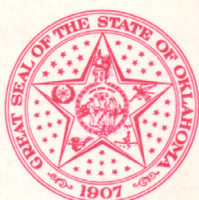
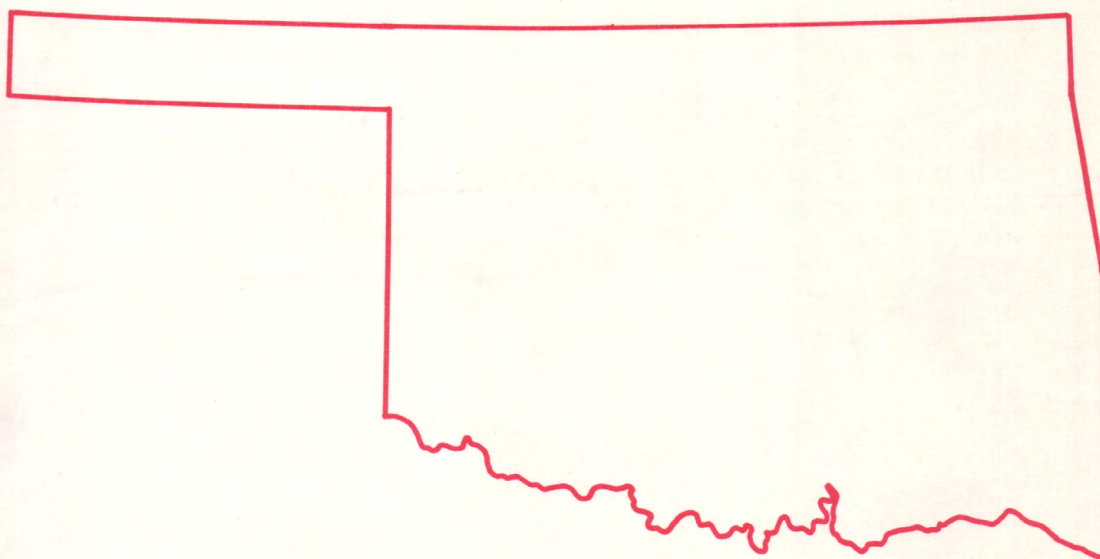
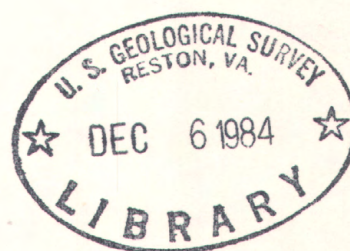


R
(200)
Ga3
Oklahoma
1982



Water Resources Data Oklahoma Water Year 1982



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OK-82-1
Prepared in cooperation with the State of Oklahoma
and with other agencies

CALENDAR FOR WATER YEAR 1982

1981

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

1982

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

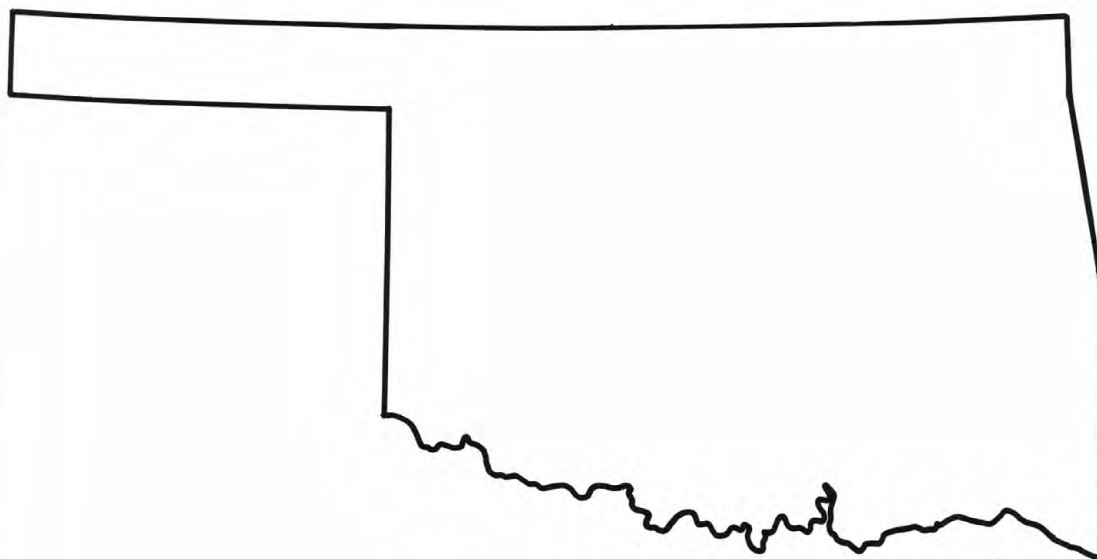
APRIL							MAY							JUNE						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2														
4	5	6	7	8	9	10							1		1	2	3	4	5	
11	12	13	14	15	16	17	2	3	4	5	6	7	8	6	7	8	9	10	11	12
18	19	20	21	22	23	24	9	10	11	12	13	14	15	13	14	15	16	17	18	19
25	26	27	28	29	30		16	17	18	19	20	21	22	20	21	22	23	24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

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



Water Resources Data Oklahoma Water Year 1982

by L.D. Hauth, J.K. Kurklin, D.M. Walters, and D.M. Ferree



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OK-82-1
Prepared in cooperation with the State of Oklahoma
and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR
WILLIAM P. CLARK, Secretary

GEOLOGICAL SURVEY
Dallas L. Peck, Director

For additional information write to:

District Chief
U.S. Geological Survey
Water Resources Division
Room 621, Old Post Office Building
215 Dean A. McGee Avenue
Oklahoma City, Oklahoma 73102

Telephone: (405) 231-4256

***Copies of this report can be
purchased from:***

Open-File Services Section
Western Distribution Branch
U.S. Geological Survey
Box 25425, Federal Center
Lakewood, Colorado 80225

Telephone: (303) 234-5888

PREFACE

This report was prepared by personnel of the Oklahoma District of the Water Resources Division of the U.S. Geological Survey under the supervision of J.H. Irwin, District Chief, and A. Clebsch, Regional Hydrologist, Central Region. It was done in cooperation with the State of Oklahoma and with other agencies.

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

REPORT DOCUMENTATION PAGE	1. REPORT NO. USGS/WRD/HD - 84/061	2.	3. Recipient's Accession No.
4. Title and Subtitle Water Resources Data for Oklahoma, Water Year 1982			5. Report Date July 1984
7. Author(s) L.D. Hauth, J.K. Kurklin, D.M. Walters, and D.M. Ferree			6.
9. Performing Organization Name and Address U.S. Geological Survey Water Resources Division 215 Dean McGee Ave., Rm. 621 Oklahoma City, OK 73102			8. Performing Organization Rept. No. USGS-WRD-OK-82-1
12. Sponsoring Organization Name and Address U.S. Geological Survey Water Resources Division 215 Dean McGee Ave., Rm. 621 Oklahoma City, OK 73102			10. Project/Task/Work Unit No.
			11. Contract(C) or Grant(G) No. (C) (G)
			13. Type of Report & Period Covered Annual - Oct. 1, 1981 to Sept. 30, 1982
15. Supplementary Notes Prepared in cooperation with the State of Oklahoma and with other agencies.			14.
16. Abstract (Limit: 200 words) Water resources data for the 1982 water year for Oklahoma consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes or reservoirs. This report contains discharge records for 125 gaging stations; stage and contents for 26 lakes or reservoirs; water quality for 38 gaging stations and 3 lakes. Also included are 39 crest-stage partial-record stations and 3 low-flow stations. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Oklahoma.			
17. Document Analysis a. Descriptors *Oklahoma, *Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperatures, Sampling sites, Water analyses. b. Identifiers/Open-Ended Terms c. COSATI Field/Group			
18. Availability Statement: No restriction on distribution. This report may be purchased from: National Technical Information Service, Springfield, VA 22161		19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 336
		20. Security Class (This Page) UNCLASSIFIED	22. Price

CONTENTS

	Page
Preface.....	III
List of gaging stations, in downstream order, for which records are published.....	VI
Introduction.....	1
Cooperation.....	1
Hydrologic conditions.....	1
Definition of terms.....	2
Downstream order and station numbers.....	6
Numbering system for miscellaneous sites.....	7
Special networks and programs.....	7
Explanation of stage and water-discharge records.....	7
Collection and computation of data.....	7
Accuracy of field data and computed results.....	9
Other data available.....	10
Explanation of water-quality records.....	10
Collection and examination of data.....	10
Water analysis.....	10
Water temperatures.....	10
Sediment.....	10
Publications on techniques of water-resources investigations.....	11
Gaging station records.....	17
Discharge at partial-record stations.....	307
Water-quality at partial-record stations.....	311
Index.....	333

ILLUSTRATIONS

	Page
Figure 1. System for numbering miscellaneous sites.....	7
Figure 2. Discharge during 1982 water year compared with median discharge for period 1941-80 for one representative gaging station.....	12
Figure 3. Specific conductance during 1982 water year compared with average specific conductance for period 1945-80 at one site.....	12
Figure 4. Map of Oklahoma showing locations of continuous-record surface-water stations, water year 1982.....	13
Figure 5. Map of Oklahoma showing locations of partial-record stations, water year 1982.....	14
Figure 6. Map of Oklahoma showing locations of water-quality stations, water year 1982.....	15

GAGING RECORDS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

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

	Page
LOWER MISSISSIPPI RIVER BASIN	
MISSISSIPPI RIVER	
ARKANSAS RIVER BASIN	
Kaw Lake near Ponca City (e).....	17
Arkansas River near Ponca City (d).....	18
Salt Fork Arkansas River near Winchester (d).....	19
Salt Fork Arkansas River near Alva (d).....	20
Great Salt Plains Lake near Jet (e).....	21
Salt Fork Arkansas River near Jet (dct).....	22
Salt Fork Arkansas River at Tonkawa (d).....	26
Chikaskia River near Blackwell (d).....	27
Arkansas River at Ralston (dcmts).....	28
Black Bear Creek at Pawnee (d).....	33
Cimarron River near Kenton (d).....	34
Cimarron River near Forgan (d).....	35
Cimarron River near Englewood (dc).....	36
Cimarron River near Buffalo (dcmts).....	38
Buffalo Creek near Lovedale (d).....	42
Cimarron River near Waynoka (d).....	43
Cimarron River near Dover (d).....	44
Cottonwood Creek near Navina (dc).....	45
Cottonwood Creek at Seward (dcs).....	48
Skeleton Creek near Lovell (d).....	56
Cimarron River at Perkins (dcms).....	57
Council Creek near Stillwater (d).....	62
Keystone Lake near Sand Springs (e).....	63
Arkansas River at Tulsa (dcmts).....	64
Polecat Creek:	
Heyburn Lake near Heyburn (e).....	73
Arkansas River near Haskell (d).....	74
Verdigris River near Lenapah (d).....	75
Oologah Lake near Oologah (e).....	76
Verdigris River near Oologah (d).....	77
Hulah Lake near Hulah (e).....	78
Caney River near Hulah (d).....	79
Sandy Creek at Okesa (d).....	80
Caney River near Ramona (dcts).....	81
Verdigris River near Claremore (d).....	85
Bird Creek:	
Birch Lake near Barnsdall (e).....	86
Birch Creek below Birch Lake near Barnsdall (d).....	87
Bird Creek at Avant (d).....	88
Bird Creek near Sperry (d).....	89
Bird Creek near Catoosa (c).....	90
Verdigris River near Inola (cms).....	91
Neosho River near Commerce (d).....	95
Tar Creek at Miami (d).....	96
Spring River near Quapaw (d).....	97
Elk River near Tiff City, MO (d).....	98
Lake O' The Cherokees at Langley (e).....	99
Neosho River near Langley (d).....	100
Big Cabin Creek near Big Cabin (d).....	101
Spavinaw Creek near Sycamore (d).....	102
Lake Hudson near Locust Grove (e).....	105
Neosho River near Chouteau (d).....	106
Fort Gibson Lake near Fort Gibson (e).....	107
Neosho River below Fort Gibson near Fort Gibson (dcms).....	108
Illinois River near Watts (d).....	111
Flint Creek near Kansas (d).....	112
Illinois River near Tahlequah (d).....	113
Baron Fork at Eldon (d).....	114
Tenkiller Ferry Lake near Gore (e).....	115
Illinois River near Gore (dc).....	116
Canadian River at Bridgeport (dcts).....	118
Canadian River at Purcell (dc).....	123
Walnut Creek at Purcell (d).....	126
Little River:	
Lake Thunderbird near Norman (ec).....	127
Little River below Lake Thunderbird near Norman (d).....	128
Little River near Tecumseh (d).....	129
Little River near Sasakwa (dct).....	130
Canadian River at Calvin (dcmts).....	133

GAGING RECORDS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

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

	Page
<u>LOWER MISSISSIPPI RIVER BASIN</u>	
MISSISSIPPI RIVER--Continued	
ARKANSAS RIVER BASIN--Continued	
Canadian River--Continued	
Gaines Creek--Continued	
Brushy Creek near Haileyville (d).....	140
Peaceable Creek near Haileyville (d).....	141
Jones Creek:	
Blue Creek near Blocker (d).....	142
Beaver River near Guymon (d).....	143
Optima Lake near Hardesty (e).....	144
Beaver River near Hardesty (d).....	145
Beaver River at Beaver (dcs).....	146
Clear Creek near Elmwood (d).....	149
North Canadian River:	
Fort Supply Lake near Fort Supply (e).....	150
Wolf Creek near Fort Supply (d).....	151
North Canadian River at Woodward (dcms).....	152
North Canadian River near Seiling (d).....	156
Canton Lake near Canton (ec).....	157
North Canadian River at Canton (d).....	158
North Canadian River near Watonga (d).....	159
North Canadian River near El Reno (d).....	160
Lake Hefner Canal near Oklahoma City (d).....	161
Lake Overholser near Oklahoma City (e).....	162
North Canadian River below Lake Overholser near Oklahoma City (d).....	163
North Canadian River near Harrah (dcbmt).....	164
North Canadian River near Wetumka (dcmts).....	181
Deep Fork near Arcadia (dcs).....	187
Dry Creek near Kendrick (d).....	190
Deep Fork near Beggs (dcmts).....	191
Eufaula Lake near Brooken (e).....	197
Canadian River near Whitefield (dcmts).....	198
Robert S. Kerr Lock and Dam (Arkansas River) near Sallisaw (c).....	203
Cache Creek:	
Coal Creek near Spiro (d).....	204
Poteau River:	
Fourche Maline near Red Oak (d).....	205
Red Oak Creek near Red Oak (d).....	206
Wister Lake near Wister (e).....	207
Poteau River near Wister (d).....	208
Caston Creek at Wister (d).....	209
<u>RED RIVER BASIN</u>	
Red River:	
Salt Fork Red River at Mangum (d).....	210
Salt Fork Red River near Elmer (dcms).....	211
North Fork Red River near Sayre (d).....	214
North Fork Red River near Carter (d).....	215
Lake Altus at Lugert (e).....	216
North Fork Red River below Altus Dam near Lugert (d).....	217
Elm Fork of North Fork Red River near Carl (c).....	218
Elm Fork of North Fork Red River near Reed (c).....	219
Elk Creek near Hobart (dct).....	220
North Fork Red River near Headrick (dcbmts).....	224
Otter Creek:	
West Otter Creek at Snyder Lake near Mountain Park (d).....	235
Red River near Burkburnett, TX (d).....	236
Cache Creek:	
East Cache Creek near Walters (dc).....	237
West Cache Creek:	
Blue Beaver Creek near Cache (dcm).....	239
Deep Red Run near Randlett (d).....	241
Waurika Lake near Waurika (e).....	242
Beaver Creek near Waurika (d).....	243
Red River near Terral (d).....	244
Mud Creek near Courtney (d).....	245
Red River near Gainesville, TX (d).....	246
Washita River near Cheyenne (d).....	247
Washita River near Hammon (dct).....	248
Foss reservoir near Foss (ec).....	252
Washita River near Foss (dct).....	253
Washita River near Clinton (d).....	257
Washita River at Carnegie (dct).....	258
Cobb Creek near Eakly (d).....	262

GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

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

LOWER MISSISSIPPI RIVER BASIN

Page

MISSISSIPPI RIVER BASINRED RIVER BASINRed River--Continued

Washita River--Continued	
Fort Cobb Reservoir near Fort Cobb (e).....	263
Cobb Creek near Fort Cobb (d).....	264
Washita River at Anadarko (d).....	265
Little Washita River near Ninnekah (d).....	266
Winter Creek near Alex (d).....	267
Washita River at Alex (d).....	268
Washita River near Pauls Valley (d).....	269
Rush Creek at Purdy (d).....	270
Wildhorse Creek near Hoover (d).....	271
Washita River near Dickson (dcms).....	272
Lake Texoma near Denison, TX (e).....	277
Red River at Dension Dam near Denison, TX (d).....	278
Blue River at Milburn (d).....	279
Blue River near Blue (d).....	280
Muddy Boggy Creek:	
McGee Creek near Farris (dcms).....	281
Muddy Boggy Creek near Farris (d).....	285
Clear Boggy Creek:	
Big Springs Creek:	
Byrds' Mill Spring near Fittstown (d).....	286
Clear Boggy Creek near Caney (d).....	287
Red River at Arthur City, TX (d).....	288
Kiamichi River near Big Cedar (dcms).....	289
Kiamichi River at Clayton (d).....	296
Kiamichi River near Antlers (d).....	298
Hugo Lake near Hugo (e).....	299
Red River near De Kalb, TX (d).....	300
Pine Creek Lake near Wright City (e).....	301
Little River near Wright City (d).....	302
Glover Creek near Glover (d).....	303
Little River below Lukfata Creek near Idabel (d).....	304
Broken Bow Lake near Broken Bow (e).....	305
Mountain Fork near Eagletown (d).....	306

INTRODUCTION

Water resources data for Oklahoma for the 1982 water year are presented in one volume. Data consist of records of stage, discharge, and water quality of streams and stage, contents, and water quality of lakes and reservoirs. This report contains discharge records for 125 gaging stations; stage and contents for 26 lakes and reservoirs; water quality for 38 gaging stations and 3 lakes. Also included are data for 39 crest-stage partial-record stations and 3 low-flow stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Oklahoma. Records are published for the water year, which begins on October 1 and ends on September 30.

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

For water years 1961 through 1974, streamflow data were released by the Geological Survey in annual reports on a state-boundary basis. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, water data for streamflow and water quality are published as an official Survey report on a state-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report OK-82-1." Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA, 22161.

Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." For water years 1975 through 1980, water data for ground water are published as an official Survey report on a state-boundary basis.

Beginning with the 1981 water year, water data for ground water are published as a separate official Survey report on a state-boundary basis. Records are published for the climatological year, which begins on April 1 and ends on March 31.

COOPERATION

The U.S. Geological Survey and organizations of the State of Oklahoma have had cooperative agreements for the systematic collection of streamflow records since 1935, and for water-quality records since 1941. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Oklahoma Water Resources Board, Gerald E. Borelli, chairman.
James R. Barnett, executive director.

Oklahoma Department of Transportation, Richard A. Ward, chief engineer.

Oklahoma City Water Department, Patrick M. Brian, director of water services.

Oklahoma Geological Survey, Charles J. Mankin, director.

Oklahoma State Department of Health, Environmental Health Services, Mark S. Coleman,
deputy commissioner.

Assistance in the form of funds or services was given by the following Federal Agencies: Bureau of Land Management, U.S. Department of the Interior; Corps of Engineers, U.S. Army; Federal Emergency Management Agency; and Bureau of Reclamation, U.S. Department of the Interior.

Assistance in the form of funds or services was rendered by the following organizations through the Oklahoma Water Resources Board: Grand River Dam Authority; Central Oklahoma Master Conservancy District; Fort Cobb Reservoir Master Conservancy District; Lugert-Altus Irrigation District; Foss Reservoir Master Conservancy District; the cities of Ada, Altus, Claremore, Edmond, Guthrie, Lawton, Sapulpa, and Tulsa.

Organizations that supplied data are acknowledged in the station descriptions.

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

HYDROLOGIC CONDITIONS

Flow in the eastern two-thirds of the state was above normal for much of the year with the western one-third below normal. Very heavy rain during mid-October caused some major flooding in the extreme south-central section of the state. Heavy rains in February, May and June caused high runoff in most of the state. Peaks of record occurred at several stations during the year.

Discharge at the index station in south-central Oklahoma, Washita River near Dickson, was in the upper 75 percent quartile for seven months of the year. Reservoirs were near normal for the year except Lake Altus near Lugert which was below normal.

The chemical quality of surface waters statewide showed a definite improvement in 1982. Specific conductance and dissolved solids levels decreased over the entire state. The largest changes were noted in the central part of the state, while there was actually a slight increase in very low conductivities in the extreme southeastern area of the state.

WATER RESOURCES DATA FOR OKLAHOMA, 1982

Nutrient levels in state surface water were not directly affected by the dilution of increased flows during the year. Nutrient levels at selected sites in the Cimarron, Canadian, and North Canadian basins showed a slight decrease for the year, while levels at sites on the Arkansas, Neosho, North Fork of the Red River, and Deep Fork increased markedly during the year.

Total metal levels in state surface waters showed little overall change during the year. The increases in metal levels at some sites is directly attributable to increased sediment transport during periods of higher flow.

Sediment concentrations increased statewide as the flows increased. There was very little actual change in the eastern part of the state where sediment levels are very low, while sites in the central and western parts of the state exhibited much larger increases in sediment concentration.

DEFINITION OF TERMS

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

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

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 0.5°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 0.5°C on M-enterococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/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 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

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

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

Bottom material: See Bed material.

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

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

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

WATER RESOURCES DATA FOR OKLAHOMA, 1982

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

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

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

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

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

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

Cubic foot per second (CFS, 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 approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

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

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

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

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

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

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

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

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

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

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

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

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO₃).

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

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

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

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

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

WATER RESOURCES DATA FOR OKLAHOMA, 1982

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

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

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

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

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

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

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

The classification is as follows:

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

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

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

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

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

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

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

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

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

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

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

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

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

WATER RESOURCES DATA FOR OKLAHOMA, 1982

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.

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

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 sample zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying ft^3/s (daily mean discharge) times mg/L times 0.0027.

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

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

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

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

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

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

Substrate is the physical surface upon which an organism lives.

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

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

Surface area of a lake is that area outlined on the latest USGS 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 planimeted. All areas shown are those for the stage when the planimeted map was made.

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

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

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

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 μm membrane filter. This term is used only when the analytical procedure assures measurement of the expected form 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".

WATER RESOURCES DATA FOR OKLAHOMA, 1982

Determination of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter, or more commonly, by difference, based on determination 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 the taxonomy of a particular mayfly, Hexagenia limbata is the following:

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

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

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

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

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

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

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying ft³/s (sum of daily mean discharges) times the mg/L of the constituent, times the factor 0.0027.

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

Water year is the 12-month period ending September 30 each year. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months.

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

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

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

DOWNSTREAM ORDER AND STATION NUMBER

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

WATER RESOURCES DATA FOR OKLAHOMA, 1982

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 07304500, which appears just to the left of the station name, includes the 2-digit part number "07" plus the 6-digit downstream order number "304500".

NUMBERING SYSTEM FOR MISCELLANEOUS SITES

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

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

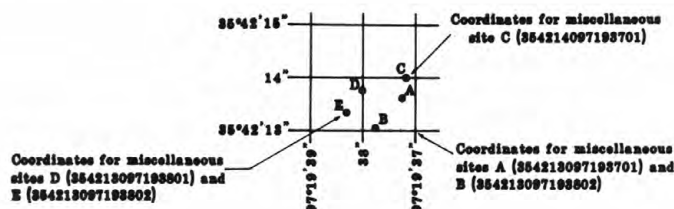


Figure 1.--System for numbering miscellaneous sites (latitude and longitude).

SPECIAL NETWORKS AND PROGRAMS

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

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

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

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

WATER RESOURCES DATA FOR OKLAHOMA, 1982

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by hydrologists, technicians, and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations, the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations, there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise, daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals, a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD".

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges are revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE". National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 3.

WATER RESOURCES DATA FOR OKLAHOMA, 1982

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS". For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents) it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with "EXTREMES FOR THE CURRENT YEAR"; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

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

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

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

Data collected at partial-record stations follow the information for continuous record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of record.

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

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft³/s; to tenths between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures above 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

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

WATER RESOURCES DATA FOR OKLAHOMA, 1982

Other data available

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

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

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface-water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations. A continuing record station is a specific site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, bimonthly or quarterly.

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

Water analysis

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

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

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

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

Water temperatures

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

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

Sediment

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

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-seven manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 604 South Pickett St., Alexandria, VA 22304 (authorized agent of the Superintendent of Documents, Government Printing Office).

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

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-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-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programmed 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-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-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

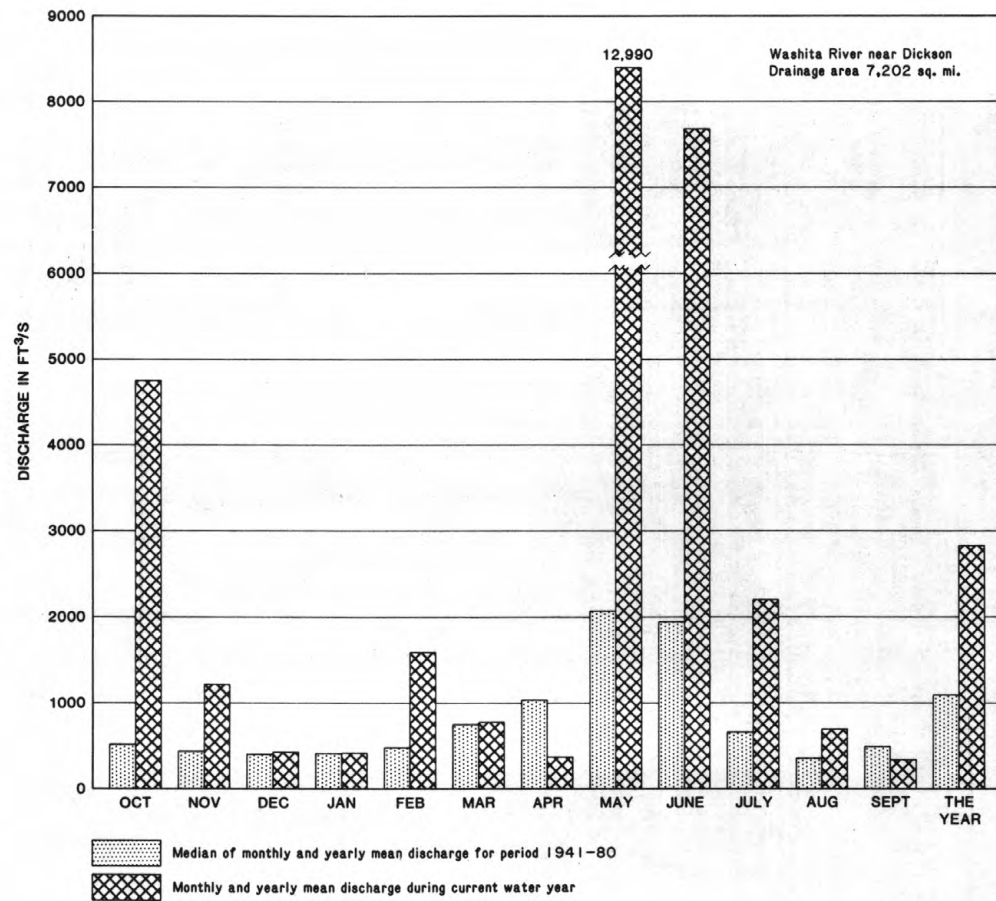


Figure 2.—Discharge during 1982 water year compared with median discharge for period 1941-80 for one representative gaging station.

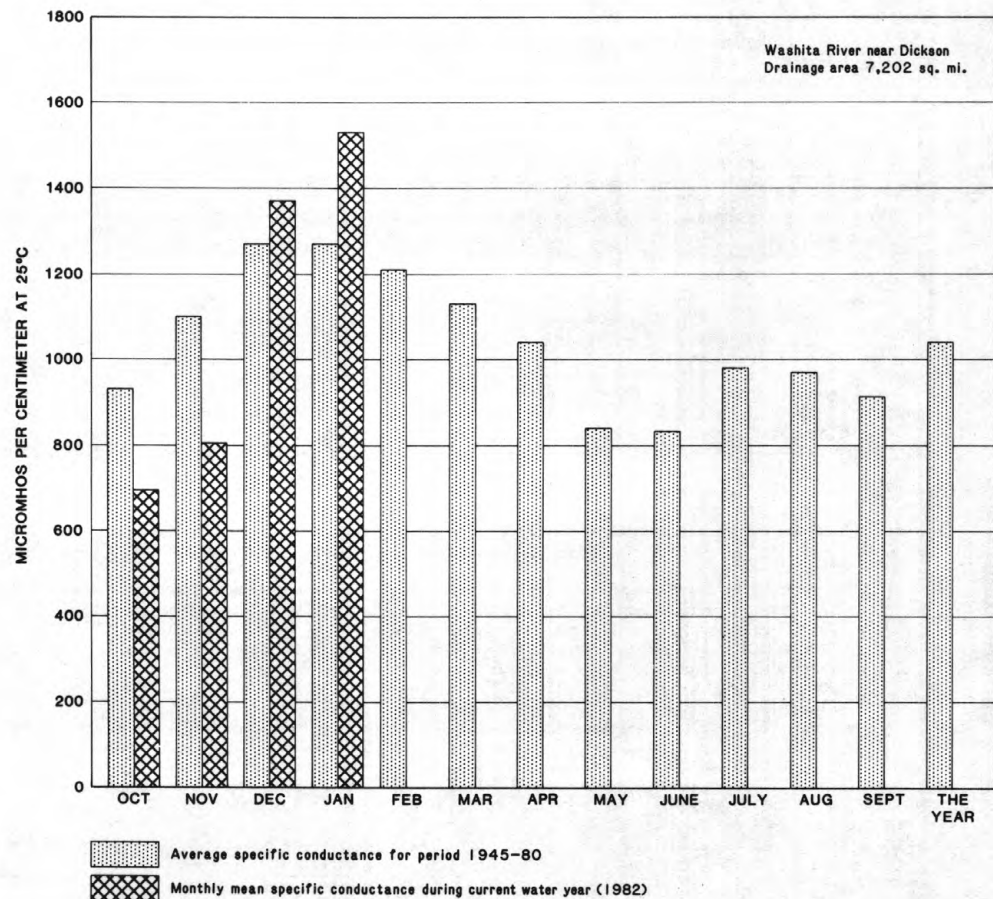


Figure 3.—Specific conductance during 1982 water year compared with average specific conductance for period 1945-80 at one site.

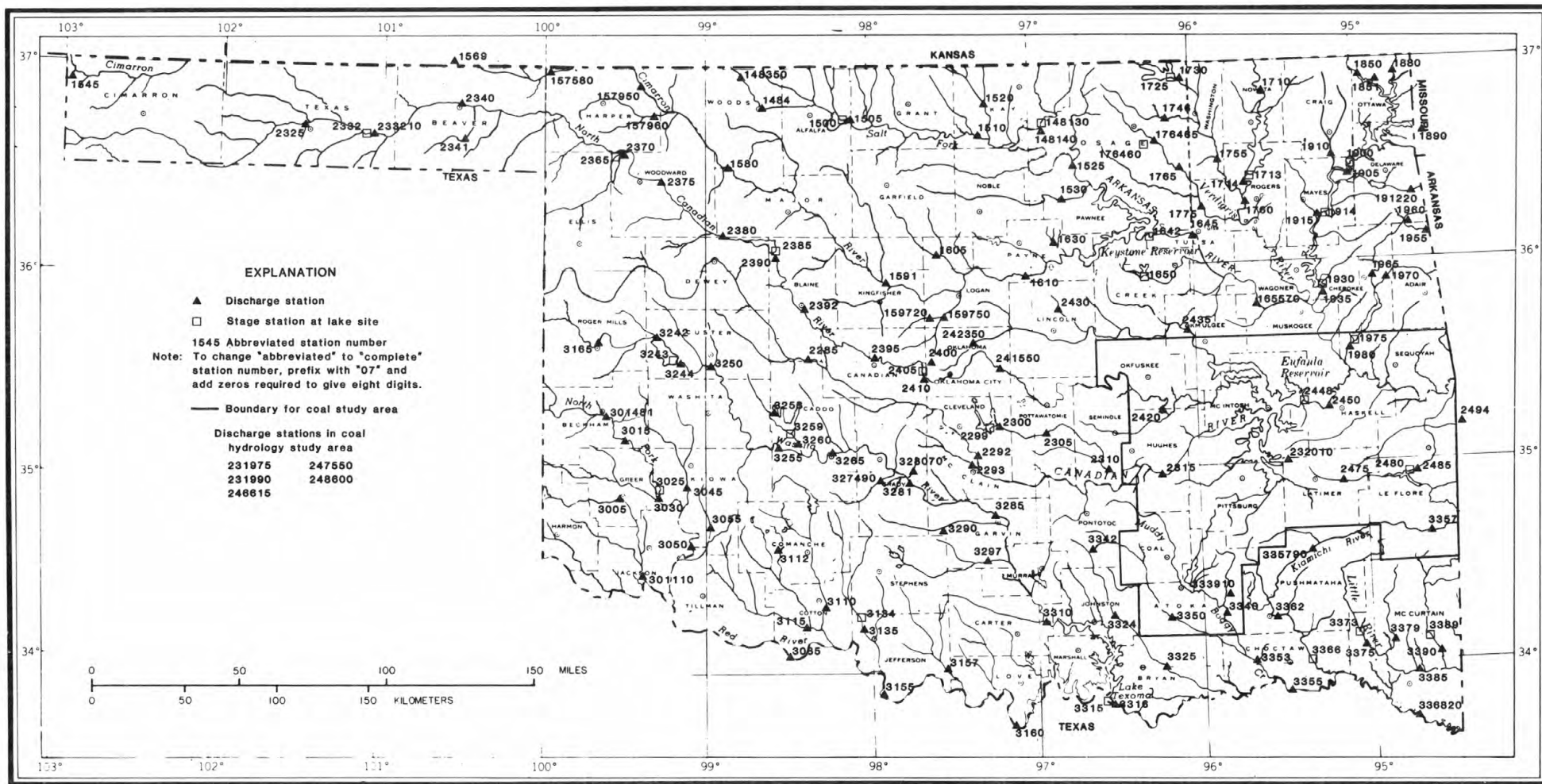


Figure 4.--Locations of continuous-record surface-water stations, water year 1982.

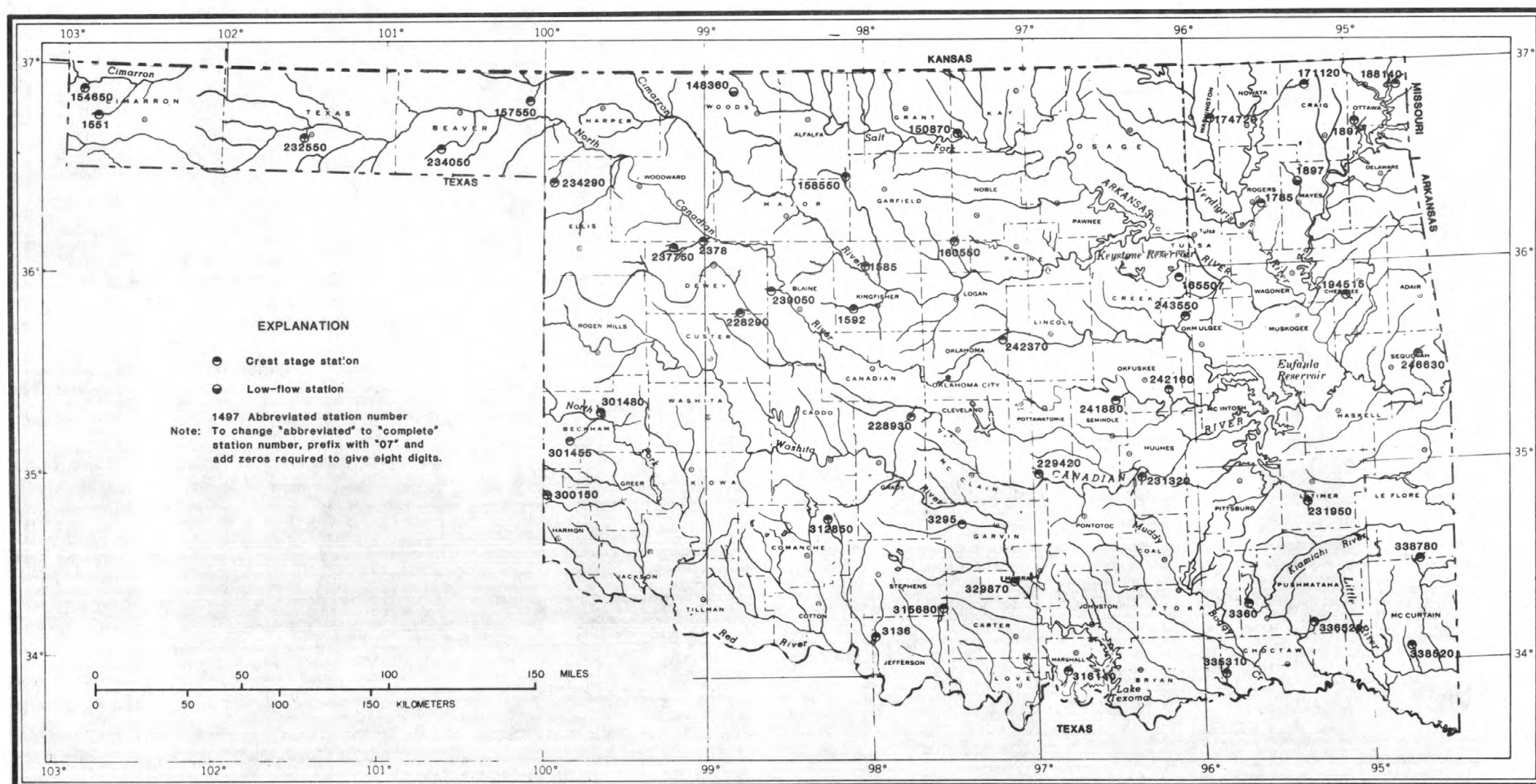


Figure 5.--Locations of partial record stations, water year 1982.

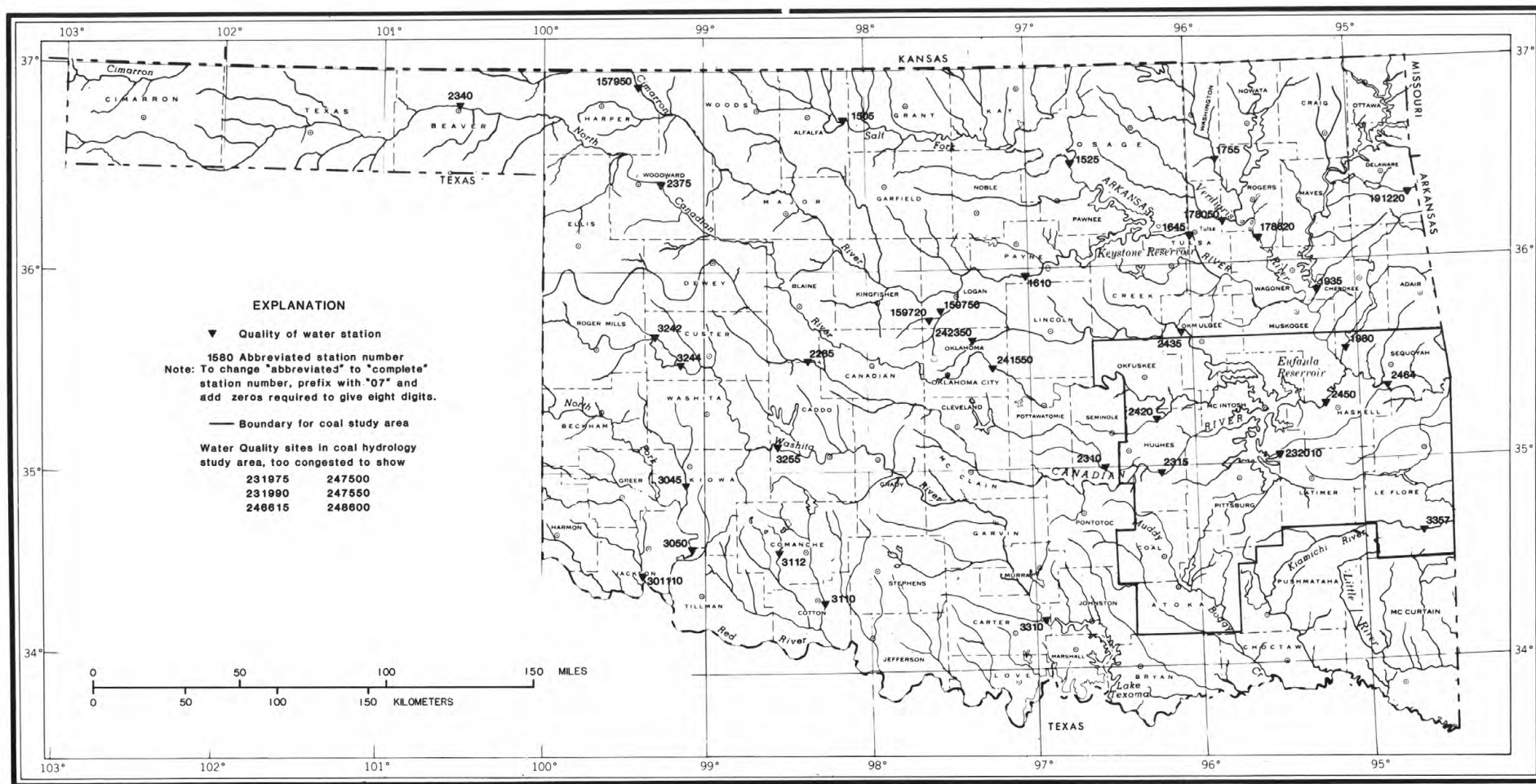


Figure 6.--Locations of water-quality stations, water year 1982.

ARKANSAS RIVER BASIN

07148130 KAW LAKE NEAR PONCA CITY, OK

LOCATION.--Lat 36°41'58", long 96°55'18", in NW 1/4 SW 1/4 sec.30, T.26 N., R.4 E., Osage County, Hydrologic Unit 11060001, 1,700 ft (518 m) east of centerline of spillway on dam on Arkansas River, about 8 mi (13 km) east of Ponca City, and at mile 653.7 (1,051.8 km).

DRAINAGE AREA.--46,530 mi² (120,513 km²), of which 7,607 mi² (19,702 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to July 8, 1976, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by a rolled, earthfill dam. Spillway is concrete, gravity ogee-weir type controlled by 8, 50 ft (15.2 m) taintor gates. Outlet works consist of two sluice gates. Regulated storage began April 22, 1976; conservation pool first filled July 6, 1976. Capacity, 1,348,000 acre-ft (1.66 km³), at elevation 1,044.5 ft (318.36 m), top of flood control pool, 428,600 acre-ft (528 hm³), at elevation 1,010.0 ft (307.85 m), top of conservation pool, and 250,700 acre-ft (309 hm³), at elevation 997.5 ft (304.04 m), crest of controlled spillway. Dead storage 85,100 acre-ft (105 hm³) below elevation 978.0 ft (298.09 m). Figures given herein represent total contents. Reservoir is designed for flood control, water-quality control, recreation, fish and wildlife, and water supply.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 799,200 acre-ft (985 hm³) June 6, 1982, elevation, 1,027.27 ft (313.112 m), minimum since conservation pool first filled, 223,100 acre-ft (275 hm³) March 25, 1977, elevation, 995.06 ft (303.294 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 799,200 acre-ft (985 hm³) June 6, elevation, 1,027.27 ft (313.112 m); minimum, 396,700 acre-ft (489 hm³) Aug. 13, elevation, 1,008.08 ft (307.263 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

1,008	395,900	1,020	624,000
1,012	463,700	1,025	741,200
1,016	539,800	1,030	873,000

RESERVOIR STORAGE, (ACRE-FEET) WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400200	415300	434900	433600	446100	439600	433600	433300	726400	633000	435200	405400
2	400200	433600	434900	433600	450300	436800	433600	433600	743700	614400	425900	405800
3	400200	463200	435600	435300	450800	432400	433600	433400	752900	612200	417000	405800
4	400700	477100	434600	435100	448600	427900	432200	432400	767600	606800	407900	405600
5	401900	477100	434400	435600	445700	426400	432100	435700	793800	596400	403700	405100
6	401000	471800	432700	435500	442800	426400	430000	431400	798800	589200	403300	405000
7	400200	463700	431700	431700	440200	425900	429100	430500	785300	593000	401900	404600
8	399400	457100	430100	429800	439700	426600	429800	434700	764300	584500	400200	404100
9	399900	448000	429800	429100	435800	426800	429500	437100	749700	574700	399200	403800
10	400400	459800	429800	426900	433400	427600	429300	435500	736800	567400	398900	403200
11	401700	475400	430100	425900	431700	428300	429300	432100	747400	557900	398100	402700
12	402500	479600	430500	425700	431300	428900	430000	434000	755200	547300	397300	402300
13	403300	481100	430800	425700	430800	429800	429800	447000	755900	536200	397600	402700
14	403000	478700	430600	426600	430800	439800	429300	473400	744200	528900	398300	404500
15	402700	474300	430600	427800	431700	459600	428800	487900	727400	523800	399200	403500
16	402500	468800	432400	428300	435600	471400	428900	502100	712100	518600	399700	404100
17	406600	462500	430600	428900	442700	474300	428300	560100	707300	513200	400100	406300
18	408700	456600	430000	429600	457900	471000	426900	604800	715000	506900	400700	406100
19	409200	450700	428400	430500	467100	463300	427900	643200	715700	501900	401000	407400
20	410500	445400	427600	431800	472200	456400	427800	685600	715700	497100	401700	408700
21	411800	442100	427600	432000	475500	447900	427900	694800	707300	491500	402000	408500
22	411000	438300	427400	431800	476600	439300	428400	692700	687100	486700	402200	408900
23	408200	434000	428100	430800	475700	433100	428400	687700	667700	483500	402500	409800
24	405600	430700	428800	429400	473500	430800	428400	675800	656500	480500	402800	410300
25	405300	430700	429600	429100	467700	428900	430000	655500	653000	477600	403500	410200
26	403000	430700	430300	427800	461000	429300	430500	635600	645100	474500	403300	410300
27	402500	431500	431300	428100	453700	430300	430800	617000	652400	471000	404100	410300
28	402200	431700	431500	427600	446300	431500	432100	605000	671900	467400	404100	410700
29	402500	433200	432200	430100	---	431900	432600	600000	673500	462100	404300	411500
30	403800	434300	432200	430300	---	433600	432900	600000	655600	453200	405600	411800
31	407200	---	433600	436300	---	433800	---	683000	---	444200	405400	---
MAX	411800	481100	435600	436300	476600	474300	433600	694800	798800	633000	435200	411800
MIN	399400	415300	427400	425700	430800	425900	426900	430500	645100	444200	397300	402300
†	1008.72	1010.33	1010.29	1010.45	1011.02	1010.31	1010.25	1022.59	1021.41	1010.91	1008.62	1009.00
††	+5,200	+27,100	-700	+2,700	+10,000	-12,500	-900	+250,100	-27,400	-211,400	-38,800	+6,400
CAL YR 1981	MAX	481100	MIN	383000	†† +3,800							
WTR YR 1982	MAX	798800	MIN	397300	†† +9,800							

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07148140 ARKANSAS RIVER NEAR PONCA CITY, OK

LOCATION.--Lat 36°41'55", long 96°55'40", in SW 1/4 SE 1/4 sec.25, T.26 N., R.3 E., Kay County, Hydrologic Unit 11060001, at spillway of Kaw Dam, about 8 mi (13 km) east of Ponca City, and at mile 653.7 (1,051.8 km).

DRAINAGE AREA.--46,530 mi² (120,513 km²), of which 7,607 mi² (19,702 km²) is probably noncontributing.

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

GAGE.--Gate position recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records fair.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,800 ft³/s (589 m³/s) June 27-29, 1977; no flow May 13, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,000 ft³/s (510 m³/s) June 30, July 1; minimum daily, 109 ft³/s (3.09 m³/s) Sept. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	840	652	1100	580	1100	4960	1600	891	8520	18000	5900	500
2	840	2110	1380	580	1100	3640	1660	891	12200	14200	5900	500
3	840	5000	1800	580	1520	3630	1810	1000	12200	10500	5900	500
4	840	8520	1980	580	1950	3620	1810	1140	12200	10500	5900	500
5	840	12600	1970	894	1950	2240	1810	1140	13200	10500	3270	500
6	1180	12300	1970	1360	1950	1340	1810	1870	14000	10500	1600	500
7	1400	12300	1970	1570	1950	1340	1410	1890	15400	10500	1600	500
8	1400	12000	1970	1400	1950	1120	1150	1140	16400	10500	1600	500
9	1060	8810	1100	1120	1950	850	1150	1140	12600	9430	1380	500
10	840	5980	1100	1120	1950	850	1150	2290	9700	7800	1150	500
11	840	6030	1100	929	1520	850	1150	2990	9700	7800	1150	500
12	840	6050	1100	580	1100	849	1140	2990	12500	7800	1150	500
13	1260	6050	1100	314	1100	850	1140	1510	15600	7800	631	289
14	1640	6050	1100	140	1100	851	1140	363	15600	5810	250	125
15	1640	6040	1100	140	1100	857	1140	367	15600	4500	250	125
16	1640	6030	1100	140	1100	3250	1140	370	15600	4500	250	109
17	1640	6020	1100	140	1630	6080	1140	377	15600	4500	250	125
18	1640	6000	1100	140	2630	6990	1140	385	15600	4500	250	125
19	1870	5980	1100	140	4580	7450	825	392	15600	4500	250	125
20	1950	4580	1100	140	6050	6880	621	397	15600	4500	250	125
21	1950	3660	1100	424	6060	6850	621	2600	15600	4500	250	125
22	1950	3650	1100	775	6060	6230	621	6060	15600	3780	250	125
23	1950	3650	785	1100	6060	5140	621	6050	15600	3000	250	125
24	1950	2790	579	1100	6060	3320	621	6200	12900	3000	250	125
25	1950	1540	579	1100	6050	2010	622	9220	10500	3000	250	125
26	1950	1100	579	1100	6030	1490	622	12000	10500	3000	250	125
27	1580	1100	579	1100	6020	1140	622	12000	10500	3000	250	125
28	1320	1100	579	1100	6000	1140	622	8910	12300	3000	250	125
29	757	1100	579	1100	---	1140	623	6270	17200	4030	250	125
30	504	1100	579	1100	---	1360	740	6260	18000	5900	328	125
31	651	---	580	1100	---	1600	---	6340	---	5900	500	---
TOTAL	41552	159892	34958	23686	87620	89917	32271	105443	412120	210750	41959	8398
MEAN	1340	5330	1128	764	3129	2901	1076	3401	13740	6798	1354	280
MAX	1950	12600	1980	1570	6060	7450	1810	12000	18000	18000	5900	500
MIN	504	652	579	140	1100	849	621	363	8520	3000	250	109
AC-FT	82420	317100	69340	46980	173800	178400	64010	209100	817400	418000	83230	16660
CAL YR 1981	TOTAL	512009	MEAN	1403	MAX	12600	MIN	155	AC-FT	1016000		
WTR YR 1982	TOTAL	1248566	MEAN	3421	MAX	18000	MIN	109	AC-FT	2477000		

ARKANSAS RIVER BASIN

07148350 SALT FORK ARKANSAS RIVER NEAR WINCHESTER, OK

LOCATION.--Lat 36°57'45", long 98°46'55", in NE 1/4 SE 1/4 sec.26, T.29 N., R.15 W., Woods County, Hydrologic Unit 11060002, near left bank on downstream side of pier of county road bridge, 1 mi (2 km) northeast of Winchester, 2.5 mi (4.0 km) upstream from Greenwood Creek, 4.9 mi (7.9 km) downstream from Yellowstone Creek, 5 mi (8 km) downstream from State line, 19 mi (31 km) northwest of Alva, and at mile 156.2 (251 km).

DRAINAGE AREA.--856 mi² (2,220 km²).

PERIOD OF RECORD.--October 1959 to current year. Monthly discharge only for some periods, published in WSP 1731.

REVISED RECORDS.--WSP 1731: Drainage area. WSP 1921: 1960.

GAGE.--Water-stage recorder. Datum of gage is 1,410.05 ft (429.783 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--23 years, 87.1 ft³/s (2.467 m³/s), 63,100 acre-ft/yr (77.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,000 ft³/s (1,470 m³/s) Aug. 19, 1961, gage height, 13.95 ft (4.252 m), from rating curve extended above 17,400 ft³/s (493 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1957 reached a stage of 15.4 ft (4.69 m), from information by county engineer, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (142 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 31	0830	7,700 218	11.12 3.389	July 9	1145	*9,660 274	*11.85 3.612
June 16	0930	6,030 171	10.44 3.182				

Minimum daily discharge, 1.1 ft³/s (0.031 m³/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	588	60	39	41	52	48	119	1070	1300	96	15
2	2.0	306	60	40	32	50	47	98	530	378	88	8.4
3	1.7	206	53	38	29	49	42	79	993	226	78	5.8
4	1.4	141	44	36	26	47	42	69	1470	167	71	4.8
5	1.2	103	39	37	22	49	42	69	685	135	67	5.3
6	1.1	83	41	33	21	49	36	316	436	115	68	5.3
7	1.3	71	43	30	33	51	36	171	327	101	58	5.2
8	1.4	747	41	36	31	50	34	122	258	113	51	4.4
9	1.6	822	36	33	26	47	33	95	216	4720	42	3.3
10	1.5	410	32	29	29	47	34	78	178	2650	39	2.7
11	1.9	199	35	34	34	46	35	68	170	1260	125	2.2
12	2.9	143	37	38	42	46	35	80	151	722	55	2.1
13	2.2	123	39	40	56	42	32	153	127	514	44	2.1
14	1.9	106	39	42	82	78	32	121	111	448	36	2.0
15	5.6	93	39	59	95	101	32	101	985	376	34	1.9
16	7.6	81	40	53	124	93	29	1300	2920	317	37	1.9
17	7.9	74	59	50	223	73	26	1890	884	268	30	2.0
18	5.1	72	90	48	252	72	25	683	519	221	27	2.4
19	4.2	61	68	44	181	67	23	636	386	186	23	2.7
20	3.6	55	62	43	134	56	20	551	313	176	20	2.4
21	2.4	56	62	47	108	50	20	261	271	164	18	2.2
22	1.7	55	60	42	92	43	21	211	284	154	16	1.9
23	1.5	54	51	44	77	41	19	857	254	138	14	1.7
24	1.5	48	44	58	69	42	18	1210	434	126	12	1.7
25	8.4	46	43	55	61	52	62	384	456	117	12	1.5
26	8.3	42	44	58	61	49	65	332	285	108	11	1.7
27	9.0	35	46	62	60	49	53	309	258	101	9.2	1.7
28	7.4	34	42	63	57	53	390	475	225	103	7.8	1.8
29	6.1	34	40	57	---	60	155	315	203	107	7.4	3.0
30	4.8	52	41	51	---	58	143	242	176	103	7.1	1.7
31	15	---	42	42	---	52	---	3860	---	102	8.2	---
TOTAL	124.6	4940	1472	1381	2098	1714	1629	15255	15575	15716	1211.7	100.8
MEAN	4.02	165	47.5	44.5	74.9	55.3	54.3	492	519	507	39.1	3.36
MAX	15	822	90	63	252	101	390	3860	2920	4720	125	15
MIN	1.1	34	32	29	21	41	18	68	111	101	7.1	1.5
AC-FT	247	9800	2920	2740	4160	3400	3230	30260	30890	31170	2400	200
CAL YR 1981	TOTAL	24828.96	MEAN	68.0	MAX	4620	MIN	.06	AC-FT	49250		
WTR YR 1982	TOTAL	61217.1	MEAN	168	MAX	4720	MIN	1.1	AC-FT	121400		

ARKANSAS RIVER BASIN

07148400 SALT FORK ARKANSAS RIVER NEAR ALVA, OK

LOCATION.--Lat 36°48'45", long 98°38'50", in SW 1/4 SW 1/4 sec.18, T.27 N., R.13 W., Woods County, Hydrologic Unit 11060002, at bridge on U.S. Highway 281, 1.0 mi (1.6 km) northeast of Alva, 19 mi (31 km) upstream from Medicine Lodge River, and at mile 126.0 (202.7 km).

DRAINAGE AREA.--1,009 mi² (2,613 km²).

PERIOD OF RECORD.--April 1904 to December 1905 (gage heights only), October 1937 to September 1951, monthly discharge only for some periods, published in WSP 1311, October 1979 to current year. Occasional low flow measurements water years 1952-54, 1977-79.

GAGE.--Water stage recorder. Datum of gage is 1,292.04 ft (393.814 m) National Geodetic Vertical Datum of 1929. April 1904 to December 1905, chain gage at site 0.8 mi (1.3 km) upstream at different datum, and February 1938 to September 1951, water stage recorder at present site and at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years (water years 1938-51, 1980-82), 151 ft³/s (4.276 m³/s), 109,400 acre-ft/yr (135 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s (765 m³/s) Oct. 23, 1941, from rating curve extended above 13,000 ft³/s (368 m³/s). Maximum gage height, 15.04 ft (4.584 m) Oct. 30, 1979; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,620 ft³/s (187 m³/s) July 10, gage height 13.62 ft (4.151 m), no peak above base of 8,000 ft³/s (227 m³/s); minimum daily discharge, 2.2 ft³/s (0.062 m³/s) Sept. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	906	67	50	62	72	59	126	847	664	72	21
2	9.0	563	74	51	65	69	56	103	663	580	71	17
3	9.3	266	77	54	51	60	49	92	664	317	66	14
4	13	206	70	57	57	62	45	85	965	251	61	12
5	15	182	56	56	37	61	49	91	716	214	62	12
6	14	144	54	53	28	56	44	343	523	196	71	10
7	5.4	121	53	38	29	53	41	221	416	188	59	12
8	4.7	406	50	40	40	57	42	134	349	161	53	13
9	5.0	1080	49	43	38	55	42	111	299	1870	50	12
10	5.2	451	48	47	42	55	44	96	261	2900	50	10
11	13	252	46	64	43	57	44	86	224	1190	62	7.8
12	14	182	45	66	56	59	44	105	208	703	69	7.3
13	13	150	50	57	64	55	43	174	197	492	51	6.3
14	12	130	53	50	65	80	41	126	195	372	48	6.7
15	30	118	52	46	70	114	41	111	439	307	42	7.0
16	72	111	51	52	82	102	37	396	2180	260	37	6.5
17	129	103	45	72	100	100	33	1740	825	235	34	6.0
18	57	98	35	56	139	86	32	1010	567	215	31	5.1
19	42	87	37	55	204	81	29	774	438	201	29	6.2
20	35	79	38	48	165	73	28	895	377	180	26	5.9
21	32	84	51	48	145	63	26	532	329	175	25	6.2
22	30	77	62	57	131	57	27	373	300	164	25	5.0
23	27	80	59	47	113	53	30	367	293	152	22	4.4
24	25	77	51	59	109	53	32	1210	278	128	22	4.4
25	41	74	48	76	95	57	69	629	447	108	19	3.9
26	39	65	47	67	93	55	102	429	313	96	20	4.3
27	34	59	49	72	74	54	68	406	277	89	17	3.3
28	33	56	46	82	69	60	224	476	263	85	16	2.2
29	33	60	47	77	---	64	301	410	242	82	16	8.4
30	30	65	49	76	---	65	149	340	205	79	16	11
31	78	---	50	64	---	64	---	2750	---	75	50	---
TOTAL	910.6	6332	1609	1780	2266	2052	1871	14741	14300	12729	1292	250.9
MEAN	29.4	211	51.9	57.4	80.9	66.2	62.4	476	477	411	41.7	8.36
MAX	129	1080	77	82	204	114	301	2750	2180	2900	72	21
MIN	4.7	56	35	38	28	53	26	85	195	75	16	2.2
AC-FT	1810	12560	3190	3530	4490	4070	3710	29240	28360	25250	2560	498
CAL YR 1981	TOTAL	31961.6	MEAN	87.6	MAX	2830	MIN	1.2	AC-FT	63400		
WTR YR 1982	TOTAL	60133.5	MEAN	165	MAX	2900	MIN	2.2	AC-FT	119300		

ARKANSAS RIVER BASIN

07150000 GREAT SALT PLAINS LAKE NEAR JET, OK

LOCATION.--Lat 36°44'40", long 98°08'08", in NW 1/4 SE 1/4 sec.11, T.26 N., R.9 W., Alfalfa County, Hydrologic Unit 11060004, at right end of Great Salt Plains Dam on Salt Fork Arkansas River, 4.5 mi (7.2 km) upstream from Wagon Creek, 5.5 mi (8.8 km) northeast of Jet, and at mile 103.3 (166.2 km).

DRAINAGE AREA.--3,200 mi² (8,288 km²), of which 8 mi² (20.7 km²) is probably noncontributing.

PERIOD OF RECORD.--July 1941 to current year. Prior to October 1970, published as Great Salt Plains Reservoir near Jet.

REVISED RECORDS.--WSP 1117: Drainage area.

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

REMARKS.--Reservoir is formed by earth dam. Outlet works consist of 310 ft (94.5 m) uncontrolled concrete spillway containing a series of three weirs to form a cascade. Storage began in June 1941; conservation pool was first filled Oct. 21, 1941. Capacity, 257,700 acre-ft (318 hm³) at elevation 1,138.5 ft (347.01 m), crest of upper weir, and 31,420 acre-ft (38.7 hm³) at elevation 1,125.0 ft (342.90 m), crest of intermediate weir and conservation pool. Reservoir is used for flood control and as a wildlife refuge. Figures given herein represent total contents. Revised capacity table, based on survey in 1971, used since Oct. 1, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 189,400 acre-ft (234 hm³) July 2, 1951, elevation, 1,134.38 ft (345.759 m); minimum, 17,180 acre-ft (21.2 hm³) Sept. 6, 1973, elevation, 1,123.16 ft (342.339 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 84,710 acre-ft (104 hm³) May 21, elevation 1,129.62 ft (344.308 m); minimum, 30,360 acre-ft (37.4 hm³) Sept. 30, elevation 1,124.88 ft (342.863).

Capacity table (elevation, in feet, and contents, in acre-ft):

1,125	31,420	1,128	62,940
1,126	40,700	1,129	75,970
1,127	51,180	1,130	90,350

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32650	44120	36940	34260	35450	36850	34900	35690	56900	39410	36240	32200
2	32560	52410	35910	34450	35730	36290	37410	35780	62690	39310	35960	32200
3	32470	59280	35450	34540	36100	36100	34450	35870	68100	39210	35590	32370
4	32560	60000	35360	34450	35910	35730	33630	35960	76790	39110	35130	32450
5	32560	57020	35180	34260	35730	35360	33450	35410	80830	38620	34770	32370
6	31950	53660	35180	33900	35360	35540	33190	35690	81540	38140	34680	32190
7	31950	50190	34990	33900	35080	35270	33190	36060	77200	37280	34320	32190
8	31950	47800	34900	33900	34990	34990	33450	36150	71900	36900	34140	32110
9	31860	47800	34900	33810	34900	35080	33540	36060	65810	42980	34050	31930
10	31770	50520	34630	33720	34720	35080	33720	35870	60360	47660	33870	31850
11	31950	53090	34720	33630	34540	35270	33900	35500	57020	63060	33510	31760
12	32030	52750	34720	33450	34540	35360	33720	35590	53310	75690	33510	31590
13	32740	50520	34720	33360	34540	34630	33270	36150	49620	78030	33240	31420
14	32740	48120	34810	33270	34540	38360	33070	36710	47130	76790	33240	31330
15	32920	46100	34720	33190	34810	40500	33420	36520	45750	74740	33070	31150
16	33450	44230	34810	33190	35360	40700	33070	39210	44300	70840	32800	31150
17	36570	42590	34630	33190	36010	40400	32890	53880	45230	65930	32630	31240
18	39040	41590	34350	33190	36470	39520	32890	70580	46700	60840	32540	31150
19	38560	40600	34260	33190	37030	39330	32540	78170	46810	56080	32540	31150
20	37600	39230	34260	33190	37600	38170	32450	84130	45860	51850	32450	30970
21	36290	38460	34260	33360	38270	37320	32540	83550	44400	48420	32370	30970
22	36010	37890	34260	33630	38650	36850	32630	78730	43280	45130	32450	31060
23	35540	37600	34540	33630	38560	36570	32720	73110	41980	42880	32190	30890
24	35180	36940	34720	33630	37890	36010	32280	67460	43180	41290	31930	30800
25	35180	36850	34720	33630	37410	35270	32890	63800	42980	40000	31850	30800
26	35640	36570	34810	33720	37410	35180	33160	59870	42480	38920	32110	30710
27	35640	36010	34810	33900	37220	34990	33160	56430	42180	38140	31760	30530
28	35360	35820	34720	33900	37030	35270	34230	54680	41580	37090	31590	30710
29	35080	35730	34630	34260	---	35270	34680	52520	40800	36810	31680	30450
30	34810	37700	34630	34990	---	35640	35320	50730	40100	36620	31760	30360
31	35180	---	34540	35450	---	34990	---	54340	---	36520	31930	---
MAX	39040	60000	36940	35450	38650	40700	37410	84130	81540	78030	36240	32450
MIN	31770	35730	34260	33190	34540	34630	32280	35410	40100	36520	31590	30360
†	1,125.42	1,125.69	1,125.35	1,125.45	1,125.62	1,125.40	1,125.45	1,127.28	1,125.94	1,125.57	1,125.06	1,124.88
††	+2,350	+2,520	-3,160	+910	+1,580	-2,040	+330	+19,020	-14,240	-3,580	-4,590	-1,570

CAL YR 1981 MAX 60000 MIN 25060, †† +9,560
WTR YR 1982 MAX 84130 MIN 30360, †† -2,470

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07150500 SALT FORK ARKANSAS RIVER NEAR JET, OK

LOCATION.--Lat 36°45'11", long 98°07'44", in NE 1/4 NE 1/4 sec.11, T.26 N., R.9 W., Alfalfa County, Hydrologic Unit 11060004, near center of span on downstream side of county road bridge, 0.6 mi (0.97 km) downstream from Great Salt Plains Dam, 4 mi (6.4 km) upstream from Wagon Creek, 6 mi (9.7 km) northeast of Jet, and at mile 102.7 (165.2 km).

DRAINAGE AREA.--3,202 mi² (8,293 km²), of which 8 mi² (20.7 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSC 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,092.20 ft (332.903 m), National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Mar. 17, 1938, nonrecording gage at site 2.5 mi (4.0 km) upstream at datum 13.46 ft (4.103 m) higher. Mar. 17, 1938, to Apr. 26, 1953, water-stage recorder at site 200 ft (61.0 m) upstream, datum 5.00 ft (1.524 m) higher prior to Oct. 1, 1950.

REMARKS.--Records fair. Flow regulated since June 1941 by Great Salt Plains Lake (station 07150000).

AVERAGE DISCHARGE.--(Since regulation by Great Salt Plains Dam) 41 years (water years 1942-82), 371 ft³/s (10.51 m³/s), 268,800 acre-ft/yr (331 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 25,900 ft³/s (733 m³/s) May 19, 1938, gage height, 13.80 ft (4.206 m), present datum; no flow at times in 1939-41, 1944, 1955-56.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,020 ft³/s (199 m³/s) May 20, gage height, 8.93 ft (2.722 m); minimum daily discharge, 2.7 ft³/s (0.076 m³/s) Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	1350	542	167	290	435	277	393	2740	841	434	90
2	58	2310	306	225	351	407	623	389	3520	834	398	85
3	47	3450	277	208	401	332	203	394	4110	815	352	94
4	66	3590	262	203	359	325	154	377	5070	819	292	96
5	69	3010	255	184	307	278	167	370	5690	739	272	77
6	22	2450	244	159	279	312	118	393	5910	673	277	57
7	23	2020	241	223	244	276	119	444	5290	557	258	51
8	21	1710	234	197	243	261	157	478	4710	530	225	49
9	19	1750	235	172	246	258	160	422	4050	1090	227	40
10	22	2110	194	169	217	280	181	395	3370	1530	198	35
11	18	2490	228	172	209	253	217	382	2810	3380	166	39
12	59	2340	219	176	210	289	173	333	2340	5110	151	29
13	66	2040	218	175	197	241	139	459	1930	5350	140	23
14	71	1760	224	171	206	693	132	536	1630	5000	131	16
15	84	1540	222	128	253	1030	179	502	1470	4860	118	6.1
16	132	1330	223	112	327	992	148	642	1330	4420	97	9.5
17	571	1160	198	111	383	912	116	2130	1410	3750	88	19
18	749	1050	164	108	416	828	119	3840	1600	2970	85	8.6
19	651	960	197	103	464	818	93	5570	1610	2360	80	7.8
20	555	757	182	107	552	674	93	6560	1510	1920	73	5.7
21	384	643	170	112	675	538	85	6590	1360	1670	64	4.6
22	351	592	180	152	700	485	99	5710	1230	1530	81	6.6
23	302	549	213	170	655	454	107	4890	1120	1160	50	6.0
24	292	471	221	162	554	394	73	4190	1250	1040	44	3.3
25	251	462	220	142	464	304	123	3720	1220	888	36	2.9
26	350	454	231	152	501	310	157	3210	1170	733	93	2.7
27	316	351	222	190	483	286	140	2700	1140	627	26	4.5
28	280	335	208	151	448	329	251	2460	1080	524	16	14
29	267	329	205	201	---	314	287	2210	996	509	41	6.8
30	249	600	202	302	---	388	348	2030	910	487	49	9.1
31	261	---	214	327	---	282	---	2340	---	457	63	---
TOTAL	6672	43963	7151	5331	10634	13978	5238	65059	73576	57173	4625	898.2
MEAN	215	1465	231	172	380	451	175	2099	2453	1844	149	29.9
MAX	749	3590	542	327	700	1030	623	6590	5910	5350	434	96
MIN	18	329	164	103	197	241	73	333	910	457	16	2.7
AC-FT	13230	87200	14180	10570	21090	27730	10390	129000	145900	113400	9170	1780
CAL YR 1981	TOTAL	114576.9	MEAN	314	MAX	3590	MIN	1.2	AC-FT	227300		
WTR YR 1982	TOTAL	294298.2	MEAN	806	MAX	6590	MIN	2.7	AC-FT	583700		

ARKANSAS RIVER BASIN

07150500 SALT FORK ARKANSAS RIVER NEAR JET, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1954 to September 1959, October 1961 to September 1963, July 1968 to current year.

WATER TEMPERATURE: October 1954 to September 1959, October 1961 to September 1963, July 1968 to current year.

CHLORIDES: October 1955 to September 1959.

INSTRUMENTATION.--Water quality monitor since July 1968.

REMARKS.--In addition to water quality monitor, samples were collected by a local observer on a daily basis.

Partial analyses were made on those samples having maximum, minimum, and mean specific conductance for each month. Mean daily sulfate, chloride, and dissolved solids concentrations, and loads for those parameters were calculated from specific conductance values.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 57,000 micromhos Jan. 28, 1977; minimum daily, 1,280 micromhos Nov. 4, 1980.

WATER TEMPERATURE: Maximum daily, 36.0°C, Aug. 11, 1980; minimum daily, 0.0°C on many days during winter period.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 29,200 micromhos Feb. 17; minimum 4,580 micromhos June 8.

WATER TEMPERATURE: Maximum daily, 34.0°C July 20; minimum 0.5°C Feb. 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
OCT								
05...	1820	80020	52	7540	7.4	22.0	--	--
07...	1421	810	24	--	--	17.5	--	--
15...	1720	80020	106	7950	7.6	19.0	--	--
25...	1720	80020	307	7790	7.1	9.5	--	--
NOV								
05...	1720	80020	2870	4470	7.5	12.0	--	--
15...	1730	80020	1500	2280	7.7	12.0	--	--
18...	1022	810	1080	--	--	13.0	--	--
24...	1725	80020	472	3510	7.5	9.0	--	--
DEC								
05...	1750	80020	249	4130	8.4	5.5	--	--
15...	1715	80020	230	4310	8.3	5.5	--	--
26...	1730	80020	230	4250	8.2	3.5	--	--
JAN								
05...	1710	80020	178	4110	8.2	3.0	--	--
15...	1725	80020	109	5000	8.2	4.0	--	--
25...	1730	80020	144	4490	8.2	3.0	--	--
28...	1052	810	166	--	--	1.0	--	--
FEB								
05...	1725	80020	292	5110	8.1	.0	--	--
15...	1730	80020	277	5230	7.5	3.0	--	--
25...	1725	80020	509	7310	7.7	6.0	--	--
MAR								
04...	1701	810	292	--	--	6.5	--	--
JUN								
10...	1032	810	3440	--	--	23.0	--	--
AUG								
20...	0830	80020	73	--	7.9	25.5	6.4	84
30...	1830	80020	54	5100	--	27.0	6.6	84

ARKANSAS RIVER BASIN

07150500 SALT FORK ARKANSAS RIVER NEAR JET, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)
OCT									
05...	430	340	120	32	1500	88	33	9.3	92
07...	--	--	--	--	--	--	--	--	--
15...	430	337	120	31	1600	89	35	10	91
25...	370	285	100	29	1600	90	38	8.3	85
NOV									
05...	280	201	74	22	840	87	23	6.2	75
15...	280	177	81	18	360	73	10	5.6	100
18...	--	--	--	--	--	--	--	--	--
24...	320	202	91	23	620	80	16	6.1	120
DEC									
05...	460	305	130	34	710	77	15	5.7	160
15...	440	296	120	33	750	79	16	6.0	140
26...	480	322	130	38	720	76	15	5.7	160
JAN									
05...	550	362	150	43	670	72	13	5.4	190
15...	570	389	150	47	870	77	16	6.3	180
25...	570	403	150	48	750	74	14	5.8	170
28...	--	--	--	--	--	--	--	--	--
FEB									
05...	530	376	140	45	900	78	18	5.4	160
15...	540	374	140	47	930	79	18	5.6	170
25...	540	389	130	52	1400	85	27	5.7	150
MAR									
04...	--	--	--	--	--	--	--	--	--
JUN									
10...	--	--	--	--	--	--	--	--	--
AUG									
20...	630	490	170	50	740	71	13	11	141
30...	560	--	150	45	810	75	15	10	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SEDI- MENT, DIS- SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
OCT								
05...	340	2400	--	4460	--	6.1	--	--
07...	--	--	--	--	--	--	20	1.3
15...	340	2600	--	4690	--	6.4	--	--
25...	290	2600	--	4570	--	6.2	--	--
NOV								
05...	190	1400	--	2510	--	3.4	--	--
15...	190	540	--	1280	--	1.7	--	--
18...	--	--	--	--	--	--	100	292
24...	230	1000	--	2010	--	2.7	--	--
DEC								
05...	320	1100	--	2420	--	3.3	--	--
15...	320	1200	--	2520	--	3.4	--	--
26...	350	1200	--	2500	--	3.4	--	--
JAN								
05...	360	1100	--	2450	--	3.3	--	--
15...	410	1400	--	2990	--	4.1	--	--
25...	420	1300	--	2680	--	3.6	--	--
28...	--	--	--	--	--	--	50	22
FEB								
05...	400	1400	--	3030	--	4.1	--	--
15...	400	1500	--	3120	--	4.2	--	--
25...	390	2200	--	4320	--	5.9	--	--
MAR								
04...	--	--	--	--	--	--	60	47
JUN								
10...	--	--	--	--	--	--	90	836
AUG								
20...	500	1200	4.2	2780	2800	3.8	--	--
30...	490	1300	5.4	--	--	--	--	--

ARKANSAS RIVER BASIN

07150500 SALT FORK ARKANSAS RIVER NEAR JET, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6730	7670	6660	7700	7280	8060	5970	3610	3340	1100	5720	8680
2	6510	10400	6710	7560	7500	7940	6030	3420	3290	3160	6110	8510
3	6580	11400	6820	7600	7740	7690	5160	3410	3270	3530	5950	8400
4	6450	11400	6790	7560	7520	7680	4680	3550	4160	3560	5820	8750
5	6490	14500	6770	7250	7500	7850	4660	3550	4420	3970	5710	9440
6	6720	14900	6820	7370	7530	7190	4420	3600	4380	4210	5650	9430
7	---	---	6930	7320	7570	5660	3830	4000	4490	4160	6160	9370
8	6410	17500	7150	---	7510	6390	3680	3900	4290	3520	6130	9460
9	5870	19300	7150	---	7420	6270	3580	3930	2920	3530	6040	9470
10	5850	18300	6950	---	7480	6620	2680	3910	3690	3760	6270	9260
11	6770	7080	7390	---	7450	6350	3170	3990	3700	4300	5900	9390
12	7660	7840	7700	---	7890	6340	3160	3980	4280	4290	6240	10600
13	7930	9410	7770	---	7970	6320	3480	3970	1010	4250	6250	9470
14	7990	12700	7970	---	7910	6060	3480	3920	2630	4420	---	9830
15	7950	12900	7150	6480	8020	6090	3500	4020	2890	4340	---	8420
16	---	13400	7530	6980	7800	6100	3100	4400	2330	4240	9640	9270
17	8460	13700	7560	7020	7650	6190	2810	4920	2320	4410	6500	9200
18	8050	13500	7690	7220	7560	6400	3060	---	2360	4520	6420	6160
19	7770	16700	7660	7620	5890	6300	3510	3730	2850	4540	6410	7630
20	7870	19400	7230	7640	7220	6250	3630	4740	3550	4630	6220	6930
21	7920	19800	7660	7570	7250	5840	3560	4130	3930	4520	6160	8870
22	7570	19700	8130	7460	7350	6360	3570	4140	4290	4630	6040	8060
23	7760	17400	8090	7250	7570	6650	3460	3720	4170	4660	6400	8820
24	8220	14000	8090	7220	8030	6300	3630	3520	4280	4630	6470	8890
25	8210	---	8220	7270	8030	6110	3560	3330	4320	5010	6540	8480
26	8520	8300	8200	7180	8110	5730	3580	3310	4490	4910	7320	8430
27	8260	6860	7830	7140	8110	5520	3570	3140	3490	4880	7320	8320
28	7570	6840	7850	7220	8210	7160	3530	3230	2980	4910	8760	8580
29	8730	6650	7520	7160	---	6830	3540	3400	3900	5230	8740	8740
30	7770	6620	7650	7300	---	6000	3610	3510	3870	5200	8830	8800
31	---	---	7720	7310	---	5740	---	3400	---	5320	8650	---
MEAN	7450	12800	7460	7310	7610	6520	3770	3780	3530	4270	6700	8790
WTR YR 1983		MEAN	6600	MAX	19800	MIN	1010					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.0	---	10.0	2.0	1.5	11.0	9.5	18.0	20.5	26.5	32.0	32.0
2	23.0	---	10.0	2.0	1.5	13.0	8.0	17.5	22.0	27.0	33.0	32.0
3	21.0	---	9.0	1.5	1.0	15.0	10.0	17.0	22.5	26.0	32.5	30.5
4	24.0	---	9.0	2.0	1.5	14.0	8.0	18.0	24.0	26.0	28.5	29.0
5	24.5	---	9.5	2.5	2.5	14.5	4.0	20.0	22.0	25.5	33.0	30.5
6	20.5	12.0	8.0	4.0	2.5	13.0	8.0	20.0	22.0	26.0	36.5	30.5
7	---	---	7.0	3.5	4.0	12.0	7.5	20.0	24.0	25.0	31.0	30.0
8	23.5	14.5	7.5	---	4.0	12.5	7.0	19.0	22.0	25.0	32.0	28.5
9	17.5	17.0	5.0	---	4.0	10.5	8.0	20.0	24.0	25.5	31.0	31.0
10	15.5	14.0	5.0	---	4.5	9.5	9.5	18.5	25.5	25.0	31.0	30.0
11	19.0	14.0	4.0	---	3.0	10.5	10.5	19.0	27.0	25.0	26.0	30.0
12	19.0	10.0	4.0	---	3.0	11.5	6.0	23.0	23.0	26.5	32.0	27.0
13	19.5	7.0	3.0	---	4.0	11.0	15.0	24.0	22.0	29.0	33.0	28.0
14	19.5	9.5	4.5	---	7.0	13.5	11.0	18.0	23.5	28.0	---	27.5
15	16.5	5.5	4.0	6.0	7.5	13.5	12.0	16.5	25.0	26.5	---	27.5
16	---	9.0	8.0	5.5	9.0	11.0	---	18.5	27.0	26.0	33.0	26.5
17	20.0	10.0	5.0	4.5	8.0	9.5	---	17.0	26.5	27.0	32.0	26.5
18	21.5	9.5	6.0	2.0	9.0	7.0	11.0	---	26.0	27.0	31.0	26.5
19	16.0	14.0	5.5	2.0	11.0	7.0	13.0	16.5	26.0	28.0	28.0	24.0
20	16.0	14.5	6.0	1.5	10.0	6.0	12.0	18.0	27.0	29.0	29.0	19.0
21	16.0	13.5	6.0	1.5	9.0	6.0	12.0	19.0	26.0	28.0	31.0	22.5
22	17.0	12.0	6.0	1.0	10.0	5.0	13.0	22.0	28.0	30.0	33.0	22.0
23	14.5	5.5	---	1.5	11.0	4.5	15.0	26.0	28.0	31.5	32.0	19.0
24	15.0	4.0	7.5	2.0	9.0	5.5	14.0	23.0	27.0	30.0	31.0	19.0
25	15.0	---	8.0	3.0	9.0	6.0	13.0	22.5	26.0	31.5	31.0	23.0
26	15.5	6.5	7.5	3.5	9.5	7.5	16.0	22.0	27.0	32.0	32.5	22.0
27	15.5	4.5	4.0	2.0	10.0	6.0	17.0	26.0	29.0	29.0	33.0	24.0
28	16.5	4.5	3.0	3.0	10.5	6.5	17.0	28.5	28.0	27.5	31.5	24.5
29	---	5.0	.0	5.0	---	7.0	17.0	26.0	26.5	33.5	32.0	24.0
30	15.5	7.0	1.0	4.5	---	10.0	16.0	23.0	26.0	34.0	33.0	24.0
31	---	---	2.5	4.0	---	11.5	---	21.5	---	31.0	30.5	---
MEAN	18.5	9.5	6.0	3.0	6.5	9.5	11.5	20.5	25.0	28.0	31.5	26.5
WTR YR 1983		MEAN	17.0	MAX	36.5	MIN	.0					

ARKANSAS RIVER BASIN

07151000 SALT FORK ARKANSAS RIVER AT TONKAWA, OK

LOCATION.--Lat 36°40'13", long 97°18'33", in NW 1/4 SE 1/4 sec.4, T.25 N., R.1 W., Kay County, Hydrologic Unit 11060004, near right bank on downstream side of pier of bridge on U.S. Highway 77 in Tonkawa, 4 mi (6 km) downstream from Thompson Creek, 7.8 mi (12.6 km) upstream from Chikaskia River, and at mile 33.8 (54.4 km).

