	6.7	3.8	5.0
8	3.6	4.2	4.9	5.0	5.6	5.5	6.0	5.7	5.0	6.0	4.3	5.1
9	3.5	4.1	4.5	5.0	5.6	5.4	5.9	5.6	12	5.4	4.3	5.0
10	3.7	3.7	4.2	4.7	5.6	5.4	5.8	5.7	15	5.2	4.3	5.2
11	4.0	3.6	5.1	4.9	5.7	5.4	5.6	5.6	7.0	5.0	4.2	4.0
12	4.4	4.2	5.0	5.2	5.6	5.6	5.8	5.4	6.4	4.9	4.4	3.8
13	4.2	3.1	5.0	5.0	5.7	5.6	6.4	5.4	5.9	5.0	4.4	3.8
14	4.0	4.6	5.0	5.0	5.7	5.7	6.3	5.2	5.7	3.9	3.8	3.9
15	4.0	4.9	5.0	4.3	5.8	5.8	5.8	5.2	5.7	3.7	3.8	4.9
16	3.7	5.0	5.0	4.0	5.7	6.0	5.7	5.2	5.8	3.4	3.7	5.0
17	3.6	4.9	5.0	4.9	5.7	6.6	5.6	5.1	11	4.1	2.8	3.9
18	3.8	4.6	4.4	4.1	5.7	6.4	5.6	7.5	6.6	183	3.2	3.7
19	3.6	4.6	4.4	4.9	5.7	6.0	5.5	5.8	5.5	9.7	3.1	3.6
20	4.0	4.5	4.4	4.3	5.7	6.0	5.4	5.7	5.5	4.9	2.8	3.6
21	4.6	4.3	4.3	4.5	5.7	5.9	5.3	5.5	5.6	4.3	3.4	3.5
22	5.0	4.5	4.9	4.3	5.5	5.8	5.3	5.5	5.4	3.1	3.2	3.3
23	4.9	4.3	4.6	5.1	5.5	5.8	5.4	5.5	5.4	2.8	3.5	3.4
24	4.6	4.2	4.9	4.9	5.7	6.1	5.4	5.6	5.5	2.7	4.5	3.3
25	4.3	4.3	4.6	4.7	5.7	6.0	5.4	6.1	18	3.2	4.0	3.4
26	4.3	4.6	4.3	5.0	5.7	6.6	5.4	6.3	5.4	3.3	3.9	3.3
27	4.2	4.6	4.6	5.0	6.5	6.4	5.3	6.1	5.5	3.4	3.7	3.4
28	4.1	4.6	4.9	5.1	6.6	4.2	5.3	5.8	6.0	3.2	3.6	3.3
29	4.1	4.7	4.6	5.3	---	5.9	5.3	5.5	6.3	3.2	3.7	3.4
30	4.3	4.9	4.4	5.3	---	6.9	5.4	5.5	5.7	2.4	3.7	3.6
31	4.2	---	5.0	5.4	---	7.2	---	5.5	---	2.4	3.8	---
TOTAL	126.2	130.6	146.4	150.9	158.8	180.5	173.6	176.3	201.7	330.7	112.2	119.0
MEAN	4.07	4.35	4.72	4.87	5.67	5.82	5.79	5.69	6.72	10.7	3.62	3.97
MAX	5.0	5.0	5.1	5.4	6.6	7.2	7.1	7.5	18	183	4.5	5.2
MIN	3.5	3.1	4.2	4.0	5.4	4.2	5.3	5.1	5.0	2.4	2.8	3.3
AC-FT	250	259	290	299	315	358	344	350	400	656	223	236

CAL YR 1986 TOTAL 1744.6 MEAN 4.78 MAX 14 MIN 2.0 AC-FT 3460
WTR YR 1987 TOTAL 2006.9 MEAN 5.50 MAX 183 MIN 2.4 AC-FT 3980

KANSAS RIVER BASIN

239

06841000 MEDICINE CREEK ABOVE HARRY STRUNK LAKE, NE

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.

DRAINAGE AREA.--770 mi², approximately, of which about 530 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--January 1950 to current year. Prior to October 1950, published as "above Medicine Creek Reservoir."

REVISED RECORDS.--WSP 2119: Drainage area.

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).

REMARKS.--Estimated daily discharges: Nov. 11-16, Dec. 4, 5, 10-15, Dec. 18 to Jan. 4, Jan. 11, 12, 16-29, Mar. 28-31, June 17, and July 25 to Aug. 12. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--37 years, 64.1 ft³/s, 46,440 acre-ft/yr; median of yearly mean discharges, 57 ft³/s, 41,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s June 21, 1967, gage height, 20.05 ft; minimum daily, 9.1 ft³/s Aug. 9, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1874, 24.4 ft June 22, 1947, from floodmark (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 11	0400	*565	*a8.45	No peaks greater than base dischrge.			

a From floodmark.

Minimum daily discharge, 19 ft³/s Aug. 21.

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	31	39	47	46	52	71	87	45	42	53	20	26
2	32	39	47	45	53	67	91	48	39	41	20	24
3	33	40	47	48	54	65	62	50	39	43	20	23
4	37	40	45	50	54	63	54	49	39	57	21	22
5	39	40	45	47	54	60	53	55	38	53	20	22
6	39	39	45	48	53	59	51	57	37	42	20	22
7	38	40	46	48	54	58	49	56	36	41	22	23
8	37	40	46	49	55	58	48	52	37	46	24	24
9	35	39	48	49	55	55	48	49	70	47	23	25
10	36	39	38	49	55	53	46	47	106	43	22	25
11	40	37	41	48	55	52	45	45	194	37	26	26
12	41	35	50	49	55	53	45	44	75	34	26	27
13	43	32	49	50	56	53	58	43	62	33	25	27
14	41	38	48	51	57	53	71	42	53	30	25	27
15	40	56	52	50	56	54	69	41	53	27	25	28
16	40	52	50	48	55	56	63	40	52	26	24	39
17	39	50	49	45	55	61	59	39	50	25	23	38
18	38	49	48	47	54	69	56	52	83	121	24	35
19	37	50	47	48	54	68	54	51	73	153	21	32
20	37	48	46	48	54	68	52	50	62	70	20	30
21	37	47	44	47	54	59	50	50	55	44	19	29
22	40	47	45	46	54	53	50	46	51	29	21	28
23	41	46	46	45	55	55	49	45	49	25	22	28
24	42	46	45	46	54	57	49	44	50	23	28	28
25	43	46	45	47	56	58	48	48	61	160	36	27
26	43	45	44	48	57	60	48	53	52	66	38	27
27	42	45	43	49	65	62	47	55	51	40	37	27
28	42	46	44	50	75	60	46	52	43	30	35	27
29	39	46	45	50	---	52	46	48	48	24	31	27
30	39	47	46	52	---	60	46	48	45	22	29	28
31	39	---	48	52	---	70	---	46	---	21	27	---
TOTAL	1200	1303	1429	1495	1560	1842	1640	1490	1745	1506	774	821
MEAN	38.7	43.4	46.1	48.2	55.7	59.4	54.7	48.1	58.2	48.6	25.0	27.4
MAX	43	56	52	52	75	71	91	57	194	160	38	39
MIN	31	32	38	45	52	52	45	39	36	21	19	22
AC-FT	2380	2580	2830	2970	3090	3650	3250	2960	3460	2990	1540	1630

CAL YR 1986 TOTAL 16296 MEAN 44.6 MAX 113 MIN 18 AC-FT 32320
WTR YR 1987 TOTAL 16805 MEAN 46.0 MAX 194 MIN 19 AC-FT 33330

KANSAS RIVER BASIN

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, 38,580 acre-ft June 12, elevation, 2,367.61 ft; minimum, 16,730 acre-ft Oct. 1, elevation, 2,352.31 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16760	19230	21610	24080	26610	29570	33040	36190	37920	36450	28330	20400
2	16820	19310	21670	24160	26690	29700	33130	37110	37820	36420	27710	20310
3	16900	19390	21760	24230	26770	29810	33250	37490	37760	36550	27040	20230
4	16980	19460	21820	24310	26900	29950	33350	37450	37740	36700	26500	20290
5	17050	19550	21940	24430	27000	30060	33470	37430	37720	36680	25920	20270
6	17130	19650	22000	24480	27090	30180	33570	37600	37680	36740	25330	20360
7	17230	19720	22100	24550	27210	30310	33730	37660	37640	36740	24980	20370
8	17340	19790	22190	24650	27260	30320	33840	37700	37620	36850	24790	20400
9	17330	19850	22250	24780	27380	30350	33850	37740	37940	36890	24560	20450
10	17480	19910	22300	24820	27480	30430	34000	37820	38150	36920	24360	20490
11	17570	19990	22360	24920	27570	30550	34050	37780	38460	36920	24160	20520
12	17600	20010	22430	25020	27680	30660	34230	37700	38580	36750	23950	20590
13	17710	20060	22530	25130	27810	30780	34480	37780	38540	36750	23750	20660
14	17790	20120	22630	25180	27890	30840	34550	37680	38540	36770	23580	20740
15	17870	20210	22730	25260	27980	30890	34750	37700	38420	36680	23400	20870
16	17960	20330	22820	25300	28060	31160	34930	37700	38360	36270	23100	20950
17	18060	20450	22910	25340	28150	31350	35090	37780	38250	35740	22760	21020
18	18140	20490	22970	25410	28260	31440	35180	37640	38170	35480	22330	21100
19	18210	20600	23060	25480	28350	31550	35360	37660	38090	35470	22040	21150
20	18270	20660	23120	25560	28440	31730	35180	37720	38110	35320	21820	21200
21	18360	20750	23200	25670	28560	31800	35230	37600	38050	35040	21550	21240
22	18460	20840	23290	25730	28630	31930	35340	37620	37970	34700	21210	21300
23	18530	20890	23380	25770	28710	32110	35480	37580	37680	34270	20930	21380
24	18610	20980	23450	25870	28790	32270	35580	37620	37410	33700	20700	21440
25	18690	21080	23530	25940	28900	32250	35730	37780	37130	33140	20640	21500
26	18790	21140	23610	26050	29090	32320	35840	37800	36960	32490	20580	21560
27	18900	21210	23690	26120	29340	32510	35820	37860	36720	31760	20570	21600
28	18970	21300	23780	26220	29470	32700	35910	37860	36620	31040	20580	21610
29	19030	21390	23860	26330	---	32630	36010	37880	36400	30290	20580	21610
30	19130	21520	23920	26400	---	32730	36020	37920	36360	29570	20490	21670
31	19160	---	24000	26520	---	32920	---	37940	---	28950	20440	---
MEAN	17960	20330	22800	25280	27950	31220	34670	37640	37760	34970	23180	20910
MAX	19160	21520	24000	26520	29470	32920	36020	37940	38580	36920	28330	21670
MIN	16760	19230	21610	24080	26610	29570	33040	36190	36360	28950	20440	20230
(†)	2354.58	2356.60	2358.57	2360.43	2362.42	2364.53	2366.27	2367.28	2366.45	2362.09	2355.70	2356.73
(‡)	+2440	+2360	+2480	+2520	+2950	+3450	+3100	+1920	-1580	-7410	-8510	+1230
CAL YR 1986	MEAN	27900	MAX	38440	MIN	15400	(‡)	-5430				
WTR YR 1987	MEAN	27880	MAX	38580	MIN	16760	(‡)	+4940				

(†) Elevation, in feet, at end of month.

(‡) Change in contents, in acre-feet.

KANSAS RIVER BASIN

241

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.--38 years, 59.9 ft³/s, 43,400 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, 0.10 ft³/s Nov. 13, 1952, Sept. 19, 1963, Sept. 27-29, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 342 ft³/s July 27, gage height, 3.05 ft; minimum daily, 0.20 ft³/s Sept. 27.

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	.85	.55	.44	.42	.46	.53	.67	.58	40	33	292	57
2	.79	.54	.43	.42	.47	.54	.61	2.8	38	48	289	64
3	.94	.52	.42	.42	.47	.52	.59	28	36	19	284	72
4	.73	.48	.42	.42	.48	.54	.59	30	34	11	278	1.9
5	.72	.41	.44	.40	.54	.57	.56	33	33	12	286	.68
6	.79	.37	.47	.39	.50	.58	.58	33	32	22	290	.62
7	.45	.34	.49	.37	.51	.44	.57	33	31	27	192	.82
8	.52	.34	.44	3.1	.51	.43	.50	34	32	16	121	.59
9	.51	.34	.42	.39	.52	.47	.51	34	42	16	130	.58
10	.42	.33	.40	.34	.53	.54	.52	34	48	17	114	.58
11	.61	.32	.42	.32	.55	.58	.55	34	55	17	96	.77
12	.32	.33	.43	.34	.54	.55	.81	33	60	18	124	.65
13	.28	.33	.45	.34	.52	.54	.77	32	60	17	138	.58
14	.32	.35	.44	.34	.55	.59	.53	34	59	37	131	.59
15	.38	.38	.45	.33	.57	.70	.48	34	59	112	131	1.1
16	.34	.38	.46	.33	.56	1.0	.51	33	57	186	149	.87
17	.37	.38	.46	.36	.59	.70	8.9	33	55	245	218	.94
18	.38	.36	.45	.36	.40	.64	.47	35	52	206	219	.53
19	.37	.37	.44	.35	.48	.59	.45	35	50	148	170	.42
20	.34	1.3	.42	.34	.51	.54	.43	37	50	149	152	.36
21	.37	.40	.42	.34	.52	.52	.41	39	48	173	148	.31
22	.38	.36	.44	.34	.50	.55	.43	36	72	177	148	.29
23	.35	.34	.44	.36	.49	.64	.45	36	136	220	148	.28
24	.34	.35	.45	.38	.51	.65	.44	36	157	264	139	.24
25	.37	.38	.45	.38	.52	.57	.45	39	150	257	115	.23
26	.38	.39	.45	.38	.56	.54	.47	39	134	286	77	.21
27	.37	.43	.46	.38	.81	.61	.48	39	123	332	50	.20
28	.38	.47	.46	.38	.62	.48	.48	40	128	338	42	.24
29	.41	.48	.47	.39	---	.53	.51	40	97	338	51	.26
30	.46	.48	.46	.39	---	.58	.55	40	26	332	57	.25
31	.44	---	.43	.44	---	.60	---	40	---	312	57	---
TOTAL	14.68	12.80	13.72	14.24	14.79	17.86	24.27	1026.38	1994	4385	4836	208.09
MEAN	.47	.43	.44	.46	.53	.58	.81	33.1	66.5	141	156	6.94
MAX	.94	1.3	.49	3.1	.81	1.0	8.9	40	157	338	292	72
MIN	.28	.32	.40	.32	.40	.43	.41	.58	26	11	42	.20
AC-FT	29	25	27	28	29	35	48	2040	3960	8700	9590	413

CAL YR 1986 TOTAL 18409.21 MEAN 50.4 MAX 333 MIN .21 AC-FT 36510
WTR YR 1987 TOTAL 12561.80 MEAN 34.4 MAX 338 MIN .20 AC-FT 24920

KANSAS RIVER BASIN

06843500 REPUBLICAN RIVER AT CAMBRIDGE, NE

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.

DRAINAGE AREA.--14,520 mi², approximately, of which about 7,810 mi² contributes directly to surface runoff.

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

REVISED RECORDS.--WSP 2119: Drainage area. WDR NE-84: 1983(M).

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.

REMARKS.--Estimated daily discharges: Nov. 11-17, Dec. 7 to Feb. 1, and Mar. 28 to Apr. 1. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station and since 1949 by regulation from upstream reservoirs.

AVERAGE DISCHARGE.--38 years (water years 1950-87, since storage in Harry Strunk Lake), 266 ft³/s, 192,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 160,000 ft³/s June 22, 1947, gage height, 16.7 ft, from floodmarks, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 0.07 ft³/s Sept. 27, 1978.

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, 1,160 ft³/s May 3, gage height, 6.13 ft; minimum daily, 29 ft³/s Sept. 10.

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	32	92	114	88	130	143	205	103	93	141	302	100
2	34	94	118	90	131	129	213	105	72	172	299	95
3	43	90	112	86	130	123	200	513	70	157	300	94
4	55	86	109	110	130	118	192	188	64	188	299	54
5	59	86	111	120	131	117	185	174	57	194	298	57
6	57	88	117	114	131	117	177	165	50	164	297	44
7	58	89	116	114	130	116	173	144	45	197	289	41
8	56	92	112	118	128	113	170	137	44	204	225	46
9	102	92	106	116	124	116	167	136	61	184	213	33
10	73	95	90	114	125	121	161	134	301	171	190	29
11	95	90	94	120	126	123	154	131	465	155	140	35
12	111	80	110	125	126	123	159	126	410	150	146	44
13	101	60	120	135	126	125	189	120	271	155	182	41
14	96	80	135	140	131	124	194	118	223	146	168	41
15	93	100	145	130	130	123	178	115	189	178	180	52
16	96	130	140	100	128	133	171	109	175	244	175	53
17	94	120	135	110	126	146	164	103	171	301	228	48
18	90	112	130	116	125	145	168	113	145	304	290	46
19	90	113	120	120	124	138	157	118	142	235	221	43
20	88	108	114	125	121	136	152	133	138	193	200	44
21	88	106	110	125	120	133	152	126	132	221	192	40
22	93	106	120	130	115	130	149	114	127	208	182	40
23	101	105	125	125	117	134	148	108	183	218	185	39
24	101	108	120	116	119	142	145	104	214	301	189	39
25	97	110	110	120	120	144	141	122	234	278	182	40
26	93	112	98	125	121	144	138	119	262	277	162	39
27	90	113	94	140	142	150	136	117	230	336	127	36
28	90	114	96	145	161	170	132	115	225	338	108	35
29	91	115	92	150	---	200	123	112	262	334	103	36
30	92	114	86	150	---	180	109	104	194	344	99	36
31	91	---	90	140	---	195	---	100	---	319	97	---
TOTAL	2550	3000	3489	3757	3568	4251	4902	4226	5249	7007	6268	1420
MEAN	82.3	100	113	121	127	137	163	136	175	226	202	47.3
MAX	111	130	145	150	161	200	213	513	465	344	302	100
MIN	32	60	86	86	115	113	109	100	44	141	97	29
AC-FT	5060	5950	6920	7450	7080	8430	9720	8380	10410	13900	12430	2820

CAL YR 1986 TOTAL 50624 MEAN 139 MAX 356 MIN 12 AC-FT 100400
WTR YR 1987 TOTAL 49687 MEAN 136 MAX 513 MIN 29 AC-FT 98550

KANSAS RIVER BASIN

243

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: Nov. 14-16, Dec. 10, 18-20, Dec. 26 to Jan. 4, Jan. 11, 16-20, 22-26, and Mar. 28-31. 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.--31 years (1951-72, 1978-87), 14.5 ft³/s, 10,510 acre-ft/yr; median of yearly mean discharges, 10 ft³/s, 7,240 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 10	1800	*255	*9.75	No peak greater than base discharge.			

Minimum daily discharge, 4.2 ft³/s Sept. 29, 30.

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	6.0	6.8	6.9	6.2	7.8	10	12	7.3	14	13	5.5	5.7
2	6.2	6.9	6.9	6.4	7.8	8.9	12	7.5	8.4	8.2	5.4	5.9
3	6.5	7.0	6.9	6.6	7.8	7.9	11	12	7.1	6.7	5.2	5.6
4	6.7	7.1	6.8	7.2	7.8	7.4	10	16	6.4	6.7	5.9	5.5
5	6.7	7.0	6.5	7.5	7.6	7.3	9.5	19	6.3	6.5	5.5	5.5
6	6.7	6.9	6.8	7.6	7.7	7.1	8.9	12	6.0	6.6	6.0	5.5
7	6.5	6.9	6.9	7.2	7.8	7.1	8.6	9.8	5.7	6.5	7.9	5.5
8	6.5	6.9	7.2	7.4	7.8	7.1	8.6	9.1	6.1	13	5.7	5.6
9	9.2	6.9	7.1	7.4	7.8	7.1	8.4	8.5	7.1	24	5.5	5.6
10	9.0	6.8	6.4	6.7	7.8	6.8	8.3	8.2	90	15	5.8	5.5
11	18	6.7	6.9	6.8	7.8	6.7	8.0	8.0	88	8.2	5.8	5.5
12	18	6.5	6.9	7.0	7.6	6.5	8.1	8.0	26	6.5	6.2	5.5
13	11	6.1	7.0	7.5	7.7	6.6	8.8	7.8	19	6.1	6.8	5.5
14	7.9	6.4	7.1	7.3	7.8	6.7	9.8	7.6	12	6.3	6.7	5.5
15	6.9	7.0	6.9	7.1	7.8	6.8	9.7	7.5	8.6	6.0	6.3	5.5
16	6.7	7.2	7.0	6.4	7.8	8.2	9.1	7.6	7.4	5.5	6.1	6.1
17	6.7	7.5	7.0	6.2	7.8	11	8.5	7.7	6.7	5.7	6.3	6.4
18	6.5	7.4	6.8	6.4	7.8	13	8.2	8.4	6.3	6.2	8.0	6.9
19	6.5	7.2	6.6	7.0	7.6	10	8.1	12	6.0	5.7	6.2	7.1
20	6.4	7.0	6.4	7.0	7.6	8.4	7.7	10	5.9	6.5	7.2	6.7
21	6.5	6.8	6.7	7.1	7.6	7.4	7.5	8.5	6.0	6.4	6.3	6.0
22	6.7	6.8	6.9	7.0	7.6	7.0	7.4	8.1	5.8	5.8	5.7	5.6
23	7.1	6.8	6.8	6.8	7.3	7.0	7.4	7.7	5.9	5.7	5.7	5.3
24	7.0	6.7	6.7	6.6	7.3	7.6	7.4	7.6	6.0	6.0	5.7	5.1
25	6.9	6.7	6.8	7.0	7.4	8.2	7.4	7.8	5.9	5.4	6.6	4.9
26	6.9	6.6	6.8	7.0	7.8	8.3	7.3	8.3	7.1	5.1	6.8	4.8
27	6.8	6.5	6.6	7.2	9.2	8.1	7.3	7.8	5.9	5.7	6.8	4.6
28	6.7	6.5	6.6	7.3	10	7.6	7.4	8.4	6.1	6.2	6.6	4.3
29	6.7	6.6	6.6	7.4	---	9.0	7.4	8.7	9.0	5.8	6.3	4.2
30	6.7	6.8	6.4	7.4	---	6.6	7.4	7.6	29	6.0	6.1	4.2
31	6.7	---	6.4	7.7	---	9.0	---	7.1	---	5.7	5.8	---
TOTAL	239.3	205.0	210.3	217.4	219.2	246.4	257.2	281.6	429.7	232.7	192.4	165.6
MEAN	7.72	6.83	6.78	7.01	7.83	7.95	8.57	9.08	14.3	7.51	6.21	5.52
MAX	18	7.5	7.2	7.7	10	13	12	19	90	24	8.0	7.1
MIN	6.0	6.1	6.4	6.2	7.3	6.5	7.3	7.1	5.7	5.1	5.2	4.2
AC-FT	475	407	417	431	435	489	510	559	852	462	382	328

CAL YR 1986 TOTAL 10510.3 MEAN 28.8 MAX 4570 MIN 5.8 AC-FT 20850
WTR YR 1987 TOTAL 2896.8 MEAN 7.94 MAX 90 MIN 4.2 AC-FT 5750

KANSAS RIVER BASIN

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: Nov. 10 to Feb. 6 and Mar. 28 to Apr. 7. 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.--10 years, 6.58 ft³/s, 4,770 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, 783 ft³/s June 29, gage height, 12.52 ft; minimum daily, 4.3 ft³/s Sept. 11.

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	4.3	4.8	5.6	4.6	8.4	9.2	12	9.8	9.2	29	8.0	5.3
2	4.2	4.9	5.0	4.8	8.4	8.4	11	9.8	9.0	13	7.6	5.3
3	4.3	4.9	5.0	4.7	8.0	8.4	10	29	8.7	11	7.1	5.1
4	4.9	4.7	4.8	5.6	7.4	8.4	10	25	8.7	9.7	6.8	5.1
5	4.8	4.9	4.8	5.8	7.0	8.4	11	12	8.5	9.6	7.3	5.2
6	4.5	5.3	5.6	6.0	8.4	8.4	11	12	9.0	9.1	8.7	5.1
7	4.4	6.1	5.4	5.6	7.2	8.4	11	11	8.7	10	11	5.0
8	4.4	6.1	5.6	5.4	5.3	8.4	11	10	8.9	82	8.1	4.8
9	4.2	6.1	5.8	5.2	6.9	8.4	11	10	11	45	6.7	4.6
10	4.6	5.4	4.5	4.8	8.2	8.4	11	9.9	13	14	6.8	4.4
11	16	4.5	4.6	4.6	8.2	8.1	10	9.7	16	9.9	6.7	4.3
12	15	5.0	4.8	5.0	8.2	7.8	10	9.5	13	9.4	6.7	4.6
13	7.1	4.5	5.0	6.0	8.2	7.9	11	9.2	10	9.3	7.1	4.8
14	4.3	4.8	4.8	6.2	8.2	7.9	12	9.6	10	9.1	6.8	4.9
15	4.3	5.4	5.0	5.2	8.2	7.9	12	9.3	9.7	9.4	7.2	4.9
16	4.7	5.6	4.8	4.5	8.2	8.7	11	9.1	9.6	9.2	7.0	5.0
17	4.9	5.6	5.0	4.8	8.3	12	10	9.1	9.3	51	6.2	4.7
18	4.9	5.4	4.9	5.4	8.5	13	10	12	9.4	108	6.9	4.7
19	4.9	5.2	4.9	6.4	8.4	10	10	11	8.9	18	7.7	4.7
20	4.9	5.4	4.6	6.6	8.4	9.0	10	12	8.9	10	6.7	4.7
21	5.1	5.4	4.3	6.8	8.4	8.5	9.7	18	9.4	9.3	6.4	4.5
22	5.3	5.8	4.5	7.2	8.5	8.4	9.2	11	10	8.7	5.6	4.7
23	5.3	5.2	4.8	6.8	8.5	8.7	9.3	9.5	9.9	9.0	5.8	4.7
24	5.3	5.2	4.7	6.8	8.4	9.2	9.6	9.4	9.7	9.3	6.5	4.6
25	5.1	5.6	4.6	7.0	8.4	7.7	9.5	9.6	9.7	9.9	6.3	5.0
26	4.9	5.0	4.5	7.6	8.4	10	9.6	9.9	9.6	10	7.4	4.9
27	4.9	4.8	4.4	7.8	9.3	12	9.5	10	10	11	6.8	5.4
28	4.9	5.2	4.6	7.8	10	14	9.5	9.9	14	9.5	5.6	5.5
29	4.9	6.0	4.6	7.6	---	12	9.6	10	330	8.6	5.3	5.3
30	4.9	5.6	4.4	7.6	---	10	9.8	9.5	99	8.9	5.3	5.4
31	4.9	---	4.3	8.0	---	9.0	---	9.2	---	8.3	5.1	---
TOTAL	171.1	158.4	150.2	188.2	227.9	286.6	310.3	355.0	710.8	578.2	213.2	147.2
MEAN	5.52	5.28	4.85	6.07	8.14	9.25	10.3	11.5	23.7	18.7	6.88	4.91
MAX	16	6.1	5.8	8.0	10	14	12	29	330	108	11	5.5
MIN	4.2	4.5	4.3	4.5	5.3	7.7	9.2	9.1	8.5	8.3	5.1	4.3
AC-FT	339	314	298	373	452	568	615	704	1410	1150	423	292

CAL YR 1986 TOTAL 2875.4 MEAN 7.88 MAX 175 MIN 2.6 AC-FT 5700
WTR YR 1987 TOTAL 3497.1 MEAN 9.58 MAX 330 MIN 4.2 AC-FT 6940

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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.

WATER-DISCHARGE RECORDS

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: Nov. 11-19, Dec. 10-19, Jan. 16 to Feb. 3, Mar. 29-31, and Apr. 11-22. Records fair except for periods of estimated discharge, which are poor. Natural flow affected by irrigation development above station and regulation by upstream reservoirs.

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, 1,350 ft³/s May 4, gage height, 5.50 ft; minimum daily, 39 ft³/s Oct. 1.

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	39	111	135	130	175	199	309	180	150	254	76	57
2	42	117	137	128	170	200	333	171	143	185	84	51
3	44	115	137	122	170	189	348	204	134	138	86	50
4	50	115	145	125	169	183	341	955	119	129	76	44
5	52	115	143	133	163	181	320	529	112	128	68	42
6	56	117	146	148	162	181	308	356	103	138	59	57
7	60	118	154	154	167	178	296	305	94	135	94	62
8	58	115	149	143	165	178	287	267	97	750	131	58
9	62	115	152	133	167	172	279	238	108	846	150	63
10	73	114	130	136	168	168	265	217	108	379	145	56
11	120	100	135	116	168	169	260	208	144	250	141	53
12	163	90	145	122	168	171	280	203	435	194	127	56
13	158	70	155	137	171	169	300	196	425	179	109	53
14	128	90	155	146	166	170	320	188	330	173	94	53
15	111	130	165	120	165	167	300	179	269	158	92	61
16	102	150	160	110	165	173	290	169	227	135	80	60
17	100	145	155	116	163	228	280	163	183	125	67	65
18	97	145	150	120	160	267	270	161	164	244	67	68
19	95	145	140	125	162	266	260	167	139	239	88	67
20	95	142	139	130	162	257	255	198	127	200	118	62
21	93	140	125	130	160	245	250	226	119	162	108	58
22	100	135	138	140	157	231	245	220	115	126	88	58
23	102	135	144	135	157	247	235	204	100	116	80	57
24	108	135	147	130	155	258	228	192	86	107	81	53
25	113	135	149	130	153	255	223	190	83	99	95	49
26	113	133	147	135	158	250	215	191	79	106	96	50
27	111	132	138	135	169	253	202	197	77	94	99	48
28	111	135	132	140	187	250	194	174	96	77	99	44
29	108	135	133	150	---	265	190	166	88	74	90	42
30	108	136	138	160	---	300	183	160	314	75	73	43
31	111	---	125	165	---	335	---	159	---	76	63	---
TOTAL	2883	3710	4443	4144	4622	6755	8066	7333	4768	6091	2924	1640
MEAN	93.0	124	143	134	165	218	269	237	159	196	94.3	54.7
MAX	163	150	165	165	187	335	348	955	435	846	150	68
MIN	39	70	125	110	153	167	183	159	77	74	59	42
AC-FT	5720	7360	8810	8220	9170	13400	16000	14550	9460	12080	5800	3250
CAL YR 1986	TOTAL	61346	MEAN 168	MAX 4260	MIN 25	AC-FT 121700						
WTR YR 1987	TOTAL	57379	MEAN 157	MAX 955	MIN 39	AC-FT 113800						

KANSAS RIVER BASIN
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 1986 TO SEPTEMBER 1987

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)	HARD- NESS (MG/L AS CACO3) (00900)
OCT 08...	1315	58	730	8.40	20.0	736	8.5	20	270	140	290
NOV 06...	1310	117	--	8.22	10.0	675	10.9	28	45	59	280
DEC 09...	1350	1.6	--	--	4.0	713	--	<5	110	63	330
JAN 28...	1130	141	768	8.20	0.5	703	12.8	8	120	88	280
FEB 17...	1545	163	760	7.80	2.0	710	12.6	7	14	22	290
MAR 05...	0915	176	766	8.60	8.0	715	10.6	11	87	210	300
APR 06...	1550	307	850	--	12.5	714	9.3	20	170	17000	280
MAY 11...	1230	208	790	7.90	24.0	710	8.8	32	270	520	300
JUN 10...	1600	112	670	7.90	26.0	705	8.0	41	6300	1900	270
JUL 13...	1130	166	678	8.14	21.0	715	9.3	38	970	920	260
AUG 11...	1200	142	559	7.70	26.0	704	9.1	43	K720	430	200
SEP 15...	1430	60	611	7.70	19.5	693	8.1	26	2000	5100	240

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

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	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 08...	19	73	26	49	1	23	150	29	0.70	36	550
NOV 06...	0	74	23	48	1	--	120	21	--	--	--
DEC 09...	50	88	26	44	1	16	89	24	0.70	40	490
JAN 28...	7	72	25	42	1	15	94	25	0.70	40	480
FEB 17...	0	75	24	41	1	--	78	22	--	--	--
MAR 05...	27	82	24	51	1	17	88	26	0.80	40	500
APR 06...	0	74	24	49	1	17	97	11	0.70	40	490
MAY 11...	0	79	24	48	1	--	95	21	--	--	--
JUN 10...	17	72	23	41	1	16	72	21	0.50	33	430
JUL 13...	13	68	23	45	1	15	80	19	0.70	30	430
AUG 11...	0	54	17	38	1	--	63	15	--	--	--
SEP 15...	64	62	20	40	1	13	71	21	0.60	29	360

KANSAS RIVER BASIN

247

06844500 REPUBLICAN RIVER NEAR ORLEANS, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)
OCT 08...	0.75	87	48	0.910	0.940	<0.020	--	0.85	1.8	0.100	0.130
NOV 06...	--	--	46	1.40	--	0.040	0.75	0.79	2.2	0.280	--
DEC 09...	0.67	2.1	54	2.40	<0.100	0.110	0.49	0.60	3.0	0.200	0.090
JAN 28...	0.65	182	5	--	2.80	--	--	--	--	0.140	0.140
FEB 17...	--	--	39	2.30	--	0.080	0.57	0.65	3.0	0.130	--
MAR 05...	0.67	235	92	2.10	2.20	0.060	0.04	0.10	2.2	0.240	0.100
APR 06...	0.66	403	116	1.70	<0.100	0.100	0.90	1.0	2.7	0.360	0.140
MAY 11...	--	--	204	1.30	--	0.880	1.2	2.1	3.4	0.330	--
JUN 10...	0.59	131	161	1.40	0.790	0.070	1.3	1.4	2.8	0.400	0.160
JUL 13...	0.59	194	210	0.440	0.540	<0.020	--	5.7	6.1	0.480	0.190
AUG 11...	--	--	226	<0.020	--	0.070	2.2	2.3	--	0.410	--
SEP 15...	0.49	58	171	--	0.620	0.050	1.2	1.2	--	--	0.100

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 08...	1315	--	160	--	--	--	6
NOV 06...	1310	12	--	<15	<10	20	--
DEC 09...	1350	--	130	--	--	--	16
JAN 28...	1130	--	130	--	--	--	21
FEB 17...	1545	21	--	<15	<10	20	--
MAR 05...	0915	--	120	--	--	--	6
APR 06...	1550	--	130	--	--	--	10
MAY 11...	1230	15	--	<15	<10	20	--
JUN 10...	1600	--	120	--	--	--	25
JUL 13...	1130	--	110	--	--	--	6
AUG 11...	1200	17	--	<15	<10	20	--
SEP 15...	1430	--	120	--	--	--	4

KANSAS RIVER BASIN

06844500 REPUBLICAN RIVER NEAR ORLEANS, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 08...	--	6	--	--	--	--	10
NOV 06...	<20	--	<0.10	4	<1	<30	4.6
DEC 09...	--	4	--	--	--	--	3.8
JAN 28...	--	6	--	--	--	--	3.1
FEB 17...	<20	--	<0.10	6	<1	<30	2.9
MAR 05...	--	4	--	--	--	--	3.8
APR 06...	--	11	--	--	--	--	5.2
MAY 11...	40	--	<0.10	<3	<1	30	4.8
JUN 10...	--	5	--	--	--	--	6.6
JUL 13...	--	4	--	--	--	--	8.4
AUG 11...	30	--	<0.10	3	<1	70	4.9
SEP 15...	--	<1	--	--	--	--	4.6

KANSAS RIVER BASIN

249

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.

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.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--42 years, 16.2 ft³/s, 11,740 acre-ft/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)
June 16	2100	*116	*6.55	No peak greater than base discharge.			

No flow most days.

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	.00	.04	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00
2	.03	.07	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00
3	.03	.03	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00
4	.02	.00	.00	.00	.00	.00	.00	.00	.00	.75	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.00	.01
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.90	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.02	.01
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.3	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8	.00	.00
10	.02	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00	.00
11	.13	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.01
12	.01	.00	.00	.00	.00	.00	.00	.00	2.4	2.5	.02	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	12	2.0	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	3.6	1.6	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	24	1.4	.00	.05
16	.00	.00	.00	.00	.00	.00	.00	.00	36	1.1	.00	.02
17	.00	.00	.00	.00	.00	.00	.00	.00	27	.84	.04	.02
18	.00	.00	.00	.00	.00	.00	.00	.00	11	.53	.02	1.9
19	.00	.00	.00	.00	.00	.00	.00	.00	2.9	.12	.00	1.1
20	.00	.00	.00	.00	.00	.00	.00	.00	1.7	.00	.00	.21
21	.09	.00	.00	.00	.00	.00	.00	.00	1.4	.00	.00	.00
22	.12	.00	.00	.00	.00	.00	.00	.00	1.1	.00	.01	.00
23	.06	.00	.00	.00	.00	.00	.00	.00	.88	.00	.02	.00
24	.02	.00	.00	.00	.00	.00	.00	.00	.89	.00	.09	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.07	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.86	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.11	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.05	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.53	.14	.00	.00	.00	.00	.00	.00	127.49	23.60	.29	3.33
MEAN	.017	.005	.000	.000	.000	.000	.000	.000	4.25	.76	.009	.11
MAX	.13	.07	.00	.00	.00	.00	.00	.00	36	3.0	.09	1.9
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.1	.3	.00	.00	.00	.00	.00	.00	253	47	.6	6.6

CAL YR 1986	TOTAL	6.19	MEAN	.017	MAX	.97	MIN	.00	AC-FT	12
WTR YR 1987	TOTAL	155.38	MEAN	.43	MAX	36	MIN	.00	AC-FT	308

KANSAS RIVER BASIN

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 mi 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.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--51 years, 22.2 ft³/s, 16,080 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)
Oct. 9	0100	*27	*3.91	No peaks greater than base discharge.			
Minimum daily discharge, 0.23 ft ³ /s Oct. 7.							

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	.31	.55	.73	.95	1.1	.82	2.0	3.6	2.0	1.1	.43	.39
2	.32	.54	.74	.99	1.1	.94	4.2	3.7	2.0	1.4	.42	.36
3	.39	.54	.85	1.0	1.1	.88	3.4	4.7	1.9	1.2	.45	.33
4	.36	.48	.76	1.0	1.1	1.1	3.6	4.3	1.9	.89	.48	.33
5	.35	.56	.75	.98	1.1	1.1	3.9	4.8	1.8	.93	.46	.35
6	.28	.45	.81	1.1	1.2	.88	4.2	6.2	1.6	.77	.44	.37
7	.23	.48	.86	1.0	1.2	1.0	4.6	5.8	1.5	.79	.52	.49
8	.57	.43	.87	1.0	1.2	.94	4.9	5.5	1.5	1.3	.48	.37
9	5.8	.43	.87	1.0	1.1	1.0	4.8	4.6	1.6	1.2	.50	.36
10	.90	.47	.81	1.1	1.1	1.0	4.5	4.1	1.8	1.7	.49	.38
11	9.9	.47	.78	1.0	.88	1.1	4.2	3.8	2.1	1.1	.48	.40
12	7.8	.45	.80	1.1	1.1	1.1	4.1	3.5	1.8	.90	.48	.37
13	5.8	.45	.82	1.1	.88	1.2	4.4	3.3	1.6	.80	.50	.38
14	3.7	.48	.82	1.1	1.1	1.2	8.2	3.2	1.6	.73	.53	.37
15	.91	.53	.82	1.1	1.1	1.2	8.9	2.8	1.5	.70	.49	.46
16	.44	.55	.83	1.0	1.1	1.9	10	2.6	1.4	.68	.43	.55
17	.36	.58	.88	1.0	1.1	3.6	8.1	2.4	1.4	.72	.49	.54
18	.35	.56	.88	1.0	1.1	2.8	6.8	2.3	1.4	.81	.75	.53
19	.34	.61	.89	1.1	1.1	2.1	6.0	2.4	1.5	.65	.54	.49
20	.33	.59	.86	1.0	1.0	2.1	5.4	2.4	1.4	.63	.53	.49
21	.31	.59	.84	1.1	1.1	1.7	5.0	2.4	1.4	.62	.50	.46
22	.33	.68	.89	1.0	1.1	1.8	4.7	2.3	1.2	.58	.39	.46
23	.30	.56	.88	1.0	1.1	2.0	4.6	2.4	1.2	.53	.38	.48
24	.37	.62	.90	.98	1.1	2.3	4.3	2.5	2.4	.49	.38	.36
25	.66	.55	.94	.96	1.1	2.1	4.0	2.6	2.5	.47	.39	.38
26	.49	.58	.95	1.0	.94	2.5	4.0	2.5	1.5	.48	.38	.41
27	.41	.63	1.1	1.0	1.3	2.4	3.9	2.5	1.1	.56	.36	.43
28	.39	.66	.99	1.1	.82	2.0	3.9	2.4	1.1	.45	.37	.44
29	.35	.69	1.0	1.1	---	2.2	3.8	2.3	7.0	.39	.42	.48
30	.39	.70	.99	1.1	---	1.6	3.6	2.2	3.8	.38	.39	.50
31	.49	---	.92	1.1	---	1.5	---	2.2	---	.44	.37	---
TOTAL	43.93	16.46	26.83	32.06	30.32	50.06	148.0	102.3	56.5	24.39	14.22	12.71
MEAN	1.42	.55	.87	1.03	1.08	1.61	4.93	3.30	1.88	.79	.46	.42
MAX	9.9	.70	1.1	1.1	1.3	3.6	10	6.2	7.0	1.7	.75	.55
MIN	.23	.43	.73	.95	.82	.82	2.0	2.2	1.1	.38	.36	.33
AC-FT	87	33	53	64	60	99	294	203	112	48	28	25

CAL YR 1986 TOTAL 815.41 MEAN 2.23 MAX 273 MIN .16 AC-FT 1620
WTR YR 1987 TOTAL 557.77 MEAN 1.53 MAX 10 MIN .23 AC-FT 1110

KANSAS RIVER BASIN

251

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: Jan. 16-22, Feb. 17-23, Mar. 11, 12, 25-28, and Sept. 1-14. Records fair except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--42 years, 52.9 ft³/s, 38,330 acre-ft/yr; median of yearly mean discharges, 22 ft³/s, 15,900 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)
Apr. 6	0900	*203	*6.61	No peaks greater than base discharge.			
No flow Oct. 1-9.							