DRAINAGE AREA.--4,528 mi² (11,728 km²), of which 8 mi² (20.7 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1903 to October 1905 (gage heights only), October 1935 to current year. Monthly discharge only for some periods, published as Arkansas River (Salt Fork) near Tonkawa 1903-4 and as "near Tonkawa" 1905.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 930.22 ft (283.531 m) Corps of Engineers datum. September 1903 to October 1905, nonrecording gage near present site at different datum. Jan. 2, 1936, to Jan. 22, 1939, nonrecording gage, and Jan. 23, 1939, to June 20, 1960, water-stage recorder at site 100 ft (30.5 m) upstream at same datum.

REMARKS.--Records good. Some regulation since June 1941 by Great Salt Plains Lake, 69.5 mi (111.8 km) upstream (station 07150000).

AVERAGE DISCHARGE.--(Since regulation by Great Salt Plains Dam) 41 years (water years 1942-82) 730 ft³/s (20.66 m³/s), 528,900 acre-ft/yr (652 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,300 ft³/s (2,760 m³/s) Oct. 11, 1973, gage height, 28.98 ft (8.833 m); no flow Aug. 31 to Oct. 12, Oct. 14-16, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1923, reached a stage of 26.8 ft (8.17 m), from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,600 ft³/s (442 m³/s) at 1230 May 18, gage height 19.55 ft (5.959 m), no other peak above base of 11,000 ft³/s (312 m³/s); minimum daily discharge, 65 ft³/s (1.84 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	2170	500	292	508	586	492	373	8230	1160	675	211
2	134	4860	704	296	479	547	413	391	8930	1060	638	195
3	127	5460	579	270	361	533	388	423	6200	986	587	164
4	118	4390	459	291	220	480	611	423	6620	984	542	164
5	106	3990	424	284	180	459	376	420	7600	941	508	152
6	90	3410	393	286	130	449	289	446	6450	906	449	154
7	92	2910	375	210	180	414	284	446	5750	846	422	148
8	93	2430	359	180	250	418	253	442	5550	773	416	141
9	72	2210	351	150	300	388	245	488	5080	703	383	131
10	66	2570	344	130	270	367	251	499	4560	1720	353	123
11	68	2640	334	150	285	346	256	453	4040	3640	338	118
12	76	2530	311	170	300	361	258	640	3580	2840	316	123
13	75	2560	323	150	290	332	279	2750	3140	4290	284	157
14	68	2320	318	180	330	1270	253	2000	2660	5360	276	129
15	84	2030	319	170	370	5340	238	1010	2270	5860	267	115
16	137	1760	314	140	417	6520	215	885	2040	4830	240	117
17	948	1550	313	150	529	3670	230	7960	1870	4400	237	112
18	1230	1350	316	160	910	2220	235	14400	2450	3940	213	102
19	1400	1180	267	170	1640	1470	201	13900	2250	3440	196	98
20	1000	1060	245	180	2120	1250	193	10900	2180	2930	185	90
21	695	923	318	198	1840	1140	184	12700	2120	2480	184	83
22	542	768	375	215	1630	933	180	11100	1730	2090	181	83
23	409	700	299	240	1330	808	171	9480	1620	1760	165	77
24	371	652	282	267	1320	717	174	7190	2740	1490	164	73
25	338	612	306	321	1070	644	183	6020	2100	1290	159	71
26	350	548	311	314	669	558	185	5100	1870	1150	148	72
27	454	540	315	324	615	487	177	4380	2520	1020	137	72
28	488	514	313	249	614	476	234	4010	1930	921	132	71
29	409	452	307	258	---	459	247	4840	1370	918	159	68
30	340	503	303	251	---	471	313	4160	1240	803	142	65
31	374	---	294	318	---	452	---	4520	---	736	229	---
TOTAL	10886	59592	10971	6964	19157	34565	8008	132749	110690	66267	9325	3479
MEAN	351	1986	354	225	684	1115	267	4282	3690	2138	301	116
MAX	1400	5460	704	324	2120	6520	611	14400	8930	5860	675	211
MIN	66	452	245	130	130	332	171	373	1240	703	132	65
AC-FT	21590	118200	21760	13810	38000	68560	15880	263300	219600	131400	18500	6900
CAL YR 1981	TOTAL	178210	MEAN	488	MAX	5460	MIN	30	AC-FT	353500		
WTR YR 1982	TOTAL	472653	MEAN	1295	MAX	14400	MIN	65	AC-FT	937500		

ARKANSAS RIVER BASIN

07152000 CHIKASKIA RIVER NEAR BLACKWELL, OK

LOCATION.--Lat 36°48'31", long 97°16'39", in NE 1/4 NW 1/4 sec.23, T.27 N., R.1 W., Kay County, Hydrologic Unit 11060005, near right bank on downstream side of pier of St. Louis-San Francisco Railway Co. bridge at north-east edge of Blackwell, 0.2 mi (0.3 km) downstream from Bitter Creek, and at mile 28.2 (45.4 km).

DRAINAGE AREA.--1,859 mi² (4,815 km²).

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 967.41 ft (29.487 m), National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). See WSP 1921 for history of changes prior to April, 1952.

REMARKS.--Records fair. Some regulation at low flow by Lake Blackwell, capacity 3,600 acre-ft (4.44 hm³) 12.6 mi (20.3 km) above station. Small diversion made from reservoir for municipal supply of city of Blackwell.

AVERAGE DISCHARGE.--47 years 479 ft³/s (13.57 m³/s) 347,000 acre-ft/yr (428 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 85,000 ft³/s (2,410 m³/s) June 22, 1942, gage height, 33.3 ft (10.15 m), from floodmark, present site and datum; no flow at times in 1954, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1923, reached a stage of about 34 ft (10.4 m), present site and datum, from information by local residents, discharge 100,000 ft³/s (2,830 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 ft³/s (227 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Mar. 15	1100	9,130 259	23.80 7.254	June 1	0700	13,600 385	27.89 8.501
May 18	0900	*22,700 643	*30.26 9.223	June 19	0300	11,700 331	26.55 8.092
May 21	0100	8,520 241	22.96 6.998				

Minimum daily discharge, 13 ft³/s (0.37 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	2850	233	134	420	237	220	165	10500	728	206	79
2	14	7420	290	126	264	223	215	150	4330	748	160	91
3	15	5440	237	125	201	219	178	133	1640	620	136	92
4	30	2500	195	124	165	211	170	122	4300	460	117	88
5	18	1310	175	111	140	205	167	120	7370	372	98	49
6	18	736	161	127	88	201	152	150	2770	316	96	48
7	17	499	150	134	110	186	149	260	1380	591	92	61
8	17	391	145	141	130	189	150	240	1060	983	89	66
9	18	1360	146	101	110	189	150	231	865	309	89	52
10	20	4160	146	62	100	186	148	174	710	433	86	60
11	22	1430	145	68	117	180	146	146	691	890	83	44
12	28	871	142	72	130	173	145	745	768	469	80	36
13	30	640	142	66	120	164	142	1160	666	360	79	67
14	33	484	142	70	130	1220	140	564	533	311	76	89
15	54	390	140	74	140	7190	139	524	465	459	75	141
16	56	328	140	66	153	2380	138	1420	1060	316	72	132
17	388	292	137	72	469	1100	133	13400	1130	248	68	56
18	1340	261	115	76	2740	654	130	19400	6190	209	68	71
19	525	239	92	82	3910	471	131	7480	10900	180	68	59
20	192	219	87	92	2490	364	131	4930	5080	164	67	60
21	117	202	105	95	1310	320	131	6600	1290	149	66	63
22	82	192	141	99	842	282	131	2130	996	140	64	63
23	67	184	159	115	581	249	131	1010	804	134	62	59
24	55	173	139	116	450	234	131	878	3350	127	61	49
25	55	168	139	115	370	228	132	2190	2720	122	66	48
26	154	166	142	113	311	228	131	1360	1060	118	64	50
27	662	157	139	123	274	228	131	804	4150	124	62	56
28	250	153	141	149	251	228	137	1150	6420	201	59	65
29	132	147	144	186	---	228	138	1690	2670	481	58	46
30	93	166	123	360	---	243	148	950	1080	269	66	60
31	110	---	134	1030	---	238	---	7010	---	195	75	---
TOTAL	4625	33528	4666	4424	16516	18648	4415	77286	86948	11226	2608	2000
MEAN	149	1118	151	143	590	602	147	2493	2898	362	84.1	66.7
MAX	1340	7420	290	1030	3910	7190	220	19400	10900	983	206	141
MIN	13	147	87	62	88	164	130	120	465	118	58	36
AC-FT	9170	66500	9260	8780	32760	36990	8760	153300	172500	22270	5170	3970
CAL YR 1981	TOTAL	91539.0	MEAN	251	MAX	7420	MIN	3.2	AC-FT	181600		
WTR YR 1982	TOTAL	266890	MEAN	731	MAX	19400	MIN	13	AC-FT	529400		

ARKANSAS RIVER BASIN

07152500 ARKANSAS RIVER AT RALSTON, OK

LOCATION.--Lat 36°30'09", long 96°43'22", in NW 1/4 sec.1, T.23 N., R.5 E., Osage County, Hydrologic Unit 11060006, near left bank on downstream side of pier of bridge on State Highway 18 at Ralston, 2 mi (3.2 km) downstream from Salt Creek, 2 mi (3.2 km) upstream from Grayhorse Creek, and at mile 594.0 (955.7 km).

DRAINAGE AREA.--54,465 mi² (141,064 km²), of which 7,615 mi² (19,723 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1925 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected in this vicinity since 1922 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 776.70 ft (236.738 m), National Geodetic Vertical Datum of 1929. Oct. 1, 1925, to Nov. 13, 1935, nonrecording gage at site of former highway bridge 1,200 ft (366 m) downstream at same datum. Nov. 14, 1935 to Feb. 23, 1939, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated since April 1976 by Kaw Lake (station 07148130) 59.7 mi (96.1 km) upstream; some regulation by Great Salt Plains Lake (station 07150000) since 1941.

AVERAGE DISCHARGE.--(Prior to regulation by Kaw Dam) 50 years (water years 1926-75), 4,826 ft³/s (136.7 m³/s), 3,496,000 acre-ft/yr (4.31 km³/yr); (since regulation by Kaw Dam) 6 years (water years 1977-82), 3,888 ft³/s (110.1 m³/s), 2,816,000 acre-ft/yr (3.47 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 211,000 ft³/s (5,980 m³/s) Oct. 13, 1973, gage height, 22.98 ft (7.004 m); minimum 14 ft³/s (0.40 m³/s) Oct. 12, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 11, 1923, reached a stage of 23.8 ft (7.25 m), referred to outside gage on basis of stages observed in 1923 and 1944 at site 1,200 ft (366 m) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,200 ft³/s (940 m³/s) May 20, gage height, 10.94 ft (3.335 m); minimum daily discharge, 517 ft³/s (14.6 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	650	3140	2500	1230	1640	7150	2570	1500	15700	21400	7200	638
2	910	4160	2610	1210	1940	6570	2620	1620	26300	20500	7080	740
3	959	11200	2530	1220	1960	5090	2520	1700	27800	16200	7000	773
4	993	17600	2890	1210	1800	4980	2640	1730	19500	14100	6870	801
5	983	16200	3070	1170	2500	4860	2600	1840	19500	13700	6780	765
6	943	16300	2970	1140	2450	4240	2680	2080	27200	13400	5590	760
7	964	14800	2890	1370	2400	2890	2520	2180	25700	13800	3240	779
8	1230	14100	2820	1810	2300	2640	2360	3140	24300	13400	2550	766
9	1350	14200	2760	1600	2250	2510	1930	2260	23900	13900	2450	741
10	1360	12600	2670	1300	2200	2230	1830	2130	18900	12000	2190	742
11	1070	11500	2160	1100	2150	2080	1800	2330	22000	9970	1910	740
12	1130	12500	2050	1000	3500	2010	1780	7100	18700	12600	1620	730
13	1060	10400	2000	900	3400	1920	1760	9590	19300	11900	1540	752
14	977	10100	1960	800	3530	2560	1760	8300	20100	12400	1420	745
15	1380	9830	1910	750	3750	3660	1760	6400	19500	11700	1040	653
16	1710	9440	1860	700	3110	11100	1710	4170	20100	11000	893	574
17	2190	9130	1810	660	2450	14900	1740	17200	18400	10600	859	568
18	3120	8840	1730	640	2390	11700	1800	19500	24000	10000	802	580
19	5580	8480	1660	620	3540	10600	1790	30100	22700	9570	786	570
20	4700	8230	1790	700	8320	10500	1750	32700	27200	9140	771	567
21	4300	7430	1660	750	11700	8690	1490	25600	26100	8720	739	560
22	3620	6110	1670	900	10200	8470	1390	26700	19900	8270	708	553
23	3140	5810	1700	1000	9140	8040	1350	23000	18600	7480	708	551
24	2890	5520	1660	1500	8340	6700	1320	20700	18500	6230	701	545
25	2830	5130	1380	1700	7830	5610	1350	23200	18400	5750	678	538
26	2900	3880	1280	1700	7620	3690	1350	22800	18500	5390	655	531
27	2740	2830	1270	1510	7450	3330	1340	22400	19900	5080	633	530
28	2690	2570	1250	1510	7200	2650	1400	20400	18000	4900	626	524
29	2570	2480	1260	1530	---	2430	1420	15100	22400	5060	623	523
30	2380	2480	1280	1970	---	2360	1430	13400	23400	5270	617	517
31	1460	---	1260	1780	---	2260	---	16000	---	7320	633	---
TOTAL	64779	266990	62310	36980	127060	168420	55760	386870	644500	330750	69912	19356
MEAN	2090	8900	2010	1193	4538	5433	1859	12480	21480	10670	2255	645
MAX	5580	17600	3070	1970	11700	14900	2680	32700	27800	21400	7200	801
MIN	650	2480	1250	620	1640	1920	1320	1500	15700	4900	617	517
AC-FT	128500	529600	123600	73350	252000	334100	110600	767400	1278000	656000	138700	38390
CAL YR 1981	TOTAL	820821	MEAN	2249	MAX	17600	MIN	189	AC-FT	1628000		
WTR YR 1982	TOTAL	2233687	MEAN	6120	MAX	32700	MIN	517	AC-FT	4431000		

ARKANSAS RIVER BASIN

07152500 ARKANSAS RIVER AT RALSTON, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-63, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1950 to September 1963, July 1968 to current year.

WATER TEMPERATURE: January 1950 to September 1963, July 1968 to current year.

INSTRUMENTATION.--Water quality monitor July 1968 to September 1980.

REMARKS.--Samples were collected by a local observer on a daily basis. Partial analyses were made on those samples having maximum, minimum, and mean specific conductance for each month. An additional sample was collected bimonthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 7,510 micromhos Sept. 14, 1955; minimum daily, 157 micromhos Nov. 21, 1979.

WATER TEMPERATURE: Maximum daily, 37.0°C, July 28, 1956; minimum, -0.5°C on many days during winter period.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 5,780 micromhos May 17; minimum daily, 842 micromhos Oct. 18.

WATER TEMPERATURE: Maximum, 31.0°C Aug. 14; minimum 0.0°C on several days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT 27...	1500	80020	2740	1910	8.4	14.5	25	11.0	112	170	77	230
DEC 08...	1500	80020	2830	1300	7.7	11.0	28	10.6	99	43	46	220
08...	1501	810	2830	--	--	--	--	--	--	--	--	--
FEB 10...	1300	80020	3780	1430	8.3	.0	6.8	17.0	120	26	21	250
MAR 17...	1700	1028	15500	728	7.7	14.5	--	9.7	98	--	--	--
APR 14...	1345	80020	1780	1640	8.8	24.0	7.0	10.2	128	21	K55	270
MAY 14...	1345	1028	8660	1320	7.8	19.5	--	9.1	103	--	--	--
20...	1700	80020	32600	680	7.8	22.0	10	--	--	K980	K1400	110
AUG 03...	1600	80020	7030	930	8.5	30.5	30	--	--	370	190	200

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	ACIDITY (MG/L AS H)	ACIDITY (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 27...	106	--	--	64	16	320	75	10	7.6	120	110	500
DEC 08...	87	--	--	62	15	190	65	6	6.6	130	110	300
08...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	98	.6	30	71	17	200	63	6	6.2	150	100	320
MAR 17...	--	--	--	--	--	--	--	--	--	--	--	--
APR 14...	112	--	--	74	21	260	67	7	6.1	160	130	380
MAY 14...	--	--	--	--	--	--	--	--	--	--	--	--
20...	36	--	--	30	8.0	89	63	4	6.1	72	48	140
AUG 03...	65	--	--	57	13	120	56	4	7.4	131	74	190

ARKANSAS RIVER BASIN

07152500 ARKANSAS RIVER AT RALSTON, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)
OCT 27...	.40	4.8	1070	1100	1.5	7920	.650	.070	.09	1.0	.250	.77
DEC 08...	.30	6.8	747	770	1.0	5710	1.20	.100	.13	.75	.200	.61
08...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	.30	7.3	807	810	1.1	8240	1.20	.100	.13	.87	.270	.83
MAR 17...	--	--	--	--	--	--	--	--	--	--	--	--
APR 14...	.30	3.6	977	970	1.3	4700	.410	<.060	.08	.77	.130	.40
MAY 14...	--	--	--	--	--	--	--	--	--	--	--	--
20...	.30	8.9	380	370	.52	33400	.240	.220	.28	1.0	.430	1.3
AUG 03...	.30	8.4	697	550	.95	13200	.470	<.060	.08	1.5	.250	.77

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
OCT 27...	.230	.190	.58	4	0	4	300	200	150	<1	<1	20
DEC 08...	.220	.190	.58	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	.190	.200	.61	3	1	2	200	.00	170	<1	<1	10
MAR 17...	--	--	--	--	--	--	--	--	--	--	--	--
APR 14...	.080	.060	.18	--	--	--	--	--	--	--	--	--
MAY 14...	--	--	--	--	--	--	--	--	--	--	--	--
20...	.100	.080	.25	6	4	2	200	100	88	2	<3	20
AUG 03...	.160	.130	.40	4	1	3	100	.00	120	<1	<1	10

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 27...	20	.00	3	<3	10	6	4	2200	--	<10	16
DEC 08...	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	--	<10	<1	<3	11	6	5	380	--	<10	3
MAR 17...	--	--	--	--	--	--	--	--	--	--	--
APR 14...	--	--	--	--	--	--	--	--	--	--	--
MAY 14...	--	--	--	--	--	--	--	--	--	--	--
20...	--	<10	7	<1	36	30	6	11000	11000	170	20
AUG 03...	0	10	<1	<1	10	8	2	2000	2000	5	4

ARKANSAS RIVER BASIN

07152500 ARKANSAS RIVER AT RALSTON, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)
OCT 27...	13	3	110	110	2	.1	.0	3.0	34	33	1
DEC 08...	--	--	--	--	--	--	--	--	--	--	--
DEC 08...	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	0	3	30	30	4	.2	--	<.1	2	0	3
MAR 17...	--	--	--	--	--	--	--	--	--	--	--
APR 14...	--	--	--	--	--	--	--	--	--	--	--
MAY 14...	--	--	--	--	--	--	--	--	--	--	--
MAY 20...	17	3	360	--	<3	4.0	.0	20	33	31	2
AUG 03...	3	1	100	100	2	.5	.3	.2	11	--	<1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 27...	1	0	1	<1	<1	30	30	3	113	836	82
DEC 08...	--	--	--	--	--	--	--	--	52	397	83
DEC 08...	--	--	--	--	--	--	--	--	40	306	--
FEB 10...	1	0	1	<1	<1	40	--	<3	16	163	89
MAR 17...	--	--	--	--	--	--	--	--	1750	73200	90
APR 14...	--	--	--	--	--	--	--	--	37	178	72
MAY 14...	--	--	--	--	--	--	--	--	852	19900	73
MAY 20...	<1	--	<1	1	<1	70	--	<12	1250	110000	68
AUG 03...	<1	--	1	<1	<1	20	20	3	109	2070	75

ARKANSAS RIVER BASIN

07152500 ARKANSAS RIVER AT RALSTON, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1840	1870	1600	2200	1790	1880	1080	---	986	769	1530	1500
2	1830	1610	1660	2400	1120	1910	666	1040	963	847	1540	1580
3	1860	1570	1610	2290	1430	2010	1350	1090	1070	1040	1520	1560
4	1850	1540	1610	2210	1880	2020	1080	1130	1230	1050	1410	1660
5	1800	1520	1750	2300	1900	1820	1160	1070	1250	919	---	1640
6	1870	1520	2100	1870	1500	1760	1160	---	1270	1080	1340	1660
7	1870	1500	2420	1910	1770	1530	1020	---	1290	884	1330	1640
8	1780	1520	2460	1740	2090	1210	943	959	1300	890	1390	1570
9	1840	1520	2470	1760	1710	1290	818	966	1320	915	1430	1580
10	1930	1490	2430	1820	1810	1420	798	974	1330	1040	1440	1590
11	2000	1480	2570	1840	1790	1480	765	922	1270	1000	1440	1650
12	1170	1460	2680	---	1930	1710	791	1080	1150	913	1420	1720
13	1010	1480	2700	---	1900	2160	746	1010	1410	1060	1430	1600
14	1160	1510	2740	2190	1560	2460	748	352	678	1020	1440	1580
15	1260	1490	2680	2290	1490	2720	707	529	773	1020	1560	2110
16	1350	1480	2680	2280	1670	2770	640	549	856	996	1600	1130
17	1460	1500	2700	2220	1780	2710	---	809	833	982	---	977
18	1610	1560	2790	2180	1720	3270	616	---	1200	957	---	653
19	1670	1670	2880	1210	1790	1530	560	647	1150	932	1610	573
20	1730	1750	2980	1230	1600	1930	530	774	1080	916	1480	700
21	1760	1850	3070	1240	1560	2170	563	334	1160	896	1590	781
22	1760	1940	2980	1220	1570	2300	627	661	1040	826	1560	862
23	1870	1910	2950	1400	1590	2330	636	604	1050	810	1430	837
24	1850	1780	2560	1380	1600	2010	753	720	1140	997	988	950
25	1770	1650	2240	1400	1480	2140	723	796	1200	1330	1020	1290
26	1820	1610	2210	1420	1540	1060	750	832	1350	1590	1230	1520
27	1840	---	1990	1480	1760	492	816	902	1260	1670	1220	1600
28	1910	1500	1880	1990	1840	768	689	817	1280	1700	1260	1620
29	1790	1490	1940	2120	---	510	557	831	943	1740	1430	1720
30	1810	1510	2220	2090	---	826	763	923	1010	1740	1480	1730
31	1870	---	2270	2170	---	1090	---	927	---	1660	1500	---
MEAN	1710	1600	2380	1860	1680	1780	795	824	1130	1100	1410	1390
WTR YR 1983		MEAN	1480	MAX	3270	MIN	334					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.0	19.0	11.0	2.0	5.0	9.0	11.0	19.0	18.5	26.5	28.0	25.5
2	22.0	15.0	13.5	3.0	2.0	10.0	8.5	17.0	20.0	27.0	29.0	24.5
3	21.0	9.5	11.5	2.5	.0	14.0	8.5	15.0	21.0	28.5	28.5	27.0
4	20.0	7.5	9.0	2.0	.0	14.5	8.0	16.0	23.0	26.0	27.5	25.0
5	23.0	6.0	9.0	3.0	.0	16.5	7.0	17.0	23.0	24.5	---	25.0
6	21.0	7.0	6.0	3.0	1.0	14.0	6.0	---	19.0	25.5	29.0	24.0
7	17.0	12.0	6.0	4.0	.0	10.5	7.0	---	20.0	26.5	28.5	24.0
8	22.0	13.5	7.0	9.0	3.5	9.5	7.0	15.0	21.0	26.0	27.5	26.0
9	17.0	13.5	3.0	7.0	5.5	6.0	7.0	16.0	21.5	26.0	28.0	24.5
10	14.5	15.0	5.5	7.0	5.0	6.0	8.0	17.0	21.5	27.0	28.5	24.5
11	13.0	17.0	4.0	5.0	5.5	6.0	9.0	17.0	21.0	29.5	29.0	25.0
12	15.5	10.0	.0	---	6.0	7.5	11.0	20.0	22.5	27.0	28.0	25.0
13	13.5	5.0	.0	---	7.0	11.0	7.0	20.0	23.0	27.5	33.0	23.0
14	17.0	5.0	2.0	8.0	6.0	12.0	6.0	18.0	22.0	26.5	28.0	20.0
15	18.0	3.0	3.0	6.0	9.5	14.0	7.0	15.0	22.0	25.5	28.0	21.0
16	19.0	4.5	4.0	4.5	11.5	13.5	9.0	15.5	26.0	25.0	28.5	22.5
17	14.5	5.5	4.5	3.0	8.5	10.0	---	19.5	23.0	25.5	---	24.0
18	13.5	9.0	8.5	2.0	8.0	8.0	10.0	---	24.0	26.5	---	25.0
19	17.5	12.0	6.0	1.5	11.0	7.5	9.0	16.5	25.5	27.0	27.0	24.5
20	10.0	17.0	4.5	3.0	11.5	5.5	8.0	20.0	25.0	28.0	25.0	20.0
21	10.0	11.0	5.0	3.0	10.0	4.0	10.0	18.5	26.0	27.5	26.5	18.0
22	10.0	12.0	9.5	2.5	9.0	5.0	10.0	19.5	26.0	27.0	28.0	16.0
23	10.0	7.5	10.0	4.5	9.0	5.5	11.0	18.5	26.5	28.0	28.0	16.0
24	11.0	2.5	12.0	4.0	8.5	6.5	13.0	20.0	26.0	28.0	31.5	16.5
25	11.0	5.0	7.5	5.0	6.0	7.5	12.0	24.5	27.0	28.0	28.0	18.0
26	12.0	7.0	4.0	4.0	6.0	9.0	14.0	21.0	26.5	28.0	27.5	18.5
27	14.0	---	4.5	2.5	9.0	7.5	14.0	24.0	25.0	28.5	28.0	21.5
28	15.5	5.0	1.5	5.5	7.0	6.0	17.0	22.5	24.5	27.5	28.0	21.0
29	14.5	4.5	.0	6.0	---	7.5	16.0	23.0	27.0	26.5	28.0	21.0
30	12.5	7.0	.0	6.0	---	8.0	18.0	20.0	25.5	28.0	28.0	22.0
31	17.0	---	2.0	6.0	---	8.0	---	23.5	---	27.5	27.0	---
MEAN	15.5	9.0	5.5	4.5	6.0	9.0	10.0	19.0	23.5	27.0	28.0	22.5
WTR YR 1983		MEAN	15.0	MAX	33.0	MIN	.0					

ARKANSAS RIVER BASIN

07153000 BLACK BEAR CREEK AT PAWNEE, OK

LOCATION.--Lat 36°20'37", long 96°47'57", on east line of SE 1/4 NE 1/4 sec.31, T.22 N., R.5 E., Pawnee County, Hydrologic Unit 11060006, on downstream side of left pier of bridge on State Highway 18 in north Pawnee, 300 ft (91.4 m) downstream from Skedee Creek, and at mile 23.4 (37.7 km).

DRAINAGE AREA.--576 mi² (1,492 km²).

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

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 802.73 ft (244.672 m), National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 21, 1944, nonrecording gage at present site and datum except for Aug. 27, 1953, to Apr. 29, 1954, nonrecording gage at site 500 ft (152 m) downstream at same datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--38 years, 170 ft³/s (4.814 m³/s), 123,200 acre-ft/yr (152 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 30,200 ft³/s (855 m³/s) Oct. 3, 1959, gage height, 31.43 ft (9.580 m); no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1943, reached a stage of 28.19 ft (8.592 m), from floodmark, discharge 17,800 ft³/s (504 m³/s).

EXTREMES FOR CURRENT YEAR.--Peak discharge above base of 4,000 ft³/s (113 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 12	2000	4,850 137	12.55 3.825	May 24	2200	4,030 114	11.08 3.377
May 17	1300	*5,750 163	14.39 *4.386				

Minimum .08 ft³/s (.002 m³/s) Oct. 2-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	366	4.8	3.7	63	8.0	10	430	284	120	7.1	.42
2	.09	243	26	3.9	32	7.6	10	250	234	87	5.3	.46
3	.08	110	64	4.2	17	7.6	6.9	160	200	64	4.7	.44
4	.11	76	34	3.8	9.8	7.2	6.5	120	180	47	4.5	.45
5	.11	40	20	3.6	7.8	6.5	6.0	100	158	36	3.9	.50
6	.14	20	12	3.4	6.4	7.0	5.5	300	136	31	3.5	.49
7	.17	14	7.6	3.5	5.7	6.7	5.5	600	111	159	3.1	.47
8	.17	197	5.7	3.5	6.8	6.3	5.0	300	96	61	2.5	.55
9	.14	868	5.0	3.5	7.2	6.0	5.0	170	82	28	1.7	.63
10	.12	228	4.8	3.1	6.8	6.2	4.9	140	73	20	1.5	.63
11	.14	96	4.5	2.8	6.4	6.4	4.8	120	73	15	1.4	.68
12	.23	73	4.3	2.8	7.2	5.8	4.7	3310	73	15	1.4	.73
13	.20	41	4.3	2.9	7.2	5.7	4.6	3800	63	18	1.3	.54
14	.17	21	4.3	2.8	46	81	4.5	1960	62	17	1.2	.66
15	6.0	11	3.9	2.9	510	479	4.4	991	57	14	1.1	.42
16	32	6.7	3.7	2.8	747	379	4.3	713	57	10	1.0	.40
17	31	5.2	3.7	2.7	349	206	4.2	5050	59	9.3	.95	.49
18	119	4.9	3.5	2.7	176	118	4.1	4620	67	8.1	.87	.51
19	207	3.1	3.7	2.8	122	75	4.5	5040	61	6.1	.87	.33
20	79	3.1	3.7	3.0	94	51	4.3	3610	51	6.0	.87	.23
21	32	3.6	3.7	3.0	74	36	4.2	2250	45	4.9	.87	.12
22	21	3.4	3.9	3.3	52	26	4.0	1380	43	4.4	.87	.13
23	13	3.1	3.7	3.2	39	19	3.9	985	178	3.9	.80	.17
24	8.4	2.7	3.5	3.1	30	15	3.8	2020	1090	3.2	.80	.19
25	10	3.2	3.5	3.0	21	9.7	10	2920	2420	2.8	.73	.17
26	6.0	2.8	3.7	3.0	15	8.7	11	1270	919	2.6	.73	.16
27	4.7	2.0	3.7	3.2	11	12	5.0	989	518	2.7	.80	.17
28	5.5	2.1	3.7	3.1	9.0	9.5	40	1100	394	2.7	.91	.20
29	6.7	2.5	3.7	3.5	---	9.0	500	907	266	4.4	.80	.16
30	5.4	5.7	3.7	142	---	10	400	554	183	4.9	.61	.20
31	56	---	3.7	170	---	11	---	358	---	9.0	.48	---
TOTAL	644.66	2458.1	264.0	404.8	2478.3	1641.9	1091.6	46517	8233	817.0	57.16	11.70
MEAN	20.8	81.9	8.52	13.1	88.5	53.0	36.4	1501	274	26.4	1.84	.39
MAX	207	868	64	170	747	479	500	5050	2420	159	7.1	.73
MIN	.08	2.0	3.5	2.7	5.7	5.7	3.8	100	43	2.6	.48	.12
AC-FT	1280	4880	524	803	4920	3260	2170	92270	16330	1620	113	23
CAL YR 1981	TOTAL	9543.51	MEAN	26.1	MAX	962	MIN	.00	AC-FT	18930		
WTR YR 1982	TOTAL	64619.22	MEAN	177	MAX	5050	MIN	.08	AC-FT	128200		

ARKANSAS RIVER BASIN

07154500 CIMARRON RIVER NEAR KENTON, OK

LOCATION.--Lat 36°55'36", long 102°57'31", in SE 1/4 sec. 4, T.5 N., R.1 E., Cimarron County, Hydrologic Unit 11040001, near right bank on downstream side of pier of county road bridge, 1.5 mi (2.4 km) upstream from North Carrizo Creek, 1.7 mi (2.7 km) northeast of Kenton, 2.2 mi (3.5 km) downstream from Carrizozo Creek, and at mile 594.0 (955.7 km).

DRAINAGE AREA.--1,106 mi² (2,865 km²), of which 68 mi² (176.1 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1904 to July 1905 (gage heights only), October 1950 to current year.

REVISED RECORDS.--WSP 1711: 1956 (M).

GAGE.--Water-stage recorder. Datum of gage is 4,262.08 ft (1,299.082 m) National Geodetic Vertical Datum of 1929, (levels by State Highway Department). April 1904 to July 1905 nonrecording gage at site 0.9 mi (1.45 km) upstream at different datum. Oct. 1, 1950, to Sept. 19, 1967, water-stage recorder at same site and at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair below 100 ft³/s (2.83 m³/s) and poor above. Extensive diversions for irrigation above station.

AVERAGE DISCHARGE.--32 years (water years 1951-82), 21.9 ft³/s (0.620 m³/s), 15,870 acre-ft/yr (19.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,400 ft³/s (1,230 m³/s) Oct. 17, 1965, gage height, 22.32 ft (6.803 m); present datum, from rating curve extended above 7,000 ft³/s (198 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,300 ft³/s (93.5 m³/s) at 0945 June 26, gage height, 12.18 ft (3.712 m), no other peak above base of 2,000 ft³/s (56.6 m³/s); no flow Apr. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	1.4	1.6	2.0	1.4	1.5	.16	1.1	.98	13	52	.06
2	2.4	1.3	2.1	2.1	1.0	1.3	.11	1.1	.60	5.8	16	.14
3	2.5	2.6	2.6	1.9	.80	1.4	.06	1.1	.81	2.7	5.6	.18
4	2.4	3.1	2.7	1.5	.35	2.1	.04	.82	1.4	.95	2.2	386
5	2.4	3.2	2.9	2.4	.03	3.2	.02	.70	.89	82	1.2	45
6	2.3	3.3	3.0	1.9	.01	3.6	.02	.84	.39	16	.70	21
7	2.2	3.3	3.2	1.4	.35	3.6	.02	.76	.19	6.6	.94	9.8
8	2.2	3.2	3.5	1.6	.70	2.9	.00	.68	.11	2.6	34	5.4
9	2.1	3.2	3.4	2.2	.10	2.4	.37	.56	.07	2.3	23	125
10	2.1	3.4	3.2	2.4	.25	2.2	1.0	.47	.04	48	11	63
11	1.7	3.5	2.9	1.2	.35	2.1	1.3	.36	143	14	7.0	29
12	1.5	3.7	2.6	1.8	.20	1.8	1.2	.46	19	3.0	52	16
13	1.2	3.9	2.7	1.9	.80	1.5	.98	.55	5.0	.85	9.7	11
14	1.0	4.0	2.6	1.8	1.5	1.8	.71	.60	3.2	65	3.1	8.2
15	1.1	3.8	2.4	2.3	3.4	1.4	.57	.56	2.1	109	75	6.2
16	1.6	3.8	2.4	2.0	3.0	.40	.33	.51	1.1	17	87	5.5
17	1.6	3.8	2.4	2.5	3.3	.38	.30	.52	.58	8.0	27	4.8
18	1.2	3.6	2.1	3.2	2.8	.55	.35	.43	.39	4.9	15	4.1
19	1.2	2.9	2.5	3.7	2.0	.85	.28	.30	.27	3.4	11	3.8
20	1.0	2.9	3.3	2.2	1.5	.65	.21	.22	.19	2.1	7.8	3.2
21	1.0	2.9	3.2	1.8	1.4	.38	.24	.16	.13	.98	6.0	2.6
22	1.1	2.9	3.9	1.8	1.4	.38	.24	.13	.10	.45	3.7	2.1
23	1.1	2.9	3.6	1.1	1.2	.36	.22	.10	5.0	.32	3.5	1.6
24	1.2	2.7	2.3	1.7	1.1	.32	.24	15	16	.23	1.7	1.3
25	1.4	2.7	2.8	2.0	1.2	.22	.24	7.3	162	.17	.88	1.2
26	1.8	2.4	2.6	1.6	1.4	.21	.22	49	619	.13	.37	1.1
27	2.2	2.2	2.6	1.3	1.6	.25	.37	17	343	.11	.23	1.0
28	2.5	2.1	2.0	1.1	1.7	.30	.52	4.1	73	.09	.16	.85
29	2.7	2.1	1.5	1.3	---	.31	.57	2.1	45	354	.07	.53
30	2.4	1.9	2.3	1.2	---	.24	.96	1.3	25	587	1.2	.55
31	2.0	---	2.3	1.2	---	.20	---	1.3	---	222	.19	---
TOTAL	55.8	88.7	83.2	58.1	34.84	38.80	11.85	110.13	1468.54	1572.68	459.24	760.21
MEAN	1.80	2.96	2.68	1.87	1.24	1.25	.39	3.55	49.0	50.7	14.8	25.3
MAX	2.7	4.0	3.9	3.7	3.4	3.6	1.3	49	619	587	87	386
MIN	1.0	1.3	1.5	1.1	.01	.20	.00	.10	.04	.09	.07	.06
AC-FT	111	176	165	115	69	77	24	218	2910	3120	911	1510
CAL YR 1981	TOTAL	7036.43	MEAN	19.3	MAX	2160	MIN	.00	AC-FT	13960		
WTR YR 1982	TOTAL	4742.09	MEAN	13.0	MAX	619	MIN	.00	AC-FT	9410		

ARKANSAS RIVER BASIN

07156900 CIMARRON RIVER NEAR FORGAN, OK

LOCATION.--Lat 37°00'45", long 100°29'30", in SE 1/4 SE 1/4 sec.8, T.35 S., R.24 E., Mead County, Kans., Hydrologic Unit 11040006, near center of span on downstream side of pier of bridge on Kansas State Highway 23, 0.8 mi (1.3 km) north of Oklahoma-Kansas State Line, 7.8 mi (12.5 km) north of Forgan, and at mile 375.7 (604.5 km).

DRAINAGE AREA.--8,536 mi² (22,108 km²), of which 4,316 mi² (11,178 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,326.05 ft (708.980 m) (National Geodetic Vertical Datum of 1929).

REMARKS.--Records fair. Extensive diversion for irrigation above station.

AVERAGE DISCHARGE.--17 years, 78.1 ft³/s (2.212 m³/s), 56,580 acre-ft/yr (69.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,200 ft³/s (600 m³/s) Oct. 20, 1965, gage height, 8.10 ft (2.469 m); minimum, 18 ft³/s (0.51 m³/s) Jan. 4, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,790 ft³/s (79.0 m³/s) May 19, gage height, 4.68 ft (1.426 m), no peak above base of 3,000 ft³/s (85.0 m³/s); minimum daily discharge, 24 ft³/s (0.68 m³/s) Aug. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	58	53	56	52	56	62	76	65	52	30	34
2	45	63	54	56	51	55	60	65	58	45	28	38
3	43	60	47	63	41	58	60	62	58	33	25	41
4	45	52	42	63	38	62	61	58	54	28	24	40
5	45	48	49	64	35	60	63	60	56	30	28	33
6	43	44	51	59	33	59	61	63	53	39	54	39
7	44	48	43	54	39	57	61	59	51	39	41	36
8	48	55	51	53	44	60	61	57	52	44	33	35
9	54	51	49	50	43	62	62	56	52	38	32	36
10	51	50	48	48	50	63	74	58	48	44	31	32
11	50	50	52	46	48	62	62	62	52	42	33	31
12	44	48	52	44	50	62	57	72	51	40	33	32
13	39	48	53	52	52	59	59	62	48	35	29	34
14	40	45	56	64	55	62	62	60	48	41	28	36
15	53	47	59	63	58	61	60	61	51	50	28	35
16	51	46	58	54	56	58	61	69	56	35	28	36
17	63	49	54	60	54	58	57	71	54	29	26	34
18	52	51	53	64	53	59	57	62	58	29	30	32
19	51	53	50	66	50	80	59	614	56	28	29	35
20	51	54	57	67	48	137	60	135	51	27	33	33
21	50	58	57	66	44	78	58	62	49	28	46	33
22	50	51	63	58	54	57	56	51	48	28	39	34
23	51	49	58	55	60	64	56	45	116	27	39	37
24	56	46	64	55	57	58	56	48	72	26	41	36
25	61	48	60	52	55	57	57	46	49	25	37	33
26	60	46	60	52	59	61	54	52	55	26	36	37
27	59	46	60	52	59	71	55	51	53	27	33	36
28	56	42	62	51	59	68	73	56	48	28	39	32
29	55	43	59	53	---	71	63	55	114	29	38	34
30	54	54	58	53	---	66	88	58	73	30	34	36
31	52	---	58	49	---	64	---	63	---	30	33	---
TOTAL	1560	1503	1690	1742	1397	2005	1835	2469	1749	1052	1038	1050
MEAN	50.3	50.1	54.5	56.2	49.9	64.7	61.2	79.6	58.3	33.9	33.5	35.0
MAX	63	63	64	67	60	137	88	614	116	52	54	41
MIN	39	42	42	44	33	55	54	45	48	25	24	31
AC-FT	3090	2980	3350	3460	2770	3980	3640	4900	3470	2090	2060	2080
CAL YR 1981	TOTAL	18820	MEAN	51.6	MAX	324	MIN	24	AC-FT	37330		
WTR YR 1982	TOTAL	19090	MEAN	52.3	MAX	614	MIN	24	AC-FT	37870		

ARKANSAS RIVER BASIN

07157580 CIMARRON RIVER NEAR ENGLEWOOD, KS

LOCATION.--Lat 36°58'38", long 99°58'32", in SE 1/4 sec.23, T.9 N., R.26 W., Harper County, Ok, Hydrologic Unit 11040008, on the downstream side of bridge on U.S. Highway 283, 4 mi (6.4 km) south of Englewood, Kansas, 10.5 mi (16.9 km) north of junction of U.S. Highways 283 and 64, and at mile 341.6 (549.6 km).

DRAINAGE AREA.--10,096 mi² (26,149 km²), of which 4,813 mi² (12,466 km²) is probably noncontributing.

PERIOD OF RECORD.--March 11, 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,965.62 ft (599.121 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR CURRENT PERIOD.--March 11 to September 30, 1982: Maximum discharge 770 ft³ (21.8 m³) May 20, gage height, 6.80 ft (2.073 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	59	116	130	74	14	.00
2						---	53	130	116	48	7.5	.00
3						---	40	108	116	42	.46	.00
4						---	46	71	97	32	.00	6.8
5						---	42	56	83	31	.00	5.3
6						---	19	59	77	26	26	.68
7						---	2.1	53	74	28	72	7.4
8						---	.68	51	59	24	37	8.0
9						---	.29	51	44	40	18	3.2
10						---	1.1	46	51	42	17	.24
11						40	2.4	21	48	34	22	.00
12						40	6.8	56	56	36	11	.00
13						46	1.1	116	48	34	8.0	.00
14						62	.35	145	42	46	4.9	2.8
15						90	.17	116	53	34	1.7	4.7
16						62	.03	121	90	41	.50	6.8
17						48	.00	125	77	25	.04	7.4
18						40	.00	104	97	8.2	1.1	5.3
19						42	.00	80	100	6.4	.93	4.1
20						100	.00	208	93	6.7	.00	5.3
21						68	.00	86	83	9.7	.00	5.3
22						40	.00	83	68	11	3.7	5.3
23						36	.00	90	145	8.5	8.0	4.1
24						46	.00	116	116	6.7	12	3.2
25						53	53	108	97	3.4	12	2.4
26						51	56	125	83	1.1	7.9	2.1
27						71	25	116	77	1.7	3.5	2.1
28						80	42	130	59	7.2	5.3	.58
29						74	83	125	64	9.2	7.0	.00
30						74	86	112	145	8.7	12	.17
31						56	---	140	---	15	2.4	---
TOTAL						---	619.02	3064	2488	740.5	315.93	93.27
MEAN						---	20.6	98.8	82.9	23.9	10.2	3.11
MAX						---	86	208	145	74	72	8.0
MIN						---	.00	21	42	1.1	.00	.00

ARKANSAS RIVER BASIN

07157580 CIMARRON RIVER NEAR ENGLEWOOD, KS--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year February, 1982 to current year.

REMARKS.--Samples were collected and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
FEB 08...	1745	80020	--	7300	7.8	.5	--	--	840	468	200
MAR 03...	0930	80020	74	3600	7.6	3.5	--	--	490	304	120
JUN 04...	1500	80020	91	3200	8.5	18.5	8.6	100	410	209	98
JUL 15...	1600	80020	35	3250	8.4	31.0	6.6	99	410	250	95
AUG 26...	1430	80020	8.0	3500	8.3	30.5	6.8	99	410	224	93

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
FEB 08...	82	1200	75	19	11	370	380	2000	4150	5.6	--
MAR 03...	47	570	71	12	6.2	190	210	1000	2090	2.8	418
JUN 04...	39	520	73	12	6.2	197	180	850	1820	2.5	447
JUL 15...	41	510	73	11	8.8	157	180	850	1900	2.6	180
AUG 26...	43	580	75	13	8.8	186	210	970	2040	2.8	44

ARKANSAS RIVER BASIN

07157950 CIMARRON RIVER NEAR BUFFALO, OK

LOCATION.--Lat 36°51'07", long 99°18'54", in SE 1/4 NE 1/4 sec.2, T.27 N., R.20 W., Harper County, Hydrologic Unit 11050001, near left bank on downstream side of pier of U.S. Highway 64, 0.5 mi (0.8 km) downstream from Keno Creek, 17.0 mi (27.4 km) northeast of Buffalo, and at mile 289.1 (465.2 km).

DRAINAGE AREA.--12,004 mi² (31,090 km²), of which 4,813 mi² (12,466 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,599.67 ft (487.579 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1979, at site 6.9 mi (11.1 km) upstream at an altitude of 1,650 ft (502.9 m).

REMARKS.--Records good.

AVERAGE DISCHARGE.--22 years, 145 ft³/s (4.106 m³/s), 105,100 acre-ft/yr (130 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 26,400 ft³/s (748 m³/s) Sept. 26, 1973, gage height, 5.57 ft (1.698 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,380 ft³/s (124 m³/s) June 15 at 2345, gage height, 7.76 ft (2.365 m), no other peak above base of 3,000 ft³/s (85.0 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	238	94	74	97	139	125	224	489	77	10	.03
2	2.3	234	96	82	102	137	116	208	373	102	8.0	.02
3	3.1	282	84	81	72	135	89	202	334	60	5.6	.01
4	2.6	215	60	75	42	131	88	179	435	34	4.0	.02
5	1.8	179	55	73	22	130	85	137	468	18	3.2	.00
6	1.1	140	62	71	24	131	78	164	383	11	3.7	.02
7	.87	113	67	45	23	128	81	124	315	7.9	4.8	.03
8	.77	211	65	36	28	153	74	98	256	6.3	2.9	.01
9	.73	302	61	54	24	139	54	69	214	16	2.0	.00
10	1.0	330	58	47	28	122	50	60	179	295	1.4	.00
11	2.1	220	62	33	32	110	51	53	165	1680	1.0	.00
12	3.4	167	68	26	35	109	50	180	161	788	.93	.00
13	4.4	134	72	28	54	97	41	115	154	439	.68	.00
14	5.6	115	76	43	99	143	34	125	146	299	1.2	.01
15	26	105	74	52	148	167	33	157	715	261	.35	.00
16	30	94	80	47	177	185	29	371	1680	248	.28	.01
17	99	89	39	42	699	153	24	346	544	186	.23	.00
18	77	85	21	52	503	119	22	296	312	145	.18	.00
19	75	74	19	63	342	103	22	267	259	113	.15	.00
20	61	59	25	73	263	86	17	235	227	90	.13	.00
21	44	63	64	100	210	118	19	433	229	78	.12	.00
22	31	61	146	78	184	191	18	298	211	64	.09	.00
23	18	64	127	62	164	148	16	233	204	55	.10	.00
24	15	59	101	98	148	108	15	225	170	45	.08	.00
25	29	61	98	127	139	85	168	267	220	37	.08	.00
26	44	61	93	126	134	70	115	418	211	27	.07	.00
27	64	52	86	269	137	92	131	363	165	22	.06	.00
28	61	50	80	230	138	106	222	467	127	20	.06	.00
29	51	55	71	141	---	149	255	507	105	19	.07	.00
30	44	100	70	114	---	157	288	419	80	15	.51	.00
31	58	---	85	107	---	154	---	901	---	15	.11	---
TOTAL	859.47	4012	2259	2549	4068	3995	2410	8141	9531	5273.2	52.08	.16
MEAN	27.7	134	72.9	82.2	145	129	80.3	263	318	170	1.68	.00
MAX	99	330	146	269	699	191	288	901	1680	1680	10	.03
MIN	.73	50	19	26	22	70	15	53	80	6.3	.06	.00
AC-FT	1700	7960	4480	5060	8070	7920	4780	16150	18900	10460	103	.3
CAL YR 1981	TOTAL	25845.06	MEAN	70.8	MAX	1810	MIN	.00	AC-FT	51260		
WTR YR 1982	TOTAL	43149.91	MEAN	118	MAX	1680	MIN	.00	AC-FT	85590		

ARKANSAS RIVER BASIN

07157950 CIMARRON RIVER NEAR BUFFALO, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples collected at bridge on U.S. Highway 64.

PERIOD OF RECORD.--Water years 1953, 1961-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to Jan. 1982.

WATER TEMPERATURE: July 1968 to Jan. 1982.

INSTRUMENTATION.--Water quality monitor from March 1969 to September 1979.

REMARKS.--Samples were collected by a local observer on a daily basis. Samples were collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 109,000 micromhos July 20, 21, 1980; minimum daily, 1,020 micromhos July 2, 1975.

WATER TEMPERATURE: Maximum daily, 38.0°C Aug. 14, 1974; minimum daily, -0.5°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEC C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT 28...	0945	80020	89	5880	8.2	12.0	240	11.4	119	3300	2800	490
DEC 29...	1330	80020	75	7490	7.9	3.5	230	13.7	133	K8	84	560
FEB 11...	1400	80020	32	37900	7.7	.0	8.9	11.5	98	K0	88	1100
APR 21...	1100	80020	18	11900	8.2	12.0	2.1	10.4	106	K4	K16	740
JUN 17...	1630	80020	455	7900	8.1	26.5	140	7.0	96	980	3600	590
AUG 18...	1430	80020	.15	17200	8.1	33.0	1.7	10.4	162	K38	500	1400

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
OCT 28...	320	120	46	1200	84	24	6.6	170	270	2000	.80	17
DEC 29...	336	140	50	1300	83	25	6.3	220	30	2200	.80	19
FEB 11...	849	250	110	8700	95	120	13	230	670	15000	.70	19
APR 21...	543	190	65	2300	87	38	7.2	200	440	3800	.70	16
JUN 17...	448	150	53	1700	86	31	10	146	360	2700	.40	16
AUG 18...	1320	440	83	3500	84	42	7.7	125	1200	5700	.30	22

ARKANSAS RIVER BASIN

07157950 CIMARRON RIVER NEAR BUFFALO, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 28...	3610	3800	4.9	867	.110	.100	.13	1.1	.220	.67	.070	.040
DEC 29...	4140	3900	5.6	838	.620	.150	.19	1.3	.350	1.1	.050	.050
FEB 11...	23600	25000	32.1	2040	.430	.320	.41	.67	.020	.06	.020	.040
APR 21...	6980	6900	9.5	339	<.100	.090	.12	.54	.010	.03	.010	.010
JUN 17...	5110	5100	6.9	6280	<.100	.100	.13	1.7	.300	.92	.170	.110
AUG 18...	10900	11000	14.8	4.4	.170	.200	.26	1.0	.020	.06	.050	.020

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
OCT 28...	.12	4	1	3	300	100	200	1	<1	20	0	30
DEC 29...	.15	--	--	--	--	--	--	--	--	--	--	--
FEB 11...	.12	3	0	3	300	.00	300	<1	<1	20	0	20
APR 21...	.03	--	--	--	--	--	--	--	--	--	--	--
JUN 17...	.34	5	1	4	<100	--	200	1	<1	20	10	10
AUG 18...	.06	3	0	3	100	.00	100	<1	<1	20	0	20

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
OCT 28...	4	<1	16	14	2	9400	9400	20	6	4	2	210
DEC 29...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 11...	<1	3	4	--	<1	600	450	150	3	--	<1	160
APR 21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 17...	5	<1	9	8	1	5600	5600	50	2	--	<1	220
AUG 18...	<1	<1	2	1	1	360	290	70	<1	--	3	350

ARKANSAS RIVER BASIN

07157950 CIMARRON RIVER NEAR BUFFALO, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- MPENDE RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)
OCT 28...	190	20	.1	--	<.1	11	9	2	2	0	2	<1
DEC 29...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 11...	20	140	.2	--	<.1	5	3	2	2	0	2	<1
APR 21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 17...	200	20	.1	.0	.1	12	9	3	1	0	1	<1
AUG 18...	10	340	.1	--	<.1	3	--	<1	1	0	1	<1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT 28...	<1	140	110	30	.0	.00	.0	.00	.0	.0	.0	.0
DEC 29...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 11...	<1	40	0	40	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 17...	<1	40	20	20	<1.0	<1	<.1	<1.0	<.1	<.1	<.1	<.1
AUG 18...	<1	30	0	30	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATERIAL (UG/KG)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE IN BOTTOM MATERIAL (UG/KG)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 28...	.0	.0	.0	.0	.0	.0	.0	.00	.00	--	--	--
DEC 29...	--	--	--	--	--	--	--	--	--	749	152	73
FEB 11...	--	--	--	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	13	.63	79
JUN 17...	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<1.00	<10	354	435	76
AUG 18...	--	--	--	--	--	--	--	--	--	18	.00	72

ARKANSAS RIVER BASIN

07157960 BUFFALO CREEK NEAR LOVEDALE, OK

LOCATION.--Lat 36°46'08", long 99°21'58", in NW 1/4 NW 1/4 sec.4, T.26 N., R.20 W., Harper County, Hydrologic Unit 11050001, near center of channel on downstream side of pier of bridge on State Highway 34, 1.2 mi (1.9 km) east of Lovedale, 1.3 mi (2.1 km) upstream from Sleeping Bear Creek, and at mile 7.6 (12.2 km).

DRAINAGE AREA.--408 mi² (1,057 km²).

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,602.56 ft (488.460 m) Oklahoma State Highway Department datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--16 years, 10.4 ft³/s (0.295 m³/s), 7,530 acre-ft/yr (9.28 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 15,800 ft³/s (447 m³/s) Aug. 9, 1967, gage height, 14.80 ft (4.511 m), from rating curve extended above 7,000 ft³/s (198 m³/s) on basis of slope-area determination of peak flow; maximum gage height, 16.17 ft (4.929 m) May 10, 1979; no flow each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,360 ft³/s (38.5 m³/s) at 0330 May 31, gage height, 9.54 ft (2.908 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); no flow Oct. 1-10

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	9.7	2.6	2.6	3.6	4.6	7.6	12	57	6.7	2.0	.15
2	.00	21	2.6	2.6	4.2	4.3	6.9	12	47	7.3	1.9	.15
3	.00	10	2.4	2.6	4.0	4.4	6.1	11	38	5.4	1.5	.18
4	.00	5.1	2.2	2.5	3.4	4.4	5.6	9.8	52	4.2	1.3	.20
5	.00	3.6	2.2	2.4	2.7	4.3	5.2	8.7	33	3.6	1.3	.14
6	.00	2.7	2.2	2.4	2.6	4.5	4.9	11	31	3.2	1.4	.15
7	.00	2.4	2.1	1.6	2.8	4.6	4.7	15	22	2.9	1.6	.23
8	.00	4.9	2.1	2.2	2.7	4.7	4.3	13	16	2.7	1.5	.23
9	.00	22	2.1	2.1	2.4	4.6	4.2	9.8	12	4.8	5.2	.14
10	.00	14	2.2	1.5	2.5	4.4	4.2	7.9	9.5	55	5.6	.11
11	.03	8.7	2.1	1.7	2.7	4.4	4.3	6.4	8.3	58	3.1	.09
12	.13	7.0	2.1	1.6	2.8	4.3	4.3	6.0	7.6	32	2.1	.13
13	.11	5.4	2.1	1.6	3.0	4.2	4.4	8.5	6.8	18	1.3	.12
14	.08	4.5	2.2	1.6	3.2	7.3	4.3	25	5.9	11	1.1	.15
15	.32	3.9	2.1	1.7	4.0	11	4.1	25	17	7.7	.79	.15
16	.54	3.3	2.2	1.5	9.2	12	3.5	29	209	5.5	.73	.16
17	.72	3.0	2.1	1.7	14	15	3.3	54	93	4.0	.67	.17
18	.83	2.9	2.1	1.7	16	11	3.0	45	41	3.0	.64	.14
19	.77	2.5	2.1	1.8	13	9.2	2.7	32	25	2.4	.56	.16
20	.66	2.3	2.2	1.9	11	8.0	2.3	29	19	2.0	.49	.16
21	.83	2.3	2.4	2.1	8.7	7.0	2.2	21	15	1.7	.45	.15
22	.83	2.3	2.6	2.5	7.8	6.5	2.2	17	12	1.3	.42	.15
23	.82	2.3	2.7	2.6	6.8	6.3	2.3	13	13	.73	.41	.12
24	.82	2.3	2.7	2.8	6.2	6.3	2.4	12	20	1.2	.43	.10
25	.91	2.3	2.8	2.8	5.4	5.9	3.9	17	20	1.2	.37	.10
26	1.0	2.1	2.8	2.8	5.0	5.6	4.9	32	15	.78	.34	.11
27	1.1	2.0	2.8	3.1	4.8	6.7	5.4	21	12	1.2	.29	.10
28	1.2	2.0	2.8	3.2	4.7	7.7	6.2	24	10	1.5	.32	.09
29	1.2	2.1	2.7	3.3	---	8.6	8.7	23	8.7	1.8	.29	.09
30	1.2	2.7	2.7	3.6	---	8.8	11	46	7.5	1.7	.27	.11
31	1.4	---	2.6	3.6	---	8.6	---	435	---	2.0	.19	---
TOTAL	15.50	161.3	73.6	71.7	159.2	209.2	139.1	1031.1	883.3	254.51	38.56	4.23
MEAN	.50	5.38	2.37	2.31	5.69	6.75	4.64	33.3	29.4	8.21	1.24	.14
MAX	1.4	22	2.8	3.6	16	15	11	435	209	58	5.6	.23
MIN	.00	2.0	2.1	1.5	2.4	4.2	2.2	6.0	5.9	.73	.19	.09
AC-FT	31	320	146	142	316	415	276	2050	1750	505	76	8.4
CAL YR 1981	TOTAL	4040.35	MEAN	11.1	MAX	892	MIN	.00	AC-FT	8010		
WTR YR 1982	TOTAL	3041.30	MEAN	8.33	MAX	435	MIN	.00	AC-FT	6030		

ARKANSAS RIVER BASIN

07158000 CIMARRON RIVER NEAR WAYNOKA, OK

LOCATION.--Lat 36°31'02", long 98°52'45", in NW 1/4 NE 1/4 sec.35, T.24 N., R.16 W., Woods County, Hydrologic Unit 11050001, near left bank on downstream side of bridge on U.S. Highway 281, 4 mi (6 km) south of Waynoka, and at mile 247.0 (397.4 km).

DRAINAGE AREA.--13,334 mi² (34,535 km²), of which 4,830 mi² (12,510 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1903 to December 1905 (gauge heights and discharge measurements only), October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 1,367.35 ft (416.768 m) National Geodetic Vertical Datum of 1929. September 1903 to December 1905, nonrecording gage at the Atchison, Topeka and Santa Fe Railway Co. bridge 5 mi (8 km) upstream at different datum. Feb. 4 to Mar. 3, 1938, nonrecording gage and Mar. 4, 1938, to Oct. 24, 1956, water-stage recorder, on former highway bridge 50 ft (15.2 m) downstream at present datum.

REMARKS.--Records fair. Extensive diversions for irrigation above station.

AVERAGE DISCHARGE.--45 years, (water years 1938-82), 331 ft³/s (9.374 m³/s), 239,800 acre-ft/yr (296 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,500 ft³/s (2,680 m³/s) May 16, 1957, gage height, 15.10 ft (4.602 m), from rating curve extended above 45,000 ft³/s (1,270 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of about 14 ft (4.3 m) occurred probably in 1914.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,300 ft³/s (377 m³/s) at 1530 June 16, gage height, 8.29 ft (2.527 m), no other peak above base of 10,000 ft³/s (283 m³/s); no flow Aug. 22-Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	1590	173	117	89	85	192	250	3060	206	55	.00
2	6.9	1120	121	121	125	76	190	205	1360	307	46	.00
3	5.6	439	121	115	68	70	150	193	1100	206	40	.00
4	5.7	393	120	108	45	67	122	188	1630	178	32	.00
5	4.5	269	105	106	41	66	115	140	1160	153	26	.00
6	4.6	211	101	105	39	73	105	242	853	109	25	.00
7	4.4	164	104	44	52	84	95	270	681	105	25	.00
8	4.5	297	105	49	46	87	96	178	511	96	23	.00
9	4.9	1130	197	63	37	77	91	102	392	90	22	.00
10	5.0	464	117	25	39	102	83	87	263	916	18	.00
11	9.2	396	106	19	42	80	70	71	256	1120	15	.00
12	18	283	105	21	56	71	64	230	242	3690	12	.00
13	33	224	107	30	150	67	56	459	206	1000	11	.00
14	19	195	119	34	198	288	53	256	153	568	16	.00
15	48	172	118	55	197	434	48	163	206	392	7.6	.00
16	140	154	125	23	302	262	46	310	5480	292	5.0	.00
17	453	149	125	22	399	250	42	4410	2440	256	5.0	.00
18	216	142	111	31	896	212	40	1580	1140	206	5.0	.00
19	121	134	87	69	567	183	35	823	793	153	3.1	.00
20	89	117	80	56	348	145	32	1320	580	184	.70	.00
21	78	119	77	42	248	122	30	642	459	200	.28	.00
22	62	119	116	51	201	112	31	449	533	105	.00	.00
23	48	123	173	44	167	185	29	382	439	84	.00	.00
24	40	120	219	47	140	192	28	419	389	77	.00	.00
25	47	119	174	70	119	155	36	331	642	68	.00	.00
26	55	117	158	96	102	116	181	277	694	62	.00	.00
27	58	109	157	115	95	131	104	374	511	90	.00	.00
28	56	110	142	175	89	183	127	949	410	200	.00	.00
29	70	115	133	292	---	188	198	884	263	94	.00	.00
30	65	137	120	190	---	193	185	533	242	71	.00	.00
31	83	---	122	119	---	206	---	3250	---	62	.00	---
TOTAL	1864.3	9231	3938	2454	4897	4562	2674	19967	27088	11340	392.68	.00
MEAN	60.1	308	127	79.2	175	147	89.1	644	903	366	12.7	.00
MAX	453	1590	219	292	896	434	198	4410	5480	3690	55	.00
MIN	4.4	109	77	19	37	66	28	71	153	62	.00	.00
AC-FT	3700	18310	7810	4870	9710	9050	5300	39600	53730	22490	779	.00
CAL YR 1981	TOTAL	64400.17	MEAN	176	MAX	5880	MIN	.00	AC-FT	127700		
WTR YR 1982	TOTAL	88407.98	MEAN	242	MAX	5480	MIN	.00	AC-FT	175400		

ARKANSAS RIVER BASIN

07159100 CIMARRON RIVER NEAR DOVER, OK

LOCATION.--Lat 35°57'06", long 97°54'51", in SW 1/4 NE 1/4 sec.14, T.17 N., R.7 W., Kingfisher County, Hydrologic Unit 11050002, near right bank on downstream bridge on U.S. Highway 81, 1.0 mi (1.6 km) downstream from Turkey Creek, 2.0 mi (3.2 km) south of Dover, 2.5 mi (4.0 km) upstream from Kingfisher Creek, and at mile 160.6 (258.4 km).

DRAINAGE AREA.--15,713 mi² (40,697 km²), of which 4,926 mi² (12,758 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 999.19 ft (304.553 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--9 years, 782 ft³/s (22.15 m³/s), 566,600 acre-ft/yr (699 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,900 ft³/s (1,950 m³/s) May 17, 1982, gage height, 22.87 ft (6.971 m) from high-water mark; minimum daily, 10 ft³/s (0.28 m³/s) June 29, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 12,000 ft³/s (340 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Nov. 2	1645	17,200 487	17.45 5.319	June 2	0245	17,300 490	17.47 5.325
May 13	0230	17,100 484	17.43 5.313	July 29	1845	13,100 371	16.72 5.096
May 17	2215	*68,900 1,950	*22.87 6.971				

Minimum daily discharge 39 ft³/s (1.10 m³/s) Oct. 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	1050	520	261	614	391	414	1230	7260	804	1090	129
2	51	12000	348	245	437	372	397	875	12600	718	761	124
3	44	10400	303	241	396	358	372	677	6780	632	588	116
4	62	5310	308	241	368	343	346	547	4960	617	489	119
5	62	2520	276	234	343	331	323	434	5080	560	426	114
6	59	1870	267	233	318	323	304	454	4710	513	385	109
7	41	1540	268	218	294	324	282	452	2370	2190	355	111
8	40	1370	267	200	250	317	272	747	1950	1120	336	111
9	39	2040	240	192	230	313	269	859	1570	1980	322	104
10	39	2620	245	104	230	310	261	493	1300	2880	298	97
11	50	2930	242	99	215	302	261	351	1140	2540	283	88
12	65	1370	282	140	272	292	241	7650	1520	3040	268	90
13	68	950	282	129	349	287	229	12100	1360	2300	254	99
14	59	818	262	119	580	426	215	5030	997	2390	238	111
15	601	736	256	137	1260	2940	194	3110	868	1240	223	104
16	3980	622	250	99	965	4610	184	4500	963	973	208	95
17	5940	553	251	170	1040	2070	176	42700	963	746	203	88
18	3630	520	234	226	1080	1100	168	42300	2700	607	203	88
19	5720	489	215	226	1290	836	157	13400	1940	510	198	90
20	1880	429	245	255	1690	729	155	8660	1360	457	188	106
21	745	407	251	263	1520	623	145	7040	1250	414	185	99
22	425	323	250	255	1090	548	143	4280	1440	378	179	95
23	329	348	260	238	802	488	140	2320	916	410	173	93
24	270	348	266	211	663	449	138	1980	3550	396	162	88
25	241	348	270	220	562	422	169	1550	5710	307	156	88
26	262	338	285	249	492	452	205	1360	4430	271	151	88
27	289	323	317	260	449	471	206	1250	2230	247	146	86
28	268	313	291	222	416	467	243	3080	1470	232	151	80
29	247	299	278	230	---	435	638	5460	1150	7230	151	78
30	204	447	271	318	---	415	775	3200	972	4320	143	78
31	186	---	261	617	---	438	---	2240	---	2000	137	---
TOTAL	25948	53631	8561	6852	18215	22182	8022	180329	85509	43022	9050	2966
MEAN	837	1788	276	221	651	716	267	5817	2850	1388	292	98.9
MAX	5940	12000	520	617	1690	4610	775	42700	12600	7230	1090	129
MIN	39	299	215	99	215	287	138	351	868	232	137	78
AC-FT	51470	106400	16980	13590	36130	44000	15910	357700	169600	85330	17950	5880
CAL YR 1981	TOTAL	197835	MEAN	542	MAX	12000	MIN	10	AC-FT	392400		
WTR YR 1982	TOTAL	464287	MEAN	1272	MAX	42700	MIN	39	AC-FT	920900		

ARKANSAS RIVER BASIN

07159720 COTTONWOOD CREEK NEAR NAVINA, OK

LOCATION.--Lat 35°46'36", long 97°32'45", SW 1/4 NW 1/4 sec. 17, T.15 N., R.4 W., Logan County, Hydrologic Unit 11050002 on downstream right bank, 0.5 mi (0.8 km) downstream from Deer Creek, 1.7 mi (2.7 km) southeast of Navina, 10.7 mi (17.2 km) southwest of Guthrie, and at mile 25.0 (40.2 km).

DRAINAGE AREA.--247 mi² (640 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to September 1980, March 1982 to September 1982.

GAGE.--Water-stage recorder. Datum of gage is 962.10 ft (293.248 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Low flow sustained by part of sewage effluent from Oklahoma City.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,300 ft³/s (348 m³/s) May 30, 1980, gage height, 22.43 ft (6.837 m); minimum daily, 8.0 ft³/s (0.23 m³/s) Oct. 14, 15, 1977.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*) for period March to September, 1982

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 13	0200	2,660 75.3	20.34 6.200	May 25	0330	2,360 66.8	20.26 6.175
May 18	0230	3,330 94.3	21.02 6.407	June 3	1745	*3,540 100	20.83 6.349
May 21	0215	3,280 92.9	*21.03 6.610				

Minimum daily discharge, 31 ft³/s (0.88 m³/s) April 7, 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						72	35	204	605	114	77	44
2						72	37	87	1470	106	69	42
3						78	42	64	3250	98	66	40
4						67	39	51	2720	94	63	39
5						64	37	46	1020	86	62	41
6						70	34	186	594	85	57	42
7						67	31	156	535	642	54	45
8						66	35	78	495	1180	86	44
9						67	36	60	453	285	76	41
10						61	34	48	325	207	62	44
11						66	36	42	242	168	56	44
12						66	39	1330	261	142	82	45
13						67	38	2460	212	126	66	39
14						151	34	1050	172	117	57	81
15						187	36	379	173	106	53	292
16						81	40	302	236	97	50	123
17						55	38	2400	168	91	50	83
18						48	37	2730	144	87	52	67
19						46	38	946	146	81	50	58
20						44	34	1710	150	82	50	53
21						38	31	2690	139	75	44	44
22						38	32	869	151	71	46	44
23						38	32	523	125	71	50	44
24						39	35	1900	212	66	42	43
25						38	35	2170	463	68	45	39
26						35	166	1010	447	69	49	39
27						33	55	676	230	65	49	38
28						55	48	884	184	63	47	38
29						45	210	630	152	69	45	37
30						46	143	294	130	76	46	33
31						41	---	588	---	84	44	---
TOTAL						1941	1517	26563	15604	4771	1745	1706
MEAN						62.6	50.6	857	520	154	56.3	56.9
MAX						187	210	2730	3250	1180	86	292
MIN						33	31	42	125	63	42	33
AC-FT						3850	3010	52690	30950	9460	3460	3380

ARKANSAS RIVER BASIN

07159720 COTTONWOOD CREEK NEAR NAVINA, OK--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to November 1980.

WATER TEMPERATURE: October 1977 to November 1980.

REMARKS.--Samples collected March-September monthly. Specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)
MAR											
04...	1042	80020	67	1380	7.6	10.0	3.8	36	5.7	450	188
APR											
07...	1324	80020	31	1490	7.5	11.0	7.3	70	6.4	470	203
MAY											
24...	1500	80020	2070	330	6.8	20.0	7.6	87	1.6	110	29
JUN											
21...	1300	80020	135	1250	7.4	22.5	6.8	82	3.3	410	168
JUL											
19...	1215	80020	84	1400	7.4	27.0	4.0	53	4.3	420	150
AUG											
16...	1315	80020	50	1520	7.6	27.0	3.0	39	7.6	410	161
SEP											
20...	1415	80020	55	1160	7.4	20.0	6.0	67	5.9	260	116

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
MAR											
04...	110	42	140	40	6.5	260	260	170	.50	13	901
APR											
07...	120	45	150	40	7.0	270	270	170	.50	12	961
MAY											
24...	30	9.5	19	25	5.9	85	42	19	.30	12	211
JUN											
21...	100	40	98	34	5.6	247	210	120	.30	18	784
JUL											
19...	100	42	120	38	6.7	273	220	140	.40	17	862
AUG											
16...	100	40	150	43	8.6	254	230	150	.40	16	909
SEP											
20...	63	24	100	45	6.9	140	170	120	.30	12	632

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N03)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N02)	NITRO- GEN, NO2+N03 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)
MAR										
04...	920	1.1	163	2.52	11	.380	1.1	2.90	1.60	2.1
APR										
07...	960	1.3	80	4.33	19	.270	.89	4.60	.420	.54
MAY										
24...	190	.29	1180	.340	1.5	.040	.13	.380	.070	.09
JUN										
21...	750	1.1	286	1.49	6.6	.210	.69	1.70	.280	.36
JUL										
19...	830	1.1	196	2.41	11	.390	1.3	2.80	.200	.26
AUG										
16...	870	1.1	123	3.61	16	.390	1.3	4.00	1.80	2.3
SEP										
20...	610	.86	94	4.28	19	.120	.39	4.40	.100	.13

ARKANSAS RIVER BASIN

07159720 COTTONWOOD CREEK NEAR NAVINA, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
MAR 04...	1.1	2.8	2.50	1.40	4.3	<100	4	490	2	50
APR 07...	1.4	1.8	1.60	1.70	5.2	--	--	--	--	--
MAY 24...	1.1	1.1	.190	.160	.49	200	3	110	<1	<10
JUN 21...	1.3	1.6	.820	.780	2.4	--	--	--	--	--
JUL 19...	1.3	1.5	1.80	1.70	5.2	<100	5	510	1	<10
AUG 16...	1.8	3.6	1.90	.820	2.5	--	--	--	--	--
SEP 20...	1.4	1.5	2.10	2.10	6.4	<100	5	390	<1	<10

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)
MAR 04...	4	360	2	210	<.1	<100	1	35	--	--
APR 07...	--	--	--	--	--	--	--	--	6.1	1.1
MAY 24...	8	180	<1	8	.2	--	<1	17	--	--
JUN 21...	--	--	--	--	--	--	--	--	--	--
JUL 19...	<1	7	<1	63	<.1	<100	1	15	--	--
AUG 16...	--	--	--	--	--	--	--	--	--	--
SEP 20...	3	13	6	35	<.1	<100	1	17	--	--

ARKANSAS RIVER BASIN

07159750 COTTONWOOD CREEK AT SEWARD, OK

LOCATION.--Lat 35°47'43", long 97°29'32", in SW 1/4 sec.2, T.15 N., R.3 W., Logan County, Hydrologic Unit 11050002, on downstream right bank, 0.3 mi (0.5 km) west of Seward, 7.7 mi (12.4 km) southwest of Guthrie, and at mile 19.2 (30.9 km).

DRAINAGE AREA.--316 mi² (818 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1973 to Sept. 30, 1982, discontinued.

GAGE.--Water-stage recorder. Datum of gage is 946.49 ft (288.490 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Low flow sustained by part of sewage effluent from Oklahoma City.

AVERAGE DISCHARGE.--9 years, 137 ft³/s (3.880 m³/s), 99,260 acre-ft/yr (122 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,900 ft³/s (847 m³/s) Nov. 2, 1974, gage height, 23.99 ft (7.312 m); minimum daily, 6.1 ft³/s (0.17m³/s) Aug. 15, 22, 23, 1976.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 13	0300	4,900 139	20.67 6.300	May 20	1730	*7,630 216	21.28 6.486
May 17	2030	6,680 189	21.09 6.428	June 3	2145	6,360 180	21.02 6.407

Minimum daily discharge 15 ft³/s (0.42 m³/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	522	82	43	362	58	54	345	743	117	60	29
2	15	165	62	37	232	59	52	145	978	105	52	24
3	17	81	53	40	399	62	57	102	4980	96	47	24
4	22	60	46	43	185	57	57	81	4070	89	42	22
5	85	52	40	43	119	50	49	66	1480	78	40	22
6	40	40	40	43	104	54	47	374	771	77	36	24
7	41	35	43	37	97	56	41	300	671	523	33	25
8	38	49	42	31	107	51	46	139	605	1310	60	27
9	33	627	40	24	109	54	49	98	545	417	75	25
10	23	164	37	26	98	49	49	77	391	231	53	26
11	16	84	37	29	93	52	49	63	279	176	47	24
12	462	61	57	32	92	55	53	1430	295	145	65	25
13	186	48	35	27	108	54	54	3650	256	125	59	26
14	49	38	39	30	455	179	45	1840	202	114	49	62
15	47	36	42	30	512	317	45	602	195	102	43	365
16	40	36	39	32	234	131	51	430	280	88	39	214
17	814	40	37	32	154	90	52	3370	203	80	40	102
18	192	37	35	42	123	76	48	4820	168	75	39	62
19	72	42	34	39	101	69	48	1700	162	68	37	54
20	46	37	37	39	92	65	45	3420	181	67	35	47
21	38	34	39	40	84	55	38	4500	163	59	33	42
22	31	34	40	37	79	62	36	1540	172	54	29	40
23	28	35	38	34	76	54	37	637	147	52	32	39
24	26	35	40	40	70	54	40	1530	211	48	32	36
25	27	33	38	41	60	54	43	2110	534	49	31	37
26	37	37	40	42	56	50	118	1300	636	50	31	38
27	45	37	38	40	57	43	163	787	273	45	28	34
28	32	34	36	43	58	83	71	904	198	44	29	33
29	26	35	37	40	---	72	290	811	165	53	27	39
30	26	37	35	1120	---	66	181	314	137	54	28	33
31	34	---	36	1690	---	61	---	550	---	70	29	---
TOTAL	2604	2605	1274	3866	4316	2292	2008	38035	20091	4661	1280	1600
MEAN	84.0	86.8	41.1	125	154	73.9	66.9	1227	670	150	41.3	53.3
MAX	814	627	82	1690	512	317	290	4820	4980	1310	75	365
MIN	15	33	34	24	56	43	36	63	137	44	27	22
AC-FT	5170	5170	2530	7670	8560	4550	3980	75440	39850	9250	2540	3170
CAL YR 1981	TOTAL	20307	MEAN	55.6	MAX	1150	MIN	14	AC-FT	40280		
WTR YR 1982	TOTAL	84632	MEAN	232	MAX	4980	MIN	15	AC-FT	167900		

ARKANSAS RIVER BASIN

07159750 COTTONWOOD CREEK AT SEWARD, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD---Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1973 to April 1982.

WATER TEMPERATURE: February 1973 to April 1982.

REMARKS.--Samples were collected by a local observer on a daily basis. Partial analyses were made on those samples having maximum, minimum, and mean specific conductance for each month from October to February. An additional sample was collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,610 micromhos Jan. 3, 1974; minimum daily, 132 micromhos Nov. 4, 1974.