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	.00	.04	2.4	5.8	8.3	9.0	.80	20	18	5.5	.79	.48
2	.00	.03	2.7	4.8	8.4	8.4	20	18	18	9.4	.73	.47
3	.00	.09	2.2	6.2	10	8.1	15	20	17	9.2	.68	.46
4	.00	.28	1.9	5.8	9.8	7.5	23	22	16	7.2	.63	.45
5	.00	.39	2.6	5.6	11	7.1	65	23	16	6.8	.58	.44
6	.00	.59	2.6	4.8	8.1	7.1	116	26	16	8.7	.54	.43
7	.00	.89	3.0	2.8	7.5	7.0	58	25	15	4.4	.65	.42
8	.00	.91	3.3	3.7	9.4	6.7	49	25	14	75	.56	.41
9	.00	.83	2.7	6.5	8.2	6.9	59	22	15	99	.50	.41
10	.01	.86	2.7	3.8	8.0	6.7	46	20	14	90	.44	.41
11	.02	.84	3.3	3.1	9.0	6.4	41	21	17	18	.44	.40
12	4.7	.92	3.6	4.9	9.0	6.0	38	40	17	20	.50	.40
13	56	.85	3.3	6.7	6.8	7.0	35	46	16	31	.79	.40
14	99	.95	3.1	4.1	6.3	6.5	39	39	15	46	.78	.39
15	48	1.1	3.3	3.7	4.9	6.7	38	30	15	21	.80	.38
16	16	1.2	3.6	3.6	4.3	8.6	43	23	17	50	.68	.35
17	5.3	1.2	3.5	3.5	3.5	19	57	18	10	68	.68	.33
18	2.2	1.4	3.1	3.3	3.4	20	58	16	9.1	135	.74	.38
19	1.3	1.3	3.8	3.3	3.3	19	50	14	12	97	.66	.44
20	.91	1.5	3.7	3.1	3.4	24	45	15	8.2	45	1.2	.36
21	.86	1.5	4.2	2.9	4.0	21	43	20	8.6	28	1.2	.26
22	.85	1.8	4.2	2.9	4.2	19	37	15	17	26	.84	.22
23	.74	1.7	4.0	3.5	3.9	24	34	13	14	25	.68	.19
24	.67	1.8	4.2	4.0	5.7	31	33	13	10	18	.62	.21
25	.47	2.2	4.3	4.5	6.4	25	31	14	9.9	10	.72	.18
26	.39	1.8	4.0	5.0	7.0	16	28	17	6.4	8.8	.69	.16
27	.28	1.8	4.4	6.0	8.1	10	25	19	5.5	5.6	.74	.13
28	.23	2.4	4.4	7.3	9.8	5.0	23	17	11	3.1	.77	.11
29	.15	2.9	4.3	8.1	---	3.0	22	16	29	1.4	.66	.10
30	.09	2.3	4.4	8.3	---	2.2	21	15	15	1.0	.54	.10
31	.05	---	5.1	8.7	---	1.3	---	18	---	1.0	.51	---
TOTAL	238.22	36.37	107.9	150.3	191.7	355.2	1192.80	660	421.7	974.1	21.34	9.87
MEAN	7.68	1.21	3.48	4.85	6.85	11.5	39.8	21.3	14.1	31.4	.69	.33
MAX	99	2.9	5.1	8.7	11	31	116	46	29	135	1.2	.48
MIN	.00	.03	1.9	2.8	3.3	1.3	.80	13	5.5	1.0	.44	.10
AC-FT	473	72	214	298	380	705	2370	1310	836	1930	42	20

CAL YR 1986 TOTAL 3938.48 MEAN 10.8 MAX 428 MIN .00 AC-FT 7810
WTR YR 1987 TOTAL 4359.46 MEAN 11.9 MAX 135 MIN .00 AC-FT 8650

KANSAS RIVER BASIN

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 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: Nov. 11-21 and Mar. 27, 28. 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.--47 years, (water years 1929-32, 1945-87), 32.0 ft³/s, 23,180 acre-ft/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, 849 ft³/s July 9, gage height, 14.25 ft; no flow many days.

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	.00	.00	.00	.00	.00	.00	.82	.72	.28	6.0	.35	.00
2	.00	.00	.00	.00	.00	.00	.92	.66	.28	1.5	.42	.00
3	.00	.00	.00	.00	.00	.00	.97	.99	.23	.65	.36	.00
4	.00	.00	.00	.00	.00	.00	1.0	2.0	.17	.47	1.0	.00
5	.00	.00	.00	.00	.00	.00	11	2.0	.13	.29	.98	.00
6	.00	.00	.00	.00	.00	.00	7.7	.92	.09	.19	.97	.00
7	.00	.00	.00	.00	.00	.00	8.3	.95	.02	.15	.22	.00
8	.00	.00	.00	.00	.00	.00	16	1.2	.00	.98	102	.00
9	.00	.00	.00	.00	.00	.00	15	1.0	.00	654	50	.00
10	.00	.00	.00	.00	.00	.00	13	.87	.00	335	21	.00
11	.00	.00	.00	.00	.00	.00	14	.67	.00	36	9.0	.00
12	51	.00	.00	.00	.00	.00	11	.54	.00	15	2.5	.00
13	118	.00	.00	.00	.00	.00	12	.45	.00	8.9	5.1	.00
14	49	.00	.00	.00	.00	.00	44	.40	.00	2.6	4.9	.00
15	19	.00	.00	.00	.00	.00	42	.31	.00	.72	9.0	2.3
16	11	.00	.00	.00	.00	.00	48	.25	.00	.43	6.1	6.4
17	6.9	.00	.00	.00	.00	.00	38	.20	.00	.36	1.7	.29
18	4.4	.00	.00	.00	.00	.00	22	.15	.00	.44	.61	.13
19	2.7	.00	.00	.00	.00	.00	14	.13	.00	82	.32	.08
20	1.6	.00	.00	.00	.00	.00	6.9	.37	.00	21	.22	.02
21	1.2	.00	.00	.00	.00	.00	3.6	1.9	.00	9.4	.17	.00
22	.98	.00	.00	.00	.00	.00	2.4	.36	.00	2.6	.13	.00
23	.79	.00	.00	.00	.00	3.7	1.9	.38	.00	.63	.09	.72
24	.61	.00	.00	.00	.00	7.0	1.7	.38	.00	.30	.05	.65
25	.45	.00	.00	.00	.00	3.1	1.5	.46	.00	.19	.02	.39
26	.30	.00	.00	.00	.00	1.2	1.3	.45	.00	.12	.00	.26
27	.22	.00	.00	.00	.00	1.0	1.1	.50	.00	.08	.00	.19
28	.16	.00	.00	.00	.00	.70	.93	.48	.00	.02	.00	.16
29	.11	.00	.00	.00	---	.59	.85	.37	9.2	.00	.00	.10
30	.08	.00	.00	.00	---	.40	.77	.31	10	3.2	.00	.05
31	.02	---	.00	.00	---	.77	---	.27	---	1.7	.00	---
TOTAL	268.52	.00	.00	.00	.00	18.46	342.66	20.64	20.40	1325.50	238.99	11.74
MEAN	8.66	.000	.000	.000	.000	.60	11.4	.67	.68	42.8	7.71	.39
MAX	118	.00	.00	.00	.00	7.0	48	2.0	10	654	102	6.4
MIN	.00	.00	.00	.00	.00	.00	.77	.13	.00	.00	.00	.00
AC-FT	533	.00	.00	.00	.00	37	680	41	40	2630	474	23
CAL YR 1986	TOTAL	786.52	MEAN	2.15	MAX	285	MIN	.00	AC-FT	1560		
WTR YR 1987	TOTAL	2246.91	MEAN	6.16	MAX	654	MIN	.00	AC-FT	4460		

KANSAS RIVER BASIN

253

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, 325,500 acre-ft June 15, elevation, 1,945.84 ft; minimum, 230,500 acre-ft Oct. 2, elevation, 1,937.68 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230900	236200	240800	246900	253500	263000	282900	303700	322100	311800	283700	266900
2	230900	236400	241200	247200	253800	263400	283900	304700	322100	311600	282000	266500
3	231200	236400	241200	247400	254000	263800	284800	305900	322400	311200	280500	266300
4	231200	236500	241300	247400	254500	264200	285800	308300	322200	310900	278700	266000
5	231000	236600	241600	247700	254900	264600	286700	309600	322100	309700	276900	266200
6	231100	236500	242100	248000	255000	264900	287600	310200	322000	308300	275200	266200
7	231200	237200	242400	248200	255600	265300	288300	310900	322000	307600	276800	266200
8	231200	236900	242800	248600	255800	265600	289000	311500	322000	308300	276800	266100
9	231400	236700	242800	249100	256100	265600	289800	312000	322400	309300	276400	265900
10	231400	237100	242800	249200	256600	265900	290300	312400	322600	309800	276300	265900
11	232900	236900	242800	249300	256800	266100	291100	312900	323300	309700	276100	261100
12	232700	236900	242500	249500	256900	266500	292300	313300	323800	308700	275900	266000
13	232900	236700	242900	250000	257300	266800	294200	313700	324600	307300	275800	265900
14	233000	236800	243000	250100	257600	267300	294800	314300	325100	306100	275200	265900
15	233200	237100	243200	250200	258000	267200	295400	314700	325100	304800	275000	265900
16	233500	237300	243500	250300	258100	268100	296300	314800	324300	302900	274600	266500
17	233700	237800	243700	250300	258300	269100	297000	315300	323800	302500	273700	266400
18	233700	237700	243800	250500	258500	270000	297600	315900	322900	302000	273300	266300
19	234100	238300	244200	250700	258700	270900	298700	316600	322000	301800	272200	266300
20	234100	238300	244200	250700	259000	271800	299200	318600	320900	301100	271900	266200
21	234400	238500	244500	251100	259300	272700	299700	318800	319500	300100	270800	266000
22	234900	238900	244600	251100	259500	273600	300200	318800	318100	298800	270100	266000
23	235100	239000	245000	251200	259800	274600	300600	319400	316800	298100	269400	266000
24	235300	239300	245200	251300	260000	275500	301100	319900	315900	297000	268500	266000
25	235400	239600	245300	251500	260400	276400	301600	320400	314400	295500	268500	266000
26	235600	239600	245500	251800	261000	277300	301900	320800	312600	294100	268000	266100
27	235600	239800	245600	252100	262300	278100	302200	321000	311400	292300	268000	266000
28	235600	240100	246000	252500	262900	279200	302500	321200	311600	290600	267800	266000
29	235600	240200	246200	252700	---	280000	302900	321300	311800	288900	267700	265600
30	235600	240400	246600	252700	---	281100	303300	321600	311500	287100	267300	265600
31	235700	---	246700	253200	---	282000	---	321800	---	285300	267200	---
MEAN	233400	237900	243700	250100	257600	270300	294700	315000	320000	302400	273600	265900
MAX	235700	240400	246700	253200	262900	282000	303300	321800	325100	311800	283700	266900
MIN	230900	236200	240800	246900	253500	263000	282900	303700	311400	285300	267200	261100
(↑)	1938.18	1938.63	1939.22	1939.81	1940.69	1942.35	1944.11	1945.56	1944.76	1942.63	1941.07	1940.93
(↓)	+4800	+4700	+6300	+6500	+9700	+19100	+21300	+18500	-10300	-26200	-18100	-1600
CAL YR 1986	MEAN	274100	MAX	366100	MIN	229700	(↓)	-19500				
WTR YR 1987	MEAN	272100	MAX	325100	MIN	230900	(↓)	+34700				

(↑) Elevation, in feet, at end of month.

(↓) Change in contents, in acre-feet.

KANSAS RIVER BASIN

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. 18-26, Mar. 17, 18. Records good except for periods of estimated record, which are fair. Flow completely regulated by Harlan County Lake (station 06849000) and partially regulated by six upstream reservoirs.

AVERAGE DISCHARGE.--34 years (1953-87), 245 ft³/s, 177,500 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, 537 ft³/s Aug. 7, gage height, 2.95 ft; minimum daily, 2.4 ft³/s Oct. 19.

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	4.7	5.1	4.8	11	10	11	12	7.2	7.3	33	468	7.2
2	4.7	5.4	11	9.8	9.9	9.2	12	7.2	8.1	128	468	6.9
3	5.4	5.1	11	11	9.9	4.6	11	9.3	11	169	468	6.6
4	5.4	4.7	11	11	9.9	4.1	11	10	11	268	464	6.6
5	5.4	4.7	12	11	9.9	3.9	13	15	10	359	462	6.6
6	4.7	4.9	10	9.6	9.7	3.7	14	11	9.9	396	464	6.6
7	4.7	5.4	11	9.3	10	3.4	13	8.4	9.1	412	395	6.2
8	4.1	5.4	11	9.5	9.9	2.8	12	7.3	16	419	223	6.0
9	5.4	5.4	91	9.9	9.7	2.8	13	7.1	12	401	182	6.0
10	4.1	5.3	94	10	10	2.8	12	6.8	16	370	151	6.5
11	8.6	4.0	18	11	9.9	2.8	11	6.4	13	419	135	7.2
12	7.2	3.8	13	9.9	9.9	2.8	11	6.0	11	452	136	7.0
13	6.0	3.0	12	9.9	9.9	3.0	13	5.5	9.7	432	132	6.6
14	3.6	2.8	12	9.9	10	3.2	30	8.3	8.5	416	131	6.6
15	3.2	2.8	12	8.6	11	3.2	16	7.9	195	415	128	6.6
16	2.8	2.8	12	11	11	3.8	11	7.8	415	436	126	6.8
17	2.8	2.8	12	11	10	4.8	9.9	7.5	462	446	124	6.4
18	2.8	2.8	12	10	11	6.8	9.9	8.5	494	304	138	6.0
19	2.4	2.8	12	9.6	10	8.8	8.6	8.2	493	329	155	6.0
20	3.2	2.8	12	9.6	9.9	6.2	8.0	11	491	366	155	5.7
21	3.2	2.8	13	10	9.9	4.1	6.0	21	489	388	155	5.4
22	3.6	2.8	12	10	9.9	5.7	7.2	13	487	424	136	5.4
23	3.6	2.8	11	11	10	63	8.3	8.5	489	443	120	5.4
24	3.2	2.8	11	10	11	19	8.9	6.9	489	444	118	5.4
25	3.2	2.8	11	9.6	11	11	8.2	7.9	489	440	58	5.4
26	3.2	2.8	11	10	11	10	7.9	7.2	489	440	11	5.1
27	2.8	2.8	11	10	11	10	7.2	7.2	490	440	9.2	4.7
28	3.7	2.8	11	10	12	19	8.1	7.2	432	459	7.9	4.7
29	3.8	2.8	11	9.9	---	50	7.9	7.2	290	477	7.2	4.7
30	4.3	2.9	11	8.6	---	26	7.2	7.2	80	474	7.0	4.7
31	4.4	---	11	9.8	---	13	---	7.9	---	472	7.2	---
TOTAL	130.2	109.9	517.8	311.5	287.3	324.5	328.3	267.6	6926.6	11871	5741.5	181.0
MEAN	4.20	3.66	16.7	10.0	10.3	10.5	10.9	8.63	231	383	185	6.03
MAX	8.6	5.4	94	11	12	63	30	21	494	477	468	7.2
MIN	2.4	2.8	4.8	8.6	9.7	2.8	6.0	5.5	7.3	33	7.0	4.7
AC-FT	258	218	1030	618	570	644	651	531	13740	23550	11390	359

CAL YR 1986 TOTAL 41735.5 MEAN 124 MAX 892 MIN 2.4 AC-FT 82780
WTR YR 1987 TOTAL 26997.1 MEAN 74.0 MAX 494 MIN 2.4 AC-FT 53550

KANSAS RIVER BASIN

255

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: Nov. 13 and Mar. 23, 24, 28-30. Records fair. Two small diversions above station for irrigation.

AVERAGE DISCHARGE.--25 years (1948-56, 1968-75, 1978-87) 8.07 ft³/s, 5,850 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)
Mar. 22	2345	171	2.73	May 18	0245	155	2.69
May 3	0530	314	3.56	July 17	2030	882	*5.85

Minimum daily discharge, 1.6 ft³/s Aug. 2.

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	6.1	5.7	7.9	4.9	6.7	6.0	13	6.5	7.6	7.0	2.0	5.8
2	6.4	5.7	7.6	5.1	6.7	5.6	12	6.4	7.3	7.1	1.6	5.7
3	5.7	5.8	7.5	5.2	6.7	5.3	12	114	7.1	7.2	1.7	5.7
4	5.7	6.5	7.4	5.4	6.7	5.3	12	69	7.1	6.5	2.8	5.6
5	5.7	6.5	7.5	5.4	7.1	5.2	11	10	7.3	6.1	2.6	5.8
6	5.9	6.5	6.9	5.5	7.0	5.4	11	11	7.3	6.8	2.3	5.8
7	6.5	6.7	6.6	5.7	6.6	5.7	11	7.9	7.1	7.5	7.6	5.6
8	5.7	7.4	7.2	5.7	6.4	5.4	28	7.3	7.1	9.6	9.7	5.6
9	8.4	7.1	7.3	5.7	6.4	5.5	26	7.3	7.1	8.8	4.7	5.5
10	6.5	6.5	6.3	5.7	6.7	5.8	12	7.7	7.0	8.8	4.5	5.6
11	23	6.5	5.4	5.8	6.7	5.8	10	7.6	7.5	8.5	4.7	6.0
12	12	6.5	5.1	5.8	6.7	6.0	9.3	9.9	6.9	8.0	11	6.3
13	13	6.4	5.4	6.0	6.7	6.1	11	7.8	6.9	7.1	6.4	6.0
14	7.9	6.5	5.2	6.0	6.4	6.0	63	8.0	6.9	7.2	5.7	5.9
15	7.1	6.5	5.3	6.0	6.7	5.7	30	7.5	6.6	7.9	5.5	6.4
16	6.5	6.7	5.4	6.2	6.7	23	8.1	7.7	6.9	8.2	5.4	6.6
17	6.5	6.5	5.4	6.4	6.5	23	6.4	7.7	7.0	62	5.5	6.2
18	6.8	6.3	5.7	6.2	6.1	12	6.5	21	6.8	9.8	5.7	5.9
19	6.6	5.7	5.6	6.0	6.0	9.5	6.5	9.0	6.6	6.3	5.9	5.9
20	7.4	5.8	5.4	6.0	6.0	8.4	6.3	9.6	6.9	6.8	5.9	5.9
21	7.9	6.1	5.4	6.3	6.3	8.4	6.3	36	6.8	7.0	6.0	5.9
22	8.6	6.2	5.4	6.4	6.4	28	6.0	18	4.5	7.4	6.5	6.1
23	7.7	6.4	5.5	6.4	6.5	40	6.1	8.6	4.9	6.8	6.3	6.1
24	6.1	6.7	4.6	6.4	6.3	14	6.5	8.2	5.5	6.3	6.3	6.0
25	5.7	6.9	4.5	6.4	6.3	12	6.7	8.1	6.0	3.9	6.5	6.1
26	5.7	7.2	4.5	6.4	6.5	12	6.5	7.8	5.5	2.9	6.3	6.2
27	5.9	7.3	4.6	6.4	7.7	12	6.7	7.8	4.9	2.7	6.2	6.1
28	6.3	7.4	4.8	6.4	6.8	11	6.8	7.7	6.9	2.4	6.0	6.3
29	5.5	7.1	4.8	6.5	---	11	6.7	7.5	8.0	2.3	5.9	6.0
30	5.3	7.4	4.8	6.7	---	11	6.8	7.4	7.2	1.9	5.8	6.0
31	5.7	---	4.8	7.1	---	12	---	7.7	---	1.9	5.9	---
TOTAL	229.8	196.5	179.8	186.1	184.3	332.1	370.2	467.7	201.2	252.7	168.9	178.6
MEAN	7.41	6.55	5.80	6.00	6.58	10.7	12.3	15.1	6.71	8.15	5.45	5.95
MAX	23	7.4	7.9	7.1	7.7	40	63	114	8.0	62	11	6.6
MIN	5.3	5.7	4.5	4.9	6.0	5.2	6.0	6.4	4.5	1.9	1.6	5.5
AC-FT	456	390	357	369	366	659	734	928	399	501	335	354

CAL YR 1986 TOTAL 2630.2 MEAN 7.21 MAX 48 MIN 2.3 AC-FT 5220
WTR YR 1987 TOTAL 2947.9 MEAN 8.08 MAX 114 MIN 1.6 AC-FT 5850

KANSAS RIVER BASIN

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: Oct. 10 to Mar. 24 except random days when gage was read, and Mar. 29-31, ice affected. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--25 years (1948-56, 1968-75, 1978-87), 31.3 ft³/s, 22,680 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)
(a)	----	ice jam	b7.92	May 21	0130	493	6.60
Apr. 14	0500	350	6.13	June 10	0415	344	6.11
May 18	0615	376	6.22	July 18	0915	*1920	*9.62

a Sometime during period Mar. 15-25.

b From floodmark.

Minimum daily discharge, 9.1 ft³/s July 3, 5.

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	17	19	19	14	22	21	39	21	17	16	20	15
2	18	19	21	14	21	17	40	20	17	11	18	15
3	18	18	21	14	21	16	42	52	16	9.1	21	15
4	17	18	21	14	21	16	53	50	16	9.8	22	14
5	17	18	21	15	22	16	73	60	17	9.1	21	15
6	17	18	20	15	21	17	61	37	17	16	17	16
7	20	17	19	15	20	18	87	30	17	18	98	17
8	17	16	20	15	19	17	106	27	20	32	38	16
9	18	16	20	15	19	17	105	26	124	48	17	17
10	16	15	19	14	20	18	54	24	227	19	16	17
11	80	15	18	13	20	18	39	24	104	16	18	17
12	35	15	18	13	20	18	33	24	83	17	19	17
13	25	14	18	14	20	19	64	25	28	18	29	18
14	18	15	17	15	19	16	271	25	18	17	34	19
15	16	17	17	15	20	16	116	26	18	18	34	20
16	15	18	17	15	21	35	56	23	18	18	33	20
17	15	17	17	17	21	90	37	23	18	44	20	18
18	15	17	17	17	20	50	28	128	19	1140	17	18
19	15	16	16	16	20	30	27	29	19	267	16	17
20	16	16	15	16	19	20	25	82	21	88	17	16
21	17	17	15	17	19	20	22	251	18	32	18	16
22	18	18	15	18	20	60	22	42	17	33	37	16
23	16	19	15	18	21	130	22	28	17	31	33	16
24	15	19	15	19	20	70	21	28	20	21	33	17
25	15	20	14	19	20	53	23	27	60	19	34	18
26	14	20	14	20	21	54	22	26	16	16	28	18
27	15	20	14	20	25	58	22	24	15	19	18	16
28	16	19	14	21	23	52	21	23	47	21	16	18
29	15	18	14	20	---	46	22	19	67	19	15	19
30	15	18	14	21	---	38	21	18	52	16	14	19
31	17	---	14	21	---	39	---	17	---	18	15	---
TOTAL	598	522	529	510	575	1105	1574	1259	1163	2076.0	786	510
MEAN	19.3	17.4	17.1	16.5	20.5	35.6	52.5	40.6	38.8	67.0	25.4	17.0
MAX	80	20	21	21	25	130	271	251	227	1140	98	20
MIN	14	14	14	13	19	16	21	17	15	9.1	14	14
AC-FT	1190	1040	1050	1010	1140	2190	3120	2500	2310	4120	1560	1010

CAL YR 1986 TOTAL 7292.0 MEAN 20.0 MAX 151 MIN 11 AC-FT 14460
WTR YR 1987 TOTAL 11207.0 MEAN 30.7 MAX 1140 MIN 9.1 AC-FT 22230

KANSAS RIVER BASIN

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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: Mar. 24, 25. Records good except for periods of estimated record, which are fair. Natural flow affected by pump irrigation development above station.

AVERAGE DISCHARGE.--15 years (water years 1949-53, 1978-87), 21.8 ft³/s, 15,790 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)
Oct. 11	1630	255	10.66	Mar. 23	1600	*543	*b12.60
Mar. 17	1045	212	a10.34	Apr. 14	0800	488	b12.21

a May have been higher.

b From floodmark.

Minimum daily discharge, 8.7 ft³/s July 25.

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	12	17	15	14	16	14	29	18	16	14	9.7	11
2	16	18	15	14	15	14	29	18	16	14	11	10
3	14	18	15	14	15	14	35	22	15	13	11	10
4	14	17	14	14	14	14	45	27	15	13	11	9.9
5	13	16	14	15	14	14	50	48	15	13	10	11
6	14	16	14	14	14	14	44	30	15	12	11	11
7	13	16	16	14	15	14	43	22	15	12	19	11
8	14	16	15	14	14	13	39	20	15	13	15	11
9	15	16	15	14	14	12	33	20	15	12	13	11
10	14	15	15	14	15	13	27	19	15	11	12	12
11	153	15	15	14	15	13	23	19	15	11	13	12
12	121	15	15	14	14	14	23	19	14	11	14	12
13	40	15	15	15	15	14	34	18	14	12	14	12
14	29	15	15	15	14	15	343	18	14	11	15	12
15	25	15	15	14	14	25	75	18	14	12	13	13
16	24	15	15	14	14	19	35	18	14	12	13	13
17	23	15	15	14	14	152	27	18	14	13	13	13
18	22	15	14	14	15	43	25	18	14	15	14	12
19	21	15	14	14	15	22	25	18	14	13	13	12
20	21	15	14	14	15	19	23	18	15	13	13	11
21	20	15	14	14	15	16	22	18	15	12	11	11
22	20	15	15	14	15	16	22	17	14	10	18	12
23	20	15	15	14	15	318	22	17	14	9.0	14	11
24	19	15	15	14	14	260	21	18	14	9.0	13	11
25	19	15	15	14	15	125	21	18	15	8.7	14	11
26	19	14	15	14	14	54	20	17	14	9.6	13	11
27	18	14	15	14	15	36	20	17	14	10	13	12
28	18	14	15	14	14	85	19	17	16	11	12	12
29	17	15	15	15	---	60	19	17	19	11	12	11
30	17	15	15	15	---	26	19	16	15	10	11	11
31	17	---	14	15	---	27	---	16	---	9.3	11	---
TOTAL	822	462	458	440	408	1495	1212	614	444	359.6	399.7	342.9
MEAN	26.5	15.4	14.8	14.2	14.6	48.2	40.4	19.8	14.8	11.6	12.9	11.4
MAX	153	18	16	15	16	318	343	48	19	15	19	13
MIN	12	14	14	14	14	12	19	16	14	8.7	9.7	9.9
AC-FT	1630	916	908	873	809	2970	2400	1220	881	713	793	680

CAL YR 1986 TOTAL 7238.9 MEAN 19.8 MAX 1130 MIN 6.7 AC-FT 14360
WTR YR 1987 TOTAL 7457.2 MEAN 20.4 MAX 343 MIN 8.7 AC-FT 14790

KANSAS RIVER BASIN

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.--33 years, 77.5 ft³/s, 56,150 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, 367 ft³/s Aug. 6; no flow for many days.

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	.00	.00	.00	.00	.00	.00	.00	22	45	79	333	59
2	.00	.00	.00	.00	.00	.00	.00	27	46	103	334	58
3	.00	.00	.00	.00	.00	.00	.00	36	46	110	345	57
4	.00	.00	.00	.00	.00	.00	.00	36	43	180	356	57
5	.00	.00	.00	.00	.00	.00	.00	16	44	221	363	60
6	.00	.00	.00	.00	.00	.00	.00	9.2	45	282	367	60
7	.00	.00	.00	.00	.00	.00	.00	6.3	45	324	335	60
8	.00	.00	.00	.00	.00	.00	.00	4.7	43	334	304	60
9	.00	.00	.00	.00	.00	.00	.00	.00	72	366	290	66
10	.00	.00	.00	.00	.00	.00	.00	14	76	350	225	20
11	.00	.00	.00	.00	.00	.00	.00	58	82	325	182	17
12	.00	.00	.00	.00	.00	.00	.00	92	76	319	189	20
13	.00	.00	.00	.00	.00	.00	.00	45	79	319	193	17
14	.00	.00	.00	.00	.00	.00	.00	40	78	314	195	27
15	.00	.00	.00	.00	.00	.00	.00	39	89	305	193	14
16	.00	.00	.00	.00	.00	.00	.00	40	97	301	190	.00
17	.00	.00	.00	.00	.00	.00	.00	40	131	297	186	.00
18	.00	.00	.00	.00	.00	.00	.00	49	238	299	183	.00
19	.00	.00	.00	.00	.00	.00	.00	46	329	297	184	.00
20	.00	.00	.00	.00	.00	.00	.00	45	355	304	184	.00
21	.00	.00	.00	.00	.00	.00	.00	43	357	312	185	.00
22	.00	.00	.00	.00	.00	.00	.00	34	353	322	186	.00
23	.00	.00	.00	.00	.00	.00	.00	33	347	340	194	.00
24	.00	.00	.00	.00	.00	.00	.00	34	343	335	187	.00
25	.00	.00	.00	.00	.00	.00	.00	34	354	333	156	.00
26	.00	.00	.00	.00	.00	.00	.00	35	350	331	122	.00
27	.00	.00	.00	.00	.00	.00	.00	45	332	333	92	.00
28	.00	.00	.00	.00	.00	.00	1.9	45	343	327	66	.00
29	.00	.00	.00	.00	.00	.00	12	46	290	325	61	.00
30	.00	.00	.00	.00	.00	.00	7.5	46	137	326	60	.00
31	.00	.00	.00	.00	.00	.00	.00	46	.00	330	60	.00
TOTAL	.00	.00	.00	.00	.00	.00	21.40	1106.20	5265	9043	6500	652.00
MEAN	.00	.00	.00	.00	.00	.00	.71	35.7	175	292	210	21.7
MAX	.00	.00	.00	.00	.00	.00	12	92	357	366	367	66
MIN	.00	.00	.00	.00	.00	.00	.00	.00	43	79	60	.00
AC-FT	.0	.0	.0	.0	.0	.0	42	2190	10440	17940	12890	1290

CAL YR 1986 TOTAL 26942.70 MEAN 73.8 MAX 629 MIN .00 AC-FT 53440
WTR YR 1987 TOTAL 22587.60 MEAN 61.9 MAX 367 MIN .00 AC-FT 44800

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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.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 2119: Drainage area.

REMARKS.--Estimated daily discharges: Oct. 9 to 19, 26-31, Nov. 7-17, Dec. 9-19, Jan. 11-30, and Feb. 15-20. Records good except for periods of estimated record, which are 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.--37 years, 325 ft³/s, 235,500 acre-ft/yr, unadjusted.

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, 3,770 ft³/s Mar. 23, gage height, 10.77 ft; minimum daily, 16 ft³/s July 29.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	99	121	118	124	147	502	190	154	404	27	103
2	94	108	123	112	123	134	604	186	179	309	28	91
3	103	116	118	116	118	125	595	268	139	226	41	76
4	100	130	115	115	116	120	562	513	124	184	51	59
5	99	122	121	121	116	114	558	597	123	149	41	51
6	98	119	125	120	116	110	544	456	120	138	29	41
7	99	120	141	115	118	105	515	339	113	63	218	32
8	100	108	143	113	117	100	521	277	90	108	720	28
9	102	92	120	115	113	92	506	233	93	206	265	40
10	118	84	100	109	116	92	479	211	134	205	143	101
11	1000	76	104	98	119	94	418	191	224	173	114	133
12	580	78	112	100	118	100	383	161	160	115	57	120
13	310	76	112	100	119	100	481	160	134	192	139	118
14	195	90	112	86	117	98	2240	160	91	180	177	116
15	170	110	118	76	110	146	1420	159	59	121	125	111
16	160	114	118	72	102	122	763	154	35	79	103	115
17	150	120	118	66	96	745	544	149	33	48	79	117
18	140	124	119	72	100	777	452	217	89	774	53	127
19	135	118	120	82	106	431	402	337	99	2290	45	131
20	129	119	120	90	110	317	362	214	96	518	50	106
21	124	119	120	96	115	265	304	416	96	290	56	99
22	134	118	125	94	113	242	283	374	90	159	93	96
23	136	115	121	92	113	2070	262	248	60	105	172	94
24	134	113	121	90	114	2350	248	221	28	86	159	92
25	125	115	121	90	115	1060	249	211	173	58	221	88
26	119	112	117	92	122	676	239	193	82	39	272	87
27	116	109	117	96	132	551	231	187	45	30	202	88
28	112	116	118	100	147	485	223	179	168	27	145	91
29	105	117	118	112	---	236	212	177	372	16	135	87
30	102	117	116	124	---	291	197	170	609	29	118	83
31	102	---	119	132	---	405	---	161	---	26	111	---
TOTAL	5273	3274	3693	3114	3245	12700	15299	7709	4012	7347	4189	2721
MEAN	170	109	119	100	116	410	510	249	134	237	135	90.7
MAX	1000	130	143	132	147	2350	2240	597	609	2290	720	133
MIN	82	76	100	66	96	92	197	149	28	16	27	28
AC-FT	10460	6490	7330	6180	6440	25190	30350	15290	7960	14570	8310	5400
CAL YR 1986	TOTAL	47094	MEAN	129	MAX	1840	MIN	11	AC-FT	93410		
WTR YR 1987	TOTAL	72576	MEAN	199	MAX	2350	MIN	16	AC-FT	144000		

KANSAS RIVER BASIN
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 1986 TO SEPTEMBER 1987

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)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
OCT 08...	1545	100	--	7.80	21.5	8.6	41	K50	K89	190	0	55
NOV 06...	1440	127	660	8.26	12.0	10.6	14	K10	K48	310	0	94
DEC 03...	1300	118	705	8.21	3.5	15.2	10	K10	K26	290	0	87
JAN 28...	1110	99	640	8.27	1.0	13.4	5	K12	K19	270	0	82
FEB 25...	1215	115	635	8.24	6.0	12.0	5	K28	K45	310	0	94
MAR 26...	0950	736	635	7.95	2.5	11.6	52	100000	K790000	270	0	84
APR 30...	1230	198	849	8.26	19.5	9.5	6	K18000	K100	380	0	120
MAY 27...	1450	190	856	7.88	19.5	9.0	33	1800	640	360	0	110
JUN 24...	1145	29	681	7.64	26.5	7.4	5	--	600	270	0	75
JUL 22...	1245	140	660	8.38	29.0	8.1	24	1000	400	240	0	66
AUG 19...	1100	40	691	8.36	22.5	8.3	24	580	320	280	0	79
SEP 16...	1320	--	765	8.05	17.0	8.4	23	250	310	330	0	100

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

DATE	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, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)
OCT 08...	13	22	0.7	52	6.3	292	1.50	0.080	1.8	1.9	3.4	0.360
NOV 06...	19	34	0.9	110	23	22	1.00	0.120	0.33	0.45	1.5	0.160
DEC 03...	17	33	0.9	83	21	13	1.20	0.040	1.1	1.1	2.3	0.230
JAN 28...	17	27	0.7	98	20	18	0.830	0.140	0.26	0.40	1.2	0.120
FEB 25...	18	34	0.9	120	22	14	1.30	0.120	0.27	0.39	1.7	0.090
MAR 26...	14	28	0.8	39	20	236	1.30	0.290	3.3	3.6	4.9	0.250
APR 30...	22	43	1	140	31	20	1.00	0.180	0.42	0.60	1.6	0.080
MAY 27...	19	33	0.8	150	30	99	2.10	0.140	1.5	1.6	3.7	0.170
JUN 24...	19	39	1	82	22	34	1.00	0.100	0.55	0.65	1.7	0.210
JUL 22...	18	38	1	94	28	117	0.620	<0.020	--	2.6	3.2	0.170
AUG 19...	19	40	1	110	28	33	0.830	0.130	0.77	0.90	1.7	0.210
SEP 16...	19	35	0.9	130	22	131	1.30	0.110	0.71	0.82	2.1	0.270

KANSAS RIVER BASIN

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06853020 REPUBLICAN RIVER AT GUIDE ROCK, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 06...	1440	7	<15	<10	20	<20	<0.10	<2	<1	<30	3.9
FEB 25...	1215	9	<15	<10	<10	<20	<0.10	6	<1	<30	1.3
AUG 19...	1100	12	<15	<10	10	<20	<0.10	6	<1	<30	5.6

KANSAS RIVER BASIN

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 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: July 31 to Aug. 31. 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/yr; 30 years (water years 1958-87, since conservation pool at Harlan County Lake was first filled), 377 ft³/s, 273,100 acre-ft/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, 6,940 ft³/s Apr. 14, gage height, 11.17 ft; minimum discharge, 80 ft³/s Jan. 18 and Sept. 9.

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	230	188	178	176	203	189	886	334	270	757	170	152
2	185	207	185	173	191	183	1130	323	266	472	180	136
3	230	215	185	175	179	169	1080	1220	278	353	200	131
4	204	218	175	172	174	162	1040	1620	251	304	220	121
5	178	204	169	176	172	156	1020	3820	229	276	260	109
6	163	191	181	180	169	148	984	1300	215	243	330	101
7	160	194	211	181	167	144	922	852	202	243	450	98
8	149	208	226	173	166	140	905	669	189	236	600	89
9	151	191	226	172	161	133	865	547	188	257	940	82
10	155	166	198	172	157	126	818	474	178	297	900	95
11	2140	160	175	162	159	127	735	433	219	283	600	121
12	2180	144	185	162	158	129	645	377	301	301	450	183
13	838	110	263	179	155	133	685	325	241	267	430	195
14	469	119	258	193	155	134	5100	337	204	291	380	191
15	357	174	213	180	155	134	3720	324	158	289	360	188
16	313	211	217	168	152	185	1440	305	134	238	350	155
17	286	201	213	146	148	1080	1030	292	108	187	290	152
18	266	201	201	119	143	1470	876	343	106	180	290	149
19	256	172	196	143	146	853	781	538	166	1100	300	145
20	245	172	188	183	148	545	690	473	160	1260	240	151
21	234	172	185	193	149	430	597	408	175	490	210	138
22	253	172	183	183	148	374	544	568	178	361	200	129
23	264	169	189	170	147	4050	510	458	160	293	190	127
24	250	163	189	177	145	6080	443	377	139	243	185	124
25	244	160	186	169	144	2590	470	357	121	223	185	122
26	230	155	186	173	150	1290	444	344	201	215	190	120
27	218	155	187	195	164	995	425	330	191	201	240	120
28	208	155	183	212	182	900	408	354	219	181	290	137
29	200	160	183	221	---	594	377	319	595	179	300	131
30	191	169	177	239	---	444	358	296	863	168	280	119
31	188	---	175	217	---	614	---	284	---	170	200	---
TOTAL	11635	5276	6066	5534	4487	24701	29928	19001	6905	10558	10410	4011
MEAN	375	176	196	179	160	797	998	613	230	341	336	134
MAX	2180	218	263	239	203	6080	5100	3820	863	1260	940	195
MIN	149	110	169	119	143	126	358	284	106	168	170	82
AC-FT	23080	10460	12030	10980	8900	48990	59360	37690	13700	20940	20650	7960

CAL YR 1986 TOTAL 91061 MEAN 249 MAX 3030 MIN 56 AC-FT 180600
WTR YR 1987 TOTAL 138512 MEAN 379 MAX 6080 MIN 82 AC-FT 274700

KANSAS RIVER BASIN

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06879900 BIG BLUE RIVER AT SURPRISE, NE

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.

DRAINAGE AREA.--345 mi².

PERIOD OF RECORD.--April 1964 to current year. Prior to October 1965, published as North Branch Big Blue River at Surprise.

GAGE.--Water-stage recorder and concrete broad-crested weir control. Elevation of gage is 1,520 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Nov. 11-14, Dec. 10-15, Jan. 6-11, 18, 19, and Feb. 18-19. Records good above 5 ft³/s and poor below.

AVERAGE DISCHARGE.--23 years, 29.4 ft³/s, 21,300 acre-ft/yr; median of yearly mean discharges, 30 ft³/s, 21,700 acre-ft/yr.

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.

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)
Oct. 11	1600	320	3.31	Aug. 25	1615	*1280	*7.48
Mar. 24	0530	1170	6.43	Sept. 16	1230	492	3.88

Minimum daily discharge, 3.3 ft³/s Sept. 26, 30.

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	3.5	7.5	5.0	5.2	5.6	6.0	45	14	29	11	15	31
2	20	6.5	5.3	4.9	5.2	4.9	59	12	32	12	19	26
3	28	6.2	5.5	5.8	5.2	4.7	68	13	20	19	19	20
4	23	6.1	4.4	5.4	5.2	4.3	88	15	16	21	26	22
5	26	5.9	5.0	5.8	5.3	4.1	114	17	12	23	23	15
6	19	6.8	5.4	5.4	4.8	5.5	128	15	12	17	26	10
7	15	21	5.4	5.2	5.4	5.4	97	13	11	9.9	26	6.3
8	10	33	5.4	4.7	5.4	5.4	79	12	9.7	9.5	128	6.2
9	7.8	14	5.5	5.2	4.8	5.3	61	11	8.3	9.3	169	8.8
10	7.2	6.8	4.5	4.7	5.0	4.3	46	10	7.8	9.9	88	9.2
11	186	4.5	4.8	4.5	5.0	3.8	37	10	9.1	8.8	42	6.5
12	183	4.6	4.0	6.3	5.1	4.6	32	9.2	9.4	6.6	29	6.2
13	69	4.4	4.9	6.8	5.1	5.0	34	8.2	8.8	7.2	27	5.9
14	31	5.5	4.7	6.0	5.1	4.3	36	7.8	9.0	9.4	20	5.8
15	39	5.1	4.4	5.3	4.9	4.4	33	8.6	9.9	8.9	12	5.5
16	23	5.5	4.6	4.9	4.5	4.4	30	9.0	9.3	6.9	7.0	330
17	15	5.9	4.7	4.2	4.2	15	26	7.5	10	6.8	4.8	132
18	11	6.2	4.4	4.0	3.5	40	25	8.2	14	13	4.3	65
19	6.9	6.0	4.6	4.5	3.8	32	29	8.5	14	48	4.1	146
20	4.7	5.9	4.6	5.4	4.1	25	26	13	9.8	31	3.8	52
21	4.1	5.7	4.6	5.1	4.4	19	23	7.6	9.5	12	4.4	29
22	11	5.7	4.8	5.1	4.5	16	20	13	11	9.2	7.0	19
23	20	5.7	4.9	5.0	4.5	661	19	13	12	6.8	6.5	12
24	58	5.5	5.0	4.8	4.5	1110	18	9.7	8.2	8.1	4.3	7.4
25	98	5.5	5.4	4.6	4.9	1010	17	17	11	8.0	829	4.8
26	95	5.4	5.4	4.8	4.8	1110	17	19	13	12	1060	3.3
27	48	4.9	5.5	5.3	4.4	618	15	28	9.9	13	1030	3.8
28	30	5.2	5.6	5.6	5.3	212	16	19	13	16	608	3.8
29	22	5.3	5.2	6.0	---	53	14	14	16	14	291	3.8
30	17	5.1	5.4	6.2	---	51	14	14	16	13	85	3.3
31	12	---	5.7	6.2	---	46	---	20	---	13	42	---
TOTAL	1143.2	221.4	154.6	162.9	134.5	5094.4	1266	396.3	380.7	413.3	4660.2	999.6
MEAN	36.9	7.38	4.99	5.25	4.80	164	42.2	12.8	12.7	13.3	150	33.3
MAX	186	33	5.7	6.8	5.6	1110	128	28	32	48	1060	330
MIN	3.5	4.4	4.0	4.0	3.5	3.8	14	7.5	7.8	6.6	3.8	3.3
AC-FT	2270	439	307	323	267	10100	2510	786	755	820	9240	1980

CAL YR 1986 TOTAL 18812.3 MEAN 51.5 MAX 3250 MIN 1.4 AC-FT 37310
WTR YR 1987 TOTAL 15027.0 MEAN 41.2 MAX 1110 MIN 3.3 AC-FT 29810

KANSAS RIVER BASIN

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: Nov. 8-17, Dec. 10-14, Jan. 11, 16-29, May 28 to June 1. Records fair except for periods of estimated record, which are poor. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--33 years, (1953-73, 1975-87) 52.9 ft³/s, 38,330 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)
Oct. 12	0930	930	13.40	July 10	1900	553	11.07
Mar. 24	2300	2210	16.98	Aug. 26	0800	*3260	*18.79

Minimum daily discharge, 22 ft³/s Aug. 24.