WATER TEMPERATURE: Maximum daily, 28.0°C July 15, 1978; minimum daily, 0.0°C on many days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	
OCT												
05...	0735	80020	96	1330	8.3	19.5	--	--	--	290	170	71
17...	0810	80020	814	334	7.7	17.5	--	--	--	110	32	27
21...	0745	80020	38	896	8.2	17.0	--	--	--	260	113	64
28...	1530	80020	32	1120	7.9	12.0	8.1	77	72	--	--	--
NOV												
09...	0705	80020	914	496	7.9	9.5	--	--	--	130	45	34
13...	0740	80020	48	919	8.2	7.5	--	--	--	280	102	70
16...	1524	80020	34	1190	7.2	12.5	7.2	71	74	--	--	--
24...	0735	80020	35	1370	8.2	7.0	--	--	--	390	178	91
DEC												
02...	0715	80020	62	1150	8.4	6.0	--	--	--	350	151	81
10...	1230	80020	35	1350	7.8	8.0	9.7	87	27	--	--	--
14...	0705	80020	39	1340	8.4	7.0	--	--	--	390	172	94
30...	0745	80020	35	1420	8.4	2.0	--	--	--	410	169	100
JAN												
03...	0840	80020	34	1310	8.3	4.0	--	--	--	410	176	98
13...	1119	80020	37	1410	8.2	.0	13.1	93	36	--	--	--
14...	0825	80020	39	1500	8.1	.0	--	--	--	440	197	110
31...	0815	80020	2090	434	7.8	4.0	--	--	--	140	60	36
FEB												
15...	0835	80020	607	550	7.6	3.0	--	--	--	180	70	44
19...	0820	80020	101	1100	7.5	5.0	--	--	--	380	148	90
27...	0810	80020	54	1400	7.6	6.0	--	--	--	460	192	110
27...	1135	80020	59	1280	7.6	7.0	10.2	88	28	--	--	--
MAR												
22...	1222	80020	57	1380	7.9	13.0	8.7	85	31	--	--	--
APR												
19...	1156	80020	54	1430	7.6	17.0	6.5	70	77	--	--	--
MAY												
25...	1329	80020	2150	335	6.8	20.0	4.9	56	51	--	--	--
JUN												
24...	1150	80020	180	1350	7.5	23.0	5.5	66	54	--	--	--
JUL												
20...	1300	80020	68	1480	7.6	27.5	4.8	64	26	430	--	100
AUG												
17...	1445	80020	42	1460	7.4	27.5	4.5	58	25	380	147	94
SEP												
22...	1230	80020	39	1210	7.6	20.0	7.4	84	42	300	--	74

ARKANSAS RIVER BASIN
07159750 COTTONWOOD CREEK AT SEWARD, OK--Continued
WATER-QUALITY RECORDS
WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAR (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT												
05...	27	160	53	4	14	--	210	210	--	837	1.1	--
17...	9.7	29	36	1	4.2	76	49	36	--	211	.29	--
21...	25	80	39	2	6.2	150	160	100	--	570	.78	--
28...	--	--	--	--	--	--	--	--	--	--	--	4.90
NOV												
09...	12	46	41	2	5.7	89	73	55	--	306	.42	--
13...	26	77	37	2	6.5	180	160	95	--	582	.79	--
16...	--	--	--	--	--	--	--	--	--	--	--	3.10
24...	39	130	41	3	9.1	210	250	170	--	886	1.1	--
DEC												
02...	36	110	40	3	6.8	200	210	140	--	729	.99	--
10...	--	--	--	--	--	--	--	--	--	--	--	6.20
14...	38	130	41	3	8.2	220	240	170	--	864	1.1	--
30...	38	140	42	3	8.4	240	250	170	--	905	1.1	--
JAN												
03...	39	130	41	3	8.0	230	230	160	--	837	1.1	--
13...	--	--	--	--	--	--	--	--	--	--	--	5.80
14...	41	150	42	3	9.8	240	250	180	--	967	1.3	--
31...	13	35	34	1	4.4	84	74	37	--	263	.36	--
FEB												
15...	17	46	35	2	4.3	110	89	57	--	332	.45	--
19...	37	94	35	2	5.2	230	200	110	--	702	.95	--
27...	46	120	36	3	6.0	270	240	160	--	896	1.1	--
27...	--	--	--	--	--	--	--	--	--	--	--	3.00
MAR												
22...	--	--	--	--	--	--	--	--	--	--	--	3.90
APR												
19...	--	--	--	--	--	--	--	--	--	--	--	4.10
MAY												
25...	--	--	--	--	--	--	--	--	--	--	--	.300
JUN												
24...	--	--	--	--	--	--	--	--	--	--	--	2.40
JUL												
20...	42	120	--	3	--	--	--	--	17	--	--	3.30
AUG												
17...	36	130	42	3	8.9	236	210	150	--	839	1.1	5.03
SEP												
22...	27	120	--	3	--	--	--	--	13	--	--	5.50

ARKANSAS RIVER BASIN

07159750 COTTONWOOD CREEK AT SEWARD, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N03)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N02)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS P04)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
OCT												
05...	--	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	4.90	--	--	2.30	7.1	--	--	--	--
NOV												
09...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	3.10	--	--	1.50	4.6	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
02...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	6.20	--	--	2.20	6.7	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
03...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	5.80	--	--	3.30	10	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
15...	--	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	3.00	--	--	.890	2.7	--	--	--	--
MAR												
22...	--	--	--	3.90	--	--	.850	2.6	--	--	--	--
APR												
19...	--	--	--	4.10	--	--	1.60	4.9	--	--	--	--
MAY												
25...	--	--	--	.300	--	--	1.40	4.3	--	--	--	--
JUN												
24...	--	--	--	2.40	--	--	.780	2.4	--	--	--	--
JUL												
20...	--	--	--	3.30	--	--	1.10	3.4	--	--	5	190
AUG												
17...	22	.170	.56	5.20	.200	.26	1.50	4.6	1.50	4.6	--	--
SEP												
22...	--	--	--	5.50	--	--	3.30	10	--	--	6	140

ARKANSAS RIVER BASIN
 07159750 COTTONWOOD CREEK AT SEWARD, OK--Continued
 WATER-QUALITY RECORDS
 WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
16...	--	<1	<10	--	10	64	<10	--	90	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
DEC											
02...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
15...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	1	<10	--	<10	<10	<10	--	230	--	--
MAR											
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
19...	--	--	--	--	--	--	--	--	--	--	--
MAY											
25...	--	<3	<10	--	<30	190	<100	--	11	--	--
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
JUL											
20...	0	<1	<10	<3	<10	5	<10	19	46	<.1	<10
AUG											
17...	--	--	--	--	--	--	--	--	--	--	--
SEP											
22...	<0	1	<10	<3	<10	12	<10	19	36	<.1	<10

ARKANSAS RIVER BASIN

07159750 COTTONWOOD CREEK AT SEWARD, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
NOV											
09...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	65	.0	.00	.000	.0	.000	.000	.000	.11
24...	--	--	--	--	--	--	--	--	--	--	--
DEC											
02...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
FEB											
15...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	13	<.1	<.10	<.010	<.1	<.010	<.010	<.010	.07
MAR											
22...	--	--	--	--	--	--	--	--	--	--	--
APR											
19...	--	--	--	--	--	--	--	--	--	--	--
MAY											
25...	--	--	42	<.1	<.10	<.010	<.1	<.010	<.010	<.010	.08
JUN											
24...	--	--	--	--	--	--	--	--	--	--	--
JUL											
20...	2600	13	8	<.1	<.10	<.010	<.1	<.010	<.010	<.010	.32
AUG											
17...	--	--	--	--	--	--	--	--	--	--	--
SEP											
22...	1800	14	16	--	--	--	--	--	--	--	--

ARKANSAS RIVER BASIN

07159750 COTTONWOOD CREEK AT SEWARD, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

ARKANSAS RIVER BASIN

07160500 SKELETON CREEK NEAR LOVELL, OK

LOCATION.--Lat 36°03'36", long 97°35'05", in NW 1/4 SW 1/4 sec.1, T.18 N., R.4 W., Logan County, Hydrologic Unit 11050002, near right bank on downstream side of pier of bridge on State Highway 74, 2 mi (3 km) upstream from Otter Creek, 2.8 mi (4.5 km) east of Lovell, and at mile 14.6 (23.5 km).

DRAINAGE AREA.--410 mi² (1,062 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 909.76 ft (277.295 m) Oklahoma State Highway Department datum.
Prior to Dec. 5, 1949, nonrecording gage at site 60 ft (18.3 m) downstream at datum 4.70 ft (1.433 m) higher.
Prior to Oct. 1, 1979, gage at present site and datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--33 years, 116 ft³/s (3.285 m³/s), 84,000 acre-ft/yr (104 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,200 ft³/s (2,130 m³/s) May 16, 1957, gage height, 34.58 ft (10.540 m), no flow at times in 1953-54, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 17, 1932, reached a stage of 32.0 ft (9.75 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,300 ft³/s (65.1 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage Height (ft)	Gage Height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage Height (ft)	Gage Height (m)
May 13	0830	6,970	197	27.67	8.434	May 18	0130	*16,800	476	*33.22	10.125

Minimum daily discharge, 1.4 ft³/s (0.04 m³/s) Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	28	192	15	33	27	20	353	168	41	25	7.7
2	10	190	96	17	26	24	19	103	130	36	23	8.0
3	11	56	39	16	24	26	19	51	127	34	21	5.1
4	10	32	26	16	25	23	16	37	204	32	20	4.8
5	11	23	22	15	21	24	17	27	136	31	18	5.4
6	9.3	21	20	17	20	24	17	56	107	28	16	4.1
7	8.0	20	18	16	21	23	15	118	89	130	14	2.8
8	6.7	17	18	14	20	24	18	64	79	193	13	3.6
9	4.7	18	17	12	22	24	17	36	72	1040	13	2.8
10	7.6	18	17	7.4	22	24	17	24	65	1650	14	3.1
11	10	18	15	7.2	21	24	13	22	60	429	14	2.3
12	15	18	18	9.0	26	22	17	2440	86	155	13	1.4
13	50	17	14	10	24	22	15	6330	80	117	15	7.2
14	24	17	17	10	76	78	16	2340	64	90	12	21
15	197	18	14	10	468	417	15	191	60	121	12	16
16	357	18	13	11	573	133	13	753	80	66	11	9.3
17	820	18	13	11	253	60	13	9670	83	52	9.8	6.5
18	157	18	13	11	153	43	13	13400	59	44	10	5.8
19	51	19	11	12	121	35	10	2700	159	39	8.5	7.5
20	41	17	15	25	103	29	11	721	98	37	9.1	7.1
21	31	15	17	25	72	25	9.6	552	84	36	9.2	6.0
22	28	15	18	22	58	23	8.9	219	53	33	6.9	5.6
23	25	16	19	19	46	20	11	160	46	31	6.5	5.1
24	25	18	26	20	35	22	9.5	287	287	30	6.4	4.8
25	24	16	24	18	32	22	14	412	623	28	6.6	4.3
26	30	17	20	15	28	21	25	244	208	25	6.3	3.9
27	41	17	18	16	27	19	45	168	98	23	6.3	3.4
28	48	17	18	16	27	22	64	362	90	23	5.9	3.6
29	36	14	16	21	---	34	220	742	58	23	5.3	4.8
30	30	16	17	31	---	26	335	226	48	34	5.9	4.0
31	28	---	16	54	---	24	---	137	---	32	9.1	---
TOTAL	2158.3	762	817	518.6	2377	1364	1053.0	42945	3601	4683	365.8	177.0
MEAN	69.6	25.4	26.4	16.7	84.9	44.0	35.1	1385	120	151	11.8	5.90
MAX	820	190	192	54	573	417	335	13400	623	1650	25	21
MIN	4.7	14	11	7.2	20	19	8.9	22	46	23	5.3	1.4
AC-FT	4280	1510	1620	1030	4710	2710	2090	85180	7140	9290	726	351
CAL YR 1981	TOTAL	13794.9	MEAN	37.8	MAX	1310	MIN	4.7	AC-FT	27360		
WTR YR 1982	TOTAL	60821.7	MEAN	167	MAX	13400	MIN	1.4	AC-FT	120600		

ARKANSAS RIVER BASIN

07161000 CIMARRON RIVER AT PERKINS, OK

LOCATION.--Lat 35°57'32", long 97°01'49", in SW 1/4 SW 1/4 sec.7, T.17 N., R.3 E., Payne County, Hydrologic Unit 11050003, near right bank at downstream side of bridge on U.S. Highway 177, 1.0 mi (1.6 km) south of Perkins, 1.5 mi (2.4 km) upstream from Dugout Creek, 4.0 mi (6.4 km) downstream from Wildhorse Creek, and at mile 87.3 (140.5 km).

DRAINAGE AREA.--17,852 mi² (46,237 km²) of which 4,962 mi² (12,758 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1939 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site since 1927 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 814.88 ft (248.375 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 26, 1940, and Jan. 9 to Apr. 7, 1957, nonrecording gage at same site and datum 5.00 ft (1.524 m) higher. Prior to Oct. 1, 1977, at same site and datum 5.00 ft (1.524 m) higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--43 years, 1,179 ft³/s (33.39 m³/s), 854,200 acre-ft/yr (1.05 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 149,000 ft³/s (4,220 m³/s) May 17, 1957, gage height, 19.53 ft (5.953 m) Datum then in use; minimum, 0.8 ft³/s (0.023 m³/s) Dec. 8, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 4, 5, 1926, reached a stage of 17.0 ft (5.18 m) from floodmarks, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 16,000 ft³/s (453 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 14	0400	27,000 765	17.49 5.331	June 3	2200	22,800 646	15.94 4.859
May 19	0200	*106,000 3,000	*22.03 6.715				

Minimum daily discharge, 142 ft³/s (4.02 m³/s) Sept. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	282	835	465	386	3740	548	492	1570	5800	1730	2240	170
2	266	775	490	381	2000	521	495	1630	12700	1520	1560	165
3	253	7600	719	386	1370	495	469	1440	19800	1340	1010	161
4	258	7680	553	381	1100	485	448	1060	20300	1210	764	162
5	254	4160	500	371	700	475	442	878	17100	1090	615	154
6	254	2180	450	370	471	455	423	1330	8840	1050	495	151
7	289	1520	441	357	400	441	414	1010	7890	980	470	149
8	276	1380	422	350	350	436	413	1150	5140	1700	441	151
9	260	1310	408	339	380	431	386	882	3860	4210	386	147
10	253	1790	368	300	420	427	381	880	3170	3330	367	145
11	261	1910	404	260	450	422	377	974	2680	5150	351	142
12	358	1990	390	280	500	413	368	13800	2320	3040	326	146
13	451	1610	390	270	570	413	360	23100	2160	2640	311	143
14	848	1160	390	290	706	455	356	21000	2420	2870	302	147
15	595	1020	404	320	1650	532	347	10600	2080	2470	287	159
16	552	906	390	350	3580	1640	335	6840	1840	2000	274	197
17	1940	825	395	387	3760	4340	315	33400	1710	1440	261	416
18	7410	763	390	460	2480	4080	315	67200	1830	1160	253	269
19	4300	707	386	480	2210	1960	311	64000	1870	982	251	217
20	3040	667	390	470	2150	1200	299	21600	3060	820	244	197
21	3070	639	386	465	2270	824	293	21700	3660	706	243	183
22	1610	633	390	436	2600	725	287	19000	3340	655	240	178
23	1140	655	395	417	2090	651	281	10100	2350	605	224	168
24	903	684	395	417	1560	602	274	10300	2370	571	214	164
25	814	611	386	413	1190	559	284	14800	6040	560	207	157
26	756	505	395	386	943	532	300	10400	11500	561	202	156
27	700	485	399	360	745	530	309	6720	6910	506	196	154
28	682	480	395	360	592	545	484	5810	3910	491	188	154
29	696	480	422	368	---	537	561	8140	2520	638	189	151
30	656	495	399	907	---	557	927	11100	2020	2320	181	147
31	698	---	395	1590	---	507	---	6740	---	5640	172	---
TOTAL	34125	46455	13102	13307	40977	26738	11746	399154	171190	53985	13464	5200
MEAN	1101	1549	423	429	1463	863	392	12880	5706	1741	434	173
MAX	7410	7680	719	1590	3760	4340	927	67200	20300	5640	2240	416
MIN	253	480	368	260	350	413	274	878	1710	491	172	142
AC-FT	67690	92140	25990	26390	81280	53030	23300	791700	339600	107100	26710	10310
CAL YR 1981	TOTAL	243544	MEAN	667	MAX	7680	MIN	72	AC-FT	483100		
WTR YR 1982	TOTAL	829443	MEAN	2272	MAX	67200	MIN	142	AC-FT	1645000		

ARKANSAS RIVER BASIN

07161000 CIMARRON RIVER AT PERKINS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1953-63, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1952 to September 1963, June 1965 to Jan. 1982.

WATER TEMPERATURE: October 1962 to September, 1963, June 1965 to Jan. 1982.

INSTRUMENTATION.--Water-quality monitor from April 1969 to September 1980.

REMARKS.--Samples were collected by a local observer on a daily basis. An additional sample was collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 32,400 micromhos March 18, 1957; minimum, 353 micromhos April 30, 1970.

WATER TEMPERATURE: Maximum, 39.0°C June 18, 1974; minimum daily, 0.0°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
NOV												
03...	1300	80020	10500	4150	7.8	10.5	2200	10.0	94	K70000	75000	240
DEC												
29...	1230	80020	422	12200	8.2	3.0	4.3	13.6	104	K6	K12	830
FEB												
17...	1506	80020	3730	3670	7.8	4.0	550	11.9	96	190	>2000	290
APR												
08...	1220	80020	413	15100	8.4	11.0	10	13.2	131	K4	K30	850
MAY												
12...	1016	1028	7790	2490	7.6	17.5	--	5.4	60	--	--	--
12...	1425	1028	24100	1260	7.5	17.0	--	5.4	59	--	--	--
13...	1200	1028	22300	2720	7.3	18.0	--	4.6	50	--	--	--
14...	0430	1028	26800	1020	7.3	18.0	--	5.0	55	--	--	--
14...	1210	1028	20600	870	7.4	18.5	--	5.0	56	--	--	--
14...	1718	1028	16200	833	7.6	19.0	--	4.2	47	--	--	--
18...	1600	1028	73900	1460	7.8	17.5	--	9.8	100	--	--	--
JUN												
23...	1300	80020	2340	3940	8.0	28.0	200	7.1	105	400	610	490
AUG												
09...	1500	80020	386	3970	8.4	31.0	32	6.4	90	60	1200	590

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
NOV												
03...	163	67	18	760	87	22	5.4	79	180	1300	.20	5.7
DEC												
29...	586	210	73	2400	86	38	7.0	240	28	4100	.40	8.5
FEB												
17...	182	74	26	700	84	18	6.2	110	180	1200	.20	9.7
APR												
08...	635	210	80	3000	88	46	8.1	220	600	4800	.50	4.7
MAY												
12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
23...	310	130	41	850	79	17	7.3	184	350	1400	.40	12
AUG												
09...	412	150	53	1200	81	22	7.4	182	410	2000	.40	11

ARKANSAS RIVER BASIN

07161000 CIMARRON RIVER AT PERKINS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
NOV 03...	2060	2400	2.8	58400	<.020	.600	.340	.44	7.1	2.10	6.4	.100
DEC 29...	7690	7000	10.5	8760	--	1.10	.100	.13	.71	.270	.83	.250
FEB 17...	2190	2300	3.0	22100	--	1.30	.690	.89	2.7	.320	.98	.220
APR 08...	8830	8800	12.0	9850	--	.120	.060	.08	9.7	.170	.52	.120
MAY 12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 23...	2970	2900	4.0	18800	--	--	--	--	--	--	--	--
AUG 09...	3870	3900	5.3	4030	--	<.100	<.060	.08	1.4	.300	.92	.110

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDED RECOV. (UG/L AS CR)
NOV 03...	.110	.34	22	19	3	1100	900	200	<1	1	130	120
DEC 29...	.230	.71	--	--	--	--	--	--	--	--	--	--
FEB 17...	.210	.64	12	9	3	500	400	100	1	<1	40	30
APR 08...	.120	.37	--	--	--	--	--	--	--	--	--	--
MAY 12...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 23...	--	--	6	1	5	300	--	<100	1	<5	20	10
AUG 09...	.070	.21	5	0	5	100	.00	200	2	<5	10	0

ARKANSAS RIVER BASIN

07161000 CIMARRON RIVER AT PERKINS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CHROMIUM, DIS-SOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOVERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOVERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOVERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)
NOV 03...	10	50	--	<1	120	110	6	83000	83000	120	78
DEC 29...	--	--	--	--	--	--	--	--	--	--	--
FEB 17...	10	10	11	1	43	37	6	23000	23000	140	27
APR 08...	--	--	--	--	--	--	--	--	--	--	--
MAY 12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
JUN 23...	10	5	--	<1	13	8	5	8300	8200	80	4
AUG 09...	10	1	--	<5	5	--	<5	1300	1300	40	11

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LEAD, SUS- PENDE RECOVERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUS- PENDE RECOVERABLE (UG/L AS MN)	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOVERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOVERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)
NOV 03...	74	4	2400	2400	20	1.5	1.4	.1	130	120	13
DEC 29...	--	--	--	--	--	--	--	--	--	--	--
FEB 17...	24	3	720	710	10	<.1	--	<.1	36	31	5
APR 08...	--	--	--	--	--	--	--	--	--	--	--
MAY 12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
JUN 23...	0	4	360	350	10	.3	--	<.1	23	22	1
AUG 09...	--	<5	200	180	20	.1	--	<.1	6	--	<5

ARKANSAS RIVER BASIN

07161000 CIMARRON RIVER AT PERKINS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV 03...	1	--	<1	<1	<1	360	340	20	5620	159000	74
DEC 29...	--	--	--	--	--	--	--	--	48	55	25
FEB 17...	2	1	1	1	<1	120	100	20	1280	12900	90
APR 08...	--	--	--	--	--	--	--	--	40	45	76
MAY 12...	--	--	--	--	--	--	--	--	4670	98200	97
12...	--	--	--	--	--	--	--	--	4080	265000	98
13...	--	--	--	--	--	--	--	--	3900	235000	79
14...	--	--	--	--	--	--	--	--	2730	198000	82
14...	--	--	--	--	--	--	--	--	2060	115000	83
14...	--	--	--	--	--	--	--	--	1530	66900	92
18...	--	--	--	--	--	--	--	--	8590	1710000	40
JUN 23...	<1	--	1	<1	<5	50	10	40	437	2760	89
AUG 09...	1	0	1	<1	<5	20	10	10	87	91	87

ARKANSAS RIVER BASIN

07163000 COUNCIL CREEK NEAR STILLWATER, OK

LOCATION.--Lat 36°07'07", long 96°52'00", in SE 1/4 SW 1/4 sec.15, T.19 N., R.4 E., Payne County, Hydrologic Unit 11050003, on right bank 200 ft (61.8 m) upstream from bridge on State Highway 51, 10.0 mi (16.1 km) east of Stillwater, and at mile 10.0 (16.1 km).

DRAINAGE AREA.--31 mi² (80.3 km²).

PERIOD OF RECORD.--March 1934 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 838.28 ft (255.077 m) National Geodetic Vertical Datum of 1929. Prior to May 4, 1934, nonrecording gage at same site and datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--48 years, 10.9 ft³/s (0.309 m³/s), 4.78 in/yr (121 mm/yr), 7,900 acre-ft/yr (9.74 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 25,000 ft³/s (708 m³/s) Oct. 2, 1959, gage height, 18.9 ft (5.76 m), from floodmarks, from rating curve extended above 2,500 ft³/s (70.8 m³/s) on basis of slope-area measurements at gage heights 13.4 ft (4.08 m) and 17.5 ft (5.33 m); no flow at times in each year except 1975.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 27, 1912, reached a stage of 16.6 ft (5.06 m) at gage, based on floodmarks set by local resident at site 900 ft (274 m) downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,200 ft³/s (34.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Nov. 8	2045	1,360 38.5	6.05 1.844	May 24	1500	2,200 62.3	6.51 1.984
May 12	0630	2,850 80.7	*10.26 3.127	June 25	0945	*3,670 103.9	9.96 3.036
May 17	0445	1,580 44.7	7.10 2.164				

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	106	2.4	.28	6.1	1.1	.87	6.0	1.9	1.0	.55	.00
2	.00	2.0	.55	.30	3.7	.93	.97	2.2	1.7	.90	.50	.00
3	.00	.39	.24	.30	4.1	.84	.68	1.5	.41	.80	.45	.00
4	.00	.06	.11	.25	2.6	.71	.87	1.2	5.3	.70	.43	.00
5	.00	.00	.06	.14	1.5	.51	.97	3.7	3.4	.60	.40	.00
6	.00	.00	.05	.12	.80	.44	.87	221	2.4	.54	.37	.00
7	.00	.00	.05	.10	.75	.35	.77	17	1.6	.48	.35	.00
8	.00	367	.06	.10	1.4	.38	.82	5.6	1.2	.42	.33	.00
9	.00	108	.05	.10	2.9	.38	.97	3.2	1.0	.37	.32	.00
10	.00	3.8	.05	.10	1.9	.35	.77	2.2	.90	.90	.30	.00
11	.00	1.2	.05	.06	1.3	.35	.77	1.8	1.4	.70	.28	.00
12	.00	.54	.05	.08	1.8	.34	.87	1130	1.2	.62	.27	.00
13	.00	.33	.05	.12	3.0	.23	.87	42	1.0	.56	.25	.00
14	.00	.23	.06	.35	165	.94	.87	25	.90	.50	.23	.00
15	.00	.19	.07	.13	98	12	.97	12	1.2	.45	.21	.00
16	.00	.18	.08	.02	25	4.6	.97	37	1.0	.43	.20	.00
17	.00	.15	.10	.00	10	2.1	.77	499	.90	.40	.18	.00
18	.00	.15	.08	.00	6.0	1.5	.77	16	.84	.37	.17	.00
19	.00	.14	.08	.00	14	1.4	.87	7.3	.80	.35	.16	.00
20	.00	.07	.08	.00	3.4	1.3	.87	304	.74	1.0	.15	.00
21	.00	.05	.12	.00	2.7	1.2	.77	22	.70	.80	.14	.00
22	.00	.05	.19	.42	2.3	1.1	.77	6.0	.64	.60	.13	.00
23	.00	.05	.18	.27	2.1	1.1	.77	3.4	.60	.50	.11	.00
24	.00	.06	.14	.17	2.0	.97	.77	713	21	.44	.10	.00
25	.00	.06	.12	.15	1.8	.97	1.5	68	894	.40	.08	.00
26	.00	.07	.15	.17	1.5	.77	1.6	4.2	1.8	.37	.02	.00
27	.00	.06	.22	.19	1.3	1.3	1.2	3.9	1.5	.35	.00	.00
28	.00	.06	.32	.19	1.2	1.8	2.9	108	1.3	.33	.00	.00
29	.00	.08	.24	3.1	---	1.2	3.4	4.2	1.2	.80	.00	.00
30	.00	5.4	.19	307	---	1.3	18	3.8	1.1	.70	.00	.00
31	127	---	.25	29	---	1.1	---	2.7	---	.60	.00	---
TOTAL	127.00	596.37	6.44	343.21	368.15	136.62	48.84	3276.9	994.22	17.98	6.68	.00
MEAN	4.10	19.9	.21	11.1	13.1	4.41	1.63	106	33.1	.58	.22	.00
MAX	127	367	2.4	307	165	.94	18	1130	894	1.0	.55	.00
MIN	.00	.00	.05	.00	.75	.23	.68	1.2	.60	.33	.00	.00
AC-FT	252	1180	13	681	730	271	97	6500	1970	36	13	.00
CAL YR 1981	TOTAL	1304.90	MEAN	3.58	MAX	367	MIN	.00	AC-FT	2590		
WTR YR 1982	TOTAL	5922.41	MEAN	16.2	MAX	1130	MIN	.00	AC-FT	11750		

ARKANSAS RIVER BASIN

07164200 KEYSTONE LAKE NEAR SAND SPRINGS, OK

LOCATION.--Lat 36°09'05", long 96°15'05", in SW 1/4 SE 1/4 sec.4, T.19 N., R.10 E., Tulsa County, Hydrologic Unit 11110101, in stair tower of intake structure near left end of Keystone Dam on Arkansas River, 8.5 mi (13.7 km) west of Sand Springs, and at mile 538.8 (866.9 km).

DRAINAGE AREA.--74,506 mi² (192,971 km²), of which 12,541 mi² (32,481 km²) is probably noncontributing.

PERIOD OF RECORD.--September 1964 to current year. Prior to October 1970, published as Keystone Reservoir near Sand Springs.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1964, nonrecording gage nearby at same datum.

REMARKS.--Reservoir is formed by rolled-fill earth dam. Spillway is concrete ogee weir controlled by 18, 40 ft (12.2 m) taintor gates. Outlet works consist of nine sluices. Regulated storage began Sept. 11, 1964; power pool was first filled Nov. 20, 1964. Capacity, 1,836,000 acre-ft (2.26 km³), at elevation 754.0 ft (229.82 m), top of flood control pool, 618,000 acre-ft (762 hm³), at elevation 723.0 ft (220.37 m) top of power pool, 520,700 acre-ft (354 hm³) at elevation 706.0 ft (215.19 m), minimum power pool. Figures given herein represent total contents. Reservoir is designed for flood control, power development, and conservation. Revised capacity table, based on survey in 1969, used since Oct. 1, 1972.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,886,000 acre-ft (2.33 hm³) Nov. 6, 1974, elevation, 754.86 ft (230.081 m); minimum since power pool was first filled, 297,800 acre-ft (367 hm³) Jan. 19, 1965, elevation, 705.07 ft (214.905 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,146,000 acre-ft (1.410 hm³) May 20, elevation 739.27 ft (225.329 m); minimum, 506,500 acre-ft (625 hm³) Jan. 14, elevation, 718.37 ft (218.959 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

718	498,600	731	852,900
721	567,600	735	988,400
727	729,200	739	1,137,000

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	603800	650100	626100	545500	593700	642800	603100	593100	991400	863600	726000	599500
2	606600	648500	626100	547400	605900	641700	605600	600000	985200	842900	720400	602000
3	604600	634500	626100	552800	611800	637700	602600	601800	1039000	834500	715100	601500
4	602300	647400	623700	550900	618200	627100	600300	608400	1078000	823700	715100	602800
5	607900	669100	622700	550400	618200	615400	598000	610000	1099000	811000	714900	601800
6	607700	685300	623400	551400	621100	611800	590400	610000	1111000	808200	713700	587100
7	603300	693800	626100	549500	625300	602800	582300	609200	1122000	799400	712500	585800
8	601500	717500	621600	548300	626800	581600	580100	613800	1122000	786000	706200	584100
9	601000	734900	618000	551100	626600	562800	577400	621400	1119000	773700	698700	585600
10	598700	737500	613800	548300	625000	542500	582100	616700	1106000	767600	692700	582300
11	593100	731300	609200	536000	624700	536000	584100	612800	1094000	752700	683900	584100
12	590900	727200	613600	522600	625300	535300	580400	727800	1081000	742900	666800	585300
13	585800	722200	619000	509400	631900	539700	580100	819200	1061000	736300	661600	579100
14	583800	712800	614100	508700	642500	556800	579900	865300	1045000	733400	653100	576900
15	577600	703300	597500	513200	652300	565000	584600	872400	1030000	739900	652600	572500
16	574400	690700	608700	515000	653600	571300	583800	862300	1014000	742600	646000	569100
17	568300	679400	602000	512000	653600	595700	586600	911900	994300	745500	636900	569600
18	571700	672000	596700	515900	649600	615100	590600	984800	982200	744900	628700	570300
19	587600	665000	583300	518400	647700	630800	594400	1094000	970300	742600	616200	572500
20	603800	655300	580400	518400	655000	645000	594400	1145000	965700	738700	608400	573700
21	613800	652600	575700	522300	675500	655300	592900	1133000	966000	738400	610800	572000
22	615100	647100	570500	523300	674600	653100	591100	1099000	956800	744900	612800	570800
23	609500	638500	564200	524900	673500	649600	591600	1056000	941500	749400	604100	571000
24	609200	633200	559400	528100	667700	639600	591600	1027000	929300	751500	605900	570300
25	610200	623400	560900	527900	660200	629500	596200	1059000	925900	751800	603100	569800
26	615900	626600	562300	529800	650900	624200	593700	1057000	932700	751800	604300	570000
27	622100	618500	549300	527900	646600	624500	591900	1045000	934000	751500	605900	566900
28	628700	623700	555400	532300	643600	614600	591100	1042000	918600	752400	607200	565900
29	634500	628400	549700	540900	---	610800	587600	1036000	900000	750300	608400	563000
30	637200	629500	545500	571300	---	604800	588400	1020000	883900	736000	608200	563600
31	643300	---	543000	586100	---	605400	---	1006000	---	726000	603100	---
MAX	643300	737500	626100	586100	675500	655300	605600	1145000	1122000	863600	726000	602800
MIN	568300	618500	543000	508700	593700	535300	577400	593100	883900	726000	603100	563000
†	723.96	723.44	719.96	721.75	723.97	722.51	721.84	735.48	731.95	726.89	722.42	720.82
††	+44,100	-13,800	-86,500	+43,100	+57,500	-38,200	-17,000	+417,600	-122,100	-157,900	-122,900	-39,500
CAL YR 1981	MAX	737500	MIN	505900	†† +36,900							
WTR YR 1982	MAX	1145000	MIN	508700	†† -35,600							

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07164500 ARKANSAS RIVER AT TULSA, OK

LOCATION.--Lat 36°08'37", long 96°00'13", in NW 1/4 sec.11, T.19 N., R.12 E., Tulsa County, Hydrologic Unit 11110101, near left bank on downstream side of pier of 11th Street bridge on U.S. Highway 66 in Tulsa, 10.1 mi (16.3 km) upstream from Polecat Creek, 15.1 mi (24.3 km) downstream from Keystone Dam, and at mile 523.7 (842.6 km).

DRAINAGE AREA.--74,615 mi² (193,253 km²), of which 12,541 mi² (32,481 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1925 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected in this vicinity since 1904 are published in reports of the U.S. Weather Bureau.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 615.23 ft (187.522 m) Corps of Engineers datum. Prior to Feb. 2, 1939, nonrecording gage and Feb. 2, 1939, to Sept. 30, 1952, water-stage recorder at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records fair. Except for 109 mi² (282 km²) intervening area, flow completely regulated by Keystone Lake (station 07164200) since September 1964. Prior to September 1964, minor regulation by John Martin Lake in Colorado and by Great Salt Plains Lake (station 07150000).

COOPERATION.--Gage height record and 17 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Keystone Lake) 39 years (water years 1926-64), 6,554 ft³/s (185.6 m³/s), 4,745,000 acre-ft/yr (5.85 km³/yr); (since regulation by Keystone Lake) 18 years (water years 1965-82), 6,936 ft³/s (196.4 m³/s), 5,025,000 acre-ft/yr (6.20 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 246,000 ft³/s (6,970 m³/s) Oct. 5, 1959, gage height, 22.00 ft (6.706 m); minimum, 27 ft³/s (0.76 m³/s) Oct. 12, 13, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1904, 22.8 ft (6.949 m), June 13, 1923, present datum, from reports of U.S. Weather Bureau.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 62,800 ft³/s (1,780 m³/s) May 22, gage height, 11.33 ft (3.453 m); minimum daily discharge 218 ft³/s (6.17 m³/s) Sept. 20.

DISCHARGE, IN CURIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2720	3420	4020	1970	872	8420	3590	1420	31400	37200	12600	2820
2	2680	5610	3320	598	621	8740	4480	437	31800	35500	12600	1820
3	1230	12800	3300	1340	843	9160	2790	989	33700	28400	11600	426
4	318	13100	4070	678	738	9630	4240	1710	23000	22000	8350	1030
5	1810	13400	3930	2820	359	10700	4680	2370	23900	21800	8380	305
6	2270	13300	3560	1780	1660	8760	5760	6330	30800	17800	8020	8800
7	812	13200	4620	2020	621	6000	6230	6370	30800	22100	6600	1010
8	1460	13300	4750	800	935	12400	5010	2530	31600	22100	6720	1990
9	468	14000	5440	1890	2590	11600	4540	1880	32000	21500	6620	1820
10	1310	16800	5230	820	3830	12800	1780	3600	32600	21800	5840	700
11	489	16800	5010	5250	3830	8260	277	5090	33000	21800	7290	2090
12	458	16800	3300	4640	2730	3510	2640	9680	32600	22400	10600	270
13	1460	16800	739	3620	1710	1410	2520	13900	32500	20600	5320	2640
14	489	16900	2440	2300	834	531	1950	17700	32200	16800	6110	2420
15	1350	16900	4830	800	2390	1270	1810	19600	31500	13300	3540	3160
16	532	16500	4070	543	4840	4010	1620	19500	31400	12500	4250	2680
17	1270	16500	4320	398	6800	4520	1400	21200	31400	12400	5350	1710
18	458	13800	4820	931	6870	5570	274	37600	31400	12700	5910	1290
19	288	13300	4980	800	7070	7790	322	43400	31400	12600	6140	296
20	1390	13300	4360	1070	4820	6110	560	50800	31500	12500	5280	218
21	1870	9830	3620	1000	3820	4910	1670	61500	31600	10600	2900	1300
22	5990	9540	5420	678	7730	9990	2380	61000	31800	6420	382	309
23	7340	10300	5100	1420	13000	9900	2330	60100	32000	6420	2840	1130
24	5140	8570	4670	678	13100	12400	2100	54500	32200	6420	2820	580
25	3690	10300	2580	1240	13100	12400	968	41700	32400	6420	607	1390
26	2660	5720	1540	1360	13200	7800	1310	41300	32800	6420	2030	263
27	564	6860	1870	3250	11300	5150	2430	41100	32600	6420	380	898
28	377	3220	4630	968	9570	7800	3340	38600	33600	6590	1140	1400
29	316	1180	4230	1300	---	7220	2680	32200	37400	6940	316	1540
30	291	2700	4190	1800	---	4200	2360	31800	37300	12700	245	1010
31	2920	---	3020	750	---	3400	---	31400	---	12700	1400	---
TOTAL	54420	344750	121979	49512	139783	226361	78041	761306	954200	495850	162180	47315
MEAN	1755	11490	3935	1597	4992	7302	2601	24560	31810	16000	5232	1577
MAX	7340	16900	5440	5250	13200	12800	6230	61500	37400	37200	12600	8800
MIN	288	1180	739	398	359	531	274	437	23000	6420	245	218
AC-FT	107900	683800	241900	98210	277300	449000	154800	1510000	1893000	983500	321700	93850
CAL YR 1981	TOTAL	1145034	MEAN	3137	MAX	16900	MIN	144	AC-FT	2271000		
WTR YR 1982	TOTAL	3435697	MEAN	9413	MAX	61500	MIN	218	AC-FT	6815000		

ARKANSAS RIVER BASIN

07164500 ARKANSAS RIVER AT TULSA, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-61, 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1977 to current year.

WATER TEMPERATURE: March 1977 to current year.

INSTRUMENTATION.--Water-quality monitor since March 1977.

REMARKS.--In addition to water-quality monitor, samples were collected by a local observer on a daily basis.

Partial analyses were made on those samples at or near the 5th, 15th, and 25th of each month from October to February. An additional sample was collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field. Mean daily sulfate, chloride, and dissolved solids concentrations and loads for those parameters were calculated from specific conductance values.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum 7,820 micromhos Feb. 16, 1978; minimum daily 518 micromhos July 27, 1977.

WATER TEMPERATURE: Maximum daily 32.0°C July 3-6, 14, 1978; minimum daily 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,430 micromhos Dec. 4; minimum daily, 890 micromhos Jan. 13.

WATER TEMPERATURE: Maximum, 29.0°C Aug. 12-16, 19-28; minimum 2.0°C Jan. 23.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT												
05...	0710	80020	252	2490	8.2	17.0	--	--	--	--	--	270
06...	1200	80020	1130	2740	8.2	21.0	3.0	10.2	117	4200	430	280
15...	0722	80020	1460	2800	8.2	20.0	--	--	--	--	--	280
25...	0815	80020	1870	2680	8.1	15.0	--	--	--	--	--	270
NOV												
05...	0725	80020	13400	2540	7.6	13.0	--	--	--	--	--	260
12...	1105	810	16800	--	--	21.0	--	--	--	--	--	--
15...	0758	80020	16900	2590	7.9	13.0	--	--	--	--	--	240
25...	0920	80020	7080	2100	8.0	10.0	--	--	--	--	--	220
DEC												
02...	1200	80020	1290	2530	8.2	9.5	12	11.6	105	K55	K60	240
05...	0820	80020	1730	3240	8.2	9.0	--	--	--	--	--	290
10...	1125	810	1780	--	--	--	--	--	--	--	--	--
12...	0711	80020	3500	3250	8.2	6.0	--	--	--	--	--	290
27...	0720	80020	1700	1270	8.2	7.0	--	--	--	--	--	120
JAN												
05...	0715	80020	2250	2910	7.8	4.0	--	--	--	--	--	260
15...	0810	80020	800	2080	7.7	3.0	--	--	--	--	--	200
25...	0722	80020	499	2660	7.8	5.0	--	--	--	--	--	290
FEB												
05...	0750	80020	359	2720	7.6	4.0	--	--	--	--	--	290
08...	1200	80020	241	3200	7.9	1.5	3.5	13.6	103	K130	260	410
15...	0945	80020	407	2300	7.7	6.0	--	--	--	--	--	270
25...	0735	80020	13200	2360	7.9	8.0	--	--	--	--	--	280
APR												
14...	1315	80020	702	3380	8.2	18.0	4.4	13.0	144	K800	680	330
JUN												
09...	1400	80020	33500	1610	7.9	26.0	37	7.0	90	K30	>1000	230
JUL												
28...	1425	810	7000	--	--	28.0	--	--	--	--	--	--
AUG												
03...	1240	80020	12600	--	7.7	28.5	6.1	5.9	79	K10	200	250
SEP												
23...	1400	810	1100	--	--	29.0	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC TOTAL (UG/L AS AS)		ARSENIC SUS- PENDED TOTAL (UG/L AS AS)		ARSENIC DIS- SOLVED (UG/L AS AS)		BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)		BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)		BARIUM, DIS- SOLVED (UG/L AS BA)		CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)		CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD)		CADMIUM DIS- SOLVED (UG/L AS CD)		CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)		CHRO- MIUM, SUS- PENDED RECOV- ERABLE (UG/L AS CR)		COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)			
OCT																										
05...	--		--		--		--		--		--		--		--		--		--		--		--		--	
06...	--		--		--		--		--		--		--		--		--		--		--		--		--	
15...	--		--		--		--		--		--		--		--		--		--		--		--		--	
25...	--		--		--		--		--		--		--		--		--		--		--		--		--	
NOV																										
05...	--		--		--		--		--		--		--		--		--		--		--		--		--	
12...	--		--		--		--		--		--		--		--		--		--		--		--		--	
15...	--		--		--		--		--		--		--		--		--		--		--		--		--	
25...	--		--		--		--		--		--		--		--		--		--		--		--		--	
DEC																										
02...	--		--		--		--		--		--		--		--		--		--		--		--		--	
05...	--		--		--		--		--		--		--		--		--		--		--		--		--	
10...	--		--		--		--		--		--		--		--		--		--		--		--		--	
12...	--		--		--		--		--		--		--		--		--		--		--		--		--	
27...	--		--		--		--		--		--		--		--		--		--		--		--		--	
JAN																										
05...	--		--		--		--		--		--		--		--		--		--		--		--		--	
15...	--		--		--		--		--		--		--		--		--		--		--		--		--	
25...	--		--		--		--		--		--		--		--		--		--		--		--		--	
FEB																										
05...	--		--		--		--		--		--		--		--		--		--		--		--		--	
08...	3		1		2		200		.00		200		1		0		30		10		--		--		1	
15...	--		--		--		--		--		--		--		--		--		--		--		--		--	
25...	--		--		--		--		--		--		--		--		--		--		--		--		--	
APR																										
14...	--		--		--		--		--		--		--		--		--		--		--		--		--	
JUN																										
09...	3		0		3		<100		--		160		<1		--		1		<10		--		--		<1	
JUL																										
28...	--		--		--		--		--		--		--		--		--		--		--		--		--	
AUG																										
03...	4		0		4		100		.00		150		<1		--		<1		30		20		20		<1	
SEP																										
23...	--		--		--		--		--		--		--		--		--		--		--		--		--	

[illegible]

ARKANSAS RIVER BASIN

07164500 ARKANSAS RIVER AT TULSA, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

ARKANSAS RIVER BASIN

07164500 ARKANSAS RIVER AT TULSA, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
06...	--	--	--	140	427	5	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
NOV											
05...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	960	43500	1	5	25	43	63	82
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
DEC											
02...	--	--	--	29	101	75	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	20	96	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JAN											
05...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
08...	20	10	10	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
APR											
14...	--	--	--	10	19	71	--	--	--	--	--
JUN											
09...	30	20	7	77	6960	44	--	--	--	--	--
JUL											
28...	--	--	--	180	3400	--	--	--	--	--	--
AUG											
03...	50	50	4	18	612	60	--	--	--	--	--
SEP											
23...	--	--	--	20	59	--	--	--	--	--	--

ARKANSAS RIVER BASIN

07164500 ARKANSAS RIVER AT TULSA, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1800	1760	1890		---	2260	---	---	970	1560	1800	1780
2	1590	1690	1900		---	1890	2090	2100	969	1580	1830	1770
3	1820	1750	1840		---	1950	---	1390	961	---	1890	---
4	1830	1730	1830		---	2250	1780	1750	---	---	1920	---
5	1740	1740	1820		---	1670	1500	1750	---	1620	1980	---
6	1790	1750	---		2760	1670	1430	1910	1290	1650	---	1840
7	1820	1760	---		2660	2070	1450	---	1290	1690	---	1930
8	1810	1730	---		2760	2480	1460	1440	1350	1570	1900	1880
9	1620	1750	---		2580	2180	1970	1400	1370	---	1960	1790
10	1740	1720	---		2760	2260	1830	1460	---	1610	2090	1790
11	1720	1670	---		2590	2590	2030	1450	---	1470	2070	1800
12	1730	1750	---		2580	2640	2070	1730	1460	1530	1820	1740
13	1780	1750	---		2350	2480	1590	1420	1450	1460	---	1690
14	1760	1750	---		2590	2140	1460	1420	1240	1460	---	1670
15	1630	1750	---		2560	1670	1570	---	1230	1550	1730	---
16	1820	1730	---		2530	2070	---	1760	1620	---	1930	1450
17	1730	---	---		2520	1670	1530	1750	1620	1530	1830	1520
18	1550	1880	---		2520	1900	1530	1870	1730	1590	1810	1470
19	1770	1710	---		2460	1970	2000	1750	1720	1550	2070	1460
20	1740	1750	---		2620	1960	1960	1590	1700	1560	1990	1300
21	1800	1660	---		2190	1940	---	1410	1660	1480	2010	1470
22	1730	1580	---		2660	1890	---	1210	1630	1460	1940	1480
23	1780	1800	---		2150	2070	1550	1170	1640	---	1990	1460
24	1850	1840	---		2480	1960	---	1070	1570	1520	1960	---
25	1680	1730	---		2260	2090	1980	1070	1290	1540	1830	---
26	1760	1710	---		2600	2470	2080	1080	---	1650	1830	1470
27	1680	1860	---		2260	2110	2090	1010	1940	1670	1830	---
28	1800	1630	---		1670	2290	1810	1000	1580	1660	1710	---
29	1690	1790	---		---	2390	1820	---	1630	1730	1680	1630
30	1900	1670	---		---	2330	---	---	1580	---	1710	1680
31	1680	---	---		---	2340	---	990	---	---	1820	---
MEAN	1750	1740	1860		2480	2120	1760	1460	1460	1570	1890	1640
WTR YR 1983		MEAN	1790	MAX	2760		MIN	961				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22.0	14.0	9.0		---	7.0	---	---	21.0	27.5	29.0	29.0
2	22.0	14.0	9.0		---	7.0	8.5	14.5	21.0	27.0	28.0	30.0
3	22.0	12.0	10.0		---	7.0	---	14.5	23.0	---	31.5	---
4	22.0	12.0	10.0		---	7.0	9.0	16.0	---	---	32.0	---
5	21.0	10.0	8.0		---	7.0	9.0	19.0	---	28.5	31.0	---
6	21.0	10.0	---		4.0	8.0	9.5	20.5	23.5	28.5	---	26.0
7	20.0	10.0	---		4.0	8.0	8.5	---	24.0	28.5	---	30.0
8	19.0	9.0	---		4.0	8.0	9.0	18.0	24.5	27.0	28.0	30.0
9	19.0	9.0	---		5.0	8.0	9.5	21.0	25.0	---	32.5	29.5
10	18.0	9.0	---		5.0	8.0	10.5	19.0	---	28.5	32.5	29.5
11	17.0	9.0	---		5.0	8.0	11.5	18.0	---	27.0	33.0	29.0
12	17.0	9.0	---		5.0	7.0	11.0	---	25.0	29.0	33.5	29.0
13	17.0	9.0	---		5.0	6.0	9.0	---	25.5	29.0	---	24.5
14	17.0	14.0	---		5.0	7.0	10.0	18.5	24.5	28.5	---	25.0
15	17.0	14.0	---		5.0	7.0	10.0	---	25.5	27.5	28.0	---
16	18.0	14.0	---		5.0	7.0	---	20.5	25.5	---	30.0	22.5
17	16.0	---	---		5.0	8.0	14.0	19.0	24.0	29.0	28.0	26.5
18	16.0	14.0	---		8.0	5.0	13.0	18.0	25.0	27.0	29.0	27.0
19	16.0	14.0	---		7.0	5.0	10.0	21.0	25.0	29.5	27.0	---
20	16.0	14.0	---		7.0	8.0	12.5	21.0	25.5	30.0	28.0	19.0
21	16.0	12.0	---		6.0	8.0	---	19.5	26.0	29.0	28.0	20.0
22	16.0	12.0	---		7.0	7.0	---	21.5	26.5	30.0	28.0	21.5
23	12.0	12.0	---		7.0	5.0	13.0	21.0	26.5	---	31.5	22.0
24	17.0	14.0	---		7.0	7.0	---	21.5	27.0	31.0	31.5	---
25	17.0	13.0	---		7.0	6.0	13.0	22.0	25.5	29.5	31.5	---
26	16.0	13.0	---		5.0	5.0	13.5	23.0	---	31.0	27.0	24.0
27	16.0	12.0	---		4.0	5.0	15.0	23.0	26.0	31.5	31.5	---
28	16.0	9.0	---		4.0	7.0	16.0	21.5	26.5	27.0	28.5	---
29	16.0	10.0	---		---	4.0	17.5	---	26.5	28.5	32.5	25.0
30	17.0	10.0	---		---	5.0	---	---	27.0	---	32.0	24.5
31	17.0	---	---		---	6.0	---	21.0	---	---	25.0	---
MEAN	17.5	11.5	9.0		5.5	6.5	11.5	19.5	25.0	28.5	30.0	26.0
WTR YR 1983		MEAN	18.0	MAX	33.5		MIN	4.0				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

ARKANSAS RIVER BASIN

07165000 HEYBURN LAKE NEAR HEYBURN, OK

LOCATION.--Lat 35°56'52", long 96°17'55", in SE 1/4 sec.13, T.17 N., R.9 E., Creek County, Hydrologic Unit 11110101, at intake structure at right abutment of Heyburn Dam on Polecat Creek, 2.5 mi (4.0 km) northwest of Heyburn, 3.5 mi (5.5 km) upstream from bridge on U.S. Highway 66, 11.0 mi (17.7 km) southwest of Sapulpa, and at mile 48.6 (28.2 km).

DRAINAGE AREA.--123 mi² (318.6 km²).

PERIOD OF RECORD.--October 1950 to current year. Prior to October 1970, published as Heyburn Reservoir near Heyburn.

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

REMARKS.--Reservoir is formed by an earth dam. Outlet works consist of an 8.25 ft (2.515 m) diameter concrete conduit extending from an uncontrolled concrete drop inlet at the upstream side of dam at a concrete stilling basin near downstream toe of dam and three, 36 in. (0.91 m) gated lowflow pipes which drain into the conduit below the drop inlet. Spillway is 200 ft (61.0 m) channel in a natural saddle about 1,000 ft (304.8 m) west of right abutment. Storage began Sept. 29, 1950; conservation pool was first filled Mar. 10, 1951. Capacity, 144,800 acre-ft (179 hm³), at elevation 802.0 ft (244.45 m) maximum pool, 55,030 acre-ft (67.9 hm³), at elevation 784.0 ft (238.96 m), spillway crest and top of flood control pool, and 6,620 acre-ft (8.2 hm³) at elevation 761.5 (232.11 m), conservation pool. Dead storage, 226 acre-ft (3,280 m³) below elevation 740.0 ft (225.55 m), invert of lowflow sluices. Reservoir was designed for flood control and conservation. Figures given herein represent total contents. Revised capacity table, based on survey in 1971, used since Oct. 1, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,210 acre-ft (39.7 hm³), Nov. 4, 1974, elevation, 776.85 ft (236.784 m); minimum since conservation pool was first filled, 4,070 acre-ft (5.02 hm³) May 8, 9, 1981, elevation 757.95 ft (231.023 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 24,470 acre-ft (30.2 hm³), May 13, elevation, 773.63 ft (235.802 m); minimum, 4,210 acre-ft (5.19 hm³) Nov. 23-29, elevation 758.17 ft (231.090 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

757	3,510	769	15,940
760	5,420	772	21,090
763	8,130	775	27,550
766	11,690		

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6500	7590	4340	4370	6640	4310	4360	4460	7410	6730	6820	6110
2	6260	7010	4350	4370	5990	4320	4410	4480	7290	6710	6780	6100
3	5930	6300	4340	4440	5370	4340	4400	4480	8080	6690	6750	6080
4	5550	5810	4340	4440	4940	4350	4380	4490	8290	6670	6720	6060
5	5340	5320	4340	4450	4690	4350	4380	4500	7900	6650	6700	6030
6	5050	4870	4340	4450	4520	4360	4370	5630	7610	6630	6670	6010
7	4790	4710	4340	4440	4370	4360	4370	5910	7410	6750	6660	5990
8	4550	5560	4340	4430	4260	4370	4370	5960	7250	6760	6650	5970
9	4430	6380	4340	4420	4280	4370	4390	5980	7180	6730	6630	5950
10	4410	5880	4340	4410	4320	4400	4400	5990	7070	6710	6610	5930
11	4410	5380	4340	4390	4350	4410	4400	5990	7100	6690	6580	5910
12	4510	4870	4340	4380	4410	4420	4400	24340	7080	6670	6560	5890
13	4600	4830	4340	4380	4470	4420	4420	22330	7020	6660	6540	5870
14	4560	4650	4350	4350	4700	4970	4410	19180	6970	6640	6500	5850
15	4520	4450	4350	4350	5420	5100	4410	16080	7010	6630	6480	5860
16	4640	4370	4350	4340	5420	4750	4410	13070	7000	6600	6450	5840
17	4510	4360	4350	4340	5170	4580	4380	13690	6960	6570	6430	5830
18	4430	4340	4350	4340	4780	4510	4370	11050	6940	6540	6410	5820
19	4400	4320	4350	4340	4620	4440	4360	9370	6930	6530	6390	5810
20	4370	4280	4340	4340	4540	4430	4340	8750	6890	6510	6360	5800
21	4350	4250	4350	4340	4410	4400	4320	8460	6860	6480	6350	5780
22	4340	4230	4360	4390	4340	4380	4320	7980	6840	6460	6330	5760
23	4320	4210	4360	4390	4340	4360	4320	7680	6820	6440	6300	5740
24	4320	4210	4360	4400	4340	4340	4310	7670	6820	6410	6280	5720
25	4310	4210	4370	4400	4340	4320	4320	9250	6820	6390	6260	5700
26	4300	4210	4370	4400	4320	4300	4320	8490	6820	6360	6230	5690
27	4300	4210	4370	4410	4320	4310	4320	7990	6800	6340	6210	5670
28	4300	4210	4370	4410	4320	4320	4340	8800	6780	6790	6190	5660
29	4290	4210	4370	4450	---	4340	4370	7850	6770	6960	6160	5640
30	4280	4300	4370	7140	---	4350	4420	7600	6760	6930	6150	5630
31	7430	---	4370	7050	---	4350	---	7480	---	6880	6120	---
MAX	7430	7590	4370	7140	6640	5100	4420	24340	8290	6960	6820	6110
MIN	4280	4210	4340	4340	4260	4300	4310	4460	6760	6340	6120	5630
†	762.33	758.31	758.42	761.96	758.34	758.40	758.50	762.38	761.65	761.78	760.93	760.29
††	+890	-3,130	+70	+2,680	-2,730	+30	+70	+3,060	-720	+120	-760	-490
CAL YR 1981	MAX	12800	MIN	4100, ††	0							
WTR YR 1982	MAX	24340	MIN	4210, ††	-910							

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07165570 ARKANSAS RIVER NEAR HASKELL, OK

LOCATION.--Lat 35°49'23", long 95°38'39", in NE 1/4 sec.31, T.16 N., R.16 E., Muskogee County, Hydrologic Unit 11110101, near right bank on downstream side of bridge on State Highway 104, 2 mi (3.2 km) east of Haskell, 23.5 mi (37.8 km) upstream from Verdigris River, and at mile 483.7 (778.3 km).

DRAINAGE AREA.--75,473 mi² (195,475 km²), of which 12,541 mi² (32,481 km²) probably is noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 530.00 ft (161.544 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Keystone Lake (station 07164200) 55.1 mi (88.7 km) upstream.

COOPERATION.--Gage-height record and 27 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--10 years, 8,855 ft³/s (250.8 m³/s), 6,415,000 acre-ft/yr (7.91 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 108,000 ft³/s (3,060 m³/s) Nov. 6, 1974, gage height, 17.30 ft (5.273 m); minimum daily, 193 ft³/s (5.47 m³/s) Feb. 26, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 64,600 ft³/s (1,830 m³/s) May 21, gage height, 14.63 ft (4.459 m); minimum daily discharge, 365 ft³/s (10.3 m³/s) Oct. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2750	7660	4800	3630	6030	10300	4450	2640	35100	34600	12900	1400
2	2440	5700	5770	2600	3810	9140	5040	1970	33300	34800	12700	2580
3	2300	7040	4880	1230	3120	9720	5840	1010	34100	31900	12700	2420
4	1590	13500	4830	1400	2680	10100	4600	797	45300	24300	11500	1210
5	710	13600	5470	1180	3000	10500	5410	1990	27600	21800	8690	1270
6	923	13400	5300	1830	2020	11600	6190	3060	30100	23200	8620	1080
7	2560	13600	4910	1860	2180	9110	7340	7290	31700	24600	8310	7070
8	1160	13700	5620	1930	2190	8680	8410	7460	31400	26700	7580	2790
9	1310	16000	6010	1640	1730	13000	6620	4550	31700	26200	7290	3050
10	784	16700	6540	2250	3510	12700	6160	3050	33200	25500	7320	3220
11	895	17100	6380	1810	4640	13000	4000	4100	33800	25700	6490	1960
12	984	17000	6320	4670	4430	8770	2090	9340	33600	25600	7690	3100
13	1080	17000	4560	7410	3670	5470	3100	21000	31500	26200	9610	1870
14	2330	17000	2240	8110	3000	3880	3850	23200	31100	21700	5660	2230
15	1290	17200	3000	6160	2090	2990	2970	23400	31200	17400	5990	4270
16	1430	17300	5620	2700	2890	3100	2610	23500	31500	13800	3560	4030
17	1320	17100	5100	2040	5590	5520	1800	26300	30600	13100	4320	3930
18	1160	16500	5410	1970	7010	6100	2410	32100	30500	12900	5140	3070
19	787	14700	5770	1790	7950	7410	1220	45400	30200	13100	5510	2130
20	446	14400	7710	2190	7730	8820	910	48200	29900	13000	5640	1460
21	748	13900	5620	1530	6050	7470	1110	60500	29900	12800	4970	1060
22	2100	11800	4990	1930	4600	6660	1620	61100	29800	10500	3040	1400
23	5150	11700	6380	1440	8790	10900	2280	61400	29800	7380	1540	1270
24	7430	12400	5980	1650	13300	11600	2330	62100	30200	7150	2520	1230
25	5050	10700	5620	1420	13200	13300	2290	50400	30500	7030	2500	1300
26	3980	11800	4050	1090	13200	12500	1540	45300	31900	6960	1450	1550
27	3320	7240	2820	1790	13000	8980	1090	44800	31100	6870	2120	1180
28	1120	8630	2860	2850	11300	6530	2320	47500	30800	6880	1650	836
29	550	4880	4850	2310	---	8830	2950	40900	33100	7310	1670	1810
30	365	3070	5190	4290	---	8640	2770	35100	34600	8260	1240	1180
31	544	---	5020	9960	---	5640	---	35600	---	13200	992	---
TOTAL	58606	382320	159620	88660	162710	270960	105320	835057	959100	550440	180912	66956
MEAN	1891	12740	5149	2860	5811	8741	3511	26940	31970	17760	5836	2232
MAX	7430	17300	7710	9960	13300	13300	8410	62100	45300	34800	12900	7070
MIN	365	3070	2240	1090	1730	2990	910	797	27600	6870	992	836
AC-FT	116200	758300	316600	175900	322700	537400	208900	1656000	1902000	1092000	358800	132800
CAL YR 1981	TOTAL	1300959		MEAN	3564	MAX	17300	MIN	287	AC-FT	2580000	
WTR YR 1982	TOTAL	3820661		MEAN	10470	MAX	62100	MIN	365	AC-FT	7578000	

ARKANSAS RIVER BASIN

07171000 VERDIGRIS RIVER NEAR LENAPAH, OK

LOCATION.--Lat 36°51'05", long 95°35'06", at center of sec.3, T.27 N., R.16 E., Nowata County, Hydrologic Unit 11070103, on right bank on downstream side of county road bridge, 2.8 mi (4.5 km) east of Lenapah, 4.5 mi (7.2 km) upstream from Cedar Creek, and at mile 144.6 (232.7 km).

DRAINAGE AREA.--3,639 mi² (942.5 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 977: 1942 (M). WSP 1117: drainage area.

GAGE.--Water-stage recorder. Datum of gage is 644.89 ft (196.562 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Some regulation, by dams in Kansas, since April 1949.

COOPERATION.--Gage-height record and 14 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation) 11 years (water years 1939-49), 2,599 ft³/s (73.60 m³/s), 1,833,000 acre-ft/yr (2.32 km³/yr); (since regulation) 16 years (water years 1967-82), 2,384 ft³/s (67.51 m³/s), 1,727,000 acre-ft/yr (2.13 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 137,000 ft³/s (3,880 m³/s) May 20, 1943, gage height, 40.44 ft (12.326 m), from floodmarks; no flow at times in 1939-40, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 25,200 ft³/s (715 m³/s) June 12, gage height, 25.01 ft (7.623 m); minimum daily discharge, 11 ft³/s (0.31 m³/s) Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	4640	1760	446	1970	498	567	138	17500	11900	143	839
2	18	4890	2670	1220	1090	473	538	122	18400	12400	192	1130
3	15	3440	2060	1200	1520	467	626	111	11400	10600	193	770
4	14	1510	2200	1220	2170	466	919	108	10500	8870	181	352
5	13	2830	1960	1210	2180	661	875	151	13400	8550	150	264
6	12	4690	1570	1150	2070	755	848	512	14500	8300	99	209
7	11	4900	1220	1040	2060	543	831	532	13300	3480	70	150
8	12	3720	1140	1070	2220	426	802	414	12700	1510	55	111
9	15	2520	944	940	2160	332	663	646	12400	906	51	83
10	18	3090	585	940	2050	311	648	1370	12500	749	51	69
11	19	3710	544	980	2010	303	614	1350	15600	676	134	65
12	41	4820	446	1100	1970	300	418	2120	24500	459	906	63
13	88	4590	331	1200	1980	298	355	2640	19200	395	7230	69
14	161	3540	230	1920	1860	3730	338	2140	13500	394	1660	352
15	608	1860	204	628	2560	13200	328	3800	12500	880	1230	599
16	627	970	194	700	4090	12400	314	4950	12600	624	1080	92
17	2050	883	192	660	5530	3590	308	7340	12200	1070	978	46
18	7550	860	324	600	5730	3460	259	12400	11600	796	777	69
19	2310	842	450	250	6360	3490	197	10900	10900	1230	609	72
20	847	774	442	134	5470	4130	180	8640	8570	1310	586	59
21	474	530	430	110	4600	4480	170	10700	7190	1170	524	51
22	1190	426	470	96	4240	4280	170	10200	6990	755	432	45
23	1220	373	478	93	3910	4140	168	8710	7400	527	398	40
24	1200	324	474	90	2960	4000	177	9230	6050	248	387	42
25	947	314	466	94	2100	2910	142	9090	4790	163	386	45
26	448	311	462	115	1500	2100	150	14200	7170	113	391	43
27	282	292	466	117	1050	1500	146	10200	11500	92	388	41
28	260	230	462	119	602	1060	146	6070	17300	82	2150	43
29	258	209	458	128	---	786	146	5010	11900	787	2090	40
30	249	517	454	7780	---	760	142	9020	10300	363	962	42
31	914	---	450	5150	---	733	---	14300	---	161	957	---
TOTAL	21890	62605	24536	32500	78012	76582	12185	167114	368360	79560	25440	5895
MEAN	706	2087	791	1048	2786	2470	406	5391	12280	2566	821	197
MAX	7550	4900	2670	7780	6360	13200	919	14300	24500	12400	7230	1130
MIN	11	209	192	90	602	298	142	108	4790	82	51	40
AC-FT	43420	124200	48670	64460	154700	151900	24170	331500	730600	157800	50460	11690
CAL YR 1981	TOTAL	226940.0	MEAN	622	MAX	7550	MIN	7.0	AC-FT	450100		
WTR YR 1982	TOTAL	954679	MEAN	2616	MAX	24500	MIN	11	AC-FT	1894000		

ARKANSAS RIVER BASIN

07171300 OOLOGAH LAKE NEAR OOLOGAH, OK

LOCATION.--Lat 36°25'19", long 95°40'43", in NE 1/4 NW 1/4 sec.2, T.22 N., R.15 E., Rogers County, Hydrologic Unit 11070103, in gage tower 1,000 ft (304.8 m) from left end of dam on Verdigris river, 2.0 mi (3.2 km) southeast of Oologah, and at mile 90.3 (145.3 km).

DRAINAGE AREA.--4,339 mi² (11,238 km²).

PERIOD OF RECORD.--May 1963 to current year. Prior to October 1970, published as Oologah Reservoir near Oologah.

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

REMARKS.--Reservoir is formed by earth dam. Spillway is concrete ogee-type weir controlled by 7 taintor gates. Storage began May 15, 1963, conservation pool was first filled Apr. 4, 1964. Capacity 1,519,000 acre-ft (1.87 km³) at elevation 661.0 ft (201.47 m), top of flood control pool, 553,400 acre-ft (682 hm³) at elevation 638.0 ft (194.46 m), conservation pool. Dead storage 9,260 acre-ft (11.4 hm³) below elevation 592.0 ft (180.44 m). Figures given herein represent total contents. Reservoir is used for flood control and conservation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,426,000 acre-ft (1.76 km³) Apr. 26, 1973, elevation, 659.33 ft (200.964 m); minimum since conservation pool first filled 33,750 acre-ft (41.6 hm³) Aug. 28, Oct. 27, 1969, elevation, 602.87 ft (183.755 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 922,400 acre-ft (1,137 hm³) June 15, elevation, 648.66 ft (197.712 m); minimum, 503,400 acre-ft (621 hm³) Aug. 12, elevation, 636.26 ft (193.932 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

636	496,290	644	750,470
638	553,420	646	819,420
641	645,970	649	935,900

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	547100	578600	558000	550000	614200	574600	552300	558300	845300	750100	578000	529000
2	546200	580400	558600	554000	619100	576800	554300	558300	863800	745300	567600	532400
3	542200	573100	558600	555700	617500	577400	554900	557700	877300	739400	557400	532100
4	544200	568200	557700	555400	614200	580100	555400	557400	899400	729600	546800	532100
5	544800	567300	555700	559200	613800	580400	558300	560600	910100	714700	536500	531300
6	543900	563300	554900	563900	611100	579500	556300	565700	912100	708400	530400	531900
7	542800	560900	555700	560000	610200	578900	556600	565100	909000	695600	526400	531300
8	541600	564200	555400	558600	613200	578600	558000	563900	903000	687000	521800	530400
9	542200	555700	555700	561500	609900	578300	557700	561800	901400	674300	516900	529600
10	541600	553100	554000	557400	608900	574000	557700	562000	892700	667500	513200	528700
11	541100	554000	554000	556600	608900	569100	557200	562700	893500	659300	508600	527800
12	542800	556000	554300	556300	607100	568800	558600	580400	907800	654100	505100	528100
13	545700	558000	554300	556000	601900	565700	558300	590500	918900	650200	517500	527000
14	545700	558600	553100	556600	597900	580400	557400	595800	915700	646900	517200	527800
15	548500	557400	552800	558300	597600	601300	557400	601300	917300	643700	520600	534200
16	548800	556000	553100	556000	598200	617500	558800	606500	911700	640800	523200	533000
17	551100	555700	552800	556000	600100	614200	558000	616300	905000	638500	522700	534200
18	562000	558600	551400	556300	601600	605000	557700	632000	900200	636200	522700	532100
19	563000	557700	549700	556300	602500	595100	558300	647900	889900	634900	523200	531600
20	563600	555700	550000	555700	601600	588700	558900	659700	877300	633600	523500	531900
21	566600	554900	551100	554900	603400	581700	556600	673000	862600	735200	523500	529600
22	565100	554600	550800	557200	609600	573700	556900	686100	847200	629700	522400	528400
23	563000	554900	550500	558300	612900	565700	556000	696300	833100	625800	522900	528400
24	561800	554000	549700	558300	609900	561200	554900	708800	819400	622700	525200	530400
25	563000	552000	550000	558600	601600	555700	558000	722700	800900	619400	523800	527300
26	560000	554900	550500	557400	595100	553400	557400	748700	788000	615700	520600	526400
27	558600	554600	551400	559200	588100	554000	557400	768500	786500	611400	523800	523500
28	557200	554300	550800	558000	581400	554300	558000	777600	790600	610800	525800	523200
29	555700	554600	550500	558300	---	554000	558300	785400	780600	608900	527800	524100
30	555700	555700	548800	558800	---	553400	558600	799100	761600	598800	528400	524100
31	568200	---	550500	608300	---	554600	---	825000	---	588700	528100	---
MAX	568200	580400	558600	608300	619100	617500	558900	825000	918900	750100	578000	534200
MIN	541100	552000	548800	550000	581400	553400	552300	557400	761600	588700	505100	523200
†	638.50	638.08	637.90	639.81	638.93	638.04	638.18	646.15	644.42	639.17	637.12	639.98
††	+20,800	-12,500	-5,200	+57,800	-26,900	-26,800	+4,000	+266,400	-63,400	-172,900	-60,600	-4,000

CAL YR 1981 MAX 580400 MIN 450600, †† +79,800
WTR YR 1982 MAX 918900 MIN 505100, †† -23,300

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07171400 VERDIGRIS RIVER NEAR OOLOGAH, OK

LOCATION.--Lat 36°25'17", long 95°41'01", in NW 1/4 sec.2, T.22 N., R.15 E., Rogers County Hydrologic Unit 11070105, on right bank 0.2 mi (0.3 km) downstream from Oologah Dam, 1.2 mi (1.9 km) upstream from Fourmile Creek, 2 mi (3.2 km) southeast of Oologah, and at mile 90.0 (144.8 km).

DRAINAGE AREA.--4,339 mi² (11,238 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 552.00 ft (168.250 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulation by several dams in Kansas prior to May 1963 and completely regulated thereafter by Oologah Lake (station 07171300).

COOPERATION.--Gage height record and 13 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Since regulation by Oologah Lake) 18 years (water years 1965-82), 2,625 ft³/s (74.34 m³/s), 1,902,000 acre ft/yr (2.35 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s (850 m³/s) May 16, 1973, gage height, 38.05 ft (11.598 m); no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1943 reached a stage of 65.2 ft (19.87 m), from floodmarks. Flood of May 9, 1961, reached a stage of 52.8 ft (16.09 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,200 ft³/s (544 m³/s) June 30, gage height, 29.34 ft (8.943 m); minimum daily discharge. No flow Sept. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	226	1510	423	107	3420	630	61	5140	16900	5100	80
2	8.5	3850	2570	423	1070	149	525	61	8460	13500	5090	55
3	16	8470	2560	423	2460	147	386	63	7140	13400	5080	9.4
4	17	4600	2540	423	2460	148	388	62	503	13400	5070	.08
5	18	3890	2540	428	2460	147	388	62	5540	13300	5050	.00
6	16	5250	2540	755	2460	145	382	312	12400	11900	3510	.00
7	15	5240	1750	1350	2460	142	385	986	14200	9720	2240	12
8	16	5240	1070	1330	2460	140	375	1120	14200	8060	2230	57
9	16	5300	1070	1320	2460	1050	371	1090	14200	5240	2230	40
10	16	4140	836	1320	2260	2460	377	1070	14200	4240	2230	32
11	16	3250	520	1300	2340	2440	382	1060	14200	4230	2220	32
12	18	3240	415	1290	3470	1800	384	1060	14200	3300	1460	32
13	15	3240	415	1280	4360	1080	380	1060	14200	2000	291	31
14	15	3240	410	1270	4380	1080	378	1840	14200	1800	97	33
15	16	3230	410	870	4390	2710	376	2910	14100	1790	98	34
16	17	2000	406	661	4360	5180	372	2880	14100	1800	96	33
17	18	876	406	658	4350	6290	368	2880	14100	1800	95	32
18	18	879	410	651	4350	7840	368	2880	14100	1800	95	32
19	645	777	410	647	4630	9110	200	2880	14100	1800	95	33
20	1160	626	415	643	4930	7850	57	2880	14100	1800	98	32
21	1140	568	415	640	2920	7820	60	2880	14100	1800	93	32
22	1130	566	415	380	2850	7810	59	2880	14000	1800	93	32
23	1130	500	415	123	6000	7780	58	2890	14000	1780	94	34
24	1130	405	419	113	3180	7160	59	2910	14000	1770	96	35
25	1120	310	423	111	5300	6380	60	1750	13900	1760	98	35
26	1120	223	419	109	4190	3080	59	147	13800	1770	98	35
27	864	222	415	110	4180	1000	59	1370	13800	1760	98	35
28	641	222	415	108	4170	999	61	3050	13800	1760	98	35
29	403	223	419	107	---	807	61	3010	16900	3010	98	36
30	226	249	419	107	---	632	61	2990	19100	5140	88	35
31	226	---	419	107	---	626	---	2990	---	5120	79	---
TOTAL	11213.5	71052	27796	19480	95007	97422	8069	54084	384783	159250	43508	953.48
MEAN	362	2368	897	628	3393	3143	269	1745	12830	5137	1403	31.8
MAX	1160	8470	2570	1350	6000	9110	630	3050	19100	16900	5100	80
MIN	7.0	222	406	107	107	140	57	61	503	1760	79	.00
AC-FT	22240	140900	55130	38640	188400	193200	16000	107300	763200	315900	86300	1890
CAL YR 1981	TOTAL	187722.5	MEAN	514	MAX	8470	MIN	7.0	AC-FT	372300		
WTR YR 1982	TOTAL	972617.98	MEAN	2665	MAX	19100	MIN	.00	AC-FT	1929000		

ARKANSAS RIVER BASIN

07172500 HULAH LAKE NEAR HULAH, OK

LOCATION.--Lat 36°55'44", long 96°05'18", in SE 1/4 sec.2, T.28 N., R.11 E., Osage County, Hydrologic Unit 11070106, in stair tower at right end of Hulah Dam on Caney River, 0.5 mi (0.8 km) downstream from Hickory Creek, 2.0 mi (3.2 km) west of Hulah, 15.7 mi (25.3 km) upstream from Little Caney River, and at mile 96.2 (154.8 km).

DRAINAGE AREA.--732 mi² (1,896 km²).

PERIOD OF RECORD.--April 1950 to current year. Prior to October 1970, published as Hulah Reservoir near Hulah.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Feb. 15, 1951, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by an earth dam. Spillway is 472 ft (143.9 m) concrete ogee-type weir controlled by 10 taintor gates. Outlet works consist of nine rectangular sluices, two 24 in. (0.61 m) gated pipes, and one 10 in. (254 mm) water-supply pipe. Closure for diversion made Feb. 6, 1950; regulated storage began Oct. 25, 1950; conservation pool was first filled Sept. 24, 1951. Capacity, 292,600 acre-ft (361 hm³) at elevation 765.0 ft (233.17 m), top of taintor gates, 65,600 acre-ft (80.9 hm³) at elevation 740.0 ft (225.55 m), crest of spillway, and 34,660 acre-ft (42.7 hm³) at elevation 733.0 ft (223.42 m) conservation pool. Dead storage, 506 acre-ft (0.62 hm³) below elevation 706.0 ft (215.19 m) invert of sluices. Figures given herein represent total contents. Reservoir is used for flood control, conservation, and municipal water supply. Revised capacity table, based on survey in 1973, used since Oct. 1, 1977.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 293,400 acre-ft (362 hm³) June 23, 1957, elevation, 764.87 ft (233.132 m); minimum since conservation pool was first filled, 11,250 acre-ft (13.9 hm³) Mar. 20, 1957, elevation, 723.22 ft (220.437 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 183,200 acre-ft (226 hm³) June 5, elevation 755.90 ft (230.398 m), minimum, 14,280 acre-ft (17.6 hm³) Oct. 11, elevation 727.24 ft (221.663 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

727	13,750	743	78,170
732	27,660	749	120,500
737	47,070	756	184,200

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14960	27130	34910	32200	35900	32750	31690	31330	160700	36830	31260	29050
2	14850	28670	34530	32230	36090	32710	31660	31330	172400	35130	31190	29010
3	14760	29640	34380	32380	35520	32670	31400	31370	174200	34530	31150	28910
4	14710	30300	33860	32230	34940	32450	31150	31400	180600	33970	30970	28980
5	14690	30830	33410	32340	34300	32310	30970	31550	182800	33190	30940	28670
6	14600	31120	32930	32490	33710	32200	30800	31760	181900	33080	30900	28740
7	14530	31300	32560	32380	33150	31940	30760	31580	176600	33080	30870	28710
8	14440	34720	32090	32230	32750	31760	30870	31300	166500	33040	30760	28600
9	14390	36590	31690	32130	32160	31580	30940	30970	156000	32930	30650	28370
10	14330	36240	31660	31910	31730	31400	31050	30800	144200	32820	30480	28300
11	14280	35710	31690	31690	31510	31260	31010	30760	157700	32490	30830	28300
12	14640	35130	31760	31550	31400	31300	31050	35710	162200	32340	30760	28430
13	15080	34790	31840	31480	31440	31260	31080	37610	164100	32200	30690	28600
14	14730	34680	31910	31440	32160	38160	31080	37800	163400	32160	30650	28570
15	14710	34530	31940	31400	33890	43950	31120	36980	160500	32050	30650	28880
16	14690	34420	32160	31400	34870	43100	31220	36480	154800	32020	30620	28810
17	17420	34300	32020	31330	35360	40700	31150	59480	145200	31940	30480	28570
18	17710	34300	32020	31260	35740	37800	31120	63600	135100	31910	30440	28740
19	17710	34150	32050	31260	35900	35860	31220	63970	125500	31870	30300	28570
20	17660	33780	32090	31260	36090	34570	31150	66500	115600	31840	30190	28400
21	17730	33930	32130	31260	36630	33110	31120	65630	103800	31840	30120	28260
22	17680	33970	32270	31330	37060	32270	31080	63240	91580	31840	30050	28300
23	17580	34120	32230	31220	36980	31760	31010	60140	81750	31840	29950	28230
24	17500	33890	32230	31190	36440	31370	30900	64290	72840	31840	29950	28130
25	17630	33820	32230	31190	35590	31510	31080	100600	65200	31760	29810	28090
26	17600	34000	32230	31150	34790	31400	31150	102300	59120	31730	29570	27990
27	17550	33780	32270	31190	34000	31550	31120	103000	55080	31620	29530	27830
28	17550	33820	32230	31190	33220	31620	31330	104200	50120	31580	29390	27760
29	17550	33860	32270	32160	---	31690	31300	103700	44590	31440	29290	27730
30	17450	34980	32230	35170	---	31800	31300	102700	40450	31400	29250	27630
31	18150	---	32230	35590	---	31870	---	151200	---	31370	29120	---
MAX	18150	36590	34910	35590	37060	43950	31690	151200	182800	36830	31260	29050
MIN	14280	27130	31660	31150	31400	31260	30760	30760	40450	31370	29120	27630
†	728.83	734.05	733.31	734.21	733.58	733.21	733.05	752.57	735.44	733.07	732.43	731.99
††	+3,070	+16,830	-2,750	+3,360	-2,370	-1,350	-570	+119,900	-110,750	-9,080	-2,250	-1,490
CAL YR 1981	MAX	36590	MIN	11620	†† +16,300							
WTR YR 1982	MAX	182800	MIN	14280	†† +12,550							

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07173000 CANEY RIVER NEAR HULAH, OK

LOCATION.--Lat 36°55'34", long 96°05'01", in NE 1/4 NE 1/4 sec.11, T.28 N., R.11 E., Osage County, Hydrologic Unit 11070106, on left bank 1,200 ft (365.8 m) downstream from Hulah Dam, 2.1 mi (3.4 km) upstream from Opossum Creek, 2.5 mi (4.0 km) west of Hulah, and at mile 95.9 (154.3 km).