DISCHARGE, 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	34	46	33	31	27	31	162	52	200	46	36	60
2	30	42	34	31	27	28	208	51	157	47	36	51
3	34	40	33	30	27	28	214	51	100	45	37	47
4	35	38	32	31	26	27	244	60	76	44	38	44
5	41	37	32	31	26	27	283	55	61	42	32	40
6	54	37	31	31	27	27	255	52	56	43	37	38
7	58	37	34	30	27	27	222	52	53	43	41	38
8	42	68	34	30	27	26	192	49	52	46	47	36
9	34	60	34	30	26	26	169	49	50	59	191	35
10	29	48	29	30	27	25	140	55	63	424	123	35
11	430	36	29	27	27	25	122	51	90	252	61	33
12	884	39	30	30	27	26	101	49	57	83	47	33
13	462	37	32	31	27	26	94	47	50	53	41	33
14	285	36	32	30	27	27	129	47	48	44	35	32
15	208	34	33	29	27	27	133	46	50	39	31	35
16	108	34	32	27	27	27	90	46	48	35	28	62
17	68	34	31	25	26	61	79	46	49	35	26	97
18	53	34	32	23	26	126	76	45	78	38	25	59
19	46	34	32	23	26	123	76	47	55	57	24	63
20	41	34	33	23	26	94	75	47	60	58	24	95
21	38	33	32	24	27	93	67	46	74	59	25	54
22	39	33	32	25	27	85	62	45	53	49	25	39
23	66	33	32	25	27	1330	61	59	46	38	23	34
24	100	33	32	24	27	2160	59	53	44	34	22	31
25	299	32	32	26	27	2100	57	53	44	33	649	28
26	214	32	32	27	27	1450	55	83	42	31	3040	27
27	148	32	32	28	28	930	55	126	43	35	2860	27
28	115	32	32	29	30	474	53	113	43	36	1660	29
29	88	32	32	29	---	151	53	91	47	39	340	27
30	64	32	31	30	---	175	52	144	46	38	130	26
31	52	---	31	27	---	171	---	193	---	38	76	---
TOTAL	4199	1129	992	867	753	9953	3638	2003	1935	1963	9810	1288
MEAN	135	37.6	32.0	28.0	26.9	321	121	64.6	64.5	63.3	316	42.9
MAX	884	68	34	31	30	2160	283	193	200	424	3040	97
MIN	29	32	29	23	26	25	52	45	42	31	22	26
AC-FT	8330	2240	1970	1720	1490	19740	7220	3970	3840	3890	19460	2550

CAL YR 1986 TOTAL 37628 MEAN 103 MAX 3550 MIN 20 AC-FT 74640
WTR YR 1987 TOTAL 38530 MEAN 106 MAX 3040 MIN 22 AC-FT 76420

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 1986 TO SEPTEMBER 1987

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 07...	1000	62	430	7.90	13.0	8.7	52	3100	5600
NOV 05...	0950	39	612	8.07	6.0	11.0	25	K250	3100
DEC 02...	1245	34	580	8.08	2.0	13.0	18	K50	880
JAN 06...	0940	32	627	8.12	1.5	12.6	5	K49	100
FEB 03...	0850	23	596	8.25	3.0	12.3	13	K140	K110
MAR 03...	0910	22	650	8.10	4.0	11.0	14	K23	K64
31...	0950	214	378	7.14	0.0	11.5	60	K1100	60000
MAY 11...	1050	43	635	7.95	17.0	9.2	30	--	320
JUN 02...	1245	162	226	--	21.0	5.7	240	260000	360000
29...	1430	--	573	8.20	24.0	7.6	22	2100	2000
AUG 04...	0910	40	564	8.25	23.0	7.2	30	1500	2000
SEP 22...	1115	43	--	8.10	14.0	9.4	58	4500	9400

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 07...	170	0	51	11	18	0.6	30	7.3
NOV 05...	230	0	70	14	26	0.8	67	8.4
DEC 02...	230	0	70	14	28	0.8	47	9.1
JAN 06...	260	0	76	16	33	0.9	55	11
FEB 03...	260	0	76	16	28	0.8	56	10
MAR 03...	280	0	85	16	34	0.9	56	14
31...	120	0	36	7.9	14	0.6	34	7.5
MAY 11...	250	0	76	15	25	0.7	61	9.9
JUN 02...	68	0	20	4.5	8.0	0.4	7.4	<5.0
29...	250	0	75	15	29	0.8	57	9.8
AUG 04...	220	0	66	13	25	0.8	48	11
SEP 22...	150	0	43	9.4	17	0.6	31	5.5

KANSAS RIVER BASIN

06880000 LINCOLN CREEK NEAR SEWARD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDEDE (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- PHORUS, TOTAL (MG/L) AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L) AS C) (00680)
OCT 07...	414	1.60	0.090	3.7	3.8	5.4	0.480	16
NOV 05...	56	2.80	0.070	0.83	0.90	3.7	0.640	5.1
DEC 02...	13	3.00	0.080	0.07	0.15	3.2	0.300	3.9
JAN 06...	12	3.30	0.080	0.50	0.58	3.9	0.280	3.3
FEB 03...	18	0.570	0.340	0.11	0.45	1.0	0.230	4.4
MAR 03...	55	3.20	0.850	0.55	1.4	4.6	0.410	3.8
MAY 31...	476	3.00	0.590	13	14	17	0.690	8.0
MAY 11...	136	2.90	0.040	2.2	2.2	5.1	0.300	4.5
JUN 02...	2040	3.50	0.310	7.8	8.1	12	0.070	17
JUN 29...	80	3.20	0.060	1.5	1.6	4.8	0.580	3.0
AUG 04...	254	2.80	0.030	2.0	2.0	4.8	0.490	6.3
SEP 22...	372	2.60	0.280	2.0	2.3	4.9	0.890	7.4

KANSAS RIVER BASIN

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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: Nov. 8-12, Dec. 6-16, and Jan. 11-19.. 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.--34 years, 134 ft³/s, 97,080 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)
Oct. 12	1400	2120	13.56	Aug. 26	1900	4230	19.00
Mar. 25	0600	*5700	*19.35	Sept. 18	0145	1600	10.41
May 31	1800	1030	8.39				

Minimum daily discharge, 43 ft³/s Aug. 23.

DISCHARGE, 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	193	144	109	94	80	82	814	140	869	90	62	185
2	130	131	111	84	83	86	922	136	461	92	62	132
3	150	119	112	96	81	88	972	138	276	87	63	115
4	272	115	112	88	80	82	1100	146	190	80	64	192
5	221	111	95	95	78	80	1200	148	141	82	55	138
6	188	106	98	96	75	78	1070	151	125	80	62	93
7	163	105	100	94	73	76	930	155	115	91	86	80
8	131	130	102	88	70	75	814	150	110	96	86	76
9	106	150	100	89	70	73	673	141	106	114	508	81
10	89	130	98	84	70	71	552	140	119	512	615	136
11	831	110	98	88	67	70	436	135	142	440	309	127
12	2010	100	98	86	68	68	315	130	104	156	174	89
13	1620	96	98	85	68	68	289	124	108	110	132	83
14	808	107	98	80	70	71	545	122	111	90	101	78
15	545	112	98	78	70	71	585	116	109	76	88	84
16	280	107	100	76	68	74	486	112	107	69	75	591
17	195	109	103	76	67	147	337	112	104	68	64	1270
18	152	115	104	74	62	541	260	112	144	71	58	1080
19	128	116	104	74	61	668	228	110	102	91	52	547
20	114	119	108	71	65	502	209	115	109	99	50	397
21	105	117	109	74	66	334	190	162	125	105	53	284
22	101	117	106	68	66	277	177	199	109	104	60	164
23	127	118	104	63	66	2300	169	157	97	72	43	122
24	194	118	102	68	67	4610	165	136	90	59	48	103
25	512	117	102	68	68	5550	163	138	92	55	1200	89
26	640	116	102	69	69	4560	161	326	88	48	3760	81
27	518	110	104	70	71	3160	156	595	84	55	4210	76
28	427	107	102	70	77	2100	150	604	86	56	3640	78
29	277	106	101	73	---	814	146	430	89	60	2340	74
30	197	106	95	76	---	457	145	616	91	63	1540	69
31	161	---	96	77	---	562	---	801	---	64	538	---
TOTAL	11585	3464	3169	2472	1976	27795	14359	6797	4603	3335	20198	6714
MEAN	374	115	102	79.7	70.6	897	479	219	153	108	652	224
MAX	2010	150	112	96	83	5550	1200	801	869	512	4210	1270
MIN	89	96	95	63	61	68	145	110	84	48	43	69
AC-FT	22980	6870	6290	4900	3920	55130	28480	13480	9130	6610	40060	13320
CAL YR 1986	TOTAL	98760	MEAN	271	MAX	8580	MIN	40	AC-FT	195900		
WTR YR 1987	TOTAL	106467	MEAN	292	MAX	5550	MIN	43	AC-FT	211200		

KANSAS RIVER BASIN

06880500 BIG BLUE RIVER AT SEWARD, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 07...	0930	174	--	7.90	13.0	8.8	9	3500	6600
NOV 05...	0900	48	688	8.07	6.0	10.4	19	730	1300
DEC 02...	0930	116	773	8.13	1.5	12.7	15	K79	1400
JAN 06...	0900	116	745	8.14	0.0	14.7	7	73	96
FEB 03...	0750	85	714	8.26	0.5	14.0	16	K36	K160
MAR 03...	0830	84	729	8.06	3.5	13.5	14	K9	K45
MAR 31...	0855	454	412	7.35	0.0	12.2	55	K1300	76000
MAY 11...	1015	124	722	8.11	17.5	8.2	32	--	190
JUN 02...	1115	472	237	7.05	21.0	6.0	190	210000	260000
JUN 29...	1510	89	682	8.15	24.5	7.1	25	2900	2000
AUG 04...	0830	64	605	8.18	24.0	5.7	27	K1300	2600
SEP 22...	1040	167	--	8.14	15.0	8.7	61	6300	K10000

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 07...	310	0	92	19	36	0.9	130	23
NOV 05...	280	0	80	19	31	0.8	100	7.9
DEC 02...	320	0	89	23	39	1	100	9.6
JAN 06...	320	0	91	23	42	1	100	12
FEB 03...	310	0	89	22	35	0.9	120	11
MAR 03...	330	0	93	23	42	1	110	14
MAR 31...	150	0	42	10	16	0.6	50	6.0
MAY 11...	290	0	84	20	31	0.8	90	11
JUN 02...	98	0	28	6.8	13	0.6	16	6.1
JUN 29...	290	0	85	20	36	0.9	74	8.3
AUG 04...	230	0	69	15	28	0.8	64	8.8
SEP 22...	140	0	39	9.8	17	0.7	42	5.5

KANSAS RIVER BASIN

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06880500 BIG BLUE RIVER AT SEWARD, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 07...	37	1.40	0.020	0.27	0.29	1.7	0.100	4.2
NOV 05...	43	2.70	0.040	1.2	1.2	3.9	0.720	3.1
DEC 02...	11	2.30	0.050	1.4	1.4	3.7	0.400	6.0
JAN 06...	5	3.00	0.070	0.53	0.60	3.6	0.260	5.6
FEB 03...	7	2.50	0.220	0.78	1.0	3.5	0.210	8.2
MAR 03...	38	2.30	0.340	0.66	1.0	3.3	0.330	4.8
31...	104	2.90	0.530	9.0	9.5	12	0.470	12
MAY 11...	133	2.00	0.880	1.3	2.2	4.2	0.320	5.0
JUN 02...	2180	3.20	0.280	8.1	8.4	12	1.70	32
29...	154	2.50	0.090	1.5	1.6	4.1	0.300	7.0
AUG 04...	198	1.80	0.140	4.5	4.6	6.4	0.350	7.1
SEP 22...	333	1.90	0.280	2.8	3.1	5.0	0.910	9.0

KANSAS RIVER BASIN

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: Nov. 11-14, Dec. 9-14, and Jan 16-27. 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.--29 years, 187 ft³/s, 135,500 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)
Oct. 13	1630	2520	13.94	May 31	1800	1600	11.15
Mar. 25	0300	*7840	*19.51				

Minimum daily discharge, 79 ft³/s Mar. 10-13.

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	82	158	98	90	93	92	619	145	939	605	173	101
2	106	148	101	90	93	90	727	139	1180	470	177	95
3	89	139	99	89	94	89	808	141	730	368	166	92
4	97	132	95	89	93	87	1090	153	362	289	155	88
5	85	127	93	88	93	86	1230	175	278	417	154	86
6	89	124	91	88	91	85	1140	757	230	236	172	82
7	85	122	101	88	90	85	1040	1120	208	187	182	82
8	91	166	102	88	90	82	900	833	201	173	193	82
9	104	203	96	87	89	80	741	432	662	177	197	82
10	87	158	90	84	88	79	597	272	997	437	180	85
11	1330	120	94	84	88	79	480	231	840	396	157	116
12	2220	115	90	84	90	79	399	201	530	349	158	128
13	2420	110	90	90	89	79	366	173	274	295	163	146
14	2090	110	92	90	89	80	814	158	177	215	209	113
15	1070	109	92	87	89	80	862	149	113	171	211	98
16	494	107	94	84	89	81	950	143	92	169	284	95
17	319	107	92	80	88	145	637	139	83	178	436	104
18	239	105	91	85	87	478	457	139	843	190	402	134
19	196	104	91	90	88	1020	331	141	320	221	265	114
20	168	103	92	95	87	859	267	147	342	337	223	99
21	150	102	92	95	86	501	229	161	266	255	164	95
22	152	102	91	90	86	321	218	185	197	204	122	92
23	215	100	91	86	86	2490	206	171	160	183	105	86
24	379	96	91	90	86	6580	189	171	226	173	99	83
25	672	96	91	95	85	7560	175	213	196	171	130	82
26	894	97	91	100	86	6080	169	236	153	165	313	81
27	667	97	90	110	87	4320	159	372	156	180	293	81
28	414	96	90	90	91	2540	155	367	156	168	225	86
29	278	95	89	90	---	954	150	387	177	164	153	81
30	215	95	89	93	---	674	147	885	515	173	125	80
31	182	---	90	92	---	570	---	1500	---	175	112	---
TOTAL	15679	3543	2879	2781	2491	36425	16252	10436	11603	7891	6098	2869
MEAN	506	118	92.9	89.7	89.0	1175	542	337	387	255	197	95.6
MAX	2420	203	102	110	94	7560	1230	1500	1180	605	436	146
MIN	82	95	89	80	85	79	147	139	83	164	99	80
AC-FT	31100	7030	5710	5520	4940	72250	32240	20700	23010	15650	12100	5690

CAL YR 1986 TOTAL 102411 MEAN 281 MAX 9400 MIN 60 AC-FT 203100
WTR YR 1987 TOTAL 118947 MEAN 326 MAX 7560 MIN 79 AC-FT 235900

KANSAS RIVER BASIN

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06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963-70, 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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										
02...	1430	161	300	7.30	14.0	722	8.1	150	E110000	E120000
28...	1400	387	273	7.02	12.0	--	8.7	71	1000	5600
DEC										
16...	1245	96	--	8.09	3.0	743	12.9	10	K21	K120
JAN										
20...	1015	88	650	8.00	0.0	740	12.6	25	210	K65
FEB										
18...	1300	85	583	8.08	2.0	--	13.5	7	K140	K57
MAR										
18...	1140	477	575	7.55	6.5	--	9.8	130	K32000	E110000
APR										
21...	1355	237	482	8.15	13.0	733	8.2	31	350	720
MAY										
13...	0930	290	437	8.13	18.5	734	7.9	--	--	--
15...	0855	495	495	7.97	16.5	731	8.6	--	--	--
19...	1330	136	557	8.16	18.5	720	8.6	22	1100	1000
21...	0915	135	593	8.60	19.0	728	8.9	--	--	--
27...	1400	276	436	7.40	15.0	721	8.0	--	--	--
29...	1130	404	317	7.87	16.5	723	7.9	--	--	--
JUN										
03...	0945	838	125	7.25	19.5	744	6.7	--	--	--
05...	1000	288	334	7.74	20.0	744	7.3	--	--	--
08...	1045	190	514	7.57	18.5	727	10.3	--	--	--
09...	1000	733	106	6.57	18.0	728	7.0	--	--	--
10...	1100	1060	173	6.88	18.5	725	7.1	--	--	--
11...	1030	866	140	6.82	18.5	722	7.0	--	--	--
16...	1030	205	452	7.90	25.0	730	6.3	36	--	K11
18...	1030	1180	--	--	18.5	725	7.3	--	--	--
JUL										
15...	1100	171	417	8.05	25.5	735	7.7	49	290000	4600
AUG										
11...	1000	163	523	8.23	26.0	733	7.3	32	--	1400
SEP										
09...	1030	79	572	8.42	18.0	740	10.6	9	K150	860

E Estimated value.

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

KANSAS RIVER BASIN

06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD CACO3 (MG/L AS (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT										
02...	110	0	32	6.9	13	0.6	--	--	6.6	6.0
28...	72	0	21	4.8	7.2	0.4	--	--	<2.0	9.9
DEC										
16...	240	0	73	14	34	1	--	--	70	18
JAN										
20...	240	0	75	14	38	1	--	--	73	19
FEB										
18...	240	0	73	14	37	1	--	--	75	17
MAR										
18...	200	0	59	12	64	2	--	--	58	30
APR										
21...	170	0	50	9.9	20	0.7	--	--	51	11
MAY										
13...	170	17	50	9.9	22	0.8	10	149	48	13
15...	--	--	--	--	--	--	--	176	--	--
19...	210	110	66	12	24	0.7	--	100	53	11
21...	230	0	69	13	29	0.9	8.7	--	65	15
27...	--	--	--	--	--	--	--	130	--	--
29...	--	--	--	--	--	--	--	98	--	--
JUN										
03...	40	0	11	3.1	5.4	0.4	9.0	40	15	4.5
05...	--	--	--	--	--	--	--	116	--	--
08...	--	--	--	--	--	--	--	178	--	--
09...	35	0	9.6	2.7	4.7	0.4	7.8	38	15	2.9
10...	54	5	15	4.0	7.6	0.5	8.6	49	19	5.0
11...	--	--	--	--	--	--	--	36	--	--
16...	180	12	54	10	22	0.8	10	165	48	16
18...	--	--	--	--	--	--	--	62	--	--
JUL										
15...	160	9	46	9.7	22	0.8	9.5	146	47	13
AUG										
11...	210	13	63	12	27	0.9	11	194	54	15
SEP										
09...	250	26	76	14	31	0.9	8.8	222	63	15

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 CONSTITU- ENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE 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									
02...	--	--	--	--	--	--	2440	--	--
28...	--	--	--	--	--	--	254	--	--
DEC									
16...	--	--	--	--	--	--	60	--	--
JAN									
20...	--	--	--	--	--	--	60	--	--
FEB									
18...	--	--	--	--	--	--	<4	--	--
MAR									
18...	--	--	--	--	--	--	1090	--	--
APR									
21...	--	--	--	--	--	--	246	--	--
MAY									
13...	--	24	282	270	0.38	221	--	2.53	0.070
15...	--	--	--	--	--	--	--	2.46	0.040
19...	--	--	--	--	--	--	176	2.39	0.010
21...	--	31	360	--	0.49	131	--	2.29	0.010
27...	--	--	--	--	--	--	--	4.51	0.090
29...	--	--	--	--	--	--	--	3.54	0.160
JUN									
03...	--	17	114	91	0.16	258	--	2.35	0.050
05...	--	--	--	--	--	--	--	2.66	0.040
08...	--	--	--	--	--	--	--	2.97	0.030
09...	--	11	141	78	0.19	279	--	1.83	0.070
10...	--	13	131	100	0.18	374	--	2.16	0.040
11...	--	--	--	--	--	--	--	3.13	0.070
16...	--	27	298	290	0.41	165	282	2.88	0.020
18...	--	--	--	--	--	--	--	1.66	0.040
JUL									
15...	0.40	24	269	260	0.37	124	316	2.79	0.010
AUG									
11...	--	26	349	330	0.47	154	164	2.19	0.010
SEP									
09...	--	28	375	370	0.51	80	74	--	<0.010

KANSAS RIVER BASIN

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06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT									
02...	1.20	--	<0.178	--	8.6	9.8	1.10	--	--
28...	0.870	--	0.060	2.1	2.2	3.1	0.950	--	--
DEC									
16...	3.20	--	0.130	0.15	0.28	3.5	0.430	--	--
JAN									
20...	0.620	--	0.140	0.35	0.49	1.1	0.600	--	--
FEB									
18...	2.50	--	0.080	0.17	0.25	2.8	0.350	--	--
MAR									
18...	3.90	--	0.580	--	--	--	1.00	--	--
APR									
21...	2.70	--	0.250	1.2	1.4	4.1	0.650	--	--
MAY									
13...	--	2.60	--	--	2.6	--	0.990	--	0.390
15...	--	2.50	--	--	1.3	--	1.60	--	0.370
19...	--	2.40	0.100	1.0	1.1	--	0.610	--	0.350
21...	--	2.30	--	--	1.2	--	0.630	--	0.360
27...	--	4.60	--	--	3.9	--	1.40	--	0.360
29...	--	3.70	--	--	--	--	--	--	0.360
JUN									
03...	--	2.40	--	--	--	--	3.10	--	0.210
05...	--	2.70	--	--	--	--	--	--	0.250
08...	--	3.00	--	--	1.4	--	0.640	--	0.340
09...	--	1.90	--	--	3.2	--	2.90	--	0.140
10...	--	2.20	--	--	9.1	--	2.00	--	0.180
11...	--	3.20	--	--	3.8	--	1.00	--	0.240
16...	--	2.90	--	--	1.5	--	0.680	--	0.370
18...	--	1.70	--	--	4.3	--	0.790	--	0.200
JUL									
15...	--	2.80	--	--	1.0	--	0.820	--	0.390
AUG									
11...	--	2.20	0.170	1.0	1.2	--	0.770	--	0.400
SEP									
09...	1.40	1.40	0.060	1.2	1.3	2.7	0.390	--	0.280

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)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)
MAY												
13...	0930	30	4	160	<0.5	40	--	1	<5	<3	<10	10
15...	0855	--	--	--	--	--	--	--	--	--	--	--
19...	1330	--	--	--	--	--	--	--	--	--	--	--
21...	0915	<10	6	190	<0.5	50	--	<1	<5	<3	<10	7
27...	1400	--	--	--	--	--	--	--	--	--	--	--
29...	1130	--	--	--	--	--	--	--	--	--	--	--
JUN												
03...	0945	--	2	76	<0.5	20	--	3	<5	<3	20	920
05...	1000	--	--	--	--	--	--	--	--	--	--	--
08...	1045	--	--	--	--	--	--	--	--	--	--	--
09...	1000	--	2	62	0.5	20	--	1	<5	<3	10	170
10...	1100	80	2	86	0.6	20	--	2	<5	<3	<10	110
11...	1030	--	--	--	--	--	--	--	--	--	--	--
16...	1030	50	4	200	<0.5	40	--	<1	<5	<3	<10	31
18...	1030	--	--	--	--	--	--	--	--	--	--	--
JUL												
15...	1100	<10	5	170	5	50	<0.010	<1	<5	<3	14	5
AUG												
11...	1000	10	6	180	<0.5	50	--	2	<5	<3	5	9
SEP												
09...	1030	<10	11	190	<0.5	60	--	1	<5	<3	2	5

KANSAS RIVER BASIN

06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
MAY											
13...	10	27	35	0.1	<10	<10	--	<1	250	8	12
15...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
21...	<10	22	58	<0.1	<10	<10	--	<1	340	9	9
27...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
JUN											
03...	<10	8	23	0.3	<10	<10	--	<1	65	7	41
05...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
09...	<10	5	42	<0.1	10	<10	--	<1	58	<6	25
10...	10	8	5	<0.1	<10	<10	--	<1	93	<6	30
11...	--	--	--	--	--	--	--	--	--	--	--
16...	<10	16	36	<0.1	<10	<10	--	<1	280	7	3
18...	--	--	--	--	--	--	--	--	--	--	--
JUL											
15...	<5	15	19	0.2	<10	<10	3	<1	240	8	5
AUG											
11...	<5	210	19	--	<10	<10	--	<1	310	10	6
SEP											
09...	<5	16	39	0.3	<10	<10	--	<1	360	7	3

DATE	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)	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)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDED TOTAL (MG/L AS C) (00689)	CYANIDE DIS- SOLVED (MG/L AS CN) (00723)	PRO- PAZINE TOTAL (UG/L) (39024)
MAY											
13...	--	--	--	--	--	--	--	4.2	2.2	--	0.10
15...	--	--	--	--	--	--	--	5.4	>6.0	--	0.10
19...	--	--	--	--	--	--	--	11	2.9	--	<0.10
21...	--	--	--	--	--	--	--	3.7	4.1	--	<0.10
27...	--	--	--	--	--	--	--	6.3	<5.0	--	0.30
29...	--	--	--	--	--	--	--	6.3	>5.0	--	0.20
JUN											
03...	--	--	--	--	--	--	--	6.8	>10	--	--
05...	--	--	--	--	--	--	--	5.3	>5.0	--	0.20
08...	--	--	--	--	--	--	--	3.0	2.6	--	<0.10
09...	--	--	--	--	--	--	--	5.2	>5.0	--	--
10...	--	--	--	--	--	--	--	6.2	>9.8	--	0.40
11...	--	--	--	--	--	--	--	7.1	>9.8	--	0.30
16...	--	--	--	--	--	--	--	6.7	4.6	--	0.10
18...	--	--	--	--	--	--	--	6.6	>20	--	--
JUL											
15...	2	4.1	<0.4	17	0.9	13	0.9	10	5.4	<0.01	<0.10
AUG											
11...	--	--	--	--	--	--	--	1.2	0.1	--	<0.10
SEP											
09...	--	--	--	--	--	--	--	3.9	2.7	--	<0.10

KANSAS RIVER BASIN

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06880800 WEST FORK BIG BLUE RIVER NEAR DORCHESTER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	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)	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)
MAY											
13...	--	<0.1	1.0	0.1	<0.1	7.3	--	1.0	<0.10	--	--
15...	<0.10	<0.1	0.60	0.1	<0.1	4.2	0.90	0.70	<0.10	<0.1	1.0
19...	<0.10	<0.1	0.20	<0.1	<0.1	2.1	0.20	0.20	<0.10	<0.1	0.5
21...	--	<0.1	0.10	<0.1	<0.1	1.7	--	0.20	<0.10	--	--
27...	<0.10	<0.1	0.40	0.3	<0.1	16	5.00	3.7	<0.10	0.4	4.0
29...	<0.10	<0.1	0.30	0.3	<0.1	17	2.00	1.6	<0.10	0.3	2.0
JUN											
03...	--	--	--	--	--	--	--	--	--	--	--
05...	<0.10	<0.1	0.30	0.1	<0.1	11	1.00	1.2	<0.10	0.2	2.0
08...	<0.10	<0.1	0.10	<0.1	<0.1	2.4	<0.10	0.50	<0.10	<0.1	0.4
09...	--	--	--	--	--	--	--	--	--	--	--
10...	0.10	<0.1	0.20	0.1	<0.1	18	3.00	1.7	<0.10	0.3	2.0
11...	0.10	<0.1	0.40	0.2	<0.1	17	4.00	1.5	<0.10	0.4	2.0
16...	<0.10	<0.1	0.30	<0.1	<0.1	7.2	0.60	0.80	<0.10	0.1	0.9
18...	--	--	--	--	--	--	--	--	--	--	--
JUL											
15...	<0.10	<0.1	0.50	<0.1	<0.1	3.7	0.10	0.30	0.10	<0.1	0.5
AUG											
11...	<0.10	<0.1	0.10	0.3	<0.1	2.2	<0.10	0.10	0.10	<0.1	<0.1
SEP											
09...	<0.10	<0.1	<0.10	<0.1	<0.1	0.50	<0.10	0.10	<0.10	<0.1	<0.1

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. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)
MAY									
13...	0930	290	18.5	317	248	--	--	--	100
21...	0915	135	19.0	123	45	--	63	--	100
JUN									
03...	0945	838	19.5	3840	8690	70	77	90	99
09...	1000	733	18.0	8040	15900	58	68	88	99
10...	1100	1060	18.5	4420	12600	60	67	81	99
16...	1030	205	25.0	373	206	--	68	--	100
JUL									
15...	1100	171	25.5	342	158	--	71	--	99
AUG									
11...	1000	163	26.0	193	85	--	71	--	100
SEP									
09...	1030	79	18.0	60	13	--	74	--	100

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 250 ft downstream from 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 to 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.

REMARKS.--Estimated daily discharges: Oct. 1, Nov. 11-14, Dec. 11-26, and Jan. 16-25. 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.--34 years (1953-87), 404 ft³/s, 292,700 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)
Oct. 12	1000	6650	22.70	May 31	1900	3220	17.22
Mar. 25	0900	*18100	*27.84	June 2	2100	3750	18.31
Apr. 5	1600	3260	17.24	June 18	2400	4400	19.39
Apr. 15	0400	3610	18.21	Aug. 28	1200	6030	22.08

Minimum daily discharge, 150 ft³/s Dec. 24, Jan. 17.

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	480	434	280	223	213	241	1590	367	2910	868	244	753
2	396	392	295	218	217	249	2330	359	2840	787	243	483
3	536	368	295	213	220	236	2470	414	2780	653	247	414
4	371	346	284	218	220	229	2690	473	1330	528	235	367
5	459	330	267	216	219	221	3170	498	792	508	227	419
6	362	318	249	223	211	215	3140	481	619	538	242	345
7	326	317	279	221	210	209	2740	1030	526	399	302	272
8	285	429	322	220	210	209	2340	1140	500	473	350	244
9	298	443	299	213	210	202	1920	881	1200	410	363	234
10	315	526	252	212	209	196	1520	593	1870	437	629	231
11	3110	400	200	182	205	196	1210	484	1660	932	802	423
12	6490	290	220	213	205	194	997	443	1240	827	536	338
13	6130	280	210	216	206	193	872	408	799	582	487	293
14	5110	290	210	228	209	192	2120	375	595	457	413	289
15	2880	339	210	225	210	198	3350	352	522	358	427	255
16	1440	306	220	180	211	200	2230	333	469	300	394	302
17	863	298	215	150	210	313	1500	317	462	281	505	1080
18	654	289	210	160	204	1080	1060	318	2380	284	590	1260
19	532	299	210	170	200	2010	832	316	2440	288	515	1030
20	453	304	220	185	197	2170	687	323	766	323	412	581
21	399	299	220	195	203	1560	593	324	690	445	345	466
22	381	301	220	200	203	1080	542	386	565	345	274	408
23	490	303	220	190	203	6510	508	451	467	313	234	316
24	582	305	216	170	201	11300	483	404	490	282	213	270
25	1310	302	215	180	194	17600	462	390	1320	254	273	245
26	1820	286	220	189	203	15500	441	468	528	235	1670	228
27	1640	281	233	200	207	11400	426	1160	394	245	4610	216
28	1140	273	233	195	220	7980	405	1420	369	241	5890	215
29	817	261	234	206	---	5160	389	1150	559	224	5330	209
30	616	263	228	211	---	1860	380	1020	510	230	3620	199
31	497	---	223	217	---	1290	---	2960	---	245	1880	---
TOTAL	41182	9872	7409	6239	5830	90193	43397	20038	32592	13292	32502	12385
MEAN	1328	329	239	201	208	2909	1447	646	1086	429	1048	413
MAX	6490	526	322	228	220	17600	3350	2960	2910	932	5890	1260
MIN	285	261	200	150	194	192	380	316	369	224	213	199
AC-FT	81680	19580	14700	12380	11560	178900	86080	39750	64650	26360	64470	24570

CAL YR 1986 TOTAL 292630 MEAN 802 MAX 21000 MIN 130 AC-FT 580400
WTR YR 1987 TOTAL 314931 MEAN 863 MAX 17600 MIN 150 AC-FT 624700

KANSAS RIVER BASIN

277

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: Nov. 10-15, Dec. 9-21, Jan. 10-12, and Jan. 15-27. Records good except for periods of estimated record, which are poor. Many diversions above station for irrigation.

AVERAGE DISCHARGE.--28 years, 99.5 ft³/s, 72,090 acre-ft/yr; median of yearly mean discharges, 74.6 ft³/s, 54,000 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)
Oct. 11	1600	5470	16.76	June 3	0800	2100	13.75
Oct. 25	1530	1150	11.59	June 11	0700	1580	12.69
Mar. 25	0330	*8260	*17.90	June 19	1100	1990	13.61
Apr. 6	0830	1320	12.04	June 29	0830	1330	12.04
Apr. 16	1100	3060	14.85	July 1	1630	2720	14.49
May 27	1900	1260	11.74	July 8	1300	1020	10.59

Minimum daily discharge, 21 ft³/s Jan. 24.

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	147	76	36	31	32	36	488	63	187	2350	39	29
2	258	72	39	41	33	37	770	62	1180	1120	40	26
3	447	70	42	34	32	35	734	61	1960	263	38	25
4	418	63	40	36	32	33	935	223	642	167	36	27
5	278	57	31	35	33	31	1180	271	236	150	35	25
6	179	54	40	35	32	30	1310	494	144	114	35	22
7	99	63	75	34	32	29	1050	343	108	101	40	22
8	68	155	91	35	32	28	657	178	87	572	47	22
9	54	88	60	34	32	27	480	109	229	494	45	26
10	61	75	40	22	31	27	352	85	855	393	53	23
11	2970	60	40	25	31	25	261	75	1180	288	48	57
12	4460	45	37	35	31	25	200	69	268	162	40	85
13	3730	30	34	35	31	25	170	66	178	100	36	63
14	2890	35	36	34	31	26	971	63	130	79	39	48
15	1260	40	38	30	31	25	2240	60	103	70	82	79
16	289	45	39	27	30	26	2960	57	89	62	98	117
17	189	44	38	23	29	108	1880	56	80	59	188	50
18	143	42	35	24	28	407	414	57	779	56	109	96
19	118	41	37	24	30	623	234	59	1410	55	71	77
20	105	40	39	26	30	718	172	59	197	59	113	47
21	96	39	40	26	30	450	138	58	113	67	102	33
22	93	39	40	26	30	195	120	58	90	62	50	28
23	266	39	38	23	29	4050	108	69	82	54	37	26
24	326	38	38	21	29	6980	99	73	235	50	30	25
25	836	36	39	23	29	7910	92	91	113	50	28	24
26	708	36	39	25	29	5490	85	208	77	49	109	23
27	374	35	39	27	29	3080	78	1010	62	47	133	22
28	227	35	39	30	31	1100	72	937	60	45	79	25
29	146	34	38	31	---	406	69	537	1050	44	56	75
30	107	35	39	32	---	236	66	301	1210	42	43	70
31	88	---	38	33	---	278	---	239	---	41	34	---
TOTAL	21430	1561	1294	917	859	32496	18385	6091	13134	7265	1933	1317
MEAN	691	52.0	41.7	29.6	30.7	1048	613	196	438	234	62.4	43.9
MAX	4460	155	91	41	33	7910	2960	1010	1960	2350	188	117
MIN	54	30	31	21	28	25	66	56	60	41	28	22
AC-FT	42510	3100	2570	1820	1700	64460	36470	12080	26050	14410	3830	2610

CAL YR 1986 TOTAL 71645 MEAN 196 MAX 6290 MIN 6.4 AC-FT 142100
WTR YR 1987 TOTAL 106682 MEAN 292 MAX 7910 MIN 21 AC-FT 211600

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 1986 TO SEPTEMBER 1987

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 02...	1315	202	240	7.40	15.0	7.9	120	K27000	K24000
28...	1210	227	261	7.07	11.5	8.6	73	2300	9100
DEC 16...	1145	39	748	8.01	0.5	15.0	34	K93	540
JAN 20...	1200	26	758	7.78	0.0	13.0	8	K79	K26
FEB 18...	1415	30	657	8.09	1.5	15.0	10	K10	K8
MAR 18...	1310	337	353	7.45	6.5	11.2	92	25000	K140000
APR 21...	1215	137	479	8.01	16.0	9.5	34	700	1200
MAY 19...	1125	58	612	8.10	21.0	11.5	22	500	1000
JUN 16...	1415	88	455	7.82	28.0	6.1	52	--	4800
JUL 16...	1045	55	--	7.78	22.5	6.7	33	3800	K970
AUG 11...	1400	46	534	8.10	24.5	7.3	30	--	390
SEP 09...	1330	22	637	8.30	18.0	9.2	23	200	400

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 02...	76	0	22	5.0	12	0.6	2.8	7.8
28...	73	0	21	5.0	9.3	0.5	2.8	11
DEC 16...	260	0	76	17	48	1	98	34
JAN 20...	270	0	80	17	57	2	93	40
FEB 18...	250	0	72	16	46	1	75	38
MAR 18...	130	0	39	7.9	17	0.7	41	8.5
APR 21...	160	0	46	10	24	0.9	<2.0	17
MAY 19...	200	0	60	12	33	1	52	27
JUN 16...	170	0	50	10	30	1	45	23
JUL 16...	170	0	51	11	32	1	42	25
AUG 11...	190	0	56	11	35	1	71	30
SEP 09...	220	0	69	12	53	2	60	63

KANSAS RIVER BASIN

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06881200 TURKEY CREEK NEAR WILBER, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT								
02...	1030	0.570	0.040	5.4	5.4	6.0	0.540	18
28...	290	0.400	0.020	2.8	2.8	3.2	0.080	13
DEC								
16...	13	1.30	0.110	0.58	0.69	2.0	0.310	4.9
JAN								
20...	<4	0.400	0.060	0.29	0.35	0.75	0.280	4.7
FEB								
18...	4	0.170	0.060	0.44	0.50	0.67	0.170	4.2
MAR								
18...	1480	2.20	0.430	14	14	16	0.030	14
APR								
21...	299	1.20	0.290	1.2	1.5	2.7	0.370	6.7
MAY								
19...	109	0.900	0.110	2.0	2.1	3.0	0.360	4.6
JUN								
16...	400	2.20	0.030	1.6	1.6	3.8	0.110	9.2
JUL								
16...	184	2.10	0.520	6.2	6.7	8.8	0.630	9.4
AUG								
11...	71	0.550	0.080	1.5	1.6	2.2	0.520	6.0
SEP								
09...	110	0.450	0.040	0.96	1.0	1.5	0.610	7.6

KANSAS RIVER BASIN

06881500 BIG BLUE RIVER AT BEATRICE, NE

LOCATION.--Lat 40°15'22", long 96°44'47" in SW1/4NW1/4 sec.3, T.3 N., R.6 E., Gage County, Hydrologic Unit 10270202, at left upstream corner of 6th Street and U.S. Highway 77 bridge in Beatrice, 0.7 mi south of the intersection of U.S. Highways 136 and 77, 1.2 mi downstream from Indian Creek, and 3.1 mi upstream from Bear Creek.

DRAINAGE AREA.--3,900 mi², of which about 3,830 mi² contributes directly to surface runoff.

PERIOD OF RECORD.--October 1910 to September 1915, (monthly discharge only for some periods, published in WSP 1310), 1954, 1960-65, 1967-69, 1971-74 (discharge measurements only), October 1974 to current year. Gage-height records collected 1905-10, 1916-74, are in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,219.90 ft above National Geodetic Vertical Datum of 1929. October 1910 to September 1915, non-recording gage at present site and datum.

REMARKS.--Estimated daily discharges: Nov. 11-14, Dec. 10-14, and Jan. 11, 12, 15-29. Records good except for periods of estimated record, which are poor.

AVERAGE DISCHARGE.--18 years (water years 1911-15, 1975-87), 804 ft³/s, 582,500 acre-ft/yr; median of yearly mean discharges, 742 ft³/s, 538,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,100 ft³/s June 14, 1984, gage height, 31.27 ft; minimum daily, 20 ft³/s Aug. 15, 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1902, 55,100 ft³/s June 14, 1984; maximum gage height, 33.02 ft Oct. 12, 1973, from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 13	0230	21200	25.26	May 27	0800	7720	14.58
Oct. 26	1830	4090	10.12	June 3	2230	6150	12.77
Mar. 20	0700	4300	10.33	June 11	1800	4860	11.25
Mar. 26	0800	*32400	*27.44	June 20	0030	5290	11.77
Apr. 3	0130	5810	12.26	Aug. 30	0545	5300	11.70
Apr. 15	2230	10400	17.49				

Minimum daily discharge, 275 ft³/s Aug. 6.