DRAINAGE AREA.--733 mi² (1,898 km²).

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

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 699.00 ft (213.055 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 18, 1939, nonrecording gage. Feb. 18, 1939, to Sept. 30, 1948, waterstage recorder at county road bridge, 0.2 mi (0.3 km) upstream at datum 14.04 ft (4.279 m) lower. Oct. 1, 1948, to Sept. 30, 1972, at site 0.6 mi (1.0 km) downstream at datum 17.04 ft (5.194 m) lower.

REMARKS.--Records fair. Flow completely regulated since February 1950 by Hulah Lake (station 07172500). About 5 to 9 ft³/s (0.14 to 0.25 m³/s) is diverted above station by city of Bartlesville for municipal water supply.

COOPERATION.--Gage-height record and 16 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Hulah Dam) 13 years (water years 1938-50), 413 ft³/s (11.70 m³/s), 299,200 acre-ft/yr (369 hm³/yr); (since regulation by Hulah Dam) 32 years (water years 1951-82), 326 ft³/s (9.232 m³/s), 236,200 acre-ft/yr (291 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft³/s (1,440 m³/s) Apr. 10, 1944, gage height, 39.45 ft (12.024 m), at former site and datum; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 40.2 ft (12.25 m) occurred at former site and datum, date unknown, from floodmark, from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,500 ft³/s (184 m³/s) June 21, gage height, 13.41 ft (4.087 m). Minimum daily discharge, 0.35 ft³/s (0.010 m³/s) on Aug. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	4.1	270	26	7.1	335	156	8.3	63	2240	1.5	11
2	8.9	2.8	337	26	130	159	159	8.3	70	1010	1.6	12
3	8.9	2.8	327	25	318	159	159	8.3	69	520	1.8	12
4	9.1	2.8	327	25	313	159	159	8.3	56	520	1.7	12
5	9.1	2.9	327	26	308	159	150	8.3	570	527	1.7	12
6	9.1	2.9	327	26	318	159	103	83	1840	342	1.7	12
7	8.9	2.9	327	26	322	159	44	179	3590	217	1.7	12
8	8.9	8.3	327	50	322	159	16	183	5230	213	1.7	12
9	8.9	221	246	75	318	159	14	179	6260	209	1.7	12
10	8.9	486	80	80	251	159	13	50	6300	209	1.6	12
11	8.9	486	30	75	156	159	13	10	1720	213	7.5	12
12	9.2	391	30	77	113	85	13	33	163	213	11	12
13	9.2	263	30	47	45	36	13	26	159	87	4.8	12
14	9.0	150	29	23	48	55	13	337	950	10	.52	11
15	8.9	153	29	23	44	384	23	794	2460	15	.44	12
16	8.9	150	28	23	171	1410	17	873	3260	6.7	.40	12
17	20	123	27	23	322	1800	23	925	4940	6.7	.40	11
18	20	77	27	24	322	1780	26	933	5450	6.7	.38	11
19	12	75	27	24	404	1370	17	1380	5340	6.8	.35	11
20	2.1	37	27	24	199	958	13	2020	5220	6.7	.38	11
21	2.2	3.1	27	24	3.9	941	14	2000	6000	5.6	.42	11
22	2.3	3.1	27	24	4.0	676	13	1990	6270	4.5	.45	11
23	1.9	3.1	27	23	282	486	11	1990	5660	2.8	7.6	11
24	1.8	78	27	23	493	342	8.2	1990	4910	2.0	15	11
25	2.0	4.8	27	16	486	150	8.6	1460	4350	2.1	13	11
26	1.9	4.6	26	6.4	493	108	8.4	1070	3550	2.1	12	11
27	1.3	34	26	6.2	499	74	8.3	1070	3470	2.1	12	12
28	1.2	5.7	26	6.2	493	74	8.5	1080	3340	2.2	11	12
29	1.2	5.3	26	6.3	---	82	8.4	1070	3260	1.9	11	12
30	1.3	71	26	8.9	---	120	8.3	1070	2670	1.5	11	12
31	1.5	---	26	7.6	---	147	---	467	---	1.4	11	---
TOTAL	216.4	2854.2	3470	899.6	7185.0	13003	1240.7	23303.5	97190	6606.8	147.34	348
MEAN	6.98	95.1	112	29.0	257	419	41.4	752	3240	213	4.75	11.6
MAX	20	486	337	80	499	1800	159	2020	6300	2240	15	12
MIN	1.2	2.8	26	6.2	3.9	36	8.2	8.3	56	1.4	.35	11
AC-FT	429	5660	6880	1780	14250	25790	2460	46220	192800	13100	292	690
CAL YR 1981	TOTAL 7802.57		MEAN 21.4		MAX 486		MIN .00		AC-FT 15480			
WTR YR 1982	TOTAL 156464.54		MEAN 429		MAX 6300		MIN .35		AC-FT 310300			

ARKANSAS RIVER BASIN

07174600 SAND CREEK AT OKESA, OK

LOCATION.--Lat 36°43'10", long 96°07'56", in NW 1/4 NW 1/4 sec.21, T.26 N., R.11 E., Osage County, Hydrologic Unit 11070106, on downstream side of left abutment of county road bridge, 0.5 mi (0.8 km) northeast of Okesa, 9 mi (14 km) southwest of Bartlesville, and at mile 17.2 (27.7 km).

DRAINAGE AREA.--139 mi² (360 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 689.20 ft (210.068 m) National Geodetic Vertical Datum of 1929. Prior to May 25, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair.

COOPERATION.--Gage-height record and 13 discharge measurements and 3 observations of no flow furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--23 years, 67.4 ft³/s (1.909 m³/s), 48,830 acre-ft/yr (60.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,700 ft³/s (416 m³/s) Sept. 13, 1961, gage height, 27.7 ft (8.44 m), from floodmarks; no flow at times in each year except 1975.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 17	0900	*8,170 231	*18.24 5.560	May 31	1000	6,550 185	16.34 4.980
May 25	1000	7,160 203	16.82 5.127	June 11	1500	5,980 169	15.62 4.761

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	413	18	2.7	129	16	15	4.0	339	28	.71	.00
2	.00	167	19	2.7	81	15	14	4.0	162	23	.56	.00
3	.00	66	25	2.9	64	14	12	4.0	154	18	.36	.00
4	.00	41	18	2.7	46	14	10	3.8	229	15	.24	.00
5	.00	29	15	2.7	34	13	9.2	3.3	146	13	.12	.00
6	.00	20	12	2.7	26	13	8.9	51	99	12	.21	.00
7	.00	16	11	2.5	20	13	8.9	41	76	226	.23	.00
8	.00	152	8.9	2.1	17	12	8.9	37	61	78	.15	.00
9	.00	632	7.8	1.7	17	10	8.2	19	48	30	.09	.00
10	.00	144	7.1	1.3	17	10	7.8	12	40	27	.05	.00
11	.00	69	6.0	1.8	16	10	7.1	8.1	1800	18	.10	.00
12	.00	44	5.4	2.3	17	10	7.1	1370	347	20	.30	.00
13	.00	32	5.2	2.8	16	10	7.1	804	137	13	.05	.00
14	.00	25	4.7	3.3	44	783	6.5	196	85	11	.00	.00
15	.00	21	4.2	2.7	248	469	6.2	118	67	10	.00	.00
16	.00	18	4.0	2.0	162	869	5.4	79	68	7.8	.00	.00
17	.00	16	3.6	2.4	100	186	4.7	3910	51	6.0	.00	.00
18	.00	15	4.0	2.5	76	103	4.2	370	43	5.2	.00	.00
19	.00	12	2.9	2.5	59	76	3.6	175	36	4.5	.00	.00
20	.00	9.5	2.9	2.7	46	57	2.9	156	35	3.3	.00	.00
21	.00	9.6	2.9	2.5	38	43	2.7	465	29	3.3	.00	.00
22	.00	11	3.1	2.7	33	35	2.4	175	24	3.3	.00	.00
23	.00	10	3.3	2.7	28	31	1.8	108	20	4.0	.00	.00
24	.00	7.4	3.3	2.7	24	27	1.4	2060	19	3.1	.00	.00
25	.00	7.0	3.1	3.1	21	24	1.3	3840	21	2.4	.00	.00
26	.00	6.3	2.9	3.6	18	23	1.4	609	29	2.3	.00	.00
27	.00	6.2	2.7	3.1	16	19	1.4	650	370	1.8	.00	.00
28	.00	6.2	2.7	2.7	16	18	1.6	650	108	1.7	.00	.00
29	.84	5.6	2.7	3.1	---	17	2.5	248	53	1.5	.00	.00
30	1.1	15	2.9	738	---	17	3.8	133	37	1.3	.00	.00
31	2.7	---	2.9	301	---	16	---	2640	---	.95	.00	---
TOTAL	4.64	2025.8	217.2	1114.2	1429	2973	178.0	18943.2	4733	594.45	3.17	.00
MEAN	.15	67.5	7.01	35.9	51.0	95.9	5.93	611	158	19.2	.10	.00
MAX	2.7	632	25	738	248	869	15	3910	1800	226	.71	.00
MIN	.00	5.6	2.7	1.3	16	10	1.3	3.3	19	.95	.00	.00
AC-FT	9.2	4020	431	2210	2830	5900	353	37570	9390	1180	6.3	.00
CAL YR 1981	TOTAL	4263.86	MEAN	11.7	MAX	1060	MIN	.00	AC-FT	8460		
WTR YR 1982	TOTAL	32215.66	MEAN	88.3	MAX	3910	MIN	.00	AC-FT	63900		

ARKANSAS RIVER BASIN

07175500 CANEY RIVER NEAR RAMONA, OK

LOCATION.--Lat 36°30'31", long 95°50'36", in NE 1/4 NW 1/4 sec.5, T.23 N., R.14 E., Washington County, Hydrologic Unit 11070106, near left bank on downstream side of pier of county road bridge, 1 mi (1.6 km) upstream from Buck Creek, 2.2 mi (3.5 km) downstream from Double Creek, 4.5 mi (7.2 km) southeast of Ramona, and at mile 32.0 (51.5 km).

DRAINAGE AREA.--1,955 mi² (5,063 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1935 to February 1939 (published as "near Collinsville"), September 1945 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1241: 1939.

GAGE.--Water-stage recorder. Datum of gage is 586.43 ft (178.744 m) National Geodetic Vertical Datum of 1929. Dec. 4, 1935, to Feb. 28, 1939, nonrecording gage at site 16.2 mi (26.1 km) downstream at datum 21.41 (6.526 m) lower. Sept. 1, 1945, to Feb. 15, 1946, nonrecording gage at present site and datum.

REMARKS.--Records fair. Some regulation since February 1950 by Hulah Lake (station 07172500).

COOPERATION.--Gage-height record and 18 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--40 years, 931 ft³/s (26.37 m³/s), 674,500 acre-ft/yr (832 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,500 ft³/s (1,090 m³/s) Oct. 3, 1945, gage height, 30.12 ft (9.181 m); no flow Aug. 9 to Sept. 15, 1936, Sept. 11 to Nov. 3, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 7,500 ft³/s (212 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage Height (ft)	Gage Height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage Height (ft)	Gage Height (m)
May 18	0930	8,170	231	22.89	6.977	June 1	1045	8,490	240	23.61	7.196
May 26	1100	*9,630	273	*26.13	7.964	June 12	1200	7,890	223	22.26	6.785

Minimum daily discharge, 8.2 ft³/s (0.23 m³/s) Oct. 1

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	748	529	78	3160	537	435	123	8070	3530	86	23
2	8.8	1380	441	78	943	508	417	118	6030	2680	80	20
3	11	651	470	76	418	346	414	115	5500	1650	82	20
4	11	488	453	72	449	312	408	115	6050	725	82	24
5	11	516	433	74	405	300	406	109	5350	566	70	24
6	11	486	422	74	372	293	394	1460	4090	537	66	20
7	11	409	418	74	499	293	385	1030	3890	562	58	20
8	11	360	414	68	570	289	343	663	4540	587	50	20
9	12	1470	414	64	578	288	290	540	5390	397	42	21
10	12	1960	401	82	537	285	246	449	6140	348	29	22
11	12	1610	242	93	520	285	246	396	6700	324	26	21
12	20	1080	152	123	474	287	256	2870	7420	312	56	21
13	30	785	107	125	414	286	217	6700	5040	293	77	17
14	41	554	103	128	384	1770	186	2720	4230	285	45	23
15	62	390	102	128	687	5320	164	1130	3220	204	41	68
16	35	325	100	107	935	3950	155	1300	3520	181	46	93
17	24	306	100	102	619	5010	140	4240	3730	194	41	58
18	42	296	98	112	616	4250	140	7690	4890	179	33	31
19	185	256	98	110	541	3280	136	5120	5500	173	28	16
20	131	232	91	110	524	2500	142	4300	5580	164	25	24
21	119	211	88	110	507	1610	139	5940	5450	167	20	26
22	139	175	88	112	293	1400	128	4450	5490	141	18	21
23	163	169	110	105	214	1130	125	3420	6060	138	16	31
24	114	167	88	102	297	797	126	3050	6040	138	15	32
25	107	164	82	98	514	755	128	7040	5400	136	13	32
26	107	242	80	98	537	562	142	9380	5000	131	15	30
27	105	167	80	91	528	505	124	8040	4890	128	33	28
28	101	164	82	84	531	445	123	8390	5250	123	31	27
29	99	194	82	76	---	426	143	8410	4620	105	26	26
30	93	312	80	2800	---	424	132	6410	4260	95	24	26
31	115	---	82	5600	---	426	---	5760	---	86	24	---
TOTAL	1951.0	16267	6530	11154	17066	38869	6830	111478	157340	15279	1298	865
MEAN	62.9	542	211	360	610	1254	228	3596	5245	493	41.9	28.8
MAX	185	1960	529	5600	3160	5320	435	9380	8070	3530	86	93
MIN	8.2	164	80	64	214	285	123	109	3220	86	13	16
AC-FT	3870	32270	12950	22120	33850	77100	13550	221100	312100	30310	2570	1720
CAL YR 1981	TOTAL	60858.1	MEAN	167	MAX	6170	MIN	3.7	AC-FT	120700		
WTR YR 1982	TOTAL	384927.0	MEAN	1055	MAX	9380	MIN	8.2	AC-FT	763500		

ARKANSAS RIVER BASIN

07175500 CANEY RIVER NEAR RAMONA, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952-53, 1955-62, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1966 to April 1982.

WATER TEMPERATURE: October 1966 to April 1982.

REMARKS.--Samples were collected by a local observer on a daily basis. Partial analyses were made on those samples at or near the 5th, 15th and 25th of each month for October-February. Additional samples were collected monthly July-September and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos Feb. 5, 1967; minimum daily, 114 micromhos Oct. 20, 1973.

WATER TEMPERATURE: Maximum daily 38.0°C July 18, 19, 1980; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)
OCT										
05...	1330	80020	11	670	8.2	25.0	--	--	180	34
15...	1500	80020	60	732	7.6	20.0	--	--	190	39
25...	0800	80020	107	565	8.0	12.0	--	--	150	53
NOV										
05...	0845	80020	537	473	7.4	14.0	--	--	130	42
15...	0900	80020	393	347	7.4	10.0	--	--	120	26
25...	0930	80020	164	391	7.6	10.0	--	--	130	34
30...	1230	810	201	--	--	--	--	--	--	--
DEC										
05...	0930	80020	433	400	8.1	7.0	--	--	130	31
15...	1400	80020	102	423	8.1	7.0	--	--	140	32
25...	1100	80020	82	501	7.9	3.0	--	--	150	45
JAN										
05...	0900	80020	74	555	8.3	4.0	--	--	170	53
15...	0900	80020	128	692	8.3	.0	--	--	210	73
25...	1000	80020	98	466	8.0	.0	--	--	130	56
25...	1335	810	98	--	--	--	--	--	--	--
FEB										
06...	1100	80020	372	469	7.7	.0	--	--	140	18
15...	1000	80020	687	520	7.5	2.0	--	--	160	59
24...	1205	810	211	--	--	--	--	--	--	--
25...	1400	80020	537	568	7.6	8.0	--	--	180	55
JUL										
27...	1315	80020	133	457	7.9	31.5	9.7	135	150	21
AUG										
12...	1415	80020	59	494	8.2	31.0	8.6	118	180	39
SEP										
02...	1440	80020	19	569	8.2	32.0	9.8	138	180	49
24...	1305	810	31	--	--	22.0	--	--	--	--

07175500 CANEY RIVER NEAR RAMONA, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982[illegible]

ARKANSAS RIVER BASIN

07176000 VERDIGRIS RIVER NEAR CLAREMORE, OK

LOCATION.--Lat 36°18'26", long 95°41'52", SE 1/4 SW 1/4 sec.10, T.21 N., R.15 E., Rogers County, Hydrologic Unit 11070105, near left bank on downstream side of pier of bridge on State Highway 20, 2.3 mi (3.7 km) downstream from Caney River, 4.5 mi (7.2 km) west of Claremore, 12.4 mi (20.0 km) upstream from Bird Creek, and at mile 76.0 (122.3 km).

DRAINAGE AREA.--6,534 mi² (16,923 km²).

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 538.62 ft (164.171 m), National Geodetic Vertical Datum of 1929. Prior to Feb. 24, 1939, and May 17 to Aug. 24, 1967, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since May 1963 to Oologah Lake 14.3 mi (23.0 km) upstream (station 07171300); some regulation by dams in Kansas since 1949 and by Hulah Lake since 1950 (station 07172500).

COOPERATION.--Gage-height record and 12 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Oologah Lake) 27 years (water years 1936-62), 3,723 ft³/s (105.4 m³/s), 2,695,000 acre-ft/yr (3.32 km³/yr); (since regulation by Oologah Lake) 18 years (water years 1965-82), 3,722 ft³/s (105.4 m³/s), 2,697,000 acre-ft/yr (3.33 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 182,000 ft³/s (5,150 m³/s) May 21, 1943, gage height, 55.05 ft (16.779 m); no flow at times in 1936, 1939-40, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,700 ft³/s (643 m³/s) July 1, gage height, 22.30 ft (6.797 m); minimum daily discharge, 18 ft³/s (0.51 m³/s) Sept. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	3360	2160	517	5000	5040	826	204	12200	21200	5800	102
2	26	3830	3300	517	4000	899	831	190	16100	16500	5780	107
3	35	10300	3190	645	3000	642	652	182	14100	15900	5770	61
4	35	5940	3180	801	3000	463	652	180	8370	14700	5760	29
5	35	4800	3130	624	3230	437	662	185	10300	14300	5740	20
6	35	6560	3100	755	3070	433	666	537	16200	13300	4480	19
7	35	6420	2550	1560	2980	426	659	2600	18000	11000	2300	19
8	35	6350	1620	1490	3150	418	637	1870	18300	9740	2300	18
9	35	7580	1610	1470	3090	791	569	1570	19100	6670	2280	69
10	35	7870	1430	1440	2800	2790	520	1430	19900	5360	2260	54
11	35	5880	1010	1430	3100	2720	500	1340	21000	5300	2240	49
12	35	5400	748	1440	4040	2280	498	4390	21900	4510	1790	50
13	41	5050	659	1440	5230	1290	499	9440	20900	2460	412	52
14	55	4690	624	1440	5340	2140	494	7370	18700	2070	176	58
15	59	4430	617	1140	5910	7740	493	5210	17900	2030	138	360
16	110	3100	617	650	6090	9520	484	4640	17900	1910	127	276
17	86	1270	617	625	5900	11200	478	6370	17600	1880	122	210
18	60	1250	603	625	5660	12300	467	10400	18400	1870	123	128
19	277	1160	603	624	6070	13000	427	10100	19300	1860	125	104
20	1160	938	596	610	7280	10900	213	7730	19600	1860	125	97
21	1070	824	596	610	5910	9940	203	8360	19500	1850	120	100
22	1050	817	590	567	710	9500	198	8630	19500	1850	113	105
23	1090	755	590	501	1980	9320	187	7140	19900	1840	112	104
24	1100	603	590	600	6860	8230	187	6590	20200	1840	108	104
25	1040	556	583	600	6370	7070	188	7600	19700	1840	114	101
26	1040	450	576	600	5340	4640	192	9390	19000	1830	113	102
27	912	505	569	600	5340	1330	204	10400	18400	1820	113	97
28	633	433	569	600	5320	1250	190	12000	19000	1820	118	95
29	526	439	563	600	---	1080	195	12300	18700	2580	125	98
30	287	732	543	1000	---	820	207	11500	20200	6070	126	99
31	3900	---	530	2500	---	817	---	10200	---	5860	106	---
TOTAL	14660.0	102292	38263	28621	125770	139426	13178	180048	539870	183620	49116	2887
MEAN	473	3410	1234	923	4492	4498	439	5808	18000	5923	1584	96.2
MAX	3900	10300	3300	2500	7280	13000	831	12300	21900	21200	5800	360
MIN	2.5	433	530	501	710	418	187	180	8370	1820	106	18
AC-FT	29080	202900	75890	56770	249500	276600	26140	357100	1071000	364200	97420	5730
CAL YR 1981	TOTAL	284147.0	MEAN	778	MAX	10300	MIN	2.5	AC-FT	563600		
WTR YR 1982	TOTAL	1402055.0	MEAN	3884	MAX	21900	MIN	2.5	AC-FT	2812000		

ARKANSAS RIVER BASIN

07176460 BIRCH LAKE NEAR BARNSDALL, OK

LOCATION.--Lat 36°32'05", long 96°09'45", in NW 1/4 NE 1/4 sec.30, T.24 N., R.11 E., Osage County, Hydrologic Unit 11070107, 450 ft (137 m) north of dam on Birch Creek, 1.5 mi (2.4 km) south of Barnsdall and at mile 0.8 (1.3 km).

DRAINAGE AREA.--66.0 mi² (170.9 km²).

PERIOD OF RECORD.--March 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to May 31, 1977 nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam with uncontrolled concrete spillway. Storage began Mar. 18, 1977; conservation pool was first filled Mar. 23, 1978. The outlet work is a gated intake structure. Capacity, 58,180 acre-ft (71.7 hm³) at elevation 774.0 ft (235.92 m), crest of uncontrolled spillway and 19,180 acre-ft (23.7 hm³) at elevation 750.5 ft (228.75 m), top of conservation pool. Dead storage, 3,360 acre-ft (4.14 hm³) below elevation 730.0 ft (222.50 m). Figures given herein represent total contents. Reservoir is used for flood control, water supply, water quality, recreation, and fish and wildlife.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 25,240 acre-ft (31.1 hm³) May 22, 1978, elevation, 755.48 ft (230.270 m); minimum since conservation pool was first filled, 13,080 acre-ft (16.1 hm³) Oct. 26-29, 1977, elevation, 744.68 ft (226.868 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 24,740 acre-ft (30.5 hm³) May 28, elevation, 755.09 ft (230.151 m), minimum, 17,300 acre-ft (21.3 hm³) Sept. 30, elevation, 748.81 ft (228.237 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

749	17,510	752	20,920
750	18,620	754	23,350
751	19,750	755	24,620

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17780	17800	19500	19180	20920	19320	19070	18680	21820	19510	18690	18060
2	17760	17820	19510	19180	20970	19320	19070	18680	20910	19490	18660	18010
3	17730	17820	19510	19190	20650	19240	19030	18680	20540	19450	18630	17980
4	17710	17840	19500	19190	20210	19230	19010	18670	20220	19440	19570	17950
5	17690	17860	19480	19180	20070	19230	18980	18670	19720	19400	18540	17910
6	17670	17860	19480	19160	19710	19210	18940	19190	19180	19440	18510	17890
7	17650	17840	19470	19160	19390	19200	18940	19240	18950	19430	18540	17870
8	17630	18920	19450	19160	19230	19200	18950	19270	18940	19420	18560	17850
9	17670	19160	19440	19150	19190	19200	18930	19250	18890	19410	18560	17820
10	17600	19240	19420	19090	19150	19210	18920	19250	18860	19370	18550	17780
11	17590	19280	19420	19100	19120	19210	18910	19250	19820	19350	18530	17750
12	17650	19310	19410	19100	19140	19200	18900	21990	19940	19330	18530	17730
13	17710	19290	19400	19090	19140	19170	18890	22320	19980	19310	18490	17710
14	17720	19280	19400	19060	19260	20970	18870	22190	19960	19260	18500	17670
15	17740	19280	19370	19070	19370	21140	18890	21720	19830	19240	18470	17650
16	17740	19290	19360	19060	19430	21000	18850	21360	19650	19200	18450	17620
17	17750	19290	19330	19040	19440	20580	18820	23830	19580	19170	18440	17600
18	17710	19310	19330	19040	19450	20150	18800	23450	19580	19120	18430	17600
19	17680	19250	19310	19030	19450	19830	18780	22990	19560	19090	18400	17600
20	17650	19240	19290	19030	19470	19620	18750	22840	19550	19100	18370	17550
21	17640	19230	19290	19030	19430	19510	18710	22520	19520	19090	18360	17540
22	17630	19210	19290	19080	19420	19280	18690	21990	19510	19040	18350	17510
23	17600	19210	19290	19030	19430	19260	18670	21580	19490	19000	18310	17480
24	17550	19180	19280	19030	19400	19240	18650	22060	19490	18970	18270	17450
25	17560	19190	19260	19020	19360	19200	18660	23320	19480	18930	18220	17420
26	17560	19160	19260	19020	19360	19180	18660	23940	19480	18900	18210	17400
27	17550	19140	19240	19000	19350	19160	18660	24030	19580	18850	18180	17360
28	17540	19120	19240	18980	19350	19140	18680	24520	19580	18820	18170	17350
29	17540	19110	19230	18970	---	19150	18680	23620	19570	18780	18140	17330
30	17530	19500	19200	20450	---	19090	18680	22660	19530	18750	18140	17300
31	17690	---	19200	20890	---	19080	---	22800	---	18730	18100	---
MAX	17780	19500	19510	20890	20970	21140	19070	24520	21820	19510	19570	18060
MIN	17530	17800	19200	18970	19120	19080	18650	18670	18860	18730	18100	17300
†	749.17	750.78	750.52	751.60	750.65	750.41	750.06	753.55	750.81	750.10	749.54	748.81
††	-110	+1,810	-300	+1,690	-1,540	-270	-400	+4,120	-3,270	-800	-630	-800

CAL YR 1981 MAX 19890 MIN 15750, †† +3,010
WTR YR 1982 MAX 24520 MIN 17300, †† -500

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07176465 BIRCH CREEK BELOW BIRCH LAKE NEAR BARNSDALL, OK

LOCATION.--Lat 36°32'08", long 96°09'38", NW 1/4 NE 1/4 sec.30, T.24 N., R.11 E., Osage County, Hydrologic Unit 11070107, 300 ft (91 m) downstream from Birch Dam, 1.5 mi (2.4 km) south of Barnsdall, and at mile 0.7 (1.1 km).

DRAINAGE AREA.--66.0 mi² (179.9 km²).

PERIOD OF RECORD.--February 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 690.00 ft (210.312 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow completely regulated since March 1977 by Birch Lake (station 07176460).

COOPERATION.--Gage-height record and 13 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--5 years, 21.8 ft³/s (0.617 m³/s), 15,790 acre-ft/yr (19.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 623 ft³/s (17.6 m³/s) May 22-24, 1978, gage height, 9.53 ft (2.905 m); no flow at times in 1977, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 527 ft³/s (14.9 m³/s) May 28, gage height, 9.15 ft (2.789 m); No flow Nov. 16-18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.6	2.7	3.0	3.0	8.4	9.3	3.0	517	5.7	6.4	2.6
2	1.0	1.6	2.7	3.0	38	8.4	9.3	3.0	517	5.7	6.1	2.6
3	2.0	1.6	2.7	2.7	89	8.4	9.3	3.0	362	5.7	5.0	2.5
4	1.1	1.6	3.0	2.7	89	8.4	9.3	2.8	250	5.6	4.1	2.6
5	1.6	2.0	3.0	3.0	89	8.9	5.0	2.9	250	5.7	3.2	2.4
6	2.3	2.7	3.0	3.0	89	8.9	3.0	4.1	250	5.7	2.5	2.4
7	2.3	2.4	3.0	3.2	89	8.4	3.2	2.9	88	5.7	2.5	2.3
8	2.4	2.4	3.0	3.2	45	8.0	3.2	2.7	30	5.7	2.2	2.3
9	2.7	3.0	3.0	3.0	16	7.6	3.2	2.8	15	5.7	2.2	2.3
10	3.5	2.9	3.0	3.2	16	7.6	3.2	3.0	13	5.7	2.0	2.3
11	3.8	2.7	3.2	3.2	16	7.6	3.2	3.0	8.6	5.7	1.8	2.7
12	4.1	2.7	3.0	3.2	16	7.6	3.3	6.4	2.6	8.7	1.8	3.3
13	3.5	2.7	2.7	3.5	17	7.6	3.6	4.4	2.0	9.9	1.6	3.7
14	3.2	2.9	3.2	3.5	17	7.6	3.5	118	44	9.2	1.6	2.1
15	4.0	2.9	3.0	3.5	17	6.4	3.8	285	97	8.9	1.4	2.2
16	5.1	.00	3.0	3.5	17	6.1	3.8	285	97	9.3	1.4	2.3
17	7.8	.00	3.0	3.5	17	124	4.2	285	41	8.9	1.8	2.2
18	8.9	.00	3.0	3.5	17	232	4.7	285	5.8	8.3	2.1	2.2
19	8.0	.03	2.7	3.5	18	183	4.5	285	5.4	8.4	2.1	1.9
20	6.4	.59	2.7	3.5	18	121	3.6	285	5.4	6.8	2.1	1.9
21	6.4	2.7	2.7	3.5	19	121	3.1	285	5.4	6.8	2.3	1.9
22	6.4	2.7	2.5	3.5	21	61	2.7	255	5.4	8.0	2.2	2.1
23	5.9	2.7	3.0	3.5	15	14	2.7	285	5.3	8.4	2.4	2.0
24	1.6	2.7	3.2	3.5	12	12	2.7	285	5.1	8.4	2.4	2.3
25	1.8	2.5	3.0	3.5	8.4	9.3	3.1	110	5.4	8.4	2.4	2.5
26	1.8	2.5	3.2	3.5	8.4	9.3	3.1	10	5.4	8.4	2.4	2.5
27	1.6	2.5	3.2	3.5	8.4	9.3	3.0	125	5.7	8.4	2.5	2.7
28	1.6	2.5	3.0	3.5	8.4	9.3	3.1	362	5.7	7.9	2.5	2.0
29	1.6	2.5	3.0	3.5	---	9.3	3.1	526	5.7	7.2	2.5	2.4
30	1.6	2.7	3.0	2.7	---	9.3	3.0	518	5.7	7.2	2.5	2.6
31	1.6	---	3.0	2.5	---	9.3	---	517	---	7.2	2.5	---
TOTAL	107.2	62.32	91.4	101.1	833.6	1059.0	125.8	5150.0	2655.6	227.3	80.5	71.8
MEAN	3.46	2.08	2.95	3.26	29.8	34.2	4.19	166	88.5	7.33	2.60	2.39
MAX	8.9	3.0	3.2	3.5	89	232	9.3	526	517	9.9	6.4	3.7
MIN	1.0	.00	2.5	2.5	3.0	6.1	2.7	2.7	2.0	5.6	1.4	1.9
AC-FT	213	124	181	201	1650	2100	250	10220	5270	451	160	142
CAL YR 1981	TOTAL	1460.02	MEAN	4.00	MAX	78	MIN	.00	AC-FT	2900		
WTR YR 1982	TOTAL	10565.62	MEAN	28.9	MAX	526	MIN	.00	AC-FT	20960		

ARKANSAS RIVER BASIN

07176500 BIRD CREEK NEAR AVANT, OK

LOCATION.--Lat 36°29'12", long 96°03'50", in NW 1/4 sec.7, T.23 N., R.12 E., Osage County, Hydrologic Unit 11070107, 150 ft (45.7 m) upstream from county road bridge at Avant, 1.5 mi (2.4 km) upstream from Candy Creek, and at mile 54.2 (87.2 km).

DRAINAGE AREA.--364 mi² (943 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 651.28 ft (198.510 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversions above station for municipal water supply of cities of Pawhuska and Barnsdall.

COOPERATION.--Gage-height record and 13 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--37 years, 192 ft³/s (5.437 m³/s), 139,100 acre-ft/yr (172 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 32,400 ft³/s (918 m³/s), Oct. 2, 1959, gage height, 31.40 ft (9.571 m); maximum gage height, 32.03 ft (9.763 m) Mar. 11, 1974; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 17	1800	*11,700 331	*16.75 5.105	June 11	2100	6,850 194	8.95 2.728
May 25	1200	10,700 303	15.20 4.633				

Minimum daily discharge, 1.4 ft³/s (0.040 m³/s) Oct 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	266	167	5.8	316	18	37	23	1600	77	10	7.6
2	2.5	291	81	5.8	191	16	36	24	991	57	9.8	7.7
3	2.1	50	52	7.2	278	18	32	19	879	47	9.3	5.9
4	1.5	13	30	7.2	254	18	24	14	885	37	9.3	5.3
5	1.4	6.8	17	7.4	221	14	26	13	634	30	9.1	5.0
6	1.5	4.2	13	7.7	206	13	18	540	521	27	7.8	4.7
7	1.5	2.8	9.9	9.2	191	13	14	222	379	36	6.8	4.4
8	1.6	842	8.2	8.3	181	13	16	108	150	43	6.7	4.3
9	1.8	1690	7.5	8.6	59	11	14	64	127	67	26	4.3
10	2.1	346	6.5	7.9	47	11	12	37	103	49	20	4.3
11	2.6	135	6.3	9.1	44	10	13	22	2500	38	13	4.3
12	9.2	73	6.8	10	47	10	14	3680	1850	31	9.4	4.3
13	8.3	46	6.8	9.4	52	10	17	2800	507	26	10	4.6
14	7.9	32	6.8	9.2	172	2210	15	771	312	23	12	6.1
15	10	24	6.0	9.3	559	1450	14	692	276	20	9.6	7.4
16	10	17	5.7	9.0	395	1740	14	541	256	19	8.1	6.7
17	8.5	12	6.1	9.0	227	670	11	8340	214	17	7.3	6.7
18	8.8	8.9	5.8	8.9	159	447	9.1	2370	102	15	6.9	6.7
19	9.7	8.2	5.8	8.7	114	382	8.6	923	128	14	6.7	6.7
20	10	6.9	5.6	8.7	99	247	8.3	1030	142	26	6.5	6.4
21	11	5.5	5.8	8.7	76	216	7.5	2220	104	26	6.8	5.8
22	21	5.4	6.5	11	64	182	6.8	994	74	17	7.3	5.3
23	20	6.7	6.8	10	49	81	6.5	688	64	19	6.9	4.8
24	22	6.7	6.7	10	37	68	5.8	2280	58	20	6.3	4.7
25	26	6.6	6.4	10	33	61	6.7	8520	52	20	5.1	4.2
26	21	6.3	6.3	10	26	52	7.8	2010	59	18	4.7	3.9
27	17	5.8	6.5	12	24	49	8.6	2120	641	20	4.7	3.6
28	15	5.8	6.6	11	20	45	15	2750	356	25	5.0	3.2
29	14	6.1	6.9	10	---	44	20	1640	167	19	6.3	3.4
30	14	211	6.5	2430	---	45	20	1060	104	16	7.0	3.8
31	96	---	5.8	1160	---	44	---	3390	---	14	7.1	---
TOTAL	381.0	4140.7	524.6	3849.1	4141	8208	457.7	49905	14235	913	271.5	156.1
MEAN	12.3	138	16.9	124	148	265	15.3	1610	475	29.5	8.76	5.20
MAX	96	1690	167	2430	559	2210	37	8520	2500	77	26	7.7
MIN	1.4	2.8	5.6	5.8	20	10	5.8	13	52	14	4.7	3.2
AC-FT	756	8210	1040	7630	8210	16280	908	98990	28240	1810	539	310
CAL YR 1981	TOTAL	20474.7	MEAN	56.1	MAX	3920	MIN	1.4	AC-FT	40610		
WTR YR 1982	TOTAL	87182.7	MEAN	239	MAX	8520	MIN	1.4	AC-FT	172900		

ARKANSAS RIVER BASIN

07177500 BIRD CREEK NEAR SPERRY, OK

LOCATION.--Lat 36°16'42", long 95°57'14", in NW 1/4 NW 1/4 sec.29, T.21 N., R.13 E., Tulsa County, Hydrologic Unit 11070107, on downstream side of right pier of county road bridge, 1.5 mi (2.4 km) upstream from Delaware Creek, 2.4 mi (3.9 km) downstream from Hominy Creek, 2.5 mi (4.0 km) southeast of Sperry, and at mile 25.0 (40.2 km).

DRAINAGE AREA.--905 mi² (2,344 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1921: 1943.

GAGE.--Water-stage recorder. Datum of gage is 579.43 ft (176.610 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

COOPERATION.--Gage-height record and 14 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--44 years, 479 ft³/s (13.56 m³/s), 347,000 acre-ft/yr (428 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 90,000 ft³/s (2,550 m³/s) Oct. 3, 1959, gage height, 32.60 ft (9.936 m), from rating curve extended above 49,000 ft³/s (1,390 m³/s); no flow at times in 1939, 1954-57, 1964-66, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1943, reached a stage of 31.68 ft (9.656 m), discharge 72,200 ft³/s (2,040 m³/s). Flood in 1915 reached a stage similar to flood of Oct. 31, 1941, 30.14 ft (9.187 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,830 ft³/s (278 m³/s) May 26, gage height, 21.71 ft (6.617 m), no peak above base of 11,000 ft³/s (312 m³/s); minimum daily discharge, 1.1 ft³/s (0.031 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	1300	592	23	2750	63	81	22	4820	165	59	9.2
2	1.4	1020	296	22	1120	58	70	25	1720	127	37	10
3	1.1	436	152	30	540	57	63	25	1330	99	24	12
4	1.2	219	132	54	495	55	60	23	3330	82	18	12
5	1.5	120	93	38	386	52	51	20	1620	69	17	9.8
6	1.4	116	67	31	360	41	46	567	947	62	17	9.3
7	1.3	105	56	26	300	37	40	1410	710	196	17	8.7
8	1.3	156	47	25	267	49	36	446	415	82	15	7.5
9	1.2	5020	41	24	206	47	34	244	277	86	14	7.2
10	1.2	2920	56	17	101	46	33	171	213	93	18	7.2
11	1.2	982	44	11	83	48	31	122	1500	73	26	6.8
12	7.6	331	34	13	167	49	30	4430	5240	61	22	5.8
13	16	225	30	15	125	68	30	8840	2180	54	19	9.5
14	17	163	29	18	333	2560	30	4860	781	47	17	11
15	12	137	27	21	1300	5140	30	2880	681	41	16	31
16	13	107	27	15	1360	2860	25	1800	504	37	17	16
17	24	63	26	17	753	1630	19	5010	382	33	15	13
18	43	44	25	20	457	801	20	9080	287	30	12	11
19	27	33	24	23	326	631	19	4890	283	26	12	10
20	12	43	22	28	246	474	17	2490	394	46	12	10
21	8.7	83	22	33	198	364	16	3850	219	33	12	10
22	7.9	38	22	46	166	311	15	2650	159	34	12	10
23	8.7	36	23	98	142	241	13	1190	130	27	12	9.7
24	8.7	32	23	63	115	152	11	1320	137	24	38	9.1
25	10	30	24	51	92	130	9.5	7350	580	25	15	8.0
26	14	28	24	46	82	117	9.2	8900	350	27	12	7.9
27	14	27	24	41	75	107	10	5420	180	24	10	7.8
28	13	26	24	38	69	103	13	5890	1050	58	8.7	6.9
29	10	26	24	37	---	93	15	5660	457	84	8.4	6.1
30	8.9	181	24	3230	---	89	17	3580	243	116	8.7	5.8
31	1670	---	23	6600	---	86	---	4540	---	100	8.7	---
TOTAL	1960.3	14047	2077	10754	12614	16559	893.7	97705	31119	2061	549.5	298.3
MEAN	63.2	468	67.0	347	451	534	29.8	3152	1037	66.5	17.7	9.94
MAX	1670	5020	592	6600	2750	5140	81	9080	5240	196	59	31
MIN	1.1	26	22	11	69	37	9.2	20	130	24	8.4	5.8
AC-FT	3890	27860	4120	21330	25020	32840	1770	193800	61720	4090	1090	592
CAL YR 1981	TOTAL	45534.7	MEAN	125	MAX	5020	MIN	1.1	AC-FT	90320		
WTR YR 1982	TOTAL	190637.8	MEAN	522	MAX	9080	MIN	1.1	AC-FT	378100		

ARKANSAS RIVER BASIN

07178050 BIRD CREEK NEAR CATOOSA, OK

LOCATION.--Lat 36°14'21", long 95°50'52", in NW 1/4 SW 1/4 sec.5, T.20 N., R.14 E., Tulsa County, Hydrologic Unit 11070107, at bridge on U.S. Highway 75, approximately 5.5 mi (8.8 km) northwest of Catoosa.

DRAINAGE AREA.--1,080 mi² (2,797 km²).

PERIOD OF RECORD.--Water years 1965 to current year.

REMARKS.--Samples were collected on a monthly basis and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CAC03)	NESS NONCARBONATE (MG/L AS CAC03)	CALCIUM DISSOLVED (MG/ AS C)
OCT 07...	1230	80020	642	7.6	21.0	11	4.4	50	150	2	48
NOV 09...	1400	80020	340	7.9	11.0	400	7.8	72	78	25	22
DEC 03...	1200	80020	540	7.7	9.5	35	10.5	95	140	59	42
JAN 29...	1100	80020	890	7.4	8.0	10	9.5	82	220	80	65
FEB 10...	1100	80020	680	7.5	2.5	33	13.9	104	190	65	56
MAR 08...	1230	80020	880	7.4	10.5	6.5	10.6	97	220	60	65
APR 06...	1200	80020	700	7.2	14.0	14	7.4	73	190	52	57
JUL 27...	1045	80020	647	6.9	29.5	2.6	4.0	53	180	37	52
AUG 12...	1200	80020	539	7.1	27.5	14	6.0	77	150	42	44
SEP 02...	1220	80020	483	7.2	28.0	26	4.6	61	140	41	46

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CAC03)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)
OCT 07...	7.7	47	38	2	10	150	59	45	351	.48
NOV 09...	5.7	30	44	2	4.3	54	6.0	60	200	.27
DEC 03...	9.1	44	39	2	5.0	84	31	81	305	.41
JAN 29...	14	82	44	3	6.6	140	71	140	491	.67
FEB 10...	11	52	37	2	6.3	120	61	78	352	.48
MAR 08...	14	75	42	2	6.2	160	79	120	474	.64
APR 06...	12	57	38	2	6.7	140	64	78	399	.54
JUL 27...	11	58	41	2	6.5	138	42	79	371	.50
AUG 12...	8.6	46	39	2	7.5	104	45	63	--	.52
SEP 02...	7.2	37	34	1	7.3	104	50	47	296	.40

ARKANSAS RIVER BASIN

07178620 VERDIGRIS RIVER NEAR INOLA, OK
(National stream-quality accounting network station)

LOCATION.--Lat 36°09'43", long 95°37'07", in NW 1/4 NW 1/4 sec.4, T.9 N., R.16 E., Rogers County, Hydrologic Unit 11070105, at bridge on State Highway 33, 6.0 mi (9.6 km) west of Inola, and at navigation channel mile 36.6 (58.9 km).

DRAINAGE AREA.--7,911 mi² (20,489 km²).

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1971 to September 1976.

WATER TEMPERATURE: December 1971 to September 1976.

REMARKS.--Samples were collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	SPECIFIC CONDUCTANCE (UMHOS)	pH (STANDARD UNITS)	TEMPERATURE (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS (MG/L AS CACO3)	NONCARBONATE (MG/L AS CACO3)
OCT 28...	1100	80020	546	7.6	14.0	15	9.2	91	430	>1000	190	60
DEC 01...	1400	80020	384	7.0	9.5	38	9.3	84	>600	K5300	150	54
FEB 08...	1430	80020	468	8.2	1.0	26	14.9	107	210	150	180	65
APR 21...	1500	80020	538	8.6	17.0	7.9	10.2	106	K140	80	180	49
JUN 30...	1500	80020	324	7.7	25.0	90	7.8	98	170	430	130	26
AUG 11...	1330	80020	326	7.5	28.5	25	7.0	92	K36	31	140	40

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT 28...	58	11	32	26	1	4.2	130	71	48	.30	1.7	308
DEC 01...	44	8.6	21	23	.8	4.7	92	43	54	.20	5.6	231
FEB 08...	52	11	29	26	1	3.6	110	60	44	.20	4.0	283
APR 21...	55	10	33	28	1	3.9	130	54	50	.30	.5	298
JUN 30...	42	6.6	14	18	.6	3.5	106	30	20	.20	7.5	203
AUG 11...	45	6.9	14	17	.5	3.9	101	34	22	.20	6.7	238

ARKANSAS RIVER BASIN

07178620 VERDIGRIS RIVER NEAR INOLA, OK--Continued
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO ₂ +NO ₃ DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH ₄)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS P0 ₄)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTH0, DIS- SOLVED (MG/L AS P0 ₄)	PHOS- PHATE, ORTH0, DIS- SOLVED (MG/L AS P0 ₄)	ARSENIC TOTAL (UG/L AS AS)
OCT 28...	310	.42	.430	.280	.36	1.4	.210	.64	.220	.130	.40	2
DEC 01...	240	.31	1.10	.420	.54	1.5	.280	.86	.220	.250	.77	--
FEB 08...	270	.38	.570	.240	.31	.95	.100	.31	.070	.070	.21	1
APR 21...	290	.41	.920	<.060	.08	1.1	.240	.74	.200	.170	.52	--
JUN 30...	190	.28	.480	<.070	.09	1.5	.230	.71	.100	.070	.21	2
AUG 11...	190	.32	.400	.080	.10	.90	.090	.28	.090	.050	.15	2

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)
OCT 28...	1	1	100	.00	90	4	<1	10	10	.00	1	<3
DEC 01...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 08...	0	1	100	.00	80	1	<1	90	--	<10	2	<3
APR 21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 30...	1	1	200	100	74	2	<1	10	--	<10	4	<1
AUG 11...	1	1	100	.00	72	<1	<1	10	--	<10	<1	<1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT 28...	9	7	2	1400	--	<10	36	35	1	70	60	6
DEC 01...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 08...	12	9	3	1500	1400	58	4	0	18	70	40	27
APR 21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 30...	11	5	6	5200	5200	31	5	--	<1	210	200	14
AUG 11...	2	0	3	1300	1300	9	16	13	3	110	110	3

ARKANSAS RIVER BASIN

07178620 VERDIGRIS RIVER NEAR INOLA, OK--Continued
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HEPTA- CHLOR, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
OCT 28...	--	.0	--	.0	--	.0	--	--	.0	--	--	--
DEC 01...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 08...	--	--	--	--	--	--	--	--	--	--	--	--
APR 21...	<.010	<.1	<.010	<.1	.010	<.1	<.01	<.01	<.1	<.01	<.01	<.01
JUN 30...	<.010	--	<.010	--	<.010	--	<.01	<.01	--	<.01	<.01	<.01
AUG 11...	--	--	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION, TOTAL (UG/L)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)
OCT 28...	.0	--	.00	--	--	.00	--	--	--
DEC 01...	--	--	--	--	--	--	--	--	--
FEB 08...	--	--	--	--	--	--	--	--	--
APR 21...	<.1	<.01	<1.00	<.1	<1	<10	<.01	.16	<.01
JUN 30...	--	<.01	--	<.1	<1	--	<.01	.14	<.01
AUG 11...	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 28...	--	--	31	66
DEC 01...	--	--	65	97
FEB 08...	--	--	36	96
APR 21...	<.01	<.01	20	94
JUN 30...	.02	.01	226	90
AUG 11...	--	--	40	92

ARKANSAS RIVER BASIN

07185000 NEOSHO RIVER NEAR COMMERCE, OK

LOCATION.--Lat 36°55'43", long 94°57'26", in SW 1/4 SE 1/4 sec.5, T.28 N., R.22 E., Ottawa County, Hydrologic Unit 11070206, on downstream side of left pier of county road bridge, 1.3 mi (2.1 km) upstream from Mud Creek, 2.2 mi (3.5 km) downstream from Four Mile Creek, 4.5 mi (7.2 km) west of Commerce, and at mile 153.4 (246.8 km).

DRAINAGE AREA.--5,876 mi² (15,219 km²).

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

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 748.97 ft (228.286 m) Corps of Engineers datum.

REMARKS.--Records fair. Flow regulated to some extent since 1963 by John Redmond Reservoir in Kansas, 190 mi (360 km) upstream.

AVERAGE DISCHARGE.--43 years, 3,456 ft³/s (97.87 m³/s), 2,504,000 acre-ft/yr (3.09 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 267,000 ft³/s (7,560 m³/s) July 15, 1951, computed by flood-routing methods from hydrograph defined at Miami, mile 144.2 (232.0 km), by several discharge measurements, gage-height record, and by comparison with computed inflow into Lake O' The Cherokees; maximum gage height, 34.03 ft (10.327 m) July 16, 1951, from floodmark; no flow at times in 1953-54, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 20,000 ft³/s (566 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Jan. 31	1400	22,000 623	15.39 4.691	June 6	2300	*33,800 957	*18.98 5.785
Mar. 15	2300	24,300 688	16.46 5.017	June 12	1300	21,100 598	14.88 4.535
May 27	0900	22,000 623	15.39 4.691				

Minimum daily discharge 82 ft³/s (2.32 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	109	9400	5060	2860	19700	2890	963	350	24600	6580	978	237
2	104	11600	8540	2810	7740	2000	870	440	25200	7910	492	180
3	95	9450	6720	2200	4340	1700	2650	500	27900	9570	319	149
4	89	5760	5800	2220	6540	1500	3870	540	31600	6370	231	133
5	89	8320	5790	2360	6000	1400	3100	520	33000	4550	172	117
6	96	10200	3510	2260	5600	1300	2680	693	33500	3890	142	108
7	97	10800	2170	1610	5000	1250	2500	2070	30400	3700	131	160
8	99	10800	1860	800	4700	1200	1970	1330	14800	3760	127	174
9	102	10600	1760	500	4300	1150	1190	1570	10100	3930	1370	144
10	106	10600	1390	450	4000	1100	694	1390	10900	3870	2290	116
11	103	9010	1010	420	3900	1050	523	1070	13900	3700	1140	96
12	115	9460	920	425	3800	1020	477	1040	20600	2020	718	86
13	141	10100	895	425	3700	1000	460	2690	17800	988	943	83
14	170	10100	1000	400	3600	7800	426	6360	12700	803	781	93
15	548	8910	1330	418	6000	20900	398	8770	9080	1450	2780	137
16	3030	5280	1390	542	10000	23800	401	8680	8440	2690	1790	250
17	6340	4370	1620	563	11000	17800	636	10000	8170	5250	1000	165
18	15500	4050	1780	566	8260	13200	674	11600	9420	2240	672	141
19	14100	2910	1550	566	7300	8000	499	14400	10600	1590	542	129
20	4390	2380	1380	558	8120	6130	366	14500	10800	1590	588	124
21	1800	1660	1270	549	8500	4940	316	13100	10400	1500	631	121
22	2290	1260	1250	716	9040	3420	314	13000	10200	1430	643	105
23	2780	1170	1470	1880	8910	2960	300	12700	11500	1350	481	86
24	3880	1140	2060	1390	8540	2790	293	9400	10800	968	347	86
25	3640	1220	2300	966	8060	2670	291	12800	11000	629	280	87
26	1960	1230	2320	1030	6870	2580	349	18400	11200	513	260	85
27	1120	1210	2290	789	4930	1910	372	21400	10200	404	254	85
28	968	1190	2270	724	4210	1440	328	15700	17200	294	303	86
29	892	1170	2230	658	---	1220	286	12900	11000	246	787	85
30	649	2050	2330	11900	---	1060	257	16000	7720	310	610	82
31	2240	---	2810	21500	---	1020	---	21000	---	1300	364	---
TOTAL	67642	177400	78075	65055	192660	142200	28453	254913	474730	85395	22166	3730
MEAN	2182	5913	2519	2099	6881	4587	948	8223	15820	2755	715	124
MAX	15500	11600	8540	21500	19700	23800	3870	21400	33500	9570	2780	250
MIN	89	1140	895	400	3600	1000	257	350	7720	246	127	82
AC-FT	134200	351900	154900	129000	382100	282100	56440	505600	941600	169400	43970	7400
CAL YR 1981	TOTAL	689935	MEAN	1890	MAX	15500	MIN	11	AC-FT	1368000		
WTR YR 1982	TOTAL	1592419	MEAN	4363	MAX	33500	MIN	82	AC-FT	3159000		

ARKANSAS RIVER BASIN

07185100 TAR CREEK AT MIAMI, OK

LOCATION.--Lat 36°52'56", long 94°51'43", in SE 1/4 SE 1/4 sec.30, T.28 N., R.23 E., Ottawa County, Hydrologic Unit 11070206, near right downstream abutment of Central street bridge of Miami, 0.6 mi (1.0 km) northwest of intersection of I-44 and State Highway 10.

DRAINAGE AREA.--52 mi² (134.7 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 743.85 ft (226.725 m), Corps of Engineers datum.

REMARKS.--Records good below 200 ft³/s (5.66 m³/s), and fair above.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,030 ft³/s (85.8 m³/s) Jan. 30, 1982, gage height 10.91 ft (3.325 m), maximum gage height, 11.77 ft (3.587 m) June 7, 1982 (backwater from Neosho River); minimum daily discharge, 0.12 ft³/s (0.003 m³/s) Oct. 14, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,030 ft³/s (85.7 m³/s) Jan. 30, gage height, 10.91 ft (3.325 m), maximum gage height, 11.77 ft (3.587 m) June 7, (backwater from Neosho River); minimum daily discharge, 0.24 ft³/s (0.007 m³/s) Sept. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.63	753	123	6.4	123	11	8.4	9.3	200	11	3.0	.33
2	1.5	141	47	8.0	58	11	13	8.5	90	9.3	3.3	.29
3	.63	68	29	43	44	11	14	7.8	110	7.8	2.8	.24
4	.64	151	20	69	34	11	10	7.9	300	6.8	2.2	.51
5	.74	88	16	48	29	10	9.0	12	200	6.1	2.3	.35
6	.46	54	15	30	26	9.7	8.0	17	100	5.6	2.1	.28
7	.47	39	13	20	20	11	7.5	17	45	5.0	2.1	.38
8	1.1	31	12	15	19	9.7	9.1	13	14	4.8	2.2	.58
9	1.1	53	12	14	16	8.7	8.2	10	12	4.6	1.9	.53
10	.84	59	11	13	15	8.7	8.1	9.4	11	4.4	1.8	.36
11	.85	39	10	9.9	15	8.7	7.7	10	10	4.2	8.7	.37
12	10	30	9.6	9.3	17	8.9	7.8	148	200	4.6	3.3	.52
13	19	24	9.0	8.4	18	10	7.8	362	150	4.8	3.0	.35
14	22	20	8.7	7.6	32	617	7.3	570	105	4.2	2.3	.44
15	202	19	8.1	7.6	61	200	7.5	229	84	3.8	1.8	.43
16	96	18	7.4	16	55	100	9.1	127	75	3.3	1.6	.46
17	197	16	6.3	9.3	49	45	6.6	239	60	2.9	1.5	.44
18	147	15	5.3	7.6	38	31	5.6	86	35	2.5	1.1	.37
19	57	13	5.1	7.3	31	25	5.8	55	22	2.2	.61	.46
20	33	12	5.2	6.8	26	21	6.6	43	15	2.1	.60	.46
21	20	11	5.7	8.0	23	17	5.7	34	12	2.0	.56	.52
22	100	11	15	99	21	14	5.0	25	11	2.3	.42	.42
23	78	11	21	95	19	15	4.8	21	10	2.3	.33	.41
24	42	9.9	15	43	16	13	4.4	35	9.4	2.0	.37	.94
25	26	11	14	28	13	12	12	57	9.0	1.8	1.4	.77
26	20	8.7	12	21	12	12	15	40	50	1.8	.35	.55
27	16	8.1	10	19	12	10	10	101	30	4.2	3.0	.52
28	13	7.6	9.0	18	11	9.5	12	93	20	11	.73	.49
29	12	7.3	8.1	16	---	11	14	39	16	7.1	.57	.36
30	11	110	7.4	1780	---	9.9	12	40	13	4.1	.52	.37
31	688	---	6.9	644	---	8.7	---	75	---	3.3	.33	---
TOTAL	1817.96	1838.6	496.8	3127.2	853	1300.5	262.0	2540.9	2018.4	141.9	56.79	13.50
MEAN	58.6	61.3	16.0	101	30.5	42.0	8.73	82.0	67.3	4.58	1.83	.45
MAX	688	753	123	1780	123	617	15	570	300	11	8.7	.94
MIN	.46	7.3	5.1	6.4	11	8.7	4.4	7.8	9.0	1.8	.33	.24
AC-FT	3610	3650	985	6200	1690	2580	520	5040	4000	281	113	27
CAL YR 1981	TOTAL	10807.42	MEAN	29.6	MAX	1370	MIN	.46	AC-FT	21440		
WTR YR 1982	TOTAL	14467.55	MEAN	39.6	MAX	1780	MIN	.24	AC-FT	28700		

ARKANSAS RIVER BASIN

07189000 ELK RIVER NEAR TIFF CITY, MO

LOCATION.--Lat 36°37'50", long 94°35'12", in NE 1/4 sec.22, T.22 N., R.34 W., McDonald County, Hydrologic Unit 11070208, on downstream side of second pier from right bank of bridge on State Highway 43, 0.8 mi (1.3 km) downstream from Blackfoot Branch, 2.8 mi (4.5 km) upstream from Buffalo Creek, 3.0 mi (4.8 km) southeast of Tiff City, and at mile 15.8 (25.4 km).

DRAINAGE AREA.--872 mi² (2,258 km²).

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

REVISED RECORDS.--WSP 927: 1940. WSP 1117: Drainage area.

GAGE.--Water stage recorder. Datum of gage is 750.61 ft (228.786 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Sept. 6, 1960 to Aug. 25, 1961, at site 100 ft (30.5 m) downstream.

REMARKS.--Records good.

AVERAGE DISCHARGE.--43 years, 769 ft³/s (21.78 m³/s), 11.97 in/yr (304 mm/yr), 557,100 acre-ft/yr (687 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 137,000 ft³/s (3,880 m³/s) Apr 19, 1941, gage height, 28.4 ft (8.66 m), from floodmark, from rating curve extended above 60,000 ft³/s (1,700 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 5.1 ft³/s (0.14 m³/s), Sept. 5, 6, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Jan. 31	1730	*15,500 439	*14.85 4.526	June 16	1700	9,870 280	11.85 3.612

Minimum daily discharge, 51 ft³/s (1.44 m³/s) Oct. 2-5, 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	53	670	357	322	6600	445	377	397	468	918	323	709		
2	51	1320	502	305	3330	427	372	390	492	852	258	482		
3	51	1260	512	298	2300	417	370	381	506	760	215	374		
4	51	1100	483	298	1680	407	357	371	660	658	187	306		
5	51	1180	446	295	1300	393	343	357	1410	585	169	266		
6	53	1160	412	289	1050	375	331	353	1330	529	157	236		
7	52	1020	383	285	903	359	320	336	1110	479	147	209		
8	51	864	358	279	807	344	311	320	964	444	146	191		
9	51	741	336	274	722	332	306	304	848	410	176	177		
10	53	648	316	260	668	321	299	293	790	378	206	165		
11	55	575	300	250	624	312	292	283	757	343	185	155		
12	61	521	289	240	597	314	286	278	810	318	172	146		
13	79	477	279	235	565	305	281	336	773	298	168	152		
14	180	438	271	222	536	449	276	1800	712	282	164	148		
15	319	405	263	220	545	1110	271	2840	722	262	176	142		
16	330	378	255	209	685	1480	267	1880	5840	247	168	142		
17	287	353	248	200	868	1280	261	1340	3470	229	157	139		
18	289	333	240	200	889	1080	270	1030	1940	211	148	139		
19	310	311	231	208	835	929	277	847	1420	191	140	134		
20	278	298	223	204	773	828	280	729	1180	176	133	132		
21	256	284	220	200	716	738	273	645	1030	163	127	128		
22	418	273	228	218	669	667	263	573	909	158	123	123		
23	666	264	290	246	627	613	258	519	810	153	116	118		
24	687	256	406	286	588	571	253	479	739	149	111	117		
25	563	251	469	313	550	535	255	458	699	144	116	117		
26	477	242	470	318	516	501	301	447	744	141	115	114		
27	415	238	448	313	490	471	419	422	883	135	119	109		
28	362	230	425	302	465	444	418	411	1030	140	137	106		
29	321	225	396	295	---	422	410	405	1420	204	154	102		
30	289	260	367	850	---	405	405	394	1110	287	165	99		
31	313	---	342	10900	---	393	---	426	---	377	820	---		
TOTAL	7472	16575	10765	19334	30898	17667	9402	20044	35576	10621	5698	5677		
MEAN	241	553	347	624	1104	570	313	647	1186	343	184	189		
MAX	687	1320	512	10900	6600	1480	419	2840	5840	918	820	709		
MIN	51	225	220	200	465	305	253	278	468	135	111	99		
CFSM	.28	.63	.40	.72	1.27	.65	.36	.74	1.36	.39	.21	.22		
IN.	.32	.71	.46	.82	1.32	.75	.40	.86	1.52	.45	.24	.24		
AC-FT	14820	32880	21350	38350	61290	35040	18650	39760	70560	21070	11300	11260		
CAL YR 1981	TOTAL	93807	MEAN	257	MAX	1730	MIN	51	CFSM	.29	IN.	4.00	AC-FT	186100
WTR YR 1982	TOTAL	189729	MEAN	520	MAX	10900	MIN	51	CFSM	.60	IN.	8.09	AC-FT	376300

ARKANSAS RIVER BASIN

07190000 LAKE O' THE CHEROKEES AT LANGLEY, OK

LOCATION.--Lat 36°28'17", long 95°02'19", in SW 1/4 sec.14, T.23 N., R.21 E., Mayes County, Hydrologic Unit 11070209, on upstream side of pier at intake structure near right end of Pensacola Dam on Neosho River at Langley, 9.9 mi (15.9 km) upstream from Big Cabin Creek, and at mile 77.0 (123.9 km).

DRAINAGE AREA.--10,298 mi² (26,672 km²).

PERIOD OF RECORD.--March 1940 to current year. Prior to October 1940, published as Grand Lake at Langley.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1.10 ft (0.335 m), Corps of Engineers datum. Prior to Nov. 14, 1941, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by multiple-arch concrete dam, with top of taintor-type spillway gates at gage height 755.0 ft (230.12 m). Storage began Mar. 21, 1940; power-pool was first filled Apr. 19, 1941. Capacity between gage heights 682.0 ft (207.87 m), sill of powerhouse penstock, and 745.0 ft (227.08 m), maximum power pool is 1,492,000 acre-ft (1.84 km³). Capacity between gage heights 745.0 ft (227.08 m), and 755.0 ft (230.12 m) is 525,000 acre-ft (647 hm³) and is reserved for flood control. Dead storage below gage height 682.0 ft (207.87 m) is 180,200 acre-ft (222 hm³). Figures given herein represent total contents. Reservoir is utilized for power development and flood control.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,213,000 acre-ft (2.73 km³), May 25, 1957, gage height, 755.27 ft (230.206 m), minimum since power-pool was first filled, 642,900 acre-ft (793 hm³) Sept. 28, 1954, gage height, 713.41 ft (217.447 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,901,000 acre-ft (2.34 km³), June 8, gage height, 749.68 ft (228.502 m); minimum, 1,400,000 acre-ft (1.73 km³) May 12, gage height, 738.72 ft (225.162 m).

Capacity table (gage height, in feet, and contents, in acre-ft):

738	1,371,000	744	1,626,000
740	1,452,000	747	1,767,000
742	1,537,000	750	1,917,000

RESERVOIR STORAGE, (ACRE-Feet) WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1476000	1597000	1583000	1595000	1688000	1597000	1559000	1453000	1784000	1753000	1549000	1443000
2	1476000	1621000	1608000	1595000	1721000	1581000	1547000	1456000	1804000	1738000	1545000	1437000
3	1474000	1633000	1626000	1591000	1724000	1560000	1546000	1448000	1818000	1735000	1535000	1438000
4	1474000	1637000	1628000	1588000	1724000	1541000	1548000	1441000	1839000	1729000	1525000	1439000
5	1474000	1643000	1626000	1589000	1726000	1534000	1550000	1433000	1871000	1717000	1513000	1439000
6	1475000	1651000	1617000	1593000	1723000	1531000	1550000	1420000	1885000	1702000	1507000	1441000
7	1473000	1658000	1605000	1591000	1719000	1531000	1551000	1413000	1897000	1688000	1506000	1441000
8	1473000	1669000	1590000	1590000	1716000	1532000	1551000	1407000	1892000	1673000	1506000	1441000
9	1473000	1669000	1589000	1584000	1701000	1528000	1551000	1405000	1868000	1659000	1507000	1440000
10	1465000	1676000	1590000	1565000	1694000	1532000	1540000	1403000	1848000	1650000	1512000	1438000
11	1454000	1676000	1581000	1552000	1686000	1534000	1533000	1403000	1848000	1649000	1515000	1438000
12	1445000	1674000	1573000	1549000	1677000	1539000	1534000	1402000	1870000	1649000	1512000	1436000
13	1441000	1674000	1568000	1547000	1663000	1535000	1536000	1411000	1884000	1643000	1513000	1437000
14	1432000	1674000	1563000	1531000	1650000	1555000	1534000	1432000	1880000	1637000	1516000	1433000
15	1423000	1672000	1556000	1529000	1643000	1608000	1533000	1470000	1871000	1632000	1521000	1428000
16	1420000	1662000	1552000	1522000	1642000	1658000	1528000	1497000	1869000	1626000	1523000	1427000
17	1426000	1649000	1544000	1518000	1649000	1695000	1518000	1515000	1859000	1624000	1520000	1427000
18	1458000	1636000	1539000	1501000	1654000	1713000	1516000	1536000	1849000	1617000	1516000	1427000
19	1490000	1620000	1543000	1492000	1652000	1716000	1508000	1553000	1839000	1604000	1509000	1427000
20	1500000	1602000	1546000	1485000	1651000	1712000	1496000	1567000	1831000	1601000	1498000	1430000
21	1509000	1583000	1544000	1476000	1651000	1705000	1485000	1587000	1822000	1595000	1492000	1427000
22	1517000	1563000	1543000	1473000	1651000	1693000	1476000	1600000	1810000	1588000	1485000	1427000
23	1526000	1559000	1544000	1467000	1651000	1680000	1467000	1611000	1803000	1583000	1479000	1427000
24	1538000	1551000	1549000	1463000	1650000	1667000	1463000	1617000	1795000	1582000	1468000	1430000
25	1550000	1540000	1556000	1468000	1646000	1652000	1466000	1630000	1786000	1581000	1469000	1429000
26	1544000	1545000	1562000	1468000	1639000	1638000	1466000	1649000	1783000	1576000	1461000	1429000
27	1549000	1548000	1571000	1472000	1629000	1619000	1469000	1676000	1780000	1570000	1454000	1428000
28	1551000	1552000	1574000	1473000	1615000	1600000	1463000	1697000	1787000	1565000	1455000	1429000
29	1555000	1557000	1581000	1473000	---	1579000	1456000	1712000	1785000	1558000	1456000	1429000
30	1559000	1563000	1584000	1507000	---	1570000	1450000	1733000	1769000	1548000	1455000	1429000
31	1576000	---	1592000	1603000	---	1572000	---	1757000	---	1548000	1449000	---
MAX	1576000	1676000	1628000	1603000	1726000	1716000	1559000	1757000	1897000	1753000	1549000	1443000
MIN	1420000	1540000	1539000	1463000	1615000	1528000	1450000	1402000	1769000	1548000	1449000	1427000
†	742.89	742.60	743.25	743.48	743.75	742.79	739.95	746.79	747.05	742.26	739.93	739.43
††	+100,000	-13,000	+29,000	+11,000	+12,000	-43,000	-122,000	+307,000	+12,000	-221,000	-99,000	-20,000
CAL YR 1981	MAX	1715000	MIN	1303000	††	+289,000						
WTR YR 1982	MAX	1897000	MIN	1402000	††	-47,000						

† Gage height, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07190500 NEOSHO RIVER NEAR LANGLEY, OK

LOCATION.--Lat 36°26'15", long 95°02'44", in SE 1/4 sec.27, T.23 N., R.21 E., Mayes County, Hydrologic Unit 11070209, in concrete stilling well on left bank, 0.5 mi (0.8 km) upstream from bridge on State Highway 82, 1.5 mi (2.4 km) south of Langley, 3.6 mi (5.8 km) downstream from Pensacola Dam, 6.3 mi (10.1 km) upstream from Big Cabin Creek, and at mile 73.4 (118.1 km).

DRAINAGE AREA.--10,335 mi² (26,768 km²).

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

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 607.65 ft (185.212 m), Corps of Engineers datum. Prior to Feb. 16, 1940, nonrecording gage at site 0.1 mi (0.2 km) upstream at same datum. Feb. 10, 1954, to Sept. 30, 1963, water-stage recorder at site 0.5 mi (0.8 km) downstream at same datum. Auxiliary water-stage recorders at sites 2.0 and 3.0 mi (3.2 and 4.8 km) upstream at same datum.

REMARKS.--Records fair. Low flow values of 25 ft³/s (0.71 m³/s) consist of estimated base flow (since July 1964). Flow regulated since 1940 by Lake O' The Cherokees (station 07190000).

AVERAGE DISCHARGE.--43 years, 6,817 ft³/s (193.1 m³/s), 4,939,000 acre-ft/yr (6.09 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 300,000 ft³/s (8,500 m³/s) May 20, 1943, gage height, 45.5 ft (13.87 m), from floodmarks, from computation of outflow from Lake O' The Cherokees; minimum daily, 9 ft³/s (0.25 m³/s), Mar. 25, 1940 (caused by closure of Pensacola Dam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,000 ft³/s (935 m³/s) June 6, maximum gage height, 22.06 ft (6.724 m) June 9; minimum daily discharge, 25 ft³/s (0.71 m³/s) at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	10100	818	1920	11600	11700	7860	1100	15100	16200	1270	6850
2	25	11400	532	4130	11700	11600	8500	1190	18700	15800	3100	5680
3	25	12400	573	6210	11700	11600	6040	6250	22500	12400	5330	1310
4	25	12300	5900	8300	11700	11100	5570	6500	26800	12300	5900	357
5	88	12200	10500	5910	11800	9960	4720	7750	30500	12200	6400	697
6	25	12100	10100	4790	11700	3020	3690	8740	32000	12300	3440	277
7	28	11100	10900	3940	11700	3000	3780	7570	30300	12400	1420	797
8	25	10500	10600	2320	11700	3130	3340	6290	25900	12500	833	447
9	68	10600	3660	6320	11700	2680	2480	3830	24800	12500	946	1570
10	4690	12400	2900	8720	11700	927	7290	4000	20900	11100	888	1030
11	5620	12400	6570	8610	11700	1580	5220	2840	15500	11100	1500	454
12	6140	12400	6590	3890	11700	1380	1250	6260	13400	6590	1680	970
13	5090	12300	4710	2540	11800	2820	1200	9030	14600	5130	1550	1760
14	5770	12200	3250	8600	11600	4480	2240	10400	17600	4600	5620	1410
15	5780	12200	5540	4560	11500	12500	2160	8100	18600	5410	6410	3600
16	6410	12200	4370	3510	11200	12100	4370	7470	18100	5470	4700	1290
17	5780	12200	6360	3460	11600	12400	6450	12300	17500	5950	3640	1030
18	4510	12300	5350	9510	11600	12500	3020	9270	17200	7070	2920	753
19	6240	12300	25	7190	11600	12600	7400	10900	17400	7370	5050	487
20	4350	12200	25	4400	11600	12500	7090	12200	17700	5170	7600	194
21	34	12200	3800	6480	11600	12600	6630	11900	17600	5390	4400	88
22	25	11600	3100	4810	11700	12500	5910	12100	17400	6110	4030	208
23	25	4310	2710	7410	11400	12400	5480	12100	17100	3560	5180	117
24	201	6250	559	6110	11700	12500	1990	10900	17100	2040	5850	133
25	953	7690	25	876	11700	12400	1080	11600	16900	1400	1570	159
26	5560	227	25	2800	11500	12400	4240	11500	16800	4190	3220	167
27	236	25	25	1320	11700	12400	6590	11700	16700	3720	4780	479
28	779	25	1720	1450	11500	12400	5670	11700	16700	5750	996	68
29	27	25	25	1970	---	12400	6640	12000	16800	4820	921	195
30	25	377	1320	9540	---	9590	6560	11600	16600	5400	4350	88
31	1590	---	1630	11600	---	1760	---	11700	---	1840	4510	---
TOTAL	70169	280529	114212	163196	325700	276927	144460	270790	584800	237780	110004	32665
MEAN	2264	9351	3684	5264	11630	8933	4815	8735	19490	7670	3549	1089
MAX	6410	12400	10900	11600	11800	12600	8500	12300	32000	16200	7600	6850
MIN	25	25	25	876	11200	927	1080	1100	13400	1400	833	68
AC-FT	139200	556400	226500	323700	646000	549300	286500	537100	1160000	471600	218200	64790
CAL YR 1981	TOTAL	1102508	MEAN	3021	MAX	12600	MIN	25	AC-FT	2187000		
WTR YR 1982	TOTAL	2611232	MEAN	7154	MAX	32000	MIN	25	AC-FT	5179000		

ARKANSAS RIVER BASIN

07191000 BIG CABIN CREEK NEAR BIG CABIN, OK

LOCATION.--Lat 36°34'06", long 95°09'07", in NE 1/4 NE 1/4 sec.15, T.24 N., R.20 E., Craig County, Hydrologic Unit 11070209, near downstream side of right bank end of county road bridge, 4.9 mi (7.9 km) northeast of Big Cabin, 0.9 mi (1.5 km) downstream from White Oak Creek, 6.8 mi (10.9 km) upstream from Mustang Creek, and at mile 13.0 (20.9 km).

DRAINAGE AREA.--450 mi² (1,165 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 622.00 ft (189.586 m), National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 30, 1972, water-stage recorder at site 4.5 mi (7.2 km) downstream at same datum and present site used as supplemental gage.

REMARKS.--Records good. Low flow sustained by sewage from city of Vinita.

AVERAGE DISCHARGE.--35 years, 306 ft³/s (8.666 m³/s), 8.92 in/yr (227 mm/yr), 221,700 acre-ft/yr (273 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 52,000 ft³/s (1,470 m³/s) Oct. 3, 1959, gage height, 34.55 ft (10.531 m), at former site; maximum gage height, 44.58 ft (13.588 m) Nov. 4, 1974; minimum, 0.10 ft³/s (0.003 m³/s) at times in 1954, 1956 and 1963.

EXTREMES FOR OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1943, reached a stage of 34.96 ft (10.656 m) at former site, discharge, 63,000 ft³/s (1,780 m³/s), by slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,780 ft³/s (249 m³/s) Jan. 31, gage height, 30.67 ft (9.348 m), no peak above base of 9,000 ft³/s (255 m³/s); minimum daily discharge, 0.60 ft³/s (0.017 m³/s) Sept. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	2.5	5180	1260	30	1030	54	34	29	910	68	12	3.1		
2	2.6	1180	358	29	592	51	44	25	345	47	6.6	3.0		
3	2.6	387	180	578	418	50	189	21	399	34	4.0	2.6		
4	2.6	659	119	1190	274	50	118	19	1700	25	2.3	2.6		
5	2.6	780	88	361	203	50	60	30	1020	19	1.1	2.5		
6	2.6	364	71	201	155	50	40	78	397	15	.90	1.8		
7	2.6	199	61	125	144	45	31	79	235	14	.75	1.1		
8	2.6	130	58	79	137	42	29	89	159	13	.90	1.0		
9	2.6	146	53	60	130	37	27	60	116	12	.90	.90		
10	2.6	239	47	41	123	35	26	36	88	10	.80	.80		
11	2.9	184	42	33	122	35	24	25	172	8.9	.65	.70		
12	5.4	125	40	32	122	35	22	977	275	8.0	.70	.70		
13	18	97	38	29	118	35	21	2150	192	7.8	.90	.60		
14	82	80	36	28	158	1860	20	3360	106	5.2	1.1	.80		
15	59	67	35	28	676	3130	19	4980	249	4.6	1.3	1.7		
16	211	60	35	26	537	696	19	992	851	4.1	1.0	1.7		
17	103	54	33	24	392	342	19	1090	268	3.5	1.0	1.2		
18	212	48	27	22	285	220	18	410	118	3.0	1.1	2.7		
19	87	41	22	22	215	166	17	230	70	2.5	1.1	3.4		
20	38	36	22	22	169	133	17	155	47	2.0	1.4	1.7		
21	27	36	22	22	141	104	17	132	36	1.3	1.8	1.1		
22	22	35	25	310	118	82	16	121	28	1.0	2.0	1.0		
23	73	31	75	543	102	69	16	94	24	1.0	2.1	1.0		
24	55	29	92	211	88	64	15	237	168	1.0	2.1	1.0		
25	43	27	69	178	76	58	15	1960	457	1.0	2.4	1.7		
26	32	25	57	158	67	52	23	701	348	1.0	3.8	1.6		
27	25	25	51	119	59	45	35	324	900	1.0	4.1	1.6		
28	19	24	48	96	56	41	25	1020	704	182	4.0	1.3		
29	15	23	40	91	---	39	25	887	201	78	3.6	1.0		
30	12	947	36	3850	---	37	33	316	107	89	2.8	.78		
31	1600	---	33	5940	---	37	---	1700	---	27	2.6	---		
TOTAL	2767.2	11258	3173	14478	6707	7744	1014	22328	10690	689.9	71.80	46.68		
MEAN	89.3	375	102	467	240	250	33.8	720	356	22.3	2.32	1.56		
MAX	1600	5180	1260	5940	1030	3130	189	4980	1700	182	12	3.4		
MIN	2.5	23	22	22	56	35	15	19	24	1.0	.65	.60		
CFSM	.20	.83	.23	1.04	.53	.56	.08	1.60	.79	.05	.01	.00		
IN.	.23	.93	.26	1.20	.55	.64	.08	1.85	.88	.06	.01	.00		
AC-FT	5490	22330	6290	28720	13300	15360	2010	44290	21200	1370	142	93		
CAL YR 1981	TOTAL	43657.5	MEAN	120	MAX	6570	MIN	1.2	CFSM	.27	IN.	3.61	AC-FT	86590
WTR YR 1982	TOTAL	80967.58	MEAN	222	MAX	5940	MIN	.60	CFSM	.49	IN.	6.69	AC-FT	160600

ARKANSAS RIVER BASIN

07191220 SPAVINAW CREEK NEAR SYCAMORE, OK

LOCATION.--Lat 36°20'07", long 94°38'24", in NE 1/4 NW 1/4 sec.4, T.21 N., R.25 E., Delaware County, Hydrologic Unit 11070209, on right bank 1.8 mi (2.9 km) upstream from Cherokee Creek, 4.8 mi (7.7 km) northeast of Row, 6.5 mi (10.5 km) southeast of Sycamore, and at mile 35.0 (56.3 km).

DRAINAGE AREA.--133 mi² (344 km²).

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 2121: 1965 (M).