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	5990	1070	458	455	367	372	4260	649	3360	2480	293	2250
2	2490	1020	483	437	370	410	5390	644	3600	2860	292	1110
3	2300	1120	506	427	371	420	5510	639	5630	1930	292	746
4	2680	1080	513	425	367	420	4810	679	5240	1560	288	626
5	1890	917	492	427	367	401	4920	990	2320	1140	288	538
6	1370	826	471	434	367	381	5310	1180	1350	905	275	527
7	1020	797	671	442	365	367	5270	1180	1010	914	346	504
8	803	1360	1290	442	362	353	4490	1490	829	935	754	410
9	678	1650	1090	440	361	348	3650	1510	1860	1620	929	387
10	630	1070	600	440	358	338	2970	1250	3240	1410	585	459
11	7870	840	520	370	357	331	2410	902	4360	1150	634	488
12	18100	720	500	390	353	327	1980	734	3320	1420	964	568
13	19800	640	490	405	349	323	1690	656	1930	1300	781	582
14	14100	580	500	436	344	319	5030	635	1280	968	765	501
15	10600	581	488	390	340	318	9510	628	921	791	1810	624
16	6320	625	490	360	340	320	9250	591	769	647	1320	1420
17	2780	617	500	330	340	351	6630	562	666	545	770	1280
18	1920	591	525	300	335	596	4130	546	1800	514	1150	1320
19	1510	567	504	320	322	2890	2130	547	4370	493	1240	1660
20	1250	558	488	350	323	4090	1590	548	4010	484	1670	1410
21	1080	550	484	380	323	3760	1320	542	1410	450	786	898
22	986	535	473	400	323	2620	1150	532	1040	572	660	698
23	960	521	472	350	322	7850	990	524	969	532	664	620
24	1380	497	464	310	318	21400	962	621	855	461	489	519
25	1670	490	464	320	318	30000	951	642	1020	413	388	445
26	3620	482	463	340	318	31200	908	1260	1550	378	384	405
27	3410	473	461	350	320	24500	854	6620	867	353	1830	380
28	2670	470	466	360	338	19000	770	5680	607	323	3980	369
29	2000	469	461	370	---	13100	734	3810	2350	322	4920	365
30	1550	458	462	383	---	8300	664	2310	2970	303	5270	374
31	1260	---	460	370	---	3740	---	2030	---	298	4200	---
TOTAL	124687	22174	16709	11953	9638	179145	100233	41131	65503	28471	39017	22483
MEAN	4022	739	539	386	344	5779	3341	1327	2183	918	1259	749
MAX	19800	1650	1290	455	371	31200	9510	6620	5630	2860	5270	2250
MIN	630	458	458	300	318	318	664	524	607	298	275	365
AC-FT	247300	43980	33140	23710	19120	355300	198800	81580	129900	56470	77390	44600
CAL YR 1986	TOTAL 531051	MEAN 1455	MAX 22400	MIN 150	AC-FT 1053000							
WTR YR 1987	TOTAL 661144	MEAN 1811	MAX 31200	MIN 275	AC-FT 1311000							

KANSAS RIVER BASIN

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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: Nov. 10-13, Dec. 10-13, Jan. 16-27, Mar. 24, Mar. 30 to Apr. 6, and Sept. 7. 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.--55 years, 855 ft³/s, 619,400 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)
Oct. 13	1845	22300	25.39	Apr. 15	0015	18800	21.87
Mar. 25	1415	*37500	*28.11	June 29	1515	10300	16.79

Minimum daily discharge, 35 ft³/s Jan. 25.

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	4010	1070	530	538	524	562	6450	911	3540	4010	335	3060
2	4450	983	562	495	430	597	6960	884	4200	3320	339	1520
3	2760	1080	605	493	423	552	6550	888	5340	2790	357	924
4	3530	1080	616	485	432	514	5620	944	5940	2390	348	756
5	2710	932	580	482	444	471	5410	1050	3550	1770	339	808
6	1700	818	558	496	440	447	5610	1420	1810	1310	338	389
7	1280	765	790	488	438	415	5680	1380	1310	1180	360	566
8	962	1370	2060	475	439	389	5240	1600	1050	1180	864	508
9	771	2000	1920	477	434	370	4460	1850	1430	1960	1200	457
10	653	1200	900	480	429	374	3760	1590	4210	2090	826	633
11	9510	1000	720	434	425	364	2990	1230	4570	1600	662	759
12	20100	800	640	468	423	356	2430	986	4510	1380	1060	637
13	21500	700	620	446	419	355	2080	868	2360	1590	962	724
14	19800	679	646	473	421	355	9640	803	1710	1200	864	724
15	12200	663	641	484	422	354	15900	743	1200	975	4290	1210
16	7960	695	616	430	421	358	12400	694	980	805	2710	3440
17	3990	728	721	400	415	485	8440	663	864	673	1490	3100
18	2470	722	794	360	401	5290	5850	644	3760	605	2200	1570
19	1790	709	712	400	397	7390	3330	645	6360	571	2070	1870
20	1370	619	603	430	395	5730	2300	677	5950	552	2970	1710
21	1170	633	627	480	382	4990	2010	697	3220	522	1440	1160
22	1060	628	589	480	379	3930	1660	664	1840	571	1730	861
23	1030	612	571	450	378	7830	1420	617	2290	614	1590	743
24	1230	574	566	300	380	20900	1310	700	1870	535	1030	648
25	1540	587	559	35	386	35300	1230	791	1690	477	743	544
26	3240	566	555	300	382	35300	790	1390	1910	433	697	472
27	3950	544	541	400	392	32500	994	7620	1490	407	1280	428
28	3030	537	555	405	440	27100	1020	7180	980	378	3810	404
29	2240	533	525	432	---	21000	988	5400	7210	369	4830	407
30	1660	523	527	440	---	13500	945	3490	4990	363	5290	404
31	1300	---	912	506	---	5260	---	2410	---	349	4900	---
TOTAL	144966	24350	22361	13462	11691	233338	133467	51429	92134	36969	51924	31436
MEAN	4676	812	721	434	418	7527	4449	1659	3071	1193	1675	1048
MAX	21500	2000	2060	538	524	35300	15900	7620	7210	4010	5290	3440
MIN	653	523	525	35	378	354	790	617	864	349	335	389
AC-FT	287500	48300	44350	26700	23190	462800	264700	102000	182700	73330	103000	62350
CAL YR 1986	TOTAL 666250	MEAN 1825	MAX 26700	MIN 215	AC-FT 1322000							
WTR YR 1987	TOTAL 847527	MEAN 2322	MAX 35300	MIN 35	AC-FT 1681000							

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 1986 TO SEPTEMBER 1987

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 (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L) (00340)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)
OCT										
01...	1330	8590	190	7.30	17.0	740	--	8.8	110	35000
NOV										
05...	1200	946	583	7.73	7.5	732	55	12.1	52	2800
DEC										
17...	1305	704	776	8.10	0.5	745	--	14.3	7	340
JAN										
20...	1230	429	794	8.26	0.0	738	5.0	15.9	5	87
FEB										
18...	1310	407	783	8.50	4.5	735	--	14.6	16	K50
MAR										
19...	1430	6960	370	7.89	5.0	728	420	12.5	--	230000
APR										
21...	1030	1760	502	7.64	16.5	750	--	9.4	23	K380
MAY										
12...	1100	849	433	8.27	18.0	--	--	--	--	--
19...	1115	637	704	8.36	23.0	738	22	8.8	27	K190
JUN										
02...	1230	4170	245	7.59	21.0	738	--	8.1	--	--
10...	1300	3960	283	--	22.0	737	--	8.4	--	--
16...	1000	980	395	8.10	28.0	740	--	6.9	36	560
19...	1100	7500	230	7.66	22.0	737	--	7.8	--	--
JUL										
14...	1200	1160	526	8.24	23.5	735	120	8.2	36	K1200
AUG										
10...	1130	814	492	8.24	24.0	740	--	7.3	30	1300
SEP										
08...	1100	706	486	8.18	23.0	742	41	8.8	12	K43

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

DATE	STREP- TOCOCI FECAL KF AGAR (COLS. PER 100 ML) (31673)	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
OCT										
01...	86000	53	0	15	3.7	8.0	0.5	--	--	<2.0
NOV										
05...	7300	210	11	60	15	34	1	12	201	57
DEC										
17...	680	280	0	78	20	51	1	--	--	88
JAN										
20...	88	320	55	92	22	51	1	6.7	265	88
FEB										
18...	K10	290	0	82	20	49	1	--	--	110
MAR										
19...	K1200000	130	18	35	9.3	19	0.8	8.4	108	44
APR										
21...	1100	180	0	51	13	25	0.8	--	--	57
MAY										
12...	--	150	24	44	10	24	0.9	8.4	127	50
19...	290	270	36	77	18	45	1	8.5	231	77
JUN										
02...	--	82	15	23	5.9	13	0.6	8.0	67	31
10...	--	96	17	27	6.8	15	0.7	8.0	79	32
16...	740	140	22	40	9.4	23	0.9	9.2	117	44
19...	--	74	8	21	5.2	12	0.6	6.9	66	24
JUL										
14...	K400	170	13	50	11	27	0.9	10	158	65
AUG										
10...	1400	150	5	45	10	35	1	9.2	149	45
SEP										
08...	400	170	7	50	12	32	1	10	168	55

KANSAS RIVER BASIN

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06882000 BIG BLUE RIVER AT BARNESTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE 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 01...	<5.0	--	--	--	--	--	--	940	--	--
NOV 05...	25	0.30	24	348	350	0.47	889	92	1.88	0.020
DEC 17...	30	--	--	--	--	--	--	19	--	--
JAN 20...	37	0.30	25	513	480	0.70	594	20	2.88	0.020
FEB 18...	35	--	--	--	--	--	--	11	--	--
MAR 19...	10	0.30	10	213	200	0.29	4000	--	2.65	0.050
APR 21...	16	--	--	--	--	--	--	190	--	--
MAY 12...	18	--	16	254	250	0.35	582	--	2.65	0.050
19...	31	0.10	22	443	420	0.60	762	57	2.38	0.020
JUN 02...	7.3	--	13	172	140	0.23	1940	--	3.42	0.080
10...	14	--	13	193	160	0.26	2060	--	3.43	0.070
16...	20	--	18	250	240	0.34	661	68	3.19	0.010
19...	8.7	--	11	159	130	0.22	3220	--	--	--
JUL 14...	16	0.40	19	305	290	0.41	955	184	3.19	0.010
AUG 10...	12	--	19	299	270	0.41	657	184	2.33	0.070
SEP 08...	25	0.30	9.9	318	300	0.43	606	55	2.57	0.030

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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 01...	1.10	--	0.060	4.5	4.6	5.7	0.720	--	--
NOV 05...	1.70	1.90	0.110	0.99	1.1	2.8	0.690	0.460	0.360
DEC 17...	3.00	--	0.190	1.0	1.2	4.2	0.430	--	--
JAN 20...	2.80	2.90	0.080	0.72	0.80	3.6	0.500	0.370	0.340
FEB 18...	2.30	--	0.120	1.1	1.2	3.5	0.120	--	--
MAR 19...	--	2.70	0.530	3.7	4.2	--	3.50	0.780	0.320
APR 21...	2.50	--	0.330	1.1	1.4	3.9	0.340	--	--
MAY 12...	--	2.70	--	--	1.5	--	0.740	--	0.360
19...	--	2.40	0.040	1.9	1.9	--	0.540	0.410	0.380
JUN 02...	--	3.50	--	--	13	--	2.60	--	0.210
10...	--	3.50	--	--	10	--	2.00	--	0.330
16...	--	3.20	--	--	0.80	--	0.540	--	0.430
19...	--	--	--	--	--	--	--	--	--
JUL 14...	--	3.20	0.130	1.6	1.7	--	0.620	0.440	0.340
AUG 10...	--	2.40	0.270	1.3	1.6	--	0.720	--	0.380
SEP 08...	--	2.60	0.030	0.77	0.80	--	0.480	0.470	0.390

KANSAS RIVER BASIN

06882000 BIG BLUE RIVER AT BARNESTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	
NOV 05...	1200	50	10	4	160	<0.5	--	--	<20	4	<10	
FEB 18...	1310	--	11	--	--	--	--	--	<15	--	<10	
MAR 19...	1430	160	--	2	97	<0.5	--	--	--	4	--	
MAY 12...	1100	<10	--	4	120	1	40	--	--	<1	--	
MAY 19...	1115	<10	--	14	180	<0.5	--	--	<15	2	<10	
JUN 02...	1230	360	--	2	92	<0.5	20	--	--	<1	--	
JUN 10...	1300	100	--	2	110	0.8	30	--	--	1	--	
JUN 16...	1000	<10	--	4	150	<0.5	40	--	--	<1	--	
JUN 19...	1100	<10	--	3	88	<0.5	40	--	--	1	--	
JUL 14...	1200	20	--	5	160	<0.5	--	<0.010	--	<1	--	
AUG 10...	1130	--	--	6	130	<0.5	--	--	<15	<1	<10	
SEP 08...	1100	<10	--	11	150	<0.5	60	--	--	2	--	
DATE		CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	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)
NOV 05...	<1	<3	70	7	69	<20	<5	18	60	--	0.1	
FEB 18...	--	--	<10	--	--	<20	--	--	--	<0.10	--	
MAR 19...	<1	<3	--	10	110	--	<5	15	150	--	0.2	
MAY 12...	<5	<3	--	<10	6	--	<10	14	9	--	<0.1	
MAY 19...	<1	<3	30	3	11	<20	<5	50	14	<0.10	<0.1	
JUN 02...	<5	<3	--	<10	170	--	<10	10	3	--	0.1	
JUN 10...	<5	<3	--	<10	16	--	10	10	1	--	0.3	
JUN 16...	<5	<3	--	<10	7	--	<10	11	8	--	0.5	
JUN 19...	<5	<3	--	10	16	--	10	12	3	--	0.1	
JUL 14...	<1	<3	--	6	16	--	<5	17	3	--	0.5	
AUG 10...	<5	<3	20	4	5	70	<5	8	16	--	0.4	
SEP 08...	<5	<3	--	4	5	--	<5	10	24	--	0.2	
DATE		MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	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)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)
NOV 05...	<10	6	<2	2	<1	<1	320	<6	50	28	--	
FEB 18...	--	--	9	--	<1	--	--	--	<30	--	--	
MAR 19...	<10	17	--	1	--	<1	190	<6	--	25	--	
MAY 12...	<10	<10	--	--	--	<1	240	6	--	10	--	
MAY 19...	<10	3	--	4	<1	<1	410	8	30	10	--	
JUN 02...	<10	<10	--	--	--	<1	130	<6	--	7	--	
JUN 10...	<10	<10	--	--	--	<1	160	6	--	4	--	
JUN 16...	<10	<10	--	--	--	<1	220	6	--	<3	--	
JUN 19...	<10	<10	--	--	--	<1	120	7	--	23	--	
JUL 14...	<10	3	--	3	--	<1	260	9	--	15	2	
AUG 10...	<10	<10	<3	--	<1	<1	250	10	80	7	--	
SEP 08...	<10	<10	--	--	--	<1	270	8	--	4	--	

KANSAS RIVER BASIN

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06882000 BIG BLUE RIVER AT BARNESTON, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS- PENDEDED TOTAL (MG/L AS C) (00689)	CYANIDE DIS- SOLVED (MG/L AS CN) (00723)
NOV 05...	--	--	--	--	--	--	14	--	--	--
FEB 18...	--	--	--	--	--	--	4.4	--	--	--
MAR 19...	--	--	--	--	--	--	--	--	--	--
MAY 12...	--	--	--	--	--	--	--	7.1	--	--
MAY 19...	--	--	--	--	--	--	--	5.8	4.9	--
JUN 02...	--	--	--	--	--	--	--	6.9	>5.0	--
JUN 10...	--	--	--	--	--	--	--	8.3	>20	--
JUN 16...	--	--	--	--	--	--	--	6.1	--	--
JUN 19...	--	--	--	--	--	--	--	7.8	>20	--
JUL 14...	6.8	0.5	13	3.1	9.9	2.8	--	6.6	3.3	<0.01
AUG 10...	--	--	--	--	--	--	--	7.2	3.7	--
SEP 08...	--	--	--	--	--	--	--	6.0	1.3	--

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS) (00061)	TEMPER- ATURE WATER (DEG C) (00010)	SEDI- MENT, SUS- PENDEDED (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
NOV 05...	1200	946	7.5	127	324	86	94
JAN 20...	1230	429	0.0	89	103	--	--
MAR 19...	1430	6960	5.0	2530	47500	42	46
MAY 12...	1100	849	18.0	158	362	--	--
MAY 19...	1115	637	23.0	61	105	--	--
JUN 02...	1230	4170	21.0	2360	26600	69	80
JUN 10...	1300	3960	22.0	3300	35300	58	66
JUN 16...	1000	980	28.0	214	566	--	93
JUN 19...	1100	7500	22.0	4400	89100	47	54
JUL 14...	1200	1160	23.5	233	730	--	--
AUG 10...	1130	814	24.0	225	495	--	92
SEP 08...	1100	706	23.0	77	147	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70339)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)
NOV 05...	97	96	--	--	--	--	--
JAN 20...	--	--	--	--	--	--	--
MAR 19...	52	64	97	98	98	100	--
MAY 12...	--	--	--	--	--	--	--
MAY 19...	--	--	--	--	--	--	--
JUN 02...	--	93	--	--	--	--	99
JUN 10...	--	86	--	--	--	--	100
JUN 16...	--	--	--	--	--	--	100
JUN 19...	--	75	--	--	--	--	98
JUL 14...	--	--	--	--	--	--	99
AUG 10...	--	--	--	--	--	--	100
SEP 08...	--	--	--	--	--	--	100

KANSAS RIVER BASIN

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: Nov. 11-15, Dec. 9-14, Jan. 11-12, Jan. 15-19, 22-25, and Mar. 28-31. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--32 years (water years 1954-72, 1975-87), 150 ft³/s, 108,700 acre-ft/yr; median of yearly mean discharges, 130 ft³/s, 94,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,100 ft³/s Aug. 31, 1969, gage height, 18.57 ft; minimum daily, 6.3 ft³/s Sept. 7, 1978.

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)
Oct. 11	2400	1540	5.67	May 5	0230	3060	7.68
Mar. 24	0400	*5710	*10.12	June 29	0330	3960	8.62
Apr. 14	1800	2240	6.65				

Minimum daily discharge, 43 ft³/s Sept. 5.

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	87	85	72	70	72	72	265	110	113	496	95	44
2	87	85	72	69	72	72	336	109	109	232	94	44
3	85	83	69	70	71	71	379	490	102	149	87	44
4	83	80	69	70	69	70	492	1310	99	121	74	44
5	78	78	69	71	68	72	624	2070	99	112	65	43
6	73	77	70	72	69	72	766	1070	97	108	66	47
7	73	77	78	70	69	70	725	654	96	121	98	46
8	72	74	76	69	69	70	675	409	96	146	115	48
9	71	71	72	71	68	69	588	289	464	190	93	50
10	69	69	70	69	70	68	427	242	339	270	76	50
11	667	68	70	66	71	70	334	212	272	178	61	49
12	1400	70	70	70	71	71	271	192	261	123	51	50
13	834	72	69	73	71	71	269	182	263	110	59	47
14	411	72	72	74	71	75	1740	184	204	95	56	48
15	291	74	70	71	71	86	1460	170	161	104	140	47
16	229	70	69	66	70	90	738	157	126	119	243	78
17	180	70	69	64	68	611	449	149	117	130	148	112
18	154	69	69	66	67	832	326	150	115	174	82	69
19	133	68	70	68	67	745	263	143	102	713	70	53
20	121	68	69	69	67	418	228	155	87	668	61	52
21	111	68	69	71	68	291	204	141	78	396	55	49
22	112	69	69	72	68	221	183	150	70	221	55	48
23	112	67	70	70	67	2490	170	154	64	151	56	49
24	160	67	70	70	68	4540	160	158	63	127	51	49
25	189	69	70	68	69	1580	151	140	66	125	62	48
26	144	68	69	70	70	924	143	130	60	115	58	48
27	116	67	70	68	74	623	133	126	62	112	52	50
28	105	68	70	69	76	450	120	123	139	109	52	51
29	96	68	70	72	---	320	117	118	1790	97	51	47
30	91	69	69	70	---	300	113	115	621	94	45	47
31	89	---	70	70	---	280	---	113	---	96	44	---
TOTAL	6523	2160	2180	2158	1951	15794	12849	9915	6335	6002	2415	1551
MEAN	210	72.0	70.3	69.6	69.7	509	428	320	211	194	77.9	51.7
MAX	1400	85	78	74	76	4540	1740	2070	1790	713	243	112
MIN	69	67	69	64	67	68	113	109	60	94	44	43
AC-FT	12940	4280	4320	4280	3870	31330	25490	19670	12570	11900	4790	3080
CAL YR 1986	TOTAL 47679	MEAN 131	MAX 3330	MIN 50	AC-FT 94570							
WTR YR 1987	TOTAL 69833	MEAN 191	MAX 4540	MIN 43	AC-FT 138500							

KANSAS RIVER BASIN

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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 1986 TO SEPTEMBER 1987

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									
08...	1000	72	440	7.50	14.5	9.3	16	200	300
NOV									
06...	1110	79	440	8.11	10.5	11.5	11	K10	K190
DEC									
03...	1000	69	--	8.11	2.0	19.1	7	K31	K71
JAN									
28...	0915	68	515	8.18	0.5	13.9	5	K49	K65
FEB									
25...	0930	70	448	8.12	6.0	12.3	7	K47	K47
MAR									
25...	1400	1820	128	7.50	1.0	14.1	110	190000	K2600000
APR									
30...	0845	115	497	8.02	14.5	9.2	41	1000	200
MAY									
27...	1100	125	497	8.03	17.5	8.7	30	1000	580
JUN									
24...	0845	65	458	7.78	22.0	8.3	8	--	1100
JUL									
21...	1640	360	155	7.95	30.0	7.0	65	2500	5900
AUG									
19...	0800	71	348	7.84	20.5	7.9	34	1200	1800
SEP									
16...	0905	--	458	7.38	17.0	8.4	17	1300	1500

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT								
08...	200	0	63	10	17	0.5	51	8.9
NOV								
06...	200	0	65	10	17	0.5	51	11
DEC								
03...	200	0	62	9.8	18	0.6	42	11
JAN								
28...	190	0	60	10	16	0.5	38	12
FEB								
25...	220	0	71	10	19	0.6	48	13
MAR								
25...	43	0	13	2.5	3.2	0.2	9.4	6.5
APR								
30...	220	0	67	12	18	0.6	43	16
MAY								
27...	180	0	57	9.1	12	0.4	31	13
JUN								
24...	200	0	63	10	19	0.6	40	13
JUL								
21...	58	0	17	3.8	4.4	0.3	<2.0	<5.0
AUG								
19...	140	0	43	7.4	11	0.4	26	9.6
SEP								
16...	200	0	65	9.5	16	0.5	36	12

KANSAS RIVER BASIN

06883000 LITTLE BLUE RIVER NEAR DEWEESE, NE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SOLIDS, RESIDUE 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- PHORUS, TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 08...	16	0.940	<0.020	--	0.28	1.2	0.200	5.8
NOV 06...	17	1.10	0.030	0.27	0.30	1.4	0.340	24
DEC 03...	7	0.980	0.030	0.32	0.35	1.3	0.290	1.8
JAN 28...	<4	1.70	0.050	0.15	0.20	1.9	0.200	1.9
FEB 25...	10	1.30	0.140	0.31	0.45	1.7	0.200	1.8
MAR 25...	1150	0.770	0.400	9.6	10	11	0.500	15
APR 30...	15	0.830	0.080	0.14	0.22	1.0	0.150	2.7
MAY 27...	148	2.00	0.090	2.0	2.1	4.1	0.220	4.5
JUN 24...	34	0.440	0.040	0.26	0.30	0.74	0.290	4.0
JUL 21...	577	1.70	<0.020	--	7.0	8.7	0.480	7.2
AUG 19...	144	0.860	0.070	2.2	2.3	3.2	0.170	9.7
SEP 16...	30	0.910	0.060	0.45	0.51	1.4	0.320	2.2

KANSAS RIVER BASIN

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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: Nov. 11-17, Dec. 9-15, Jan. 10-12, and Jan. 16-24. Records good except for periods of estimated record, which are poor. Natural flow affected by irrigation development above station.

AVERAGE DISCHARGE.--26 years (water years 1960-72, 1975-87), 255 ft³/s, 185,000 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)
Oct. 12	0300	13400	a17.96	May 5	2400	7340	15.43
Mar. 24	1200	*17100	*19.09	June 29	2400	2940	11.67
Apr. 15	0400	9360	16.48				

a From floodmark.

Minimum daily discharge, 62 ft³/s Jan. 18.

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	856	204	143	126	127	129	837	248	288	910	109	84
2	402	225	148	125	120	124	1200	243	474	731	100	75
3	264	225	130	124	117	120	1470	719	355	460	98	77
4	273	231	135	124	114	121	1320	1820	258	329	95	75
5	208	199	141	124	113	119	1310	6820	223	266	88	73
6	164	191	142	123	113	117	1300	4080	208	232	86	72
7	142	162	178	122	113	116	1300	1470	200	215	115	72
8	121	225	205	119	112	112	1220	897	197	236	289	70
9	103	294	180	119	112	111	1110	620	352	295	230	251
10	92	194	130	108	111	110	963	470	610	265	174	230
11	6580	88	100	100	112	108	776	392	603	310	139	117
12	9030	96	108	116	112	110	662	345	520	294	140	106
13	2700	92	104	124	114	113	594	313	431	239	128	88
14	1310	104	120	119	113	113	4730	295	405	207	130	84
15	650	120	140	116	113	110	7230	281	352	179	287	84
16	482	180	153	86	112	120	2360	273	304	169	125	107
17	340	195	147	70	111	493	1160	253	256	169	176	107
18	259	171	142	62	110	1790	765	253	235	184	236	119
19	209	155	140	66	111	1350	592	271	273	199	176	126
20	176	152	136	74	111	938	477	292	227	488	129	115
21	152	160	135	82	110	633	411	312	201	711	109	99
22	234	157	134	94	111	489	370	368	184	493	256	97
23	296	152	134	102	111	6650	345	302	172	343	223	71
24	270	141	132	110	112	15700	326	288	164	231	179	71
25	343	130	133	119	111	9590	308	310	160	179	136	73
26	349	117	131	121	113	2830	293	316	158	167	130	73
27	313	113	131	128	121	1640	277	448	150	155	172	81
28	256	132	131	132	128	1170	267	454	150	129	137	100
29	215	141	130	133	---	747	263	347	787	126	106	107
30	212	136	128	130	---	524	254	302	1780	121	98	97
31	209	---	127	133	---	636	---	289	---	106	90	---
TOTAL	27210	4882	4268	3431	3188	47033	34490	24091	10677	9138	4686	3001
MEAN	878	163	138	111	114	1517	1150	777	356	295	151	100
MAX	9030	294	205	133	128	15700	7230	6820	1780	910	289	251
MIN	92	88	100	62	110	108	254	243	150	106	86	70
AC-FT	53970	9680	8470	6810	6320	93290	68410	47780	21180	18130	9290	5950
CAL YR 1986	TOTAL 99720	MEAN 273	MAX 9030	MIN 83	AC-FT 197800							
WTR YR 1987	TOTAL 176095	MEAN 482	MAX 15700	MIN 62	AC-FT 349300							

KANSAS RIVER BASIN

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.--No estimated daily discharges. Records good. Natural flow of stream affected by ground-water withdrawals and return flow from irrigated areas.

AVERAGE DISCHARGE.--8 years, 126 ft³/s, 91,290 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)
Oct. 11	1530	6480	14.24	May 6	1330	1030	6.97
Mar. 18	1100	880	6.64	June 2	0330	980	6.87
Mar. 24	0130	*6600	*14.30	June 29	0800	1560	8.02
Apr. 5	0030	813	6.48	Sept. 9	2100	1090	7.10
Oct. 14	1400	3590	11.14				

Minimum daily discharge, 25 ft³/s Jan. 16, 17.

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	87	46	31	32	29	31	156	46	67	170	69	28
2	54	71	32	29	29	29	411	43	524	114	67	27
3	142	159	31	31	28	28	402	44	147	82	67	27
4	224	90	30	28	27	28	585	47	77	67	58	27
5	131	63	29	28	28	28	687	508	65	60	56	27
6	73	53	42	29	28	28	611	986	60	56	64	26
7	57	47	59	29	28	27	513	626	56	57	123	26
8	49	149	54	27	28	28	361	374	54	220	250	26
9	44	116	56	28	27	28	248	223	60	376	111	222
10	41	70	39	27	28	27	192	123	105	142	83	340
11	4170	52	39	26	28	28	154	92	88	96	63	99
12	3030	50	40	27	28	29	121	77	68	77	62	55
13	1260	45	40	27	30	29	111	69	58	66	49	41
14	597	43	41	27	30	29	2250	66	54	61	55	36
15	229	42	41	27	28	30	2510	62	52	64	69	49
16	129	40	39	25	27	30	963	59	49	87	86	73
17	80	38	43	25	27	316	396	58	46	94	61	33
18	59	37	39	26	27	846	220	55	44	101	53	31
19	45	34	41	26	27	568	146	55	43	95	37	31
20	38	34	38	26	27	296	109	54	45	88	36	31
21	32	33	40	27	27	208	88	54	57	84	35	31
22	130	33	38	27	27	135	75	55	58	86	56	29
23	264	32	37	27	27	4990	70	48	52	82	50	29
24	123	31	37	27	27	5940	65	52	50	83	37	28
25	109	31	35	27	27	4310	62	55	46	79	34	27
26	121	30	33	27	27	2520	60	51	47	78	36	27
27	87	29	34	27	27	1080	57	160	50	69	34	27
28	68	29	34	27	29	588	53	213	54	67	36	27
29	57	30	34	28	---	100	51	103	965	68	33	26
30	51	29	32	28	---	71	49	73	346	69	30	27
31	47	---	33	28	---	76	---	73	---	69	29	---
TOTAL	11628	1586	1191	850	777	22501	11776	4604	3487	3007	1929	1533
MEAN	375	52.9	38.4	27.4	27.7	726	393	149	116	97.0	62.2	51.1
MAX	4170	159	59	32	30	5940	2510	986	965	376	250	340
MIN	32	29	29	25	27	27	49	43	43	56	29	26
AC-FT	23060	3150	2360	1690	1540	44630	23360	9130	6920	5960	3830	3040
CAL YR 1986	TOTAL 42543	MEAN 117	MAX 4170	MIN 23	AC-FT 84380							
WTR YR 1987	TOTAL 64869	MEAN 178	MAX 5940	MIN 25	AC-FT 128700							

KANSAS RIVER BASIN

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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: Nov. 11-18, Dec. 9-13, and Jan. 9-11, 15-30. 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.--66 years, 386 ft³/s, 279,700 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)
Oct. 12	1500	23600	15.01	May 6	0700	9460	10.76
Mar. 18	1530	3240	6.46	June 30	0700	4270	7.44
Mar. 24	2130	*27700	*15.59	Sept. 10	0200	3340	6.56
Apr. 15	1330	14400	12.93				

Minimum daily discharge, 120 ft³/s Jan. 18.

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	1570	359	212	210	206	201	1530	369	439	1210	201	167
2	646	369	215	205	197	202	2260	370	1390	966	202	162
3	449	453	215	209	191	189	2620	527	822	606	202	166
4	581	465	211	205	191	183	2600	1220	507	460	198	160
5	497	404	203	207	192	180	2590	6980	398	378	187	155
6	370	364	210	209	189	177	2390	7430	358	330	186	154
7	293	345	281	208	185	171	2190	3140	331	298	214	154
8	257	401	319	205	184	170	1910	1830	316	316	677	154
9	238	500	250	205	181	170	1570	1230	347	666	473	194
10	225	397	190	190	182	168	1310	845	495	494	306	1460
11	7690	175	210	200	183	166	1050	660	797	391	244	401
12	20200	195	200	212	181	166	848	561	591	392	217	249
13	6930	185	220	210	181	167	741	511	485	331	240	203
14	2970	200	233	213	182	169	6280	481	429	285	219	196
15	1480	220	231	180	182	168	13300	464	401	266	469	195
16	959	240	226	140	180	174	5820	443	350	254	264	319
17	727	250	223	145	177	294	2600	425	311	261	241	199
18	597	260	220	120	173	2620	1650	420	291	287	770	175
19	524	260	220	130	175	2280	1180	423	312	297	292	189
20	478	252	218	140	175	1310	920	447	282	341	222	180
21	448	244	215	145	173	821	766	446	264	952	196	177
22	439	241	218	150	173	562	664	489	275	649	439	157
23	798	236	211	160	171	9670	603	477	263	460	389	156
24	614	231	209	170	173	24400	553	464	244	339	267	156
25	551	228	210	175	173	22800	511	517	245	277	225	161
26	603	223	210	180	176	9120	475	825	241	247	215	148
27	539	216	210	185	182	4110	442	896	242	240	220	148
28	461	214	212	200	193	2800	420	1120	238	222	225	174
29	414	212	212	200	---	1700	400	677	912	207	198	161
30	386	211	208	205	---	1070	386	529	3060	205	181	159
31	371	---	208	204	---	1070	---	474	---	206	174	---
TOTAL	53305	8550	6830	5717	5101	87448	60579	35690	15636	12833	8753	6829
MEAN	1720	285	220	184	182	2821	2019	1151	521	414	282	228
MAX	20200	500	319	213	206	24400	13300	7430	3060	1210	770	1460
MIN	225	175	190	120	171	166	386	369	238	205	174	148
AC-FT	105700	16960	13550	11340	10120	173500	120200	70790	31010	25450	17360	13550

CAL YR 1986 TOTAL 183809 MEAN 504 MAX 20200 MIN 103 AC-FT 364600
WTR YR 1987 TOTAL 307271 MEAN 842 MAX 24400 MIN 120 AC-FT 609500

KANSAS RIVER BASIN

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: Nov. 10-15, Dec. 9-13, and Jan. 15-29. Records good except for period 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.--13 years, 573 ft³/s, 415,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,600 ft³/s June 13, 1984, gage height, 21.00 ft; minimum daily, 40 ft³/s Dec. 17, 1975.

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)
Oct. 13	0300	20100	17.13	Apr. 15	1800	15000	a15.42
Mar. 19	0200	4470	8.88	May 6	1100	9250	12.31
Mar. 25	0600	*28300	*19.28	May 26	2400	4900	9.24
Apr. 3	1600	3080	7.56	June 30	unknown	5600	b9.80

a Observed.

b From floodmark.

Minimum daily discharge, 186 ft³/s Sept. 27.

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	4020	454	294	286	276	300	1960	579	627	2110	293	285
2	2060	455	319	279	262	290	2560	557	1140	1330	296	274
3	828	503	320	276	256	280	2950	630	2280	883	286	296
4	763	633	306	276	266	259	2740	1950	1200	654	296	299
5	748	566	289	276	252	247	2660	5240	689	567	272	259
6	550	493	288	276	252	257	2530	8260	589	486	276	262
7	422	457	364	276	246	245	2300	3860	494	434	314	266
8	349	584	565	272	240	248	2050	2140	455	490	595	263
9	308	653	550	272	240	247	1750	1500	480	558	772	267
10	295	600	330	272	236	230	1480	1100	663	762	521	1430
11	5970	270	360	252	236	227	1390	882	1020	558	455	885
12	16200	300	330	262	233	237	1210	762	872	548	366	485
13	14600	300	340	286	236	246	1070	696	728	468	382	374
14	5540	300	350	279	233	258	5690	637	643	398	336	322
15	2350	350	372	260	239	255	13300	603	598	386	553	322
16	1460	361	379	230	236	257	10000	563	526	355	614	410
17	1040	351	378	190	230	350	3510	525	472	347	572	347
18	824	347	378	170	230	2370	2060	495	422	366	934	250
19	729	346	372	175	227	3920	1500	517	460	390	624	232
20	640	335	359	195	230	2230	1200	515	755	374	398	241
21	585	328	340	200	233	1530	1030	512	601	730	347	227
22	565	322	325	210	227	996	917	510	455	735	502	220
23	856	317	296	215	227	8280	849	532	543	567	789	203
24	885	307	300	220	227	23200	789	515	375	468	656	202
25	750	305	300	230	229	26000	730	683	349	438	490	197
26	755	297	296	250	230	13500	684	1920	351	394	394	200
27	766	290	296	265	236	4860	649	2700	340	382	391	186
28	640	286	293	290	256	3280	619	1740	344	347	386	209
29	562	288	290	320	---	2070	605	1170	438	314	360	219
30	508	285	286	307	---	1380	595	826	3530	300	321	201
31	476	---	286	276	---	1310	---	700	---	300	299	---
TOTAL	67044	11683	10551	7843	6721	99359	71377	43819	22439	17439	14090	9833
MEAN	2163	389	340	253	240	3205	2379	1414	748	563	455	328
MAX	16200	653	565	320	276	26000	13300	8260	3530	2110	934	1430
MIN	295	270	286	170	227	227	595	495	340	300	272	186
AC-FT	133000	23170	20930	15560	13330	197100	141600	86910	44510	34590	27950	19500

CAL YR 1986 TOTAL 242885 MEAN 665 MAX 16200 MIN 155 AC-FT 481800
WTR YR 1987 TOTAL 382198 MEAN 1047 MAX 26000 MIN 170 AC-FT 758100

KANSAS RIVER BASIN

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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 1986 TO SEPTEMBER 1987

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										
07...	1100	432	435	7.70	15.0	738	9.0	28	4500	3200
NOV										
05...	1020	575	475	8.06	7.0	745	10.3	44	3600	10000
DEC										
02...	1050	323	630	8.15	3.0	--	14.5	26	7300	2500
JAN										
27...	1030	261	663	8.09	0.0	730	15.6	8	K420	88
FEB										
24...	1030	226	578	8.26	5.0	740	13.2	10	K140	K20
MAR										
24...	1415	26500	131	7.65	4.5	768	13.7	160	--	K550000
APR										
29...	1000	613	637	8.25	17.0	737	9.9	17	2000	K97
MAY										
12...	1410	800	510	8.30	22.0	--	--	--	--	--
26...	1150	622	459	8.11	22.0	730	7.7	69	K14000	K30000
JUN										
23...	1030	628	372	8.23	25.5	737	7.0	200	E16000	--
30...	1700	4360	206	7.26	21.5	743	6.7	--	--	--
JUL										
01...	0730	2300	183	7.07	21.0	743	6.7	--	--	--
21...	1100	747	507	8.60	28.0	742	7.1	65	1100	2200
AUG										
18...	1120	1110	338	8.00	23.5	741	7.1	120	8000	42000
SEP										
15...	1030	301	414	7.80	22.0	737	7.9	70	14000	30000

E Estimated value.

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

DATE	HARD- NESS (MG/L AS CACO3) (00900)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3) (00902)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LITY WH WAT TOTAL FIELD (MG/L AS CACO3) (00410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT										
07...	160	8	51	7.8	23	0.8	15	--	42	21
NOV										
05...	190	0	62	8.4	26	0.9	--	--	46	27
DEC										
02...	220	0	71	10	38	1	--	--	60	33
JAN										
27...	250	0	80	12	37	1	--	--	57	36
FEB										
24...	250	0	80	11	42	1	--	--	50	35
MAR										
24...	43	0	14	1.9	3.3	0.2	--	--	2.0	<5.0
APR										
29...	260	0	83	12	34	1	--	--	68	35
MAY										
12...	200	27	65	9.8	25	0.8	10	176	50	23
26...	180	43	57	8.3	24	0.8	7.4	134	40	21
JUN										
23...	120	6	38	6.4	18	0.7	7.3	116	30	16
30...	70	9	22	3.6	8.4	0.5	8.5	61	17	7.0
JUL										
01...	63	11	20	3.1	6.3	0.4	8.8	52	12	5.6
21...	180	9	56	9.3	28	1	15	170	39	22
AUG										
18...	120	0	37	5.9	20	0.8	9.3	207	26	14
SEP										
15...	140	4	44	7.6	26	1	9.6	138	31	29

KANSAS RIVER BASIN

06884025 LITTLE BLUE RIVER AT HOLLENBERG, KS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L 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)	SOLIDS, RESIDUE 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 07...	0.30	22	--	270	0.37	318	196	--	--
NOV 05...	--	--	--	--	--	--	145	--	--
DEC 02...	--	--	--	--	--	--	49	--	--
JAN 27...	--	--	--	--	--	--	13	--	--
FEB 24...	--	--	--	--	--	--	12	--	--
MAR 24...	--	--	--	--	--	--	2340	--	--
APR 29...	--	--	--	--	--	--	81	--	--
MAY 12...	--	22	325	310	0.44	702	--	1.68	0.020
26...	--	19	288	260	0.39	484	623	1.38	0.020
JUN 23...	--	15	217	200	0.30	368	2160	1.47	0.030
30...	--	12	148	120	0.20	1740	--	2.81	0.090
JUL 01...	--	12	123	100	0.17	764	--	3.13	0.070
21...	0.40	22	298	300	0.41	601	679	0.520	0.010
AUG 18...	--	17	196	260	0.27	587	1630	0.590	0.010
SEP 15...	--	18	246	250	0.33	200	914	1.19	0.010

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- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT 07...	1.20	1.20	0.070	1.6	1.7	2.9	0.340	0.370	--
NOV 05...	1.10	--	0.070	0.93	1.0	2.1	0.640	--	--
DEC 02...	1.30	--	0.110	1.3	1.4	2.7	0.220	--	--
JAN 27...	1.90	--	0.130	0.19	0.32	2.2	0.200	--	--
FEB 24...	1.10	--	0.100	0.20	0.30	1.4	0.150	--	--
MAR 24...	0.900	--	0.330	15	15	16	1.50	--	--
APR 29...	0.960	--	0.060	1.4	1.5	2.5	0.240	--	--
MAY 12...	--	1.70	--	--	1.8	--	0.630	--	0.290
26...	2.00	1.40	0.100	2.0	2.1	4.1	0.610	--	0.180
JUN 23...	--	1.50	0.150	0.25	0.40	--	0.850	--	0.140
30...	--	2.90	--	--	3.3	--	0.220	--	0.160
JUL 01...	--	3.20	--	--	3.4	--	0.910	--	0.160
21...	--	0.530	--	--	1.6	--	1.00	--	0.270
AUG 18...	--	0.600	0.090	3.2	3.3	--	0.800	--	0.210
SEP 15...	--	1.20	0.270	--	<0.20	--	0.370	--	0.230

KANSAS RIVER BASIN

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06884025 LITTLE BLUE RIVER AT HOLLENBERG, KS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
OCT 07...	1100	--	--	--	--	--	40	--	--	--	--
NOV 05...	1020	--	7	--	--	--	--	--	<20	--	<10
FEB 24...	1030	--	7	--	--	--	--	--	<15	--	<10
MAY 12...	1410	20	--	3	190	0.6	40	--	--	<1	--
26...	1150	<10	20	3	150	<0.5	40	--	<15	<1	<10
JUN 23...	1030	<10	--	3	120	0.9	40	--	--	<1	--
30...	1700	--	--	3	84	<0.5	--	--	--	<1	--
JUL 01...	0730	220	--	3	77	<0.5	40	--	--	<1	--
21...	1100	40	--	6	150	<0.5	40	0.015	--	<1	--
AUG 18...	1120	390	41	4	110	<0.5	50	--	<15	3	50
SEP 15...	1030	20	--	4	150	<0.5	50	--	--	2	--

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	COBALT, DIS- SOLVED (UG/L AS CO) (01035)	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)
OCT 07...	--	--	--	--	43	--	--	--	4	--	--
NOV 05...	--	--	30	--	--	<20	--	--	--	0.70	--
FEB 24...	--	--	<10	--	--	<20	--	--	--	<0.10	--
MAY 12...	<5	<3	--	<10	7	--	10	18	7	--	<0.1
26...	<5	<3	30	<10	6	40	<10	13	3	--	1.3
JUN 23...	<5	<3	--	8	7	--	<5	15	1	--	<0.1
30...	3	<3	--	5	110	--	<5	7	7	--	0.1
JUL 01...	<5	<3	--	<1	23	--	<5	7	<1	--	11
21...	<10	<3	--	10	18	--	<10	17	3	--	0.4
AUG 18...	<5	<3	50	6	280	70	<5	8	18	--	0.3
SEP 15...	<5	<3	--	35	93	--	<5	9	8	--	0.3

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO) (01060)	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)	ANTI- MONY, DIS- SOLVED (UG/L AS SB) (01095)
OCT 07...	--	--	--	--	--	--	--	--	--	--	--
NOV 05...	--	--	<2	--	<1	--	--	--	<30	--	--
FEB 24...	--	--	4	--	<1	--	--	--	<30	--	--
MAY 12...	<10	<10	--	--	--	<1	310	8	--	13	--
26...	<10	<10	<2	--	<1	<1	270	6	60	4	--
JUN 23...	<10	<10	--	--	--	<1	200	6	--	10	--
30...	<10	--	--	--	--	--	110	7	--	13	--
JUL 01...	<10	<10	--	--	--	<1	97	<6	--	<3	--
21...	<10	<0	--	2	--	<0	280	11	--	5	1
AUG 18...	<10	<10	13	--	<1	<1	180	8	230	20	--
SEP 15...	<10	10	--	--	--	1	230	7	--	52	--

KANSAS RIVER BASIN

06884025 LITTLE BLUE RIVER AT HOLLENBERG, KS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	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)
OCT 07...	--	--	--	--	--	--	14	--	--	--
NOV 05...	--	--	--	--	--	--	9.8	--	--	--
FEB 24...	--	--	--	--	--	--	3.4	--	--	--
MAY 12...	--	--	--	--	--	--	--	5.8	1.7	--
JUN 26...	--	--	--	--	--	--	--	5.2	>5.0	--
JUN 23...	--	--	--	--	--	--	--	8.3	>5.0	--
JUN 30...	--	--	--	--	--	--	--	7.5	>20	--
JUL 01...	--	--	--	--	--	--	--	9.3	>20	--
JUL 21...	4.7	3.9	13	3.6	9.6	3.2	--	5.4	>5.0	<0.01
AUG 18...	--	--	--	--	--	--	--	7.7	>10	--
SEP 15...	--	--	--	--	--	--	--	5.4	7.5	--

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. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)
MAY 12...	1410	800	22.0	314	678	--	60
MAY 26...	1150	622	22.0	704	1180	--	61
JUN 23...	1030	628	25.5	3380	5730	51	66
JUN 30...	1700	4360	21.5	5660	66600	44	49
JUL 01...	0730	2300	21.0	3100	19300	53	61
JUL 21...	1100	747	28.0	721	1450	--	42
AUG 18...	1120	1110	23.5	2340	7010	53	59
SEP 15...	1030	301	22.0	965	784	65	73

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	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)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70331)
MAY 12...	--	--	--	--	--	96
MAY 26...	--	--	--	--	--	96
JUN 23...	86	94	96	100	--	93
JUN 30...	65	97	99	100	--	90
JUL 01...	77	98	100	--	--	95
JUL 21...	--	--	--	--	--	95
AUG 18...	75	99	100	--	--	97
SEP 15...	84	91	92	97	100	91

DISCHARGE AT PARTIAL RECORD STATIONS AND MISCELLANEOUS SITES

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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 1987

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‡ 1982-87	08-08-87	15.35	5,200
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	1961-87	--	--	<5
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	1961-87	--	--	<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 1978-87b	--	--	<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	1960-87	10-12-86	15.97	4,000

[‡] 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.