GAGE.--Water-stage recorder. Altitude of gage is 875 ft (266.7 m), from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--21 years, 103 ft³/s (2.917 m³/s), 10.62 in/yr (270 mm/yr), 74,620 acre-ft/yr (92.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,800 ft³/s (1,130 m³/s), July 27, 1975, gage height, 22.07 ft (6.727 m); minimum, 1.2 ft³/s (34.0 m³/s) Aug. 9, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--According to local residents, a flood of approximately the same magnitude as the July 27, 1975 flood occurred in the early 1880's.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 2,600 ft³/s (73.6 m³/s) Jan. 31, at 0130, gage height, 9.67 ft (2.947 m), no other peak above base of 2,500 ft³/s (70.8 m³/s); minimum, 9.2 ft³/s (0.26 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	13	227	52	61	607	83	67	70	70	47	106	14		
2	14	368	59	59	401	79	66	67	73	46	91	14		
3	13	282	89	56	324	78	65	64	75	44	78	14		
4	13	245	89	54	278	77	64	61	88	42	69	14		
5	13	218	82	53	245	75	63	59	107	40	63	14		
6	13	192	75	51	220	73	61	56	110	38	57	14		
7	13	166	70	49	209	71	60	55	104	36	52	13		
8	13	146	67	48	199	68	58	53	95	33	48	13		
9	14	132	63	47	189	67	57	51	88	32	46	12		
10	15	123	62	46	180	65	57	49	86	31	43	12		
11	15	117	59	44	170	63	56	48	95	30	40	11		
12	15	108	56	43	300	62	55	46	99	29	36	11		
13	18	100	54	43	250	61	54	56	98	28	32	11		
14	59	93	52	42	220	69	53	208	95	27	30	11		
15	138	87	50	41	200	171	52	258	92	26	28	10		
16	166	82	48	41	175	223	52	203	92	28	26	10		
17	142	77	46	40	165	196	52	162	106	30	22	10		
18	125	74	44	39	160	167	63	129	108	29	22	10		
19	106	72	44	39	149	145	79	117	98	28	21	10		
20	91	68	42	38	139	129	76	117	89	25	20	11		
21	81	66	41	38	129	116	71	104	82	23	19	11		
22	137	63	43	38	118	105	68	94	75	21	18	11		
23	251	61	46	39	111	98	65	86	71	20	17	10		
24	221	59	51	40	106	94	62	80	65	18	16	10		
25	176	56	66	42	100	89	60	76	62	17	15	10		
26	144	55	74	44	95	84	61	72	58	17	15	10		
27	122	54	70	46	91	80	87	69	56	17	14	10		
28	110	52	67	47	87	76	81	66	54	21	14	10		
29	102	51	64	47	---	73	77	64	51	25	14	9.8		
30	90	52	67	617	---	71	74	62	49	38	14	9.4		
31	112	---	63	1560	---	69	---	74	---	107	14	---		
TOTAL	2555	3546	1855	3492	5617	2977	1916	2776	2491	993	1100	340.2		
MEAN	82.4	118	59.8	113	201	96.0	63.9	89.5	83.0	32.0	35.5	11.3		
MAX	251	368	89	1560	607	223	87	258	110	107	106	14		
MIN	13	51	41	38	87	61	52	46	49	17	14	9.4		
CFSM	.62	.89	.45	.85	1.51	.72	.48	.67	.62	.24	.27	.08		
IN.	.71	.99	.52	.98	1.57	.83	.54	.78	.70	.28	.31	.10		
AC-FT	5070	7030	3680	6930	11140	5900	3800	5510	4940	1970	2180	675		
CAL YR 1981	TOTAL	17087.5	MEAN	46.8	MAX	368	MIN	8.8	CFSM	.35	IN.	4.78	AC-FT	33890
WTR YR 1982	TOTAL	29658.2	MEAN	81.3	MAX	1560	MIN	9.4	CFSM	.61	IN.	8.30	AC-FT	58830

ARKANSAS RIVER BASIN

07191220 SPAVINAW CREEK NEAR SYCAMORE, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1977, January 1980 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	OXYGE DEMAN CHEM ICAL (HIG LEVEL (MG/L)
OCT										
29...	1130	80020	103	312	7.2	18.5	9.2	101	4.4	8
NOV										
12...	1230	80020	108	295	7.4	16.0	8.7	91	3.8	61
DEC										
10...	1300	80020	61	310	7.4	14.0	9.5	95	3.5	<10
JAN										
19...	1345	80020	39	310	7.4	11.0	12.0	113	3.6	<10
FEB										
17...	1130	80020	165	280	7.2	10.0	10.5	97	4.5	<7
MAR										
12...	1430	80020	61	270	7.3	12.0	11.9	113	3.3	<12
APR										
21...	1300	80020	72	--	7.4	14.0	10.0	100	2.8	53
MAY										
05...	1515	80020	58	280	7.1	14.0	9.6	97	2.9	<10
JUN										
15...	1340	80020	89	293	7.1	17.0	8.2	88	2.5	22
JUL										
21...	1540	80020	23	317	6.9	20.0	8.2	93	2.6	12
AUG										
17...	1520	80020	24	317	6.7	21.5	8.0	93	2.9	<12
SEP										
01...	1610	80020	14	327	7.0	22.0	8.0	94	2.3	28

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)
OCT										
29...	140	30	53	1.7	5.3	7	.2	2.4	110	<5.0
NOV										
12...	130	22	50	1.6	5.2	8	.2	2.3	110	6.0
DEC										
10...	130	19	49	1.5	5.2	8	.2	2.2	110	5.0
JAN										
19...	130	22	50	1.6	5.3	8	.2	1.8	110	7.0
FEB										
17...	110	17	43	1.5	4.4	8	.2	2.0	97	6.0
MAR										
12...	120	16	44	1.4	4.7	8	.2	1.9	100	6.0
APR										
21...	120	11	46	1.5	5.4	9	.2	1.9	110	<5.0
MAY										
05...	120	13	47	1.4	5.4	9	.2	2.0	110	7.0
JUN										
15...	130	6	49	1.6	5.7	9	.2	2.3	123	8.0
JUL										
21...	140	5	52	1.9	8.3	11	.3	2.6	133	6.0
AUG										
17...	130	12	50	1.7	5.9	9	.2	2.5	120	7.0
SEP										
01...	140	10	55	1.8	6.5	9	.2	2.6	135	7.0

ARKANSAS RIVER BASIN

07191220 SPAVINAW CREEK NEAR SYCAMORE, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT 29...	13	.10	11	160	.22	45	3.50	--	.93	.050
NOV 12...	9.2	.10	9.8	150	.20	44	3.10	--	.72	.040
DEC 10...	12	<.10	8.9	150	.20	25	2.90	--	.61	.010
JAN 19...	11	.10	8.3	150	.21	16	2.90	<.070	.74	.020
FEB 17...	12	.10	8.0	140	.18	60	3.70	--	.81	.050
MAR 12...	9.8	<.10	7.3	140	.18	22	2.70	--	.58	<.010
APR 21...	9.6	<.10	8.0	--	--	--	2.30	--	.53	.030
MAY 05...	9.2	.10	7.9	150	.20	23	2.20	--	.65	<.010
JUN 15...	8.7	.10	9.6	160	.22	38	1.70	--	.80	.050
JUL 21...	10	<.10	11	170	.23	11	1.70	--	.90	.090
AUG 17...	13	<.10	11	160	.22	11	1.90	--	1.0	.040
SEP 01...	10	<.10	11	170	.24	6.5	1.60	--	.70	.070

ARKANSAS RIVER BASIN

07191400 LAKE HUDSON NEAR LOCUST GROVE, OK

LOCATION.--Lat 36°13'54", long 95°11'36", in SE 4 NW 4 sec.9, T.20 N., R. 20 E., Mayes County, Hydrologic Unit 11070209, at left side of Robert S. Kerr dam on Neosho River, 2.0 mi (3.2 km) northwest of Locust Grove, 3.5 mi (5.6 km) downstream from Salina Creek, and at mile 47.3 (76.1 km).

DRAINAGE AREA.--11,534 mi² (29,873 km²).

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

GAGE.--Remote-controlled indicator and non-recording gage. Datum of gage is at National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth dam and concrete spillway controlled by seventeen 22-foot (6.706 m) taintor gates. Storage began Nov. 12, 1963; power pool first filled June 12, 1964. Capacity, 444,500 acre-ft (548 hm³) at elevation 636.0 ft (193.85 m), top of taintor gates, 200,300 acre-ft (247 hm³) at elevation 619.0 ft (188.67 m) power pool, and 48,630 acre-ft (60.0 hm³) at elevation 599.0 ft (182.58 m), top of spillway crest. Figures given herein represent total contents. Reservoir was designed for flood control and power development.

COOPERATION.--Records furnished by Grand River Dam Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 436,300 acre-ft (538 hm³) Nov. 9, 1974, elevation, 635.56 ft (193.719 m); minimum since power pool first filled, 183,100 acre-ft (226 hm³) Dec. 24, 1967, elevation, 617.38 ft (188.177 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 323,000 acre-ft (398 hm³) June 10, elevation, 628.69 ft (191.625 m); minimum, 192,800 acre-ft (237 hm³) Nov. 6, elevation, 618.30 ft (188.458 m).

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	619.62	207,100	---
Oct. 31.....	620.00	211,400	+ 4,300
Nov. 30.....	619.35	204,100	- 7,300
Dec. 31.....	619.16	202,000	- 2,100
CAL YR 81.....	---	---	+27,000
Jan. 31.....	621.25	225,600	+23,600
Feb. 28.....	619.43	205,000	-20,600
Mar. 31.....	619.47	205,500	+ 500
Apr. 30.....	619.60	206,900	+ 1,400
May 31.....	622.14	263,200	+56,300
June 30.....	620.66	218,800	-45,000
July 31.....	619.42	204,900	-13,900
Aug. 31.....	619.66	207,600	+ 2,700
Sept. 30.....	619.10	201,400	- 6,200
WTR YR 82.....	---	---	- 5,700

ARKANSAS RIVER BASIN

07191500 NEOSHO RIVER NEAR CHOUTEAU, OK

LOCATION.--Lat 36°13'45", long 95°10'59", in SE 1/4 NW 1/4 sec.9, T.20 N., R.20 E., Mayes County, Hydrologic Unit 11070209, on left bank, 300 ft (91.4 m) downstream from Robert S. Kerr Dam, 2.2 mi (3.5 km) northwest of Locust Grove, 10 mi (16.1 km) northeast of Chouteau, and at mile 47.2 (75.9 km).

DRAINAGE AREA.--11,534 mi² (29,873 km²).

PERIOD OF RECORD.--October 1937 to September 1950, October 1963 to current year.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 554.00 ft (168.859 m), National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 3, 1941, nonrecording gage at bridge on State Highway 33, 8.2 mi (13.2 km) downstream, at datum 17.63 ft (5.374 m) lower. Apr. 3, 1941, Sept. 30, 1950; Oct. 1963 to Apr. 6, 1964, at site 2.5 mi (4.0 km) downstream at datum 2.17 ft (0.661 m) lower (now used as supplementary gage). Supplemental water-stage recorder Oct. 4, 1963, to July 10, 1973, at site 8.2 mi (13.2 km) downstream.

REMARKS.--Records fair. Flow regulated since 1940 by Lake O' The Cherokees (station 07190000), and completely regulated since 1963 by Lake Hudson (station 07191400).

AVERAGE DISCHARGE.--(Since regulation by Lake Hudson), 19 years (water years 1964-82), 7,538 ft³/s (213.4 m³/s), 5,461,000 acre-ft/yr (6.73 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 400,000 ft³/s (11,328 m³/s) May 20, 1943, gage height, 45.00 ft (13.716 m), site and datum then in use, from rating curve extended above 140,000 ft³/s (3,965 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 12 ft³/s (0.32 m³/s) Nov. 13, 1963, (caused by closure of Robert S. Kerr Dam).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 34,300 ft³/s (971 m³/s) June 5, gage height, 17.67 ft (5.386 m); minimum daily discharge, 130 ft³/s (3.68 m³/s) Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	161	17100	683	2740	21000	14300	8850	2500	24100	18700	464	11000
2	141	16400	625	5690	11900	11900	8100	1300	25800	14700	2550	3050
3	140	17200	1060	5830	16100	15800	11100	7000	25600	10400	7070	223
4	140	16300	10900	8150	18400	11800	2860	7700	27100	12000	5210	170
5	140	15100	10900	4730	13000	9000	2340	7500	28100	13700	9910	165
6	138	12200	11300	5180	18700	2710	7700	10000	29500	15300	302	161
7	132	9540	10700	6530	17400	3630	244	8670	27100	18500	201	157
8	131	11100	11800	972	14100	3230	3710	6610	28200	12900	192	3510
9	131	10900	904	7400	12000	2640	2540	3470	29800	14200	403	332
10	4110	12000	3550	15900	13500	1280	10900	4280	29700	10500	491	160
11	4570	12900	7390	3350	14000	1870	1360	3760	29800	10600	3110	160
12	6870	14200	6450	664	14600	803	3420	8060	30900	10400	1480	911
13	6860	14200	5230	3130	14600	4230	1780	13000	31500	5260	1810	1650
14	6520	14200	3670	10100	11100	7990	3790	9490	27700	9430	5810	1540
15	6010	11400	4760	2280	13900	14700	488	17500	21300	6780	7630	7970
16	6030	13300	4780	3300	14200	17300	5400	20800	24300	6450	3190	163
17	7480	12000	7540	3600	15500	10200	5700	21300	23100	5860	2400	143
18	4370	11000	3830	15100	13200	13500	1700	7700	26100	4070	5000	273
19	8700	14100	189	7300	11600	17300	9200	9950	27100	8540	4670	155
20	4280	13600	175	3700	12700	10400	8900	9740	26900	7280	9780	153
21	143	12000	4390	7200	13000	15600	6300	8050	24100	5840	3470	201
22	137	12400	4150	3800	14100	17200	6300	14700	22200	4420	2390	180
23	134	4010	3550	9100	10700	10600	5300	12900	21300	3450	6190	148
24	303	5220	427	6400	14200	13600	3500	12000	23100	1960	6380	141
25	737	8490	179	900	15000	13300	1500	11700	26600	2500	709	138
26	5090	250	179	1600	12400	14300	6500	15400	21700	2930	3550	135
27	175	169	177	2400	12500	13400	5400	15400	26100	3080	8740	130
28	606	168	1550	1600	12000	10300	7400	16900	20900	7420	281	174
29	148	167	186	1500	---	12800	6900	15100	22000	5150	188	202
30	144	411	183	14300	---	11100	4700	7760	17900	9000	1990	429
31	2390	---	183	17800	---	1210	---	19100	---	1180	5860	---
TOTAL	77061	312025	121590	182246	395400	307993	153882	329340	769600	262500	111421	33924
MEAN	2486	10400	3922	5879	14120	9935	5129	10620	25650	8468	3594	1131
MAX	8700	17200	11800	17800	21000	17300	11100	21300	31500	18700	9910	11000
MIN	131	167	175	664	10700	803	244	1300	17900	1180	188	130
AC-FT	152900	618900	241200	361500	784300	610900	305200	653200	1527000	520700	221000	67290
CAL YR 1981	TOTAL	1188307	MEAN	3256	MAX	19300	MIN	96	AC-FT	2357000		
WTR YR 1982	TOTAL	3056982	MEAN	8375	MAX	31500	MIN	130	AC-FT	6064000		

ARKANSAS RIVER BASIN

07193000 FORT GIBSON LAKE NEAR FORT GIBSON, OK

LOCATION.--Lat 35°52'16", long 95°13'43", in NW 1/4 NW 1/4 sec.18, T.16 N., R.20 E., Cherokee County, Hydrologic Unit 11070209, in control tower near left end of Fort Gibson Dam on Neosho River, 4.0 mi (6.4 km) north of Fort Gibson, and at mile 7.7 (12.4 km).

DRAINAGE AREA.--12,492 mi² (32,354 km²).

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1970, published as Fort Gibson Reservoir near Fort Gibson.

REVISED RECORDS.--WSP 1731: 1950 (M).

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Jan. 13, 1950, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete-gravity and earth-fill dam. Spillway is concrete ogee-type weir controlled by 30, 40 ft (12.2 m) taintor gates; outlet works consists of 10, 5'8" x 7.0' sluice gates. Regulated storage began Sept. 5, 1949; power pool was first maintained in 1953. Capacity, 1,284,000 acre-ft (1,583 hm³) at elevation 582.0 ft (177.39 m), flood control pool, 365,200 acre-ft (450 hm³) at elevation 554.0 ft (168.86 m) (maximum power pool), and 311,300 acre-ft (384 hm³) at elevation 551.0 ft (167.94 m) (minimum power pool). Figures given herein represent total contents. Reservoir was designed for flood control and power development.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,278,000 acre-ft (1.58 km³) May 12, 1961, elevation, 581.88 ft (177.357 m); minimum since first use of power pool, 303,800 acre-ft (375 hm³) May 26, 1955, elevation, 550.56 ft (167.811 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 645,400 acre-ft (796 hm³) June 14, elevation, 565.88 ft (172.480 m); minimum, 329,400 acre-ft (406 hm³) Mar. 10, elevation 552.08 ft (168.274 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

552	328,500	561	516,600
558	447,000	566	650,900

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	354200	375800	352700	355700	485000	374700	353800	352700	512500	436900	358700	386100
2	353800	388500	354000	357200	467300	373200	355300	351900	523400	418700	353400	377000
3	352300	398700	350600	363900	451600	378500	362200	353400	556600	400300	357400	369800
4	353200	405900	361000	360400	444800	381300	351500	353400	620100	384500	358200	369800
5	350800	402300	359700	357000	424800	381300	343600	354400	632000	376000	369000	369400
6	350300	394300	365200	357600	418900	384100	346500	358000	627400	376000	369400	369400
7	350100	381100	364400	355900	409000	350500	341800	358200	622900	382500	369000	368800
8	350100	380500	366700	349900	398500	340400	349700	365000	619300	380100	369400	370900
9	350300	377200	351700	355700	390100	333700	351200	362700	628300	380700	366000	368000
10	356500	375300	351700	349600	382300	332300	363700	359500	633200	377000	362700	363300
11	361200	375300	357400	353800	376600	336100	353300	357600	638700	372400	365200	362900
12	360800	378500	360400	353600	378700	339700	358400	362900	642200	369400	367100	364400
13	368800	380900	362900	358000	378500	345100	351400	399900	645100	358900	369400	367100
14	370500	384300	357400	371500	373000	361800	350300	398500	640800	370100	374700	370900
15	364800	380700	364400	375800	374300	379300	349400	411500	636400	373200	382100	372800
16	358400	381500	362000	374700	373600	390500	357000	432100	636400	374700	370900	368600
17	360100	381100	357600	376200	376400	385300	354200	442400	624100	374700	360600	366200
18	355700	377200	349900	388500	376600	384500	353600	417800	617300	372200	367900	366700
19	361000	381900	349900	380900	370000	390100	356100	410500	614300	380100	369800	366700
20	347900	384100	349700	366900	369200	382300	355500	417800	610100	378500	377600	366900
21	346100	386300	349000	359300	369400	382900	349200	408600	601700	378100	380100	365800
22	347000	388500	353400	358700	374700	388100	352300	416200	589200	375100	377700	365800
23	347900	373200	355700	363100	369000	380500	346900	432100	575700	370500	378100	365600
24	348300	361400	356100	363500	371700	378500	351000	436400	560500	361800	384500	364100
25	351400	357200	353800	352800	375600	375500	351500	444400	549300	358700	373600	363500
26	351700	353200	353800	355500	374700	376800	353800	452900	529100	350300	370000	363300
27	351900	353600	354200	359100	373900	377600	349700	460200	518600	345200	362400	362400
28	353200	354000	355700	357200	372600	370900	353000	476300	499800	356500	371700	361400
29	353800	354400	354900	359300	---	370900	352300	487300	482000	362500	371300	361400
30	354600	357600	350600	411100	---	371700	351400	481800	458900	370300	366700	361400
31	359700	---	352700	462300	---	352700	---	500300	---	365600	370100	---
MAX	370500	405900	366700	462300	485000	390500	363700	500300	645100	436900	384500	386100
MIN	346100	353200	349000	349600	369000	332300	341800	351900	458900	345200	353400	361400
†	553.71	553.60	553.34	558.69	554.39	553.34	553.27	560.32	558.54	554.02	554.26	553.80
††	+3,100	-2,100	-4,900	+109,600	-89,700	-19,900	-1,300	+148,900	-41,400	-93,300	-4,500	-8,700

CAL YR 1981 MAX 406500 MIN 333000, †† -16,900
WTR YR 1982 MAX 645100 MIN 332300, †† +4,800

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07193500 NEOSHO RIVER BELOW FORT GIBSON LAKE NEAR FORT GIBSON, OK

LOCATION.--Lat 35°51'15", long 95°13'45", in SE 1/4 NW 1/4 sec.19, T.16 N., R.20 E., Cherokee County, Hydrologic Unit 11070209, on left bank 1.1 mi (1.8 km) downstream from Fort Gibson Dam, 3.5 mi (5.6 km) north of Fort Gibson, and at mile 6.6 (10.6 km).

DRAINAGE AREA.--12,495 mi² (32,362 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1950 to current year. Prior to October 1970, published as Neosho River below Fort Gibson Reservoir near Fort Gibson.

GAGE.--Water-stage recorder. Datum of gage is 483.75 ft (147.447 m), National Geodetic Vertical Datum of 1929. May 11, 1950, to Aug. 20, 1951, nonrecording gage and Aug. 21, 1951, to June 11, 1952, water-stage recorder, at site 4.4 mi (7.1 km) downstream at datum 8.00 ft (2.428 m) lower and used as auxiliary gage since June 10, 1971.

REMARKS.--Records fair. Flow completely regulated by Fort Gibson Lake (station 07193000).

COOPERATION.--Gage-height record and 13 discharge measurements furnished by Corps of Engineers, records computed by Geological Survey.

AVERAGE DISCHARGE.--32 years, 7,557 ft³/s (214.0 m³/s), 5,475,000 acre-ft/yr (6.75 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 223,000 ft³/s (6,320 m³/s) May 26, 1957, gage height, 37.60 ft (11.460 m), minimum, 12 ft³/s (0.34 m³/s) Oct. 10, 1957, Aug. 23, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1943 reached a stage of 43.0 ft (13.11 m), from highwater profile by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 32,200 ft³/s (912 m³/s) June 5, maximum gage height, 15.11 ft (4.606 m) June 24; minimum daily discharge, 15 ft³/s (0.42 m³/s) at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2430	11400	3680	15	13200	12700	7090	1550	17900	29100	3910	2670
2	44	12000	312	3030	24000	12900	8190	1550	21600	23900	4220	7530
3	15	13000	2990	4710	23700	12800	5050	4380	18600	20300	4110	3650
4	26	14800	4520	10400	23600	10800	10200	6590	15	20100	4660	15
5	1390	18700	11100	6110	23200	9210	6980	7120	19600	16900	2960	15
6	903	17400	9530	5630	23100	10900	4560	7150	30000	15300	1240	15
7	15	15600	10600	6100	22800	10900	2280	9110	27100	15300	15	298
8	15	14200	11300	4340	21000	9200	15	3030	26900	14400	15	849
9	15	13000	8820	4850	18200	5630	1500	4060	26900	12500	1600	2240
10	15	13000	2880	8370	18100	1910	3330	4770	27400	12400	1780	2010
11	1860	13000	4290	11200	16100	15	6970	4150	27000	12400	800	15
12	6990	13000	4130	851	14700	65	977	5560	27500	11900	15	15
13	8680	13000	3950	17	14700	15	5320	8270	27300	9890	15	28
14	11200	12900	6560	3580	14800	25	3880	7280	27200	2640	1950	15
15	11300	12900	364	1110	14800	7400	631	11300	27000	4380	3460	6150
16	10300	12800	7090	2260	14700	12800	1290	14000	26800	5990	8270	2090
17	7150	12900	8140	942	14700	13500	5590	18900	27100	5110	7020	1480
18	7590	12900	7710	10100	13500	14000	1980	21300	27000	5020	801	120
19	5430	12100	15	11200	14200	14600	6780	14100	26600	5300	2940	15
20	11400	11300	15	11100	13100	14600	8570	7330	26500	5300	5090	15
21	2240	11000	4700	10500	13200	14600	8750	12100	26400	5720	1430	15
22	15	11100	2510	5260	13200	15000	4340	11500	26300	5650	2610	15
23	15	11400	2070	5810	13200	14500	7030	6960	26100	5460	4540	15
24	15	10800	265	5670	12500	14600	1020	10800	28800	5410	1900	846
25	15	10800	1310	6350	12600	14500	1260	7860	31600	4700	6690	15
26	4430	3040	310	117	12600	13500	4540	11700	31200	5640	4000	15
27	307	15	15	951	12500	13100	6840	11900	30800	4660	6000	15
28	15	15	766	1870	12900	13200	4800	11500	30400	2730	2450	756
29	15	15	550	443	---	12600	7900	12200	29900	1410	15	15
30	15	531	1800	5830	---	11600	4820	11300	29600	3700	3670	15
31	3830	---	15	15	---	11100	---	11200	---	3680	3450	---
TOTAL	97680	328616	122307	148731	458900	322270	142483	280520	777115	296890	91626	30957
MEAN	3151	10950	3945	4798	16390	10400	4749	9049	25900	9577	2956	1032
MAX	11400	18700	11300	11200	24000	15000	10200	21300	31600	29100	8270	7530
MIN	15	15	15	15	12500	15	15	1550	15	1410	15	15
AC-FT	193700	651800	242600	295000	910200	639200	282600	556400	1541000	588900	181700	61400
CAL YR 1981	TOTAL	1240169	MEAN	3398	MAX	18700	MIN	15	AC-FT	2460000		
WTR YR 1982	TOTAL	3098095	MEAN	8488	MAX	31600	MIN	15	AC-FT	6145000		

ARKANSAS RIVER BASIN

07193500 NEOSHO RIVER BELOW FORT GIBSON LAKE NEAR FORT GIBSON, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1951 to September 1963, October 1973 to Jan. 1982.

WATER TEMPERATURE: October 1951 to September 1963, October 1973 to Jan. 1982.

REMARKS: Samples were collected by a local observer on a daily basis. Additional samples were collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 496 micromhos Sept. 7, 1975; minimum daily 188 micromhos Oct. 18, 1974.

WATER TEMPERATURE: Maximum daily, 31.5°C July 31, Aug. 1, 1955; minimum daily, 0.0°C Jan. 23-25, 1962.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 06...	1430	80020	903	--	7.8	22.0	3.5	6.9	80	29	270
DEC 02...	1705	80020	312	--	7.8	11.0	2.8	10.0	93	K14	K14
FEB 10...	1230	80020	18000	290	7.9	2.5	17	11.2	84	--	--
APR 21...	1530	80020	11600	325	8.5	15.5	4.9	10.0	100	K3	K22
JUN 29...	1100	80020	29900	306	8.0	24.5	3.8	5.8	72	K2	20
AUG 10...	1320	80020	1780	280	7.3	29.5	1.1	6.0	80	22	140

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT 06...	120	38	39	6.7	12	17	.5	3.0	87	42	21
DEC 02...	120	35	38	6.1	9.5	14	.4	4.0	85	38	20
FEB 10...	120	33	38	5.9	8.9	13	.4	4.2	86	39	11
APR 21...	140	42	45	7.1	11	14	.4	3.8	100	45	14
JUN 29...	140	38	44	6.4	8.5	12	.3	3.6	98	40	9.1
AUG 10...	120	23	38	5.7	8.0	12	.3	3.7	96	29	8.8

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)
OCT 06...	.30	.0	180	180	.24	.260	.170	.22	.59	.040	.12
DEC 02...	.20	3.6	172	170	.23	.580	.190	.24	.64	.040	.12
FEB 10...	.20	5.0	167	160	.23	.800	.140	.18	.89	.060	.18
APR 21...	.10	.7	188	190	.26	.790	.120	.15	1.1	.030	.09
JUN 29...	.20	6.3	171	180	.23	.850	<.070	.09	1.4	.080	.25
AUG 10...	.20	6.7	210	160	.29	.160	.260	.33	1.1	.130	.40

ARKANSAS RIVER BASIN

07193500 NEOSHO RIVER BELOW FORT GIBSON LAKE NEAR FORT GIBSON, OK--Continued
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS PO4)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT 06...	.030	<.010	--	--	--	--	--	--	--	--	--
DEC 02...	.050	.090	.28	--	--	--	--	--	--	--	--
FEB 10...	<.010	.040	.12	1	0	1	100	.00	61	<1	<1
APR 21...	.010	<.010	--	--	--	--	--	--	--	--	--
JUN 29...	.030	.010	.03	1	0	1	100	.00	73	1	<1
AUG 10...	.040	.030	.09	1	0	1	<100	--	65	<1	<1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 06...	--	--	--	--	--	--	--	--	--	--	--
DEC 02...	--	--	--	--	--	--	--	--	--	--	--
FEB 10...	10	<10	1	<3	6	2	4	620	560	58	3
APR 21...	--	--	--	--	--	--	--	--	--	--	--
JUN 29...	<10	<10	<1	1	8	2	6	190	170	25	5
AUG 10...	<10	<10	<1	<1	3	0	3	210	200	11	7

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)
OCT 06...	--	--	--	--	--	--	--	--	--	--
DEC 02...	--	--	--	--	--	--	--	--	--	--
FEB 10...	2	1	50	40	15	.1	--	<.1	3	0
APR 21...	--	--	--	--	--	--	--	--	--	--
JUN 29...	--	<1	70	50	24	.1	.0	.2	10	3
AUG 10...	5	2	230	220	14	<.1	--	<.1	3	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 06...	--	--	--	--	--	--	--	--	7	79
DEC 02...	--	--	--	--	--	--	--	--	9	77
FEB 10...	3	<1	<1	<1	<1	20	--	<3	28	84
APR 21...	--	--	--	--	--	--	--	--	15	81
JUN 29...	7	<1	<1	<1	<1	20	0	12	12	84
AUG 10...	<1	1	<1	<1	<1	20	--	<3	10	32

ARKANSAS RIVER BASIN

07195500 ILLINOIS RIVER NEAR WATTS, OK

LOCATION.--Lat 36°07'48", long 94°34'12", in NE 1/4 sec.18, T.19 N., R.26 E., Adair County, Hydrologic Unit 11110103, near right bank on downstream side of pier of bridge on U.S. Highway 59, 1.5 mi (2.4 km) north of Watts, 4.5 mi (7.2 km) downstream from Cincinnati Creek, and at mile 106.2 (170.9 km).

DRAINAGE AREA.--635 mi² (1,645 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 893.78 ft (272.424 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some regulations at low flow by Lake Francis Dam, 0.8 mile (1.29 km) above station. Since July 2, 1957, small diversion above station for municipal water supply for city of Siloam Springs, Ark.

AVERAGE DISCHARGE.--27 years, 561 ft³/s (15.89 m³/s), 12.01 in/yr (305 mm/yr), 406,300 acre-ft/yr (501 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 68,000 ft³/s (1,930 m³/s) July 25, 1960, gage height, 25.96 ft (7.913 m), from rating curve extended above 51,000 ft³/s (1,440 m³/s); minimum, 8.6 ft³/s (0.24 m³/s) Oct. 26, 1955, Sept. 19, Oct. 14, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,500 ft³/s (184 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Jan 31	1130	19,200 544	19.00 5.791	June 16	0930	*35,400 1,000	*22.91 6.983

Minimum daily discharge, 55 ft³/s (1.56 m³/s) Oct. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	63	1000	247	148	4210	382	272	208	684	420	396	113		
2	61	1440	302	154	2530	372	281	195	495	372	287	117		
3	69	936	261	143	1820	362	295	181	1000	328	237	109		
4	63	897	235	149	1430	355	391	178	4070	299	208	101		
5	55	1010	219	161	1160	377	298	172	2410	273	183	95		
6	55	805	203	143	983	355	274	166	1280	252	171	89		
7	58	663	188	144	853	330	262	163	911	248	163	85		
8	60	571	178	145	765	312	240	159	722	248	157	81		
9	61	498	173	138	741	293	288	156	618	238	232	81		
10	61	449	172	135	692	287	311	146	656	222	228	81		
11	64	405	159	135	622	276	285	137	652	209	201	82		
12	84	368	154	135	602	292	262	146	781	195	184	80		
13	150	337	153	135	586	262	229	202	648	184	172	98		
14	324	312	146	133	586	304	229	2790	530	178	154	182		
15	459	289	144	131	748	788	226	1790	1930	172	142	159		
16	331	267	150	127	918	1170	211	1020	19700	168	129	142		
17	264	249	131	125	1570	1180	195	705	3940	161	121	129		
18	221	255	134	123	1090	864	212	553	1990	154	116	121		
19	207	216	131	121	889	732	201	468	1350	144	111	116		
20	201	215	136	121	766	640	212	435	1080	136	107	111		
21	170	205	121	121	690	563	214	371	823	134	105	107		
22	273	194	142	157	622	495	199	327	683	133	104	105		
23	983	184	190	262	578	454	180	290	591	130	100	100		
24	593	179	224	327	520	422	176	258	521	126	96	96		
25	452	196	204	276	479	389	173	240	468	123	93	93		
26	393	161	187	251	444	367	174	236	437	108	95	91		
27	380	165	176	235	424	338	216	226	434	78	100	89		
28	334	161	165	217	405	317	226	251	784	122	105	86		
29	294	158	162	216	---	322	213	286	693	157	112	85		
30	262	206	171	1930	---	278	213	385	499	348	107	81		
31	312	---	142	13400	---	269	---	322	---	645	107	---		
TOTAL	7357	12991	5500	20138	27723	14147	7158	13162	51380	6705	4823	3105		
MEAN	237	433	177	650	990	456	239	425	1713	216	156	104		
MAX	983	1440	302	13400	4210	1180	391	2790	19700	645	396	182		
MIN	55	158	121	121	405	262	173	137	434	78	93	80		
CFSM	.37	.68	.28	1.02	1.56	.72	.38	.67	2.70	.34	.25	.16		
IN.	.43	.76	.32	1.18	1.62	.83	.42	.77	3.01	.39	.28	.18		
AC-FT	14590	25770	10910	39940	54990	28060	14200	26110	101900	13300	9570	6160		
CAL YR 1981	TOTAL	94914	MEAN	260	MAX	4630	MIN	25	CFSM	.41	IN.	5.56	AC-FT	188300
WTR YR 1982	TOTAL	174189	MEAN	477	MAX	19700	MIN	55	CFSM	.75	IN.	10.20	AC-FT	345500

ARKANSAS RIVER BASIN

07196000 FLINT CREEK NEAR KANSAS, OK

LOCATION.--Lat 36°11'54", long 94°42'30", in SW 1/4 sec.24, T.20 N., R.24 E., Delaware County, Hydrologic Unit 11110103, at bridge on State Highway 33, 6.0 mi (9.7 km) southeast of Kansas, 6.0 mi (9.7 km) downstream from Sager Creek, and at mile 2.8 (4.5 km).

DRAINAGE AREA.--110 mi² (285 km²).

PERIOD OF RECORD.--August 1955 to September 1976, April 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 854.59 ft (260.479 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversion above station for irrigation.

AVERAGE DISCHARGE.--24 years, (water years 1956-76, 80-82), 112 ft³/s (3.172 m³/s) 13.82 in/yr (351 mm/yr), 81,140 acre-ft/yr (100 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,600 ft³/s (668 m³/s) Aug. 14, 1961, gage height, 15.66 ft (4.773 m), from rating curve extended above 7,200 ft³/s (204 m³/s); minimum daily, 0.6 ft³/s (0.017 m³/s) Oct. 11-13, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 4,510 ft³/s (128 m³/s) Jan. 30, gage height, 9.62 ft (2.932 m), no other peak above base of 2,500 ft³/s (70.8 m³/s); minimum daily discharge, 13 ft³/s (0.37 m³/s) Sept. 12-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	54	599	113	44	629	77	58	49	49	31	138	17		
2	45	411	101	42	432	74	61	47	47	30	103	17		
3	37	288	91	42	351	72	61	46	54	29	85	16		
4	30	283	80	42	300	70	58	46	97	27	70	16		
5	25	251	73	41	265	74	55	45	113	26	60	15		
6	26	216	67	39	224	70	55	46	102	25	53	14		
7	25	186	63	38	191	67	55	46	88	27	48	14		
8	24	164	60	37	171	66	59	44	75	28	47	15		
9	23	141	57	37	155	64	56	41	64	26	43	15		
10	23	125	56	34	141	63	52	39	64	25	39	14		
11	21	114	54	32	124	62	50	39	70	24	39	14		
12	125	103	51	34	120	62	49	44	91	23	40	13		
13	165	94	49	35	114	64	50	89	82	25	36	13		
14	1280	85	48	34	107	69	48	243	72	24	34	16		
15	454	79	47	33	127	140	46	217	70	23	31	17		
16	279	75	46	33	132	180	47	161	84	22	29	16		
17	223	70	45	32	132	170	46	127	77	21	28	16		
18	186	66	45	31	124	160	44	104	70	21	27	16		
19	157	63	47	32	118	160	42	89	64	20	23	15		
20	133	60	45	32	107	150	45	84	57	20	21	14		
21	116	57	42	32	100	140	45	74	52	20	20	15		
22	185	55	47	40	96	120	44	65	49	20	19	15		
23	229	55	58	48	93	110	43	59	45	20	17	15		
24	185	54	57	46	90	97	43	56	43	20	17	16		
25	158	53	56	45	87	84	43	55	40	19	17	16		
26	141	52	56	44	85	80	55	51	39	18	17	15		
27	123	49	54	43	82	74	61	49	36	20	19	14		
28	110	49	53	43	80	69	57	50	36	105	22	15		
29	99	47	50	41	---	66	56	49	35	107	19	15		
30	91	81	48	1120	---	63	51	44	33	418	18	15		
31	161	---	45	1830	---	60	---	51	---	246	18	---		
TOTAL	4933	4025	1804	4056	4777	2877	1535	2249	1898	1510	1197	454		
MEAN	159	134	58.2	131	171	92.8	51.2	72.5	63.3	48.7	38.6	15.1		
MAX	1280	599	113	1830	629	180	61	243	113	418	138	17		
MIN	21	47	42	31	80	60	42	39	33	18	17	13		
CFSM	1.45	1.22	.53	1.19	1.55	.84	.47	.66	.58	.44	.35	.14		
IN.	1.67	1.36	.61	1.37	1.62	.97	.52	.76	.64	.51	.40	.15		
AC-FT	9780	7980	3580	8050	9480	5710	3040	4460	3760	3000	2370	901		
CAL YR 1981	TOTAL	20801	MEAN	57.0	MAX	1280	MIN	15	CFSM	.52	IN.	7.03	AC-FT	41260
WTR YR 1982	TOTAL	31315	MEAN	85.8	MAX	1830	MIN	13	CFSM	.78	IN.	10.59	AC-FT	62110

ARKANSAS RIVER BASIN

07196500 ILLINOIS RIVER NEAR TAHLEQUAH, OK

LOCATION.--Lat 35°55'17", long 94°55'15", in SE 1/4 sec.26, T.17 N., R.22 E., Cherokee County, Hydrologic Unit 11110103, near center of span on downstream side of pier of bridge, 0.2 mi (0.3 km) downstream from U.S. Highway 62, 2.2 mi (3.5 km) northeast of Tahlequah, 6.5 mi (10.5 km) upstream from Baron Fork, and at mile 55.8 (89.9 km).

DRAINAGE AREA.--959 mi² (2,482 km²).

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 664.14 ft (202.430 m), Corps of Engineers datum. Prior to Feb. 23, 1939, nonrecording gage.

REMARKS.--Records good.

AVERAGE DISCHARGE.--47 years, 867 ft³/s (24.55 m³/s) 12.28 in/yr (312 mm/yr), 628,100 acre-ft/yr (774 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft³/s (4,250 m³/s) May 10, 1950, gage height, 27.94 ft (98.516 m), from rating curve extended above 77,000 ft³/s (2,180 m³/s) on basis of slope-area measurement of peak flow; minimum daily, 0.1 ft³/s (0.003 m³/s) Oct. 10-14, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1916 reached a stage of about 26 ft (7.9 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Feb. 1	1700	17,900 507	15.10 4.602	June 17	1300	*25,300 716	*16.95 5.166

Minimum discharge, 99 ft³/s (2.80 m³/s) Oct. 10-12, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	136	1000	344	282	15600	537	441	312	580	687	896	152		
2	130	2110	423	267	7330	510	434	306	754	584	714	152		
3	122	2500	489	272	4040	493	423	297	778	506	534	152		
4	112	1980	484	266	2930	473	412	286	1850	445	420	152		
5	109	1700	445	263	2300	453	474	276	4480	399	359	148		
6	116	1730	415	264	1860	456	453	279	3400	362	318	142		
7	107	1490	389	258	1570	447	418	271	2070	362	288	137		
8	103	1250	362	250	1360	425	415	260	1510	324	269	133		
9	100	1080	339	248	1200	408	390	253	1190	315	250	127		
10	99	928	322	240	1110	388	385	247	1130	300	242	122		
11	99	821	309	239	1020	375	412	239	1050	286	286	118		
12	104	717	299	239	929	367	406	254	1050	269	283	117		
13	155	639	285	239	869	363	387	440	1130	255	269	117		
14	785	581	276	236	829	378	364	1360	1030	242	255	122		
15	1670	542	273	234	802	428	350	3780	955	234	239	120		
16	1430	504	267	224	923	912	346	2700	5680	219	222	175		
17	1060	464	261	224	1120	1410	334	1770	18200	212	207	191		
18	824	432	254	224	1680	1620	318	1300	6360	205	191	212		
19	660	409	245	217	1400	1360	310	1040	2900	195	182	175		
20	544	376	244	211	1190	1190	310	872	2020	186	173	156		
21	465	355	241	203	1040	1050	301	769	1620	177	160	138		
22	468	340	249	226	928	930	306	673	1290	167	160	126		
23	500	322	261	239	841	828	303	597	1060	160	156	113		
24	1050	307	281	276	768	760	291	526	899	154	148	110		
25	1030	297	317	368	697	698	283	486	784	150	141	107		
26	817	293	332	384	647	641	288	438	677	148	141	107		
27	681	277	325	370	603	599	280	409	610	148	142	105		
28	598	266	314	353	567	555	294	420	571	148	148	105		
29	532	261	302	338	---	520	321	396	709	154	154	103		
30	464	302	292	1330	---	499	319	389	877	247	152	102		
31	532	---	285	8730	---	475	---	550	---	490	156	---		
TOTAL	15602	24273	9924	17714	56153	20548	10768	22195	67214	8730	8255	4036		
MEAN	503	809	320	571	2005	663	359	716	2240	282	266	135		
MAX	1670	2500	489	8730	15600	1620	474	3780	18200	687	896	212		
MIN	99	261	241	203	567	363	280	239	571	148	141	102		
CFSM	.52	.84	.33	.60	2.09	.69	.37	.75	2.34	.29	.28	.14		
IN.	.61	.94	.38	.69	2.18	.80	.42	.86	2.61	.34	.32	.16		
AC-FT	30950	48150	19680	35140	111400	40760	21360	44020	133300	17320	16370	8010		
CAL YR 1981	TOTAL	140201	MEAN	384	MAX	3380	MIN	94	CFSM	.40	IN.	5.44	AC-FT	278100
WTR YR 1982	TOTAL	265412	MEAN	727	MAX	18200	MIN	99	CFSM	.76	IN.	10.30	AC-FT	526400

ARKANSAS RIVER BASIN

07197000 BARON FORK AT ELDON, OK

LOCATION.--Lat 35°55'16", long 94°50'18", in SE 1/4 sec.27, T.17 N., R.23 E., Cherokee County, Hydrologic Unit 11110103, on downstream side of second pier from left bank of bridge on State Highway 51, 0.4 mi (0.6 km) southeast of Eldon, 6.0 mi (9.7 km) downstream from Tyner Creek, and at mile 8.8 (14.2 km).

DRAINAGE AREA.--307 mi² (795 km²).

PERIOD OF RECORD.--October 1948 to current year. Prior to October 1970 published as Barren Fork at Eldon.

GAGE.--Water-stage recorder. Datum of gage is 701.14 ft (213.707 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Dec. 14, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--34 years, 284 ft³/s (8.043 m³/s), 12.55 in/yr (319 mm), 205,800 acre-ft/yr (254 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,600 ft³/s (1,060 m³/s) Apr. 3, 1957, gage height, 20.33 ft (6.197 m), maximum gage height, 22.73 ft (6.928 m), Apr. 20, 1976; minimum, 1.7 ft³/s (0.048 m³/s) Oct. 25, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 15, 1945, reached a stage of 23.8 ft (7.25 m), from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,300 ft³/s (433 m³/s), at 0630 Jan. 31, gage height, 17.03 ft (5.191 m), no other peak above base of 6,000 ft³/s (170 m³/s); minimum daily discharge, 13 ft³/s (0.37 m³/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	17	576	106	62	2700	192	155	104	824	211	160	27		
2	16	1170	124	60	1720	182	150	101	500	192	116	24		
3	15	847	133	59	1330	177	162	96	643	175	94	23		
4	15	712	123	58	1060	174	190	93	2480	159	78	21		
5	14	673	114	57	877	172	171	91	1780	149	70	20		
6	16	585	105	56	725	166	156	91	1210	138	65	24		
7	17	497	85	57	603	157	146	86	932	157	60	23		
8	18	427	79	58	528	149	149	83	746	130	55	20		
9	18	374	73	60	479	142	196	78	602	103	60	19		
10	18	324	68	57	434	137	201	74	682	96	62	18		
11	18	285	65	56	385	132	182	69	676	89	53	17		
12	21	251	62	55	358	130	168	79	617	82	47	16		
13	33	224	59	53	334	125	157	243	529	78	43	17		
14	96	202	58	52	319	133	148	2370	447	72	39	24		
15	111	185	60	53	346	253	141	1450	411	68	34	24		
16	138	169	63	54	403	648	134	993	3370	63	30	24		
17	117	156	64	52	470	799	189	726	1750	59	27	25		
18	107	144	62	50	443	622	237	553	1130	55	25	27		
19	99	134	61	49	396	530	202	445	876	51	22	25		
20	92	123	60	48	360	468	176	376	716	47	21	28		
21	85	115	61	52	331	417	158	322	599	43	19	27		
22	112	108	58	57	307	363	143	277	516	40	19	26		
23	334	102	56	63	285	320	132	243	448	36	19	24		
24	351	96	59	78	262	289	123	217	396	33	16	23		
25	275	92	62	103	242	262	117	202	356	30	14	22		
26	235	88	65	105	224	237	115	191	330	28	14	21		
27	208	83	74	104	212	216	112	217	308	26	13	21		
28	188	79	70	100	201	200	110	352	278	39	18	21		
29	168	75	67	97	---	187	110	710	252	220	34	19		
30	151	86	65	1280	---	176	107	467	229	176	36	18		
31	191	---	63	9390	---	165	---	441	---	231	32	---		
TOTAL	3294	8982	2324	12535	16334	8320	4637	11840	24633	3076	1395	668		
MEAN	106	299	75.0	404	583	268	155	382	821	99.2	45.0	22.3		
MAX	351	1170	133	9390	2700	799	237	2370	3370	231	160	28		
MIN	14	75	56	48	201	125	107	69	229	26	13	16		
CFSM	.35	.97	.24	1.32	1.90	.87	.50	1.24	2.67	.32	.15	.07		
IN.	.40	1.09	.28	1.52	1.98	1.01	.56	1.43	2.98	.37	.17	.08		
AC-FT	6530	17820	4610	24860	32400	16500	9200	23480	48860	6100	2770	1320		
CAL YR 1981	TOTAL	73460	MEAN	201	MAX	5980	MIN	14	CFSM	.65	IN.	8.90	AC-FT	145700
WTR YR 1982	TOTAL	98038	MEAN	269	MAX	9390	MIN	13	CFSM	.88	IN.	11.88	AC-FT	194500

ARKANSAS RIVER BASIN

07197500 TENKILLER FERRY LAKE NEAR GORE, OK

LOCATION.--Lat 35°35'43", long 95°02'57", in SE 1/4 SW 1/4 sec.14, T.13 N., R.21 E., Sequoyah County, Hydrologic Unit 11110103, at gage tower on right bank, 0.6 mi (1.0 km) upstream from Tenkiller Ferry Dam on Illinois River, 6.0 mi (9.7 km) northeast of Gore, and at mile 12.8 (20.6 km).

DRAINAGE AREA.--1,610 mi² (4,170 km²).

PERIOD OF RECORD.--July 1952 to current year. Prior to October 1970, published as Tenkiller Ferry Reservoir near Gore.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Apr. 5, 1953, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam. Spillway consists of 590-ft (179.8 m) concrete modified ogee weir in right abutment controlled by 10 taintor gates. Outlet works consist of a 19-ft (5.8 m) diameter tunnel in right abutment controlled by two vertical lift gates. A similar tunnel conducts water to two hydroelectric turbines. Closure was made for diversion in July 1950 and regulated storage began in July 1952; conservation pool was first filled Apr. 9, 1953. Capacity, 1,231,000 acre-ft (1,520 hm³) at elevation 667.0 ft (203.30 m), flood-control pool, 791,900 acre-ft (976 hm³) at elevation, 642.0 ft (195.68 m), spillway crest, 628,700 acre-ft at elevation 630.0 ft (192.02 m), maximum power pool, and 283,100 acre-ft (349 hm³) at elevation 594.5 ft (181.20 m), conservation and minimum power pool. Figures given herein represent total contents. Reservoir is used for flood control and for power development.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,218,000 acre-ft (1.50 km³) June 5, 1957, elevation, 666.36 ft (203.107 m); minimum since conservation pool was first filled, 305,700 acre-ft (377 hm³) Oct. 21, 1954, elevation, 597.50 ft (182.118 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 813,200 acre-ft (1.00 km³) June 20, elevation, 643.45 ft (196.124 m); minimum, 551,300 acre-ft (680 hm³) Oct. 12, elevation, 623.53 ft (190.052 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

624	556,800	635	693,400
627	591,800	639	748,600
631	641,000	643	806,600

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	556300	617500	652400	597200	664200	679500	635600	598400	669600	724000	644900	581000
2	556200	624300	651200	598000	688000	676900	633100	599300	672600	720700	643900	579400
3	555700	632100	649900	598600	699600	674400	629200	597600	685300	718900	642300	578200
4	555500	638200	649400	596000	705100	671500	625000	597500	700000	716200	640400	578100
5	553200	643900	650400	592200	708800	667900	621900	598400	714000	713300	639000	577900
6	552300	649000	651600	589800	711500	662400	619700	599300	725000	710400	637300	577700
7	552300	653300	651000	585300	712300	656700	617500	599200	729600	707700	635800	577100
8	551900	658200	649000	581300	712700	652000	614700	597300	731400	701500	634500	576200
9	551700	661600	647200	580000	711800	646600	612100	597700	732900	696400	632800	574700
10	551700	664700	643900	574800	710100	642200	613200	594600	734100	693700	630300	572200
11	551600	667300	641000	569300	708700	638300	614700	592300	736400	691300	628300	572000
12	551600	669400	639500	563500	707300	634000	613600	595100	739300	688700	625900	571900
13	561300	671300	638000	559100	705500	629300	612600	604100	742800	686700	624800	570500
14	569600	673200	634700	558200	706300	626000	612200	613900	742800	684900	622100	568000
15	573000	675100	631500	557800	704800	625900	611100	624600	750000	682800	621100	565800
16	576700	673800	627700	557600	703800	629200	612500	633000	765700	680300	618900	564900
17	580700	672600	624800	558000	702300	632800	613200	636300	798500	678600	616000	565100
18	582900	672300	620800	558100	701300	636000	614300	639500	811300	677000	613400	565800
19	584600	670600	616500	558500	699700	639300	613300	643100	813100	674300	610700	566000
20	586000	668500	613300	559000	699400	643100	612300	645800	812800	671700	607700	565000
21	587900	668600	610000	559900	699600	646500	611500	649000	811300	669300	605100	564600
22	592300	668800	608300	560700	697200	647600	608300	651100	808800	666000	602400	564400
23	594400	666000	603900	561400	695100	650200	607200	652900	805400	663100	599300	564200
24	597100	663900	604300	561900	693000	652700	605100	655000	797900	660800	596100	563600
25	600800	662200	604800	562900	690100	652500	605300	654400	787200	658900	592900	563500
26	601800	663100	603900	563800	687000	651900	605000	654400	776300	655800	590100	563300
27	601900	661000	603200	564700	684100	650200	603200	654100	765100	653200	587900	562900
28	602700	658200	601000	565600	682500	646800	601400	657100	753900	651000	587600	562600
29	603100	654600	599300	566500	---	644000	600300	659600	743000	649300	587400	562000
30	604700	652800	597500	589700	---	640600	597700	661800	732100	646800	585300	561700
31	612100	---	596700	625700	---	637800	---	665900	---	645500	583500	---
MAX	612100	675100	652400	625700	712700	679500	635600	665900	813100	724000	644900	581000
MIN	551600	617500	596700	557600	664200	625900	597700	592300	669600	645500	583500	561700
†	628.65	631.90	627.40	629.76	634.17	630.74	627.48	632.90	637.81	631.34	626.30	624.42
††	+54,500	+40,700	-56,100	+29,000	+56,800	-44,700	-40,100	+68,200	+66,200	-86,600	-62,000	-21,800

CAL YR 1981 MAX 849000 MIN 530900, †† +65,900
WTR YR 1982 MAX 813100 MIN 551600, †† +4,100

† Elevation, in feet, at end of month
†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07198000 ILLINOIS RIVER NEAR GORE, OK

LOCATION.--Lat 35°34'23", long 95°04'07", in NE 1/4 SW 1/4 sec.27, T.13 N., R.21 E., Sequoyah County, Hydrologic Unit 11110104, on right bank 4.5 mi (7.2 km) (revised) downstream from Tenkiller Ferry Dam, 4.5 mi (7.2 km) northeast of Gore, and at mile 8.5 (13.7 km).

DRAINAGE AREA.--1,626 mi² (4,211 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1924 to April 1926, April 1939 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder. Datum of gage is 473.00 ft (144.170 m) National Geodetic Vertical Datum of 1929. See WSP 1921 for history of changes prior to Feb. 19, 1952.

REMARKS.--Records good. Except for 16 mi² (41 km²) intervening area, flow completely regulated since July 1952 by Tenkiller Ferry Lake (station 07197500).

COOPERATION.--Gage-height record and 21 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--44 years (water years 1924-25, 1939-82), 1,479 ft³/s (41.89 m³/s), 1,072,000 acre-ft/yr (1.32 km³/yr) adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180,000 ft³/s (5,100 m³/s) May 11, 1950, gage height, 29.6 ft (9.02 m), from floodmark, present site and datum, from rating curve extended above 42,000 ft³/s (1,190 m³/s) by velocity-area studies; minimum, 2.0 ft³/s (0.057 m³/s) Sept. 16, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,820 ft³/s (193 m³/s) June 24, gage height, 9.49 ft (2.893 m); minimum daily discharge, 45 ft³/s (1.27 m³/s) May 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	708	163	849	46	169	2490	1980	116	70	5050	1080	1330
2	124	124	1150	196	95	2580	2980	52	98	2330	1240	1000
3	107	110	1210	49	632	2520	3160	1180	195	1460	1350	626
4	107	68	932	1560	2190	2590	2900	450	433	1630	1320	98
5	1280	71	66	2150	2290	2610	2940	108	127	1820	1020	80
6	924	53	48	1710	1930	3680	1710	60	100	1720	1140	117
7	111	56	985	2400	2530	3700	2320	445	1220	2450	1060	238
8	104	79	1510	2540	2320	3540	2550	1220	1660	3490	973	467
9	107	72	1420	1300	2640	3680	2470	116	1590	3070	1060	664
10	97	84	2010	2910	2880	3330	130	2060	1360	1610	1400	1300
11	100	67	1790	3090	2610	2810	91	1540	1730	1490	1240	107
12	141	52	1110	3670	2690	3370	1480	171	430	1590	1400	84
13	262	79	1160	2540	2610	3270	1260	219	76	1280	1360	883
14	630	52	2090	1010	1390	3260	889	180	1660	1180	797	1310
15	175	48	2120	711	2420	1450	1360	77	2060	1280	618	1010
16	74	1570	2340	145	2390	875	114	78	2110	1470	1320	466
17	89	1250	1790	79	2840	747	77	1380	3420	1000	1480	165
18	92	987	2330	286	3210	1150	90	515	3330	923	1430	89
19	67	1410	2470	78	3050	704	1460	56	3320	1560	1450	85
20	66	1670	1980	67	2080	90	1070	177	3310	1500	1590	544
21	57	406	2080	58	1660	76	999	67	3280	1320	1400	92
22	244	348	1430	60	2930	1190	2210	54	3250	1580	1280	84
23	84	1680	2380	52	2640	85	981	45	3240	1450	1690	84
24	68	1470	233	58	2690	65	1750	55	4890	1330	1670	237
25	60	1290	148	57	2700	1480	606	979	6480	974	1460	92
26	789	54	815	55	2830	1840	634	742	6400	1690	1320	91
27	1130	1400	531	62	2780	1630	1140	829	6320	1470	1390	124
28	581	1760	1680	65	1900	3080	1580	1170	6310	1300	111	126
29	652	2190	1140	59	---	2320	1150	82	6320	1670	107	312
30	206	1660	1150	724	---	2920	1690	58	6290	1610	1100	166
31	180	---	810	307	---	2880	---	70	---	1130	1020	---
TOTAL	9416	20323	41757	28094	63096	66012	43771	14351	81079	53427	36876	12071
MEAN	304	677	1347	906	2253	2129	1459	463	2703	1723	1190	402
MAX	1280	2190	2470	3670	3210	3700	3160	2060	6480	5050	1690	1330
MIN	57	48	48	46	95	65	77	45	70	923	107	80
AC-FT	18680	40310	82830	55720	125200	130900	86820	28470	160800	106000	73140	23940
CAL YR 1981	TOTAL	217127	MEAN	595	MAX	3190	MIN	41	AC-FT	430700		
WTR YR 1982	TOTAL	470273	MEAN	1288	MAX	6480	MIN	45	AC-FT	932800		

ARKANSAS RIVER BASIN

07198000 ILLINOIS RIVER NEAR GORE, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948, 1952, 1954 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to September 1948, October 1953 to September 1963.

WATER TEMPERATURE: October 1947 to September 1948, October 1953 to September 1963.

REMARKS.--Monthly samples were collected and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)
OCT											
22...	1545	80020	220	--	7.9	17.0	3.6	4.7	49	93	8
NOV											
20...	1150	80020	3500	--	7.2	15.5	5.0	7.7	77	90	10
DEC											
09...	1645	80020	822	265	7.2	14.5	1.8	8.2	82	91	15
JAN											
21...	1700	80020	56	270	7.6	7.0	1.7	10.2	85	91	9
FEB											
10...	1545	80020	3580	--	7.7	4.5	1.5	12.2	96	90	8
MAR											
25...	1645	80020	3990	210	7.2	9.0	2.4	12.3	107	85	2
APR											
22...	0930	80020	3710	190	7.2	10.5	.80	9.7	87	88	9
MAY											
25...	1450	80020	3150	210	7.4	12.0	2.5	--	--	87	8
JUL											
13...	1745	80020	1800	219	6.4	15.5	1.8	3.4	35	100	14
AUG											
10...	1545	80020	3350	222	6.6	18.0	1.8	2.2	24	--	--
SEP											
02...	1345	80020	1940	227	6.8	18.0	3.6	2.0	22	93	5

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT											
22...	34	1.9	6.9	14	.3	2.5	85	5.0	11	133	.18
NOV											
20...	33	1.9	5.4	11	.3	2.7	80	7.0	8.4	112	.15
DEC											
09...	33	2.1	12	22	.6	2.4	76	15	29	136	.19
JAN											
21...	33	2.2	11	20	.5	2.4	83	7.0	20	128	.17
FEB											
10...	33	1.9	5.2	11	.3	2.5	82	6.0	7.5	107	.15
MAR											
25...	31	1.8	5.2	11	.3	2.5	83	7.0	11	113	.15
APR											
22...	32	1.9	6.9	14	.3	2.3	79	5.0	15	104	.14
MAY											
25...	32	1.8	5.0	11	.2	2.4	79	5.0	7.8	117	.16
JUL											
13...	37	1.8	4.6	9	.2	2.5	86	13	7.0	119	.16
AUG											
10...	--	--	--	--	--	--	90	--	--	115	.16
SEP											
02...	34	1.9	4.9	10	.2	2.5	88	10	7.8	131	.18

ARKANSAS RIVER BASIN

07228500 CANADIAN RIVER AT BRIDGEPORT, OK

LOCATION.--Lat 35°32'37", long 98°19'03", SE 1/4 NW 1/4 sec.1, T.12 N., R.11 W., Blaine County, Hydrologic Unit 11090202, on downstream side of pier near center of bridge on U.S. Highway 281, 3.3 mi (5.3 km) north of Bridgeport, 1.6 mi (2.6 km) downstream from Lumpmouth Creek, and at mile 263.3 (423.6 km).

DRAINAGE AREA.--25,276 mi² (65,465 km²), of which 4,801 mi² (12,435 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1944 to September 1964; October 1969 to current year.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,360.00 ft (414.528 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1947, at site 3.8 mi (6.1 km) upstream at datum 24.25 ft (7.391 m) higher. Oct. 1, 1947 to Sept. 30, 1948, nonrecording gage and Oct. 1, 1948 to September 1964, Oct. 1, 1969 to Dec. 17, 1980 at site 4.0 mi (6.4 km) upstream and at datum 24.25 ft (7.391 m) higher.

REMARKS.--Records poor. Occasional slight regulation by Conchas Reservoir in New Mexico, and by Lake Meredith in Texas since 1964.

AVERAGE DISCHARGE.--33 years, 375 ft³/s (10.62 m³/s), 272,000 acre-ft/yr (335 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 150,000 ft³/s (4,250 m³/s) June 23, 1948, gage height, 14.60 ft (4.450 m), from floodmarks, from rating curve extended above 50,000 ft³/s (1,420 m³/s), no flow at times in 1946, 1951-56, 1964, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of about 19.4 ft (5.91 m), a higher stage probably occurred during flood in October 1904.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 13	0100	15,000 425	15.31 4.666	May 17	0930	*86,100 2,440	*17.55 5.349

Minimum daily discharge, 11 ft³/s (0.31 m³/s) Sept. 9-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	201	293	288	374	189	195	195	886	320	48	13
2	13	358	250	271	330	191	222	185	629	300	59	14
3	15	343	249	271	300	201	210	182	472	280	60	12
4	122	358	246	258	260	204	183	167	377	260	62	12
5	34	324	243	256	230	194	172	147	274	250	64	12
6	24	324	239	248	200	203	158	167	239	245	79	12
7	22	341	232	220	160	209	148	180	221	346	82	12
8	23	366	220	230	180	213	144	167	215	268	175	12
9	24	514	216	220	220	211	138	172	198	165	126	11
10	25	373	212	170	250	206	138	158	198	162	110	11
11	30	304	210	190	320	199	147	157	195	190	87	11
12	109	290	203	210	400	204	139	4650	198	314	69	11
13	40	282	203	190	500	197	141	6080	242	366	58	18
14	27	294	213	220	733	320	145	873	227	248	48	25
15	2860	316	219	250	530	428	147	362	224	128	41	37
16	3400	324	228	220	865	321	133	4010	221	103	35	23
17	882	318	231	250	730	212	131	36500	227	87	31	22
18	598	314	224	270	423	187	130	6680	218	72	30	22
19	354	297	222	300	374	185	113	2990	427	66	28	24
20	221	257	206	346	299	185	102	2300	932	60	27	22
21	130	234	227	335	268	169	97	1220	600	56	24	19
22	102	226	236	328	255	154	94	954	450	50	21	18
23	100	214	251	303	236	136	94	856	350	47	19	16
24	90	226	271	260	190	131	97	820	450	46	17	16
25	88	223	274	280	180	126	124	708	700	38	17	16
26	101	219	268	340	195	115	137	629	600	35	17	16
27	96	209	271	380	197	118	130	701	500	34	16	14
28	89	203	281	414	194	145	126	1340	450	39	16	14
29	82	217	288	382	---	160	128	720	400	38	16	14
30	73	279	274	638	---	175	162	573	350	65	14	13
31	78	---	288	445	---	189	---	866	---	52	13	---
TOTAL	9865	8748	7488	8983	9393	6077	4225	75709	11670	4730	1509	492
MEAN	318	292	242	290	335	196	141	2442	389	153	48.7	16.4
MAX	3400	514	293	638	865	428	222	36500	932	366	175	37
MIN	13	201	203	170	160	115	94	147	195	34	13	11
AC-FT	19570	17350	14850	17820	18630	12050	8380	150200	23150	9380	2990	976
CAL YR 1981	TOTAL	49423.9		MEAN	135	MAX	4000	MIN	4.2	AC-FT	98030	
WTR YR 1982	TOTAL	148889		MEAN	408	MAX	36500	MIN	11	AC-FT	295300	

07228500 CANADIAN RIVER AT BRIDGEPORT, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-61, 1964, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1948 to September 1960, October 1969 to April 1982.

WATER TEMPERATURE: October 1948 to September 1960, October 1969 to April 1982.

REMARKS: Samples were collected by a local observer on a daily basis. Partial analyses were made on those samples collected at or near the 5th, 15th, and 25th of each month from Oct.-Feb. Additional samples were collected at times and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,830 micromhos June 11, 1975; minimum daily, 223 micromhos Aug. 16, 1973.

WATER TEMPERATURE: Maximum daily, 40.0°C July 9, 22, 1973; minimum, 0.0°C many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
OCT												
05...	1400	80020	34	655	7.6	24.0	--	--	300	189	98	13
08...	1030	1028	23	--	--	14.0	--	--	--	--	--	--
14...	1400	80020	26	977	7.9	27.0	--	--	450	301	140	25
25...	0930	80020	86	1840	7.6	11.0	--	--	590	382	160	44
NOV												
05...	1600	80020	324	2160	8.0	15.0	--	--	610	424	160	52
14...	0900	80020	296	2350	7.9	12.0	--	--	630	450	160	57
25...	1400	80020	227	2400	8.2	14.0	--	--	690	493	180	59
DEC												
05...	1000	80020	248	2330	8.2	8.0	--	--	700	497	180	60
15...	1630	80020	221	2300	8.2	8.0	--	--	770	590	200	66
21...	1645	1028	242	--	--	9.0	--	--	--	--	--	--
26...	1700	80020	281	2300	8.2	6.0	--	--	710	540	180	63
JAN												
05...	1630	80020	258	2340	8.1	6.0	--	--	730	570	190	62
15...	1600	80020	250	2260	8.3	.5	--	--	810	584	220	64
25...	1330	80020	280	2340	8.3	4.0	--	--	720	508	190	59
FEB												
09...	1000	80020	220	2560	8.2	.0	--	--	880	644	230	75
15...	1600	80020	530	2500	8.2	7.0	--	--	890	648	230	76
25...	1100	80020	180	2270	8.1	8.0	--	--	730	515	190	63
JUL												
16...	1025	80020	103	--	8.5	27.0	7.5	106	--	--	--	--
SEP												
02...	1130	80020	14	1310	8.2	31.0	7.6	112	570	--	160	40
28...	0900	80020	14	1010	8.1	20.5	7.2	86	500	386	140	35

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
OCT												
05...	19	12	.5	6.4	110	210	24	--	448	--	.61	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
14...	42	17	.9	6.1	150	320	39	--	691	--	.94	--
25...	170	38	3	8.7	210	410	260	--	1240	--	1.7	--
NOV												
05...	260	48	5	9.2	190	440	380	--	1420	--	1.9	--
14...	290	49	5	9.2	--	430	440	--	1520	--	2.1	--
25...	280	46	5	8.6	200	500	420	--	1580	--	2.1	--
DEC												
05...	240	43	4	7.9	200	480	380	--	1520	--	2.1	--
15...	230	39	4	7.7	--	490	370	--	1490	--	2.0	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
26...	250	43	4	7.4	170	490	390	--	1510	--	2.1	--
JAN												
05...	240	41	4	6.8	--	480	380	--	1540	--	2.1	--
15...	200	35	3	6.3	230	550	300	--	1560	--	2.1	--
25...	240	42	4	6.9	210	510	380	--	1530	--	2.1	--
FEB												
09...	240	37	4	8.0	240	610	360	--	1750	--	2.4	--
15...	240	37	4	7.8	240	590	360	--	1730	--	2.4	--
25...	240	41	4	7.1	220	470	360	--	1520	--	2.1	--
JUL												
16...	--	--	--	9.3	202	460	250	--	1350	--	1.8	--
SEP												
02...	57	--	1	--	--	--	--	17	--	--	--	.310
28...	46	17	.9	3.9	110	440	34	9.4	805	780	1.1	--

ARKANSAS RIVER BASIN

07228500 CANADIAN RIVER AT BRIDGEPORT, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)
OCT												
05...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
05...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
05...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
09...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	1.4	.020	.07	--	.330	.250	.32	.200	.61	--	140	<0
28...	--	<.020	--	.200	<.100	<.060	.08	.120	.37	7	120	0

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)
OCT												
05...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
05...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
05...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
09...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
16...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	<1	<1	4	<10	<3	<10	18	<1	<10	43	21	<.1
28...	<2	1	<1	<10	<3	<10	9	<1	<10	37	15	.1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
OCT												
05...	--	--	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
05...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
05...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
05...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
09...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
16...	--	--	--	--	<.1	<.10	<.010	<.1	<.010	<.010	<.010	.01
SEP												
02...	<10	1600	25	55	--	--	--	--	--	--	--	--
28...	<10	1300	14	16	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

ARKANSAS RIVER BASIN

07229200 CANADIAN RIVER AT PURCELL, OK

LOCATION.--Lat 35°00'50", long 97°20'50", in NW 1/4 sec.7, T.6 N., R.1 W., Cleveland County, Hydrologic Unit 11090202, near left bank on downstream side of pier of U.S. Highway 77, 0.5 mi (0.8 km) east of Purcell, 1.0 mi (1.6 km) upstream from Walnut Creek, and at mile 184.9 (297.5 km).

DRAINAGE AREA.--25,939 mi² (67,182 km²), of which 4,801 mi² (12,435 km²) probably is noncontributing.

PERIOD OF RECORD.--October 1959 to June 1961 and October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,017.14 ft (310.024 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,500 ft³/s (1,430 m³/s) May 19, 1982, gage height, 14.50 ft (4.420 m), no flow at times in 1980, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1904 reached a stage of 14.18 ft (4.322 m) and flood in 1914 reached a stage of 12.98 ft (3.956 m), from information by the Atchison, Topeka, and Santa Fe Railway Co.

EXTREMES FOR CURRENT PERIOD.--Peak discharges above base of 8,000 ft³/s (227 m³/s) and maximum for each year (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 30, 1980	--	*6,870 195	*9.82 2.993	May 24, 1982	1445	11,000 312	9.35 2.850
July 5, 1981	--	*5,700 161	*9.81 2.990	May 28, 1982	2200	9,400 266	9.10 2.774
May 19, 1982	1100	*50,500 1,430	*14.50 4.420	May 31, 1982	2130	10,200 289	9.23 2.813

Minimum daily discharge for each year, no flow at times in 1980, 1981, and 0.23 ft³/s (0.007 m³/s) Oct. 3, 1981.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	11	153	137	658	240	1010	1250	4620	323	.20	.00
2	4.3	146	146	110	286	240	858	2090	2650	276	.00	.00
3	4.0	250	139	109	477	230	945	2640	1480	139	.00	5.2
4	3.7	203	132	108	460	210	872	2240	781	125	.85	.84
5	3.4	150	132	104	260	190	830	1650	600	91	.31	.77
6	3.1	177	125	130	240	179	616	1490	460	81	.00	.62
7	2.9	107	107	135	220	169	518	1370	370	64	.00	.69
8	2.7	81	107	140	300	159	479	917	320	49	.00	.15
9	2.5	74	101	154	360	164	416	857	287	32	.00	.08
10	2.3	70	101	161	1000	189	310	704	255	30	.00	.08
11	2.2	66	101	162	700	180	220	640	235	14	.00	.00
12	2.1	62	101	125	382	160	195	434	225	11	.00	.00
13	2.2	60	146	129	169	140	180	339	212	8.5	.10	.00
14	2.4	83	146	203	568	130	164	252	204	7.4	.35	.00
15	2.7	112	146	274	846	120	154	1220	200	5.6	.00	.00
16	3.7	190	146	476	745	120	148	5400	194	6.0	.00	.00
17	3.8	166	125	456	496	125	142	4420	190	3.3	1.0	.15
18	3.4	161	125	274	281	140	136	5520	185	2.4	56	.00
19	3.1	152	125	278	254	170	130	5220	180	1.7	2.0	.00
20	2.9	368	119	634	232	210	124	3120	748	1.3	.54	.00
21	2.8	835	119	545	215	180	116	3360	2370	1.1	.39	.00
22	2.9	1070	119	485	210	160	110	3230	575	1.5	.08	.00
23	3.3	545	153	478	200	170	100	1820	4400	1.5	.08	.00
24	3.1	336	232	627	220	190	151	775	4040	1.3	.00	.00
25	3.5	323	194	505	466	230	479	520	2180	1.1	.00	.00
26	3.6	288	153	309	330	320	1560	410	617	1.0	.00	.00
27	3.4	254	153	549	270	290	1980	430	442	1.0	.00	2.4
28	3.4	222	315	236	260	350	1910	1700	416	.92	.00	49
29	3.6	177	603	161	250	430	1700	3200	374	.92	.00	11
30	3.5	161	214	153	---	593	1410	6350	320	1.3	.00	5.2
31	3.5	---	189	571	---	1020	---	5980	---	.92	.00	---
TOTAL	98.9	6900	4967	8918	11355	7398	17963	69548	30130	1283.76	61.90	76.18
MEAN	3.19	230	160	288	392	239	599	2243	1004	41.4	2.00	2.54
MAX	4.9	1070	603	634	1000	1020	1980	6350	4620	323	.56	.49
MIN	2.1	11	101	104	169	120	100	252	180	.92	.00	.00
AC-FT	196	13690	9850	17690	22520	14670	35630	137900	59760	2550	123	151

WTR YR 1980 TOTAL 158699.74 MEAN 434 MAX 6350 MIN .00 AC-FT 314800

ARKANSAS RIVER BASIN

07229200 CANADIAN RIVER AT PURCELL, OK--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	2.6	6.4	30	46	14	60	12	74	1010	125	90
2	1.8	2.8	7.4	29	43	11	40	30	739	1790	323	148
3	1.5	3.3	5.6	28	13	12	23	119	1200	559	72	442
4	.23	2.8	5.2	27	46	86	161	68	2390	1280	52	161
5	.54	2.6	9.1	29	43	27	107	46	1700	2690	35	91
6	.61	2.8	23	32	13	9.8	38	86	907	710	25	81
7	8.5	2.8	54	17	16	12	30	23	1030	454	478	17
8	1.5	3.3	930	19	14	119	30	21	674	222	107	14
9	.80	3.6	466	27	8.5	113	32	91	362	194	96	169
10	.15	3.1	573	38	12	86	21	213	267	587	46	60
11	.31	3.3	518	16	25	40	56	107	134	442	77	17
12	.46	4.2	387	32	19	40	40	91	129	300	30	14
13	.38	3.3	243	27	23	43	21	81	107	243	17	5.6
14	1.5	3.3	119	19	43	77	25	64	158	139	9.8	4.2
15	.85	8.5	86	30	32	213	60	46	793	81	38	107
16	.38	11	68	27	25	323	17	60	531	46	558	35
17	11	68	49	21	30	559	16	222	177	32	710	21
18	2.4	91	56	17	27	276	17	194	101	14	401	4.5
19	4.8	27	35	13	23	161	60	64	96	4.5	323	3.9
20	1.1	14	25	13	17	132	68	38	49	1.0	254	3.6
21	.85	11	38	21	12	139	43	19	23	.00	125	2.0
22	.46	10	38	23	9.8	96	30	12	14	.00	101	1.6
23	.38	11	40	30	7.9	101	25	11	8.0	.00	52	1.5
24	.00	11	32	17	6.4	113	21	6.4	7.9	.00	46	1.3
25	1.1	14	23	13	5.2	96	17	7.9	6.4	.00	32	1.0
26	.38	12	11	25	4.2	86	21	96	4.2	.00	30	.70
27	9.8	7.9	15	17	4.5	77	25	161	2.8	9.1	27	.50
28	9.1	6.0	30	14	29	77	14	68	.85	678	27	.40
29	11	5.6	40	23	---	161	13	54	.46	177	23	.38
30	9.8	6.4	37	27	---	107	12	82	331	572	11	.31
31	3.9	---	32	35	---	86	---	72	---	194	6.4	---
TOTAL	87.98	358.2	4001.7	736	597.5	3492.8	1143	2265.3	12016.61	12428.60	4257.2	1498.49
MEAN	2.84	11.9	129	23.7	21.3	113	38.1	73.1	401	401	137	49.9
MAX	11	91	930	38	46	559	161	222	2390	2690	710	442
MIN	.00	2.6	5.2	13	4.2	9.8	12	6.4	.46	.00	6.4	.31
AC-FT	175	710	7940	1460	1190	6930	2270	4490	23830	24650	8440	2970
CAL YR 1980	TOTAL	151181.72	MEAN	413	MAX	6350	MIN	.00	AC-FT	299900		
WTR YR 1981	TOTAL	42883.38	MEAN	117	MAX	2690	MIN	.00	AC-FT	85060		

ARKANSAS RIVER BASIN

07229200 CANADIAN RIVER AT PURCELL, OK--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.31	310	203	192	2000	265	335	360	3960	502	71	13
2	.31	313	232	188	1200	311	348	264	1630	437	134	21
3	.23	470	243	180	700	311	335	212	1350	378	87	19
4	1.0	616	254	176	540	348	312	194	912	301	71	16
5	631	531	243	166	450	430	312	161	891	287	73	14
6	300	430	213	156	400	442	300	1500	598	272	87	12
7	132	300	194	146	360	442	300	545	519	596	105	11
8	32	391	169	138	320	454	276	416	518	939	126	12
9	25	894	146	130	450	479	254	213	467	404	96	12
10	13	430	139	122	370	466	222	101	429	266	87	12
11	241	361	139	130	312	454	194	86	552	224	92	11
12	1760	288	139	138	442	430	169	1070	674	211	138	12
13	1020	222	146	150	335	454	153	6410	508	219	123	11
14	601	185	146	180	265	1080	139	5610	438	495	92	13
15	843	194	132	203	1700	646	132	1440	635	437	81	64
16	3770	213	132	176	1080	492	125	1370	648	249	66	151
17	5790	243	125	150	1510	466	113	7060	419	191	51	214
18	2120	243	119	139	723	442	101	20700	457	173	43	156
19	1470	243	38	146	693	361	91	43500	623	142	37	121
20	710	203	56	153	545	348	96	18000	530	122	34	119
21	573	185	125	146	401	387	81	9520	1260	102	32	83
22	559	161	177	400	265	374	72	3760	824	81	28	70
23	531	146	153	194	222	361	68	2360	540	57	24	60
24	491	125	132	169	169	336	64	5780	1340	55	21	52
25	504	113	125	194	125	312	68	4120	1740	47	19	44
26	466	107	146	212	107	323	96	1150	1550	44	18	40
27	361	101	161	146	139	466	113	1100	1550	39	22	34
28	276	101	177	323	203	454	185	3790	1580	178	28	25
29	222	112	161	300	---	416	222	2980	1270	126	18	21
30	194	185	203	5340	---	361	835	1080	683	92	15	21
31	295	---	200	3500	---	348	---	4380	---	51	14	---
TOTAL	23931.85	8416	4968	14083	16026	13259	6111	149232	29095	7717	1933	1464
MEAN	772	281	160	454	572	428	204	4814	970	249	62.4	48.8
MAX	5790	894	254	5340	2000	1080	835	43500	3960	939	138	214
MIN	.23	101	38	122	107	265	64	86	419	39	14	11
AC-FT	47470	16690	9850	27930	31790	26300	12120	296000	57710	15310	3830	2900
CAL YR 1981	TOTAL	75751.35	MEAN	208	MAX	5790	MIN	.00	AC-FT	150300		
WTR YR 1982	TOTAL	276235.85	MEAN	757	MAX	43500	MIN	.23	AC-FT	547900		

ARKANSAS RIVER BASIN

07229300 WALNUT CREEK AT PURCELL, OK

LOCATION.--Lat 34°59'56", long 97°22'00", NW 1/4 NW 1/4 sec.13, T.6 N., R.2 W., McClain County, Hydrologic Unit 11090202, on downstream side of right bank pier of bridge on U.S. Highway 77, at south edge of Purcell, and at mile 1.0 (1.6 km).

DRAINAGE AREA.--202 mi² (523 km²).

PERIOD OF RECORD.--Water years 1951-55, 1958-65 (occasional low-flow measurements). October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,017.57 ft (310.155 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--17 years, 45.9 ft³/s (1.300 m³/s), 33,250 acre-ft/yr (41.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,200 ft³/s (770 m³/s) May 23, 1975, gage height, 16.80 ft (5.121 m), from rating curve extended above 8,200 ft (232 m³/s) on basis of slope-area measurement at peak; no flow at times in 1966-67.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 6	0430	3,460 98.0	9.68 2.950	May 19	1330	3,360 95.2	9.57 2.917
May 17	0915	*7,640 216	*13.50 4.115	May 24	1345	4,480 127	11.07 3.374

Minimum daily discharge, 0.82 ft³/s (0.023 m³/s) Oct. 1,3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	106	22	11	35	12	13	166	80	33	20	6.1
2	.90	24	17	12	25	11	14	54	77	30	29	9.2
3	.82	15	13	12	20	12	13	38	84	28	15	6.7
4	.90	14	11	13	19	12	12	28	73	26	13	5.5
5	.90	13	16	12	18	12	13	90	60	25	11	5.2
6	1.1	11	11	12	17	12	13	1580	54	24	9.9	5.0
7	2.3	11	11	10	17	12	13	138	48	343	12	4.8
8	1.0	99	11	10	20	12	14	63	43	82	28	4.8
9	1.2	702	11	11	25	12	14	46	38	44	14	4.5
10	1.4	47	10	10	21	12	14	38	35	37	12	4.5
11	8.1	25	11	11	19	12	14	35	71	30	11	4.5
12	46	19	11	10	24	12	14	170	107	25	11	4.5
13	83	16	11	11	21	12	13	936	53	25	10	4.5
14	20	16	12	11	20	289	13	169	40	22	9.2	5.0
15	254	15	11	11	18	30	13	80	119	21	8.2	139
16	307	15	11	11	16	22	13	59	82	20	7.0	34
17	74	14	11	11	15	20	13	3980	43	19	7.0	20
18	19	14	11	11	14	18	13	636	35	18	7.4	14
19	12	14	12	11	13	17	14	2030	45	17	7.3	15
20	9.7	13	12	11	13	17	13	490	40	16	6.9	19
21	8.7	13	12	11	13	16	13	197	298	16	6.6	14
22	8.1	14	13	11	12	15	13	141	66	13	6.5	11
23	8.1	14	12	11	12	15	13	119	39	11	6.4	10
24	7.5	14	11	11	12	14	13	1760	363	13	6.0	9.6
25	7.2	14	11	11	12	14	15	459	598	13	5.7	10
26	7.5	14	12	11	12	14	17	137	113	13	5.9	8.8
27	7.5	14	11	11	12	19	16	125	63	13	24	8.7
28	7.2	14	11	12	12	21	41	867	53	15	24	10
29	6.9	14	10	25	---	17	58	154	44	17	9.4	8.4
30	6.6	24	11	65	---	16	462	98	37	15	7.4	7.8
31	12	---	11	76	---	14	---	118	---	16	6.6	---
TOTAL	931.44	1352	371	477	487	743	927	15001	2901	1040	357.4	414.1
MEAN	30.0	45.1	12.0	15.4	17.4	24.0	30.9	484	96.7	33.5	11.5	13.8
MAX	307	702	22	76	35	289	462	3980	598	343	29	139
MIN	.82	11	10	10	12	11	12	28	35	11	5.7	4.5
AC-FT	1850	2680	736	946	966	1470	1840	29750	5750	2060	709	821
CAL YR 1981	TOTAL	6542.65	MEAN	17.9	MAX	1010	MIN	.36	AC-FT	12980		
WTR YR 1982	TOTAL	25001.94	MEAN	68.5	MAX	3980	MIN	.82	AC-FT	49590		

ARKANSAS RIVER BASIN

07229900 LAKE THUNDERBIRD NEAR NORMAN, OK

LOCATION.--Lat 35°13'15", long 97°13'05", in NW 4 SE 4 sec.29, T.9 N., R.1 E., Cleveland County, Hydrologic Unit 11090203, near center of dam on Little River, just downstream from Hog Creek, 13 mi (20.9 km) east of Norman, and at mile 96.4 (111.1km).

DRAINAGE AREA.--256 mi² (663 km²).

PERIOD OF RECORD.--March 1965 to current year.

GAGE.--Nonrecording gage at outlet structure and at pump house. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth dam. Regulated storage began Mar. 1, 1965; minimum conservation pool first filled September 1965. Capacity, 196,200 acre-ft (242 hm³) at elevation 1,049.4 ft (319.86 m), crest of drop inlet; 119,600 acre-ft (147 hm³) at elevation 1,039.0 ft (316.687 m), top of conservation pool; 13,640 acre-ft (16.8 hm³) at elevation 1,010.0 ft (307.848 m), minimum conservation pool. Dead storage, 1,200 acre-ft (1.48 hm³) below elevation 997.0 ft (303.886 m), sill of gated outlet. Figures given herein represent total contents. Reservoir is used for flood control, irrigation (inactive), and municipal water supplies diverted to Del City, Midwest City, and Norman.

COOPERATION.--Elevations and data on diversions furnished by Central Oklahoma Master Conservancy District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 147,100 acre-ft (181 hm³) May 30, 1975, elevation, 1,043.20 ft (317.967 m); minimum since conservation pool first reached, 15,370 acre-ft (19.0 hm³) Nov. 30, 1965, elevation, 1,011.0 ft (308.153 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 136,900 acre-ft (166 hm³) June 5, 1982, elevation, 1,041.72 ft (317.516 m); minimum, 90,440 acre-ft (112 hm³) Oct. 11, elevation, 1,033.74 ft (315.084 m).

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30.....	1033.98	91,640	---	---
Oct. 31.....	1034.00	91,740	+ 100	904
Nov. 30.....	1035.22	98,110	+ 6,370	816
Dec. 31.....	1034.93	96,560	- 1,550	979
CAL YR 81.....	---	---	- 2,460	12,415
Jan. 31.....	1035.34	98,750	- 2,190	1,022
Feb. 28.....	1035.48	99,500	+ 750	1,005
Mar. 31.....	1035.66	100,500	+ 1,000	762
Apr. 30.....	1035.51	99,660	- 840	652
May 31.....	1041.36	134,500	+34,840	1,138
June 30.....	1040.67	130,000	- 4,500	1,109
July 31.....	1039.16	120,600	- 9,400	1,335
Aug. 31.....	1038.37	115,800	- 4,800	1,439
Sept. 30.....	1037.90	113,000	- 2,800	1,304
WTR YR 82.....	---	---	+21,360	12,465

ARKANSAS RIVER BASIN

07230000 LITTLE RIVER BELOW LAKE THUNDERBIRD NEAR NORMAN, OK

LOCATION.--Lat 35°13'17", long 97°12'51", in NE 1/4 SE 1/4 sec.29, T.9 N., R.1 E., Cleveland County, Hydrologic Unit, 11090203, at right bank of outlet channel, 170 ft (51.8 m) upstream from State Highway 9, 1,200 ft (365.8 m) downstream from Lake Thunderbird, 1.0 mi (1.6 km) upstream from Prairie Creek, 13.0 mi (20.9 km) east of Norman, and at mile 96.2 (154.8 km).

DRAINAGE AREA.--257 mi² (666 km²).

PERIOD OF RECORD.--October 1952 to current year. Prior to October 1964, published as Little River below Hog Creek near Norman.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 965.62 ft (294.321 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1956, nonrecording gage 800 ft (243.8 m) downstream at same datum. Nov. 28, 1956 to Oct. 14, 1964, water-stage recorder at site 800 ft (243.8 m) downstream at same datum. Oct. 15, 1964, to Sept. 1, 1965, nonrecording gage at site 170 ft (51.8 m) downstream at same datum.

REMARKS.--Records fair. Flow regulated by Lake Thunderbird since March 1965 (station 07229900). In prior years, occasional small diversions above station for irrigation.

AVERAGE DISCHARGE.--(Prior to regulation by Lake Thunderbird) 12 years (water years 1952-64), 58.9 ft³/s (1.668 m³/s), 42,640 acre-ft/yr (52.6 hm³/yr); (after regulation by Lake Thunderbird) 17 years, (water years 1966-82), 16.1 ft³/s (0.456 m³/s), 11,660 acre-ft/yr (14.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,600 ft³/s (980 m³/s) May 25, 1957, gage height, 28.85 ft (8.793 m), from high-water mark, at site then in use, from rating curve extended above 15,000 ft³/s (425 m³/s); no flow at times in 1954-56, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 432 ft³/s (12.2 m³/s) June 8, gage height, 5.54 ft (1.689 m); minimum daily discharge, 0.27 ft³/s (0.008 m³/s) at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	.32	.27	.27	.80	.66	.95	.71	167	299	.69	.62
2	.53	.31	.29	.28	.97	.69	.89	.65	71	297	.80	.64
3	.50	.31	.27	.31	.84	.69	1.1	.59	.82	298	.61	.70
4	.53	.30	.27	.27	.77	.67	1.2	.66	.72	296	.71	.69
5	.52	.28	.29	.27	.70	.69	1.3	1.7	55	297	.68	.68
6	.50	.29	.31	.27	.70	.69	1.5	1.4	218	299	.68	.66
7	.55	.31	.31	.33	.64	.69	1.4	.66	296	299	.72	.64
8	.53	.75	.29	.39	.62	.69	1.6	.61	365	299	.71	.64
9	.53	.33	.29	.40	.60	.69	1.4	.60	426	301	.69	.63
10	.51	.31	.31	.34	.58	.69	1.4	.61	425	302	.71	.61
11	.65	.31	.31	.30	.61	.69	1.1	.61	424	302	.76	.59
12	.42	.32	.29	.30	.60	.67	.62	1.4	422	81	.72	.60
13	.49	.40	.31	.30	.53	.61	1.4	.96	421	.74	.67	.61
14	.32	.40	.31	.31	.55	1.7	1.5	.66	421	.68	.69	.68
15	.42	.39	.30	.35	.61	.67	.94	.62	268	.66	.69	.80
16	.42	.39	.27	.40	.69	.62	.81	.73	143	.67	.69	.75
17	.34	.39	.27	.36	.69	.65	.53	2.1	293	.69	.69	.64
18	.30	.39	.27	.35	.70	.79	.56	.69	293	.69	.69	.58
19	.31	.35	.27	.43	.69	1.7	.57	.70	293	.69	.69	.63
20	.30	.33	.27	.51	.71	.73	.53	.66	293	.70	.69	.65
21	.31	.30	.53	.44	.68	.64	.53	143	294	.69	.69	.62
22	.31	.29	.28	.66	.69	.61	.53	242	336	.75	.69	.60
23	.31	.29	.27	.58	.66	.59	.61	241	370	.65	.65	.59
24	.31	.31	.27	.50	.61	.84	.61	154	86	.68	.66	.58
25	.31	.30	.27	.55	.61	.86	.62	.69	1.3	.69	.69	.56
26	.31	.29	.27	.50	.66	.87	.65	154	.69	.69	.68	.57
27	.30	.28	.27	.43	.64	1.0	.68	274	1.2	.69	.69	.58
28	.29	.29	.27	.36	.67	.87	.96	59	1.5	.81	.68	.58
29	.29	.32	.27	.31	---	.87	.79	.69	32	.73	.66	.58
30	.30	.37	.27	1.2	---	.91	1.4	.66	189	.69	.65	.60
31	.43	---	.27	.60	---	.90	---	.69	---	.71	.63	---
TOTAL	12.60	10.22	9.01	12.87	18.82	24.64	28.68	1287.05	6607.23	3383.30	21.35	18.90
MEAN	.41	.34	.29	.42	.67	.79	.96	41.5	220	109	.69	.63
MAX	.65	.75	.53	1.2	.97	1.7	1.6	274	426	302	.80	.80
MIN	.29	.28	.27	.27	.53	.59	.53	.59	.69	.65	.61	.56
AC-FT	25	20	18	26	37	49	57	2550	13110	6710	42	37
CAL YR 1981	TOTAL	153.45	MEAN	.42	MAX	1.1	MIN	.27	AC-FT	304		
WTR YR 1982	TOTAL	11434.67	MEAN	31.3	MAX	426	MIN	.27	AC-FT	22680		

ARKANSAS RIVER BASIN

07230500 LITTLE RIVER NEAR TECUMSEH, OK

LOCATION.--Lat 35°10'25", long 96°55'55", near northwest corner sec.18, T.8 N., R.4 E., Pottawatomie County, Hydrologic Unit 11090203, on downstream side of center pier of bridge on U.S. Highway 177, 1.5 mi (2.4 km) downstream from Dance Creek, 5.0 mi (8.0 km) south of Tecumseh, and at mile 77.2 (124.2 km).

DRAINAGE AREA.--456 mi² (1,181 km²).

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 898.52 ft (273.869 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records fair. Flow regulated or diverted since 1965 by Lake Thunderbird, 19.2 mi (30.9 km) upstream (station 07229900).

AVERAGE DISCHARGE.--(Prior to regulation by Lake Thunderbird) 21 years (water years 1944-64), 149 ft³/s (4.22 m³/s), 107,900 acre-ft/yr (133.0 hm³/yr); (since regulation by Lake Thunderbird) 17 years (water years 1966-82), 75.9 ft³/s (2.15 m³/s), 54,990 acre-ft/yr (67.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,400 ft³/s (918 m³/s) May 25, 1957, gage height, 18.84 ft (5.742 m), maximum gage height, 19.68 ft (5.998 m), May 18, 1949; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1932 reached a stage of 25.58 ft (7.797 m), from flood mark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 3,300 ft³/s (93.5 m³/s) May 6, gage height, 15.49 ft (4.721 m); no flow Oct. 1-6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	69	21	4.8	39	9.1	12	115	290	450	13	.50
2	.00	26	8.6	5.2	86	9.8	13	43	1310	380	11	3.6
3	.00	13	6.6	5.2	53	8.6	10	28	431	320	8.3	7.6
4	.00	10	5.7	5.7	30	8.1	9.8	20	323	400	6.5	1.6
5	.00	8.6	5.2	5.2	16	8.1	10	39	127	510	5.4	.77
6	.00	6.6	5.2	5.2	15	8.1	9.2	2410	257	460	5.1	.50
7	.19	6.1	5.7	3.6	23	7.6	9.2	341	375	400	34	.44
8	2.5	119	5.7	4.0	22	7.6	11	194	375	360	20	.44
9	2.3	154	5.2	5.2	19	7.1	10	121	526	320	12	.44
10	2.4	42	5.2	4.8	19	7.1	10	91	499	338	9.5	.38
11	8.1	19	5.2	5.2	18	7.1	9.8	73	573	307	8.0	.32
12	24	12	5.2	5.0	21	7.6	9.2	1130	585	250	7.1	.25
13	508	8.6	5.2	5.4	23	7.1	9.2	1200	510	56	5.9	.77
14	64	8.6	6.6	5.2	20	814	8.6	386	485	40	4.8	1.8
15	42	7.6	5.7	5.2	21	140	8.6	181	579	38	4.0	62
16	55	7.1	5.7	5.7	64	79	8.6	118	317	34	3.3	56
17	30	6.6	5.2	5.7	24	43	7.6	2480	377	30	2.9	17
18	12	6.6	4.0	5.7	20	32	8.1	642	317	25	4.0	10
19	7.1	5.7	5.2	6.1	15	27	8.6	421	366	23	4.0	14
20	5.2	4.8	5.7	7.1	14	22	7.6	242	310	22	4.8	21
21	4.0	5.2	6.1	6.6	13	20	7.1	215	331	19	5.7	11
22	4.0	5.2	6.1	10	11	17	7.6	582	310	17	5.7	7.1
23	3.6	5.7	5.7	6.6	11	17	7.6	901	999	15	4.4	4.5
24	2.9	5.2	5.9	5.7	9.8	17	7.1	1370	1900	13	3.3	2.4
25	2.9	5.2	6.3	6.1	8.8	15	8.1	536	1650	11	2.5	1.7
26	3.6	5.7	5.6	5.2	9.0	13	9.8	303	1400	11	2.9	1.7
27	2.9	5.2	4.9	5.2	9.2	21	8.1	701	1200	11	2.5	1.7
28	2.5	5.2	4.4	5.2	9.3	25	14	2070	1000	11	4.0	1.3
29	2.5	6.1	4.0	5.2	---	19	26	530	800	37	3.6	.93
30	2.5	32	4.8	370	---	17	331	213	540	21	1.8	.78
31	238	---	5.2	130	---	14	---	497	---	16	1.1	---
TOTAL	1032.19	621.6	186.8	661.0	643.1	1455.0	616.5	18193	19062	4945	211.1	232.52
MEAN	33.3	20.7	6.03	21.3	23.0	46.9	20.6	587	635	160	6.81	7.75
MAX	508	154	21	370	86	814	331	2480	1900	510	34	62
MIN	.00	4.8	4.0	3.6	8.8	7.1	7.1	20	127	11	1.1	.25
AC-FT	2050	1230	371	1310	1280	2890	1220	36090	37810	9810	419	461
CAL YR 1981	TOTAL	5002.94	MEAN	13.7	MAX	508	MIN	.00	AC-FT	9920		
WTR YR 1982	TOTAL	47859.81	MEAN	131	MAX	2480	MIN	.00	AC-FT	94930		

ARKANSAS RIVER BASIN

07231000 LITTLE RIVER NEAR SASAKWA, OK

LOCATION.--Lat 34°59'02", long 96°33'01", NE 1/4 sec.22, T.6 N., R.7 E., Seminole County, Hydrologic Unit 11090203, near left abutment on downstream side of county road bridge, 2.8 mi (4.5 km) northwest of Sasakwa, 8.7 mi (14.0 km) downstream from Salt Creek, and at mile 24.1 (38.8 km).

DRAINAGE AREA.--865 mi² (2,240 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 744.34 ft (226.875 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Apr. 11, 1946, nonrecording gage at same site and datum. Prior to Oct. 1, 1979, gage at same site and datum 4.87 ft (1.484 m) higher.

REMARKS.--Records good. Flow regulated by Lake Thunderbird 72.3 mi (116.3 m) upstream since March 1965 (station 07229900).

AVERAGE DISCHARGE.--(Prior to regulation by Lake Thunderbird) 23 years (water years 1943-65), 398 ft³/s (11.27 m³/s), 288,400 acre-ft/yr (356 hm³/yr); (since regulation by Lake Thunderbird) 17 years (water years 1966-82), 242 ft³/s (6.853 m³/s), 175,300 acre-ft/yr (216 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 44,600 ft³/s (1,260 m³/s) May 11, 1950, gage height, 33.48 ft (10.205 m); no flow at times most years after 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,650 ft³/s (188 m³/s) May 12, gage height, 21.90 ft (6.675 m); minimum daily discharge, 0.07 ft³/s (.002 m³/s) on Sept. 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.84	702	143	8.7	748	31	40	1060	2380	1010	38	1.1
2	.55	238	84	9.4	754	31	38	502	2610	895	31	.80
3	.25	119	47	10	639	31	34	238	3490	735	24	.72
4	.19	88	30	12	310	30	29	153	3140	659	18	.46
5	.10	58	21	12	93	29	27	585	1860	596	14	.40
6	.15	45	18	11	143	26	25	1920	1000	558	10	.31
7	.48	34	16	9.4	100	24	21	2060	842	1350	8.4	.27
8	.27	65	15	7.4	63	24	23	1730	796	891	15	.27
9	.17	450	14	5.5	12	24	23	991	656	628	26	.24
10	.09	438	13	4.0	48	24	24	569	954	579	22	.24
11	.52	172	13	3.0	141	25	26	393	793	564	17	.17
12	18	100	11	2.7	131	26	25	2960	895	504	15	.15
13	1750	68	11	4.7	256	30	25	5830	727	469	12	.17
14	1470	51	13	6.3	193	141	23	4210	623	249	6.3	.15
15	833	43	13	6.6	149	915	21	2580	692	159	5.7	.09
16	1270	36	14	6.0	204	1330	20	1200	2760	145	4.2	.07
17	688	30	13	5.7	189	424	18	2540	1960	114	3.8	.07
18	400	27	10	6.3	146	225	16	2950	1000	98	3.6	.23
19	189	22	9.3	6.3	93	159	16	2600	791	84	3.8	.12
20	119	19	8.2	11	74	121	16	1750	724	75	3.2	.11
21	81	17	8.9	19	63	97	17	880	722	66	2.5	5.2
22	64	15	10	24	55	99	14	621	701	62	2.4	4.8
23	48	14	14	19	48	71	13	900	1330	54	1.8	6.0
24	37	13	13	12	43	60	12	3340	4230	48	1.2	4.0
25	30	13	11	13	37	51	14	4400	4880	43	1.2	2.5
26	25	13	12	10	34	43	17	2860	4540	36	1.1	1.8
27	22	12	10	8.8	33	41	21	1430	2960	34	1.2	1.6
28	19	12	10	9.2	33	52	24	4300	2640	30	2.4	1.4
29	15	12	10	9.2	---	56	34	5250	2260	30	2.2	1.1
30	12	87	10	1140	---	59	198	4050	1450	30	1.9	.88
31	363	---	9.6	1860	---	49	---	3690	---	47	1.3	---
TOTAL	7456.61	3013	635.0	3272.2	4832	4348	854	68532	54406	10842	300.2	80.96
MEAN	241	100	20.5	106	173	140	28.5	2211	1814	350	9.68	2.70
MAX	1750	702	143	1860	754	1330	198	5830	4880	1350	38	.23
MIN	.09	12	8.2	2.7	12	24	12	153	623	30	1.1	.07
AC-FT	14790	5980	1260	6490	9580	8620	1690	135900	107900	21510	595	161
CAL YR 1981	TOTAL 17711.49		MEAN 48.5		MAX 1750	MIN .00	AC-FT 35130					
WTR YR 1982	TOTAL 158571.97		MEAN 434		MAX 5830	MIN .07	AC-FT 314500					

07231000 LITTLE RIVER NEAR SASAKWA, OK--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1955 to April 1982.

WATER TEMPERATURE: October 1955 to April 1982.

REMARKS: Samples were collected by a local observer on a daily basis. Partial analyses were made on those samples at or near the 5th, 15th and 25th from Oct.-Feb. Additional samples were collected at times and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 138,000 micromhos Oct. 31, 1956; minimum daily, 118 micromhos Sept. 11, 1977.

WATER TEMPERATURE: Maximum daily, 38.5°C July 13, 1978; minimum, 0.0°C on several days during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)
OCT										
05...	1545	80020	.10	2690	7.4	27.5	--	--	410	315
15...	1227	80020	435	393	7.7	22.0	--	--	95	19
25...	1205	80020	30	910	7.9	11.0	--	--	200	69
NOV										
05...	1102	80020	58	1200	7.4	13.0	--	--	230	106
15...	1518	80020	43	1310	7.6	14.5	--	--	270	122
25...	1323	80020	13	2030	7.8	15.0	--	--	430	197
DEC										
05...	1338	80020	20	1560	8.3	8.5	--	--	320	139
15...	1523	80020	13	2540	8.0	9.5	--	--	440	305
25...	1425	80020	9.6	2850	8.0	3.0	--	--	460	304
JAN										
05...	1600	80020	12	3010	8.0	9.0	--	--	510	346
15...	1543	80020	6.6	2640	7.9	2.0	--	--	470	265
25...	1556	80020	13	2830	8.0	7.0	--	--	500	291
FEB										
05...	1513	80020	93	993	8.0	1.0	--	--	230	112
15...	1425	80020	145	1440	8.1	9.0	--	--	330	156
25...	1418	80020	36	2550	8.2	8.0	--	--	530	281
JUL										
15...	1430	80020	156	1540	7.9	30.0	8.2	112	340	118
AUG										
16...	1625	80020	4.2	2070	8.0	34.0	8.4	123	430	--
SEP										
27...	1435	80020	1.6	1200	8.2	25.0	10.7	135	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)
OCT										
05...	95	43	380	66	8	7.1	100	12	840	--
15...	24	8.4	39	46	2	3.4	76	6.0	73	--
25...	50	18	95	50	3	5.3	130	6.0	210	--
NOV										
05...	54	22	130	55	4	6.1	120	6.0	300	--
15...	66	26	140	52	4	6.6	150	6.0	320	--
25...	100	43	250	56	5	5.8	230	26	520	--
DEC										
05...	73	33	180	55	5	4.9	180	13	380	--
15...	89	54	320	61	7	5.3	140	33	700	--
25...	85	61	370	63	8	4.5	160	39	800	--
JAN										
05...	92	67	410	64	8	4.7	160	45	880	--
15...	83	65	340	61	7	4.2	210	49	680	--
25...	100	61	370	61	7	4.1	210	45	780	--
FEB										
05...	55	23	120	52	4	3.9	120	8.0	240	--
15...	76	33	170	53	4	3.5	170	10	340	--
25...	120	56	310	56	6	4.7	250	16	680	--
JUL										
15...	73	38	170	52	4	5.1	222	21	350	8.1
AUG										
16...	86	53	280	--	6	--	--	--	--	10
SEP										
27...	--	--	--	--	--	4.5	201	20	250	--

ARKANSAS RIVER BASIN

07231000 LITTLE RIVER NEAR SASAKWA, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYLLIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)
OCT										
05...	1520	--	2.1	--	--	--	--	--	--	--
15...	216	--	.29	--	--	--	--	--	--	--
25...	499	--	.68	--	--	--	--	--	--	--
NOV										
05...	669	--	.91	--	--	--	--	--	--	--
15...	707	--	.96	--	--	--	--	--	--	--
25...	1130	--	1.5	--	--	--	--	--	--	--
DEC										
05...	850	--	1.1	--	--	--	--	--	--	--
15...	1370	--	1.9	--	--	--	--	--	--	--
25...	1520	--	2.1	--	--	--	--	--	--	--
JAN										
05...	1710	--	2.3	--	--	--	--	--	--	--
15...	1390	--	1.9	--	--	--	--	--	--	--
25...	1580	--	2.1	--	--	--	--	--	--	--
FEB										
05...	563	--	.77	--	--	--	--	--	--	--
15...	796	--	1.1	--	--	--	--	--	--	--
25...	1460	--	2.0	--	--	--	--	--	--	--
JUL										
15...	882	800	1.1	1	410	<0	<1	10	<3	10
AUG										
16...	--	--	--	1	450	1	5	<10	<3	20
SEP										
27...	633	--	.86	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

ARKANSAS RIVER BASIN

07231500 CANADIAN RIVER AT CALVIN, OK

LOCATION.--Lat 34°58'32", long 96°14'24", in NE 1/4 SW 1/4 sec.22, T.6 N., R.10 E., Hughes County, Hydrologic Unit 11090202, near left bank on downstream side of pier of bridge on old U.S. Highway 75, 0.5 mi (0.8 km) north-east of Calvin, 2.4 mi (3.9 km) upstream from Shawnee Creek, 8.5 mi (13.7 km) downstream from Little River, and at mile 93.9 (151.1 km).

DRAINAGE AREA.--27,952 mi² (72,396 km²), of which 4,801 mi² (12,435 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1905 to December 1908 (gage heights and discharge measurements only except for period July 1905 to December 1906), October 1938 to September 1942, July 1944 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected in this vicinity since 1904 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 1341: Drainage area. WSP 1391: 1941.

GAGE.--Water-stage recorder and nonrecording gage. Datum of gage is 682.72 ft (208.093 m), National Geodetic Vertical Datum of 1929. January 1905 to December 1908, nonrecording gage at site 0.8 mi (1.3 km) upstream at datum 4.00 ft (1.219 m) higher. Oct. 1, 1938, to Aug. 12, 1944, nonrecording gage at present site and datum. Aug. 13, 1944, to July 31, 1977, water-stage recorder at present site and datum 2.00 ft (0.611 m) higher.

REMARKS.--Records poor. Occasional slight regulation by dams in New Mexico and Texas.

AVERAGE DISCHARGE.--43 years (water years 1906, 1939-42, 1945-82), 1,523 ft³/s (43.13 m³/s), 1,103,000 acre-ft/yr (1.36 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 174,000 ft³/s (4,930 m³/s) May 11, 1950, gage height, 17.35 ft (5.288 m), maximum gage height, 21.00 ft (6.401 m), Aug. 7, 1906, from floodmark, site and datum then in use; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25,000 ft³/s (708 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 20	1245	*69,400 1,970	*12.69 3.868	May 28	1200	29,300 830	9.66 2.944
May 25	0715	26,600 753	9.39 2.862				

Minimum daily discharge, 14 ft³/s (0.40 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	4250	870	248	7470	491	410	2060	8830	2360	320	48
2	30	2630	815	303	3280	439	446	1760	8140	1680	281	48
3	20	1800	682	328	3340	360	507	916	7310	1670	237	44
4	15	1700	476	339	1930	342	446	751	6360	1510	215	40
5	14	1600	424	302	1280	314	417	1160	5000	1410	200	33
6	39	1400	390	243	672	320	366	15600	4150	1510	192	25
7	30	1200	384	225	599	378	348	8630	3610	5690	146	23
8	38	1100	337	200	793	372	342	3120	3340	2800	137	23
9	132	2800	314	150	1110	320	342	1840	2960	1930	154	22
10	114	3200	268	110	701	273	325	1310	2720	2020	163	21
11	120	2200	240	105	564	278	314	1070	2820	1440	179	20
12	209	1360	249	150	751	288	278	6320	3040	1070	189	18
13	7840	939	283	140	1280	304	258	20300	3200	836	166	23
14	8700	581	273	130	1310	424	235	15600	2550	893	139	54
15	1940	283	268	220	1240	1690	217	9400	2410	681	191	26
16	8190	185	263	110	1610	2720	205	1800	4420	666	182	21
17	5930	372	263	110	2000	1840	197	6890	3790	896	138	21
18	9370	360	263	160	1840	1210	197	18200	2820	711	110	20
19	4520	337	254	160	1890	1070	189	18400	2410	550	95	72
20	2580	372	249	165	1440	951	177	47400	1890	460	81	142
21	2240	354	244	177	1040	815	126	16100	1630	393	70	130
22	1500	320	303	741	859	692	85	6830	3580	348	62	96
23	1300	304	279	617	701	644	129	4960	3170	314	53	72
24	1000	288	275	348	608	547	85	9240	6450	284	46	68
25	800	268	276	314	556	491	117	18500	10200	257	39	50
26	700	235	261	309	453	460	213	6610	7760	236	34	53
27	600	235	257	249	460	439	213	3730	5470	216	35	51
28	550	226	257	205	499	453	173	18100	5960	259	172	45
29	500	230	280	222	---	507	197	12100	4420	230	85	39
30	400	360	266	4000	---	507	205	7580	3640	214	49	34
31	3230	---	261	12900	---	453	---	10200	---	324	44	---
TOTAL	62698	31489	10524	23980	40276	20392	7759	296477	134050	33858	4204	1382
MEAN	2023	1050	339	774	1438	658	259	9564	4468	1092	136	46.1
MAX	9370	4250	870	12900	7470	2720	507	47400	10200	5690	320	142
MIN	14	185	240	105	453	273	85	751	1630	214	34	18
AC-FT	124400	62460	20870	47560	79890	40450	15390	588100	265900	67160	8340	2740
CAL YR 1981	TOTAL	166840.95		MEAN	457	MAX	9370	MIN	.91	AC-FT	330900	
WTR YR 1982	TOTAL	667089		MEAN	1828	MAX	47400	MIN	14	AC-FT	1323000	

ARKANSAS RIVER BASIN

07231500 CANADIAN RIVER AT CALVIN, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950-53, 1960-61, 1965 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1965 to Jan. 1982.

WATER TEMPERATURE: July 1965 to Jan. 1982.

REMARKS.--A sample was collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 11,400 micromhos Nov. 17, 1966; minimum daily, 205 micromhos Nov. 1, 1972.

WATER TEMPERATURE: Maximum daily, 34.0°C July 7, 1975; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT												
07...	1230	80020	30	1100	8.3	17.0	27	10.1	106	540	>1000	260
13...	1400	1028	7840	321	7.8	20.0	--	5.6	64	--	--	--
13...	1630	1028	7840	254	7.7	20.0	--	5.9	67	--	--	--
14...	1530	1028	8700	336	8.0	22.5	--	6.0	71	--	--	--
DEC												
22...	0930	80020	273	1620	8.2	5.0	21	11.8	98	K36	94	500
FEB												
08...	1600	80020	793	1050	8.1	1.5	120	13.6	101	--	--	320
MAR												
18...	1030	1028	1210	--	--	--	--	--	--	--	--	--
APR												
20...	1200	80020	177	2000	8.4	17.5	2.0	10.3	111	K16	18	460
MAY												
06...	0845	1028	17100	206	8.0	16.5	--	8.4	88	--	--	--
13...	1730	1028	18800	310	7.5	16.5	--	7.4	79	--	--	--
JUN												
08...	1400	80020	3340	996	8.1	29.0	230	7.6	101	250	1100	330
AUG												
17...	1115	80020	139	1760	8.0	28.0	5.0	9.2	121	K14	200	440

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT												
07...	92	67	23	130	51	4	6.7	170	73	240	.30	7.1
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
22...	370	--	43	180	44	4	6.8	130	280	300	.70	11
FEB												
08...	111	84	27	110	42	3	5.7	210	110	190	.50	9.3
MAR												
18...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
20...	283	96	54	240	53	5	7.0	180	300	340	.70	5.4
MAY												
06...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
08...	127	84	28	85	36	2	6.0	199	120	130	.40	12
AUG												
17...	312	91	52	220	51	5	8.4	130	340	330	.60	9.1

ARKANSAS RIVER BASIN

07231500 CANADIAN RIVER AT CALVIN, OK--Continued
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT 07...	644	650	.88	52	.320	<.100	.160	.120	.15	.72	.30	.88
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 22...	1120	1000	1.5	826	--	.680	--	.480	.62	--	--	1.1
FEB 08...	685	660	.93	1470	--	.510	--	.460	.59	--	--	1.1
MAR 18...	--	--	--	--	--	--	--	--	--	--	--	--
APR 20...	1170	1200	1.6	559	--	<.100	--	<.060	.08	--	--	1.3
MAY 06...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 08...	612	590	.83	5520	--	.290	--	<.060	.08	--	--	1.4
AUG 17...	1020	1100	1.4	383	--	<.100	--	.120	.15	--	--	2.5

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTH0, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTH0, DIS- SOLVED (MG/L AS P04)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDEED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 07...	.46	.42	1.1	5.3	.270	.83	.110	--	--	6	1	5
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 22...	--	--	--	--	.410	1.3	.400	.380	1.1	--	--	--
FEB 08...	--	--	--	--	.020	.06	<.020	.080	.25	3	1	2
MAR 18...	--	--	--	--	--	--	--	--	--	--	--	--
APR 20...	--	--	--	--	.280	.86	.040	.030	.09	--	--	--
MAY 06...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 08...	--	2.0	--	--	.240	.74	.110	.080	.25	5	2	3
AUG 17...	--	--	--	--	.090	.28	.020	.030	.09	5	1	4

ARKANSAS RIVER BASIN

07231500 CANADIAN RIVER AT CALVIN, OK--Continued
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE D RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE D RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE D RECOV- ERABLE (UG/L AS CU)
OCT												
07...	300	.00	220	0	<1	0	0	.00	0	<3	8	5
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
08...	400	200	230	<1	<1	10	--	<10	5	<3	12	0
MAR												
18...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
20...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
08...	900	600	280	3	<1	<10	--	<10	10	<1	19	13
AUG												
17...	400	.00	330	2	<1	<10	--	<10	<1	3	5	2

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE D RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE D RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE D RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE D RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)
OCT												
07...	1300	1300	16	3	3	0	200	170	34	.0	.0	.0
13...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
22...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
08...	6000	6000	46	8	0	9	220	180	44	.2	.0	--
MAR												
18...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
20...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
06...	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
08...	9400	9400	5	17	12	5	510	510	2	.1	--	<.1
AUG												
17...	320	320	3	3	0	3	210	200	7	.1	--	<.1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982[illegible]

ARKANSAS RIVER BASIN

07231500 CANADIAN RIVER AT CALVIN, OK--Continued
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

ARKANSAS RIVER BASIN

07231500 CANADIAN RIVER AT CALVIN, OK--Continued
(National stream-quality accounting network station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PER- THANE IN BOTTOM MATERIL (UG/KG)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT												
07...	--	--	--	--	--	--	--	--	--	55	4.5	93
13...	--	--	--	--	--	--	--	--	--	8740	185000	33
13...	--	--	--	--	--	--	--	--	--	4040	85500	66
14...	--	--	--	--	--	--	--	--	--	2860	67200	89
DEC												
22...	--	--	--	--	--	--	--	--	--	65	48	58
FEB												
08...	--	--	--	--	--	--	--	--	--	782	1670	32
MAR												
18...	--	--	--	--	--	--	--	--	--	123	402	65
APR												
20...	--	--	--	--	--	--	--	--	--	42	20	55
MAY												
06...	--	--	--	--	--	--	--	--	--	3690	170000	88
13...	--	--	--	--	--	--	--	--	--	7630	387000	35
JUN												
08...	<1.00	<.1	<1	<10	<.01	.05	<.01	.01	<.01	1150	10400	45
AUG												
17...	--	--	--	--	--	--	--	--	--	28	11	58

ARKANSAS RIVER BASIN

07231975 BRUSHY CREEK NEAR HAILEYVILLE, OK

LOCATION.--Lat 34°48'05", long 95°39'16", in NE 1/4 SE 1/4 sec.19, T.4 N., R.16 E., Pittsburg County, Hydrologic Unit 11090204, on downstream left bank at county road bridge, 0.9 mi (1.4 km) south of junction of State Highway 63 and county road, 1.2 mi (1.9 km) northeast of Arch and 6.3 mi (10.1 km) southwest of Haileyville.

DRAINAGE AREA.--139 mi² (360 km²).

PERIOD OF RECORD.--October 1978 to September 30, 1982. Discontinued.

GAGE.--Water-stage recorder. Datum of gage is 605.35 ft (184.511 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,900 ft³/s (365 m³/s) Oct. 14, 1981, gage height, 22.78 ft (6.943 m). No flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 14	0830	*12,900 365	*22.78 6.943	May 14	0015	4,650 132	18.92 5.767
Oct. 18	0300	7,640 216	20.93 6.379	May 28	2115	5,470 155	19.71 6.008
Nov. 1	0230	3,510 99.4	17.37 5.294	May 31	1930	2,660 75.3	15.40 4.694
Nov. 9	0330	3,540 100	17.44 5.316	July 7	1815	2,110 59.8	13.93 4.246
Jan. 31	0315	9,510 269	21.71 6.617				

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2070	60	9.3	779	100	30	5.7	692	5.8	.83	.20
2	2.3	386	45	9.0	770	89	22	5.7	492	4.7	1.0	.30
3	1.8	199	43	9.1	750	78	20	5.7	737	4.1	1.1	.30
4	1.3	151	41	9.2	328	66	18	5.6	1040	3.7	.96	.20
5	1.1	126	40	9.0	221	54	15	5.5	332	3.4	.72	.10
6	18	90	38	16	136	69	12	5.7	162	3.1	.56	.10
7	8.5	66	37	15	101	150	10	5.7	92	1080	.00	.00
8	3.3	1280	36	13	92	108	9.2	5.6	58	344	.00	.00
9	1.8	2030	33	12	136	76	8.3	5.4	39	10	.00	.00
10	1.3	399	29	10	126	58	7.6	4.7	32	2.7	.00	.00
11	.94	226	26	8.6	112	49	7.4	4.4	27	.47	.00	.00
12	2.0	164	23	8.5	100	45	7.1	128	27	.10	.00	.00
13	2860	119	22	7.9	92	66	6.7	3200	34	.05	.00	.00
14	9060	90	22	7.3	84	961	6.3	2020	22	.00	.00	.00
15	795	67	21	7.5	74	435	6.0	614	20	.00	.00	.00
16	4350	56	21	7.4	66	202	6.0	235	98	.00	.00	.00
17	5410	48	19	6.8	190	116	5.8	139	78	.00	.00	.00
18	4190	41	16	6.7	160	80	4.6	105	33	.00	.00	.00
19	387	34	16	6.9	130	62	4.5	48	20	.00	.00	.00
20	285	30	15	7.4	100	51	4.8	28	14	.00	.00	.00
21	248	27	14	8.0	90	38	4.2	17	12	.00	.00	.00
22	374	24	14	271	80	28	3.8	16	29	.00	.00	.00
23	383	22	14	330	75	22	4.0	19	22	.00	.00	.00
24	267	20	14	156	70	19	4.0	138	14	.00	.00	.00
25	228	17	13	108	66	17	4.1	295	11	.00	.00	.00
26	210	16	13	75	64	14	4.4	134	9.3	.00	.00	.00
27	158	15	12	54	62	13	4.5	112	8.7	.83	.00	.00
28	107	14	12	43	140	12	4.9	3970	8.2	.77	.70	.00
29	77	13	11	36	---	12	5.7	1670	7.8	.77	.40	.00
30	63	180	10	3990	---	21	5.7	271	7.6	.83	.30	.00
31	1540	---	10	5870	---	48	---	1600	---	.83	.20	---
TOTAL	31035.34	8020	740	11127.6	5194	3159	256.6	14818.7	4178.6	1466.15	6.77	1.20
MEAN	1001	267	23.9	359	186	102	8.55	478	139	47.3	.22	.04
MAX	9060	2070	60	5870	779	961	30	3970	1040	1080	1.1	.30
MIN	.94	13	10	6.7	62	12	3.8	4.4	7.6	.00	.00	.00
AC-FT	61560	15910	1470	22070	10300	6270	509	29390	8290	2910	13	2.4
CAL YR 1981	TOTAL	56475.52		MEAN	155	MAX	9060	MIN	.00	AC-FT	112000	
WTR YR 1982	TOTAL	80003.96		MEAN	219	MAX	9060	MIN	.00	AC-FT	158700	

ARKANSAS RIVER BASIN

07231990 PEACEABLE CREEK NEAR HAILEYVILLE, OK

LOCATION.--Lat 34°51'07", long 95°39'15", on east edge of NE 1/4 sec.6, T.4 N., R.16 E., Pittsburg County, Hydrologic Unit 11090204, at right downstream end of county road bridge, 3.3 mi (5.3 km) south of Bache, 5 mi (8 km) west of Haileyville, and at mile 5.7 (9.2 km).

DRAINAGE AREA.--134 mi² (347.1 km²).

PERIOD OF RECORD.--July 1978 to September 30, 1982. Discontinued.

GAGE.--Water-stage recorder. Datum of gage is 600.66 ft (183.081 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 4,610 ft³/s (131 m³/s) Oct. 13, 1981, gage height, 19.77 ft (6.026 m); no flow at times during most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 13	2315	*4,610 131	*19.77 6.026	Mar. 15	0200	1,550 43.9	10.67 3.252
Oct. 18	1500	3,620 103	17.10 5.212	May 14	0200	3,580 101	16.98 5.176
Oct. 31	2200	2,650 75.0	14.25 4.343	May 28	1100	3,580 101	16.99 5.179
Nov. 9	1900	2,400 68.0	13.48 4.109	May 31	1200	1,820 51.5	11.60 3.536
Jan. 31	0600	4,160 118	18.56 5.657				

No flow Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	2400	597	2.5	740	75	14	2.6	1200	2.0	1.0	.89
2	.54	1190	139	4.0	540	59	11	3.0	480	1.2	1.1	2.2
3	.48	200	76	3.7	400	80	16	2.6	811	1.0	1.3	3.4
4	.48	110	50	4.4	300	38	13	1.6	620	2.0	1.1	2.5
5	.36	81	28	4.4	210	25	6.7	.84	284	2.5	.90	1.7
6	33	60	24	4.0	130	24	5.1	17	108	1.0	.74	1.5
7	40	44	29	7.1	90	29	5.4	34	69	616	.62	1.0
8	11	756	23	3.4	86	31	5.1	13	43	567	.50	.75
9	4.0	2280	14	1.7	130	32	4.7	6.7	27	74	.40	.64
10	2.2	1000	10	1.5	120	26	4.4	3.8	23	40	.35	.48
11	1.2	200	9.2	1.1	100	23	4.7	2.4	16	19	.30	.42
12	1.7	108	10	.80	88	23	4.4	211	28	13	.25	.32
13	1590	76	7.9	.60	80	65	4.0	2820	23	7.5	.23	.27
14	4340	58	8.3	.70	76	1020	6.2	3160	20	4.7	.21	.20
15	2490	44	8.3	.80	68	930	4.8	439	25	4.0	.19	.24
16	1210	41	7.9	.70	62	248	3.2	160	160	3.1	.18	.24
17	2800	30	13	.80	608	115	2.5	232	58	2.8	.15	.20
18	3470	23	8.3	1.0	198	77	2.3	196	25	2.5	.13	.18
19	1420	36	4.7	1.5	118	72	2.8	83	14	2.0	.12	.15
20	278	17	4.0	2.0	82	63	3.1	53	10	1.5	.11	.20
21	225	13	4.4	27	68	34	1.9	46	7.1	1.0	.10	.18
22	391	12	7.5	45	48	26	1.0	21	8.3	.70	.08	.13
23	351	10	7.5	230	41	19	.79	43	7.1	.60	.05	.12
24	177	10	4.7	130	46	18	.75	394	9.2	.50	.04	.09
25	112	9.7	4.0	90	32	16	.75	653	12	.45	.02	.08
26	86	13	3.7	64	85	13	.84	201	8.8	.40	.00	.06
27	63	23	3.4	52	140	10	.92	157	7.1	.90	.04	.05
28	43	11	3.1	41	111	11	.80	2930	4.4	.84	3.4	.04
29	34	8.3	3.7	32	---	11	1.1	3140	3.1	.80	2.5	.03
30	30	571	3.4	1000	---	12	1.2	538	2.0	.90	1.7	.01
31	1020	---	2.5	2200	---	23	---	1170	---	.94	1.0	---
TOTAL	20226.16	9435.0	1119.5	3957.70	4797	3248	133.45	16734.54	4113.1	1374.83	18.81	18.27
MEAN	652	314	36.1	128	171	105	4.45	540	137	44.3	.61	.61
MAX	4340	2400	597	2200	740	1020	16	3160	1200	616	3.4	3.4
MIN	.36	8.3	2.5	.60	32	10	.75	.84	2.0	.40	.00	.01
AC-FT	40120	18710	2220	7850	9510	6440	265	33190	8160	2730	37	36
CAL YR 1981	TOTAL	42723.26	MEAN	117	MAX	4340	MIN	.00	AC-FT	84740		
WTR YR 1982	TOTAL	65176.36	MEAN	179	MAX	4340	MIN	.00	AC-FT	129300		

ARKANSAS RIVER BASIN

07232010 BLUE CREEK NEAR BLOCKER, OK

LOCATION.--Lat 34°02'26", long 95°34'21", SW 1/4 NW 1/4 sec.36, T.7 N., R.16 E., Pittsburg County, Hydrologic Unit 11090204 on right bank at downstream side of bridge on State Highway 31, 1.5 mi (2.4 km) south of Blocker and at mile 3.9 (6.3 km).

DRAINAGE AREA.--12.1 mi² (31.3 km²).

PERIOD OF RECORD.--January 1976 to September 30, 1982. Discontinued.

GAGE.--Water-stage recorder. Datum of gage is 592.47 ft (180.585 m), Oklahoma State Highway Department datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--6 years, 9.34 ft³/s (0.265 m³/s), 6,770 acre-ft/yr (8.35 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum 6,170 ft³/s (175 m³/s) Apr. 19, 1976, gage height, 8.41 ft (2.563 m); no flow each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 13	1900	*5,550 157	*7.71 2.350	May 12	--	2,240 63.4	5.10 1.554
Oct. 17	1515	2,040 57.8	4.98 1.518	May 28	0345	2,240 63.4	5.10 1.554
Oct. 31	1100	2,170 61.5	5.06 1.542	June 3	2200	2,190 62.0	5.07 1.545
Jan. 30	1515	3,650 103	6.08 1.853	June 15	2245	1,150 32.6	4.42 1.347

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	83	26	.60	60	4.7	1.0	7.0	21	.41	.02	.00
2	.00	24	13	.64	90	3.4	.90	4.2	68	.35	.00	.00
3	.00	15	7.8	.77	49	3.0	.80	2.7	161	.34	.00	.00
4	.00	16	5.1	.94	20	2.6	.74	1.5	6.2	.30	.00	.00
5	.00	11	3.5	.87	13	2.2	.66	140	.02	.22	.00	.00
6	.07	7.2	3.4	.76	6.6	1.9	.64	80	.08	.22	.00	.00
7	.07	4.7	2.9	.59	5.8	1.7	.66	14	.19	.74	.00	.00
8	.07	109	2.2	.53	9.3	1.4	.56	5.4	.79	6.9	.00	.00
9	.07	66	1.6	.54	13	1.3	.54	2.9	2.7	1.8	.00	.00
10	.07	23	1.4	.43	8.6	1.2	.52	2.2	1.0	.94	.00	.00
11	.07	14	1.3	.38	10	1.1	.40	1.6	.86	.73	.00	.00
12	.13	8.8	1.2	.38	26	1.0	.37	1180	.83	.55	.00	.00
13	1820	6.3	1.1	.38	46	80	.34	510	.65	.54	.00	.00
14	381	4.8	1.1	.37	33	110	.31	94	.51	.49	.00	.00
15	19	4.3	1.2	.40	21	50	1.1	47	105	.36	.00	.00
16	183	3.3	1.1	.36	92	14	.90	14	94	.27	.00	.00
17	482	2.4	.96	.30	40	4.5	.76	150	8.0	.22	.00	.00
18	53	2.0	.95	.34	15	2.1	1.3	51	3.6	.19	.00	.00
19	15	1.8	.80	.39	6.0	1.7	.66	20	1.9	.14	.00	.00
20	7.4	1.5	.77	.38	5.0	1.0	.64	25	1.2	.12	.00	.00
21	4.3	1.3	.85	.41	8.0	.96	.66	12	1.0	.08	.00	.00
22	45	1.2	.95	.27	4.5	.80	.68	4.6	1.1	.08	.00	.00
23	15	1.2	.98	.15	3.5	.70	.75	58	.92	.05	.00	.00
24	7.2	1.3	.93	6.7	2.1	.62	.80	50	.97	.03	.00	.00
25	5.4	1.4	.85	5.5	12	.58	.94	25	1.7	.02	.00	.00
26	7.8	1.3	.84	3.2	10	.54	.86	8.0	1.2	.00	.00	.00
27	4.3	1.1	.82	2.4	8.0	1.8	.78	4.1	.90	.03	.00	.00
28	2.5	1.1	.78	2.1	6.4	1.5	11	506	.72	.04	.00	.00
29	1.8	1.2	.70	1.8	---	1.3	3.5	28	.50	.04	.00	.00
30	1.4	112	.67	1370	---	2.0	12	9.8	.43	.04	.00	.00
31	529	---	.68	121	---	1.6	---	89	---	.03	.00	---
TOTAL	3584.65	531.2	86.43	1565.46	623.8	301.20	45.77	3147.0	486.97	89.53	.02	.00
MEAN	116	17.7	2.79	50.5	22.3	9.72	1.53	102	16.2	2.89	.00	.00
MAX	1820	112	26	1370	92	110	12	1180	161	74	.02	.00
MIN	.00	1.1	.67	.30	2.1	.54	.31	1.5	.02	.00	.00	.00
AC-FT	7110	1050	171	3110	1240	597	91	6240	966	178	.04	.00
CAL YR 1981	TOTAL	6520.57	MEAN	17.9	MAX	1820	MIN	.00	AC-FT	12930		
WTR YR 1982	TOTAL	10462.03	MEAN	28.7	MAX	1820	MIN	.00	AC-FT	20750		

ARKANSAS RIVER BASIN

07232500 BEAVER RIVER NEAR GUYMON, OK
(Headwater of the North Canadian River)

LOCATION.--Lat 36°43'24", long 101°29'30", NW 1/4 SW 1/4 sec.18, T.3 N., R.15 E., Texas County, Hydrologic Unit 11100101, near center of span on downstream side of pier of bridge on U.S. Highway 64 at Dry Sand Draw, 1.2 mi (1.9 km) upstream from Goff Creek, 2.5 mi (4.0 km) north of Guymon, and at mile 650.7 (1,047.0 km).

DRAINAGE AREA.--2,139 mi² (5,540 km²), which includes that of Dry Sand Draw and of which 964 mi² (2,497 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1970, published as North Canadian River near Guymon.

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,970.69 ft (905.466 m) revised, National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Records fair except for winter period which are poor.

AVERAGE DISCHARGE.--45 years, 23.3 ft³/s (0.660 m³/s), 16,880 acre-ft/yr (20.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,400 ft³/s (1,570 m³/s) June 15, 1964, gage height, 13.68 ft (4.170 m); maximum gage height, 13.82 ft (4.212 m), Sept 23, 1941, from floodmark; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,770 ft³/s (50.1 m³/s) July 14, gage height, 10.56 ft (3.219 m), no peaks above base of 2,400 ft³/s (68.0 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	2.7	1.0	3.7	.90	3.8	.00	7.7	.00	.00
2	.00	.00	.00	3.1	.42	3.3	.80	2.8	.00	2.2	.00	.00
3	.00	.00	.00	3.6	.20	3.3	.40	1.9	.00	.21	.00	.00
4	.00	.00	.00	1.6	.00	3.6	.80	.68	.00	.00	.00	.00
5	.00	.00	.00	3.3	.00	3.3	.50	.24	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	3.8	.60	.32	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	4.6	.70	.11	.00	.00	.00	.00
8	.00	.00	.00	.95	.00	3.3	.50	.00	.00	.00	.00	.00
9	.00	.00	.00	2.8	.00	3.5	.55	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	3.3	.80	.00	.00	257	.00	.00
11	.00	.00	.00	.27	.00	3.0	.90	.00	.00	52	.00	.00
12	.00	.00	.00	.96	.13	2.8	.60	.47	.00	7.8	.00	.00
13	.00	.00	.00	1.1	.44	2.5	.35	2.4	.00	3.0	.00	.00
14	.00	.00	.00	1.7	26	2.8	.72	.70	.00	573	.00	.00
15	.00	.00	.16	2.2	20	2.3	.78	.21	.00	118	.00	.00
16	.00	.00	.45	.86	15	1.3	.55	.13	.00	18	.00	.00
17	.00	.00	.59	.76	5.0	1.2	.61	.22	.00	7.1	78	.00
18	.00	.00	.83	2.2	3.8	2.1	.68	.12	35	4.8	18	.00
19	.00	.00	1.6	2.0	3.0	3.8	.52	.00	16	9.8	4.1	.00
20	.00	.00	1.3	4.2	2.8	2.5	.44	.00	5.1	5.2	.00	.00
21	.00	.00	.96	2.8	3.0	1.9	.61	.00	3.5	2.8	.00	.00
22	.00	.00	.21	3.1	3.5	1.7	.52	.00	.00	1.3	.00	.00
23	.00	.00	8.4	2.6	3.8	1.6	.61	.00	4.5	.51	.00	.00
24	.00	.00	3.1	3.3	3.5	1.2	.68	.17	5.4	.03	.00	.00
25	.00	.00	1.4	4.9	3.8	.90	.58	.18	.92	.00	.00	.00
26	.00	.00	1.6	5.8	4.1	1.3	.70	.46	.55	.00	.00	.00
27	.00	.00	2.4	5.0	4.7	3.3	3.1	.26	1.1	.00	.00	.00
28	.00	.00	2.6	2.0	3.8	3.5	2.2	.17	.00	.00	.00	.00
29	.00	.00	3.7	2.5	---	3.2	1.9	.00	35	.00	.00	.00
30	.00	.00	3.3	3.0	---	2.1	5.0	.07	15	.00	.00	.00
31	.00	---	2.8	2.0	---	.90	---	.08	---	.00	.00	---
TOTAL	.00	.00	35.40	71.30	107.99	81.60	28.60	15.49	122.07	1070.45	100.10	.00
MEAN	.00	.00	1.14	2.30	3.86	2.63	.95	.50	4.07	34.5	3.23	.00
MAX	.00	.00	8.4	5.8	26	4.6	5.0	3.8	35	573	78	.00
MIN	.00	.00	.00	.00	.00	.90	.35	.00	.00	.00	.00	.00
AC-FT	.00	.00	70	141	214	162	57	31	242	2120	199	.00
CAL YR 1981	TOTAL	3708.86	MEAN	10.2	MAX	1080	MIN	.00	AC-FT	7360		
WTR YR 1982	TOTAL	1633.00	MEAN	4.47	MAX	573	MIN	.00	AC-FT	3240		

ARKANSAS RIVER BASIN

07233200 OPTIMA LAKE NEAR HARDESTY, OK

LOCATION.--Lat 36°39'23", long 101°08'13", in NE 1/4 NE 1/4 sec.8, T.2 N., R.18 E., Texas County, Hydrologic Unit 11100102, in control tower for dam on Beaver River, 4.5 mi (7.2 km) northeast of Hardesty, and at mile 623.2 (1,002.7 km).

DRAINAGE AREA.--5,029 mi² (13,025 km²), of which 1,788 mi² (4,631 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earth dam having a concrete gate tower with a 12'0" x 16'5" oblong conduit. Discharges are controlled by two drum-hoist operated tractor-type service gates and a 36 in. low-flow control pipe. Closure for storage was made Oct. 2, 1978. Capacity, 618,500 acre-ft (763 hm³) at elevation 2,814.2 ft (857.77 m), maximum pool; 382,500 acre-ft (472 hm³) at elevation 2,796.0 ft (852.22 m), uncontrolled spillway crest; 229,500 acre-ft (283 hm³) at elevation 2,779.0 ft (847.04 m), top of flood-control pool; 129,000 acre-ft (159 hm³) at elevation 2,763.5 ft (842.32 m), top of conservation pool. Figures given herein represent total contents. Reservoir is used for flood control, sediment control, and water supply. Capacity table based on original survey.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 7,610 acre-ft (9.38 hm³) May 30 to June 2, 1980, elevation, 2,722.90 ft (829.940 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,360 acre-ft (7.84 hm³) July 16-25, elevation, 2,721.70 ft (829.574 m); minimum, 3,870 acre-ft (4.771 hm³) May 10, elevation, 2,719.00 ft (828.751 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

2,719	3,870	2,721	5,670
2,720	4,730	2,722	6,660

RESERVOIR STORAGE, (ACRE-FEET)						WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982						
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4730	4510	4460	4370	4240	4330	4290	3950	5100	5960	6160	5860
2	4730	4510	4460	4370	4240	4330	4290	3950	5100	5960	6160	5770
3	4730	4510	4460	4370	4240	4330	4290	3950	5010	5960	6160	5770
4	4730	4510	4460	4370	4240	4330	4290	3950	5010	5960	6060	5770
5	4730	4510	4460	4370	4240	4370	4200	3950	5010	5960	6060	5770
6	4730	4510	4460	4370	4240	4370	4200	3950	5010	5860	6060	5770
7	4730	4510	4460	4370	4240	4370	4200	3950	5010	5860	6060	5770
8	4680	4510	4460	4370	4240	4370	4200	3950	5010	5860	6060	5770
9	4680	4510	4460	4370	4240	4370	4120	3950	5010	5860	6060	5770
10	4680	4510	4460	4370	4240	4370	4120	3870	5010	6010	6060	5770
11	4680	4510	4460	4370	4240	4370	4120	3950	5010	6110	6060	5770
12	4640	4510	4460	4370	4240	4370	4120	4640	5010	6210	5770	5670
13	4640	4510	4420	4370	4240	4370	4120	4910	5010	6210	5960	5670
14	4640	4510	4420	4370	4240	4370	4120	5050	5010	6210	5960	5670
15	4640	4510	4420	4370	4240	4370	4030	5050	5010	6310	5960	5670
16	4640	4510	4420	4370	4240	4370	4030	5100	5050	6360	5960	5670
17	4640	4510	4420	4370	4240	4370	4030	5100	5050	6360	5860	5570
18	4640	4510	4420	4290	4330	4370	4030	5100	5150	6360	5860	5570
19	4640	4510	4420	4290	4330	4370	4030	5100	5670	6360	5860	5570
20	4600	4460	4420	4290	4330	4370	4030	5100	5670	6360	5860	5570
21	4600	4460	4420	4290	4330	4370	4030	5100	5670	6360	5860	5570
22	4600	4460	4420	4290	4330	4370	4030	5100	5860	6360	5860	5570
23	4600	4460	4420	4290	4330	4370	4030	5100	5860	6360	5860	5480
24	4600	4460	4420	4290	4330	4290	4030	5100	5860	6360	5860	5480
25	4550	4460	4420	4240	4330	4290	4030	5100	5960	6360	5860	5480
26	4550	4460	4420	4240	4330	4290	3950	5100	5960	6260	5860	5480
27	4550	4460	4420	4240	4330	4290	3950	5100	5960	6260	5860	5480
28	4550	4460	4420	4240	4330	4290	3950	5100	5960	6160	5860	5380
29	4550	4460	4370	4240	---	4290	3950	5100	5960	6160	5860	5380
30	4550	4460	4370	4240	---	4290	3950	5100	5960	6160	5860	5380
31	4550	---	4370	4240	---	4290	---	5100	---	6160	5860	---
MAX	4730	4510	4460	4370	4330	4370	4290	5100	5960	6360	6160	5860
MIN	4550	4460	4370	4240	4240	4290	3950	3870	5010	5860	5770	5380
†	2719.80	2719.70	2719.60	2719.45	2719.55	2719.50	2719.10	2720.40	2721.30	2721.50	2721.20	2720.70
††	-180	-90	-90	-130	+90	-40	-340	+1150	+860	+200	-300	-480
CAL YR 1981	MAX	5340	MIN	2640, ††	-90							
WTR YR 1982	MAX	6360	MIN	3870, ††	+650							

† Elevation, in feet at end of month

†† Change in contents, in acre-feet

ARKANSAS RIVER BASIN

07233210 BEAVER RIVER NEAR HARDESTY, OK
(Headwater of the North Canadian River)

LOCATION.--Lat 36°39'23", long 101°08'06", in SE 1/4 NE 1/4 sec.8, T.2 N., R.18 E., Texas County, Hydrologic Unit 11100102, on left bank of outlet channel, 500 ft (152 m) downstream from Optima Dam, 5 mi (8 km) northeast of Hardesty, and at mile 623.1 (1,002.6 km).

DRAINAGE AREA.--5,029 mi² (13,025 km²), of which 1,788 mi² (4,631 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage 2,690.00 ft (819.912 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Flow completely regulated by Optima Lake (07233200).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 685 ft³/s (19.4 m³/s) June 8, 1978, gage height, 10.42 ft (3.176 m); no flow at times in 1978, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 77 ft³/s (2.18 m³/s) May 11, gage height, 9.02 ft (2.75 m); minimum daily discharge, 0.02 ft³/s (<0.001 m³/s) Sept. 21-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.09	.09	.25	.21	.21	.45	.39	.10	.06	.14	.04
2	.08	.14	.08	.25	.21	.21	.36	.32	.08	.06	.10	.04
3	.06	.18	.09	.28	.21	.21	.29	.28	.10	.06	.06	.04
4	.04	.18	.06	.25	.03	.21	.29	.22	.10	.06	.06	.04
5	.07	.18	.04	.25	.02	.23	.33	.18	.14	.06	.06	.04
6	.08	.18	.04	.25	.02	.22	.34	.14	.14	.06	.16	.04
7	.09	.21	.04	.25	.05	.21	.34	.14	.10	.06	.10	.04
8	.10	.29	.04	.30	.06	.24	.34	.14	.10	.10	.09	.04
9	.10	.21	.20	.29	.06	.29	.34	.14	.10	.10	.08	.09
10	.09	.18	.47	.24	.05	.29	.34	.14	.25	.29	.08	.10
11	.08	.18	.47	.22	.05	.29	.34	5.3	.34	.11	.08	.10
12	.08	.18	.46	.19	.06	.23	.34	.66	.29	.10	.08	.10
13	.08	.20	.43	.24	.07	.18	.34	.29	.29	.12	.08	.10
14	.08	.21	.41	.45	.09	.19	.34	.13	.47	.18	.08	.10
15	.10	.21	.39	.31	.14	.25	.34	.10	.34	.10	.10	.10
16	.14	.22	.37	.23	.20	.29	.34	.08	.21	.06	.10	.06
17	.14	.42	.30	.21	.30	.29	.34	.08	.08	.06	.09	.03
18	.08	.43	.29	.21	.25	.25	.29	.08	.14	.06	.07	.03
19	.08	.32	.29	.21	.29	.25	.29	.08	.10	.17	.08	.03
20	.08	.19	.29	.21	.29	.25	.29	.08	.06	.14	.07	.03
21	.08	.18	.25	.21	.29	.25	.29	.08	.04	.14	.07	.02
22	.08	.18	.28	.21	.25	.25	.29	.06	.21	.13	.08	.02
23	.08	.18	.19	.21	.21	.25	.35	.06	.14	.10	.08	.02
24	.08	.18	.18	.21	.21	.25	.34	.06	.08	.10	.09	.02
25	.08	.14	.18	.21	.21	.35	.34	.06	.06	.07	.07	.02
26	.08	.14	.18	.21	.21	.39	.34	.18	.21	.08	.06	.02
27	.08	.14	.18	.21	.21	.39	.46	.11	.08	.08	.06	.02
28	.08	.18	.21	.21	.21	.39	.37	.10	.06	.08	.09	.02
29	.08	.18	.21	.21	---	.39	.29	.10	.06	.08	.07	.02
30	.08	.15	.23	.21	---	.34	.49	.18	.06	.15	.06	.02
31	.08	---	.25	.18	---	.34	---	.18	---	.14	.04	---
TOTAL	2.61	6.05	7.19	7.37	4.46	8.38	10.23	10.14	4.53	3.16	2.53	1.39
MEAN	.08	.20	.23	.24	.16	.27	.34	.33	.15	.10	.08	.05
MAX	.14	.43	.47	.45	.30	.39	.49	5.3	.47	.29	.16	.10
MIN	.04	.09	.04	.18	.02	.18	.29	.06	.04	.06	.04	.02
AC-FT	5.2	12	14	15	8.8	17	20	20	9.0	6.3	5.0	2.8
CAL YR 1981	TOTAL	38.88	MEAN	.11	MAX	.87	MIN	.00	AC-FT	77		
WTR YR 1982	TOTAL	68.04	MEAN	.19	MAX	5.3	MIN	.02	AC-FT	135		

ARKANSAS RIVER BASIN

07234000 BEAVER RIVER AT BEAVER, OK
(Headwater of the North Canadian River)

LOCATION.--Lat 36°49'20", long 100°31'05", SW 1/4 sec.7, T.4 N., R.24 E., Beaver County, Hydrologic Unit 11100201, near right bank on downstream side of pier of bridge on U.S. Highway 270 at Beaver, 1.5 mi (2.4 km) downstream from Home Creek, 5 mi (8.0 km) upstream from Clear Creek, and at mile 576.0 (926.8 km).

DRAINAGE AREA.--7,955 mi² (20,603 km²), of which 4,270 mi² (11,059 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1904 to December 1905 (gage heights only), October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as Beaver Creek at Beaver 1904-5, and October 1937 to September 1970 as North Canadian River at Beaver.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,368.16 ft (721.815 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Mar. 29, 1904, to Dec. 31, 1905, nonrecording gage at same vicinity at different datum. Mar. 1, 1938, to Sept. 30, 1946, water-stage recorder at present site at datum 3.0 ft (9.1 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--45 years, 95.9 ft³/s (2.716 m³/s), 69,480 acre-ft/yr (85.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,000 ft³/s (1,980 m³/s) Oct. 8, 1946, maximum gage height, 14.55 ft (4.435 m) by slope-area measurement of peak flow in overflow section and extension of rating curve for main channel above 42,000 ft³/s (1,190 m³/s); no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,790 ft³/s (50.7 m³/s) June 23, gage height, 8.07 ft (2.460 m), no other peak above base of 4,000 ft³/s (113 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.3	.12	.08	.09	.16	1.6	3.5	17	50	3.0	.00
2	.00	4.5	.11	.07	.07	.13	1.4	3.2	15	42	67	.00
3	.00	2.4	.10	.13	.05	.16	.91	2.7	17	34	331	.00
4	.00	.60	.10	.13	.04	.18	1.2	1.6	20	28	156	.00
5	.00	.36	.08	.09	.03	.21	1.2	1.4	17	23	81	.00
6	.00	.23	.10	.09	.10	.29	.91	1.5	14	20	51	.00
7	.00	.20	.10	.12	.15	.16	.94	1.5	11	17	40	.00
8	.00	4.0	.10	.13	.13	.11	1.0	1.1	9.5	19	24	.00
9	.00	.66	.08	.11	.12	.12	1.4	.74	7.6	17	16	.00
10	.00	.27	.08	.08	.21	.12	2.5	.47	5.5	18	11	.00
11	.00	.23	.08	.10	.26	.12	2.0	.41	5.6	17	8.5	.00
12	.00	.20	.08	.12	.40	.14	1.6	182	4.4	15	5.1	.00
13	.00	.20	.09	.13	.66	.13	1.0	283	3.4	11	4.0	.00
14	.00	.18	.08	.17	.88	.16	.91	224	3.0	406	2.0	.00
15	.17	.17	.08	.18	.53	.32	.88	172	7.9	60	.58	.00
16	.00	.16	.08	.14	.38	.35	.78	103	26	29	.33	.00
17	.00	.15	.06	.14	.28	.27	.47	75	61	60	.28	.00
18	.00	.14	.12	.15	.15	.29	.39	60	76	31	.25	.00
19	.00	.12	.18	.16	.12	.38	.34	45	51	21	.18	.00
20	.00	.10	.13	.18	.11	.57	.32	36	48	20	.14	.00
21	.00	.10	.09	.25	.14	.59	.30	30	104	15	.15	.00
22	.00	.11	.13	.21	.13	1.0	.29	26	164	11	.09	.00
23	.00	.12	.12	.14	.10	.91	.27	22	1070	8.2	.11	.00
24	.00	.12	.10	.16	.10	.93	.30	22	400	5.4	.10	.00
25	.00	.13	.14	.18	.12	.94	.26	21	340	3.1	.07	.00
26	.00	.12	.11	.22	.12	2.2	.23	21	210	1.9	.05	.00
27	.00	.12	.11	.08	.13	2.8	.33	20	184	1.1	.03	.00
28	.00	.12	.06	.11	.12	4.2	.41	56	133	1.0	.27	.00
29	.00	.12	.09	.12	---	3.8	.32	37	94	.81	.08	.00
30	.00	.14	.09	.10	---	2.8	1.7	26	67	.94	.00	.00
31	.00	---	.07	.11	---	2.5	---	20	---	.91	.00	---
TOTAL	.17	17.37	3.06	4.18	5.72	27.04	26.16	1499.12	3185.9	987.36	802.31	.00
MEAN	.00	.58	.10	.13	.20	.87	.87	48.4	106	31.9	25.9	.00
MAX	.17	4.5	.18	.25	.88	4.2	2.5	283	1070	406	331	.00
MIN	.00	.10	.06	.07	.03	.11	.23	.41	3.0	.81	.00	.00
AC-FT	.3	34	6.1	8.3	11	54	52	2970	6320	1960	1590	.00
CAL YR 1981	TOTAL	2388.30	MEAN	6.54	MAX	1530	MIN	.00	AC-FT	4740		
WTR YR 1982	TOTAL	6558.39	MEAN	18.0	MAX	1070	MIN	.00	AC-FT	13010		

ARKANSAS RIVER BASIN

07234000 BEAVER RIVER AT BEAVER, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952, 1958-59, 1962-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to Jan. 1982.

WATER TEMPERATURE: October 1967 to Jan. 1982.

REMARKS.--Samples were collected by a local observer on a daily basis. An additional sample was collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD:

SPECIFIC CONDUCTANCE: Maximum daily, 6,720 micromhos April 6, 1981; minimum daily, 286 micromhos July 31, 1971.

WATER TEMPERATURE: Maximum daily, 38.0°C July 18, 1978; minimum -1.0°C on Dec. 22, 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAR (MG/L CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
DEC 29...	1230	330	150	660	50	8	7.6	210	870	1400	.80	24
FEB 11...	1240	310	170	690	50	8	9.1	240	920	1400	.80	20
APR 20...	992	250	140	970	64	13	9.4	210	730	1800	1.1	20
JUN 15...	851	210	120	890	65	12	9.8	169	560	1500	1.4	20
AUG 17...	1110	300	140	690	53	8	9.7	222	790	1200	.70	28

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
DEC 29...	3670	3600	5.0	1.5	<.090	.070	.09	.71	.050	.15	.020
FEB 11...	3730	3700	5.1	2.6	.090	.300	.39	2.4	.190	.58	.090
APR 20...	4320	4000	5.9	2.9	<.100	.100	.13	.88	.020	.06	.090
JUN 15...	3390	3400	4.6	32	<.100	.120	.15	1.1	.050	.15	<.010
AUG 17...	3430	3300	4.7	2.0	<.100	.140	.18	1.0	.050	.15	.030

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDED RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
DEC 29...	.040	.12	--	--	--	--	--	--	--	--	--
FEB 11...	<.020	--	4	1	3	200	100	100	3	2	1
APR 20...	.070	.21	--	--	--	--	--	--	--	--	--
JUN 15...	<.010	--	4	0	4	200	--	<100	<1	--	<1
AUG 17...	.010	.03	6	1	5	100	--	<100	<1	--	<5

ARKANSAS RIVER BASIN

07234000 BEAVER RIVER AT BEAVER, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	CHROMIUM, SUS- PENDED RECOV. (UG/L AS CR)	CHROMIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOVERABLE (UG/L AS CO)	COBALT, SUS- PENDED RECOVERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)	COPPER, SUS- PENDED RECOVERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOVERABLE (UG/L AS FE)	IRON, SUS- PENDED RECOVERABLE (UG/L AS FE)
DEC 29...	--	--	--	--	--	--	--	--	--	--	--
FEB 11...	10	0	10	5	0	5	10	9	1	2900	2800
APR 20...	--	--	--	--	--	--	--	--	--	--	--
JUN 15...	10	0	10	1	0	2	2	0	2	160	150
AUG 17...	10	--	<10	<1	--	5	3	0	5	190	100

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	LEAD, SUS- PENDED RECOVERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MANGANESE, SUS- PENDED RECOVERABLE (UG/L AS MN)	MANGANESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI)	NICKEL, SUS- PENDED RECOVERABLE (UG/L AS NI)
DEC 29...	--	--	--	--	--	--	--	--	--	--	--
FEB 11...	70	8	5	3	580	160	420	.2	<.1	5	2
APR 20...	--	--	--	--	--	--	--	--	--	--	--
JUN 15...	10	<1	--	<1	70	0	70	.1	<.1	5	2
AUG 17...	90	<1	--	5	290	0	300	.1	<.1	7	0

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NICKEL, DIS- SOLVED (UG/L AS NI)	SELENIUM, TOTAL (UG/L AS SE)	SELENIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	ZINC, SUS- PENDED RECOVERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDIMENT, SUS- PENDED (MG/L)	SEDIMENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 29...	--	--	--	--	--	--	--	--	314	.13	8
FEB 11...	3	<1	1	<1	1	50	20	30	--	--	--
APR 20...	--	--	--	--	--	--	--	--	12	.00	68
JUN 15...	3	<1	<1	<1	<1	20	0	30	14	.13	81
AUG 17...	10	<1	1	<1	<5	30	10	20	30	.02	55

ARKANSAS RIVER BASIN

07234100 CLEAR CREEK NEAR ELMWOOD, OK

LOCATION.--Lat 36°38'42", long 100°30'07", SW 1/4 SW 1/4 sec.8, T.2 N., R.24 E., Beaver County, Hydrologic Unit 11100201, on downstream side of right pile bent of county road bridge, 1,000 ft (304.8 m) downstream from small irrigation dam, 2.8 mi (4.5 km) northeast of Elmwood, and at mile 16.9 (27.2 km).

DRAINAGE AREA.--170 mi² (440 km²).

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WSP 2121: 1966.

GAGE.--Water-stage recorder. Datum of gage is 2,541.26 ft (774.576 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--17 years, 7.15 ft³/s (0.202 m³/s), 5,180 acre-ft/yr (6.38 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s (566 m³/s) Oct. 16, 1969, gage height, 13.97 ft (4.258 m), from floodmark, from rating curve extended above 12,500 ft³/s (343 m³/s) on basis of slope-area measurement at gage height 13.15 ft (4.008 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 11	2330	1,270 35.9	7.90 2.408	July 14	0415	*8,750 247	*12.31 3.752
June 23	0515	1,000 28.3	7.37 2.246				

Minimum daily discharge 1.5 ft³/s (0.042 m³/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	2.1	2.4	2.1	2.4	3.8	2.9	2.9	2.3	2.8	3.2	1.7
2	1.7	2.2	2.4	2.0	2.3	3.9	3.0	2.3	2.1	2.7	2.9	1.7
3	1.7	2.1	2.3	1.9	2.4	4.1	3.0	2.1	2.3	2.5	2.7	2.0
4	1.5	2.1	2.3	1.8	2.2	4.1	3.0	2.0	2.3	2.4	2.7	2.0
5	1.5	2.2	2.3	2.0	2.1	4.3	2.8	2.0	2.2	2.4	2.6	1.7
6	1.6	2.1	2.3	1.9	2.0	4.4	2.6	2.0	2.1	2.3	2.9	1.8
7	1.6	2.2	2.3	1.8	2.0	4.3	2.7	2.0	2.1	2.2	2.6	1.9
8	1.7	2.5	2.3	1.9	2.1	4.3	2.6	1.9	2.1	2.4	2.5	1.8
9	1.7	2.5	2.3	1.8	2.2	4.3	2.7	1.9	2.0	7.1	2.6	1.7
10	1.7	2.4	2.3	1.7	2.4	4.5	3.0	2.0	1.9	196	2.6	1.7
11	1.9	2.4	2.3	1.8	2.4	4.5	2.6	89	2.1	16	2.7	1.7
12	1.9	2.4	2.2	1.8	2.4	4.4	2.6	99	2.1	3.1	2.6	1.7
13	1.8	2.5	2.2	1.9	2.5	4.5	2.5	6.3	1.9	2.8	2.4	1.8
14	1.7	2.5	2.2	2.0	2.5	4.9	2.5	2.7	2.2	1560	2.3	1.8
15	2.0	2.4	2.3	2.0	2.6	4.4	2.4	2.4	7.3	54	2.3	1.9
16	2.0	2.3	2.2	2.0	2.6	4.3	2.1	2.7	2.8	14	2.3	1.9
17	1.8	2.5	2.1	1.9	2.8	4.1	2.0	2.5	3.2	5.9	2.3	1.8
18	1.7	2.5	2.2	2.0	2.9	4.2	2.0	2.3	3.8	5.0	2.3	1.8
19	1.7	2.6	2.3	2.1	2.9	4.0	2.0	2.3	3.0	4.6	2.2	1.9
20	1.7	2.6	2.3	2.2	3.0	3.7	2.0	2.2	2.5	4.3	2.0	1.8
21	1.7	2.6	2.3	2.1	3.0	3.7	2.0	2.2	2.5	4.0	2.1	1.8
22	1.9	2.6	2.3	2.0	3.3	3.6	2.1	2.2	2.5	3.8	1.9	1.9
23	1.8	2.6	2.1	1.9	3.3	3.7	2.1	2.2	396	3.6	1.9	1.8
24	1.8	2.5	2.1	2.1	3.3	3.5	2.2	2.8	93	3.4	2.1	1.7
25	1.9	2.5	2.2	2.2	3.3	3.3	2.1	2.4	16	3.4	2.1	1.8
26	1.9	2.5	2.2	2.2	3.4	3.4	2.0	2.7	6.9	3.3	2.0	1.9
27	2.0	2.5	2.2	2.3	3.5	3.6	2.1	3.8	4.3	3.3	2.1	1.8
28	2.0	2.4	2.1	2.3	3.6	3.4	2.1	9.5	3.7	3.4	2.3	1.8
29	1.9	2.4	2.1	2.3	---	3.4	2.0	2.4	3.4	3.3	2.1	1.9
30	1.9	2.5	2.2	2.5	---	3.2	10	2.5	3.0	3.3	1.9	2.1
31	1.8	---	2.2	2.4	---	2.9	---	5.3	---	3.3	1.8	---
TOTAL	55.2	72.2	69.5	62.9	75.4	122.7	79.7	270.5	583.6	1930.6	73.0	54.6
MEAN	1.78	2.41	2.24	2.03	2.69	3.96	2.66	8.73	19.5	62.3	2.35	1.82
MAX	2.0	2.6	2.4	2.5	3.6	4.9	10	99	396	1560	3.2	2.1
MIN	1.5	2.1	2.1	1.7	2.0	2.9	2.0	1.9	1.9	2.2	1.8	1.7
AC-FT	109	143	138	125	150	243	158	537	1160	3830	145	108
CAL YR 1981	TOTAL		1979.01	MEAN	5.42	MAX	594	MIN	.70	AC-FT	3930	
WTR YR 1982	TOTAL		3449.9	MEAN	9.45	MAX	1560	MIN	1.5	AC-FT	6840	

ARKANSAS RIVER BASIN

07236500 FORT SUPPLY LAKE NEAR FORT SUPPLY, OK

LOCATION.--Lat 36°33'14", long 99°34'16", in NE 1/4 SE 1/4 sec.17, T.24 N., R.22 W., Woodward County, Hydrologic Unit 11100203, in control tower at left end of Fort Supply Dam on Wolf Creek, 2.0 mi (3.2 km) southeast of Fort Supply and at mile 5.5 (8.8 km).