DISCHARGE AT PARTIAL RECORD STATIONS AND MISCELLANEOUS SITES

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 1987

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.	--	1969-86	11-19-86 04-30-87	26 30
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.	--	1969-86	11-19-86 04-30-87	10 12
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.	--	1969-86	11-18-86 04-29-87	31 26
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.	--	1969-86	11-18-86 04-29-87	14 13

Platte River basin						
Platte River (06770262)	Missouri River	Lat 40°40'38", long 98°50'51", in SW1/4NE1/4 sec.12, T.8 N., R.14 W., Buffalo County, at bridge on county road 4.5 miles south of Gibbon.	--	1985-86	03-04-87 04-02-87 04-30-87 05-28-87 06-23-87 07-20-87 08-17-87 09-15-87	1600 3850 1800 2490 2870 390 941 1960
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.	--	1962a 1977-86	11-06-86 04-27-87	.78 .84
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.	--	1977-86	11-06-86 04-27-87	.47 2.2

¹ Also published with additional data elsewhere in this report.

a Gage heights, or gage heights and discharge measurements only.

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 1986										
19...	1635	26	305	7.69	4.0	4	130	27	43	
APR 1987										
30...	0950	30	326	7.76	12.5	13	140	23	44	
06465100 EASTBRANCH EAGLE CREEK NR MIDWAY NEBR (LAT 42 37 30N LONG 098 45 56W)										
NOV 1986										
19...	1720	10	292	7.81	4.0	2	140	0	49	
APR 1987										
30...	1150	12	302	7.67	15.0	11	140	0	47	
06465398 REDBIRD CREEK NR MEEK NEBRASKA (LAT 42 39 33N LONG 098 33 31W)										
NOV 1986										
18...	1535	31	222	7.56	2.5	8	97	4	32	
APR 1987										
29...	1450	26	220	7.86	22.5	21	88	0	29	
06465420 BLACKBIRD CREEK NEAR MEEK NEBR (LAT 42 39 46N LONG 098 34 24W)										
NOV 1986										
18...	1640	14	309	7.83	3.0	8	140	0	46	
APR 1987										
29...	1605	13	318	7.97	24.0	26	140	0	46	
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 1986										
19...	5.9	8.9	0.4	5.6	105	16	5.9	0.20	41	
APR 1987										
30...	6.1	9.3	0.4	4.9	112	14	5.6	0.20	34	
06465100 EASTBRANCH EAGLE CREEK NR MIDWAY NEBR (LAT 42 37 30N LONG 098 45 56W)										
NOV 1986										
19...	5.1	7.2	0.3	5.7	144	7.7	2.5	0.30	52	
APR 1987										
30...	5.1	7.1	0.3	5.3	150	8.2	3.3	0.30	44	
06465398 REDBIRD CREEK NR MEEK NEBRASKA (LAT 42 39 33N LONG 098 33 31W)										
NOV 1986										
18...	4.2	7.6	0.4	5.1	93	11	3.7	0.20	42	
APR 1987										
29...	3.8	6.9	0.3	4.2	93	13	2.3	0.20	33	
06465420 BLACKBIRD CREEK NEAR MEEK NEBR (LAT 42 39 46N LONG 098 34 24W)										
NOV 1986										
18...	5.5	8.9	0.3	5.3	141	12	4.1	0.30	47	
APR 1987										
29...	5.7	8.9	0.3	5.3	139	16	3.4	0.30	40	

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 1986								
19...	228	0.31	15.8	8.80	0.010	20	17	3
APR 1987								
30...	220	0.30	17.6	7.90	0.080	20	25	3
06465100	EASTBRANCH EAGLE CREEK NR MIDWAY NEBR (LAT 42 37 30N LONG 098 45 56W)							
NOV 1986								
19...	222	0.30	6.07	1.50	0.010	30	17	5
APR 1987								
30...	216	0.29	7.00	1.30	0.110	20	16	3
06465398	REDBIRD CREEK NR MEEK NEBRASKA (LAT 42 39 33N LONG 098 33 31W)							
NOV 1986								
18...	170	0.23	14.4	1.90	0.010	20	63	10
APR 1987								
29...	155	0.21	11.1	1.60	0.090	10	50	10
06465420	BLACKBIRD CREEK NEAR MEEK NEBR (LAT 42 39 46N LONG 098 34 24W)							
NOV 1986								
18...	222	0.30	8.45	1.90	0.010	20	29	6
APR 1987								
29...	209	0.28	7.51	--	0.090	30	33	10

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 1986										
06...	1350	0.78	853	7.80	10.0	4	390	3	120	
APR 1987										
27...	1410	0.84	896	7.71	17.0	21	400	6	120	
06788990 MIRA C AT NORTH LOUP, NEBR. (LAT 41 29 54N LONG 098 46 46W)										
NOV 1986										
06...	1550	0.47	815	7.65	10.0	7	390	0	110	
APR 1987										
27...	1545	2.2	900	7.75	19.5	22	430	1	120	
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- 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)
06788495 DANE C AT ORD, NEBR. (LAT 41 36 31N LONG 098 56 36W)										
NOV 1986										
06...	23	27	0.6	18	392	58	14	0.30	43	
APR 1987										
27...	25	30	0.7	20	397	73	33	0.30	37	
06788990 MIRA C AT NORTH LOUP, NEBR. (LAT 41 29 54N LONG 098 46 46W)										
NOV 1986										
06...	28	26	0.6	18	400	40	11	0.30	44	
APR 1987										
27...	32	29	0.6	20	431	72	15	0.30	28	
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)	
06788495 DANE C AT ORD, NEBR. (LAT 41 36 31N LONG 098 56 36W)										
NOV 1986										
06...	561	0.76	1.18	5.20	--	90	18	110		
APR 1987										
27...	577	0.78	1.31	--	0.770	90	21	500		
06788990 MIRA C AT NORTH LOUP, NEBR. (LAT 41 29 54N LONG 098 46 46W)										
NOV 1986										
06...	522	0.71	0.66	0.910	--	90	9	290		
APR 1987										
27...	576	0.78	3.41	--	0.880	100	16	1100		

ANALYSES OF SAMPLES COLLECTED AT NATIONAL WATER QUALITY ASSESSMENT (NAWQA) STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
		06879900	BIG BLUE RIVER AT SURPRISE, NEBR. (LAT 41 06 05N LONG 097 18 35W)								
SEP 1987 28...	1250	7.1	340	7.56	19.5	735	5.8	0.070	2.50	0.090	1.7
		06880000	LINCOLN CREEK NEAR SEWARD, NEBR. (LAT 40 54 57N LONG 097 08 43W)								
SEP 1987 28...	1350	33	566	8.10	19.0	736	7.6	0.020	3.60	0.040	1.3
		06880500	BIG BLUE RIVER AT SEWARD, NEBR. (LAT 40 54 05N LONG 097 05 55W)								
SEP 1987 28...	1425	60	629	8.09	19.5	763	7.3	0.030	3.00	0.040	1.8
		06880800	WEST FORK BIG BLUE RIVER NR DORCHESTER, NEBR. (LAT 40 43 52N LONG 097 10 38W)								
SEP 1987 29...	1545	81	546	8.34	18.5	730	9.9	0.020	2.30	0.060	0.70
		06881000	BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)								
SEP 1987 29...	1430	186	602	8.22	18.0	732	9.0	0.030	2.80	0.100	1.0
		06881200	TURKEY CREEK NEAR WILBER, NEBR. (LAT 40 28 48N LONG 097 00 43W)								
SEP 1987 29...	1320	51	528	8.13	17.0	732	8.2	0.010	0.920	0.080	1.0
		06881500	BIG BLUE R AT BEATRICE NEBR (LAT 40 15 00N LONG 096 45 00W)								
SEP 1987 28...	1315	322	825	8.14	21.0	747	8.7	0.020	2.60	0.040	2.2
		06882000	BIG BLUE R AT BARNESTON NEBR (LAT 40 03 11N LONG 096 35 16W)								
SEP 1987 28...	1050	581	568	8.27	20.0	747	8.8	--	--	--	1.5
		06883000	LITTLE BLUE RIVER NEAR DEWESEE, NEBR. (LAT 40 19 58N LONG 098 04 20W)								
SEP 1987 30...	0925	49	462	8.29	11.5	735	10.3	0.010	0.680	0.040	0.60
		06883570	LITTLE BLUE RIVER NEAR ALEXANDRIA (GILEAD), NEBR (LAT 40 12 27N LONG 097 23 26W)								
SEP 1987 28...	1450	101	455	8.44	24.0	755	10.0	0.010	0.730	0.040	0.70
		06883940	BIG SANDY CR AT ALEXANDRIA, NE (LAT 40 14 06N LONG 097 23 20W)								
SEP 1987 28...	1530	24	370	8.40	21.0	730	10.6	0.020	1.20	0.070	--
		06884000	LITTLE BLUE RIVER NEAR FAIRBURY, NEBR. (LAT 40 06 54N LONG 097 10 13W)								
SEP 1987 28...	1240	199	416	8.20	20.0	732	8.3	0.030	0.840	0.080	2.0
		06884025	LITTLE BLUE R AT HOLLENBERG, KS (LAT 39 58 48N LONG 097 00 16W)								
SEP 1987 28...	1030	209	523	8.35	19.0	735	8.3	0.020	1.10	0.030	0.40

ANALYSES OF SAMPLES COLLECTED AT NATIONAL WATER QUALITY ASSESSMENT (NAWQA) STATIONS

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	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)	PROME- TRYNE TOTAL (UG/L) (39057)
	06879900	BIG BLUE RIVER AT SURPRISE, NEBR. (LAT 41 06 05N LONG 097 18 35W)									
SEP 1987 28...	0.90	0.350	0.230	0.250	14	<0.10	<0.10	<0.1	<0.10	<0.1	<0.1
	06880000	LINCOLN CREEK NEAR SEWARD, NEBR. (LAT 40 54 57N LONG 097 08 43W)									
SEP 1987 28...	0.80	0.390	0.320	0.320	10	--	--	--	--	--	--
	06880500	BIG BLUE RIVER AT SEWARD, NEBR. (LAT 40 54 05N LONG 097 05 55W)									
SEP 1987 28...	0.50	0.410	0.320	0.310	9.7	--	--	--	--	--	--
	06880800	WEST FORK BIG BLUE RIVER NR DORCHESTER, NEBR. (LAT 40 43 52N LONG 097 10 38W)									
SEP 1987 29...	0.40	0.480	0.420	0.420	6.1	<0.10	<0.10	<0.1	<0.10	<0.1	<0.1
	06881000	BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)									
SEP 1987 29...	0.70	0.510	0.460	0.460	6.5	<0.10	<0.10	<0.1	<0.10	<0.1	<0.1
	06881200	TURKEY CREEK NEAR WILBER, NEBR. (LAT 40 28 48N LONG 097 00 43W)									
SEP 1987 29...	0.50	0.470	0.400	0.400	13	<0.10	<0.10	<0.1	<0.10	<0.1	<0.1
	06881500	BIG BLUE R AT BEATRICE NEBR (LAT 40 15 00N LONG 096 45 00W)									
SEP 1987 28...	1.0	0.550	0.550	0.480	8.0	--	--	--	--	--	--
	06882000	BIG BLUE R AT BARNESTON NEBR (LAT 40 03 11N LONG 096 35 16W)									
SEP 1987 28...	0.90	0.500	0.510	--	7.8	<0.10	<0.10	<0.1	0.10	<0.1	<0.1
	06883000	LITTLE BLUE RIVER NEAR DEWEESE, NEBR. (LAT 40 19 58N LONG 098 04 20W)									
SEP 1987 30...	0.30	0.260	0.170	0.160	3.3	<0.10	<0.10	<0.1	<0.10	<0.1	<0.1
	06883570	LITTLE BLUE RIVER NEAR ALEXANDRIA (GILEAD), NEBR (LAT 40 12 27N LONG 097 23 26W)									
SEP 1987 23...	0.40	0.430	0.300	0.280	5.8	--	--	--	--	--	--
	06883940	BIG SANDY CR AT ALEXANDRIA, NE (LAT 40 14 06N LONG 097 23 20W)									
SEP 1987 28...	0.60	0.260	0.260	0.230	2.7	<0.10	<0.10	<0.1	<0.10	<0.1	<0.1
	06884000	LITTLE BLUE RIVER NEAR FAIRBURY, NEBR. (LAT 40 06 54N LONG 097 10 13W)									
SEP 1987 28...	0.60	0.460	0.290	0.260	10	--	--	--	--	--	--
	06884025	LITTLE BLUE R AT HOLLENBERG, KS (LAT 39 58 48N LONG 097 00 16W)									
SEP 1987 28...	0.40	0.310	0.270	0.230	7.0	<0.10	<0.10	<0.1	<0.10	<0.1	<0.1

ANALYSES OF SAMPLES COLLECTED AT NATIONAL WATER QUALITY ASSESSMENT (NAWQA) STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ATRA- ZINE, TOTAL (UG/L) (39630)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70954)	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)
06879900 BIG BLUE RIVER AT SURPRISE, NEBR. (LAT 41 06 05N LONG 097 18 35W)										
SEP 1987 28...	0.70	23.0	2.80	<0.10	<0.10	<0.10	<0.1	<0.1	101	1.9
06880000 LINCOLN CREEK NEAR SEWARD, NEBR. (LAT 40 54 57N LONG 097 08 43W)										
SEP 1987 28...	--	12.0	0.800	--	--	--	--	--	230	20
06880500 BIG BLUE RIVER AT SEWARD, NEBR. (LAT 40 54 05N LONG 097 05 55W)										
SEP 1987 28...	--	13.0	0.900	--	--	--	--	--	202	33
06880800 WEST FORK BIG BLUE RIVER NR DORCHESTER, NEBR. (LAT 40 43 52N LONG 097 10 38W)										
SEP 1987 29...	0.30	26.0	3.10	<0.10	<0.10	<0.10	<0.1	<0.1	55	12
06881000 BIG BLUE RIVER NEAR CRETE, NEBR. (LAT 40 35 47N LONG 096 57 36W)										
SEP 1987 29...	0.40	13.0	1.40	<0.10	<0.10	<0.10	<0.1	<0.1	106	53
06881200 TURKEY CREEK NEAR WILBER, NEBR. (LAT 40 28 48N LONG 097 00 43W)										
SEP 1987 29...	0.30	6.50	0.600	<0.10	<0.10	<0.10	<0.1	<0.1	316	44
06881500 BIG BLUE R AT BEATRICE NEBR (LAT 40 15 00N LONG 096 45 00W)										
SEP 1987 28...	--	6.80	1.20	--	--	--	--	--	125	109
06882000 BIG BLUE R AT BARNESTON NEBR (LAT 40 03 11N LONG 096 35 16W)										
SEP 1987 28...	0.80	13.0	1.80	<0.10	<0.10	<0.10	<0.1	<0.1	79	124
06883000 LITTLE BLUE RIVER NEAR DEWEESE, NEBR. (LAT 40 19 58N LONG 098 04 20W)										
SEP 1987 30...	0.30	3.40	0.200	<0.10	<0.10	<0.10	<0.1	<0.1	21	2.8
06883570 LITTLE BLUE RIVER NEAR ALEXANDRIA (GILEAD), NEBR (LAT 40 12 27N LONG 097 23 26W)										
SEP 1987 28...	--	22.0	0.700	--	--	--	--	--	132	36
06883940 BIG SANDY CR AT ALEXANDRIA, NE (LAT 40 14 06N LONG 097 23 20W)										
SEP 1987 28...	0.10	12.0	0.300	<0.10	<0.10	<0.10	<0.1	<0.1	12	0.78
06884000 LITTLE BLUE RIVER NEAR FAIRBURY, NEBR. (LAT 40 06 54N LONG 097 10 13W)										
SEP 1987 28...	--	30.0	13.0	--	--	--	--	--	368	198
06884025 LITTLE BLUE R AT HOLLENBERG, KS (LAT 39 58 48N LONG 097 00 16W)										
SEP 1987 28...	0.40	30.0	1.50	<0.10	<0.10	<0.10	<0.1	<0.1	205	116

ANALYSES OF SAMPLES COLLECTED AT NATIONAL WATER QUALITY ASSESSMENT (NAWQA) STATIONS

305

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)
400359097101400 ROSE CREEK NR FAIRBURY, NE (LAT 40 03 59N LONG 097 10 14W)										
SEP 1987 28...	1200	23	646	8.20	18.5	732	9.0	0.010	2.20	0.030
400632096401600 BIG INDIAN CREEK NR WYMORE, NE (LAT 40 06 32N LONG 096 40 16W)										
SEP 1987 28...	1215	18	805	7.86	20.0	747	7.0	0.020	1.40	0.060
401243097433500 LITTLE BLUE R NR DESHLER, NE (LAT 40 12 43N LONG 097 43 35W)										
SEP 1987 30...	1045	53	462	8.47	14.5	737	10.2	0.010	0.750	0.030
401730096500200 CUB CREEK NR BEATRICE, NE (LAT 40 17 30N LONG 096 50 02W)										
SEP 1987 28...	1445	5.8	438	7.86	19.0	744	6.9	0.050	2.00	0.040
402348096591100 SWAN CREEK NR DEWITT, NE (LAT 40 23 48N LONG 096 59 11W)										
SEP 1987 28...	1620	27	805	7.86	19.0	744	9.5	0.020	2.20	0.030
402726098240500 LITTLE BLUE R NR HASTINGS, NE (LAT 40 27 26N LONG 098 24 05W)										
SEP 1987 30...	0815	9.2	455	7.75	10.5	732	10.3	0.020	0.510	0.080
403304097311400 TURKEY CREEK NR GENEVA, NE (LAT 40 33 04N LONG 097 31 14W)										
SEP 1987 29...	1145	0.19	351	8.25	18.0	732	11.6	0.040	1.20	0.070
403611098200600 WEST FK BIG BLUE R NR HASTINGS, NE (LAT 40 36 11N LONG 098 20 06W)										
SEP 1987 29...	1545	6.9	785	7.75	20.0	728	1.5	0.020	<0.100	12.0
403749097503400 SCHOOL CREEK NR SUTTON, NE (LAT 40 37 49N LONG 097 50 34W)										
SEP 1987 29...	1315	0.88	484	8.01	17.0	734	8.5	0.040	0.470	0.150
404247097580600 WEST FK BIG BLUE R NR STOCKHAM, NE (LAT 40 42 47N LONG 097 58 06W)										
SEP 1987 29...	1215	5.6	734	7.82	16.0	733	7.0	0.120	5.50	0.060
404327097354600 WEST FORK BIG BLUE R NR MCCOOL JUNCTION, NE (LAT 40 43 27N LONG 097 35 46W)										
SEP 1987 29...	1030	21	581	8.14	15.0	730	8.4	0.020	2.10	0.040
405029097322100 BEAVER CREEK NR YORK, NE (LAT 40 50 29N LONG 097 32 21W)										
SEP 1987 28...	1030	2.2	903	7.82	17.5	734	8.5	0.190	10.0	0.060
405221097582100 LINCOLN CREEK NR AURORA, NE (LAT 40 52 21N LONG 097 58 21W)										
SEP 1987 29...	1045	0.03	276	7.36	13.5	733	1.9	<0.010	<0.100	0.090

ANALYSES OF SAMPLES COLLECTED AT NATIONAL WATER QUALITY ASSESSMENT (NAWQA) STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70954)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)
400359097101400 ROSE CREEK NR FAIRBURY, NE (LAT 40 03 59N LONG 097 10 14W)										
SEP 1987 28...	1.2	0.20	0.320	0.130	0.120	9.7	33.0	3.20	227	14
400632096401600 BIG INDIAN CREEK NR WYMORE, NE (LAT 40 06 32N LONG 096 40 16W)										
SEP 1987 28...	--	1.0	0.220	0.230	0.150	8.1	2.10	0.200	55	2.7
401243097433500 LITTLE BLUE R NR DESHLER, NE (LAT 40 12 43N LONG 097 43 35W)										
SEP 1987 30...	0.70	<0.20	0.340	0.280	0.310	4.2	4.20	0.400	78	11
401730096500200 CUB CREEK NR BEATRICE, NE (LAT 40 17 30N LONG 096 50 02W)										
SEP 1987 28...	1.5	1.3	0.520	0.530	--	12	2.90	0.400	105	1.6
402348096591100 SWAN CREEK NR DEWITT, NE (LAT 40 23 48N LONG 096 59 11W)										
SEP 1987 28...	0.80	0.80	0.280	0.280	--	7.6	10.0	1.00	191	14
402726098240500 LITTLE BLUE R NR HASTINGS, NE (LAT 40 27 26N LONG 098 24 05W)										
SEP 1987 30...	0.50	<0.20	0.230	0.190	0.210	2.5	3.40	0.100	4	0.10
403304097311400 TURKEY CREEK NR GENEVA, NE (LAT 40 33 04N LONG 097 31 14W)										
SEP 1987 29...	2.0	1.1	0.550	0.420	0.400	18	100	11.0	138	0.07
403611098200600 WEST FK BIG BLUE R NR HASTINGS, NE (LAT 40 36 11N LONG 098 20 06W)										
SEP 1987 29...	--	16	--	6.20	6.00	15	6.70	0.900	7	0.13
403749097503400 SCHOOL CREEK NR SUTTON, NE (LAT 40 37 49N LONG 097 50 34W)										
SEP 1987 29...	0.80	0.30	1.10	--	1.10	5.8	6.50	0.500	24	0.06
404247097580600 WEST FK BIG BLUE R NR STOCKHAM, NE (LAT 40 42 47N LONG 097 58 06W)										
SEP 1987 29...	1.7	1.4	3.30	2.70	2.60	12	11.0	1.40	107	1.6
404327097354600 WEST FORK BIG BLUE R NR MCCOOL JUNCTION, NE (LAT 40 43 27N LONG 097 35 46W)										
SEP 1987 29...	0.80	0.50	0.670	0.530	0.540	6.4	18.0	2.50	99	5.6
405029097322100 BEAVER CREEK NR YORK, NE (LAT 40 50 29N LONG 097 32 21W)										
SEP 1987 28...	1.9	1.6	3.50	3.50	2.90	9.3	4.00	0.400	37	0.22
405221097582100 LINCOLN CREEK NR AURORA, NE (LAT 40 52 21N LONG 097 58 21W)										
SEP 1987 29...	3.6	1.5	1.00	0.700	0.650	26	170	37.0	37	0.00

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN AMMONIA DIS- SOLVED (MG/L AS N) (00608)
405438097354800 LINCOLN CREEK NR YORK, NE (LAT 40 54 38N LONG 097 35 48W)										
SEP 1987 28...	1150	1.5	458	7.97	18.5	733	5.6	0.080	2.60	0.060
DATE		NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHOPHOS- PHATE (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	CHLOR-A PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO- PLANK- TON CHROMO FLUOROM (UG/L) (70954)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L) (80154)
405438097354800 LINCOLN CREEK NR YORK, NE (LAT 40 54 38N LONG 097 35 48W)										
SEP 1987 28...	1.3	1.0	0.350	0.200	0.200	7.6	23.0	2.90	57	0.23

GROUND-WATER LEVELS

309

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.

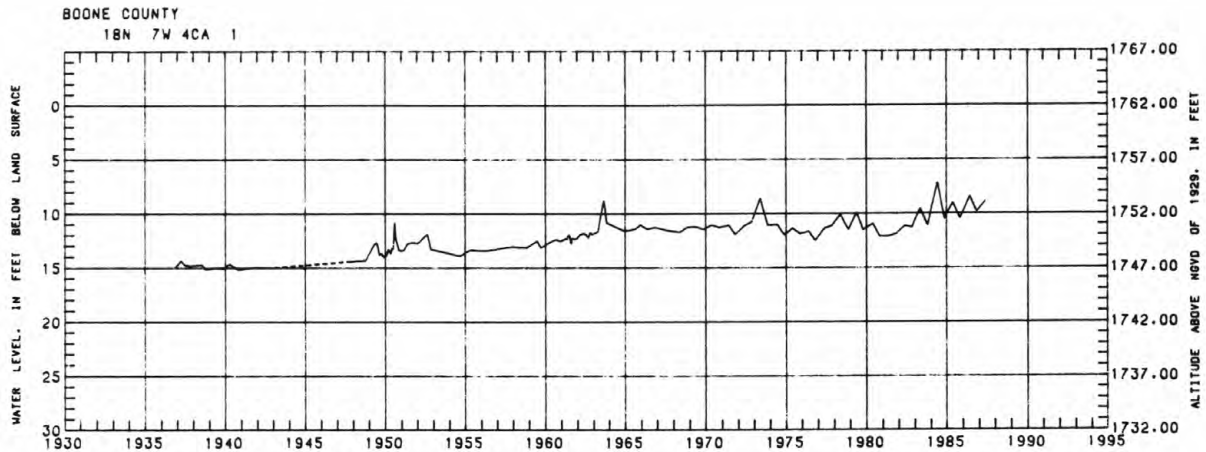
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1 in, depth 22 ft, screened 20 to 22 ft.

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 1986 TO SEPTEMBER 1987			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	9.88	MAY 12	8.92



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.--Marlsand Formation of Miocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in, depth 204 ft, screened 190 to 193 ft.

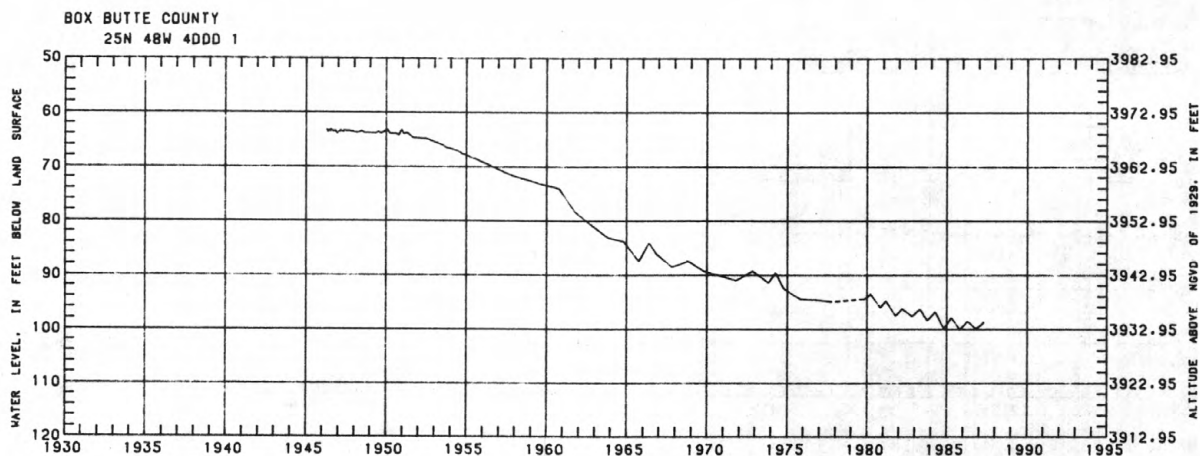
DATUM.--Altitude of land-surface datum is 4,032.95 ft. Measuring point: Top of pipe 2.00 ft above land-surface datum.

REMARKS.--Water levels in vicinity of well are affected by large withdrawals of ground water for irrigation use.

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 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	99.98	APR 30	98.69								



GROUND-WATER LEVELS

311

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, 31.70 ft below land-surface datum, Oct. 18, 1984; lowest, 40.96 ft below land-surface datum, Sept. 7, 1965.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	33.37	32.83	32.69	32.70	32.89	32.98	33.15	33.02	32.70	32.57	32.28	32.12
10	33.22	32.86	32.69	32.77	32.85	33.01	33.10	32.91	32.65	32.44	32.20	32.05
15	33.14	32.75	32.69	32.82	32.87	33.01	33.10	32.91	32.71	32.33	32.12	31.96
20	33.05	32.76	32.71	32.80	32.94	33.00	33.13	32.81	32.71	32.25	32.17	31.92
25	33.00	32.75	32.70	32.79	32.94	33.08	33.05	32.79	32.66	32.27	32.18	31.93
EOM	32.94	32.71	32.72	32.79	32.91	33.07	33.00	32.74	32.61	32.29	32.15	31.91

WTR YEAR 1987 MAX 31.90 SEP 29, 30, 1987 MIN 33.45 OCT 1, 1986

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 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	22.97	22.42	22.08	21.87	21.80	21.69	21.10	19.50	18.36	19.96	21.08	20.63
10	22.88	22.38	22.07	21.89	21.71	21.68	20.67	19.18	18.24	19.17	21.04	20.44
15	22.80	22.24	22.01	21.89	21.71	21.64	20.34	19.08	18.09	20.09	20.67	20.27
20	22.70	22.23	21.99	21.83	21.73	21.52	20.12	18.84	17.93	19.91	21.58	20.15
25	22.60	22.15	21.94	21.76	21.71	21.46	19.86	18.62	17.88	20.41	21.86	20.02
EOM	22.53	22.10	21.92	21.77	21.65	21.28	19.67	18.46	18.99	20.16	20.97	19.96

WTR YEAR 1987 MAX 17.83 JUN 24-26, 1987 MIN 23.04 OCT 1, 1986

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.

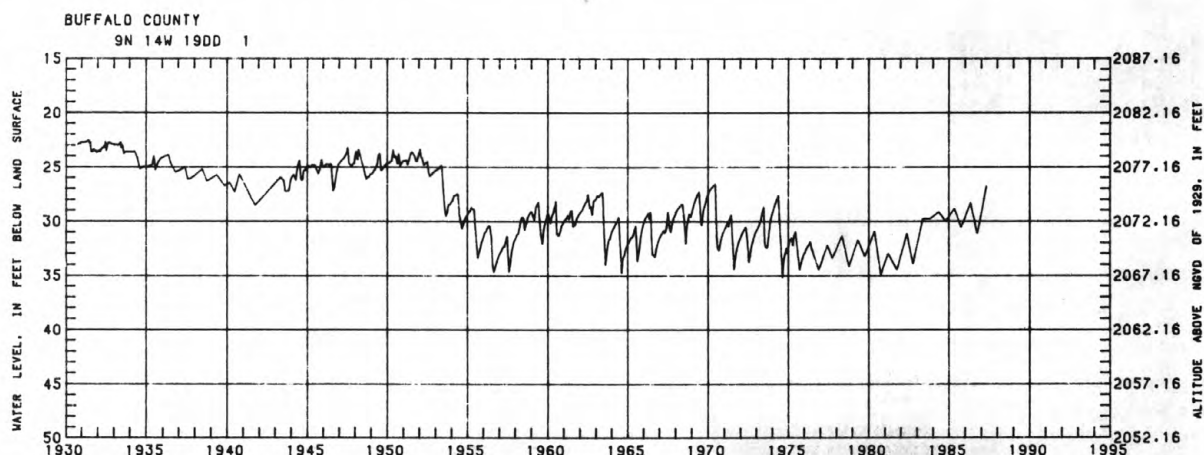
DATUM.--Altitude of land-surface datum is 2,102.16 ft. Measuring point: Hole in pump base 0.70 ft above land-surface datum.

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 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL
OCT 10	31.17
MAY 1	26.75



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, 96.71 ft below land-surface datum, Apr. 20, 1987; lowest, 174.50 ft below land-surface datum, Aug. 3, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	99.62	98.54	98.30	.....	97.81	.....	97.10	.....	97.02	.....	.....	.....
10	.....	98.46	98.20	.....	97.80	97.59	96.94	97.28	96.90	.....	.....	99.85
15	99.26	.....	.....	.....	.....	.....	96.77	.....	.....	.....	.....	.....
20	99.03	98.36	.....	.....	97.67	.....	96.71	.....	.....	140.88	.....	.....
25	.....	98.34	.....	.....	.....	.....	96.81	.....	.....	152.92	.....	.....
EOY	98.82	98.32	.....	97.73	97.61	97.12	.....	.....	.....	160.12	.....	.....

WTR YEAR 1987 MAX 96.71 APR 20, 1987 MIN 160.12 JUL 31, 1987

GROUND-WATER LEVELS

313

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.

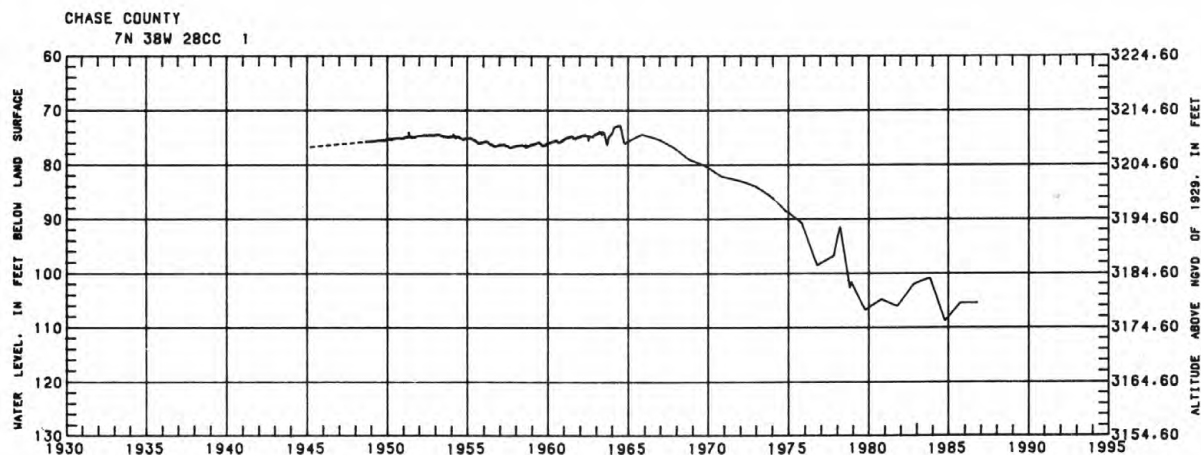
DATUM.--Altitude of land-surface datum is 3,284.6 ft. Measuring point: Top of casing 0.30 ft above land-surface datum.

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 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 7	105.56								



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.

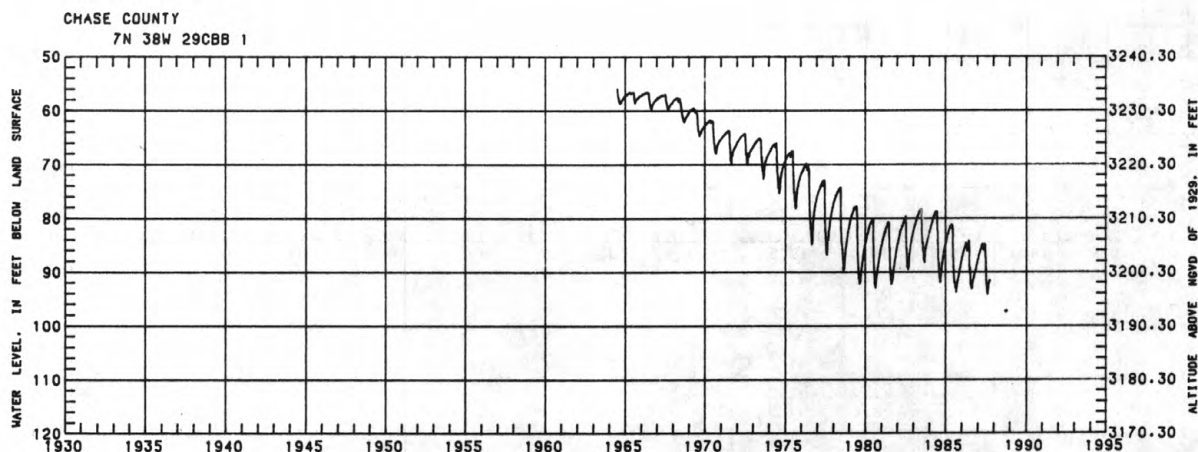
PERIOD OF RECORD.--June 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 55.87 ft below land-surface datum, July 4, 1964; lowest, 94.27 ft below land-surface datum, Aug. 18 and 20, 1987.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	91.11	89.89	88.85	87.74	86.98	86.05	85.24	85.07	85.19	87.86	93.56	92.46
10	90.83	89.93	88.83	87.72	86.64	85.97	85.05	85.61	85.03	90.01	92.70	92.24
15	90.78	89.52	88.58	87.63	86.61	85.79	84.86	85.09	84.83	90.81	93.98	92.02
20	90.52	89.59	88.43	87.50	86.49	85.66	85.12	85.98	85.06	91.55	94.27	91.91
25	90.29	89.35	88.22	87.24	86.28	85.57	84.80	84.84	86.31	92.50	92.86	91.73
ECM	90.27	89.14	88.01	86.91	86.16	85.27	85.74	85.07	87.14	93.26	92.60	91.62

WTR YEAR 1987 MAX 84.49 APR 4, 1987 MIN 94.27 AUG 18, 20, 1987



GROUND-WATER LEVELS

315

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 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL
OCT 22	0.05
FEB 1	+0.20
AUG 11	0.60

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 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL
OCT 13	106.33
NOV 4	107.60
APR 23	104.43
MAY	104.42

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 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL
OCT 16	5.57

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.

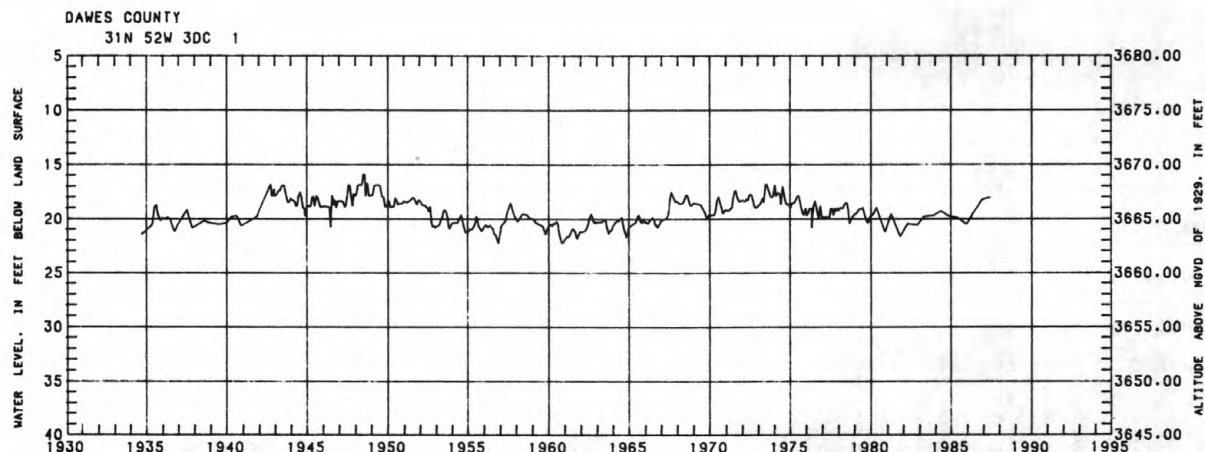
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 39 ft, casing perforated below water table.