DRAINAGE AREA.--1,735 mi² (4,494 km²), of which 241 mi² (624 km²) is probably noncontributing.

PERIOD OF RECORD.--June 1942 to current year. Prior to October 1970, published as Fort Supply Reservoir near Fort Supply.

REVISED RECORDS.--WSP 1117: Drainage area.

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

REMARKS.--Reservoir is formed by an earth dam. Outlet works consist of a 540 ft (164.6 m) uncontrolled gravity-type concrete weir, one 36-in. (914 mm) diameter gated by-pass, and one 18 ft (5.49 m) oval-shaped conduit controlled by three vertical-lift sluice gates. Regulated storage began May 4, 1942; conservation pool first filled in June 1942. Capacity, 100,700 acre-ft (124 hm³) at elevation 2,028.0 ft (618.134 m), crest of spillway, 13,890 acre-ft (17.1 hm³) at elevation 2,004.0 ft (610.819 m), conservation pool, designated in 1965. No storage below elevation 1,987.0 ft (605.638 m). Figures given herein represent total contents. Reservoir is used for flood control and conservation. Revised capacity table, based on survey in 1969, used since Oct. 1, 1972.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 99,500 acre-ft (123 hm³) June 25, 1957, elevation, 2,026.97 ft (617.820 m); no contents at times November 1942 to January 1943.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,740 acre-ft (28.0 hm³) May 19, elevation, 2,008.10 ft (612.069 m); minimum, 11,720 acre-ft (14.5 hm³) Oct. 15, elevation 2,002.79 ft (610.450 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

2,001	8,930	2,004	13,890
2,002	10,430	2,015	15,830
2,003	12,080		

DAY	RESERVOIR STORAGE, (ACRE-FEET)					WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982						
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12030	12270	13970	14850	14730	14420	14560	14810	16910	15220	14270	12880
2	12010	12450	14000	14690	14830	14270	14400	14890	16760	15140	14290	12840
3	12000	12610	14000	14710	14710	14270	14540	14940	16480	15060	14190	12880
4	11960	12680	14060	14750	14540	14170	14420	14980	16150	15000	14120	12790
5	11860	12730	14080	14710	14330	13980	14360	15060	15930	14950	14140	12700
6	11840	12790	14140	14590	14120	13760	14400	15120	15470	14910	14420	12680
7	11830	12880	14150	14650	13950	13550	14380	15060	15120	14870	14400	12680
8	11830	12970	14170	14650	13830	13420	14310	14940	14850	14830	14380	12700
9	11790	13080	14230	14630	13850	13530	14360	14850	14560	14790	14380	12610
10	11780	13130	14270	14610	13830	13590	14420	14730	14500	14980	14310	12610
11	11810	13180	14330	14590	13850	13740	14460	14650	14460	15020	14270	12570
12	11810	13240	14360	14560	13870	13720	14400	14790	14400	15040	14230	12540
13	11790	13290	14420	14560	13890	13890	14420	14830	14360	15020	14170	12430
14	11740	13330	14480	14540	13930	14020	14460	14750	14360	15040	14140	12360
15	11910	13390	14520	14520	13980	14150	14460	14750	14270	15040	14020	12360
16	11950	13420	14480	14540	14060	14170	14360	15450	14270	14940	13980	12400
17	11910	13590	14560	14520	14120	14250	14360	19460	14330	14850	13910	12310
18	11890	13480	14590	14520	14170	14480	14500	22240	14360	14730	13850	12310
19	11910	13500	14630	14520	14210	14350	14250	22740	14400	14690	13800	12270
20	11880	13590	14710	14540	14230	14310	14210	22390	14400	14610	13700	12260
21	11830	13610	14650	14560	14270	14310	14210	21410	14420	14560	13660	12260
22	11810	13650	14750	14590	14310	14360	14210	20140	14460	14500	13610	12240
23	11910	13660	14750	14610	14290	14330	14270	18790	14520	14420	13520	12150
24	11840	13760	14770	14610	14270	14120	14270	18730	14650	14360	13420	12140
25	11830	13760	14750	14630	14270	14310	14360	16440	14790	14270	13370	12120
26	11830	13740	14750	14750	14310	14350	14440	15320	15020	14230	13280	12100
27	11860	13800	14690	14650	14330	14400	14520	14790	15120	14190	13220	12170
28	11880	13810	14750	14690	14310	14540	14580	14750	15160	14250	13200	12120
29	11910	13910	14770	14610	---	14440	14630	15080	15180	14230	13150	12000
30	11860	13930	14830	14650	---	14400	14770	15470	15200	14270	13090	11960
31	11950	---	14710	14750	---	14460	---	16230	---	14270	13000	---
MAX	12030	13930	14830	14850	14830	14540	14770	22740	16910	15220	14420	12880
MIN	11740	12270	13970	14520	13830	13420	14210	14650	14270	14190	13000	11960
†	2,002.92	2,004.02	2,004.43	2,004.45	2,004.22	2,004.30	2,004.46	2,005.20	2,004.68	2,004.20	2,003.52	2,002.93
††	-80	+1,980	+780	+40	-440	+150	+310	+1,460	-1,030	-930	-1,270	-1,040
CAL YR 1981	MAX	14830	MIN	11740, ††	+2,640							
WTR YR 1982	MAX	22740	MIN	11740, ††	-70							

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

ARKANSAS RIVER BASIN

07237000 WOLF CREEK NEAR FORT SUPPLY, OK

LOCATION.--Lat 36°34'00", long 99°33'05", SE 1/4 SE 1/4 sec.9, T.24 N., R.22 W., Woodward County, Hydrologic Unit 11100203, near left bank on downstream side of pier of bridge on U.S. Highway 270, 1.0 mi (1.6 km) southeast of Fort Supply, 1.6 mi (2.6 km) downstream from Fort Supply Dam, and at mile 3.9 (6.3 km).

DRAINAGE AREA.--1,739 mi² (4,504 km²), of which 241 mi² (624 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1937 to current year. Prior to October 1, 1941, published as "Near Supply".

REVISED RECORDS.--WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,958.38 ft (596.914 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). See WSP 1921 for history of changes prior to Sept. 30, 1962.

REMARKS.--Records fair. Flow completely regulated since May 1942 by Fort Supply Lake (station 07236500).

AVERAGE DISCHARGE.--(Prior to regulation by Fort Supply Dam) 5 years, (water years 1938-42), 104 ft³/s (2.95 m³/s), 73,350 acre-ft/yr (92.9 hm³/yr); (since regulation by Fort Supply Dam) 40 years (water years 1943-82), 56.9 ft³/s (1.611 m³/s), 41,220 acre-ft/yr (50.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s (402 m³/s) June 24, 1939, gage height, 15.60 ft (4.775 m), present datum, from rating curve extended above 8,000 ft³/s (227 m³/s); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 19.6 ft (5.97 m), present datum, was reached prior to October 1937, from information by State Highway Department.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 791 ft³/s (22.4 m³/s) May 21, gage height, 8.78 ft (2.676 m); minimum daily discharge, 1.2 ft³/s (0.034 m³/s) Mar.18, Apr. 26, 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	5.5	1.8	24	22	27	20	32	67	75	29	20
2	5.4	4.2	1.8	24	23	27	20	31	197	74	29	6.8
3	5.4	3.9	1.8	24	80	27	21	30	291	70	30	5.6
4	5.0	3.5	1.8	23	132	78	22	29	288	67	29	5.4
5	4.9	3.1	1.8	23	132	148	22	31	285	69	29	5.2
6	4.5	3.0	1.8	23	132	147	23	72	279	67	32	5.2
7	4.4	2.8	1.9	23	132	148	24	109	277	64	29	5.3
8	4.3	3.7	1.9	26	68	99	24	110	278	51	29	5.3
9	4.2	3.8	1.9	23	31	5.0	24	108	199	50	30	5.1
10	4.2	3.3	2.0	34	30	2.3	25	72	120	51	30	5.2
11	4.2	3.0	2.0	25	30	1.9	24	40	120	50	30	5.2
12	4.2	2.7	2.0	23	29	2.3	24	41	114	47	29	5.3
13	4.2	2.4	1.9	23	29	1.8	25	41	109	45	28	5.0
14	4.0	2.3	1.9	23	28	1.9	25	42	101	47	29	5.0
15	4.7	2.0	1.9	23	28	1.5	25	42	84	47	28	5.0
16	4.7	1.9	1.9	23	28	1.3	25	48	82	46	28	5.0
17	4.7	1.8	1.8	23	27	1.4	26	29	82	44	29	5.0
18	4.4	1.7	1.7	23	27	1.2	26	6.6	81	41	28	4.8
19	4.3	1.6	1.7	23	27	7.5	26	118	82	41	28	4.7
20	4.3	1.5	1.7	23	26	22	26	413	82	43	28	4.6
21	4.3	1.5	9.8	23	26	21	27	641	80	43	28	4.7
22	4.3	1.5	25	23	26	21	17	833	78	44	27	4.7
23	4.2	1.6	24	23	26	20	1.9	814	76	44	27	4.6
24	4.1	1.7	24	23	26	20	1.5	801	77	41	27	4.3
25	4.0	1.8	24	23	26	20	1.4	794	77	40	27	4.3
26	4.0	1.8	24	23	26	20	1.2	784	78	38	26	4.3
27	4.0	1.8	23	23	26	21	1.2	540	79	28	26	5.3
28	3.8	1.7	23	23	27	20	2.9	301	79	29	25	4.3
29	3.8	1.7	23	23	---	20	7.6	138	76	27	24	8.6
30	3.8	1.9	23	22	---	20	21	141	76	28	23	4.5
31	3.7	---	24	22	---	20	---	73	---	30	24	---
TOTAL	135.4	74.7	283.8	730	1270	974.1	559.7	7304.6	3994	1481	865	168.3
MEAN	4.37	2.49	9.15	23.5	45.4	31.4	18.7	236	133	47.8	27.9	5.61
MAX	5.4	5.5	25	34	132	148	27	833	291	75	32	20
MIN	3.7	1.5	1.7	22	22	1.2	1.2	6.6	67	27	23	4.3
AC-FT	269	148	563	1450	2520	1930	1110	14490	7920	2940	1720	334
CAL YR 1981	TOTAL	3422.79	MEAN	9.38	MAX	46	MIN	.85	AC-FT	6790		
WTR YR 1982	TOTAL	17840.6	MEAN	48.9	MAX	833	MIN	1.2	AC-FT	35390		

ARKANSAS RIVER BASIN

07237500 NORTH CANADAIN RIVER AT WOODWARD, OK

LOCATION.--Lat 36°26'18", long 99°16'40", SE 1/4 SE 1/4 sec.25, T.23 N., R.20 W., Woodward County, Hydrologic Unit 11100301, near right bank on downstream side of pier of bridge on State Highway 15, 200 ft (61.0 m) downstream from The Atchison, Topeka and Santa Fe Railway Co. bridge, 6.0 mi (9.7 km) east of Woodward, 7.2 mi (11.6 km) upstream from Indian Creek, 27.5 mi (44.2 km) downstream from Wolf Creek, and at mile 460.2 (740.5 km).

DRAINAGE AREA.--11,589 mi² (30,016 km²), of which 4,812 mi² (12,463 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1903 to September 1905 (gage heights only), October 1905 to June 1906, October 1938 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as Canadian River (North Fork) near Woodward 1903-06. Gage-height records collected in this vicinity since 1919 are contained in reports of U.S. Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area. WSP 1731: 1951(M).

GAGE.--Water-stage recorder. Datum of gage is 1,830.43 ft (557.915 m) National Geodetic Vertical Datum of 1929. Prior to July 1906, nonrecording gage at railway bridge 200 ft (61.0 m) upstream at different datum. Oct. 1, 1938, to Oct. 26, 1943, nonrecording gage and Oct. 27, 1943, to July 12, 1951, water-stage recorder, at site 7.8 mi (12.6 km) upstream at datum 37.01 ft (11.281 m) higher than present datum.

REMARKS.--Records good. Some regulation since May 1942 by Fort Supply Lake on Wolf Creek 33 mi (53 km) upstream (station 07236500).

AVERAGE DISCHARGE.--44 years, (water years 1939-82), 185 ft³/s (5.239 m³/s), 134,000 acre-ft/yr (165 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,000 ft³/s (1,190 m³/s) Oct. 10, 1946, gage height, 9.80 ft (2.987 m), site and datum then in use; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 12, 1923, reached a stage of 11.0 ft (3.35 m), site and datum then in use; from reports of U.S. Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,340 ft³/s (37.9 m³/s) May 31, gage height, 8.39 ft (2.557 m), no peak above base of 3,500 ft³/s (99.1 m³/s); minimum daily discharge, 3.4 ft³/s (0.096 m³/s) Oct. 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	100	18	39	50	66	61	52	363	430	116	38
2	4.6	46	16	39	52	65	62	61	300	355	110	36
3	3.8	30	16	40	36	64	57	64	369	321	102	31
4	3.4	23	15	38	40	64	56	62	468	279	94	27
5	3.5	19	15	40	69	86	55	64	453	248	89	24
6	4.0	16	15	39	92	145	53	94	442	230	91	21
7	4.0	14	14	31	114	149	53	90	425	213	140	22
8	3.8	31	14	30	123	156	52	120	414	199	180	21
9	4.8	27	15	37	120	129	51	124	402	180	129	18
10	4.9	22	16	43	64	74	54	123	307	206	111	18
11	6.3	20	16	37	32	62	53	111	241	189	101	17
12	8.0	19	16	34	35	54	54	93	229	242	93	17
13	6.9	18	16	43	52	50	54	87	217	474	85	16
14	6.0	17	16	54	71	69	55	79	205	300	79	15
15	29	17	16	70	86	59	54	80	196	236	73	15
16	14	16	16	56	84	55	54	301	187	226	69	16
17	26	16	14	42	91	55	54	686	182	444	67	15
18	11	15	13	46	82	51	54	322	185	698	66	15
19	7.1	13	17	53	76	49	51	238	203	399	63	16
20	6.1	13	12	58	74	44	50	242	187	321	60	15
21	5.0	15	16	46	72	54	50	412	312	269	59	14
22	5.1	15	19	52	71	59	50	651	437	230	56	13
23	5.5	15	21	43	68	61	48	843	310	205	53	12
24	4.9	15	32	40	67	63	39	904	275	186	50	10
25	5.9	17	33	54	66	61	39	929	327	170	49	10
26	6.2	15	36	56	64	59	36	901	632	158	48	10
27	6.0	16	37	54	65	65	34	880	854	158	45	11
28	6.1	16	36	51	66	64	50	741	758	185	45	9.2
29	6.3	16	36	51	---	64	37	440	597	140	43	25
30	5.6	21	38	51	---	65	67	290	488	125	40	13
31	22	---	39	50	---	62	---	924	---	120	39	---
TOTAL	240.9	653	649	1417	1982	2223	1537	11008	10965	8136	2445	540.2
MEAN	7.77	21.8	20.9	45.7	70.8	71.7	51.2	355	366	262	78.9	18.0
MAX	29	100	39	70	123	156	67	929	854	698	180	38
MIN	3.4	13	12	30	32	44	34	52	182	120	39	9.2
AC-FT	478	1300	1290	2810	3930	4410	3050	21830	21750	16140	4850	1070
CAL YR 1981	TOTAL	6941.53		MEAN	19.0	MAX	100	MIN	.80	AC-FT	13770	
WTR YR 1982	TOTAL	41796.1		MEAN	115	MAX	929	MIN	3.4	AC-FT	82900	

ARKANSAS RIVER BASIN

07237500 NORTH CANADIAN RIVER AT WOODWARD, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1955, 1958-59, 1961-63, 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1974 to Jan. 1982.

WATER TEMPERATURE: October 1974 to Jan. 1982.

REMARKS.--Samples were collected by a local observer on a daily basis. Samples were collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD:

SPECIFIC CONDUCTANCE: Maximum daily, 3,760 micromhos Nov. 27, 1975; minimum daily, 348 micromhos Aug. 22, 1977.

WATER TEMPERATURE: Maximum daily, 38.0°C June 21, 1981; minimum daily 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT 28...	1340	80020	6.1	2160	7.9	18.5	6.0	13.2	148	400	290	650
DEC 30...	0930	80020	38	--	8.0	1.0	9.5	10.6	75	>600	>1000	430
FEB 12...	1200	80020	35	1600	7.5	.5	4.0	8.8	65	>6000	K23000	400
APR 21...	1530	80020	50	1930	8.0	16.0	5.7	12.6	138	K1400	K12	450
JUN 16...	1700	80020	186	1730	8.3	23.5	60	9.3	118	K4400	7800	410
AUG 16...	1530	80020	67	1590	8.5	32.0	45	7.0	103	K130	700	410

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT 28...	453	190	43	250	45	4	9.3	200	510	310	.70	42
DEC 30...	224	120	35	180	47	4	7.0	210	280	270	.80	24
FEB 12...	179	110	33	180	49	4	7.0	220	250	250	.80	23
APR 21...	240	110	40	210	50	4	5.6	210	300	310	.80	20
JUN 16...	201	110	34	190	50	4	5.6	214	230	280	.70	23
AUG 16...	212	110	34	180	48	4	8.5	203	250	250	.70	27

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT 28...	1500	1500	2.0	25	.980	4.30	5.5	5.9	3.00	9.2	2.90	<.010
DEC 30...	1060	1000	1.4	109	.280	1.60	2.1	2.8	1.20	3.7	1.10	1.70
FEB 12...	1010	980	1.4	95	.270	.470	.61	4.6	.640	2.0	.400	.430
APR 21...	1160	1100	1.6	157	.330	.370	.48	1.5	.500	1.5	.460	.440
JUN 16...	1030	1000	1.4	517	.160	.170	.22	2.0	.130	.40	.110	.070
AUG 16...	1060	980	1.4	192	<.100	.200	.26	1.7	.190	.58	.120	.110

ARKANSAS RIVER BASIN

07237500 NORTH CANADIAN RIVER AT WOODWARD, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDED TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDED RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDED RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
OCT 28...	--	4	0	4	100	.00	200	<1	1	20	--	<10
DEC 30...	5.2	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	1.3	6	1	5	200	.00	200	<1	<1	10	0	10
APR 21...	1.3	--	--	--	--	--	--	--	--	--	--	--
JUN 16...	.21	6	2	4	100	.00	190	<1	<1	10	--	<10
AUG 16...	.34	6	0	7	200	.00	220	<1	<1	<10	--	<10

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDED RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDED RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)
OCT 28...	1	<1	6	5	1	360	280	80	2	0	3	190
DEC 30...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	1	<3	7	6	1	260	250	15	4	3	1	60
APR 21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 16...	4	<5	5	--	<5	2200	2200	5	<1	--	<5	180
AUG 16...	1	<5	5	0	5	2300	2300	3	2	--	<5	120

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MANGA- NESE, SUS- PENDED RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDED RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
OCT 28...	0	190	.2	<.1	3	1	2	<1	<1	<1	<1	60
DEC 30...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	20	37	.3	<.1	2	0	12	<1	<1	<1	<1	20
APR 21...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 16...	180	4	.1	<.1	3	0	5	<1	<1	<1	<5	20
AUG 16...	120	5	<.1	<.1	5	--	<5	<1	1	<1	<5	30

ARKANSAS RIVER BASIN

07237500 NORTH CANADIAN RIVER AT WOODWARD, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ZINC, SUS- PENDE- RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT 28...	30	30	.0	1	.0	4.0	.0	.0	.0	.0	.0
DEC 30...	--	--	--	--	--	--	--	--	--	--	--
FEB 12...	--	<3	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	--	--
JUN 16...	0	11	<1.0	<1	<.1	<1.0	<.1	<.1	<.1	<.1	<.1
AUG 16...	20	10	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATERIAL (UG/KG)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	METH- OXY- CHLOR, TOT. IN BOTTOM MATERIAL (UG/KG)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PER- THANE IN BOTTOM MATERIAL (UG/KG)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	SEDI- MENT, SUS- PENDE- D (MG/L)	SED. DIS- CHARGE, SUS- PENDE- D (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 28...	.0	.0	.0	.0	.0	.0	.00	.00	67	1.1	68
DEC 30...	--	--	--	--	--	--	--	--	32	3.3	74
FEB 12...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	29	3.9	74
JUN 16...	<.1	<.1	<.1	<.1	<.1	<.1	<1.00	<10	142	71	86
AUG 16...	--	--	--	--	--	--	--	--	112	20	90

ARKANSAS RIVER BASIN

07238000 NORTH CANADIAN RIVER NEAR SEILING, OK

LOCATION.--Lat 36°11'06", long 98°55'15", in NW 1/4 sec.28, T.20 N., R.16 W., Major County, Hydrologic Unit 11100301, near center of span on downstream side of pier of bridge on U.S. Highway 60, 2.0 mi (3.2 km) upstream from Seiling Creek, 2.2 mi (3.5 km) north of Seiling, 2.8 mi (4.5 km) downstream from Deep Creek, and at mile 422.6 (680.0 km).

DRAINAGE AREA.--12,261 mi² (31,756 km²), of which 4,847 mi (12,554 km²) is probably noncontributing.

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

REVISED RECORDS.--WSP 1341: Drainage area. WSP 1731: 1951 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,675.53 ft (510.702 m) National Geodetic Vertical Datum of 1929. July 1, 1946, to Aug. 17, 1964, at site 60 ft (18.3 m) downstream and prior to Oct. 1, 1954, at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair. Some regulation by Fort Supply Lake on Wolf Creek 70.6 mi (113.6 km) upstream. (Station 07236500).

AVERAGE DISCHARGE.--36 years, 207 ft³/s (5.862 m³/s), 150,000 acre-ft/yr (185 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,000 ft³/s (935 m³/s) May 19, 1951, gage height, 15.61 ft (4.758 m), present datum; maximum gage height, 16.00 ft (4.877 m) Oct. 11, 1946, present datum; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,320 ft³/s (94.0 m³/s) May 17, gage height 11.78 ft (3.591 m), no peak above base of 3,500 ft³/s (99.1 m³/s); minimum daily discharge, 0.52 ft³/s (0.015 m³/s) Oct. 8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	168	43	48	59	85	84	133	1590	654	165	48
2	7.9	107	45	50	67	89	82	151	791	571	154	42
3	5.6	128	44	48	64	80	78	115	521	476	136	36
4	3.5	83	40	48	37	79	76	106	527	420	122	35
5	3.7	60	37	49	31	78	75	103	576	379	116	30
6	1.6	49	36	48	36	83	71	121	535	348	117	26
7	.74	44	35	45	58	150	72	162	503	320	108	25
8	.52	46	35	38	64	166	73	152	473	294	107	23
9	.92	57	34	42	110	171	73	155	443	281	126	21
10	1.1	74	34	30	113	157	75	160	410	335	130	19
11	21	62	35	31	102	101	75	157	388	304	114	17
12	8.9	53	36	32	93	83	82	347	308	282	102	18
13	7.2	48	38	31	99	72	80	474	262	355	95	17
14	7.7	46	41	35	114	114	79	236	238	530	92	17
15	33	44	42	51	136	148	78	172	257	414	88	17
16	151	43	42	46	169	126	77	522	239	340	84	18
17	279	42	40	45	150	98	72	2680	226	311	81	17
18	105	42	36	47	130	90	70	2480	221	524	78	18
19	41	40	34	55	114	85	69	918	239	809	75	17
20	30	37	36	71	102	80	66	791	233	539	72	18
21	19	36	38	78	95	73	64	542	260	411	70	16
22	13	35	43	78	92	72	64	635	302	347	68	15
23	8.3	35	44	113	89	78	64	864	403	315	66	13
24	6.3	34	44	92	85	80	65	1050	368	286	64	12
25	11	33	45	77	81	80	73	1220	334	260	63	11
26	9.4	33	48	68	81	79	72	1240	335	233	61	11
27	6.3	34	50	65	79	80	72	1210	625	217	57	10
28	5.3	34	51	60	79	84	85	2000	951	213	55	9.6
29	5.1	37	49	62	---	89	75	1420	908	267	55	9.5
30	4.6	43	49	73	---	91	118	780	794	207	53	13
31	29	---	49	63	---	87	---	977	---	178	50	---
TOTAL	856.68	1627	1273	1719	2529	3028	2259	22073	14260	11420	2824	599.1
MEAN	27.6	54.2	41.1	55.5	90.3	97.7	75.3	712	475	368	91.1	20.0
MAX	279	168	51	113	169	171	118	2680	1590	809	165	48
MIN	.52	33	34	30	31	72	64	103	221	178	50	9.5
AC-FT	1700	3230	2520	3410	5020	6010	4480	43780	28280	22650	5600	1190
CAL YR 1981	TOTAL	12809.74	MEAN	35.1	MAX	279	MIN	.00	AC-FT	25410		
WTR YR 1982	TOTAL	64467.78	MEAN	177	MAX	2680	MIN	.52	AC-FT	127900		

ARKANSAS RIVER BASIN

07238500 CANTON LAKE NEAR CANTON, OK

LOCATION.--Lat 36°05'03", long 98°36'05", in SE 1/4 NE 1/4 sec.32, T.19 N., R.13 W., Blaine County, Hydrologic Unit 11100301, near right end of Canton Dam on North Canadian River, 2.0 mi (3.2 km) northwest of Canton, and at mile 394.3 (634.4 km).

DRAINAGE AREA.--12,483 mi² (32,331 km²), of which 4,883 mi² (12,647 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1948 to current year. Prior to October 1970, published as Canton Reservoir near Canton.

REVISED RECORDS.--WSP 1341: Drainage area.

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

REMARKS.--Reservoir is formed by an earth dam. The outlet works consists of a concrete gravity, chute-type weir spillway controlled by 16 taintor gates with net length of 640 ft (195.1 m), three sluice gates and two, 24 in. (610 mm) valved pipes. Regulated storage began Apr. 15, 1948; conservation pool was first filled July 4, 1948. Capacity, 383,800 acre-ft (473 hm³) at elevation 1,638.0 ft (499.26 m) (flood-control pool), 116,000 acre-ft (143 hm³) at elevation 1,615.2 ft (492.31 m). (Normal water-supply pool, designated in 1965), 99,400 acre-ft (123 hm³) at elevation 1,613.0 ft (492 m) (crest of spillway), and 18,460 acre-ft (22.8 hm³) at elevation 1,596.5 ft (486.61 m) (conservation pool). Dead storage, 4 acre-ft (4,930 m³) at elevation 1,582.0 ft (482.19 m) (invert of bypass gates). Figures given herein represent total contents. Reservoir was designed for flood control, irrigation, and conservation, but owing to a lack of facilities, it is not being used for irrigation at this time. Revised capacity table, based on survey in 1980, used since Oct. 1, 1981.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 258,600 acre-ft (319 hm³) May 25, 1951, elevation, 1,628.05 ft (496.230 m); minimum since conservation pool was first filled, 867 acre-ft (1.07 hm³) May 5, 1955, elevation, 1,585.66 ft (483.309 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 127,000 acre-ft (157 hm³) June 30, elevation, 1,617.30 ft (492.953 m); minimum, 39,400 acre-ft (48.6 hm³) Oct. 11, elevation, 1,603.67 ft (488.799 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

1,603	36,470	1,613	91,180
1,605	45,460	1,615	108,200
1,607	55,450	1,617	124,400
1,609	66,710	1,619	142,000
1,611	79,350		

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39960	42590	45460	47070	49790	54680	62710	65720	111400	126500	113200	110200
2	39880	42820	45460	47260	50430	55240	61610	65960	114100	126600	112900	109900
3	39960	42960	45560	47360	50430	55610	61780	66070	116400	126400	112400	109600
4	39830	43190	45460	47360	50380	55720	62130	66420	117600	125900	112400	109200
5	39960	43430	45230	47410	50380	55830	61900	67020	118400	125400	112700	109100
6	39790	43470	45510	47750	50430	55880	61780	67020	119800	125200	112600	109200
7	39740	43330	45650	47550	50530	55880	62070	66960	120900	124800	112700	108900
8	39530	44440	45700	47700	50790	56380	62190	66830	120700	124000	112600	108700
9	39570	43980	45800	47890	50940	56650	62190	67330	120700	123600	112800	108500
10	39480	44030	45800	47650	51040	57030	62300	67260	120100	122600	112900	108300
11	39660	44120	45900	47650	51250	57300	62360	68060	121100	121800	112800	108100
12	39570	44260	45950	47650	51450	57630	62710	68620	121200	122300	112700	107900
13	39660	44300	46140	47700	51550	58120	62770	69410	121300	122200	112500	107800
14	39880	44440	46040	47750	51760	58670	62880	69910	120800	121400	112600	107700
15	40490	44540	46040	47790	52120	58830	62820	70400	121900	120300	112500	107400
16	40930	44630	46530	47840	52370	59160	63230	73510	121900	119200	112400	107300
17	41390	44630	46090	47890	52580	59320	63170	76100	121900	117900	112400	107200
18	41530	44900	46090	47890	52780	59320	63110	79750	121900	116500	112100	107000
19	41580	44900	46040	47990	53090	59820	63400	81170	121700	115700	112100	107000
20	41620	44810	46090	48090	53350	59930	63230	87530	121300	115200	112100	106600
21	41850	44860	46290	48140	53650	60090	63230	89290	121900	114300	111900	106300
22	41580	44860	46530	48280	53550	60140	63230	90560	121900	113700	111700	106000
23	41440	44950	46580	48330	54060	60250	63230	92180	122200	113700	111600	106100
24	41350	45000	46530	48380	54320	60360	63520	93690	125200	113900	111400	105900
25	41720	44860	46720	48520	54370	60420	63870	95160	125700	114100	111200	105600
26	41670	45090	46770	48280	54420	60360	64040	97300	125600	114400	111400	105100
27	41620	45090	47110	48770	54580	60800	64160	100200	125500	114800	111000	104900
28	41530	45140	46920	48330	54730	60800	64330	102100	125700	115700	110900	105000
29	41440	45230	46920	49690	---	60580	64270	104800	126100	115500	110700	105000
30	41620	45560	46680	49790	---	61370	65550	108300	126900	115100	110400	105000
31	42960	---	47110	49590	---	61490	---	109800	---	114500	110200	---
MAX	42960	45560	47110	49790	54730	61490	65550	109800	126900	126600	113200	110200
MIN	39480	42590	45230	47070	49790	54680	61610	65720	111400	113700	110200	104900
†	1,604.46	1,605.02	1,605.34	1,605.85	1,606.86	1,608.10	1,608.80	1,615.20	1,617.29	1,615.80	1,615.26	1,614.58
††	-2,740	+2,600	+1,550	+2,480	+5,140	+6,760	+4,060	+44,250	+17,100	-12,400	-4,300	-5,200
CAL YR 1981	MAX	75810	MIN	39480	††	-22,150						
WTR YR 1982	MAX	126900	MIN	39480	††	+59,300						

ARKANSAS RIVER BASIN

07239000 NORTH CANADIAN RIVER AT CANTON, OK

LOCATION.--Lat 36°04'45", long 98°35'25", in NE 1/4 SW 1/4 sec.33, T.19 N., R.13 W., Blaine County, Hydrologic Unit 11100301, on right bank 2,700 ft (823.0 m) downstream from Canton Dam, 1.5 mi (2.4 km) northwest of Canton, 4.8 mi (7.7 km) upstream from Minnehaha Creek, and at mile 393.8 (633.6 km).

DRAINAGE AREA.--12,484 mi² (32,334 km²), of which 4,883 mi² (12,647 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected in this vicinity since 1914 are contained in reports of U.S. Weather Service.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,562.50 ft (476.250 m), Corps of Engineers datum. Oct. 1, 1937, to Jan. 5, 1955, water-stage recorder at site 2.5 mi (4.0 km) downstream at datum 1.91 ft (0.582 m) lower prior to Oct. 1, 1950, and at datum 6.91 ft (2.106 m) lower thereafter.

REMARKS.--Records good. Flow partly regulated by Fort Supply Lake (station 07236500) for period May 1942 to April 1948 and completely regulated thereafter by Canton Lake (station 07238500).

AVERAGE DISCHARGE.--(Prior to regulation by Canton Dam) 11 years (water years 1938-48), 256 ft³/s (7,250 m³/s), 185,500 acre-ft/yr (229 hm³/yr); (since regulation by Canton Dam) 34 years (water years 1949-82), 160 ft³/s (4,531 m³/s), 115,900 acre-ft/yr (143 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,800 ft³/s (702 m³/s) Oct. 12, 1946, gage height, 12.83 ft (3.911 m), site and datum then in use; no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 13, 1923, reached a stage of 16.8 ft (5.121 m), at site 300 ft (91.4 m) upstream from former site at datum 1.91 ft (0.582 m) lower than present datum, from reports of U.S. Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 861 ft³/s (24.4 m³/s) July 15-17, gage height, 8.01 ft (2.441 m); minimum daily discharge, 2.8 ft³/s (0.079 m³/s) Jan. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	4.0	4.1	3.6	4.7	4.1	3.7	6.9	14	481	402	27
2	9.7	3.6	4.3	3.9	4.6	3.7	3.5	6.9	14	508	398	28
3	9.4	3.6	4.2	4.0	3.3	3.5	3.4	6.6	13	505	371	28
4	9.5	3.6	4.1	4.0	3.2	3.4	4.4	6.8	13	474	38	27
5	9.9	3.6	4.3	3.8	3.8	3.6	3.9	7.7	14	473	33	27
6	9.0	3.5	4.3	3.6	4.0	3.3	4.7	6.7	13	470	31	27
7	9.5	3.7	4.3	3.1	3.9	3.0	4.9	7.7	14	468	31	26
8	9.7	4.7	4.3	3.3	3.9	3.2	4.8	7.5	324	467	31	26
9	9.5	3.9	4.7	3.7	4.5	3.7	5.2	7.6	836	586	31	26
10	8.8	4.0	5.9	3.6	4.1	4.1	5.4	6.7	666	662	31	27
11	9.3	4.3	6.5	2.8	4.3	3.7	5.3	6.5	321	656	32	26
12	9.2	4.1	5.7	3.0	4.6	3.8	5.7	8.6	316	349	30	27
13	11	4.5	5.4	3.3	4.9	4.2	6.0	8.8	314	241	30	26
14	12	4.5	5.4	3.7	5.4	6.2	6.6	7.7	311	626	29	24
15	13	4.2	5.2	3.7	5.6	5.4	7.0	8.2	306	837	30	21
16	14	4.0	5.2	2.9	4.5	5.1	6.7	21	301	859	27	21
17	14	4.1	5.0	3.4	4.2	6.3	6.9	18	296	855	27	20
18	12	4.4	5.0	3.6	4.1	6.4	7.0	10	426	853	27	21
19	7.8	3.9	5.3	3.7	4.0	6.5	6.4	9.5	467	849	27	22
20	6.3	4.0	5.4	3.9	3.3	6.7	6.5	12	465	842	26	22
21	4.8	4.1	5.3	3.8	3.1	6.2	6.3	9.3	467	833	25	21
22	4.7	4.3	5.4	3.6	3.6	4.7	6.2	9.7	463	400	26	19
23	4.8	4.6	5.4	3.6	3.6	4.1	6.8	11	354	132	25	16
24	4.7	5.1	5.2	4.4	3.5	4.2	7.2	10	136	40	25	17
25	5.2	5.2	5.2	5.4	4.4	3.9	7.4	9.3	264	38	26	18
26	4.8	4.6	5.2	5.6	4.1	4.1	6.2	9.3	471	37	26	20
27	4.7	4.6	5.1	5.5	4.1	4.7	5.9	11	472	37	26	22
28	4.5	4.7	4.4	5.3	4.2	4.6	6.3	14	476	364	27	24
29	4.1	4.8	4.4	6.8	---	4.5	6.3	13	485	418	27	26
30	3.8	5.0	4.1	5.7	---	4.0	7.7	15	486	413	24	28
31	4.1	---	3.5	5.1	---	3.8	---	15	---	413	27	---
TOTAL	253.2	127.2	151.8	125.4	115.5	138.7	174.3	308.0	9518	15186	1966	710
MEAN	8.17	4.24	4.90	4.05	4.12	4.47	5.81	9.94	317	490	63.4	23.7
MAX	14	5.2	6.5	6.8	5.6	6.7	7.7	21	836	859	402	28
MIN	3.8	3.5	3.5	2.8	3.1	3.0	3.4	6.5	13	37	24	16
AC-FT	502	252	301	249	229	275	346	611	18880	30120	3900	1410
CAL YR 1981	TOTAL	14303.4	MEAN	39.2	MAX	798	MIN	2.2	AC-FT	28370		
WTR YR 1982	TOTAL	28774.1	MEAN	78.8	MAX	859	MIN	2.8	AC-FT	57070		

ARKANSAS RIVER BASIN

07239200 NORTH CANADIAN RIVER NEAR WATONGA, OK

LOCATION.--Lat 35°50'30", long 98°28'00", on the north line of sec.27, T.16 N., R.12 W., Blaine County, Hydrologic Unit 11100301, on right bank on downstream side of bridge pier on U.S. Highways 270 and 281, 2.5 mi (4.0 km) west of Watonga, and at mile 364.9 (587.1 km).

DRAINAGE AREA.--12,692 mi² (20,421 km²), of which 4,899 mi² (7,882 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,468.60 ft (447.629 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum 3,990 ft³/s (113 m³/s) July 3, 1981, gage height, 13.99 ft (4.264 m); minimum daily discharge 2.4 ft³/s (0.068 m³/s) June 29, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,370 ft³/s (95.4 m³/s) May 17, gage height, 13.45 ft (4.100 m); minimum daily discharge, 7.0 ft³/s (0.20 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	40	16	14	18	18	13	27	126	400	355	23
2	7.8	31	15	13	16	17	17	22	94	398	353	21
3	8.2	28	15	12	15	17	15	20	130	393	349	21
4	10	26	15	13	18	17	16	19	117	395	342	21
5	9.4	24	15	14	24	17	15	18	69	395	144	21
6	9.0	26	14	14	25	17	15	25	61	415	70	21
7	9.9	33	14	17	23	18	15	24	60	461	57	21
8	10	34	14	12	26	18	16	21	56	413	49	21
9	11	25	14	20	26	17	16	18	334	413	44	20
10	11	22	15	18	26	17	17	18	670	525	41	20
11	12	21	15	18	29	18	17	20	480	596	39	22
12	14	21	16	16	28	18	16	1870	307	619	38	21
13	13	20	16	12	50	18	16	164	295	405	36	20
14	13	18	18	13	45	26	16	40	293	238	35	20
15	446	17	18	14	44	50	16	25	307	525	33	21
16	362	17	17	14	40	26	16	504	303	732	32	20
17	118	16	17	24	39	20	16	1520	284	777	31	19
18	55	16	14	23	32	18	16	238	288	783	31	18
19	33	16	10	18	28	18	16	124	375	774	30	19
20	28	16	14	19	26	16	16	282	380	774	30	18
21	25	16	15	16	24	16	16	126	380	770	29	18
22	20	16	16	13	23	16	16	72	386	767	29	18
23	18	16	16	12	23	16	16	76	375	434	27	15
24	22	15	16	10	22	15	16	72	567	195	26	14
25	20	15	15	11	20	15	22	56	207	84	26	14
26	17	16	15	14	19	14	21	52	268	64	27	13
27	16	16	15	14	19	18	19	77	428	53	26	13
28	15	21	15	14	19	16	18	209	418	55	26	13
29	15	21	14	15	---	15	17	88	408	209	26	13
30	28	17	15	28	---	14	23	52	408	353	25	13
31	54	---	15	29	---	14	---	312	---	355	24	---
TOTAL	1437.3	636	469	494	747	570	500	6191	8874	13770	2430	552
MEAN	46.4	21.2	15.1	15.9	26.7	18.4	16.7	200	296	444	78.4	18.4
MAX	446	40	18	29	50	50	23	1870	670	783	355	23
MIN	7.0	15	10	10	15	14	13	18	56	53	24	13
AC-FT	2850	1260	930	980	1480	1130	992	12280	17600	27310	4820	1090
CAL YR 1981	TOTAL	21399.2	MEAN	58.6	MAX	1290	MIN	2.4	AC-FT	42450		
WTR YR 1982	TOTAL	36670.3	MEAN	100	MAX	1870	MIN	7.0	AC-FT	72740		

ARKANSAS RIVER BASIN

07239500 NORTH CANADIAN RIVER NEAR EL RENO, OK

LOCATION.--Lat 35°33'44", long 97°57'32", on east line of sec.32, T.13 N., R.7 W., Canadian County, Hydrologic Unit 11100301, near left bank on downstream side of pier of bridge on old U.S. Highway 81, 2.0 mi (3.2 km) north of courthouse in El Reno, 2.2 mi (3.5 km) downstream from Target Creek, and at mile 307.4 (494.6 km).

DRAINAGE AREA.--13,042 mi² (33,779 km²) of which 4,899 mi² (12,688 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1902 to April 1908, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at site 1.0 mi (1.6 km) upstream March 1914 to March 1934 and at present site thereafter are contained in reports of U.S. Weather Service. Published as Canadian River (North Fork) near El Reno 1902-4.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,299.02 ft (395.941 m) National Geodetic Vertical Datum of 1929. October 1902 to April 1908, nonrecording gage at site about 50 ft (15.2 m) downstream at different datum.

REMARKS.--Records good. Some regulation by Fort Supply Lake (station 07236500) for period May 1942 to April 1948 and by Canton Lake (station 07238500) thereafter.

AVERAGE DISCHARGE.--(Prior to regulation by Canton Lake) 16 years (water years 1903-07, 1938-48), 264 ft³/s (7.476 m³/s), 191,300 acre-ft/yr (236 hm³/yr); (since regulation by Canton Lake) 34 years (water years 1949-82), 194 ft³/s (5.490 m³/s), 140,500 acre-ft/yr (173 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s) Oct. 28, 1941, gage height, 15.98 ft (4.871 m); maximum gage height, 18.20 ft (5.547 m) Sept. 21, 1965; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 15, 1923, reached an elevation of 1,326.3 ft (404.256 m) above mean sea level at railroad bridge 1.0 mi (1.6 km) above station, from reports of U.S. Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,760 ft³/s (163 m³/s) May 19, gage height, 14.17 ft (4.319 m); minimum daily, 3.3 ft³/s (.093 m³/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	216	42	29	91	41	32	33	1030	423	305	32
2	3.3	110	48	30	78	41	30	35	603	411	307	31
3	4.6	93	46	30	75	40	29	38	1090	400	305	29
4	16	82	41	30	66	38	28	34	1200	389	298	28
5	22	61	39	29	64	38	27	31	718	383	295	27
6	14	53	37	29	70	37	26	35	390	378	240	26
7	12	49	37	32	68	36	26	32	266	770	114	25
8	12	48	37	28	71	36	27	30	212	731	94	24
9	12	58	37	31	67	36	27	32	178	527	83	25
10	12	69	36	22	76	35	28	28	200	477	78	25
11	69	64	36	27	71	35	27	25	652	483	74	26
12	244	56	36	31	74	35	27	583	646	596	73	28
13	59	50	36	32	64	33	27	1740	396	615	70	26
14	30	47	37	32	87	39	26	1440	340	529	67	27
15	86	46	37	32	149	47	26	689	319	310	65	29
16	1310	44	37	32	138	65	25	774	321	341	61	27
17	963	44	37	32	120	64	24	4250	323	619	59	28
18	450	43	36	32	90	50	23	5360	299	692	57	30
19	185	42	37	33	74	43	24	5630	298	687	54	30
20	112	41	37	33	64	40	23	3660	353	690	53	29
21	85	40	34	33	58	38	23	1840	427	691	52	27
22	73	40	33	31	55	35	23	1020	414	695	51	25
23	64	39	35	33	51	34	22	697	416	691	51	24
24	57	39	34	33	48	34	22	888	424	531	49	23
25	54	38	34	41	46	32	25	713	662	318	47	23
26	52	38	33	38	44	31	27	454	471	160	45	21
27	50	37	33	36	43	32	29	384	290	115	42	21
28	49	36	32	35	42	32	31	917	460	100	43	19
29	46	38	31	36	---	33	30	1440	467	90	40	18
30	44	41	31	95	---	35	32	630	442	88	37	18
31	45	---	31	131	---	34	---	747	---	264	36	---
TOTAL	4238.5	1702	1127	1148	2044	1199	796	34209	14307	14194	3245	771
MEAN	137	56.7	36.4	37.0	73.0	38.7	26.5	1104	477	458	105	25.7
MAX	1310	216	48	131	149	65	32	5630	1200	770	307	32
MIN	3.3	36	31	22	42	31	22	25	178	88	36	18
AC-FT	8410	3380	2240	2280	4050	2380	1580	67850	28380	28150	6440	1530
CAL YR 1981	TOTAL	31449.0	MEAN	86.2	MAX	1650	MIN	1.8	AC-FT	62380		
WTR YR 1982	TOTAL	78980.5	MEAN	216	MAX	5630	MIN	3.3	AC-FT	156700		

ARKANSAS RIVER BASIN

07240000 LAKE HEFNER CANAL NEAR OKLAHOMA CITY, OK

LOCATION.--Lat 35°33'11", long 98°57'11", in SW 1/4 SW 1/4 sec.34, T.13 N., R.4 W., Oklahoma County, Hydrologic Unit 11050002, attached to left wing wall just downstream from outlet of inverted siphon, 2,600 ft (792.5 m) upstream from Lake Hefner, 3.0 mi (4.8 km) northeast of Bethany, and 7.6 mi (12.2 km) northwest of the State Capitol in Oklahoma City.

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

REVISED RECORDS.--WDR OK-80-1: 1968-80 (Datum).

GAGE.--Water stage recorder and concrete control. Datum of gage is 1,196.06 ft (364.559 m) National Geodetic Vertical Datum of 1929 (revised). Prior to Apr. 8, 1947, nonrecording gage at site 2.7 mi (4.3 km) upstream at different datum. Apr. 8, 1947, to Apr. 30, 1950, water-stage recorder at site 3.0 mi (4.8 km) upstream at different datum. May 1, 1950 to May 19, 1954, Apr. 26, 1957 to Feb. 19, 1968 at present site and datum 4.90 ft (1.494 m) higher. May 20, 1954 to Apr. 25, 1957, water-stage recorder and concrete control at site 2,500 ft (762.0 m) downstream at datum 2.10 ft (0.640 m) higher than present datum.

REMARKS.--Records poor. Use of canal began in March 1944. Canal diverts water from North Canadian River just upstream from Lake Overholser (station 07240500) and delivers water to Lake Hefner, capacity, 80,600 acre-ft (99.4 km³), for municipal water supply of Oklahoma City. Subsequent to April 1950, small ground-water seepage, when head gates are closed, included in records.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,500 ft³/s (42.5 m³/s) May 28, 1955; no flow at times in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	160	30	.00	736	63	1.4	.50	25	26	32	1.1
2	5.0	80	6.0	.00	1480	35	1.2	.69	32	25	31	1.5
3	5.6	32	2.5	.00	300	5.8	.90	10	15	23	94	1.9
4	5.4	19	1.0	.00	120	5.1	.97	10	11	21	204	1.6
5	5.4	10	.58	.00	75	4.8	.66	11	11	20	266	1.6
6	5.3	12	.43	.00	50	5.0	.71	71	10	20	268	1.5
7	17	15	.35	.00	36	4.5	.73	96	10	24	108	1.4
8	319	100	.28	.00	33	4.3	.67	61	10	19	29	1.4
9	70	42	.25	.00	40	4.1	.68	39	9.6	29	29	1.3
10	35	17	.20	.00	35	4.0	.70	38	10	40	29	1.3
11	56	9.6	.19	.00	33	3.9	.66	37	12	37	29	1.3
12	70	4.8	.19	.00	30	3.8	.60	507	3.6	35	29	1.3
13	453	4.0	10	.00	29	3.2	.55	768	2.6	34	29	1.2
14	71	3.5	1.5	.00	28	6.4	.56	897	1.8	33	29	1.5
15	115	3.2	.15	.00	28	3.4	.57	407	1.7	32	29	4.3
16	936	3.0	.12	.00	66	3.0	.47	200	1.1	31	28	1.1
17	725	2.8	.10	.00	350	2.9	.48	408	1.2	32	29	1.0
18	886	2.6	.00	.00	250	3.0	.52	80	1.3	32	29	1.1
19	599	2.3	.00	.00	65	2.6	.39	20	1.3	32	29	1.1
20	148	2.0	.00	.00	67	2.2	.40	33	1.1	77	22	.85
21	88	1.8	.00	.00	67	2.1	.45	17	1.2	79	1.8	.72
22	65	1.5	.00	.00	67	1.9	.46	10	1.1	79	1.4	.72
23	58	1.3	.00	.00	70	2.0	.45	22	1.0	79	1.4	.78
24	54	1.2	.00	.00	69	2.0	.45	21	11	136	1.4	.78
25	50	1.1	.00	.00	67	1.9	.79	9.3	24	200	1.5	.83
26	47	1.0	.00	.00	66	1.9	.48	9.6	88	204	1.4	.94
27	42	1.0	.00	9.8	67	2.1	.46	8.5	87	108	1.4	.80
28	45	1.0	.00	127	67	1.7	1.0	13	135	35	1.2	.77
29	48	1.0	.00	79	---	1.8	.58	15	304	34	1.1	.69
30	98	1.0	.00	1110	---	1.5	.81	29	178	33	1.1	.63
31	245	---	.00	854	---	1.4	---	35	---	33	1.1	---
TOTAL	5371.4	536.7	53.84	2179.80	4391	190.3	19.75	3883.59	1001.6	1642	1386.8	50.51
MEAN	173	17.9	1.74	70.3	157	6.14	.66	125	33.4	53.0	44.7	1.68
MAX	936	160	30	1110	1480	63	1.4	897	304	204	268	15
MIN	4.7	1.0	.00	.00	28	1.4	.39	.50	1.0	19	1.1	.63
CAL YR 1981	TOTAL 21821.45			MEAN	59.8	MAX	936	MIN	.00			
WTR YR 1982	TOTAL 20707.29			MEAN	56.7	MAX	1480	MIN	.00			

ARKANSAS RIVER BASIN

07240500 LAKE OVERHOLSER NEAR OKLAHOMA CITY, OK

LOCATION.--Lat 35°29'11", long 97°39'58", on north line of SW 4 sec.30, T.12 N., R.4 W., Oklahoma County, Hydrologic Unit 11100301, at control tower at left end of dam on North Canadian river, 2.9 mi (4.7 km) upstream from Mustang Creek, 9.0 mi (14.5 km) west of State Capitol in Oklahoma City, and at mile 281.5 (452.9 km).

DRAINAGE AREA.--13,221 mi² (34,242 km²), of which 4,899 mi² (12,688 km²) is probably noncontributing.

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

GAGE.--Nonrecording gage. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by Oklahoma City Water Department). Prior to Oct. 1, 1955, at same site at datum, 1,065.77 ft (324.847 m) elevation. Oct. 1, 1955, to Sept. 30, 1962, water-stage recorder at same site and present datum.

REMARKS.--Reservoir is formed by Ambursen-type dam flanked by long earth-fill sections. Outlet facilities are twenty-three taintor gates and one uncontrolled spillway. Storage began in 1917. Dam was partly washed out in 1923 and rebuilt in 1924. Capacity, 17,100 acre-ft (21.1 hm³) below elevation 1,242.27 ft (378.644 m), top of spillway gates. Dead storage, 1,400 acre-ft (1.73 hm³) below elevation 1,229.77 ft (374.834 m), sill of outlet works. Figures given herein represent total contents. Water diverted for municipal water supply by Oklahoma City. Revised capacity table used since Oct. 1, 1950.

COOPERATION.--Elevations and capacity table furnished by Oklahoma City Water Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 20,900 acre-ft (25.8 hm³) June 14, 1944, elevation, 1,242.67 ft (378.766 m); from capacity table then in use; minimum observed, 1,870 acre-ft (2.31 hm³) May 14, 1955, elevation, 1,230.62 ft (375.093 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 17,010 acre-ft (21.0 hm³) May 16, elevation, 1,242.20 ft (378.623 m); minimum, 14,560 acre-ft (18.0 hm³) Oct. 5, elevation, 1,240.60 ft (378.135 m).

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1240.80	14,860	---
Oct. 31.....	1241.80	16,390	+1,530
Nov. 30.....	1241.55	16,010	- 380
Dec. 31.....	1241.15	15,400	- 610
CAL YR 81.....	---	---	- 80
Jan. 31.....	1242.10	16,850	+1,450
Feb. 28.....	1242.10	16,850	0
Mar. 31.....	1241.95	16,620	- 230
Apr. 30.....	1241.75	16,320	- 300
May 31.....	1241.80	16,300	- 20
June 30.....	1242.20	17,010	+ 710
July 31.....	1241.95	16,620	- 390
Aug. 31.....	1241.50	15,940	- 680
Sept. 30.....	1241.05	15,240	- 700
WTR YR 82.....	---	---	+ 380

ARKANSAS RIVER BASIN

07241000 NORTH CANADIAN RIVER BELOW LAKE OVERHOLSER, NEAR OKLAHOMA CITY, OK

LOCATION.--Lat 35°28'46", long 97°39'47", in southeast corner of SW 1/4 sec.30, T.12 N., R.4 W., Oklahoma County, Hydrologic Unit 11100301, on left bank 200 ft (61.0 m) upstream from bridge on State Highway 4, 0.5 mi (0.8 km) downstream from Lake Overholser, 2.4 mi (3.9 km) upstream from Mustang Creek, 9.1 mi (14.6 km) southwest of State Capitol in Oklahoma City, and at mile 281.0 (452.1 km).

DRAINAGE AREA.--13,222 mi² (34,245 km²), of which 4,899 mi² (12,688 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1952 to September 1968, October 1969 to September 1972, October 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,194.66 ft (364.132 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1961, at datum 10.00 ft (3.048 m) higher and through Mar. 24, 1971, at site 200 ft (61.0 m) downstream.

REMARKS.--Records fair. Some regulation by Canton Lake (station 07238500) and Lake Overholser (station 07240500). Diversions above station into Lake Overholser and Lake Hefner Canal (station 07240000).

AVERAGE DISCHARGE.--28 years, 102 ft³/s (2.887 m³/s), 73,900 acre-ft/yr (91.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s (360 m³/s) Nov. 3, 1974, gage height, 29.18 ft (8.894 m); no flow at times in 1952-57.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 40.9 ft (12.47 m), present datum, was reached in October 1923 from information by State Highway Department.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,230 ft³/s (205 m³/s) May 17, gage height, 27.05 ft (8.245 m); minimum daily discharge, 2.2 ft³/s (0.062 m³/s) Sept. 21-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	38	49	10	28	12	12	31	1490	448	118	6.5
2	2.4	5.3	20	11	58	89	78	33	1420	439	238	4.8
3	3.7	13	24	13	114	111	13	3.6	899	370	235	4.5
4	8.9	39	18	12	36	67	3.9	3.2	1010	295	92	4.5
5	2.5	39	17	13	29	60	110	5.6	948	292	6.5	4.3
6	2.5	40	17	24	8.1	52	4.5	45	680	293	7.7	4.3
7	2.4	40	17	25	8.0	48	3.6	5.4	361	418	72	4.3
8	2.3	109	16	8.7	8.0	48	19	3.8	368	577	78	4.8
9	2.3	81	16	7.4	8.2	48	3.8	3.4	227	620	23	7.1
10	2.3	31	16	7.1	8.0	48	3.6	3.2	145	554	5.7	7.4
11	22	31	15	7.4	7.6	48	3.6	3.2	396	382	4.8	6.8
12	18	31	15	7.4	7.9	51	3.6	53	599	359	4.5	5.7
13	4.2	31	15	7.4	13	48	4.3	1520	486	398	4.5	4.8
14	2.7	31	15	6.7	18	82	3.8	1250	474	478	4.8	82
15	9.1	32	14	6.5	69	76	3.6	250	381	474	5.4	73
16	25	31	32	7.1	212	70	39	272	385	250	7.1	3.6
17	975	31	29	6.9	198	58	7.7	4430	342	247	5.7	2.8
18	159	31	12	6.7	110	58	2.6	2450	317	390	4.5	4.3
19	4.7	129	11	6.8	16	59	18	3490	320	409	5.1	2.4
20	4.3	33	11	7.1	20	59	26	4630	328	407	5.7	2.3
21	7.4	31	11	7.1	15	61	3.6	4370	331	405	6.0	2.2
22	16	31	32	8.1	14	29	3.2	2380	381	403	5.7	2.2
23	5.0	32	10	10	27	10	2.8	1280	385	401	5.7	2.2
24	4.5	26	10	10	65	10	2.8	1610	395	331	6.3	2.3
25	21	21	10	11	36	40	3.8	1520	575	176	8.0	2.4
26	10	35	11	9.8	21	11	5.1	891	583	34	5.7	2.4
27	4.5	20	12	13	12	12	3.6	665	420	37	6.0	3.0
28	4.5	20	19	5.7	12	11	31	733	128	51	6.0	3.8
29	4.5	20	10	20	---	11	54	1250	125	62	6.0	3.6
30	4.5	30	10	992	---	12	21	1070	322	61	5.4	3.5
31	33	---	28	814	---	18	---	1260	---	58	8.0	---
TOTAL	1371.0	1112.3	542	2101.9	1178.8	1417	494.5	35514.4	15221	10119	996.8	267.8
MEAN	44.2	37.1	17.5	67.8	42.1	45.7	16.5	1146	507	326	32.2	8.93
MAX	975	129	49	992	212	111	110	4630	1490	620	238	82
MIN	2.3	5.3	10	5.7	7.6	10	2.6	3.2	125	34	4.5	2.2
AC-FT	2720	2210	1080	4170	2340	2810	981	70440	30190	20070	1980	531
CAL YR 1981	TOTAL	5303.1	MEAN	14.5	MAX	975	MIN	2.2	AC-FT	10520		
WTR YR 1982	TOTAL	70336.5	MEAN	193	MAX	4630	MIN	2.2	AC-FT	139500		

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK

LOCATION.--Lat 35°30'08", long 97°10'52", in SW 1/4 NE 1/4 sec.22, T.12 N., R.1 E., Oklahoma County, Hydrologic Unit 11100302, on downstream center of bridge of access road to O.G. & E. power plant, 1.8 mi (2.9 km) north-west of Harrah, 4.6 mi (7.4 km) downstream from Choctaw Creek, and at mile 229.2 (368.8 km). Prior to June 19, 1981, gage 0.8 mi (1.3 km) upstream.

DRAINAGE AREA.--13,501 mi² (34,968 km²), of which 4,899 mi² (12,688 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,055.69 ft (321.774 m) National Geodetic Vertical Datum of 1929. Prior to June 19, 1981, gage 0.8 mi (1.3 km) upstream at same datum.

REMARKS.--Records fair. Some regulation by Canton Lake (station 07238500) and by Lake Overholser (station 07240500), where diversions are made into Lake Hefner Canal (station 07240000). Low flow sustained by part of sewage effluent from Oklahoma City.

AVERAGE DISCHARGE.--14 years, 288 ft³/s (8.156 m³/s), 208,700 acre-ft/yr (257 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,630 ft³/s (216 m³/s) June 9, 1974, gage height, 18.14 ft (5.529 m), corrected; minimum, 23 ft³/s (0.65 m³/s) Aug. 8, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,010 ft³/s (170 m³/s) May 25, gage height, 14.18 ft (4.322 m); minimum daily discharge, 59 ft³/s (1.67 m³/s) Oct. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	844	263	98	1290	135	105	460	1990	487	266	125
2	59	482	179	111	522	133	123	172	2790	643	266	127
3	60	214	162	101	641	148	90	149	3280	630	457	144
4	215	176	141	125	439	270	155	138	1630	577	461	139
5	201	168	137	116	324	210	103	131	1460	472	375	129
6	173	167	125	93	307	175	104	1060	1290	475	181	123
7	236	156	130	91	269	178	108	764	1030	741	161	124
8	96	265	139	94	263	163	108	275	720	843	206	124
9	85	1920	136	100	281	164	103	193	668	796	321	115
10	77	663	133	96	258	175	104	176	556	804	210	120
11	76	283	134	96	220	188	99	172	462	757	156	118
12	927	217	129	97	231	188	95	1110	804	574	147	117
13	751	183	124	100	258	175	101	3200	904	568	140	120
14	393	176	121	95	292	352	87	1850	739	597	138	125
15	182	159	127	89	302	611	98	1560	778	668	124	589
16	927	154	122	109	268	262	110	765	922	702	116	675
17	1640	154	119	109	407	197	96	3130	677	493	121	269
18	800	150	147	112	450	167	120	4850	604	436	127	204
19	629	148	131	109	358	176	100	4890	586	573	136	205
20	213	199	115	89	194	160	97	4940	638	624	133	171
21	159	205	109	92	159	152	115	5750	550	622	131	161
22	145	151	116	100	150	154	106	5620	565	618	130	165
23	139	142	120	181	146	148	92	4220	598	611	121	159
24	135	142	137	108	143	121	89	4790	714	603	119	158
25	123	141	110	100	162	110	90	5800	1190	556	120	157
26	122	140	95	99	182	126	265	3550	1110	435	123	152
27	141	131	101	101	156	124	167	2880	831	245	126	160
28	124	138	99	90	146	184	134	3000	833	214	120	163
29	127	133	104	88	---	120	427	2390	544	1000	120	163
30	115	151	106	1990	---	115	252	1780	443	720	116	161
31	186	---	99	3730	---	111	---	1980	---	337	122	---
TOTAL	9317	8352	4010	8709	8818	5692	3843	71745	29906	18421	5590	5462
MEAN	301	278	129	281	315	184	128	2314	997	594	180	182
MAX	1640	1920	263	3730	1290	611	427	5800	3280	1000	461	675
MIN	59	131	95	88	143	110	87	131	443	214	116	115
AC-FT	18480	16570	7950	17270	17490	11290	7620	142300	59320	36540	11090	10830
CAL YR 1981	TOTAL	59637	MEAN	163	MAX	2100	MIN	42	AC-FT	118300		
WTR YR 1982	TOTAL	179865	MEAN	493	MAX	5800	MIN	59	AC-FT	356800		

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1968 to current year.

WATER TEMPERATURE: October 1968 to current year.

REMARKS.--Samples were collected by a local observer on a daily basis. Partial analyses were made on those samples at or near the 5th, 15th, and 25th for each month. An additional sample was collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 4,700 micromhos Sept. 25, 1980; minimum daily, 262 micromhos June 9, 1974.

WATER TEMPERATURE: Maximum daily, 36.0°C July 11, 1982; minimum 0.0°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,040 micromhos Sept. 28; minimum daily, 304 micromhos May 20.

WATER TEMPERATURE: Maximum daily, 36.0°C July 11 and Aug. 23; minimum daily, 0.0°C at times during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)
OCT											
05...	1200	80010	241	496	7.6	22.0	3.3	39	5.4	140	--
05...	1600	80020	193	547	7.7	23.0	--	--	--	--	--
15...	1800	80020	186	660	7.7	20.0	--	--	--	--	--
25...	1900	80020	126	1530	7.8	10.0	--	--	--	--	--
27...	1315	80020	148	1900	7.8	14.0	7.6	76	11	130	6.2
NOV											
05...	1009	80010	156	1410	7.6	13.0	7.1	70	7.3	130	--
05...	1600	80020	184	1370	8.0	13.0	--	--	--	--	--
15...	1640	80020	154	1370	7.2	18.0	--	--	--	--	--
25...	1600	80020	140	1500	7.0	22.0	--	--	--	--	--
30...	1227	80020	150	1510	7.6	12.0	9.3	92	10	70	14
DEC											
07...	1100	80010	118	1680	7.9	10.0	9.2	86	--	54	49
07...	1600	80020	143	1520	7.1	13.0	--	--	--	--	--
15...	1700	80020	128	1640	6.9	9.0	--	--	--	--	--
25...	1600	80020	111	1480	7.6	7.0	--	--	--	--	--
30...	1415	80020	101	1600	7.8	5.0	11.3	93	12	53	9.4
JAN											
05...	1630	80020	116	1740	7.8	7.0	--	--	--	--	--
06...	1249	80010	92	1620	8.0	4.5	10.8	88	11	58	17
15...	1840	80020	98	1350	7.8	1.0	--	--	--	--	--
25...	1600	80020	103	1410	8.0	8.0	--	--	--	--	--
27...	1600	1028	99	1250	8.1	4.5	12.4	101	--	--	--
FEB											
05...	1730	80020	324	1090	7.9	.0	--	--	--	--	--
12...	1347	80020	236	1510	7.6	4.0	9.9	79	11	49	4.0
15...	1800	80020	272	916	7.3	10.0	--	--	--	--	--
25...	1220	80020	160	1620	7.6	8.0	9.4	82	9.5	50	21
25...	1600	80020	171	1650	7.2	8.0	--	--	--	--	--
MAR											
05...	1700	80020	209	1270	7.0	--	--	--	--	--	--
09...	1215	80020	177	1490	7.8	12.0	9.4	92	9.0	40	11
15...	1900	80020	1110	670	7.0	--	--	--	--	--	--
25...	1615	80020	108	1520	7.0	15.5	--	--	--	--	--
30...	1322	80020	134	1300	7.3	17.0	7.6	82	9.6	40	20
APR											
05...	1730	80020	101	1250	7.9	--	--	--	--	--	--
06...	0956	80020	104	1450	7.5	11.0	9.2	87	8.4	46	16
15...	1600	80020	98	1530	8.0	--	--	--	--	--	--
20...	1050	80020	99	1420	7.8	16.0	11.2	117	9.1	100	11

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ALKA- LITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDE (MG/L)	SOLIDS, VOLA- TILE, DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N03)
OCT											
05...	--	--	--	277	.38	180	422	13	--	.480	2.1
05...	89	63	82	314	.43	164	--	--	--	--	--
15...	110	56	100	378	.51	190	--	--	--	--	--
25...	180	120	300	892	1.1	303	--	--	--	--	--
27...	--	--	--	1080	1.5	432	128	119	--	1.45	6.6
NOV											
05...	--	--	--	747	1.0	315	48	63	--	1.00	4.4
05...	190	100	260	800	1.1	397	--	--	--	--	--
15...	210	130	240	810	1.1	337	--	--	--	--	--
25...	230	150	250	890	1.1	336	--	--	--	--	--
30...	--	--	--	893	1.1	362	25	88	--	1.72	7.5
DEC											
07...	260	--	--	894	1.1	285	37	92	--	1.60	7.1
07...	210	150	260	900	1.1	347	--	--	--	--	--
15...	200	150	290	957	1.3	331	--	--	--	--	--
25...	190	180	260	883	1.1	265	--	--	--	--	--
30...	--	--	--	1000	1.4	273	22	105	--	1.78	8.0
JAN											
05...	170	100	430	1040	1.4	326	--	--	--	--	--
06...	--	--	--	963	1.3	239	12	98	--	1.59	7.1
15...	170	130	240	799	1.1	211	--	--	--	--	--
25...	170	130	260	829	1.1	231	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
FEB											
05...	200	120	180	649	.88	568	--	--	--	--	--
12...	--	--	--	857	1.1	546	21	72	--	1.04	4.4
15...	220	86	130	534	.73	392	--	--	--	--	--
25...	--	--	--	954	1.3	412	19	82	--	1.00	4.4
25...	240	130	280	956	1.3	441	--	--	--	--	--
MAR											
05...	210	170	190	769	1.0	434	--	--	--	--	--
09...	--	--	--	852	1.1	407	20	93	--	1.46	6.6
15...	150	83	72	397	.54	1190	--	--	--	--	--
25...	250	140	260	875	1.1	255	--	--	--	--	--
30...	--	--	--	707	.96	256	26	68	--	1.29	5.8
APR											
05...	210	140	200	738	1.0	201	--	--	--	--	--
06...	--	--	--	815	1.1	229	18	84	--	1.81	8.0
15...	210	120	280	880	1.1	233	--	--	--	--	--
20...	--	--	--	864	1.1	231	4	136	1.59	1.68	7.5

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)
OCT											
05...	--	.200	.66	--	.680	--	1.90	2.4	2.8	4.7	.800
05...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
27...	--	.250	.82	--	1.70	--	1.10	1.4	7.9	9.0	3.90
NOV											
05...	--	.200	.66	--	1.20	--	<.060	.08	--	6.1	3.00
05...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
30...	--	.380	1.1	--	2.10	--	7.10	9.1	1.1	8.3	3.20
DEC											
07...	--	.300	.99	--	1.90	--	5.50	7.1	--	<.21	2.80
07...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
30...	--	.220	.72	--	2.00	--	<.070	.09	--	9.5	3.60
JAN											
05...	--	--	--	--	--	--	--	--	--	--	--
06...	--	.310	1.0	--	1.90	--	8.70	11	.00	8.6	2.80
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
FEB											
05...	--	--	--	--	--	--	--	--	--	--	--
12...	--	.060	.20	--	1.10	--	6.40	8.2	3.6	10	2.10
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	.200	.66	--	1.20	--	6.60	8.5	1.7	8.3	2.50
25...	--	--	--	--	--	--	--	--	--	--	--
MAR											
05...	--	--	--	--	--	--	--	--	--	--	--
09...	--	.240	.79	--	1.70	--	6.30	8.1	1.0	7.3	3.10
15...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
30...	--	.310	1.0	--	1.60	--	6.60	8.5	1.4	8.0	3.20
APR											
05...	--	--	--	--	--	--	--	--	--	--	--
06...	--	.490	1.6	--	2.30	--	4.90	6.3	1.1	6.1	3.30
15...	--	--	--	--	--	--	--	--	--	--	--
20...	.710	.720	2.4	2.30	2.40	4.90	5.00	6.4	1.7	6.7	3.60

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
OCT										
05...	.680	.970	3.0	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
27...	<.010	<.010	--	--	--	--	--	--	--	--
NOV										
05...	<.020	<.020	--	5	1	<10	4	23	2	33
05...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
30...	2.30	.860	2.6	--	--	--	--	--	--	--
DEC										
07...	3.20	.850	2.6	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
30...	3.50	3.50	11	--	--	--	--	--	--	--
JAN										
05...	--	--	--	--	--	--	--	--	--	--
06...	2.90	2.70	8.3	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
FEB										
05...	--	--	--	--	--	--	--	--	--	--
12...	2.20	2.10	6.4	4	<1	10	8	26	2	260
15...	--	--	--	--	--	--	--	--	--	--
25...	3.20	2.30	7.1	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
MAR										
05...	--	--	--	--	--	--	--	--	--	--
09...	3.10	3.00	9.2	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
30...	3.30	3.10	9.5	--	--	--	--	--	--	--
APR										
05...	--	--	--	--	--	--	--	--	--	--
06...	3.40	3.40	10	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
20...	4.00	3.90	12	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, TOTAL, IMMED. (COLS. PER 100 ML)
APR												
25...	1600	80020	90	1580	6.9	16.0	--	--	--	--	--	--
MAY												
05...	1900	80020	118	1400	7.6	23.0	--	--	--	--	--	--
07...	1340	80020	698	443	7.1	18.0	4.8	53	3.4	83	52	--
15...	1600	80020	877	975	7.8	30.0	--	--	--	--	--	--
25...	1145	80020	5910	334	7.3	21.0	4.6	53	2.0	67	10	K95000
25...	1600	80020	5810	365	7.8	22.0	--	--	--	--	--	--
JUN												
03...	1030	80010	3650	484	7.2	18.0	5.3	58	2.2	67	--	345000
05...	2000	80020	1420	670	7.6	22.0	--	--	--	--	--	--
15...	1600	80020	794	1330	7.4	28.0	--	--	--	--	--	--
17...	1100	80020	670	1330	7.6	24.0	7.8	98	2.3	52	--	--
25...	1730	80020	1430	1080	7.6	31.0	--	--	--	--	--	--
JUL												
01...	1145	80020	487	1050	7.5	27.0	6.4	82	--	--	--	--
05...	2000	80020	468	1420	7.4	31.0	--	--	--	--	--	--
15...	1600	80020	680	1350	7.3	30.0	--	--	--	--	--	--
20...	1115	1028	635	1390	7.8	28.0	7.0	93	2.1	49	16	K70000
25...	1700	1028	518	1400	7.9	33.0	--	--	--	--	--	--
27...	1300	80020	234	1380	8.0	30.0	7.8	108	2.7	48	8.0	--
AUG												
05...	1630	80020	333	1350	7.3	32.0	--	--	--	--	--	--
10...	1025	80010	207	1380	7.8	27.5	--	--	4.3	40	--	--
15...	1600	1028	122	1720	7.6	33.5	--	--	--	--	--	--
25...	2000	1028	123	1720	7.1	29.0	--	--	--	--	--	--
26...	1230	80020	124	1600	7.5	29.0	6.2	85	6.9	52	23	--
SEP												
05...	1615	1028	131	1530	7.6	29.5	--	--	--	--	--	--
15...	1700	1028	1140	676	7.6	30.0	--	--	--	--	--	--
22...	1155	80020	165	1670	7.6	19.0	6.5	72	10	31	7.0	K6500
25...	1900	1028	156	1850	7.0	22.0	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOC- CI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)
APR												
25...	--	--	350	133	85	34	180	52	4	11	220	120
MAY												
05...	--	--	330	--	80	32	160	50	4	11	--	130
07...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	290	--	69	28	99	42	3	7.8	--	160
25...	3800	45000	--	--	--	--	--	--	--	--	--	--
25...	--	--	150	--	40	12	23	24	.8	6.8	--	32
JUN												
03...	42000	59000	--	--	--	--	--	--	--	--	--	--
05...	--	--	220	--	54	21	57	35	2	9.0	--	76
15...	--	--	400	--	96	38	130	41	3	8.9	--	230
17...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	310	--	75	30	110	43	3	7.9	--	170
JUL												
01...	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	410	209	98	41	150	43	3	8.7	205	220
15...	--	--	390	211	92	39	140	43	3	9.2	180	230
20...	K12000	K1400	--	--	--	--	--	--	--	--	--	--
25...	--	--	400	220	95	39	150	44	3	9.4	178	240
27...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
05...	--	--	370	179	90	35	150	46	4	8.8	190	200
10...	K1600	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	370	147	93	34	220	55	5	12	226	120
25...	--	--	350	152	86	33	230	58	6	13	199	130
26...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
05...	--	--	300	105	75	27	200	58	5	12	194	140
15...	--	--	180	67	48	15	65	42	2	8.8	115	72
22...	K1100	K750	--	--	--	--	--	--	--	--	--	--
25...	--	--	330	145	83	29	240	60	6	13	182	120

[illegible]

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1780	1330	1570	442	1490	1210	1450	1000	1100	1310	---
2	---	1710	1030	1410	448	1460	1610	1470	1000	1340	1460	1470
3	---	1880	1390	1350	697	1460	1240	1480	1110	1280	---	1450
4	---	1950	1420	1360	967	826	1250	1480	1230	1390	1500	1410
5	---	1800	755	1470	1110	545	1320	1450	1330	1380	1490	1370
6	1890	1790	1170	1550	1310	836	660	1520	1380	1440	1470	1300
7	1830	1660	1320	1470	1620	1230	883	1530	1410	1460	1390	1290
8	2280	1700	1460	1520	1310	1310	1160	1560	---	1470	1650	1350
9	2250	1830	1740	1470	1560	1420	1340	1510	1420	1470	985	1300
10	2330	1630	1650	1500	1550	1410	1420	1380	1540	1460	1300	1310
11	2210	1680	2350	1580	1110	1370	1020	369	1410	1470	1500	1360
12	1990	1980	1210	1520	1240	1640	1340	873	945	1470	1530	1330
13	2170	1030	1620	1520	1390	1500	---	868	963	1460	1460	1340
14	2180	1400	1620	1600	1440	1540	1620	348	1190	1650	1500	1590
15	2100	1660	1470	1580	1470	1490	1440	665	1210	1460	1500	1280
16	2120	1580	1470	1550	---	---	1480	666	737	1350	1500	1550
17	1800	1480	1430	1470	1550	1440	1440	708	852	1510	1460	1740
18	1910	1480	1540	1480	1460	1410	1470	752	990	1530	1480	1800
19	2040	1430	1550	---	1440	1280	1520	796	1170	1540	1430	1790
20	2050	1540	1560	1490	1340	1370	1500	801	1360	1560	850	1600
21	2210	1570	1530	1420	682	1480	1490	1040	1330	1520	646	949
22	1900	1450	1520	1400	731	1340	1500	712	1390	1530	790	1250
23	1990	1520	1650	1480	850	1340	1280	704	1420	1480	1110	1600
24	2060	1660	1530	1770	1150	1380	811	583	1410	1490	1370	1680
25	2320	1410	516	1540	1330	1560	1190	715	1430	1480	1380	1560
26	2280	1200	842	1350	1460	1070	1180	909	1400	1490	1380	1600
27	1980	476	1090	742	1490	643	1160	953	1420	1540	1380	1740
28	1520	485	720	1010	1540	878	---	1340	1240	1460	1370	---
29	1240	701	---	1210	---	1090	1170	1280	948	1580	1390	1380
30	1070	1050	---	1390	---	1100	1350	1270	1140	1500	1410	1450
31	1540	---	1340	1260	---	1100	---	630	---	1570	---	---
MEAN	1970	1480	1370	1430	1210	1270	1290	1030	1220	1470	1340	1460
WTR YR 1983		MEAN	1370	MAX	2350	MIN	348					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	21.0	15.5	5.5	6.0	17.0	11.5	19.0	22.0	31.0	36.0	---
2	---	18.0	14.0	4.0	4.0	17.0	11.5	20.0	23.0	30.0	32.5	31.0
3	---	14.0	12.0	5.5	4.0	15.0	11.5	20.0	24.0	31.0	---	33.0
4	---	13.0	11.0	4.0	3.0	15.5	11.0	22.0	27.0	28.5	32.0	34.0
5	---	13.0	11.5	7.0	5.0	17.0	9.0	22.5	25.0	28.5	32.0	34.0
6	29.0	15.0	11.0	9.0	5.5	15.0	9.0	24.0	25.0	29.0	33.0	32.0
7	24.0	17.0	11.0	10.0	5.5	14.0	11.0	23.0	24.0	30.0	29.0	---
8	27.0	18.0	8.0	12.0	7.5	14.0	9.0	22.5	---	30.0	29.0	---
9	23.0	18.0	8.0	12.0	9.0	11.0	12.0	22.0	25.0	31.0	31.0	30.0
10	21.0	19.0	8.0	9.0	9.5	12.0	16.0	22.0	27.0	30.0	34.0	30.5
11	19.0	18.0	6.0	9.5	7.0	13.0	18.5	21.0	28.0	31.0	34.0	30.0
12	20.5	12.0	5.5	9.0	11.0	15.0	19.5	24.0	26.0	32.0	33.0	31.0
13	26.0	9.0	5.5	11.0	11.5	17.5	---	22.0	24.0	30.5	33.0	24.0
14	20.0	8.0	5.0	9.5	13.0	19.0	15.0	18.0	25.0	26.5	34.0	27.0
15	22.0	8.0	7.0	9.0	13.0	19.0	5.0	18.0	26.5	27.0	35.0	26.0
16	20.0	8.0	8.0	9.0	---	---	17.0	19.0	26.0	28.0	33.0	29.0
17	18.0	10.0	8.0	9.0	12.5	12.0	18.0	20.0	26.5	30.0	34.0	30.0
18	21.0	12.0	8.0	5.0	14.0	11.0	18.0	21.0	27.0	33.0	32.0	31.0
19	19.0	17.0	9.0	---	14.0	8.0	14.0	22.0	28.5	33.0	25.0	26.5
20	15.0	15.0	9.0	6.0	13.0	8.0	14.0	23.0	29.0	33.0	26.0	19.0
21	16.0	15.0	9.0	4.0	13.0	12.0	15.0	20.0	29.0	33.0	28.0	19.0
22	14.0	16.0	13.0	4.0	12.5	10.0	16.0	21.0	29.0	33.0	32.0	20.5
23	15.0	12.0	14.0	8.0	4.0	9.0	18.0	23.0	30.0	33.0	33.0	21.0
24	16.0	7.0	14.0	8.0	11.5	12.0	18.0	23.5	28.0	33.0	32.0	23.0
25	17.0	7.0	10.5	8.0	13.0	10.0	17.5	27.0	28.0	34.0	32.5	26.0
26	16.0	8.0	7.0	6.5	12.5	9.0	23.0	27.0	29.0	34.5	30.0	27.0
27	20.0	7.0	7.0	7.0	13.5	9.0	17.0	27.0	28.0	32.5	34.0	29.0
28	18.0	8.0	5.5	8.0	14.5	11.0	---	29.0	28.0	32.5	33.5	---
29	16.0	10.5	---	10.5	---	11.0	19.0	30.0	26.0	32.5	31.0	30.0
30	16.0	12.0	---	10.5	---	13.0	19.0	22.0	26.0	31.0	33.0	28.0
31	22.0	---	7.0	8.0	---	16.5	---	18.0	---	32.0	---	---
MEAN	19.5	13.0	9.0	8.0	9.5	13.0	15.0	22.5	26.5	31.0	32.0	28.0
WTR YR 1983		MEAN	19.0	MAX	36.0	MIN	3.0					