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 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL
NOV 18	18.25
MAY 8	18.05



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 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	10.69	10.83	11.10	11.35	11.59	11.68	10.16	9.70	9.46	9.64	11.30	9.42
10	10.73	10.96	11.17	11.40	11.57	11.72	9.87	9.74	9.42	9.61	9.85	9.49
15	10.80	10.86	11.17	11.44	11.63	11.68	9.75	9.89	9.30	9.65	9.42	9.58
20	10.79	11.01	11.22	11.47	11.69	11.38	9.70	9.87	9.04	9.62	14.42	9.81
25	10.80	11.05	11.26	11.49	11.71	10.98	9.58	9.72	9.09	14.34	14.01	9.97
EOM	10.89	11.07	11.36	11.49	11.69	10.63	9.60	9.56	9.39	14.54	9.32	10.20

WTR YEAR 1987 MAX 8.98 JUN 20, 21, 1987 MIN 14.83 AUG 3, 1987

GROUND-WATER LEVELS

317

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 1986 TO SEPTEMBER 1987											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 13	5.69	MAY 14	3.02								

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 1986 TO SEPTEMBER 1987
 LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	18.02	17.56	17.27	17.06	16.93	16.81	16.65	16.50	16.52	16.70	17.51	18.37
10	17.92	17.52	17.23	17.04	16.90	16.79	16.61	16.46	16.57	16.65	17.72	18.44
15	17.84	17.45	17.18	17.02	16.89	16.77	16.58	16.53	16.54	16.65	17.95	18.15
20	17.76	17.42	17.15	17.00	16.86	16.73	16.57	16.75	16.69	16.71	18.09	18.05
25	17.69	17.35	17.12	16.97	16.84	16.71	16.53	16.60	16.81	16.98	18.28	17.97
EOM	17.62	17.30	17.09	16.94	16.82	16.68	16.51	16.54	16.79	17.27	18.02	17.92

WTR YEAR 1987 MAX 16.45 MAY 13, 14, 1987 MIN 18.44 SEP 9, 10, 1987

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 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	95.22	94.78	94.56	94.12	94.08	93.67	.....	93.08	92.68	93.21	95.20	94.23
10	95.07	94.87	94.60	94.34	93.87	93.68	93.20	92.85	92.52	93.29	95.29	95.08
15	95.15	94.73	94.43	94.39	93.94	93.66	93.19	93.00	92.62	93.57	95.22	94.98
20	95.10	94.87	94.49	94.15	93.89	93.43	93.36	92.82	92.70	94.11	95.24	95.17
25	94.92	94.73	94.40	94.11	93.77	.....	93.08	92.64	93.19	94.44	95.20	94.95
ECM	95.05	94.70	94.31	93.93	93.66	.....	93.07	92.67	93.23	94.84	95.27	94.88

WTR YEAR 1987 MAX 92.32 JUN 11, 1987 MIN 95.48 AUG 22, 1987

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, 1.24 ft below land-surface datum, June 18, 1983; lowest, 24.16 ft below land-surface datum, July 10, 1958.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	5.43	2.49	3.61	3.52	4.53	4.38	1.27	3.05	2.37	3.36	5.46	5.99
10	4.63	2.35	3.07	3.76	4.38	4.52	1.77	3.02	3.09	2.25	5.76	6.08
15	2.37	2.65	3.23	3.96	4.38	4.48	1.42	3.73	2.62	3.66	5.36	6.13
20	3.17	3.16	3.36	4.06	4.59	1.64	2.17	3.66	3.24	4.18	5.43	6.25
25	1.76	3.30	3.32	4.21	4.60	1.46	2.91	3.84	3.81	4.57	5.66	6.34
ECM	2.35	3.45	3.41	4.40	4.52	.....	3.37	2.40	2.30	5.08	5.79	6.49

WTR YEAR 1987 MAX 1.03 MAR 24, 1987 MIN 6.49 SEP 30, 1987

GROUND-WATER LEVELS

319

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	8.80	MAR 10	10.6	JUN 8	10.7	AUG 12	11.3				

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 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 24	19.25	NOV 21	19.27	DEC 31	19.34	APR 23	19.61				

GROUND-WATER LEVELS

321

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 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	16.92	16.68	16.56	16.40	16.43	16.36	15.88	14.78	14.13	14.02	15.33	16.02
10	16.88	16.74	16.54	16.43	16.33	16.37	15.52	14.61	14.07	14.19	15.61	15.98
15	16.86	16.63	16.49	16.44	16.33	16.35	15.29	14.55	13.97	14.32	15.72	15.92
20	16.81	16.64	16.50	16.40	16.39	16.28	15.14	14.41	13.89	14.57	15.89	15.89
25	16.77	16.56	16.45	16.37	16.35	16.26	15.00	14.30	13.91	14.80	16.04	15.84
EOM	16.77	16.53	16.43	16.38	16.29	16.12	14.86	14.20	13.89	15.10	16.11	.....

WTR YEAR 1987 MAX 13.83 JUN 27, 1987 MIN 16.92 OCT 5, 6, 1986

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, 92.31 ft below land-surface datum, June 15, 1987; lowest, 107.40 ft below land-surface datum, Aug. 24, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	95.92	.....	94.73	94.30	.....	93.66	93.29	92.99	92.55	94.23	97.83	97.01
10	95.76	.....	94.75	94.37	93.84	93.62	93.18	92.80	92.46	94.61	97.93	96.88
15	95.80	.....	94.58	.....	93.84	93.57	93.11	92.85	92.41	95.33	97.78	96.71
20	95.62	95.03	94.60	.....	93.80	93.41	93.22	92.72	92.53	96.20	97.57	96.57
25	95.55	94.87	94.50	.....	93.68	93.51	93.01	92.62	93.47	96.59	97.38	96.36
EOM	.....	94.82	94.44	.....	93.61	93.27	92.96	92.57	93.84	97.52	97.24	96.20

WTR YEAR 1987 MAX 92.31 JUN 15, 1987 MIN 98.05 AUG 6, 1987

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 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 7	97.58	APR 30	95.13								

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 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	91.73	91.23	91.08	90.75	90.73	90.47	90.32	90.28	90.05	90.38	101.96	93.03
10	91.62	91.32	91.06	90.80	90.53	90.52	90.21	90.03	89.99	90.82	95.33	92.19
15	91.61	91.08	90.94	90.85	90.60	90.44	90.20	90.15	89.96	98.83	97.42	91.88
20	91.48	91.21	90.96	90.80	90.61	90.36	90.38	90.01	91.21	91.84	99.99	90.99
25	91.39	91.11	90.88	90.71	90.53	90.45	90.15	89.93	95.25	102.69	92.75	90.86
EOM	91.43	91.05	90.84	90.69	90.44	90.28	90.18	89.96	91.90	102.93	92.39	90.88

WTR YEAR 1987 MAX 89.89 JUN 11, 1987 MIN 102.93 JUL 31, 1987

GROUND-WATER LEVELS

323

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.

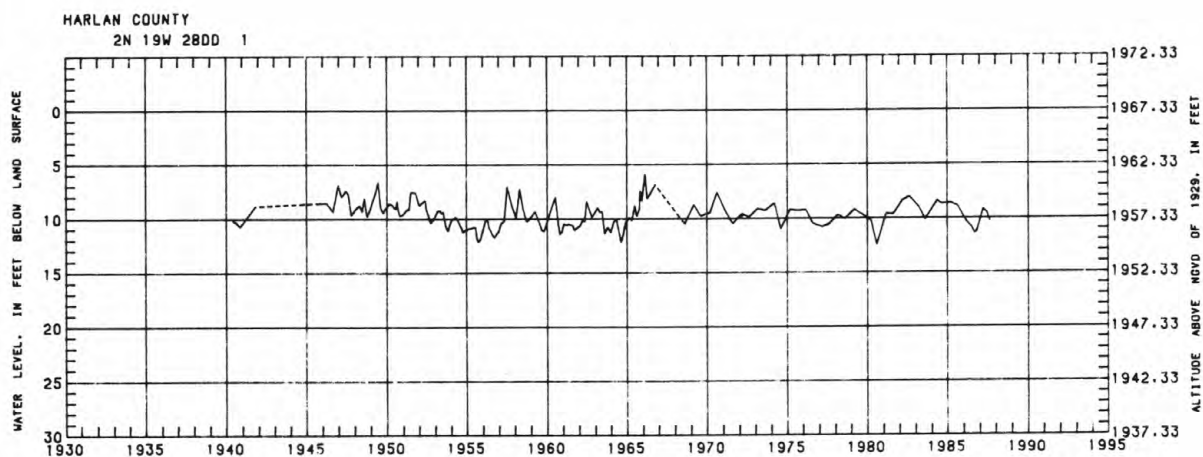
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1 in, depth 22 ft, screened 20 to 22 ft.

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 1986 TO SEPTEMBER 1987			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	11.30	MAR 10	9.20
JUN 8	9.50	AUG 12	10.30



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.

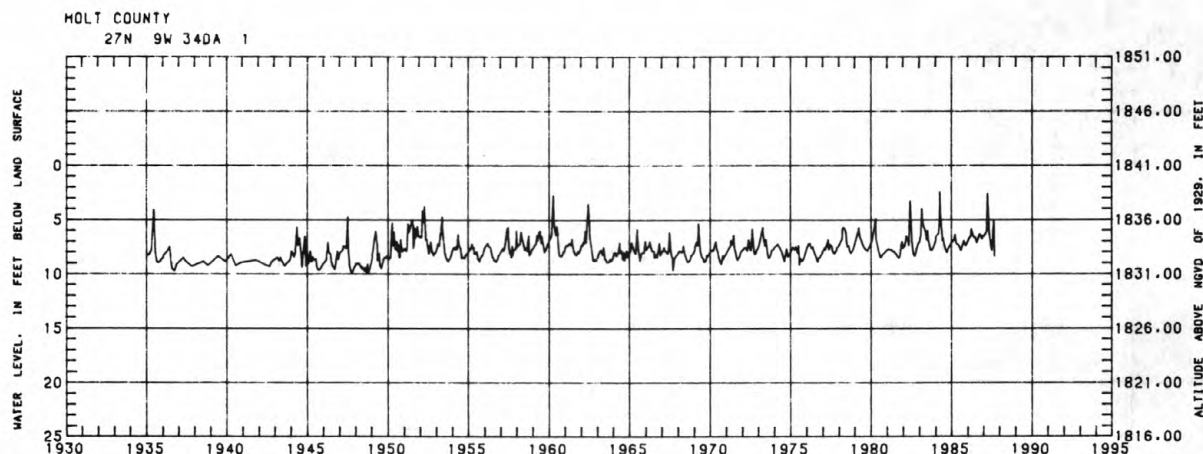
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1 in, depth 17 ft, screened 15 to 17 ft.

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 1986 TO SEPTEMBER 1987			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	6.40	DEC 10	6.49
NOV 18	6.80	DEC 30	6.56
		MAR 4	6.12
		MAR 19	2.51
		APR 29	6.30
		JUN 30	7.89
		AUG 10	5.05
		AUG 26	8.32



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 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	45.80	45.37	45.06	44.71	44.52	44.20	43.99	43.32	42.41	42.15	42.72	43.15
10	45.71	45.42	45.02	44.72	44.39	44.20	43.91	43.08	42.28	42.22	42.82	43.16
15	45.67	45.25	44.95	44.73	44.36	44.12	43.83	42.99	42.20	42.26	42.95	43.13
20	45.58	45.26	44.93	44.62	44.33	44.04	43.81	42.81	42.10	42.37	43.05	43.19
25	45.54	45.18	44.86	44.56	44.25	44.05	43.66	42.68	42.11	42.45	43.09	43.16
EOM	45.53	45.11	44.80	44.47	44.21	43.97	43.48	42.52	42.14	42.54	43.19	43.21

WTR YEAR 1987 MAX 42.04 JUN 22, 28, 1987 MIN 45.82 OCT 1, 1986

GROUND-WATER LEVELS

325

HOLT COUNTY

423730098560001. Local number 31N-14W-27DDD.

LOCATION.--Lat 42°37'30", long 98°56'00", SE1/4SE1/4SE1/4 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.

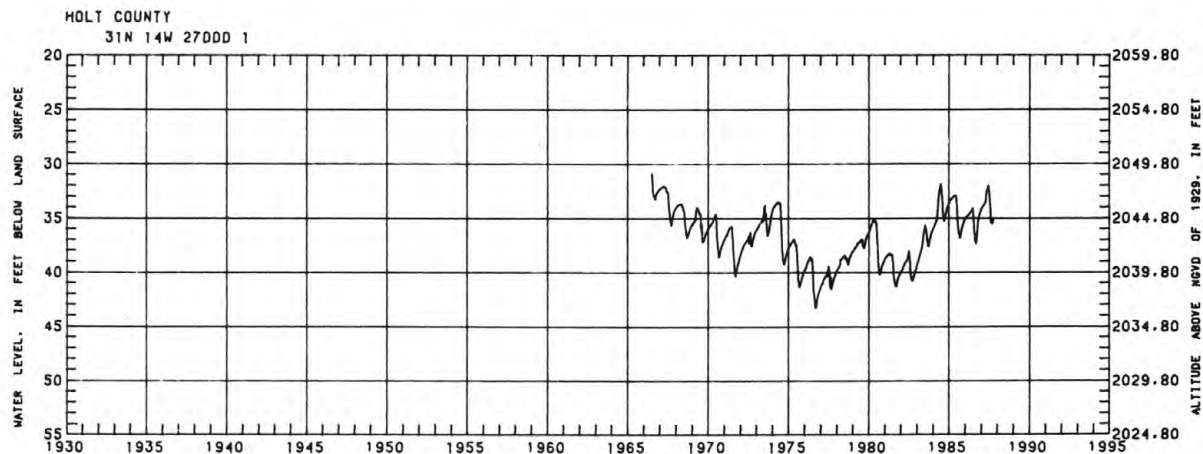
PERIOD OF RECORD.--July 1966 to current year.

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 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	36.27	35.03	34.55	34.17	33.96	33.77	33.65	32.54	32.07	32.97	35.00	35.55
10	35.98	34.95	34.48	34.13	33.89	33.77	33.55	32.35	31.96	33.21	35.16	35.58
15	35.71	34.84	34.41	34.10	33.84	33.73	33.40	32.36	32.04	33.23	35.43	35.57
20	35.51	34.76	34.35	34.04	33.83	33.70	33.13	32.39	32.22	33.46	35.48	35.39
25	35.33	34.67	34.28	33.98	33.79	33.70	32.92	32.27	32.30	33.89	35.33	35.24
EOY	35.13	34.60	34.22	33.97	33.78	33.67	32.71	32.13	32.57	34.57	35.48	35.13

WTR YEAR 1987 MAX 31.91 JUN 12 AND 13, 1987 MIN 36.55 OCT 1, 1986



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, 72.41 ft below land-surface datum, June 21, 1987; lowest, 119.43 ft below land-surface datum, Aug. 27, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	77.28	76.09	75.73	74.80	74.73	74.18	73.78	73.43	72.99	85.56	109.08	79.84
10	77.12	76.30	75.53	74.87	74.28	74.14	73.41	73.26	72.66	91.17	96.27	78.54
15	76.94	75.74	75.29	74.94	74.19	73.76	73.37	73.50	72.57	104.31	87.55	77.83
20	76.77	75.78	75.27	74.79	74.38	73.60	73.58	72.90	72.47	79.61	106.71	77.57
25	76.48	75.70	75.07	74.57	74.14	73.72	73.39	72.87	93.11	108.97	89.47	77.08
EOM	76.36	75.42	74.99	74.58	73.84	73.74	73.47	72.81	76.86	107.15	80.78	77.01

WTR YEAR 1987 MAX 72.41 JUN 21, 1987

MIN 109.38 AUG 4, 1987

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.

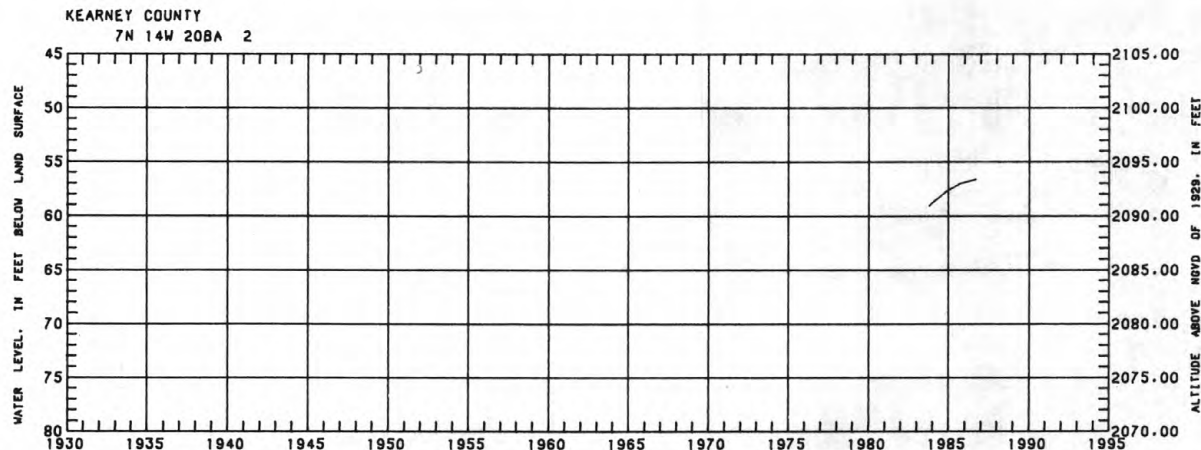
DATUM.--Altitude of land-surface datum is 2,150 ft. Measuring point: 0.30 ft above land-surface datum.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 56.62 ft below land-surface datum, Oct. 9, 1986; lowest, 59.06 ft below land surface datum, Oct. 24, 1983.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	56.62										



GROUND-WATER LEVELS

327

KIMBALL COUNTY

411416103361101. Local number 15N-55W-26CCC.

LOCATION.--Lat 41°14'18", long 103°36'15" SW1/4SW1/4SW1/4 sec.26, T.15 N., R.55 W., Hydrologic Unit 10190016, east of intersection of U.S. Highway 30 and State Highway 71 in Kimball. Owner: Henry Meier.

AQUIFER.--Ogallala Formation of Pliocene age.

WELL CHARACTERISTICS.--Drilled irrigation water-table well, diameter 24 in, depth 124 ft, casing perforated below water table.

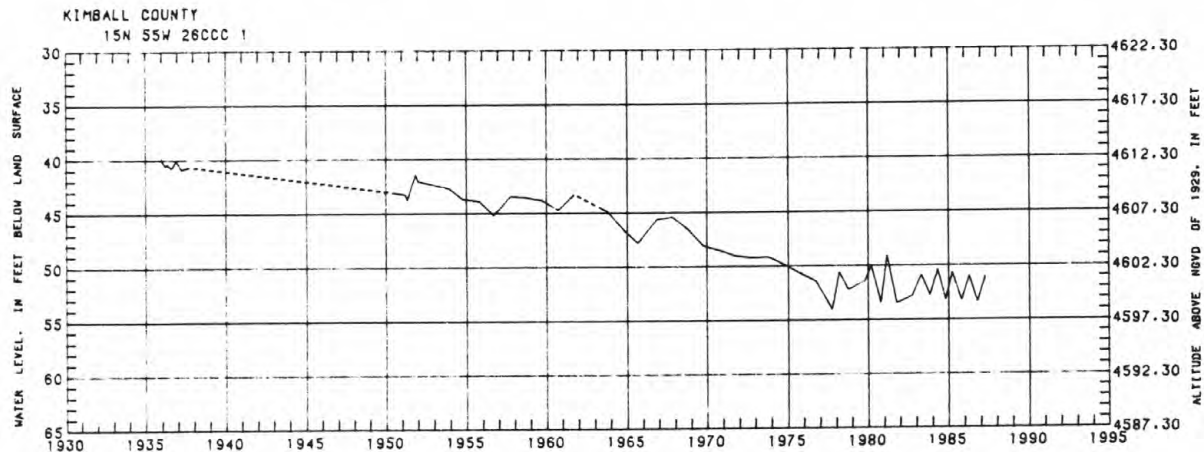
DATUM.--Altitude of land-surface datum is 4,652.3 ft. Measuring point: Top of casing 0.00 ft above land-surface datum.

REMARKS.--Local well number formerly listed as 15N-55W-26CC. Replacement for 411600103393501, local number 15N-55W-17CC1, period of record January 1935 to November 1942; June 1950 to October 1975.

PERIOD OF RECORD.--January 1936 to October 1937; January 1951 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.82 ft below land-surface datum, Jan. 2, 1936; lowest, 54.07 ft below land-surface datum, Oct. 18, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	53.42	APR 15	51.10



LANCASTER COUNTY

403929096401001. Local number 8N-7E-18DDB.

LOCATION.--Lat 40°39'29", long 96°40'10", NW1/4SE1/4SE1/4 sec.18, T.8 N., R.7 E., Hydrologic Unit 10200203, 0.6 mi west of Roca. Owner: U.S. Geological Survey.

AQUIFER.--Sand and gravel deposits, undifferentiated, of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 8 in, depth 41 ft, perforated 36 to 41 ft.

DATUM.--Altitude of land-surface datum is 1,215 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

REMARKS.--Water level not measured during 1984 water year.

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

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.63 ft below land-surface datum, Aug. 25, 1954; lowest, 13.24 ft below land-surface datum, Nov. 9, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987			
DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	5.95		

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.

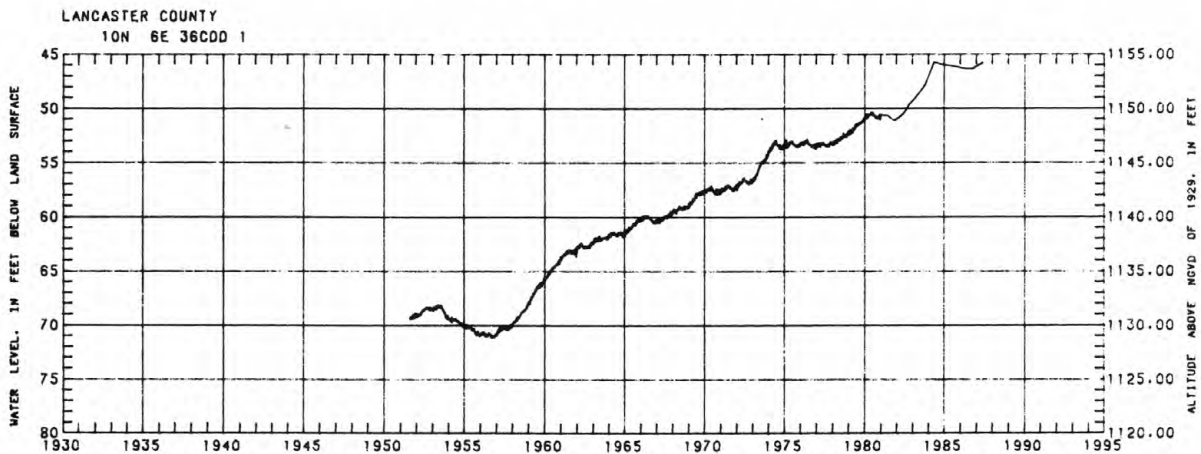
DATUM.--Altitude of land-surface datum is 1,200 ft. Measuring point: Top of casing 1.00 ft above land-surface datum.

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, 45.71 ft below land-surface datum, May 10, 1984; lowest 71.19 ft below land-surface datum, Sept. 5, 1956.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987							
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 10	46.37	MAY 15	45.79				



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.

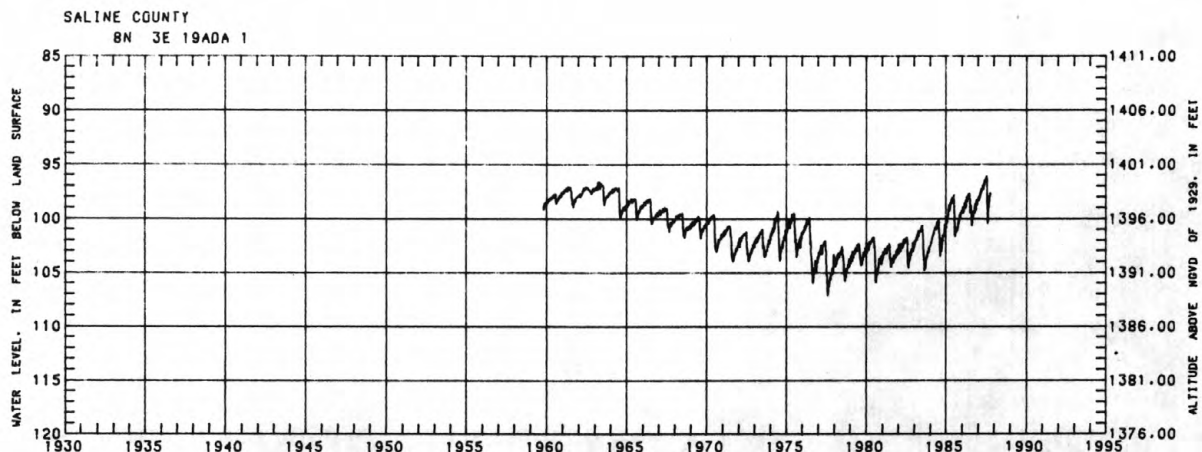
PERIOD OF RECORD.--October 1959 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 96.03 ft below land-surface datum, July 11, 1987; lowest, 107.15 ft below land-surface datum, Aug. 25, 1977.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	99.53	98.67	98.75	98.05	98.09	97.55	97.35	97.16	96.64	96.04	100.20	98.12
10	99.05	99.24	98.62	98.15	97.52	97.64	96.90	96.50	96.41	96.10	99.96	98.04
15	98.90	98.25	98.33	98.38	97.69	97.36	97.00	96.93	96.30	96.29	99.12	97.83
20	98.59	98.73	98.40	98.10	97.82	97.34	97.30	96.55	96.20	98.53	99.05	97.94
25	98.91	98.54	98.23	97.96	97.66	97.38	96.99	96.36	96.35	98.95	98.72	97.62
EOM	99.03	98.38	98.10	98.00	97.29	97.26	96.71	96.53	96.28	99.78	98.63	97.72

WTR YEAR 1987 MAX 96.03 JUL 11, 1987 MIN 100.47 AUG 7, 1987



GROUND-WATER LEVELS

333

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.

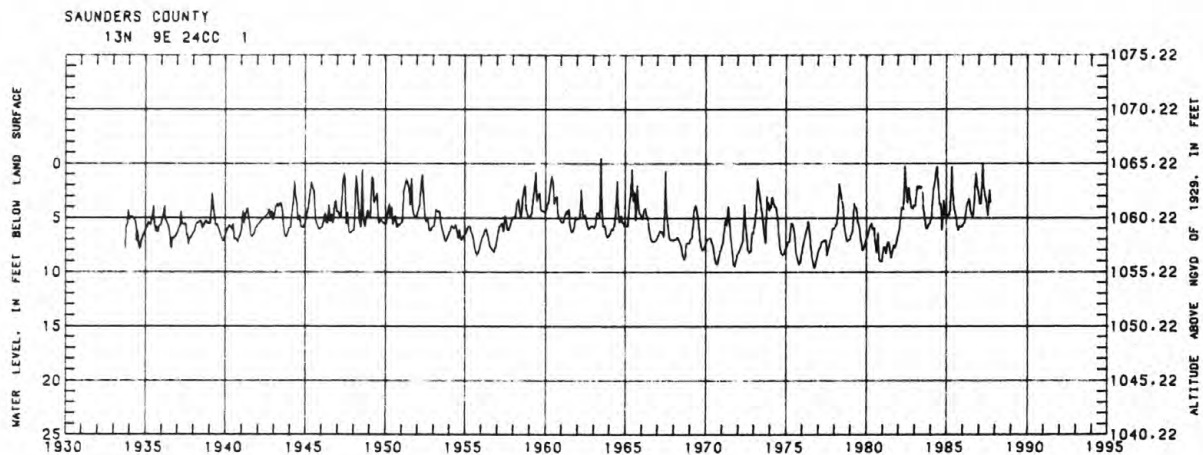
DATUM.--Altitude of land-surface datum is 1,065.22 ft. Measuring point: Top of casing 4.50 ft above land-surface datum.

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 1986 TO SEPTEMBER 1987											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 25	0.83	DEC 25	2.60	FEB 25	3.75	APR 25	2.17	JUN 25	3.50	AUG 25	2.40
NOV 25	2.20	JAN 25	3.70	MAR 25	+0.03	MAY 25	3.00	JUL 25	4.82	SEP 25	3.60



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, 39.84 ft below land-surface datum, Sept. 30, 1987; lowest, 46.98 ft below land-surface datum, Sept. 25, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987												
LOWEST WATER LEVEL FOR THE DAY												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	41.71	.....	40.96	40.67	40.59	40.54	40.48	40.32	40.26	40.14	40.21	.....
10	41.65	41.24	40.89	40.70	40.57	40.53	40.42	40.31	40.22	40.15	40.22	39.98
15	41.56	41.08	40.82	40.65	40.54	40.48	40.39	40.28	40.21	40.16	40.22	39.97
20	41.47	41.10	40.78	40.62	40.55	40.49	40.40	40.26	40.18	40.17	40.23	39.92
25	41.43	41.02	40.75	40.59	40.57	40.45	40.38	40.26	40.20	40.18	40.23	39.86
EOM	.....	40.95	40.75	40.57	40.54	40.47	40.34	40.25	40.15	.....	40.17	39.84

WTR YEAR 1987 MAX 39.84 SEP 30, 1987 MIN 41.77 OCT 1, 1986

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.

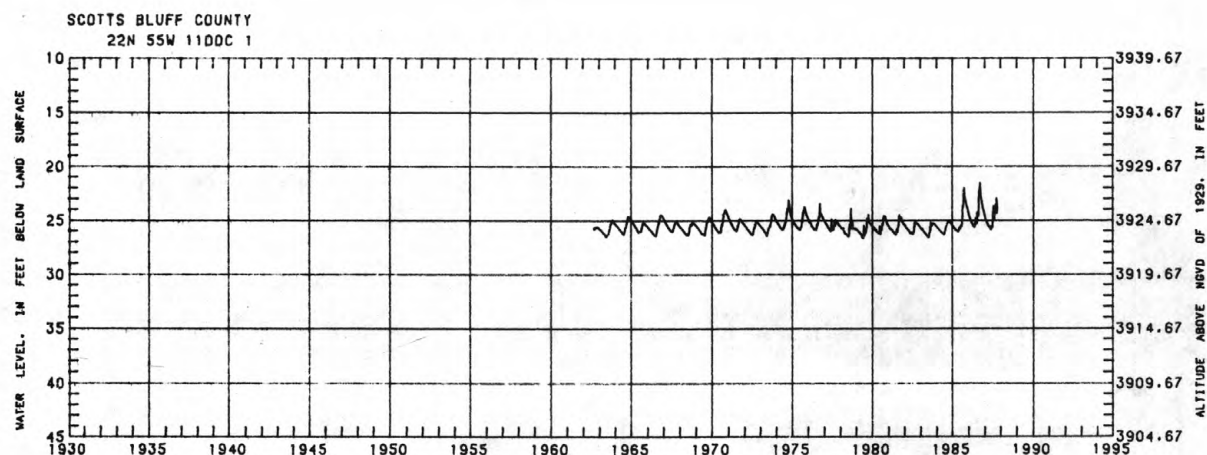
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.27 ft below land-surface datum, Sept. 9, 1986;
 lowest, 26.72 ft below land-surface datum, May 31, 1979.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
 LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	.....	23.70	24.29	24.79	25.17	25.38	25.58	25.77	25.62	23.61	24.08	23.70
10	.....	23.81	24.36	24.86	25.20	25.42	25.62	25.80	25.66	24.32	24.01	23.18
15	23.25H	23.90	24.46	24.93	25.25	25.47	25.64	25.83	25.64	24.71	24.25	22.94
20	23.36	24.02	24.55	24.98	25.30	25.48	25.66	25.87	25.65	24.95	23.75	23.35
25	23.48	24.10	24.63	25.04	25.32	25.50	25.69	25.49	25.41	25.03	23.48	23.62
EOM	23.61	24.19	24.72	25.11	25.35	25.55	25.73	25.58	24.63	24.83	23.95	23.83

WTR YEAR 1987 MAX 21.71 SEP 13, 1987 MIN 25.87 MAY 20, 1987

H TAPE MEASUREMENT



GROUND-WATER LEVELS

335

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 1986 TO SEPTEMBER 1987											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	37.33	MAR 24	38.80								

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, 75.15 ft below land-surface datum, June 12, 1987; lowest, 90.17 ft below land-surface datum, Aug. 5, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987												
LOWEST WATER LEVEL FOR THE DAY												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	78.58	77.86	77.75	77.12	77.16	76.77	76.62	76.36	75.98	.....	82.05	79.17
10	78.55	78.10	77.59	77.07	76.82	76.72	76.19	76.02	75.71	.....	81.88	78.64
15	78.31	77.64	77.39	77.23	76.65	76.34	76.00	76.10	.....	78.19	81.05	78.19
20	78.27	77.60	77.37	77.07	76.87	.....	76.23	75.79	.....	79.04	80.78	78.05
25	78.04	77.58	77.20	76.97	76.70	.....	76.24	75.96	.....	80.16	80.35	77.70
EOM	77.96	77.40	77.14	76.92	76.48	.....	75.98	75.77	.....	81.30	.....	77.59

WTR YEAR 1987 MAX 75.15 JUN 12, 1987

MIN 82.02 AUG 7, 1987

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.

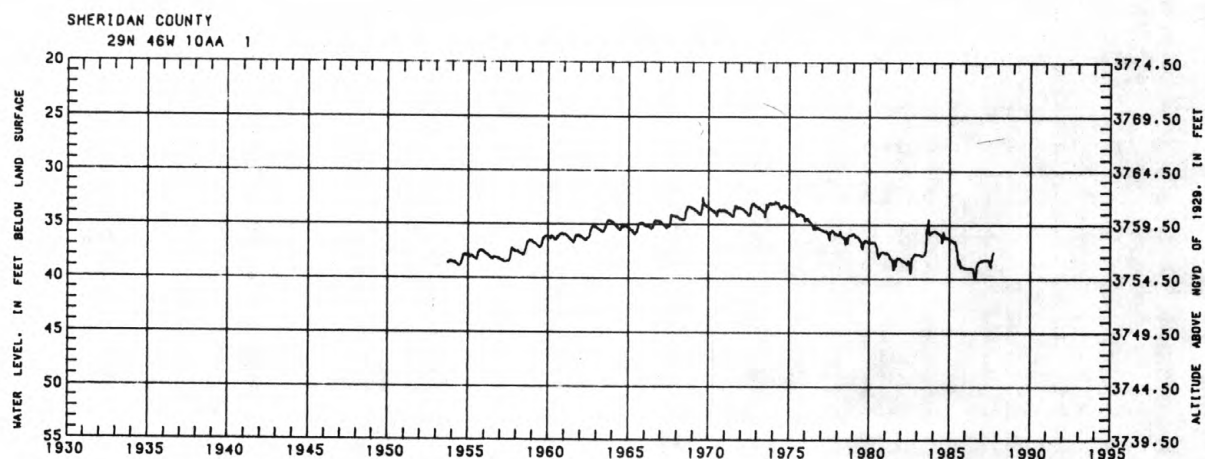
PERIOD OF RECORD.--September 1953 to current year.

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 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	38.75	38.47	38.42	38.32	38.36	38.31	38.32	38.30	38.28	38.66	38.50	38.02
10	38.68	38.49	38.41	38.35	38.30	38.31	38.29	38.28	38.27	38.73	38.17	37.86
15	38.62	38.42	38.39	38.35	38.30	38.29	38.25	38.29	38.30	38.71	38.39	37.71
20	38.58	38.46	38.37	38.33	38.33	38.29	38.29	38.28	38.36	38.87	38.39	37.67
25	38.55	38.45	38.35	38.32	38.30	38.31	38.30	38.26	38.47	38.65	38.31	37.61
EOM	38.53	38.43	38.36	38.31	38.30	38.31	38.30	38.25	38.56	39.00	38.17	37.60

WTR YEAR 1987 MAX 37.60 SEP 30, 1987 MIN 39.01 AUG 1, 1987



GROUND-WATER LEVELS

337

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.

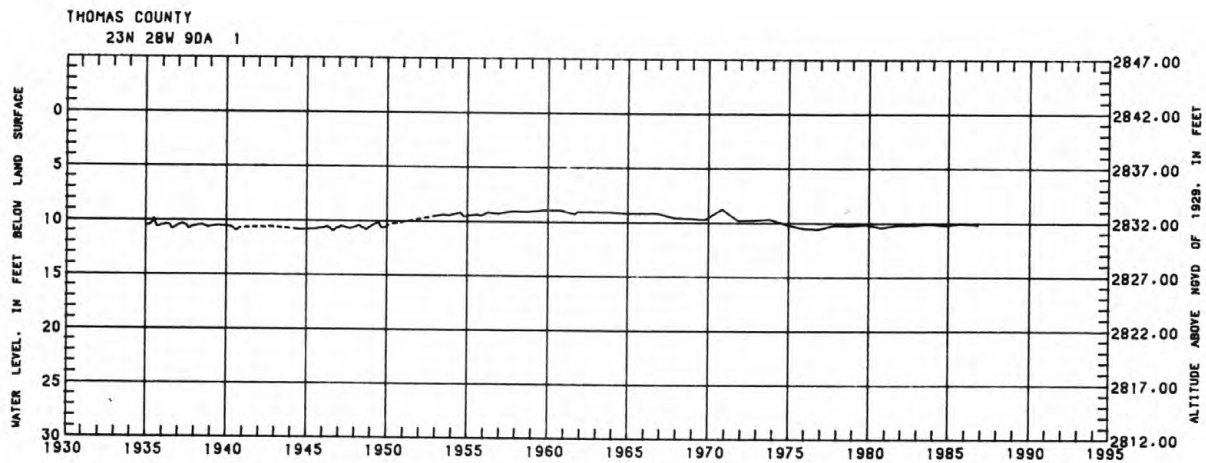
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 1.25 in, depth 15 ft, screened from 13 to 15 ft.

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 1986 TO SEPTEMBER 1987											
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 9	10.14										



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.

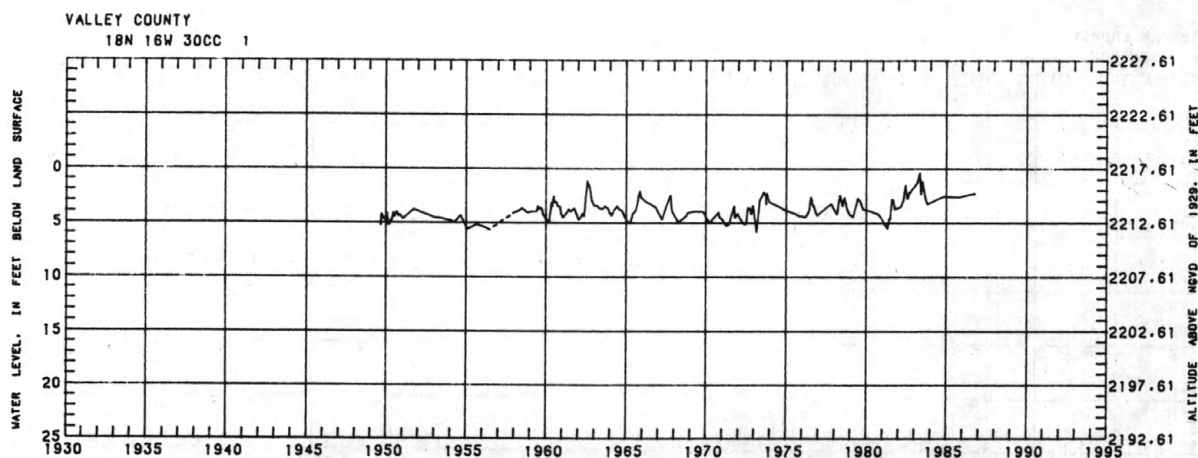
DATUM.--Altitude of land-surface datum is 2,217.61 ft. Measuring point: Top of casing 2.00 ft above land-surface datum.

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 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 8	2.28										



GROUND-WATER LEVELS

339

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 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987		WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987	
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	5.39	MAY 13	4.22								

YORK COUNTY

404618097482201. Local number 9N-4W-5CCC.

LOCATION.--Lat 40°46'18", long 97°48'22", SW1/4SW1/4 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, 76.58 ft below land-surface datum, June 11, 1987; lowest, 87.52 ft below land-surface datum, Aug. 20, 1982.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	79.34	78.78	78.56	78.18	78.07	77.70	77.41	77.25	.....	77.84	79.33	78.80
10	79.16	78.94	78.63	78.35	77.85	77.72	77.27	77.08	76.63	78.16	79.32	.....
15	79.28	78.65	78.50	78.43	77.95	77.74	77.23	77.17	76.75	78.28	79.08	.....
20	79.10	78.85	78.56	78.31	77.92	77.55	77.47	77.06	76.80	78.48	78.98	.....
25	78.97	78.70	78.44	78.12	77.81	77.71	77.23	.....	77.54	78.45	78.83	.....
EQM	79.16	78.66	78.37	77.97	77.70	77.36	77.10	.....	77.74	79.12	78.93	.....

WTR YEAR 1987 MAX 76.58 JUN 11, 1987 MIN 79.33 AUG 5, 1987

GROUND-WATER LEVELS

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.

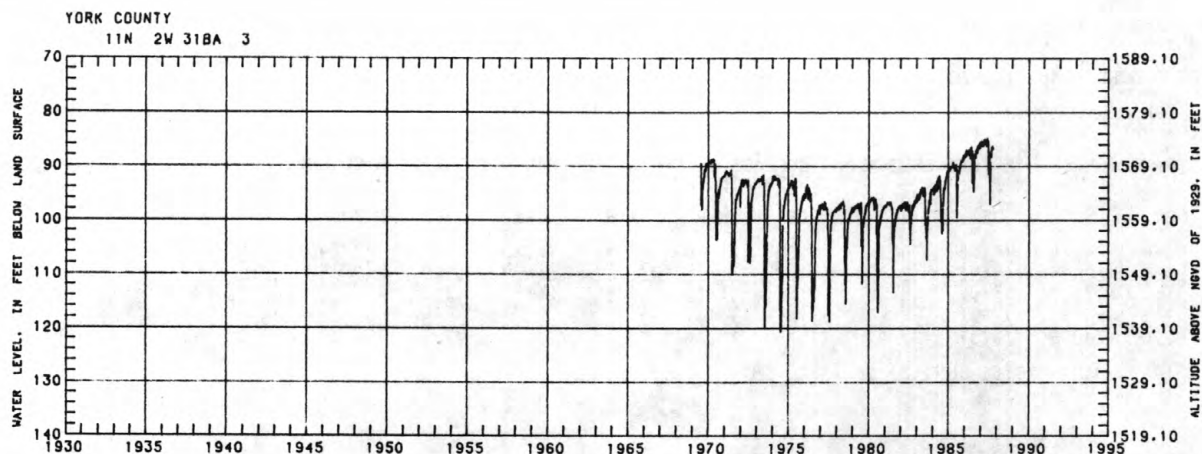
PERIOD OF RECORD.--May 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 84.55 ft below land-surface datum, June 1, 1987; lowest, 120.81 ft below land-surface datum, July 15, 1974.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
05	.....	.....	86.84	86.21	86.16	86.28	85.00	85.46	84.90	88.85	97.13	86.60
10	86.73	.....	85.54	86.22	86.01	85.96	85.77	85.19	85.79	88.90	90.85	86.75
15	87.54	86.26	86.60	86.32	86.11	85.15	85.67	86.40	86.41	87.69	88.29	86.38
20	86.50	86.13	85.63	85.36	85.39	86.12	85.01	85.12	85.17	89.48	87.70	86.71
25	86.35	86.90	85.40	86.20	86.22	85.07	85.10	85.86	89.20	93.51	88.31	86.34
EOM	.....	85.87	86.43	86.26	85.94	85.53	85.75	84.81	91.62	96.20	87.46	86.63

WTR YEAR 1987 MAX 84.55 JUN 1, 1987 MIN 97.92 AUG 1, 1987



CHEMICAL ANALYSES OF GROUND WATER

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(Local identifier: indicates location by township, range, and section. Geologic unit: 112 SDGV, sand and gravel deposits; 121 OGLL, Ogallala Formation; 110 QRNR, Quaternary System; 111 ALVM, Holocene alluvium; 110 SDGV, sand and gravel deposits, undifferentiated)

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

STATION	NUMBER	LOCAL IDENT- I- FIER	LAT- I- TUDE	LONG- I- TUDE	GEO- LOGIC UNIT	DATE	TIME
BUFFALO COUNTY							
404104099024201	8N 15W 8BBAA1		40 41 04 N	099 02 42 W	112SDGV	08-13-87	--
					112SDGV	08-13-87	1010
404538098430101	9N 13W12DDB 1		40 45 38 N	098 43 01 W	112SDGV	06-15-87	1230
					112SDGV	06-15-87	1235
					112SDGV	07-23-87	1200
					112SDGV	07-23-87	1205
					112SDGV	08-04-87	--
					112SDGV	08-04-87	1305
					112SDGV	08-20-87	1200
					112SDGV	08-20-87	1205
					112SDGV	09-02-87	1400
					112SDGV	09-02-87	1405
					112SDGV	09-24-87	1330
					112SDGV	09-24-87	1335
					112SDGV	06-15-87	1300
404538098430102	9N 13W12DDB 2				112SDGV	06-15-87	1305
					112SDGV	07-23-87	1230
					112SDGV	07-23-87	1235
					112SDGV	08-04-87	--
					112SDGV	08-04-87	1105
					112SDGV	08-20-87	1140
					112SDGV	08-20-87	1145
					112SDGV	09-02-87	1300
					112SDGV	09-02-87	1305
					112SDGV	09-24-87	1300
					112SDGV	09-24-87	1305
					112SDGV	06-15-87	1400
					112SDGV	06-15-87	1405
					112SDGV	07-23-87	1300
					112SDGV	07-23-87	1305
					112SDGV	08-04-87	--
					112SDGV	08-04-87	1105
					112SDGV	08-20-87	1100
					112SDGV	08-20-87	1105
					112SDGV	09-02-87	1200
					112SDGV	09-02-87	1205
					112SDGV	09-24-87	1230
					112SDGV	09-24-87	1235
404536098430101	9N 13W12DDBC1		40 45 36 N	098 43 01 W	112SDGV	06-15-87	1500
					112SDGV	06-15-87	1505
					112SDGV	07-23-87	1330
					112SDGV	07-23-87	1335
					112SDGV	08-04-87	--
					112SDGV	08-04-87	0705
					112SDGV	08-20-87	1400
					112SDGV	08-20-87	1405
					112SDGV	09-02-87	1100
					112SDGV	09-02-87	1105
					112SDGV	09-24-87	1500
					112SDGV	09-24-87	1505
404536098430102	9N 13W12DDBC2				112SDGV	06-15-87	1600
					112SDGV	06-15-87	1605
					112SDGV	07-23-87	1400
					112SDGV	07-23-87	1405
					112SDGV	08-04-87	--
					112SDGV	08-04-87	1505
					112SDGV	08-20-87	1430
					112SDGV	08-20-87	1435
					112SDGV	09-02-87	1000
					112SDGV	09-02-87	1005

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	DEPTH OF WELL, TOTAL (FEET) (72008)	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 NONCARB TOT FLD MG/L AS CACO3 (00902)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PRO- PAZINE TOTAL (UG/L) (39024)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)
BUFFALO COUNTY									
08-13-87	57.00	1250	6.98	12.0	--	0	15.0	--	--
08-13-87	57.00	--	--	--	--	0	--	<0.04	--
06-15-87	60.00	--	--	--	--	0	17.0	--	--
06-15-87	60.00	--	--	--	--	0	--	0.20	--
07-23-87	60.00	1330	6.93	12.0	1.3	0	26.0	--	--
07-23-87	60.00	--	--	--	--	0	--	0.05	--
08-04-87	60.00	1190	6.68	12.0	1.1	0	27.0	--	--
08-04-87	60.00	--	--	--	--	0	--	<0.02	--
08-20-87	60.00	1270	6.90	12.0	0.5	0	29.0	--	--
08-20-87	60.00	--	--	--	--	0	--	--	--
09-02-87	60.00	1120	6.65	12.0	0.3	0	28.0	--	--
09-02-87	60.00	--	--	--	--	0	--	0.05	--
09-24-87	60.00	1150	6.99	12.0	0.3	0	29.0	--	--
09-24-87	60.00	--	--	--	--	0	--	0.04	--
06-15-87	42.00	--	--	--	--	0	32.0	--	--
06-15-87	42.00	--	--	--	--	0	--	0.24	--
07-23-87	42.00	1040	6.58	15.0	7.4	0	24.0	--	--
07-23-87	42.00	--	--	--	--	0	--	<0.02	--
08-04-87	42.00	930	6.90	12.0	8.7	0	32.0	--	--
08-04-87	42.00	--	--	--	--	0	--	<0.02	--
08-20-87	42.00	1020	7.03	12.0	9.5	0	32.0	--	--
08-20-87	42.00	--	--	--	--	0	--	<0.02	--
09-02-87	42.00	1180	6.98	12.0	6.3	0	32.0	--	--
09-02-87	42.00	--	--	--	--	0	--	<0.02	--
09-24-87	42.00	1100	6.96	12.0	3.8	0	32.0	<0.10	<0.10
09-24-87	42.00	--	--	--	--	0	--	<0.02	--
06-15-87	24.00	--	--	--	--	0	43.0	--	--
06-15-87	24.00	--	--	--	--	0	--	<0.02	--
07-23-87	24.00	1410	6.82	14.0	9.9	0	37.0	--	--
07-23-87	24.00	--	--	--	--	0	--	<0.02	--
08-04-87	24.00	1280	6.91	16.0	9.3	0	46.0	--	--
08-04-87	24.00	--	--	--	--	0	--	<0.02	--
08-20-87	24.00	1310	6.88	13.5	9.4	0	44.0	--	--
08-20-87	24.00	--	--	--	--	0	--	<0.02	--
09-02-87	24.00	1260	6.92	13.0	9.4	0	49.0	--	--
09-02-87	24.00	--	--	--	--	0	--	<0.02	--
09-24-87	24.00	1230	6.87	13.0	9.8	0	47.0	--	--
09-24-87	24.00	--	--	--	--	0	--	<0.02	--
06-15-87	60.00	--	--	--	--	0	26.0	--	--
06-15-87	60.00	--	--	--	--	0	--	<0.02	--
07-23-87	60.00	1410	6.84	13.0	5.8	0	23.0	--	--
07-23-87	60.00	--	--	--	--	0	--	<0.02	--
08-04-87	60.00	1270	6.98	13.0	4.9	0	32.0	--	--
08-04-87	60.00	--	--	--	--	0	--	<0.02	--
08-20-87	60.00	1390	6.72	12.0	5.8	0	32.0	--	--
08-20-87	60.00	--	--	--	--	0	--	0.02	--
09-02-87	60.00	1220	6.70	12.0	5.0	0	33.0	--	--
09-02-87	60.00	--	--	--	--	0	--	0.02	--
09-24-87	60.00	1210	6.79	12.0	4.7	0	32.0	--	--
09-24-87	60.00	--	--	--	--	0	--	0.02	--
06-15-87	42.00	--	--	--	--	0	51.0	--	--
06-15-87	42.00	--	--	--	--	0	--	0.07	--
07-23-87	42.00	1410	6.56	14.0	6.7	0	38.0	--	--
07-23-87	42.00	--	--	--	--	0	--	<0.02	--
08-04-87	42.00	1190	6.83	12.0	6.6	0	46.0	--	--
08-04-87	42.00	--	--	--	--	0	--	<0.02	--
08-20-87	42.00	1360	6.85	12.0	9.5	0	50.0	--	--
08-20-87	42.00	--	--	--	--	0	--	<0.02	--
09-02-87	42.00	1250	6.93	12.0	5.8	0	47.0	--	--
09-02-87	42.00	--	--	--	--	0	--	<0.02	--

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	SIME- TRYNE TOTAL (UG/L) (39054)	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)
BUFFALO COUNTY									
08-13-87	--	--	--	--	--	--	--	--	--
08-13-87	--	0.09	0.10	--	4.0	--	0.84	--	--
06-15-87	--	--	--	--	--	--	--	--	--
06-15-87	--	--	--	--	1.2	--	--	--	--
07-23-87	--	--	--	--	--	--	--	--	--
07-23-87	--	<0.02	--	--	0.94	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--
08-04-87	--	<0.02	--	--	1.1	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--
08-20-87	--	<0.02	--	--	--	--	--	--	--
09-02-87	--	--	--	--	--	--	--	--	--
09-02-87	--	<0.02	--	--	1.1	--	--	--	--
09-24-87	--	--	--	--	--	--	--	--	--
09-24-87	--	<0.02	--	--	1.4	--	--	--	--
06-15-87	--	--	--	--	--	--	--	--	--
06-15-87	--	--	--	--	1.1	--	--	--	--
07-23-87	--	--	--	--	--	--	--	--	--
07-23-87	--	<0.02	--	--	0.59	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--
08-04-87	--	<0.02	--	--	0.50	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--
08-20-87	--	<0.02	--	--	0.44	--	--	--	--
09-02-87	--	--	--	--	--	--	--	--	--
09-02-87	--	<0.02	--	--	0.78	--	--	--	--
09-24-87	<0.1	<0.10	<0.10	<0.1	0.70	<0.10	<0.10	<0.10	<0.1
09-24-87	--	<0.02	--	--	0.76	--	--	--	--
06-15-87	--	--	--	--	--	--	--	--	--
06-15-87	--	<0.02	--	--	0.42	--	--	--	--
07-23-87	--	--	--	--	--	--	--	--	--
07-23-87	--	<0.02	--	--	0.43	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--
08-04-87	--	<0.02	--	--	0.27	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--
08-20-87	--	<0.02	--	--	0.20	--	--	--	--
09-02-87	--	--	--	--	--	--	--	--	--
09-02-87	--	<0.02	--	--	0.24	--	--	--	--
09-24-87	--	--	--	--	--	--	--	--	--
09-24-87	--	<0.02	--	--	0.20	--	--	--	--
06-15-87	--	--	--	--	--	--	--	--	--
06-15-87	--	--	--	--	1.3	--	--	--	--
07-23-87	--	--	--	--	--	--	--	--	--
07-23-87	--	<0.02	--	--	0.55	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--
08-04-87	--	<0.02	--	--	1.0	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--
08-20-87	--	<0.02	--	--	0.98	--	--	--	--
09-02-87	--	--	--	--	--	--	--	--	--
09-02-87	--	<0.02	--	--	0.95	--	--	--	--
09-24-87	--	--	--	--	--	--	--	--	--
09-24-87	--	<0.02	--	--	0.81	--	--	--	--
06-15-87	--	--	--	--	--	--	--	--	--
06-15-87	--	--	--	--	1.0	--	--	--	--
07-23-87	--	--	--	--	--	--	--	--	--
07-23-87	--	<0.02	--	--	1.1	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--
08-04-87	--	<0.02	--	--	0.78	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--
08-20-87	--	<0.02	--	--	0.73	--	--	--	--
09-02-87	--	--	--	--	--	--	--	--	--
09-02-87	--	<0.02	--	--	0.65	--	--	--	--

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
BUFFALO COUNTY									
404536098430102	9N 13W12DDBC2		40 45 36 N	098 43 01 W	112SDGV	09-24-87	1430	42.00	1210
404536098430103	9N 13W12DDBC3				112SDGV	09-24-87	1435	42.00	--
					112SDGV	06-15-87	1700	24.00	--
					112SDGV	06-15-87	1705	24.00	--
					112SDGV	07-23-87	1430	24.00	1310
					112SDGV	07-23-87	1435	24.00	--
					112SDGV	08-04-87	--	24.00	1150
					112SDGV	08-04-87	1435	24.00	--
					112SDGV	08-20-87	1500	24.00	1370
					112SDGV	08-20-87	1505	24.00	--
					112SDGV	09-02-87	0900	24.00	1300
					112SDGV	09-02-87	0905	24.00	--
					112SDGV	09-24-87	1400	24.00	1240
					112SDGV	09-24-87	1405	24.00	--
404539098430101	9N 13W12DO 1		40 45 39 N	098 43 01 W	112SDGV	07-14-87	1000	60.00	1130
					112SDGV	07-14-87	1005	60.00	--
					112SDGV	07-17-87	--	60.00	1100
					112SDGV	07-23-87	1130	60.00	1300
					112SDGV	07-23-87	1135	60.00	--
					112SDGV	08-04-87	--	60.00	1150
					112SDGV	08-04-87	1005	60.00	--
					112SDGV	08-20-87	1530	60.00	1260
					112SDGV	08-20-87	1535	60.00	--
404430098495601	9N 13W19BBA 1		40 44 30 N	098 49 56 W	112SDGV	07-31-87	1100	55.00	1400
					112SDGV	07-31-87	1110	55.00	--
404446098503601	9N 14W13DB 1		40 44 46 N	098 50 36 W	112SDGV	08-04-87	1235	55.00	659
404446098554901	9N 14W17CCBB1		40 44 46 N	098 55 49 W	112SDGV	07-31-87	1200	60.00	2380
					112SDGV	07-31-87	1210	60.00	--
404426098551401	9N 14W20ABCB1		40 44 26 N	098 55 14 W	112SDGV	07-31-87	1300	50.00	1760
					112SDGV	07-31-87	1310	50.00	--
404241099002501	9N 15W34BBCC1		40 42 41 N	099 00 25 W	112SDGV	08-13-87	--	59.00	1120
					112SDGV	08-13-87	0910	59.00	--
404226098591501	9N 15W35BCCC1		40 42 26 N	098 59 15 W	112SDGV	08-13-87	--	80.00	1370
					112SDGV	08-13-87	1010	80.00	--
404633099085801	9N 16W 5DBCC1		40 46 33 N	099 08 58 W	121OGLL	08-14-87	--	170.00	815
					121OGLL	08-14-87	1010	170.00	--
404609099161901	9N 17W 9BBCA1		40 46 09 N	099 16 19 W	121OGLL	08-14-87	--	200.00	487
					121OGLL	08-14-87	1110	200.00	--
404407099223701	9N 18W21DABA1		40 44 07 N	099 22 37 W	121OGLL	08-13-87	--	250.00	597
					121OGLL	08-13-87	0810	250.00	--
405137098443501	10N 13W 2DD 1		40 51 37 N	098 44 35 W	112SDGV	08-04-87	1355	75.00	612
404734098485801	10N 13W32CBBB1		40 47 34 N	098 48 58 W	112SDGV	07-31-87	--	103.00	1340
					112SDGV	07-31-87	1410	103.00	--
404714098511901	10N 14W35DDDA1		40 47 14 N	098 51 19 W	112SDGV	07-31-87	--	93.00	1120
					112SDGV	07-31-87	1510	93.00	--
405118099055201	10N 16W11BO 1		40 51 18 N	099 05 52 W	121OGLL	08-14-87	--	360.00	510
					121OGLL	08-14-87	0910	360.00	--
405506098465201	11N 13W16DD 1		40 55 06 N	098 46 52 W	112SDGV	08-04-87	--	120.00	450
410243099001501	12N 15W 3BBAC1		41 02 43 N	099 00 15 W	112SDGV	08-14-87	--	150.00	695
					112SDGV	08-14-87	0810	150.00	--
DAWES COUNTY									
423049098421801	29N 12W 3CA 1		42 30 49 N	098 42 18 W		08-21-87	0930	250.00	455

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	PH (STANDARD 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)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)
BUFFALO COUNTY												
09-24-87	6.82	12.0	6.6	--	0	--	--	--	--	--	--	--
09-24-87	--	--	--	--	0	--	--	--	--	--	--	--
06-15-87	--	--	--	--	0	--	--	--	--	--	--	--
06-15-87	--	--	--	--	0	--	--	--	--	--	--	--
07-23-87	6.70	14.0	10.3	--	0	--	--	--	--	--	--	--
07-23-87	--	--	--	--	0	--	--	--	--	--	--	--
08-04-87	6.97	13.0	8.9	--	0	--	--	--	--	--	--	--
08-04-87	--	--	--	--	0	--	--	--	--	--	--	--
08-20-87	7.11	13.5	9.4	--	0	--	--	--	--	--	--	--
08-20-87	--	--	--	--	0	--	--	--	--	--	--	--
09-02-87	7.14	13.0	9.4	--	0	--	--	--	--	--	--	--
09-02-87	--	--	--	--	0	--	--	--	--	--	--	--
09-24-87	7.04	13.0	9.0	--	0	--	--	--	--	--	--	--
09-24-87	--	--	--	--	0	--	--	--	--	--	--	--
07-14-87	7.00	12.0	--	--	0	--	--	--	--	--	--	--
07-14-87	--	--	--	--	0	--	--	--	--	--	--	--
07-17-87	6.64	12.0	--	--	0	--	--	--	--	--	--	--
07-23-87	7.15	12.0	--	--	0	--	--	--	--	--	--	--
07-23-87	--	--	--	--	0	--	--	--	--	--	--	--
08-04-87	7.12	12.0	--	--	0	--	--	--	--	--	--	--
08-04-87	--	--	--	--	0	--	--	--	--	--	--	--
08-20-87	7.10	12.0	--	--	0	--	--	--	--	--	--	--
08-20-87	--	--	--	--	0	--	--	--	--	--	--	--
07-31-87	6.77	13.0	--	--	0	--	--	--	--	--	--	--
07-31-87	--	--	--	--	0	--	--	--	--	--	--	--
08-04-87	7.23	14.0	--	260	100	79	16	32	0.9	9.7	160	--
07-31-87	7.27	12.0	--	--	0	--	--	--	--	--	--	--
07-31-87	--	--	--	--	0	--	--	--	--	--	--	--
07-31-87	7.22	12.0	--	--	0	--	--	--	--	--	--	--
07-31-87	--	--	--	--	0	--	--	--	--	--	--	--
08-13-87	6.86	14.0	--	--	0	--	--	--	--	--	--	--
08-13-87	--	--	--	--	0	--	--	--	--	--	--	--
08-13-87	6.82	13.0	--	--	0	--	--	--	--	--	--	--
08-13-87	--	--	--	--	0	--	--	--	--	--	--	--
08-14-87	6.94	13.0	--	--	0	--	--	--	--	--	--	--
08-14-87	--	--	--	--	0	--	--	--	--	--	--	--
08-14-87	7.08	14.0	--	--	0	--	--	--	--	--	--	--
08-14-87	--	--	--	--	0	--	--	--	--	--	--	--
08-13-87	7.01	14.0	--	--	0	--	--	--	--	--	--	--
08-13-87	--	--	--	--	0	--	--	--	--	--	--	--
08-04-87	7.22	14.0	--	280	280	95	11	8.9	0.2	4.9	--	13
07-31-87	6.82	12.0	--	--	0	--	--	--	--	--	--	--
07-31-87	--	--	--	--	0	--	--	--	--	--	--	--
07-31-87	6.98	12.0	--	--	0	--	--	--	--	--	--	--
07-31-87	--	--	--	--	0	--	--	--	--	--	--	--
08-14-87	7.04	13.5	--	--	0	--	--	--	--	--	--	--
08-14-87	--	--	--	--	0	--	--	--	--	--	--	--
08-04-87	7.42	14.0	--	220	0	73	8.1	6.6	0.2	4.0	223	8.4
08-14-87	6.87	12.5	--	--	0	--	--	--	--	--	--	--
08-14-87	--	--	--	--	0	--	--	--	--	--	--	--

DAWES COUNTY

08-21-87	7.35	12.0	--	190	130	58	11	9.2	0.3	6.8	62	22
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CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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 TOTAL (MG/L AS P) (00665)	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)
BUFFALO COUNTY											
09-24-87	--	--	--	--	--	--	41.0	--	--	--	--
09-24-87	--	--	--	--	--	--	--	--	--	--	--
06-15-87	--	--	--	--	--	--	47.0	--	--	--	--
06-15-87	--	--	--	--	--	--	--	--	--	--	--
07-23-87	--	--	--	--	--	--	50.0	--	--	--	--
07-23-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	51.0	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	56.0	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--
09-02-87	--	--	--	--	--	--	54.0	--	--	--	--
09-02-87	--	--	--	--	--	--	--	--	--	--	--
09-24-87	--	--	--	--	--	--	56.0	--	--	--	--
09-24-87	--	--	--	--	--	--	--	--	--	--	--
07-14-87	--	--	--	--	--	--	31.0	--	--	--	--
07-14-87	--	--	--	--	--	--	--	--	--	--	--
07-17-87	--	--	--	--	--	--	--	--	--	--	--
07-23-87	--	--	--	--	--	--	28.0	--	--	--	--
07-23-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	26.0	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	27.0	0.040	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	25.0	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	20	0.30	57	--	--	--	2.80	--	70	8	120
07-31-87	--	--	--	--	--	--	52.0	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	50.0	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	40.0	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	34.0	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--
08-14-87	--	--	--	--	--	--	0.610	--	--	--	--
08-14-87	--	--	--	--	--	--	--	--	--	--	--
08-14-87	--	--	--	--	--	--	2.30	--	--	--	--
08-14-87	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	4.20	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	37	0.20	51	225	0.31	0.0	0.970	--	40	6	<1
07-31-87	--	--	--	--	--	--	15.0	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	19.0	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--
08-14-87	--	--	--	--	--	--	1.70	--	--	--	--
08-14-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	5.8	0.20	52	295	0.40	0.0	0.760	--	40	3	<1
08-14-87	--	--	--	--	--	--	0.120	--	--	--	--
08-14-87	--	--	--	--	--	--	--	--	--	--	--
DAWES COUNTY											
08-21-87	12	0.10	32	316	0.43	0.0	29.0	--	20	4	<1

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[illegible]

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
GARFIELD COUNTY									
414517098523701	21N 13W31BBBD1		41 45 17 N	098 52 37 W	112SDGV	08-20-87	--	190.00	340
					112SDGV	08-20-87	0810	190.00	--
414445098502201	21N 13W32DADD1		41 44 45 N	098 50 22 W	112SDGV	08-18-87	--	175.00	179
					112SDGV	08-18-87	0910	175.00	--
414652098540901	21N 14W23AO 1		41 46 52 N	098 54 09 W	121OGLL	08-18-87	--	300.00	172
					121OGLL	08-18-87	1010	300.00	--
414512098582301	21N 14W32BBCE1		41 45 12 N	098 58 23 W	112SDGV	08-19-87	--	125.00	339
					112SDGV	08-19-87	0810	125.00	--
414638099045101	21N 15W20BDDC1		41 46 38 N	099 04 51 W	121OGLL	08-18-87	--	250.00	440
					121OGLL	08-18-87	0810	250.00	--
415957098455801	23N 13W 1AO 1		41 59 57 N	098 45 58 W	112SDGV	08-20-87	--	125.00	167
					112SDGV	08-20-87	1010	125.00	--
420511098500401	24N 13W 4BBDD1		42 05 11 N	098 50 04 W	112SDGV	08-20-87	--	250.00	212
					112SDGV	08-20-87	0910	250.00	--
420259098474301	24N 13W14CO 1		42 02 59 N	098 47 43 W	121OGLL	08-20-87	--	250.00	194
					121OGLL	08-20-87	1110	250.00	--
GOSPER COUNTY									
402445099410301	5N 21W10DACD1		40 24 45 N	099 41 03 W	112OGLL	08-06-87	--	225.00	552
					112OGLL	08-06-87	0810	225.00	--
402749099531601	6N 23W25BBCC1		40 27 49 N	099 53 16 W	121OGLL	08-06-87	--	270.00	570
					121OGLL	08-06-87	0910	270.00	--
403336099420301	7N 21W21DAAD1		40 33 36 N	099 42 03 W	112SDGV	08-06-87	--	250.00	942
					112SDGV	08-06-87	1010	250.00	--
403609099525001	7N 23W 1CADB1		40 36 09 N	099 52 50 W	112SDGV	08-06-87	--	130.00	939
					112SDGV	08-06-87	1110	130.00	--
404041099425401	8N 21W 9BCDD1		40 40 41 N	099 42 54 W	112SDGV	08-06-87	--	--	640
					112SDGV	08-06-87	0910	--	--
404104099412901	8N 21W10BAAA1		40 41 04 N	099 41 29 W	112SDGV	08-06-87	--	88.00	795
					112SDGV	08-06-87	1700	88.00	--
403827099500801	8N 22W29ABBA1		40 38 27 N	099 50 08 W	112SDGV	08-06-87	--	100.00	826
					112SDGV	08-06-87	1210	100.00	--
404156099533301	8N 23W 2AABB1		40 41 56 N	099 53 33 W	112SDGV	08-06-87	--	300.00	1040
					112SDGV	08-06-87	1610	300.00	--
404153099552701	8N 23W 3BBBD1		40 41 53 N	099 55 27 W	112SDGV	08-06-87	--	300.00	1170
					112SDGV	08-06-87	1510	300.00	--
404028099571701	8N 23W 8CADD1		40 40 28 N	099 57 17 W	112SDGV	08-06-87	--	240.00	995
					112SDGV	08-06-87	1310	240.00	--
HALL COUNTY									
404205098291401	9N 10W31CDBB1		40 42 05 N	098 29 14 W	112SDGV	07-30-87	1200	150.00	781
					112SDGV	07-30-87	1210	150.00	--
404618098350101	9N 11W 5CCDD1		40 46 18 N	098 35 01 W	112SDGV	07-29-87	1300	71.00	1670
					112SDGV	07-29-87	1310	71.00	--
404557098352501	9N 11W 7AD 1		40 45 57 N	098 35 25 W	112SDGV	08-04-87	1052	--	1020
					112SDGV	08-04-87	--	--	--
404536098430701	9N 12W 7CCAB1		40 45 36 N	098 43 07 W	112SDGV	07-30-87	--	55.00	915
					112SDGV	07-30-87	1510	55.00	--
404643098435201	9N 13W 1X 1		40 46 43 N	098 43 52 W	112SDGV	08-04-87	1300	61.00	1400
404321098441801	9N 13W25BC 1		40 43 21 N	098 44 18 W	112SDGV	08-04-87	1120	--	1060
405146098260001	10N 10W 3CBCA1		40 51 46 N	098 26 00 W	112SDGV	07-30-87	1600	42.00	599
					112SDGV	07-30-87	1610	42.00	--
405201098281501	10N 10W 5BC 1		40 52 01 N	098 28 15 W	112SDGV	08-05-87	1500	--	592
404832098283301	10N 10W30AD 1		40 48 32 N	098 28 33 W	112SDGV	08-05-87	1600	65.00	1160
404947098322701	10N 11W15CDDD1		40 49 47 N	098 32 27 W	112SDGV	07-29-87	1400	90.00	595
					112SDGV	07-29-87	1410	90.00	--

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
GARFIELD COUNTY												
08-20-87	7.30	15.0	--	0	--	--	--	--	--	--	--	--
08-20-87	--	--	--	0	--	--	--	--	--	--	--	--
08-18-87	7.33	12.5	--	0	--	--	--	--	--	--	--	--
08-18-87	--	--	--	0	--	--	--	--	--	--	--	--
08-18-87	7.25	12.0	--	0	--	--	--	--	--	--	--	--
08-18-87	--	--	--	0	--	--	--	--	--	--	--	--
08-19-87	6.90	15.0	--	0	--	--	--	--	--	--	--	--
08-19-87	--	--	--	0	--	--	--	--	--	--	--	--
08-18-87	7.35	12.0	--	0	--	--	--	--	--	--	--	--
08-18-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	6.48	12.0	--	0	--	--	--	--	--	--	--	--
08-20-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	6.60	11.0	--	0	--	--	--	--	--	--	--	--
08-20-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	7.03	12.0	--	0	--	--	--	--	--	--	--	--
08-20-87	--	--	--	0	--	--	--	--	--	--	--	--
GOSPER COUNTY												
08-06-87	7.15	15.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.16	15.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.08	15.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.18	13.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.10	15.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.18	14.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.10	14.5	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.21	14.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.12	13.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
08-06-87	7.21	15.0	--	0	--	--	--	--	--	--	--	--
08-06-87	--	--	--	0	--	--	--	--	--	--	--	--
HALL COUNTY												
07-30-87	7.06	13.5	--	0	--	--	--	--	--	--	--	--
07-30-87	--	--	--	0	--	--	--	--	--	--	--	--
07-29-87	7.07	12.0	--	0	--	--	--	--	--	--	--	--
07-29-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	7.60	20.0	340	140	90	27	87	2	6.9	195	290	35
07-30-87	6.64	13.0	--	0	--	--	--	--	--	--	--	--
07-30-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	7.14	13.0	610	330	190	34	67	1	23	284	330	55
08-04-87	7.30	19.0	400	160	120	24	73	2	6.9	243	280	28
07-30-87	6.62	12.0	--	0	--	--	--	--	--	--	--	--
07-30-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.43	14.0	240	55	78	12	16	0.5	14	190	50	12
08-05-87	7.51	14.0	370	200	110	24	100	2	6.7	179	300	52
07-29-87	6.54	13.0	--	0	--	--	--	--	--	--	--	--
07-29-87	--	--	--	0	--	--	--	--	--	--	--	--

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[illegible][illegible][illegible][illegible]

	DI- CHLORO- BROMO METHANE	CARBON- TETRA- CHLO- RIDE	1,2-DI- CHLORO- ETHANE	BROMO- FORM	CHLORO- DI- BROMO- METHANE	CHLORO- FORM	TOLUENE	BENZENE	CHLORO- BENZENE	CHLORO- ETHANE	ETHYL- BENZENE
DATE	TOTAL (UG/L) (32101)	TOTAL (UG/L) (32102)	TOTAL (UG/L) (32103)	TOTAL (UG/L) (32104)	TOTAL (UG/L) (32105)	TOTAL (UG/L) (32106)	TOTAL (UG/L) (34010)	TOTAL (UG/L) (34030)	TOTAL (UG/L) (34301)	TOTAL (UG/L) (34311)	TOTAL (UG/L) (34371)

[illegible][illegible][illegible]

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[illegible]

DATE	1,2-DI- CHLORO- PROPANE (UG/L) (34541)	1,2- TRANS- DI- CHLORO- ETHENE (UG/L) (34546)	1,3-DI- CHLORO- PROPENE (UG/L) (34561)	1,3-DI- CHLORO- BENZENE (UG/L) (34566)	1,4-DI- CHLORO- BENZENE (UG/L) (34571)	2- CHLORO- ETHYL- VINYL ETHER (UG/L) (34576)	DI- CHLORO- DI- FLUORO- METHANE (UG/L) (34668)	TRANS- 1,3-DI- CHLORO- PROPENE (UG/L) (34699)	CIS 1,3-DI- CHLORO- PROPENE (UG/L) (34704)	PRO- PAZINE TOTAL (UG/L) (39024)	SIMA- ZINE TOTAL (UG/L) (39055)
GARFIELD COUNTY											
08-20-87	--	--	--	--	--	--	--	--	--	--	
08-20-87	--	--	--	--	--	--	--	--	--	--	
08-18-87	--	--	--	--	--	--	--	--	--	--	
08-18-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-18-87	--	--	--	--	--	--	--	--	--	--	
08-18-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-19-87	--	--	--	--	--	--	--	--	--	--	
08-19-87	--	--	--	--	--	--	--	--	--	--	
08-18-87	--	--	--	--	--	--	--	--	--	--	
08-18-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-20-87	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	--	
08-20-87	--	--	--	--	--	--	--	--	--	<0.04	
08-20-87	--	--	--	--	--	--	--	--	--	--	
08-20-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-20-87	--	--	--	--	--	--	--	--	--	--	
08-20-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
GOSPER COUNTY											
08-06-87	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	--	
08-06-87	--	--	--	--	--	--	--	--	--	<0.04	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	--	--	
08-06-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
HALL COUNTY											
07-30-87	--	--	--	--	--	--	--	--	--	--	
07-30-87	--	--	--	--	--	--	--	--	<0.04	<0.05	
07-29-87	--	--	--	--	--	--	--	--	--	--	
07-29-87	--	--	--	--	--	--	--	--	<0.04	0.09	
08-04-87	--	--	--	--	--	--	--	--	--	--	
07-30-87	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	--	
07-30-87	--	--									

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	PROMETHE- TONE TOTAL (UG/L) (39056)	1,2- DIBROMO- ETHYL- ENE TOTAL (UG/L) (39082)	VINYL CHLO- RIDE TOTAL (UG/L) (39175)	TRI- CHLORO- ETHYL- ENE TOTAL (UG/L) (39180)	ATRA- ZINE, TOTAL (UG/L) (39630)	PICLO- RAM (TOR- DON) TOTAL (UG/L) (39720)	2,4-D, TOTAL (UG/L) (39730)	STYRENE TOTAL (UG/L) (77128)	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	XYLENE TOTAL WHOLE TOT REC (UG/L) (81551)	CYAN- AZINE TOTAL (UG/L) (81757)
GARFIELD COUNTY											
08-20-87	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	<0.50	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--
08-18-87	<0.04	--	--	--	<0.04	<0.12	--	--	<0.30	--	<0.40
08-18-87	--	--	--	--	--	--	--	--	--	--	--
08-18-87	<0.04	--	--	--	<0.04	--	--	--	--	--	<0.40
08-19-87	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	<0.50	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--
08-18-87	<0.04	--	--	--	0.06	<0.12	--	--	<0.30	--	<0.40
08-20-87	--	<3.0	<3.0	<3.0	--	--	--	<3.0	--	<3.0	--
08-20-87	<0.04	--	--	--	<0.04	0.64	--	--	<0.30	--	<0.40
08-20-87	--	--	--	--	--	--	--	--	--	--	--
08-20-87	<0.04	--	--	--	<0.04	--	--	--	--	--	<0.40
08-20-87	--	--	--	--	--	--	--	--	--	--	--
08-20-87	<0.04	--	--	--	<0.04	0.45	--	--	<0.30	--	<0.40
GOSPER COUNTY											
08-06-87	--	<3.0	<3.0	<3.0	--	--	--	<3.0	--	<3.0	--
08-06-87	<0.04	--	--	--	<0.04	1.8	--	--	<0.30	--	<0.40
08-06-87	--	--	--	--	--	--	--	--	--	--	--
08-06-87	<0.04	--	--	--	<0.04	--	--	--	--	--	<0.40
08-06-87	--	--	--	--	--	--	--	--	--	--	--
08-06-87	<0.04	--	--	--	<0.04	--	--	--	--	--	<0.40
08-06-87	--	--	--	--	<0.04	<0.12	--	--	<0.30	--	<0.40
08-06-87	--	--	--	--	--	--	<0.50	--	--	--	--
08-06-87	--	--	--	--	--	--	--	--	--	--	--
08-06-87	<0.04	--	--	--	<0.04	1.4	--	--	<0.30	--	<0.40
08-06-87	--	--	--	--	--	--	--	--	--	--	--
08-06-87	<0.04	--	--	--	<0.04	3.4	--	--	<0.30	--	<0.40
08-06-87	--	--	--	--	--	--	--	--	--	--	--
08-06-87	--	--	--	--	--	--	<0.50	--	--	--	--
08-06-87	--	--	--	--	--	--	<0.50	--	--	--	--
08-06-87	<0.04	--	--	--	<0.04	1.1	--	--	<0.30	--	<0.40
HALL COUNTY											
07-30-87	--	--	--	--	--	--	--	--	--	--	--
07-30-87	<0.04	--	--	--	0.30	--	--	--	--	--	<0.40
07-29-87	--	--	--	--	--	--	--	--	--	--	--
07-29-87	<0.04	--	--	--	0.52	<0.12	--	--	<0.30	--	<0.40
08-04-87	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	<3.0	<3.0	<3.0	--	--	--	<3.0	--	<3.0	--
07-30-87	--	--	--	--	--	1.5	<0.50	--	<0.30	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--
07-30-87	<0.04	--	--	--	0.17	<0.12	--	--	<0.30	--	<0.40
08-05-87	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--
07-29-87	<0.04	--	--	--	6.3	<0.12	--	--	<0.30	--	<0.40

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
HALL COUNTY									
404925098355901	10N	11W19BD 1	40 49 25 N	098 35 59 W	112SDGV	08-05-87	1415	212.00	514
404820098330801	10N	11W28DAO 1	40 48 20 N	098 33 08 W	112SDGV	07-30-87	1300	40.00	1510
					112SDGV	07-30-87	1310	40.00	--
404759098351001	10N	11W32BBBA1	40 47 59 N	098 35 10 W	112SDGV	07-31-87	1000	42.00	2000
					112SDGV	07-31-87	1010	42.00	--
404842098373301	10N	12W25BCBB1	40 48 42 N	098 37 33 W	112SDGV	07-29-87	1600	65.00	1020
					112SDGV	07-29-87	1610	65.00	--
404832098391501	10N	12W27ACCB1	40 48 32 N	098 39 15 W	112SDGV	07-30-87	1100	65.00	1030
					112SDGV	07-30-87	1110	65.00	--
404714098380601	10N	12W35DCCB1	40 47 14 N	098 38 06 W	112SDGV	07-29-87	1500	60.00	1720
					112SDGV	07-29-87	1510	60.00	--
405530098255702	11N	10W15BC 2	40 55 30 N	098 25 57 W	112SDGV	08-05-87	1640	100.00	438
405436098245801	11N	10W23BCCC1	40 54 36 N	098 24 58 W	112SDGV	07-29-87	1200	85.00	553
					112SDGV	07-29-87	1210	85.00	--
405315098325701	11N	11W27CCCC1	40 53 15 N	098 32 57 W	112SDGV	07-30-87	1000	73.00	1950
					112SDGV	07-30-87	1010	73.00	--
405254098314202	11N	11W35BC 2	40 52 54 N	098 31 42 W	112SDGV	08-05-87	1230	61.00	887
405618098373201	11N	12W12BCCC1	40 56 18 N	098 37 32 W	112SDGV	07-30-87	1400	55.00	2180
					112SDGV	07-30-87	1410	55.00	--
405452098363401	11N	12W24AA 1	40 54 52 N	098 36 34 W	112SDGV	08-04-87	1530	150.00	552
405255098394301	11N	12W34BC 1	40 52 55 N	098 39 43 W	112SDGV	08-05-87	1130	140.00	697
410002098234601	12N	10W24BBCB1	41 00 02 N	098 23 46 W	112SDGV	07-29-87	1100	78.00	519
					112SDGV	07-29-87	1110	78.00	--
405820098325001	12N	11W34BB 1	40 58 20 N	098 32 50 W	112SDGV	08-05-87	1020	50.00	1250
410005098365102	12N	12W24AB 2	41 00 05 N	098 36 51 W	112SDGV	08-05-87	0915	125.00	670
405821098390801	12N	12W34AB 1	40 58 21 N	098 39 08 W	112SDGV	08-05-87	0945	204.00	596
HOLT COUNTY									
420743098203801	25N	9W22AO 1	42 07 43 N	098 20 38 W	121OGLL	08-21-87	--	220.00	398
					121OGLL	08-21-87	1010	220.00	--
420614098285501	25N	10W28DCDC1	42 06 14 N	098 28 55 W	112SDGV	08-20-87	--	20.00	161
					112SDGV	08-20-87	0810	20.00	--
420835098443401	25N	12W17BO 1	42 08 35 N	098 44 34 W	112SDGV	08-20-87	--	188.00	720
					112SDGV	08-20-87	1210	188.00	--
420558098494601	25N	13W33AO 1	42 05 58 N	098 49 46 W	112SDGV	08-20-87	--	100.00	185
					112SDGV	08-20-87	1410	100.00	--
421118098495301	26N	13W33AO 1	42 11 18 N	098 49 53 W	112SDGV	08-20-87	--	170.00	409
					112SDGV	08-20-87	1310	170.00	--
422524098222101	28N	9W 4CDDC1	42 25 24 N	098 22 21 W	112SDGV	08-20-87	1420	119.00	362
422416098394301	28N	12W13AO 1	42 24 16 N	098 39 43 W	112SDGV	08-21-87	--	400.00	363
					112SDGV	08-21-87	1110	400.00	--
422925098244201	29N	9W18AC 1	42 29 25 N	098 24 42 W	112SDGV	08-20-87	1305	104.00	311
423047098320301	29N	10W 6CA 1	42 30 47 N	098 32 03 W	112SDGV	08-10-87	--	259.00	421
422723098290101	29N	10W28DA 1	42 27 23 N	098 29 01 W	112SDGV	08-20-87	1340	45.00	492
422951098341501	29N	11W 8DD 1	42 29 51 N	098 34 15 W	112SDGV	08-10-87	--	--	296
422944098360801	29N	11W 9DC 1	42 29 44 N	098 36 08 W	112SDGV	08-20-87	1030	36.00	--
423007098341501	29N	11W11BD 1	42 30 07 N	098 34 15 W	112SDGV	08-10-87	--	235.00	460
422858098372001	29N	11W17DO 1	42 28 58 N	098 37 20 W	112SDGV	08-10-87	--	--	278
423007098415901	29N	12W10AD 1	42 30 07 N	098 41 59 W	112SDGV	08-10-87	--	--	--
422917098405101	29N	12W14AC 1	42 29 17 N	098 40 51 W	121OGLL	08-18-87	1727	297.00	739
422925098435001	29N	12W16BO 1	42 29 25 N	098 43 50 W	112SDGV	08-10-87	--	328.00	--
422825098395901	29N	12W24BD 1	42 28 25 N	098 39 59 W	121OGLL	08-22-87	1000	322.00	335
422855099072001	29N	15W17CBDD1	42 28 55 N	099 07 20 W	112SDGV	08-21-87	--	65.00	149
					112SDGV	08-21-87	0810	65.00	--
423601098283401	30N	10W 3CC 1	42 36 01 N	098 28 34 W	112SDGV	08-11-87	--	260.00	--
423510098272201	30N	10W11CA 1	42 35 10 N	098 27 22 W	112SDGV	08-11-87	--	286.00	--
423415098302001	30N	10W17D 1	42 34 15 N	098 30 20 W	121OGLL	08-20-87	1145	254.00	348
423418098301501	30N	10W17DAC 1	42 34 18 N	098 30 15 W	112SDGV	08-11-87	--	265.00	616

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	PH (STANDARD 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)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
HALL COUNTY												
08-05-87	7.28	15.0	210	220	63	14	22	0.7	9.2	--	20	7.1
07-30-87	6.86	17.0	--	0	--	--	--	--	--	--	--	--
07-30-87	--	--	--	0	--	--	--	--	--	--	--	--
07-31-87	6.94	12.0	--	0	--	--	--	--	--	--	--	--
07-31-87	--	--	--	0	--	--	--	--	--	--	--	--
07-29-87	7.30	12.0	--	0	--	--	--	--	--	--	--	--
07-29-87	--	--	--	0	--	--	--	--	--	--	--	--
07-30-87	6.98	12.0	--	0	--	--	--	--	--	--	--	--
07-30-87	--	--	--	0	--	--	--	--	--	--	--	--
07-29-87	7.70	12.0	--	0	--	--	--	--	--	--	--	--
07-29-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.01	15.0	170	29	53	8.8	15	0.5	9.9	140	39	13
07-29-87	6.70	12.0	--	0	--	--	--	--	--	--	--	--
07-29-87	--	--	--	0	--	--	--	--	--	--	--	--
07-30-87	7.50	12.0	--	0	--	--	--	--	--	--	--	--
07-30-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.08	14.0	380	130	120	20	27	0.6	14	255	180	14
07-30-87	6.97	13.0	--	0	--	--	--	--	--	--	--	--
07-30-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	7.27	14.0	250	250	77	15	11	0.3	6.5	--	27	5.7
08-05-87	7.16	14.0	320	100	100	17	13	0.3	9.6	216	79	10
07-29-87	7.15	12.0	--	0	--	--	--	--	--	--	--	--
07-29-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.57	14.0	560	560	180	26	49	0.9	16	--	280	28
08-05-87	--	14.0	280	0	90	14	24	0.6	13	287	53	12
08-05-87	7.37	14.0	280	10	92	11	12	0.3	5.8	265	12	14
HOLT COUNTY												
08-21-87	7.48	12.0	--	0	--	--	--	--	--	--	--	--
08-21-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	7.08	11.0	--	0	--	--	--	--	--	--	--	--
08-20-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	7.30	11.0	--	0	--	--	--	--	--	--	--	--
08-20-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	6.92	15.0	--	0	--	--	--	--	--	--	--	--
08-20-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	7.25	15.0	--	0	--	--	--	--	--	--	--	--
08-20-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	7.18	11.5	150	34	47	7.1	15	0.6	3.9	113	13	3.0
08-21-87	7.09	11.0	--	0	--	--	--	--	--	--	--	--
08-21-87	--	--	--	0	--	--	--	--	--	--	--	--
08-20-87	6.89	14.5	130	100	39	8.1	9.3	0.4	3.6	29	21	7.8
08-10-87	6.81	12.5	150	150	45	9.4	8.5	0.3	4.3	--	15	11
08-20-87	6.60	13.5	200	150	61	12	13	0.4	14	51	30	16
08-10-87	7.84	13.0	93	94	30	4.5	9.0	0.4	5.5	--	11	6.4
08-20-87	7.59	16.0	75	0	25	3.1	6.1	0.3	4.9	92	1.7	1.2
08-10-87	6.89	13.0	150	150	47	8.8	10	0.4	5.8	--	17	7.8
08-10-87	7.76	13.0	94	94	30	4.6	8.6	0.4	5.1	--	5.9	1.3
08-10-87	7.69	13.0	76	77	25	3.4	5.0	0.3	4.2	--	3.8	1.1
08-18-87	7.51	14.0	330	260	100	20	16	0.4	7.1	72	38	17
08-10-87	7.03	13.0	71	71	23	3.2	5.1	0.3	4.0	--	3.2	0.90
08-22-87	7.21	12.0	150	48	48	6.6	9.5	0.4	5.0	99	11	1.6
08-21-87	7.12	12.0	--	0	--	--	--	--	--	--	--	--
08-21-87	--	--	--	0	--	--	--	--	--	--	--	--
08-11-87	7.26	12.0	84	84	26	4.6	10	0.5	3.8	--	9.4	6.6
08-11-87	7.07	12.0	78	78	24	4.3	10	0.5	3.1	--	11	3.8
08-20-87	6.89	13.0	150	99	44	9.3	11	0.4	3.8	49	26	9.8
08-11-87	6.93	12.0	220	220	66	13	15	0.5	4.4	--	22	12

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)
HALL COUNTY												
08-05-87	0.30	57	--	193	0.26	0.0	--	<0.100	--	--	--	--
07-30-87	--	--	--	--	--	--	--	6.50	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	--	22.0	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	33.0	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	26.0	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	15.0	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	0.20	31	--	278	0.38	0.0	--	5.40	--	--	--	--
07-29-87	--	--	--	--	--	--	--	11.0	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	26.0	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	0.30	21	--	571	0.78	0.0	--	5.00	--	--	--	--
07-30-87	--	--	--	--	--	--	--	19.0	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	0.20	50	--	193	0.26	0.0	--	0.130	--	--	--	--
08-05-87	0.30	54	--	424	0.58	0.0	--	2.70	--	--	--	--
07-29-87	--	--	--	--	--	--	--	0.480	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	0.20	27	--	606	0.82	0.0	--	<0.100	--	--	--	--
08-05-87	0.30	46	--	425	0.58	0.0	--	<0.100	--	--	--	--
08-05-87	0.20	53	--	377	0.51	0.0	--	4.10	--	--	--	--
HOLT COUNTY												
08-21-87	--	--	--	--	--	--	--	4.90	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	0.150	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	21.0	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	2.60	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	0.210	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	0.20	45	--	268	0.36	0.0	--	15.0	--	--	--	--
08-21-87	--	--	--	--	--	--	--	4.10	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	0.20	29	--	245	0.33	0.0	--	25.0	--	--	--	--
08-10-87	--	--	298	93	0.41	0.0	27.0	--	<0.010	1.8	29	0.050
08-20-87	0.10	23	--	363	0.49	0.0	--	37.0	--	--	--	--
08-10-87	--	--	192	66	0.26	0.0	11.0	--	<0.010	0.40	11	0.040
08-20-87	0.30	62	--	163	0.22	0.0	--	0.780	--	--	--	--
08-10-87	--	--	318	96	0.43	0.0	29.0	--	<0.010	1.9	31	0.030
08-10-87	--	--	172	55	0.23	0.0	7.80	--	<0.010	1.4	9.2	0.040
08-10-87	--	--	114	43	0.16	0.0	2.00	--	<0.010	0.20	2.2	0.030
08-18-87	0.10	33	--	565	0.77	0.0	--	66.0	--	--	--	--
08-10-87	--	--	136	39	0.18	0.0	2.10	--	<0.010	0.30	2.4	0.020
08-22-87	0.20	49	--	248	0.34	0.0	--	13.0	--	--	--	--
08-21-87	--	--	--	--	--	--	--	0.590	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	162	60	0.22	0.0	4.80	--	<0.010	0.30	5.1	0.070
08-11-87	--	--	144	56	0.20	0.0	11.0	--	<0.010	0.40	11	0.060
08-20-87	0.10	29	--	272	0.37	0.0	--	25.0	--	--	--	--
08-11-87	--	--	402	132	0.55	0.0	42.0	--	<0.010	1.9	44	0.040

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	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)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)
HALL COUNTY												
08-05-87	--	--	100	--	--	--	4	--	100	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	270	--	--	--	<3	--	4	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	40	--	--	--	6	--	2	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	60	--	--	--	4	--	<1	--	--	--
08-05-87	--	--	60	--	--	--	6	--	11	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	100	--	--	--	120	--	41	--	--	--
08-05-87	--	--	120	--	--	--	340	--	400	--	--	--
08-05-87	--	--	100	--	--	--	<3	--	16	--	--	--
HOLT COUNTY												
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	10	--	--	--	<3	--	<1	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	<10	--	--	--	3	--	<1	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	10	--	--	--	21	--	6	--	--	--
08-10-87	3	<0.5	--	<1	<10	<1	--	<5	--	<1	<1	20
08-20-87	--	--	20	--	--	--	3	--	<1	--	--	--
08-10-87	2	<0.5	--	<1	10	1	--	<5	--	1	<1	10
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	4	<0.5	--	<1	20	<1	--	<5	--	1	1	5
08-18-87	--	--	20	--	--	--	4	--	<1	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-22-87	--	--	30	--	--	--	23	--	6	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	1	0.9	--	<1	<10	1	--	<5	--	3	<1	6
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	10	--	--	--	17	--	6	--	--	--
08-11-87	1	0.9	--	<1	<10	1	--	<5	--	1	2	7

[illegible]

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	METHYL- BROMIDE	METHYL- CHLORIDE	METHYL- ENE CHLORIDE	TETRA- CHLORO- ETHYLENE	TRI- CHLORO- FLUOROMETHANE	1,1-DI- CHLORO- ETHANE	1,1-DI- CHLORO- ETHYLENE	1,1,1- TRI- CHLORO- ETHANE	1,1,2- TRI- CHLORO- ETHANE	1,1,2,2- TETRA- CHLORO- ETHANE	1,2-DI- CHLORO- BENZENE	1,2-DI- CHLORO- PROPANE
DATE	TOTAL (UG/L) (34413)	TOTAL (UG/L) (34418)	TOTAL (UG/L) (34423)	TOTAL (UG/L) (34475)	TOTAL (UG/L) (34488)	TOTAL (UG/L) (34496)	TOTAL (UG/L) (34501)	TOTAL (UG/L) (34506)	TOTAL (UG/L) (34511)	TOTAL (UG/L) (34516)	TOTAL (UG/L) (34536)	TOTAL (UG/L) (34541)

[illegible][illegible]

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

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DATE	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)	1,2- DIBROMO ETHYL- ENE TOTAL (UG/L) (39082)	VINYL CHLO- RIDE TOTAL (UG/L) (39175)	TRI- CHLORO- ETHYL- ENE TOTAL (UG/L) (39180)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	LINDANE TOTAL (UG/L) (39340)	CHLOR- DANE, TOTAL (UG/L) (39350)
HALL COUNTY												
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	<0.05	<0.04	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	0.22	<0.04	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	0.05	<0.04	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	0.69	<0.04	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	0.07	<0.04	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	<0.05	<0.04	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	<0.05	<0.04	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	0.08	<0.04	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
HOLT COUNTY												
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	<0.05	<0.04	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	<3.0	<3.0	<3.0	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	<0.05	<0.04	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	<0.05	<0.04	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--										

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	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)	METH- OXY- CHLOR, TOTAL (UG/L) (39480)	PCB, TOTAL (UG/L) (39516)
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HALL COUNTY

08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--	--
07-31-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
07-30-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
07-29-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--

HOLT COUNTY

08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
08-10-87	--	--	--	--	--	--	--	--	--	--	--	--
08-22-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.01	<1	<0.010	<0.010	<0.01	<0.1

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[illegible]

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

[illegible]

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
HOLT COUNTY									
423348098283201	30N 10W22BO	1	42 33 48 N	098 28 32 W		08-11-87	--	269.00	--
423204098294401	30N 10W33BB	1	42 32 04 N	098 29 44 W		08-11-87	--	200.00	--
423319098363801	30N 11W21CO	1	42 33 19 N	098 36 38 W		08-11-87	--	--	--
423137098380501	30N 11W32CO	1	42 31 37 N	098 38 05 W		08-11-87	--	221.00	228
423616098423201	30N 12W 3BD	1	42 36 16 N	098 42 32 W		08-11-87	--	322.00	--
423439098423801	30N 12W15BO	1	42 34 39 N	098 42 38 W		08-09-87	--	327.00	320
423132098461001	30N 12W31CC	1	42 31 32 N	098 46 10 W		08-11-87	--	327.00	320
423404098471401	30N 13W13CD	1	42 34 04 N	098 47 14 W	110QRNR	08-20-87	0840	244.00	362
423345098475701	30N 13W23A	1	42 33 45 N	098 47 57 W		08-12-87	--	80.00	374
423254098483401	30N 13W26BB	1	42 32 54 N	098 48 34 W		08-12-87	--	--	--
423553098561201	30N 14W 3DD	1	42 35 53 N	098 56 12 W		08-12-87	--	92.00	442
423554098590701	30N 14W 5C	1	42 35 54 N	098 59 07 W		08-12-87	--	--	338
423437098000401	30N 14W18BO	1	42 34 37 N	098 00 04 W		08-19-87	1003	--	307
423344098575401	30N 14W21BO	1	42 33 44 N	098 57 54 W	112SDGV	08-21-87	--	94.00	--
423753098291201	31N 10W28DA	1	42 37 53 N	098 29 12 W	112SDGV	08-21-87	1210	94.00	--
423704098355901	31N 11W33AD	1	42 37 04 N	098 35 59 W		08-12-87	--	269.00	--
423710098343101	31N 11W35BCAC1		42 37 10 N	098 34 31 W	121OGLL	08-21-87	--	142.00	296
					121OGLL	08-21-87	0910	105.00	232
423801098412601	31N 12W26BC	1	42 38 01 N	098 41 26 W	121OGLL	08-18-87	1253	150.00	238
423722098460501	31N 12W31BA	1	42 37 22 N	098 46 05 W	112SDGV	08-18-87	1222	85.00	273
424107098505501	31N 13W 4CO	1	42 41 07 N	098 50 55 W		08-12-87	--	182.00	--
424020098520501	31N 13W 8CC	1	42 40 20 N	098 52 05 W		08-13-87	--	156.00	472
424018098494101	31N 13W10CC	1	42 40 18 N	098 49 41 W		08-12-87	--	220.00	300
423741098531801	31N 13W30CC	1	42 37 41 N	098 53 18 W		08-13-87	--	220.00	300
424135098581901	31N 14W 5AO	1	42 41 35 N	098 58 19 W	112SDGV	08-12-87	--	155.00	508
423954098580701	31N 14W16BB	1	42 39 54 N	098 58 07 W	112SDGV	08-18-87	1111	110.00	605
423852098575401	31N 14W21BD	1	42 38 52 N	098 57 54 W		08-13-87	--	132.00	332
								167.00	490
423804098594301	31N 14W30AA	1	42 38 04 N	098 59 43 W		08-12-87	--	84.00	336
423713098553601	31N 14W35BB	1	42 37 13 N	098 55 36 W		08-12-87	--	91.00	--
424913098450601	33N 12W20DBBB1		42 49 13 N	098 45 06 W	111ALVM	08-13-87	1100	35.00	388
424913098450602	33N 12W20DBBB2				111ALVM	08-13-87	1110	60.00	428
KEARNEY COUNTY									
403030098462601	6N 13W10BA	1	40 30 30 N	098 46 26 W	112SDGV	08-04-87	--	120.00	525
402748098455101	6N 13W26BBCC1		40 27 48 N	098 45 51 W	112SDGV	08-04-87	0810	120.00	--
402639099020701	6N 15W32DBAD1		40 26 39 N	099 02 07 W	112SDGV	08-04-87	--	130.00	908
					112SDGV	08-04-87	0810	130.00	--
					112SDGV	08-04-87	--	214.00	936
402639098571901	6N 15W36DABC1		40 26 39 N	098 57 19 W	112SDGV	08-04-87	0810	214.00	--
					112SDGV	08-04-87	--	224.00	674
402931099100801	6N 16W18ACBB1		40 29 31 N	099 10 08 W	112SDGV	08-04-87	0810	224.00	--
					112SDGV	08-04-87	1200	140.00	1150
					112SDGV	08-04-87	1210	140.00	--
403513098575601	7N 15W12C	1	40 35 13 N	098 57 56 W	112SDGV	08-04-87	--	150.00	489
403914098515901	8N 14W23BAAD1		40 39 14 N	098 51 59 W	112SDGV	08-04-87	0810	150.00	--
					112SDGV	08-04-87	--	97.00	650
403747098521401	8N 14W26CO	1	40 37 47 N	098 52 14 W	112SDGV	08-04-87	0810	97.00	--
					112SDGV	08-04-87	--	110.00	228
403657098564401	8N 14W31CACCB1		40 36 57 N	098 56 44 W	112SDGV	08-04-87	0810	110.00	--
					112SDGV	08-04-87	--	150.00	352
403834098584701	8N 15W23DCCB1		40 38 34 N	098 58 47 W	112SDGV	08-04-87	1210	150.00	--
					112SDGV	08-04-87	--	55.00	690
					112SDGV	08-04-87	0810	55.00	--

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	PH (STANDARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	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)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
HOLT COUNTY												
08-11-87	7.03	12.5	63	63	19	3.8	8.6	0.5	2.7	--	11	3.3
08-11-87	6.98	12.0	78	79	24	4.5	7.2	0.4	3.6	--	9.1	7.9
08-11-87	7.41	12.5	73	74	23	3.9	7.2	0.4	5.9	--	7.8	2.8
08-11-87	7.80	13.0	81	81	26	3.8	8.0	0.4	5.4	--	5.4	1.3
08-11-87	7.98	13.0	89	89	31	2.7	5.8	0.3	4.4	--	8.9	1.4
08-09-87	7.31	13.0	--	0	--	--	--	--	--	--	--	--
08-11-87	7.31	13.0	110	110	36	5.7	8.0	0.3	5.0	--	9.0	4.2
08-11-87	7.53	13.0	150	150	49	7.2	7.2	0.3	5.4	--	3.1	1.0
08-20-87	7.53	12.5	130	35	43	5.0	7.9	0.3	5.1	93	14	4.9
08-12-87	7.64	13.0	160	160	51	7.3	7.3	0.3	5.7	--	3.0	1.2
08-12-87	7.59	12.5	130	130	42	6.0	6.2	0.2	5.0	--	4.6	2.0
08-12-87	6.71	11.5	150	150	49	7.6	11	0.4	5.1	--	19	8.3
08-12-87	6.79	13.0	110	110	35	5.6	8.4	0.4	4.5	--	14	4.5
08-19-87	7.37	11.0	140	67	43	6.8	11	0.4	5.4	69	24	9.7
08-21-87	--	--	--	0	--	--	--	--	--	--	--	--
08-21-87	--	--	--	0	--	--	--	--	--	--	--	--
08-12-87	7.29	12.5	91	91	28	5.0	10	0.5	2.5	--	12	2.3
08-12-87	7.79	12.5	110	110	37	4.1	8.3	0.4	5.6	--	4.5	1.4
08-21-87	7.53	12.0	--	0	--	--	--	--	--	--	--	--
08-21-87	--	--	--	0	--	--	--	--	--	--	--	--
08-18-87	7.42	16.0	120	0	39	4.3	5.7	0.2	4.8	129	2.9	1.0
08-18-87	7.68	16.0	130	0	42	6.2	7.4	0.3	8.6	143	3.9	3.9
08-12-87	7.14	12.0	59	59	18	3.3	6.8	0.4	3.8	--	5.5	1.3
08-13-87	6.85	12.0	160	160	50	9.4	10	0.4	4.8	--	12	11
08-12-87	6.97	12.0	100	100	30	6.3	7.9	0.4	4.5	--	10	4.9
08-13-87	6.97	12.0	--	0	--	--	--	--	--	--	--	--
08-12-87	6.54	12.0	180	180	56	10	9.9	0.3	5.3	--	19	9.8
08-12-87	6.48	12.0	210	210	66	11	12	0.4	4.9	--	21	9.6
08-18-87	7.64	12.0	140	76	44	6.7	8.6	0.3	4.9	62	16	6.0
08-13-87	6.84	12.0	180	180	56	8.6	9.8	0.3	5.4	--	20	10
08-12-87	6.97	12.0	120	120	38	5.1	8.6	0.4	5.0	--	11	5.6
08-12-87	--	--	220	220	69	12	13	0.4	6.1	--	26	16
08-13-87	7.45	12.0	150	150	50	6.7	12	0.4	7.8	--	6.1	1.5
08-13-87	7.80	12.0	160	160	49	8.0	22	0.8	8.4	--	63	1.2

KEARNEY COUNTY

08-04-87	5.11	15.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	6.98	15.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	7.11	15.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	7.18	15.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	7.14	15.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	7.09	15.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	6.96	13.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	6.47	13.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	7.05	13.0	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--
08-04-87	6.90	12.5	--	0	--	--	--	--	--	--	--	--
08-04-87	--	--	--	0	--	--	--	--	--	--	--	--

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DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, 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)
HOLT COUNTY												
08-11-87	--	--	145	48	0.20	0.0	7.40	--	<0.010	--	0.40	7.8
08-11-87	--	--	178	56	0.24	0.0	10.0	--	<0.010	--	0.60	11
08-11-87	--	--	146	51	0.20	0.0	4.90	--	<0.010	--	0.80	5.7
08-11-87	--	--	156	50	0.21	0.0	1.60	--	<0.010	--	0.20	1.8
08-11-87	--	--	170	54	0.23	0.0	6.80	--	<0.010	--	0.30	7.1
08-09-87	--	--	--	--	--	--	12.0	--	<0.010	--	0.40	12
08-11-87	--	--	241	68	0.33	0.0	--	--	--	--	--	--
08-11-87	--	--	233	73	0.32	0.0	1.60	--	<0.010	--	0.20	1.8
08-20-87	0.30	57	--	250	0.34	0.0	--	13.0	--	--	--	--
08-12-87	--	--	247	76	0.34	0.0	1.80	--	<0.010	--	0.20	2.0
08-12-87	--	--	219	66	0.30	0.0	5.00	--	<0.010	--	1.0	6.0
08-12-87	--	--	313	100	0.43	0.0	27.0	--	<0.010	--	2.3	29
08-12-87	--	--	233	72	0.32	0.0	18.0	--	<0.010	--	2.2	20
08-19-87	0.20	41	--	257	0.35	0.0	--	17.0	--	--	--	--
08-21-87	--	--	--	--	--	--	--	32.0	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	186	60	0.25	0.0	12.0	--	<0.010	--	0.60	13
08-12-87	--	--	201	61	0.27	0.0	1.90	--	<0.010	--	0.20	2.1
08-21-87	--	--	--	--	--	--	--	0.790	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-18-87	0.20	58	--	197	0.27	0.0	--	0.850	--	--	--	--
08-18-87	0.30	58	--	221	0.30	0.0	--	1.10	--	--	--	--
08-12-87	--	--	134	39	0.18	0.0	5.00	--	<0.010	--	0.50	5.5
08-13-87	--	--	333	97	0.45	0.0	20.0	--	0.040	2.4	2.4	22
08-12-87	--	--	220	64	0.30	0.0	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	14.0	--	<0.010	--	1.7	16
08-12-87	--	--	362	110	0.49	0.0	34.0	--	<0.010	--	2.4	36
08-12-87	--	--	414	125	0.56	0.0	51.0	--	<0.010	--	3.1	54
08-18-87	0.20	41	--	253	0.34	0.0	--	20.0	--	--	--	--
08-13-87	--	--	314	110	0.43	0.0	32.0	--	<0.010	--	3.7	36
08-12-87	--	--	224	73	0.30	0.0	16.0	--	<0.010	--	1.5	17
08-12-87	--	--	417	142	0.57	0.0	39.0	--	0.010	2.1	2.1	41
08-13-87	--	--	245	84	0.33	0.0	<0.100	--	0.220	0.18	0.40	--
08-13-87	--	--	298	152	0.41	0.0	<0.100	--	0.440	0.16	0.60	--

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CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	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)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)
HOLT COUNTY												
08-11-87	0.060	2	<0.5	--	<1	<10	1	--	<5	--	1	<1
08-11-87	0.080	--	--	--	--	--	--	--	--	--	--	--
08-11-87	0.040	--	--	--	--	--	--	--	--	--	--	--
08-11-87	0.030	--	--	--	--	--	--	--	--	--	--	--
08-11-87	0.030	--	--	--	--	--	--	--	--	--	--	--
08-09-87	0.030	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	0.040	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	10	--	--	--	4	--	<1	--	--
08-12-87	0.030	4	0.6	--	<1	<10	<1	--	<5	--	<1	<1
08-12-87	0.030	--	--	--	--	--	--	--	--	--	--	--
08-12-87	0.120	2	0.8	--	<1	<10	1	--	<5	--	2	<1
08-12-87	0.120	4	0.5	--	<1	<10	1	--	<5	--	1	<1
08-19-87	--	--	--	<10	--	--	--	5	--	2	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	0.080	--	--	--	--	--	--	--	--	--	--	--
08-12-87	0.030	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	<10	--	--	--	6	--	<1	--	--
08-18-87	--	--	--	20	--	--	--	3	--	<1	--	--
08-12-87	0.190	4	0.5	--	<1	20	1	--	<5	--	1	<1
08-13-87	0.120	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	0.130	--	--	--	--	--	--	--	--	--	--	--
08-12-87	0.080	--	--	--	--	--	--	--	--	--	--	--
08-12-87	0.070	<1	<0.5	--	<1	<10	1	--	<5	--	1	<1
08-18-87	--	--	--	10	--	--	--	7	--	1	--	--
08-13-87	0.080	--	--	--	--	--	--	--	--	--	--	--
08-12-87	0.120	--	--	--	--	--	--	--	--	--	--	--
08-12-87	0.090	--	--	--	--	--	--	--	--	--	--	--
08-13-87	0.100	4	<0.5	--	<1	20	1	--	<5	--	2	<1
08-13-87	0.150	7	<0.5	--	<1	10	<1	--	<5	--	<1	--

KEARNEY COUNTY

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CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	1,2-DI- CHLORO- PROPANE TOTAL (UG/L) (34541)	1,2- TRANSDI- CHLORO- ETHENE TOTAL (UG/L) (34546)	1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34561)	1,3-DI- CHLORO- BENZENE TOTAL (UG/L) (34566)	1,4-DI- CHLORO- BENZENE TOTAL (UG/L) (34571)	2- CHLORO- ETHYL- VINYL- ETHER TOTAL (UG/L) (34576)	DI- CHLORO- DI- FLUORO- METHANE TOTAL (UG/L) (34668)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34699)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (UG/L) (34704)	PRO- PAZINE TOTAL (UG/L) (39024)	TRI- FLURA- LIN TOTAL RECOVER (UG/L) (39030)	PER- THANE TOTAL (UG/L) (39034)
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HOLT COUNTY

08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-09-87	--	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.1
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.1
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	<0.10	<0.10	--
08-21-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.1
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.1
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.1
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.1
08-13-87	--	--	--	--	--	--	--	--	--	<0.10	<0.10	<0.1

KEARNEY COUNTY

08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--
08-04-87	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<0.04	--	--
08-04-87	--	--	--	--	--	--	--	--	--	<0.04	--	--

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CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	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) (AMDON) TOTAL (UG/L) (39720)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	SEVIN, TOTAL (UG/L) (39750)	MIREX, TOTAL (UG/L) (39755)	SILVEX, TOTAL (UG/L) (39760)
HOLT COUNTY												
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-09-87	<0.1	--	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	<0.1	<0.01	<0.01	<0.01	<0.01	1.7	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	<0.10	--	--	--	--	--	--
08-21-87	--	--	--	--	--	<0.04	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	<0.50	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	<0.1	<0.01	<0.01	<0.01	<0.01	0.20	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
08-12-87	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
08-12-87	--	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
08-12-87	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
08-12-87	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
08-13-87	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
08-13-87	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01	<2.0	<0.01	<0.01
KEARNEY COUNTY												
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.04	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	<0.50	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.04	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.04	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.04	--	--	--	--	--	--
08-04-87	--	--	--	--	--	0.70	1.0	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.04	--	--	--	--	--	--
08-04-87	--	--	--	--	--	0.52	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	0.25	<0.12	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	0.06	1.3	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	0.98	1.9	--	--	--	--	--

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TOTAL TRI- THION (UG/L) (39786)	METHYL TRI- THION, TOTAL (UG/L) (39790)	STYRENE TOTAL (UG/L) (77128)	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	XYLENE TOTAL WATER WHOLE TOT REC (UG/L) (81551)	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 (82184)	METRI- BUZIN WATER WHOLE TOT REC (UG/L) (82611)	METOLA- CHLOR WATER WHOLE TOT REC (UG/L) (82612)
HOLT COUNTY											
08-11-87	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--
08-09-87	<0.01	<0.01	--	<0.10	--	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-11-87	--	--	--	--	--	--	--	--	--	--	--
08-11-87	--	--	--	--	--	--	--	--	--	--	--
08-20-87	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--
08-12-87	<0.01	<0.01	--	<0.10	--	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-12-87	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	<0.10	--	<0.10	--	--	<0.10	<0.1	<0.1
08-21-87	--	--	--	--	--	<0.40	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--
08-21-87	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--
08-12-87	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--
08-13-87	<0.01	<0.01	--	<0.10	--	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-12-87	<0.01	<0.01	--	<0.10	--	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-12-87	--	--	--	--	--	--	--	--	--	--	--
08-18-87	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--
08-12-87	<0.01	<0.01	--	<0.10	--	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-12-87	<0.01	<0.01	--	<0.10	--	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-13-87	<0.01	<0.01	--	<0.10	--	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-13-87	<0.01	<0.01	--	<0.10	--	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
KEARNEY COUNTY											
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.40	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.40	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.40	--	--	--	--	--
08-04-87	--	--	--	<0.30	--	<0.40	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.40	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.40	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	--	--	<0.40	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	<0.30	--	<0.40	--	--	--	--	--
08-04-87	--	--	--	--	--	--	--	--	--	--	--
08-04-87	--	--	--	<0.30	--	<0.40	--	--	--	--	--
08-04-87	--	--	<3.0	--	<3.0	--	--	--	--	--	--
08-04-87	--	--	--	<0.30	--	<0.40	--	--	--	--	--

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
KEYA PAHA COUNTY									
425050099494101	33N 21W 7AD 1		42 50 50 N	099 49 41 W	121OGLL	08-18-87	1530	80.00	156
KNOX COUNTY									
422702098160301	29N 8W32AAA 1		42 27 02 N	098 16 03 W	121OGLL	08-20-87	1500	--	456
PHELPS COUNTY									
402250099220501	5N 18W21DCCC1		40 22 50 N	099 22 05 W	112SDGV	08-05-87	--	260.00	631
402457099331701	5N 20W11DBAB1		40 24 57 N	099 33 17 W	112SDGV	08-05-87	0810	260.00	--
402855099174601	6N 17W18CCDD1		40 28 55 N	099 17 46 W	112SDGV	08-13-87	--	250.00	578
					112SDGV	08-13-87	0810	250.00	--
					112SDGV	08-05-87	--	100.00	1100
402854099285901	6N 19W16DCCC1		40 28 54 N	099 28 59 W	112SDGV	08-05-87	0810	100.00	--
					121OGLL	08-05-87	--	400.00	619
403511099225601	7N 18W 8DDBB1		40 35 11 N	099 22 56 W	121OGLL	08-05-87	0810	400.00	--
					112SDGV	08-05-87	--	117.00	1120
					112SDGV	08-05-87	0810	117.00	--
403413099280701	7N 19W15CDCA1		40 34 13 N	099 28 07 W	121OGLL	08-13-87	--	140.00	1970
403903099122401	8N 17W23ACBC1		40 39 03 N	099 12 24 W	121OGLL	08-13-87	0810	140.00	--
403755099222601	8N 18W28CBDA1		40 37 55 N	099 22 26 W	112SDGV	08-05-87	--	50.00	772
					112SDGV	08-05-87	0810	50.00	--
					112SDGV	08-05-87	--	80.00	892
403933099312801	8N 19W18CDBB1		40 39 33 N	099 31 28 W	112SDGV	08-05-87	0810	80.00	--
					112SDGV	08-05-87	--	50.00	1140
403739099281601	8N 19W27CCDD1		40 37 39 N	099 28 16 W	112SDGV	08-05-87	0810	50.00	--
					112SDGV	08-05-87	--	90.00	1200
					112SDGV	08-05-87	0810	90.00	--
ROCK COUNTY									
424728099182201	33N 17W34BDDD1		42 47 28 N	099 18 22 W	110SDGV	10-14-86	1245	14.00	244
						12-16-86	1115	14.00	--
						03-06-87	1220	14.00	--
						06-24-87	1200	14.00	351
						07-22-87	1515	14.00	322
424728099182202	33N 17W34BDDD2					08-18-87	1115	14.00	304
						10-14-86	1345	29.00	287
						12-16-86	1050	29.00	--
						03-06-87	1200	29.00	--
						06-24-87	1130	29.00	285
						07-22-87	1500	29.00	290
						08-18-87	1100	29.00	294
WHEELER COUNTY									
415448098210401	22N 9W 3BDD1		41 54 48 N	098 21 04 W	112SDGV	08-19-87	--	150.00	179
415208098364401	22N 11W20AO 1		41 52 08 N	098 36 44 W	112SDGV	08-19-87	0810	150.00	--
415141098323901	22N 11W24CO 1		41 51 41 N	098 32 39 W	112SDGV	08-19-87	--	176.00	372
					112SDGV	08-19-87	0810	176.00	--
					112SDGV	08-19-87	--	265.00	361
415907098210201	23N 9W10BO 1		41 59 07 N	098 21 02 W	112SDGV	08-19-87	1010	265.00	--
					112SDGV	08-19-87	--	200.00	302
					112SDGV	08-19-87	0810	200.00	--
415520098202501	23N 9W34DABC1		41 55 20 N	098 20 25 W	112SDGV	08-19-87	--	90.00	168
					112SDGV	08-19-87	0810	90.00	--

CHEMICAL ANALYSES OF GROUND WATER

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WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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- LITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
KEYA PAHA COUNTY												
08-18-87	7.48	12.0	60	0	19	3.0	4.7	0.3	5.8	61	4.2	1.3
KNOX COUNTY												
08-20-87	7.56	12.5	200	5	62	11	20	0.6	6.5	195	17	5.2
PHELPS COUNTY												
08-05-87	7.12	15.0	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
08-13-87	7.20	15.0	--	0	--	--	--	--	--	--	--	--
08-13-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	6.99	15.0	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.12	16.0	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.19	15.0	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
08-13-87	7.04	14.0	--	0	--	--	--	--	--	--	--	--
08-13-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.06	15.0	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.08	13.0	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.11	15.0	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
08-05-87	7.14	15.0	--	0	--	--	--	--	--	--	--	--
08-05-87	--	--	--	0	--	--	--	--	--	--	--	--
ROCK COUNTY												
10-14-86	7.40	16.5	99	0	34	3.5	11	0.5	7.4	123	9.2	1.8
12-16-86	7.90	12.0	110	0	37	3.9	10	0.4	6.8	134	3.5	1.7
03-06-87	--	9.5	150	0	51	5.5	11	0.4	7.6	186	1.7	2.1
06-24-87	7.22	12.5	150	0	52	5.7	12	0.4	8.9	187	4.0	1.9
07-22-87	7.16	14.5	140	0	46	5.3	11	0.4	8.9	168	3.2	1.7
08-18-87	7.88	15.5	120	0	42	4.8	10	0.4	8.8	158	4.1	1.7
10-14-86	7.10	11.0	130	0	42	4.9	9.5	0.4	5.2	148	6.3	1.8
12-16-86	7.80	12.0	130	0	44	5.2	9.7	0.4	5.4	150	4.6	1.9
03-06-87	--	12.5	120	0	42	4.8	9.5	0.4	5.4	143	7.7	1.9
06-24-87	7.16	12.0	130	0	43	5.2	10	0.4	5.7	148	7.6	1.9
07-22-87	7.12	12.5	130	130	42	5.2	10	0.4	3.9	--	4.5	2.1
08-18-87	7.78	13.0	120	0	40	4.8	9.7	0.4	5.7	150	4.2	1.8
WHEELER COUNTY												
08-19-87	6.87	12.0	--	0	--	--	--	--	--	--	--	--
08-19-87	--	--	--	0	--	--	--	--	--	--	--	--
08-19-87	5.57	12.0	--	0	--	--	--	--	--	--	--	--
08-19-87	--	--	--	0	--	--	--	--	--	--	--	--
08-19-87	7.50	12.0	--	0	--	--	--	--	--	--	--	--
08-19-87	--	--	--	0	--	--	--	--	--	--	--	--
08-19-87	7.15	12.0	--	0	--	--	--	--	--	--	--	--
08-19-87	--	--	--	0	--	--	--	--	--	--	--	--
08-19-87	7.33	12.0	--	0	--	--	--	--	--	--	--	--
08-19-87	--	--	--	0	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	FLUORIDE, 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 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)	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)
KEYA PAHA COUNTY												
08-18-87	0.30	67	156	0.21	0.0	--	3.30	--	--	--	--	--
KNOX COUNTY												
08-20-87	0.50	53	336	0.46	0.0	--	10.0	--	--	--	--	--
PHELPS COUNTY												
08-05-87	--	--	--	--	--	--	2.50	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	4.20	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	11.0	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	2.80	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	3.40	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	32.0	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	5.20	--	--	--	0.030	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	6.20	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	5.60	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	3.00	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
ROCK COUNTY												
10-14-86	--	--	141	0.19	0.0	<0.100	--	0.110	1.7	1.8	<0.200	15
12-16-86	--	--	143	0.19	0.0	<0.100	--	0.070	1.5	1.6	0.120	13
03-06-87	--	--	190	0.26	0.0	<0.100	--	0.110	0.69	0.80	0.140	10
06-24-87	--	--	197	0.27	0.0	<0.100	--	0.150	0.75	0.90	0.140	11
07-22-87	--	--	177	0.24	0.0	<0.100	--	0.110	0.79	0.90	0.160	10
08-18-87	--	--	166	0.23	0.0	<0.100	--	0.120	0.38	0.50	0.160	12
10-14-86	--	--	158	0.22	0.0	<0.100	--	0.070	0.53	0.60	0.090	8
12-16-86	--	--	161	0.22	0.0	<0.100	--	0.030	0.77	0.80	0.100	8
03-06-87	--	--	157	0.21	0.0	<0.100	--	0.030	0.67	0.70	0.110	10
06-24-87	--	--	162	0.22	0.0	<0.100	--	0.100	0.60	0.70	0.110	8
07-22-87	--	--	68	0.09	0.0	<0.100	--	0.040	0.46	0.50	0.130	8
08-18-87	--	--	156	0.21	0.0	<0.100	--	0.040	0.56	0.60	0.130	8
WHEELER COUNTY												
08-19-87	--	--	--	--	--	--	0.500	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	30.0	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	5.50	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	8.00	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	0.940	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--

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CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	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) (AMDON) TOTAL (UG/L) (39720)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)
KEYA PAHA COUNTY												
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
KNOX COUNTY												
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
PHELPS COUNTY												
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	<0.04	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	<0.50	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	0.08	3.0	--	--
08-05-87	--	--	--	--	--	--	--	--	0.18	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	0.43	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	<0.50	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	0.56	2.8	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	0.07	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	0.41	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	<0.04	2.1	--	--
ROCK COUNTY												
10-14-86	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
12-16-86	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
03-06-87	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
06-24-87	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
07-22-87	<0.010	<0.010	0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
08-18-87	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.01	<0.01
10-14-86	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
12-16-86	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
03-06-87	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
06-24-87	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
07-22-87	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
08-18-87	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	<0.01	<0.01
08-18-87	<0.010	<0.010	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.10	<0.01	0.01	<0.01
WHEELER COUNTY												
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	<0.04	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	1.7	3.5	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	0.05	<0.12	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	<0.04	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	--	--
08-19-87	--	--	--	--	--	--	--	--	--	--	<0.50	--

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	SEVIN, TOTAL (UG/L) (39750)	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 (82184)	METRI- BUZIN WATER WHOLE TOT. REC (UG/L) (82611)	METOLA- CHLOR WATER WHOLE TOT. REC (UG/L) (82612)
KEYA PAHA COUNTY												
08-18-87	--	--	--	--	--	--	--	--	--	--	--	--
KNOX COUNTY												
08-20-87	--	--	--	--	--	--	--	--	--	--	--	--
PHELPS COUNTY												
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	<0.40	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	<0.30	<0.40	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	<0.40	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	<0.40	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-13-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	<0.30	<0.40	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	<0.40	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	--	<0.40	--	--	--	--	--
08-05-87	--	--	--	--	--	--	--	--	--	--	--	--
08-05-87	--	--	--	--	--	<0.30	<0.40	--	--	--	--	--
ROCK COUNTY												
10-14-86	<2.0	<0.01	<0.01	<0.01	<0.01	--	<0.10	<0.01	<0.01	<0.10	--	--
12-16-86	<2.0	<0.01	<0.01	<0.01	<0.01	--	<0.10	<0.01	<0.01	<0.10	--	--
03-06-87	<2.0	<0.01	<0.01	<0.01	<0.01	--	<0.10	<0.01	<0.01	<0.10	--	--
06-24-87	<2.0	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
07-22-87	<2.0	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-18-87	<2.0	<0.01	0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
10-14-86	<2.0	<0.01	<0.01	<0.01	<0.01	--	<0.10	<0.01	<0.01	<0.10	--	--
12-16-86	<2.0	<0.01	<0.01	<0.01	<0.01	--	<0.10	<0.01	<0.01	<0.10	--	--
03-06-87	<2.0	<0.01	<0.01	<0.01	<0.01	--	<0.10	<0.01	<0.01	<0.10	--	--
06-24-87	<2.0	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
07-22-87	<2.0	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
08-18-87	<2.0	<0.01	<0.01	<0.01	<0.01	<0.10	<0.10	<0.01	<0.01	<0.10	<0.1	<0.1
WHEELER COUNTY</												

CHEMICAL ANALYSES OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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)
YORK COUNTY									
404322097492001	9N	4W30BCA 1	40 43 22 N	097 49 20 W	112SDGV 112SDGV	07-29-87 07-29-87	1000 1010	122.00 122.00	765 --

DATE	PH (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	HARD- NESS NONCARB WH WAT TOT FLD MG/L AS CACO3 (00902)	NITRO- GEN NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PRO- PAZINE TOTAL (UG/L) (39024)	SIMA- ZINE TOTAL (UG/L) (39055)	PROME- TONE TOTAL (UG/L) (39056)	ATRA- ZINE, TOTAL (UG/L) (39630)	PICLO- RAM (TOR- DON) (AMDON) TOTAL (UG/L) (39720)	ALA- CHLOR TOTAL RECOVER (UG/L) (77825)	CYAN- AZINE TOTAL (UG/L) (81757)
YORK COUNTY											
07-29-87	6.93	12.0	0	6.40	--	--	--	--	--	--	--
07-29-87	--	--	0	--	<0.04	<0.05	<0.0	0.10	<0.12	0.45	<0.40

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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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