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO AUGUST 1982

DATE TIME	OCT 5,81 1200	NOV 5,81 1009	DEC 7,81 1100	JAN 6,82 1249	FEB 12,82 1347
TOTAL CELLS/ML	42000	1500	18000	8300	15000
DIVERSITY: DIVISION	0.6	2.3	1.2	1.7	0.8
..CLASS	0.6	2.3	1.2	1.7	0.8
..ORDER	0.9	2.9	2.0	2.4	1.5
...FAMILY	1.0	3.1	2.2	2.5	1.7
....GENUS	1.0	3.2	2.5	2.7	1.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)										
..BACILLARIOPHYCEAE										
...BACILLARIALES										
...NITZSCHIA	2500	6	41	3	550	3	--	-	140	1
...EUPODISCALES										
...COSCINODISCAEAE										
....COSCINODISCUS	--	-	--	-	--	-	--	-	--	-
...CYCLOTILLA	1400	3	--	-	180	1	2100#	25	*	0
...MELOSIRA	--	-	--	-	*	0	--	-	--	-
...FRAGILARIALES										
...FRAGILARIAEAE										
...SYNEDRA	*	0	--	-	--	-	--	-	--	-
...NAVICULALES										
...ENTOMONEIDAEAE										
...ENTOMONEIS	*	0	--	-	--	-	--	-	--	-
...GOMPHONEMAEAE										
...GOMPHONEMA	*	0	--	-	*	0	--	-	--	-
...NAVICULAEAE										
...NAVICULA	390	1	41	3	140	1	--	-	*	0
...SURIPELLALES										
...SURIPELLAEAE										
...SURIPELLA	--	-	--	-	*	0	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)										
..CHLOROPHYCEAE										
...CHLOROCOCCALES										
...DICTYOSPHAERIAEAE										
...DICTYOSPHAERIUM	--	-	--	-	*	0	230	3	220	2
...MICRACTINIACEAE										
...MICRACTINIUM	--	-	--	-	--	-	--	-	*	0
...OOCYSTACEAE										
...ANKISTRODESMUS	--	-	260#	17	230	1	140	2	450	3
...CHODATELLA	--	-	--	-	--	-	--	-	*	0
...CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-
...FRANCEIA	--	-	--	-	*	0	--	-	--	-
...KIRCHNERIELLA	--	-	--	-	230	1	140	2	*	0
...OOCYSTIS	--	-	--	-	*	0	--	-	110	1
...SELENASTRUM	*	0	14	1	110	1	--	-	--	-
...PALMELLACEAE										
...SPHAEROCYSTIS	--	-	--	-	180	1	--	-	--	-
...SCENEDESMACEAE										
...COELASTRUM	--	-	--	-	--	-	--	-	--	-
...CRUCIGENIA	--	-	55	4	1000	6	--	-	670	5
...GLOEOACTINIUM	--	-	--	-	--	-	--	-	450	3
...SCENEDESMUS	--	-	28	2	160	1	--	-	--	-
...TETRASTRUM	--	-	--	-	--	-	--	-	--	-
...VOLVOCALES										
...CHLAMYDOMONADAEAE										
...CHLAMYDOMONAS	280	1	55	4	210	1	280	3	280	2
...PHACOTACEAE										
...PTEROMONAS	*	0	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM: EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ARKANSAS RIVER BASIN
07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO AUGUST 1982

DATE TIME	OCT 5,81 1200	NOV 5,81 1009	DEC 7,81 1100	JAN 6,82 1249	FEB 12,82 1347
TOTAL CELLS/ML	42000	1500	18000	8300	15000
DIVERSITY: DIVISION	0.6	2.3	1.2	1.7	0.8
..CLASS	0.6	2.3	1.2	1.7	0.8
...ORDER	0.9	2.9	2.0	2.4	1.5
...FAMILY	1.0	3.1	2.2	2.5	1.7
...GENUS	1.0	3.2	2.5	2.7	1.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHRYSTOPHYTA										
.CHRYSTOPHYCEAE										
..CHROMULINALES										
...CHRYSOCOCCACEAE										
....CHRYSOCOCCLUS	--	-	69	5	--	-	--	-	--	-
..OCHROMONADALES										
...DINOBRYACEAE										
....STENOCALYX	--	-	28	2	--	-	--	-	--	-
..OCHROMONADACEAE										
....OCHROMONAS	--	-	14	1	--	-	--	-	*	0
.XANTHOPHYCEAE										
..MISCHOCOCCALES										
...SCIADACEAE										
....OPHIOCYTIUM	--	-	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)										
.CRYPTOPHYCEAE										
..CRYPTOMONADALES										
...CRYPTOCHRYSIDACEAE										
....CHROOMONAS	--	-	14	1	--	-	47	1	--	-
...CRYPTOMONADACEAE										
....CRYPTOMONAS	--	-	55	4	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO AUGUST 1982

DATE TIME	OCT 5,81 1200		NOV 5,81 1009		DEC 7,81 1100		JAN 6,82 1249		FEB 12,82 1347	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)										
..CYANOPHYCEAE										
...CHROOCOCCALES										
...CHROOCOCCACEAE										
....AGMENELLUM	890	2	--	-	--	-	370	5	220	2
....ANACYSTIS	--	-	300#	20	5200#	29	1300#	16	2300#	16
....COCCOCHLORIS	--	-	--	-	--	-	--	-	--	-
...NOSTOCALES										
...HAMMATOIDEACEAE										
...RAPHIDIOPSIS	--	-	--	-	--	-	190	2	--	-
...OSCILLATORIALES										
...OSCILLATORIA										
....LYNGBYA	--	-	--	-	180	1	--	-	--	-
....OSCILLATORIA	36000#	85	140	9	7900#	44	2600#	31	9600#	65
....SPIRULINA	--	-	--	-	180	1	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)										
..EUGLENOPHYCEAE										
...EUGLENALES										
...EUGLENACEAE										
....EUGLENA	330	1	--	-	1100	6	890	11	*	0
....LEPOCINCLIS	--	-	--	-	*	0	--	-	--	-
....PHACUS	*	0	--	-	*	0	--	-	*	0
....TRACHELOMONAS	--	-	390#	25	*	0	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)										
..DINOPHYCEAE										
...DINOKONTAE										
...GLENODINIACEAE										
....GLENODINIUM	--	-	28	2	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO AUGUST 1982

DATE TIME	MAR 9,82 1215	APR 6,82 0956	JUL 20,82 1115	AUG 10,82 1035
TOTAL CELLS/ML	16000	9500	400000	170000
DIVERSITY: DIVISION	1.8	1.5	1.1	1.7
..CLASS	1.8	1.5	1.1	1.7
...ORDER	2.7	2.1	1.4	2.0
...FAMILY	2.7	2.4	1.6	2.6
....GENUS	3.0	2.6	2.3	3.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
BACILLARIOPHYTA (DIATOMS)								
.BACILLARIOPHYCEAE								
..BACILLARIALES								
...NITZSCHIA	320	2	2100#	22	2800	1	1400	1
...EUPODISCALES								
...COSCONODISCAEAE								
...COSCONODISCUS	--	-	--	-	2800	1	--	-
...CYCLOTELLA	5500#	35	840	9	42000	10	45000#	27
...MELOSIRA	--	-	--	-	4800	1	--	-
..FRAGILARIALES								
...FRAGILARIAEAE								
...SYNEDRA	110	1	--	-	--	-	5100	3
..NAVICULALES								
...ENTOMONEIDAEAE								
...ENTOMONEIS	--	-	--	-	--	-	--	-
...GOMPHONEMAEAE								
...GOMPHONEMA	--	-	--	-	--	-	--	-
...NAVICULAEAE								
...NAVICULA	110	1	250	3	--	-	2900	2
..SURIPELLALES								
...SURIPELLAEAE								
...SURIPELLA	--	-	170	2	--	-	--	-
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...DICTYOSPHAERIAEAE								
...DICTYOSPHAERIUM	--	-	340	4	2100	1	14000	8
...MICRACTINIACEAE								
...MICRACTINIUM	--	-	170	2	--	-	2900	2
...OOCYSTACEAE								
...ANKISTRODESMUS	850	5	590	6	4800	1	4300	3
...CHODATELLA	--	-	--	-	--	-	--	-
...CLOSTERIOPSIS	--	-	--	-	*	0	--	-
...FRANCEIA	--	-	--	-	--	-	--	-
...KIRCHNERIELLA	--	-	--	-	8300	2	2900	2
...OOCYSTIS	--	-	--	-	6200	2	--	-
...SELENASTRUM	--	-	--	-	--	-	--	-
...PALMELLAEAE								
...SPHAEROCYSTIS	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
...COELASTRUM	--	-	--	-	--	-	4300	3
...CRUCIGENIA	--	-	--	-	--	-	--	-
...GLOEOACTINIUM	--	-	--	-	--	-	24000	14
...SCENEDESMUS	--	-	670	7	25000	6	8700	5
...TETRASTRUM	--	-	--	-	--	-	8700	5
..VOLVOCALES								
...CHLAMYDOMONADAEAE								
...CHLAMYDOMONAS	2100	14	170	2	--	-	--	-
...PHACOTACEAE								
...PTEROMONAS	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED: LESS THAN 1/2%

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO AUGUST 1982

DATE TIME	MAR 9,82 1215	APR 6,82 0956	JUL 20,82 1115	AUG 10,82 1035
TOTAL CELLS/ML	16000	9500	400000	170000
DIVERSITY: DIVISION	1.8	1.5	1.1	1.7
..CLASS	1.8	1.5	1.1	1.7
...ORDER	2.7	2.1	1.4	2.0
...FAMILY	2.7	2.4	1.6	2.6
....GENUS	3.0	2.6	2.3	3.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHRYSTOPHYTA								
..CHRYSTOPHYCEAE								
...CHROMULINALES								
....CHRYSOCOCCACEAE								
....CHRYSOCOCCLUS	--	-	--	-	--	-	--	-
...OCHROMONADALES								
...DINOBRYACEAE								
....STENOCALYX	--	-	--	-	--	-	--	-
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
..XANTHOPHYCEAE								
...MISCHOCOCCALES								
...SCIADACEAE								
....OPHIOCYTIUM	--	-	--	-	--	-	1400	1
CRYPTOPHYTA (CRYPTOMONADS)								
..CRYPTOPHYCEAE								
...CRYPTOMONADALES								
....CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ARKANSAS RIVER BASIN

07241550 NORTH CANADIAN RIVER NEAR HARRAH, OK--Continued

PHYTOPLANKTON ANALYSES, OCTOBER 1981 TO AUGUST 1982

DATE TIME	MAR 9,82 1215		APR 6,82 0956		JUL 20,82 1115		AUG 10,82 1035	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ACMENELLUM	--	-	--	-	66000# 17		41000# 24	
....ANACYSTIS	1400	9	--	-	210000# 52		--	-
....COCCOCHLORIS	1300	8	--	-	--	-	--	-
..NOSTOCALES								
...HAMMATOIDEACEAE								
....RAPHIDIOPSIS	850	5	--	-	--	-	--	-
..OSCILLATORIALES								
...OSCILLATORIAEAE								
....LYNGBYA	--	-	--	-	--	-	--	-
....OSCILLATORIA	1600	10	--	-	24000	6	--	-
....SPIRULINA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	960	6	3900# 42		* 0		2200	1
....LEPOCINCLIS	--	-	--	-	--	-	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	640	4	250	3	* 0		--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..DINOKONTAE								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%

* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK

LOCATION.--Lat 35°15'53", long 96°12'25", in center of SW 1/4 sec.12, T.9 N., R.10 E., Hughes County, Hydrologic Unit 11100302, on right downstream abutment of bridge on U.S. Highway 75, 2.3 mi (3.7 km) upstream from Wewoka Creek, 2.5 mi (4.0 km) northeast of Wetumka, and at mile 84.4 (135.8 km).

DRAINAGE AREA.--14,290 mi² (37,011 km²) of which 4,899 mi² (12,688 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 977: 1942. WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 683.28 ft (208.264 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 19, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by Lake Overholser (station 07240500) and other dams upstream.

AVERAGE DISCHARGE.--45 years, 653 ft³/s (18.49 m³/s), 473,100 acre-ft/yr (583 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,000 ft³/s (1,870 m³/s) Apr. 15, 1945, gage height, 26.40 ft (8.047 m); no flow Aug. 27 to Oct. 11, 1954, Aug. 25 to Oct. 22, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1923 reached a stage of 26.9 ft (8.20 m), from information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,800 ft³/s (334 m³/s) June 3, gage height, 11.83 ft (3.606 m); minimum daily discharge, 65 ft³/s (1.84 m³/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	363	553	182	2480	297	271	405	5400	930	609	157
2	67	739	382	182	2700	299	236	743	5300	711	763	165
3	66	578	321	187	2870	287	224	588	9890	535	524	165
4	65	613	291	190	1600	275	202	452	10900	529	409	147
5	65	622	295	186	974	264	197	392	5660	653	367	144
6	109	379	285	183	804	256	194	463	4210	662	371	140
7	125	298	271	183	642	275	190	2990	3180	1660	463	137
8	151	313	232	161	541	322	241	1780	2400	946	506	152
9	214	1440	217	150	496	301	231	1210	1970	813	404	154
10	186	1870	208	111	441	281	226	730	1570	774	316	150
11	206	1370	200	106	419	278	222	468	1300	862	291	144
12	182	1310	197	120	412	271	205	3250	1220	769	289	143
13	1110	751	203	115	421	263	194	9060	1070	791	343	147
14	3130	514	206	113	447	277	186	6410	906	752	293	161
15	1540	421	200	150	514	734	174	3890	1850	630	259	177
16	1520	372	200	120	546	1670	169	2710	3810	600	236	173
17	952	340	198	118	600	826	166	4470	1950	587	221	336
18	767	325	194	132	538	712	164	5540	1420	611	216	316
19	941	301	194	152	442	493	165	3910	1150	670	203	536
20	1090	288	195	171	437	400	169	3360	944	560	190	416
21	705	285	195	199	520	353	179	5250	854	492	181	285
22	673	275	200	251	506	315	180	6270	783	501	182	213
23	399	268	209	264	415	295	172	4380	778	578	181	190
24	301	275	201	226	351	276	178	5630	1960	590	178	174
25	260	285	194	203	323	266	178	5670	2790	590	170	163
26	238	268	193	193	306	260	183	4790	1700	590	166	153
27	222	254	198	214	296	243	188	5170	1250	584	197	149
28	209	245	209	201	287	242	187	7040	1360	577	207	148
29	196	242	202	183	---	231	192	8350	1070	522	176	146
30	184	401	191	1570	---	246	278	7350	1120	460	164	144
31	217	---	183	3800	---	244	---	6090	---	382	157	---
TOTAL	16157	16005	7217	10316	21328	11752	5941	118811	79765	20911	9232	5825
MEAN	521	534	233	333	762	379	198	3833	2659	675	298	194
MAX	3130	1870	553	3800	2870	1670	278	9060	10900	1660	763	536
MIN	65	242	183	106	287	231	164	392	778	382	157	137
AC-FT	32050	31750	14310	20460	42300	23310	11780	235700	158200	41480	18310	11550
CAL YR 1981	TOTAL	96847	MEAN	265	MAX	3130	MIN	60	AC-FT	192100		
WTR YR 1982	TOTAL	323260	MEAN	886	MAX	10900	MIN	65	AC-FT	641200		

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1953 to current year.

WATER TEMPERATURE: October 1953 to current year.

REMARKS.--Samples were collected by a local observer on a daily basis. Samples were collected bimonthly, and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 37,100 micromhos Dec. 31, 1954; minimum daily, 98 micromhos April 30, 1977.

WATER TEMPERATURE: Maximum daily, 39.0°C July 5, 1971; minimum 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos Jan. 15; minimum daily, 277 micromhos June 4.

WATER TEMPERATURE: Maximum daily, 30.5°C July 21; minimum daily, 0.0°C Jan. 16.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT												
14...	1309	1028	3330	--	--	23.0	--	--	--	--	--	--
14...	1316	1028	3300	--	--	23.0	--	--	--	--	--	--
14...	1322	1028	3300	--	--	23.0	--	--	--	--	--	--
14...	1412	1028	3230	314	8.2	23.0	--	4.8	65	--	--	--
DEC												
09...	1444	80020	217	1230	8.2	13.0	5.0	11.8	112	K18	K31	330
JAN												
19...	1440	80020	152	1440	8.2	5.0	5.3	14.0	114	K7	K35	370
FEB												
02...	1830	1028	2710	416	8.4	3.5	--	12.8	96	--	--	--
03...	0900	1028	3050	416	7.8	2.0	--	11.2	81	--	--	--
04...	1800	80020	1310	506	8.5	.0	380	13.9	95	K7600	K10000	130
05...	0815	1028	980	533	8.5	.0	--	14.4	97	--	--	--
APR												
13...	1256	80020	192	1350	9.1	24.0	15	>20.0	244	K30	340	350
MAY												
07...	1459	1028	3000	364	7.6	18.5	--	5.7	63	--	--	--
JUN												
09...	1440	80020	1940	709	7.5	27.0	230	6.3	82	640	>400	230
AUG												
18...	1230	80020	217	1320	8.2	30.0	5.3	8.4	115	--	>1000	330

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
OCT												
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
09...	106	86	27	130	46	3	8.8	220	100	210	.60	12
JAN												
19...	100	97	31	170	49	4	8.9	270	120	250	.80	14
FEB												
02...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--	--
04...	53	35	10	45	42	2	5.5	76	44	66	.30	6.6
05...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
13...	170	89	31	160	49	4	8.4	180	120	260	.50	4.3
MAY												
07...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	63	65	16	57	34	2	7.2	166	60	83	.40	14
AUG												
18...	78	81	30	160	51	4	8.0	248	94	260	.60	9.9

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	710	710	.97	416	3.40	.220	.28	1.4	--	1.60	4.9
JAN											
19...	868	860	1.1	356	3.00	4.60	5.9	5.7	--	1.70	5.2
FEB											
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
04...	290	260	.39	1030	1.10	.580	.75	2.1	--	.650	2.0
05...	--	--	--	--	--	--	--	--	--	--	--
APR											
13...	726	780	.99	376	.780	<.060	.08	.72	--	.740	2.3
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	394	400	.54	2060	.730	<.060	.08	2.1	2.6	.650	2.0
AUG											
18...	830	790	1.1	486	<.100	.120	.15	2.2	--	.740	2.3

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD)
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	1.40	1.50	4.6	5	0	5	200	.00	200	3	2
JAN											
19...	1.70	1.70	5.2	--	--	--	--	--	--	--	--
FEB											
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
04...	.170	.140	.43	6	4	2	400	300	100	<1	--
05...	--	--	--	--	--	--	--	--	--	--	--
APR											
13...	.310	.290	.89	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	.240	.200	.61	6	3	3	500	300	250	5	--
AUG											
18...	.630	.370	1.1	9	1	8	200	.00	220	1	--

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDED RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDED RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDED RECOV- ERABLE (UG/L AS FE)
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	1	10	<10	1	0	1	19	10	9	630	620
JAN											
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
04...	<1	30	<10	10	11	1	29	25	4	23000	23000
05...	--	--	--	--	--	--	--	--	--	--	--
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	<1	40	<10	20	--	<5	27	22	5	16000	16000
AUG											
18...	<1	<10	<10	1	--	<5	5	--	<5	930	930

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDED RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDED RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDED RECOV- ERABLE (UG/L AS NI)
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	10	63	--	<1	50	30	20	.9	<.1	9	1
JAN											
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--	--	--
04...	140	37	35	2	650	640	10	.1	<.1	28	27
05...	--	--	--	--	--	--	--	--	--	--	--
APR											
13...	--	--	--	--	--	--	--	--	--	--	--
MAY											
07...	--	--	--	--	--	--	--	--	--	--	--
JUN											
09...	69	52	--	<5	850	840	8	.2	<.1	27	7
AUG											
18...	4	110	--	<5	230	230	5	.1	<.1	7	--

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDED RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT											
14...	--	--	--	--	--	--	--	--	5610	50400	27
14...	--	--	--	--	--	--	--	--	10100	90000	15
14...	--	--	--	--	--	--	--	--	2550	22700	52
14...	--	--	--	--	--	--	--	--	--	--	--
DEC											
09...	8	<1	<1	<1	<1	50	20	30	24	14	79
JAN											
19...	--	--	--	--	--	--	--	--	21	8.6	74
FEB											
02...	--	--	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	3240	26700	54
04...	1	1	<1	<1	1	110	80	30	1920	6790	59
05...	--	--	--	--	--	--	--	--	810	2140	88
APR											
13...	--	--	--	--	--	--	--	--	15	7.8	95
MAY											
07...	--	--	--	--	--	--	--	--	3430	27800	74
JUN											
09...	20	1	<1	1	<5	80	60	21	1150	6020	83
AUG											
18...	<5	<1	1	1	<5	50	30	17	61	36	63

ARKANSAS RIVER BASIN

07242000 NORTH CANADIAN RIVER NEAR WETUMKA, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1610	1770	946	695	219	964	664	879	943	1210	1430	1230
2	1530	1850	935	994	242	1090	784	1070	1060	1230	1410	1280
3	1510	1690	604	1200	310	1170	862	1120	933	1070	1370	1260
4	1890	1800	695	951	494	1220	1000	1230	791	1210	1420	1280
5	1910	1870	643	981	480	590	1060	1190	843	1160	1380	1300
6	2010	1410	660	1180	555	442	975	1280	895	1230	1460	1270
7	2110	1370	578	1210	570	517	1170	1380	832	1390	1420	1260
8	1980	1460	790	1380	614	697	988	---	1060	1350	1340	1290
9	1960	1720	1250	1410	815	698	955	1430	1190	1370	1170	1370
10	1880	1710	1310	1440	817	681	595	1440	1270	1220	1320	1310
11	1510	1700	953	1480	948	820	706	1430	1280	1420	1360	1450
12	1460	1630	1000	---	1010	896	831	570	1300	1460	1290	1490
13	1420	1670	1350	---	1140	1060	905	587	1440	1440	1290	1280
14	1530	1720	1340	---	1050	1140	627	339	1370	1440	1460	1170
15	1640	1610	1690	1450	1080	1230	699	253	1420	1450	1430	1160
16	1880	1410	1610	1450	1200	1300	600	309	1240	1440	1230	1270
17	1780	1410	1580	1460	1130	1360	743	364	1100	1370	1240	641
18	1720	1850	1790	1480	1140	1310	887	404	1210	1270	1450	551
19	1820	1830	1360	1460	1170	1460	1290	510	1220	1310	1440	1070
20	1850	1680	1500	1440	1190	1430	1290	506	851	1580	1420	1040
21	2070	---	1620	1490	985	1440	1320	559	848	1340	1410	973
22	2060	1260	1620	1440	782	1360	1330	473	924	1370	1540	1090
23	2160	1460	1500	1430	829	1440	1160	582	1080	1280	1470	1090
24	2130	1440	1480	1410	824	1340	683	744	1210	1280	1320	---
25	1750	1290	567	1360	996	1300	872	782	1340	1390	603	1490
26	1830	900	1280	1250	918	1240	770	743	1310	1440	572	1660
27	2040	894	956	1040	864	600	1220	696	1350	1420	708	1630
28	1800	830	311	1040	884	453	750	680	1330	1420	734	1220
29	1830	746	899	1100	---	421	497	732	1360	1440	962	998
30	1770	610	608	1030	---	623	825	830	1080	1440	1010	1210
31	1750	---	632	311	---	605	---	835	---	1490	1200	---
MEAN	1810	1470	1100	1230	831	997	902	798	1140	1350	1250	1220
WTR YR 1983		MEAN	1180	MAX	2160	MIN	219					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.5	20.0	11.0	3.5	6.5	10.0	7.5	20.0	18.0	26.5	---	26.0
2	22.0	18.0	15.0	6.5	5.5	11.0	9.0	19.0	19.0	27.5	---	24.0
3	22.0	14.0	14.5	---	4.0	11.0	9.0	17.5	21.0	29.0	---	24.0
4	22.5	9.0	11.5	---	4.0	15.5	11.5	17.0	22.0	27.0	27.5	24.0
5	22.5	12.0	10.0	---	4.0	14.0	10.5	19.0	24.5	26.5	27.5	25.0
6	23.5	11.0	8.5	---	4.0	15.0	9.0	25.5	22.0	25.0	28.0	26.5
7	23.5	14.0	7.5	---	3.0	13.5	9.0	20.0	20.0	25.0	29.0	27.5
8	23.5	14.5	9.0	10.5	4.0	12.0	10.0	---	21.0	25.0	26.5	25.0
9	23.0	14.5	8.5	9.0	5.0	10.0	8.0	19.0	22.5	25.5	27.0	25.0
10	22.0	16.0	8.0	1.5	6.0	8.0	9.0	19.0	24.0	27.0	28.0	25.0
11	17.0	18.0	6.5	6.5	7.5	7.0	12.0	20.5	24.0	27.0	28.0	26.0
12	16.0	14.0	1.5	---	7.5	8.0	15.0	20.0	23.0	28.0	30.0	25.0
13	16.0	7.0	3.0	---	8.0	10.0	15.5	21.0	23.5	27.5	27.0	24.0
14	14.5	7.0	3.5	---	7.0	13.0	10.5	20.0	24.0	26.0	29.0	20.0
15	15.0	5.0	4.0	5.5	9.5	15.0	11.0	18.0	23.0	26.0	29.0	22.0
16	15.5	6.5	4.0	4.0	9.0	15.0	11.5	17.0	24.0	25.0	29.0	21.0
17	15.0	9.0	5.0	3.5	10.0	12.0	11.5	17.0	24.5	26.0	28.0	23.5
18	15.0	11.0	8.0	4.0	10.5	10.0	13.5	18.0	25.0	27.0	27.5	24.0
19	18.5	13.5	7.0	4.0	11.0	9.0	14.0	18.0	26.0	28.0	27.5	24.5
20	13.0	15.0	5.5	4.5	12.0	6.0	11.0	19.5	26.5	28.5	27.0	25.0
21	12.0	---	6.0	4.0	12.0	6.0	12.0	20.0	27.5	28.0	27.5	14.0
22	12.0	15.0	9.0	4.0	17.0	5.0	13.0	20.0	26.0	---	27.0	14.5
23	10.5	14.0	12.0	4.0	12.0	8.0	14.0	20.5	27.0	---	27.5	16.0
24	10.0	12.0	12.0	4.0	11.5	8.0	14.0	20.5	27.0	---	28.0	---
25	10.0	9.0	11.0	6.0	10.5	8.5	14.5	21.0	28.0	---	28.0	19.0
26	10.0	7.0	7.0	7.0	9.0	10.0	16.0	22.0	27.0	---	28.0	20.0
27	12.5	7.0	7.5	5.0	9.0	9.0	18.0	24.0	26.5	---	28.0	22.0
28	15.0	6.5	5.0	6.0	9.0	7.5	20.0	23.5	25.0	---	28.0	21.0
29	13.0	6.5	4.0	7.0	---	7.0	19.5	24.0	25.5	---	28.0	22.0
30	15.0	8.0	4.0	6.0	---	9.0	19.5	23.0	25.0	---	28.0	21.0
31	18.0	---	4.0	7.0	---	9.0	---	18.0	---	---	28.0	---
MEAN	17.0	11.5	7.5	5.5	8.0	10.0	12.5	20.0	24.0	26.5	28.0	22.5
WTR YR 1983		MEAN	16.0	MAX	30.0	MIN	1.5					

ARKANSAS RIVER BASIN

07242350 DEEP FORK NEAR ARCADIA, OK

LOCATION.--Lat 35°38'58", long 97°21'12", on east line of NE 1/4 sec.36, T.14 N., R.2 W., Oklahoma County, Hydrologic Unit 11100303, on left bank at upstream side of county road bridge, 1.9 mi (3.1 km) southwest of Arcadia, 2.0 mi (3.2 km) upstream from Coffee Creek, and at mile 213.1 (342.9 km).

DRAINAGE AREA.--105 mi² (272 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

REVISED RECORDS.--WRD OK-77-1; 1975 (gage height only).

GAGE.--Water-stage recorder. Datum of gage is 941.65 ft (287.015 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1974, at site 0.3 mi (0.5 km) downstream at same datum. May 2, 1978, to May 14, 1979, the gage was temporarily moved 1.3 mi (2.1 km) downstream to county road bridge, at a 5.00 ft (1.524 m) lower datum.

REMARKS.--Records poor. Low flow sustained by part of sewage effluent from Oklahoma City.

AVERAGE DISCHARGE.--13 years, 68.8 ft³/s (1.948 m³/s), 49,850 acre-ft/yr (61.5 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,300 ft³/s (405 m³/s) Nov. 2, 1974, gage height, 26.9 ft (8.20 m) from floodmark; minimum daily, 4.8 ft³/s (0.14 m³/s) Sept. 12, 1982.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Jan. 30	0600	10,400 295	20.92 6.376	May 23	2145	3,460 98.0	11.93 3.636
May 12	1130	5,450 154	13.93 4.246	May 24	1530	4,120 117	12.98 3.956
May 17	0730	5,010 142	14.30 4.359	June 2	1245	3,570 101	12.11 3.691
May 20	1100	*14,000 396	*24.07 7.337	Sept. 15	0245	4,340 123	13.32 4.060

Minimum daily discharge, 4.8 ft³/s (0.14 m³/s) Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	527	63	28	120	37	28	90	255	32	43	7.7
2	26	114	25	28	226	38	29	58	1340	25	36	7.9
3	41	46	27	49	146	37	29	51	947	45	36	6.5
4	372	34	29	42	78	38	28	51	333	64	36	5.9
5	146	29	32	36	63	37	29	63	177	53	34	5.4
6	192	29	36	37	61	36	28	687	118	47	35	5.0
7	127	32	31	36	59	37	29	117	104	98	37	5.2
8	116	531	31	36	63	35	37	81	89	47	52	5.6
9	75	346	31	36	72	36	31	65	81	45	37	7.8
10	63	135	32	39	58	35	31	61	76	33	32	6.0
11	298	44	31	59	58	35	33	114	135	24	33	5.0
12	548	38	30	64	63	33	34	2130	176	20	31	4.8
13	210	36	30	63	74	32	31	403	70	16	30	6.1
14	149	38	37	48	94	273	27	100	68	22	29	36
15	317	42	32	42	67	69	27	70	186	18	27	908
16	810	45	31	40	58	85	27	64	94	29	27	40
17	216	41	30	49	55	44	28	1920	79	27	26	18
18	76	39	30	48	50	37	28	180	58	26	14	17
19	30	45	29	42	47	37	29	204	141	36	12	18
20	30	47	30	40	45	34	29	4780	77	48	11	11
21	34	40	31	39	43	33	29	701	74	40	11	10
22	36	40	32	58	42	32	28	277	56	40	11	9.9
23	34	39	40	43	41	31	25	689	58	39	11	9.7
24	33	36	32	38	40	31	25	1650	352	38	9.4	9.5
25	46	36	29	39	40	29	130	536	316	36	9.1	10
26	78	36	26	36	39	28	145	433	83	36	7.1	8.8
27	36	36	28	36	39	65	69	343	79	36	7.4	8.1
28	30	38	29	36	38	40	254	897	134	44	9.8	8.1
29	28	63	30	118	---	32	135	320	96	151	8.7	8.2
30	26	214	30	4150	---	31	201	251	68	90	7.6	7.3
31	292	---	30	224	---	28	---	541	---	48	10	---
TOTAL	4543	2816	984	5679	1879	1425	1633	17927	5920	1353	720.1	1216.5
MEAN	147	93.9	31.7	183	67.1	46.0	54.4	578	197	43.6	23.2	40.5
MAX	810	531	63	4150	226	273	254	4780	1340	151	52	908
MIN	26	29	25	28	38	28	25	51	56	16	7.1	4.8
AC-FT	9010	5590	1950	11260	3730	2830	3240	35560	11740	2680	1430	2410
CAL YR 1981	TOTAL	24835	MEAN	68.0	MAX	1760	MIN	20	AC-FT	49260		
WTR YR 1982	TOTAL	46095.6	MEAN	126	MAX	4780	MIN	4.8	AC-FT	91430		

ARKANSAS RIVER BASIN

07242350 DEEP FORK NEAR ARCADIA, OK--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1969 to January 1980.

WATER TEMPERATURE: October 1969 to January 1980.

REMARKS.--A sample was collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	HARD- NESS (MG/L AS CAC03)
OCT											
28...	1150	80020	30	1180	8.0	15.5	9.8	101	--	110	--
DEC											
10...	1529	80020	28	1360	7.6	12.5	--	--	--	93	--
JAN											
13...	1418	80020	52	1060	7.4	.0	12.7	90	--	81	--
FEB											
27...	1410	80020	36	1220	7.7	8.0	11.5	98	--	53	--
MAR											
22...	1420	80020	27	1450	8.0	17.0	11.6	123	--	58	--
APR											
06...	1510	80020	26	1170	7.9	16.0	12.1	126	--	87	--
MAY											
26...	1050	80020	301	1040	7.4	20.5	8.4	98	--	36	--
JUN											
22...	1430	80020	56	1380	7.6	28.0	7.7	101	--	56	--
JUL											
21...	1300	80020	44	1340	7.6	31.5	10.0	143	--	59	--
AUG											
18...	1230	80020	14	1230	7.6	30.0	7.2	99	3.7	--	240
SEP											
23...	1230	80020	9.8	884	8.4	22.0	14.8	168	--	29	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SILICA, DIS- SOLVED (MG/L AS SI02)
OCT											
28...	--	--	24	--	--	--	--	--	--	180	--
DEC											
10...	--	--	29	--	--	--	--	--	--	220	--
JAN											
13...	--	--	26	--	--	--	--	--	--	150	--
FEB											
27...	--	--	--	--	--	--	--	--	--	170	--
MAR											
22...	--	--	39	--	--	--	--	--	--	210	--
APR											
06...	--	--	34	--	--	--	--	--	--	130	--
MAY											
26...	--	--	36	--	--	--	--	--	--	100	--
JUN											
22...	--	--	40	--	--	--	--	--	--	170	--
JUL											
21...	--	--	31	--	--	--	--	--	--	170	--
AUG											
18...	36	54	25	120	51	3	11	202	84	150	12
SEP											
23...	--	--	32	--	--	--	--	--	--	64	--

ARKANSAS RIVER BASIN

07242350 DEEP FORK NEAR ARCADIA, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)
OCT 28...	--	--	--	.810	--	--	--	.810	1.10	1.4	--
DEC 10...	--	--	--	--	--	--	--	<.090	13.0	17	--
JAN 13...	--	--	--	.290	--	--	--	.290	15.0	19	--
FEB 27...	--	--	--	.360	--	--	--	.360	9.50	12	--
MAR 22...	--	--	--	.580	--	--	--	.580	11.0	14	--
APR 06...	--	--	--	.310	--	--	--	.310	7.70	9.9	--
MAY 26...	--	--	--	1.40	--	--	--	1.40	2.00	2.6	--
JUN 22...	--	--	--	.390	--	--	--	.390	3.30	4.3	--
JUL 21...	--	--	--	.200	--	--	--	.200	8.50	11	--
AUG 18...	644	610	.88	.090	.40	.330	1.1	.420	9.80	13	.00
SEP 23...	--	--	--	1.20	--	--	--	1.20	.270	.35	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MERCURY DIS- SOLVED (UG/L AS HG)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 28...	--	4.20	--	--	46	<10	.1	--	--	--
DEC 10...	--	5.20	--	--	91	<10	.1	--	--	--
JAN 13...	--	3.90	--	--	130	10	<.1	--	--	--
FEB 27...	--	2.80	--	--	--	<100	.3	--	--	--
MAR 22...	--	3.60	--	--	50	<100	.1	--	--	--
APR 06...	--	3.90	--	--	110	<100	.4	--	--	--
MAY 26...	--	.630	--	--	50	<100	<.1	--	--	--
JUN 22...	--	2.10	1.10	3.4	60	<100	<.1	35	5.3	67
JUL 21...	--	6.70	--	--	90	<100	<.1	--	--	--
AUG 18...	3.3	6.20	5.70	17	--	--	--	--	--	--
SEP 23...	--	1.00	--	--	10	<100	<.1	--	--	--

ARKANSAS RIVER BASIN

07243000 DRY CREEK NEAR KENDRICK, OK

LOCATION.--Lat 35°46'55", long 96°51'20", in NW 1/4 NW 1/4 sec.14, T.15 N., R.4 E., Lincoln County, Hydrologic Unit 11100303, near left bank on downstream side of county road bridge, 1.0 mi (1.6 km) downstream from Beaver Creek and 4.5 mi (7.2 km) west of Kendrick.

DRAINAGE AREA.--69.0 mi² (178.7 km²).

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

GAGE.--Water-stage recorder. Altitude of gage is 820 ft (249.9 m), from topographic map. Prior to Oct. 1, 1981, gage at same site and datum 5.00 ft (1.52 m) higher.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--27 years, 20.9 ft³/s (0.592 m³/s), 15,140 acre-ft/yr (18.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s (510 m³/s) Nov. 2, 1974, gage height, 24.20 ft (7.376 m) present datum; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Nov. 8	1700	3,150 89.2	16.84 5.133	June 3	1515	3,580 101	17.96 5.474
May 12	0930	*16,900 479	*23.99 7.312	June 23	2145	3,460 98.0	17.65 4.380
May 17	0645	3,290 93.2	17.17 5.233				

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	84	3.8	2.0	24	6.8	5.5	10	28	10	3.0	1.4
2	.00	3.2	2.4	2.2	32	7.0	5.8	6.3	63	9.2	2.7	1.8
3	.00	1.6	2.3	2.4	42	6.9	4.9	5.4	1170	8.3	2.5	1.5
4	.00	1.3	2.1	2.3	20	6.5	5.2	4.9	261	7.6	2.3	1.4
5	.00	1.1	2.1	2.1	21	6.1	5.3	11	66	7.0	2.3	1.4
6	.00	.69	2.2	2.1	21	6.1	4.8	349	39	6.6	2.3	1.3
7	.00	.69	2.3	1.8	19	6.1	5.2	31	28	144	6.8	1.4
8	.00	682	2.2	1.9	16	6.1	7.0	16	23	11	3.2	1.4
9	.00	150	2.1	2.1	15	6.0	5.2	12	19	7.7	2.2	1.4
10	.00	14	2.2	2.0	13	6.2	5.1	10	16	6.8	2.1	1.3
11	.00	7.5	2.3	2.1	11	6.2	5.0	9.2	17	5.9	2.0	1.3
12	.00	5.2	2.2	2.2	13	6.2	5.0	5590	17	5.6	2.0	1.2
13	.05	4.3	2.2	2.3	12	5.7	4.8	370	14	5.6	2.0	1.2
14	.00	3.6	2.3	2.5	128	162	4.5	78	13	5.0	1.9	1.2
15	.00	3.3	2.2	3.0	64	23	4.5	39	15	4.6	1.8	1.4
16	1.5	2.9	2.3	2.4	22	11	4.4	30	13	4.2	1.8	1.4
17	.54	2.8	2.0	2.4	15	8.6	3.9	1330	11	3.9	1.9	1.5
18	.00	2.9	1.9	2.4	12	7.8	4.0	97	9.9	3.6	1.9	1.3
19	.00	2.5	2.1	2.6	10	7.5	4.2	48	10	3.4	1.8	1.4
20	.00	2.4	2.3	2.9	9.4	6.7	3.9	104	9.1	3.3	1.8	1.7
21	.00	2.6	2.6	2.6	8.8	6.1	3.8	57	107	3.2	1.7	1.5
22	.00	2.6	2.6	6.0	8.4	5.9	3.9	28	16	3.0	1.7	1.4
23	.00	2.6	2.3	3.0	8.1	6.0	3.9	62	803	2.9	1.6	1.5
24	.00	2.5	2.0	2.9	7.5	6.2	4.0	268	594	2.8	1.5	1.5
25	.00	2.6	2.1	3.1	6.9	5.6	4.7	210	340	2.8	1.4	1.4
26	.00	2.6	2.2	2.4	7.0	5.3	6.0	41	156	2.7	1.6	1.4
27	.00	2.3	2.3	2.3	7.1	6.6	4.2	27	55	2.7	1.5	1.6
28	.00	2.3	2.0	2.0	6.9	6.3	8.2	299	22	3.3	1.5	1.5
29	.00	2.6	1.9	31	---	6.1	6.6	39	16	49	1.6	1.3
30	.00	7.1	2.0	1040	---	6.2	30	21	12	6.3	1.6	1.2
31	190	---	2.2	81	---	5.4	---	117	---	3.4	1.5	---
TOTAL	192.09	1005.78	69.7	1222.0	580.1	374.2	173.5	9319.8	3963.0	345.4	65.5	42.2
MEAN	6.20	33.5	2.25	39.4	20.7	12.1	5.78	301	132	11.1	2.11	1.41
MAX	190	682	3.8	1040	128	162	30	5590	1170	144	6.8	1.8
MIN	.00	.69	1.9	1.8	6.9	5.3	3.8	4.9	9.1	2.7	1.4	1.2
AC-FT	381	1990	138	2420	1150	742	344	18490	7860	685	130	84
CAL YR 1981	TOTAL	1956.21	MEAN	5.36	MAX	682	MIN	.00	AC-FT	3880		
WTR YR 1982	TOTAL	17353.27	MEAN	47.5	MAX	5590	MIN	.00	AC-FT	34420		

ARKANSAS RIVER BASIN

07243500 DEEP FORK NEAR BEGGS, OK

LOCATION.--Lat 35°40'31", long 96°03'55", NW 1/4 SW 1/4 sec.20, T.14 N., R.12 E., Okmulgee County, Hydrologic Unit 11100303, on right bank 1,000 ft (305 m) downstream from county road bridge, 2.8 mi (4.5 km) upstream from Adams Creek, 4.0 mi (6.4 km) south of Beggs, 8.2 mi (13.2 km) downstream from Flat Rock (Checkerboard) Creek, and at mile 84.8 (136.4 km).

DRAINAGE AREA.--2,018 mi² (5,277 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1938 to current year.

REVISED RECORDS.--WSP 957: 1941. WSP 1117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 659.61 ft (201.049 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 29, 1939, nonrecording gage at site 550 ft (167.6 m) upstream at same datum. Aug. 29, 1939, to June 22, 1953, nonrecording gage at site 1,000 ft (304 m) upstream and same datum. June 23, 1953, to July 15, 1981, recording gage at site 1,000 ft (304 m) upstream at same datum

REMARKS.--Records fair.

AVERAGE DISCHARGE.--44 years, 788 ft³/s (22.32 m³/s), 570,900 acre-ft/yr (704 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,800 ft³/s (1,890 m³/s) May 11, 1943, gage height, 34.55 ft (10.531 m); no flow at times in 1939, 1954, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Feb. 8	--	4,050 115	16.17 4.929	May 31	1700	8,740 248	21.80 6.645
May 18	--	*12,200 346	*23.84 7.266	June 6	--	10,400 285	22.85 6.965

Minimum daily discharge 13 ft³/s (0.37 m³/s) Sept. 13-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	1080	637	83	2900	210	176	257	7820	2660	501	27
2	37	1760	461	80	2900	206	172	404	6600	2440	893	26
3	27	1590	384	78	2700	194	160	476	5830	1400	911	24
4	23	1190	243	79	2500	185	152	436	8590	758	718	21
5	22	1020	177	90	2900	174	149	433	10000	537	516	22
6	25	869	148	101	2500	169	135	451	10200	406	369	20
7	48	683	135	102	3000	166	119	1480	9050	541	273	18
8	51	540	131	86	4000	156	140	1790	8150	1660	218	17
9	66	1470	126	79	1770	155	218	1840	7720	1370	184	17
10	76	2280	118	61	881	153	178	1870	7140	868	155	16
11	66	2040	110	50	706	152	155	1910	6280	880	121	16
12	67	1820	102	51	641	150	139	2710	5220	716	108	15
13	226	1700	99	52	628	153	130	3780	4400	508	110	13
14	1570	1630	95	47	649	159	125	5080	2880	378	100	13
15	1690	1290	91	49	779	485	121	5790	1410	315	88	13
16	1180	802	78	50	958	1580	113	6530	1390	274	78	16
17	1050	557	88	49	1000	1660	105	10100	1310	236	74	15
18	1140	428	86	51	878	1350	104	12000	934	210	68	39
19	906	338	81	50	770	1090	104	10800	756	188	66	64
20	696	274	79	48	634	827	96	9360	675	168	62	45
21	617	228	73	46	521	631	92	8030	595	154	58	81
22	540	194	69	72	446	478	92	7160	504	140	56	100
23	445	168	76	60	388	371	85	6970	444	130	52	102
24	343	149	83	50	339	303	76	7020	459	120	47	95
25	263	142	82	200	300	264	74	6910	756	114	40	84
26	208	135	79	262	266	236	82	6360	1570	108	42	74
27	171	129	76	171	236	210	108	5850	1840	103	39	65
28	140	120	76	120	217	190	115	6970	2020	100	37	56
29	130	115	75	80	---	186	122	8440	2240	99	36	48
30	115	129	82	150	---	188	133	8190	2490	108	33	43
31	196	---	86	500	---	186	---	8390	---	241	31	---
TOTAL	12183	24870	4326	3047	36407	12617	3770	157787	119273	17930	6084	1205
MEAN	393	829	140	98.3	1300	407	126	5090	3976	578	196	40.2
MAX	1690	2280	637	500	4000	1660	218	12000	10200	2660	911	102
MIN	22	115	69	46	217	150	74	257	444	99	31	13
AC-FT	24160	49330	8580	6040	72210	25030	7480	313000	236600	35560	12070	2390
CAL YR 1981	TOTAL	95891	MEAN	263	MAX	3040	MIN	21	AC-FT	190200		
WTR YR 1982	TOTAL	399499	MEAN	1095	MAX	12000	MIN	13	AC-FT	792400		

ARKANSAS RIVER BASIN

07243500 DEEP FORK NEAR BEGGS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1951 to current year.

WATER TEMPERATURE: November 1951 to current year.

REMARKS.--A sample was collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 10,500 micromhos Jan. 12, 1955; minimum daily, 83 micromhos June 10, 1974.

WATER TEMPERATURE: Maximum daily, 38.5°C Aug. 8, 1970; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,550 micromhos Sep. 16-18, 21; minimum daily, 157 micromhos Feb. 2.

WATER TEMPERATURE: Maximum daily, 27.0°C on several days during Aug. and Sept.; minimum daily, 7.0°C Jan. 15.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT												
28...	1350	80020	129	485	7.7	12.5	180	9.8	94	K250	380	130
28...	1351	810	129	--	--	12.5	--	--	--	--	--	--
NOV												
24...	1335	810	154	--	--	9.5	--	--	--	--	--	--
DEC												
02...	1245	80020	431	470	7.7	9.0	130	12.0	107	K3300	K3300	120
21...	1433	810	73	--	--	3.0	--	--	--	--	--	--
JAN												
15...	1422	810	50	--	--	1.0	--	--	--	--	--	--
FEB												
08...	1550	80020	4000	365	7.2	.5	240	11.4	81	K730	3400	100
24...	1430	810	338	--	--	12.5	--	--	--	--	--	--
MAR												
09...	1330	810	155	--	--	9.5	--	--	--	--	--	--
APR												
21...	1120	80020	92	1200	7.9	16.5	13	8.5	88	41	170	340
MAY												
06...	1500	1028	386	828	7.7	21.0	--	5.9	68	--	--	--
14...	1345	1028	5120	185	7.1	18.0	--	4.2	46	--	--	--
JUN												
09...	1830	80020	7720	276	7.2	25.5	170	3.8	48	K95	3300	160
AUG												
10...	1600	80020	155	614	7.9	29.5	95	6.2	84	67	>1000	200

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
OCT												
28...	21	31	13	36	36	1	5.7	110	25	55	.30	7.9
28...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
24...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
02...	38	30	12	45	43	2	5.6	86	15	78	.20	8.3
21...	--	--	--	--	--	--	--	--	--	--	--	--
JAN												
15...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
08...	24	24	10	25	34	1	5.3	77	11	44	.30	6.7
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
09...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
21...	106	62	44	150	49	4	5.8	230	64	250	.40	.9
MAY												
06...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	67	--	6.1	15	17	.5	4.1	91	14	21	.30	3.3
AUG												
10...	34	45	21	52	35	2	5.5	165	28	82	.30	8.4

ARKANSAS RIVER BASIN

07243500 DEEP FORK NEAR BEGGS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)
OCT 28...	256	240	.35	89	.670	.110	.14	--	1.6	--	.350	1.1
OCT 28...	--	--	--	--	--	--	--	--	--	--	--	--
NOV 24...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 02...	265	250	.36	308	.820	.230	.30	--	1.3	--	.240	.74
DEC 21...	--	--	--	--	--	--	--	--	--	--	--	--
JAN 15...	--	--	--	--	--	--	--	--	--	--	--	--
FEB 08...	143	170	.19	1540	.760	.320	.41	--	1.9	--	.270	.83
FEB 24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 09...	--	--	--	--	--	--	--	--	--	--	--	--
APR 21...	738	720	1.0	183	<.100	.080	.10	--	1.0	--	.130	.40
MAY 06...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 14...	--	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	176	170	.24	3670	.290	.070	.09	1.1	1.5	1.3	.260	.80
AUG 10...	396	340	.54	166	.530	.080	.10	--	1.3	--	.270	.83

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHOPHOSPHATE, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOPHOSPHATE, DIS- SOLVED (MG/L AS P04)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)
OCT 28...	.250	.340	1.0	5	3	2	300	200	90	<1	1
OCT 28...	--	--	--	--	--	--	--	--	--	--	--
NOV 24...	--	--	--	--	--	--	--	--	--	--	--
DEC 02...	.180	.210	.64	--	--	--	--	--	--	--	--
DEC 21...	--	--	--	--	--	--	--	--	--	--	--
JAN 15...	--	--	--	--	--	--	--	--	--	--	--
FEB 08...	.130	.130	.40	4	3	1	200	.00	110	<1	<1
FEB 24...	--	--	--	--	--	--	--	--	--	--	--
MAR 09...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	.010	.030	.09	--	--	--	--	--	--	--	--
MAY 06...	--	--	--	--	--	--	--	--	--	--	--
MAY 14...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	.130	.070	.21	5	3	2	<100	--	55	1	<1
AUG 10...	.180	.140	.43	4	1	3	200	.00	150	<1	<1

ARKANSAS RIVER BASIN

07243500 DEEP FORK NEAR BEGGS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)
OCT 28...	10	10	.00	3	--	<3	50	1	49	6700	6700
28...	--	--	--	--	--	--	--	--	--	--	--
NOV 24...	--	--	--	--	--	--	--	--	--	--	--
DEC 02...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
JAN 15...	--	--	--	--	--	--	--	--	--	--	--
FEB 08...	10	--	<10	4	--	<3	17	1	16	6600	5700
24...	--	--	--	--	--	--	--	--	--	--	--
MAR 09...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	--	--
MAY 06...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	<10	--	<10	6	4	2	16	12	4	4600	--
AUG 10...	10	--	<10	1	--	<1	6	4	2	3800	3800

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)
OCT 28...	47	22	21	1	280	260	24	.1	.1	.0	14
28...	--	--	--	--	--	--	--	--	--	--	--
NOV 24...	--	--	--	--	--	--	--	--	--	--	--
DEC 02...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
JAN 15...	--	--	--	--	--	--	--	--	--	--	--
FEB 08...	880	13	2	11	160	120	42	.1	.0	.1	12
24...	--	--	--	--	--	--	--	--	--	--	--
MAR 09...	--	--	--	--	--	--	--	--	--	--	--
APR 21...	--	--	--	--	--	--	--	--	--	--	--
MAY 06...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	<3	5	--	<1	210	210	2	1.7	.0	1.8	5
AUG 10...	13	13	--	<1	300	300	2	.4	.1	.3	6

ARKANSAS RIVER BASIN

07243500 DEEP FORK NEAR BEGGS, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)
OCT 28...	--	<1	0	0	0	<1	<1	70	70	3	342
28...	--	--	--	--	--	--	--	--	--	--	330
NOV 24...	--	--	--	--	--	--	--	--	--	--	180
DEC 02...	--	--	--	--	--	--	--	--	--	--	188
21...	--	--	--	--	--	--	--	--	--	--	20
JAN 15...	--	--	--	--	--	--	--	--	--	--	10
FEB 08...	8	4	<1	--	<1	<1	1	30	0	41	389
24...	--	--	--	--	--	--	--	--	--	--	90
MAR 09...	--	--	--	--	--	--	--	--	--	--	10
APR 21...	--	--	--	--	--	--	--	--	--	--	67
MAY 06...	--	--	--	--	--	--	--	--	--	--	295
14...	--	--	--	--	--	--	--	--	--	--	404
JUN 09...	--	<1	<1	--	<1	<1	<1	100	--	<3	107
AUG 10...	--	<1	1	0	1	<1	<1	20	--	<3	180

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	SED. SUSP. FALL DIAM. % FINER THAN .016 MM	SED. SUSP. FALL DIAM. % FINER THAN .031 MM	SED. SUSP. FALL DIAM. % FINER THAN .062 MM	SED. SUSP. FALL DIAM. % FINER THAN .125 MM	SED. SUSP. FALL DIAM. % FINER THAN .250 MM	SED. SUSP. FALL DIAM. % FINER THAN .500 MM	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM
OCT 28...	119	75	75	84	38	89	96	98	99	99	100
28...	115	--	--	--	--	--	--	--	--	--	--
NOV 24...	75	--	--	--	--	--	--	--	--	--	--
DEC 02...	219	--	--	--	--	--	96	--	--	--	--
21...	3.9	--	--	--	--	--	--	--	--	--	--
JAN 15...	1.4	--	--	--	--	--	--	--	--	--	--
FEB 08...	4200	--	--	--	--	--	86	--	--	--	--
24...	82	--	--	--	--	--	--	--	--	--	--
MAR 09...	4.2	--	--	--	--	--	--	--	--	--	--
APR 21...	17	--	--	--	--	--	73	--	--	--	--
MAY 06...	307	--	--	--	--	--	94	--	--	--	--
14...	5580	--	--	--	--	--	66	--	--	--	--
JUN 09...	2230	--	--	--	--	--	87	--	--	--	--
AUG 10...	75	--	--	--	--	--	94	--	--	--	--

ARKANSAS RIVER BASIN

07243500 DEEP FORK NEAR BEGGS, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	698	1170	785	528	169	516	367	444	382	668	1330	1360
2	702	1180	463	529	168	517	606	430	383	666	1420	1340
3	699	1170	465	530	168	517	603	430	313	666	1420	1360
4	702	1240	464	529	167	750	608	797	314	666	1400	1350
5	704	1240	464	532	169	744	331	796	311	667	1410	1360
6	704	1160	331	660	451	311	657	795	310	182	1280	1260
7	724	1180	332	657	502	312	656	802	314	775	1260	1260
8	718	1160	330	662	644	311	653	653	312	777	1240	1260
9	713	1180	475	669	536	529	570	647	459	775	1240	1680
10	716	1180	475	679	562	526	569	540	460	776	1250	1680
11	746	1200	476	675	750	312	567	543	461	775	1240	1680
12	752	1190	555	682	---	309	594	544	460	869	1250	1680
13	751	1200	553	898	763	528	591	541	312	867	1240	1470
14	809	1130	551	910	756	630	594	171	711	870	1250	1460
15	814	1130	554	900	756	632	671	173	710	872	1250	1460
16	815	1200	774	1010	756	742	670	173	709	971	1260	1680
17	835	1200	687	1010	756	865	673	182	708	974	1260	1670
18	836	1140	694	990	761	861	749	187	709	973	1260	1680
19	858	1140	656	1010	764	577	806	183	709	1040	1400	1680
20	857	1140	690	1100	758	720	722	310	710	1030	1410	809
21	887	1130	653	1100	522	774	390	309	667	1040	1410	824
22	909	1140	651	1100	555	946	389	310	668	1040	1400	822
23	948	1140	774	1100	585	948	715	311	667	1280	1430	820
24	981	1140	683	1080	586	914	390	414	666	1270	1580	821
25	1080	1090	775	1100	571	909	435	413	666	1280	1570	1160
26	1090	1090	319	1080	595	971	434	413	668	1270	1580	1160
27	1090	1090	678	1090	594	335	436	414	658	1280	1590	1150
28	1100	1090	170	1080	595	331	434	185	655	1340	1580	1160
29	1100	1090	170	1090	---	331	434	390	673	1340	1570	1160
30	1100	924	530	1090	---	386	433	387	677	1330	1580	986
31	1190	---	529	176	---	379	---	385	---	1330	1360	---
MEAN	859	1150	539	847	554	595	558	428	547	957	1380	1310
WTR YR 1983		MEAN	812	MAX	1680	MIN	167					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.0	17.0	12.0	9.0	8.0	12.0	12.0	16.0	18.0	19.0	25.0	29.0
2	26.0	16.0	12.0	9.0	8.0	12.0	12.0	16.0	18.0	19.0	25.0	30.0
3	27.0	17.0	12.0	9.0	8.0	12.0	12.0	16.0	18.0	19.0	25.0	30.0
4	27.0	15.0	12.0	9.0	8.0	13.0	12.0	17.0	18.0	19.0	26.0	30.0
5	27.0	14.0	12.0	9.0	8.0	13.0	12.0	17.0	18.0	19.0	26.0	---
6	27.0	15.0	11.0	11.0	8.0	13.0	14.0	17.0	18.0	19.0	26.0	30.0
7	22.0	15.0	10.0	11.0	8.0	14.0	14.0	17.0	18.0	18.0	26.0	30.0
8	21.0	16.0	10.0	11.0	8.0	14.0	14.0	17.0	18.0	19.0	25.0	30.0
9	22.0	16.0	11.0	11.0	8.0	14.0	14.0	17.0	18.0	18.0	27.0	31.0
10	21.0	16.0	11.0	11.0	8.0	14.0	14.0	16.0	18.0	19.0	27.0	31.0
11	21.0	16.0	10.0	11.0	8.0	14.0	14.0	17.0	18.0	19.0	28.0	31.0
12	21.0	14.0	10.0	11.0	---	14.0	14.0	17.0	18.0	19.0	29.0	31.0
13	21.0	13.0	9.0	9.0	10.5	10.0	14.0	17.0	18.0	19.0	29.0	31.0
14	20.0	13.0	9.0	9.0	9.0	10.0	14.0	17.0	18.0	19.0	29.0	31.0
15	20.0	13.0	9.0	8.0	9.0	14.0	14.0	17.0	18.0	19.0	29.0	31.0
16	20.0	13.0	12.0	8.0	9.0	16.0	14.0	17.0	18.0	19.0	29.0	31.0
17	19.0	13.0	12.0	8.0	10.0	15.0	14.0	17.0	18.0	19.0	30.0	---
18	19.0	16.0	12.0	8.0	10.0	15.0	16.0	17.0	18.0	19.0	30.0	32.0
19	18.0	16.0	12.0	7.0	10.0	12.0	16.0	17.0	18.0	19.0	28.0	32.0
20	18.0	16.0	12.0	8.0	10.0	12.0	16.0	18.0	18.0	19.0	28.0	31.0
21	18.0	16.0	12.0	8.0	10.0	12.0	16.0	17.0	19.0	19.0	28.0	29.0
22	18.0	16.0	12.0	8.0	10.0	11.0	16.0	18.0	19.0	19.0	28.0	28.0
23	18.0	15.0	11.0	8.0	10.0	11.0	16.0	18.0	19.0	21.0	28.0	27.0
24	18.0	15.0	11.0	8.0	10.0	11.0	16.0	18.0	19.0	21.0	30.0	28.0
25	18.0	13.0	11.0	8.0	10.0	11.0	15.0	18.0	19.0	21.0	30.0	21.0
26	18.0	13.0	11.0	8.0	11.0	11.0	15.0	18.0	19.0	21.0	30.0	21.0
27	18.0	13.0	11.0	8.0	11.0	12.0	16.0	18.0	19.0	21.0	30.0	21.0
28	17.0	13.0	11.0	8.0	11.0	12.0	16.0	18.0	19.0	---	30.0	21.0
29	17.0	13.0	11.0	8.0	---	12.0	16.0	18.0	19.0	23.0	30.0	20.0
30	18.0	12.0	11.0	8.0	---	12.0	15.0	18.0	19.0	23.0	30.0	20.0
31	17.0	---	9.0	8.0	---	12.0	---	18.0	---	24.0	30.0	---
MEAN	20.5	14.5	11.0	9.0	9.0	12.5	14.5	17.0	18.5	19.5	28.0	28.0
WTR YR 1983		MEAN	17.0	MAX	32.0	MIN	7.0					

ARKANSAS RIVER BASIN

07244800 EUFAULA LAKE NEAR BROOKEN, OK

LOCATION.--Lat 35°18'25", long 95°21'45", in SW 1/4 sec.25, T.10 N., R.18 E., McIntosh County, Hydrologic Unit 11090204, in intake structure near left end of dam on Canadian River, 4.0 mi (6.4 km) northeast of Brooken, and at mile 27.0 (43.4 km).

DRAINAGE AREA.--47,522 mi² (123,082 km²), of which 9,700 mi² (25,123 km²) is probably noncontributing.

PERIOD OF RECORD.--February 1964 to current year. Prior to October 1970, published as Eufaula Reservoir near Brooken.

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

REMARKS.--Reservoir is formed by an earthen dam having a gated, concrete, ogee-type spillway weir controlled by eleven, 40 ft (12.2 m) taintor gates. Closure for diversion was made Feb. 1, 1963, and regulated storage began Feb. 10, 1964; minimum power pool was first filled June 17, 1964. Capacity, 3,798,000 acre-ft (4.68 km³) at elevation 597.0 ft (181.966 m), top of flood control pool, 2,329,000 acre-ft (2.87 km³) at elevation 585.0 ft (178.308 m), top of power pool, and 864,800 acre-ft (1.07 km³) at elevation 565.0 ft (172.212 m), bottom of power pool. Dead storage is negligible. Figures given herein represent total contents. Reservoir is used for flood control, sediment control, power development, and other water uses. Revised capacity table, based on survey 1969, used since Oct. 1, 1972.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,791,000 acre-ft (4.67 km³) Apr. 25, 1973, elevation, 596.95 ft (181.950 m); minimum since power pool first filled, 1,182,000 acre-ft (1.46 km³) Nov. 4, 1964, elevation, 570.23 ft (173.806 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,554,000 acre-ft (4.38 km³) June 5, elevation, 595.28 ft (181.441 m); minimum, 1,806,000 acre-ft (2.23 km³) Oct. 6, elevation, 579.40 ft (176.601 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

579	1,772,000	589	2,763,000
583	2,131,000	593	3,251,000
587	2,539,000	595	3,516,000

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1818000	2540000	2320000	2133000	2403000	2360000	2240000	2147000	3333000	2616000	2266000	1951000
2	1817000	2558000	2320000	2136000	2474000	2346000	2250000	2154000	3338000	2604000	2246000	1940000
3	1812000	2552000	2310000	2146000	2500000	2335000	2230000	2155000	3436000	2599000	2230000	1937000
4	1813000	2540000	2302000	2132000	2515000	2326000	2226000	2156000	3533000	2588000	2217000	1933000
5	1808000	2525000	2300000	2131000	2517000	2322000	2218000	2162000	3545000	2577000	2200000	1931000
6	1817000	2504000	2304000	2116000	2518000	2314000	2211000	2179000	3512000	2562000	2183000	1931000
7	1820000	2485000	2293000	2105000	2517000	2304000	2206000	2209000	3474000	2645000	2174000	1927000
8	1818000	2495000	2280000	2097000	2520000	2286000	2196000	2227000	3425000	2657000	2168000	1924000
9	1818000	2524000	2265000	2092000	2510000	2266000	2191000	2240000	3384000	2640000	2151000	1918000
10	1818000	2521000	2246000	2093000	2501000	2248000	2196000	2236000	3343000	2623000	2133000	1913000
11	1816000	2515000	2228000	2075000	2490000	2230000	2192000	2240000	3297000	2602000	2111000	1908000
12	1820000	2503000	2224000	2062000	2488000	2219000	2190000	2289000	3243000	2581000	2095000	1910000
13	1963000	2490000	2223000	2050000	2487000	2204000	2187000	2437000	3187000	2562000	2082000	1906000
14	2130000	2470000	2209000	2050000	2494000	2208000	2181000	2547000	3130000	2539000	2075000	1900000
15	2246000	2461000	2192000	2042000	2484000	2213000	2178000	2600000	3155000	2517000	2072000	1905000
16	2338000	2444000	2184000	2045000	2505000	2228000	2176000	2622000	3156000	2497000	2059000	1901000
17	2441000	2419000	2166000	2045000	2510000	2242000	2174000	2634000	3110000	2482000	2047000	1900000
18	2501000	2404000	2156000	2039000	2500000	2244000	2173000	2669000	3051000	2470000	2035000	1902000
19	2538000	2384000	2159000	2037000	2488000	2252000	2170000	2707000	2984000	2455000	2024000	1909000
20	2529000	2365000	2159000	2029000	2482000	2258000	2161000	2762000	2915000	2442000	2015000	1903000
21	2523000	2361000	2152000	2027000	2478000	2264000	2164000	2821000	2848000	2427000	2012000	1901000
22	2518000	2356000	2151000	2036000	2464000	2258000	2161000	2847000	2781000	2411000	2012000	1900000
23	2506000	2345000	2144000	2033000	2450000	2258000	2157000	2885000	2728000	2393000	2000000	1898000
24	2494000	2333000	2144000	2037000	2419000	2258000	2153000	2949000	2695000	2375000	1992000	1896000
25	2484000	2330000	2144000	2040000	2405000	2254000	2156000	3012000	2680000	2360000	1981000	1894000
26	2464000	2324000	2148000	2028000	2388000	2252000	2153000	3038000	2675000	2343000	1973000	1894000
27	2445000	2310000	2147000	2022000	2380000	2254000	2149000	3039000	2668000	2329000	1977000	1890000
28	2432000	2309000	2143000	2014000	2372000	2256000	2146000	3166000	2655000	2320000	1974000	1888000
29	2416000	2294000	2139000	2024000	---	2264000	2146000	3267000	2642000	2310000	1976000	1889000
30	2404000	2322000	2139000	2160000	---	2254000	2146000	3304000	2632000	2296000	1969000	1890000
31	2472000	---	2135000	2299000	---	2248000	---	3326000	---	2283000	1960000	---
MAX	2538000	2558000	2320000	2299000	2520000	2360000	2250000	3326000	3545000	2657000	2266000	1951000
MIN	1808000	2294000	2135000	2014000	2372000	2204000	2146000	2147000	2632000	2283000	1960000	1888000
†	586.37	584.92	583.04	584.70	585.41	584.19	583.16	593.57	587.85	584.54	581.16	580.37
††	+650,000	-150,000	-187,000	+164,000	+73,000	-124,000	-102,000	+1,180,000	-694,000	-349,000	-323,000	-70,000
CAL YR 1981	MAX	2558000	MIN	1773000	††	+350,000						
WTR YR 1982	MAX	3545000	MIN	1808000	††	+68,000						

† Elevation, in feet at end of month

†† Change in contents, in acre-feet

ARKANSAS RIVER BASIN

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK

LOCATION.--Lat 35°15'45", long 95°14'19", in SE 1/4 SE 1/4 sec.12, T.9 N., R.19 E., Haskell County, Hydrologic Unit 11090204, near right bank on downstream side of pier of bridge on State Highway 2, 0.8 mi (1.3 km) north of Whitefield, 5.5 mi (8.8 km) upstream from Taleka (Snake) Creek, 8.2 mi (13.2 km) downstream from Eufaula Dam, and at mile 18.8 (30.2 km).

DRAINAGE AREA.--47,576 mi² (123,222 km²), of which 9,700 mi² (25,123 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1177: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 473.16 ft (144.219 m), National Geodetic Vertical Datum of 1929. Prior to Jan. 11, 1939, nonrecording gage and Jan. 11, 1939, to Dec. 10, 1941, June 12, 1947, to Sept. 30, 1948, water-stage recorder, all at site 2.1 mi (3.4 km) downstream at datum 2.20 ft (0.671 m) higher. Dec. 11, 1941, to June 1, 1947, and Oct. 1, 1948, to Sept. 30, 1978, water-stage recorder at present site and at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair. Prior to February 1964, occasional slight regulation by Conchas Lake in New Mexico and, except for 54 mi² (140 km²) of intervening area, completely regulated thereafter by Eufaula Lake (station 07244800).

COOPERATION.--Gage-height record and 27 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Eufaula Dam) 25 years (water years 1939-63), 6,005 ft³/s (170.1 m³/s), 4,347,000 acre-ft/yr (5.36 km³/yr); (since regulation by Eufaula Dam) 15 years (water years 1968-82), 5,063 ft³/s (143.4 m³/s), 3,668,000 acre-ft/yr (4.52 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 281,000 ft³/s (7,960 m³/s) May 10, 1943, gage height, 25.5 ft (7.77 m) datum then in use; minimum daily, 0.4 ft³/s (0.011 m³/s) Oct. 8, 1956.

EXTREMES FOR OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1898, that of May 10, 1943, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,800 ft³/s (1,270 m³/s) June 3, gage height, 17.26 ft (5.261 m); minimum daily discharge, 73 ft³/s (2.07 m³/s) Sept. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1330	3180	5470	498	1560	8230	4330	368	43300	11600	8400	4230
2	346	7500	5830	146	1410	8310	4110	96	42500	14800	8600	4090
3	106	14300	7550	127	7680	9380	4640	1340	42100	8710	8650	2880
4	94	12900	5280	3280	9060	4640	2880	1910	25800	8710	8180	627
5	2430	13300	1810	3980	8630	3400	3240	1950	33200	8450	9080	120
6	432	13200	984	4200	6890	5700	4080	1960	43900	10000	9150	94
7	120	13000	5470	4780	8090	4090	4480	2670	42700	10900	6810	776
8	96	13000	7390	5440	8770	11000	5690	1640	42100	13500	6080	1100
9	129	13900	8000	1180	9470	10900	3560	1250	42100	15600	8440	2440
10	225	13400	9090	1180	11300	10400	730	5230	41900	14600	8950	3390
11	79	13500	9370	6500	9680	10700	134	3610	41500	14500	11100	688
12	79	13000	5130	7300	9510	9590	654	1820	41200	13400	8010	109
13	1370	12700	2540	6620	7690	8370	2750	6810	41000	13300	6200	2320
14	3110	13300	7540	2350	4810	9080	2640	14000	40700	13000	3110	3430
15	555	11300	6620	848	8160	9500	2530	13000	40800	13100	3090	2250
16	1840	11200	9840	236	8290	8020	2460	12600	41400	12900	5090	1640
17	457	12000	5470	152	8140	3950	706	14300	40500	8510	5670	1870
18	219	11500	3850	1310	10500	4570	107	21800	40300	8180	5780	650
19	5230	11400	585	2410	10300	2950	2520	22000	39900	8400	4910	111
20	12100	11200	251	3470	8430	553	2600	20400	39500	8500	5270	96
21	13900	4570	2870	3780	6200	209	372	24500	39100	8580	1600	80
22	12900	3060	3690	2620	10000	4690	2000	21400	38800	8600	479	392
23	12200	6610	2950	564	10500	2750	929	16600	35600	8700	4020	695
24	10200	7400	1320	177	10600	1030	1540	16600	28600	9010	4610	571
25	9450	6850	222	413	10500	2320	920	18900	26300	7510	3100	316
26	11600	1270	175	5080	11400	2270	698	25300	22900	9140	4520	87
27	11800	5650	152	4340	7510	682	1800	26300	18200	8530	4770	73
28	7410	3320	1670	2860	6490	174	3630	24500	17800	8650	1010	260
29	7250	5480	1770	1090	---	1800	433	16500	17200	7630	141	452
30	8330	7750	2400	2010	---	4370	1020	22700	15700	7960	2570	332
31	6000	---	2070	1150	---	3590	---	40300	---	8200	4490	---
TOTAL	141387	290740	127359	80091	231570	167218	68183	402354	1066600	323170	171880	36169
MEAN	4561	9691	4108	2584	8270	5394	2273	12980	35550	10420	5545	1206
MAX	13900	14300	9840	7300	11400	11000	5690	40300	43900	15600	11100	4230
MIN	79	1270	152	127	1410	174	107	96	15700	7510	141	73
AC-FT	280400	576700	252600	158900	459300	331700	135200	798100	2116000	641000	340900	71740
CAL YR 1981	TOTAL	894427	MEAN	2450	MAX	14300	MIN	22	AC-FT	1774000		
WTR YR 1982	TOTAL	3106721	MEAN	8512	MAX	43900	MIN	73	AC-FT	6162000		

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1944-64, 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1944 to February 1945, September 1946 to September 1964, October 1966 to current year.

WATER TEMPERATURE.--September 1944 to February 1945, September 1946 to September 1964, October 1966 to current year.

REMARKS.--Samples were collected by a local observer on a daily basis. An additional sample was collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 22,900 micromhos Nov. 11, 1956; minimum daily, 36 micromhos May 19, 1980.

WATER TEMPERATURE: Maximum daily, 39.0°C, July 16, 1981; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 647 micromhos Oct. 4; minimum daily, 103 micromhos Oct. 13, 14, 16.

WATER TEMPERATURE: Maximum daily, 31.0°C Aug. 26; minimum daily, 0.0°C Jan. 11 and 18, Feb. 6.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED CENT SATUR- ATION	NITRO- GEN DIS- SOLVED (MG/L AS N)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT											
06...	1300	80020	227	571	8.1	23.0	2.4	8.5	104	.66	220
DEC											
14...	1402	80020	11900	--	7.4	10.0	10	10.0	90	--	K5
FEB											
22...	1336	80020	12800	427	7.7	5.0	23	12.6	101	--	K3
APR											
12...	1418	80020	134	500	7.6	17.5	12	9.4	101	--	K2
JUL											
13...	1500	80020	13800	366	7.8	27.0	70	--	--	--	K6
AUG											
23...	1345	80020	161	461	8.0	30.0	4.9	8.0	110	--	K75

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	ALKA- LILITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
OCT											
06...	140	150	49	37	13	55	44	2	97	55	88
DEC											
14...	48	96	53	24	8.8	35	43	2	43	40	63
FEB											
22...	K12	110	32	29	9.3	38	42	2	79	39	63
APR											
12...	K26	160	35	46	12	37	32	1	130	42	--
JUL											
13...	20	110	33	31	8.7	27	33	1	80	34	40
AUG											
23...	450	170	43	47	12	30	27	1	124	39	50

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
OCT											
06...	.30	4.1	324	320	.44	.370	.120	.140	.110	.14	.57
DEC											
14...	.30	3.8	224	200	.30	--	.340	--	.070	.09	--
FEB											
22...	.40	5.5	237	240	.32	--	.410	--	.060	.08	--
APR											
12...	.20	7.6	279	270	.38	--	.280	--	.060	.08	--
JUL											
13...	.20	7.9	212	200	.29	--	.460	--	<.060	.08	--
AUG											
23...	.20	8.0	--	270	.36	--	<.100	--	.070	.09	--

ARKANSAS RIVER BASIN

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)
OCT 06...	.43	.71	.17	.54	1.1	4.8	.070	.21	.050	--	--
DEC 14...	--	.60	--	--	--	--	.050	.15	.020	.030	.09
FEB 22...	--	1.0	--	--	--	--	.170	.52	.040	.030	.09
APR 12...	--	.80	--	--	--	--	.030	.09	.020	.020	.06
JUL 13...	--	.90	--	--	--	--	.070	.21	.040	.030	.09
AUG 23...	--	1.5	--	--	--	--	.120	.37	.080	.040	.12

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
OCT 06...	3	1	2	200	.00	120	0	<1	10	10	.00
DEC 14...	--	--	--	--	--	--	--	--	--	--	--
FEB 22...	2	1	1	100	.00	87	<1	<1	10	--	<10
APR 12...	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	--	--	1	100	.00	100	<1	<1	10	--	<10
AUG 23...	3	0	3	<100	--	150	<1	<1	<10	--	<10

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)
OCT 06...	0	--	<3	11	5	6	190	180	11	7	4
DEC 14...	--	--	--	--	--	--	--	--	--	--	--
FEB 22...	1	0	4	12	9	3	1000	980	25	13	11
APR 12...	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	<1	--	<1	8	0	11	2300	2200	76	13	8
AUG 23...	<1	--	<1	9	5	4	390	--	<3	7	6

ARKANSAS RIVER BASIN

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)
OCT 06...	3	140	90	47	.1	.1	.0	2	0	4	0
DEC 14...	--	--	--	--	--	--	--	--	--	--	--
FEB 22...	2	60	60	5	.1	--	<.1	1	0	5	<1
APR 12...	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	5	100	80	21	--	--	.1	8	5	3	--
AUG 23...	1	150	60	92	<.1	--	<.1	9	7	2	<1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDE RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 06...	0	0	0	0	0	40	20	16	5	69
DEC 14...	--	--	--	--	--	--	--	--	19	96
FEB 22...	--	<1	<1	--	<1	20	0	11	63	31
APR 12...	--	--	--	--	--	--	--	--	101	96
JUL 13...	--	<1	<1	--	<1	30	0	38	77	52
AUG 23...	--	<1	<1	--	<1	20	0	14	11	77

ARKANSAS RIVER BASIN

07245000 CANADIAN RIVER NEAR WHITEFIELD, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	438	438	403	380	422	446	421	438	457	451	442	463
2	406	444	93	395	415	437	454	429	458	446	446	465
3	428	396	92	385	428	448	456	428	451	444	460	491
4	445	423	117	410	418	450	426	430	452	445	461	483
5	395	398	114	410	420	413	428	432	461	445	439	484
6	394	397	170	412	426	412	424	425	454	452	444	475
7	421	423	312	416	422	438	425	441	455	453	450	477
8	437	429	313	408	420	440	425	445	464	440	452	474
9	433	399	330	402	415	433	428	445	457	443	447	474
10	448	400	331	407	410	431	467	444	452	463	446	469
11	441	430	187	---	417	442	469	445	456	458	443	485
12	462	431	192	---	420	439	360	444	448	453	443	476
13	395	420	209	---	419	432	359	445	459	444	450	516
14	448	433	335	420	421	450	423	160	452	442	458	515
15	443	427	339	420	423	433	425	160	450	439	458	520
16	403	422	356	421	428	431	407	447	449	450	467	520
17	430	427	361	416	433	426	423	449	446	486	446	537
18	446	407	373	417	435	426	425	428	442	446	450	540
19	459	408	380	417	450	420	426	479	443	444	460	534
20	427	440	432	415	445	419	422	478	444	440	456	497
21	425	430	414	420	434	415	422	472	443	463	508	497
22	405	215	415	426	437	422	373	497	459	450	549	516
23	405	344	410	429	424	423	373	492	445	446	462	508
24	447	399	409	418	423	430	421	493	442	457	460	510
25	448	372	412	416	437	424	423	476	440	460	456	509
26	459	367	411	396	437	423	423	466	439	451	480	521
27	410	110	384	378	440	435	426	443	433	444	460	490
28	427	105	391	403	442	436	419	445	432	455	456	495
29	407	200	399	385	---	426	420	446	440	445	455	491
30	404	356	361	346	---	420	426	430	450	442	458	513
31	422	---	353	340	---	417	---	425	---	440	460	---
MEAN	428	376	316	404	427	430	421	432	449	450	459	498
WTR YR 1983		MEAN	424	MAX	549	MIN	92					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	17.0	10.0	5.0	5.0	12.0	15.0	19.0	19.0	28.0	29.0	30.0
2	28.0	16.0	13.0	7.0	6.0	11.0	12.0	18.0	22.0	26.0	28.0	27.0
3	29.0	15.0	12.0	5.0	5.0	12.0	14.0	19.0	20.0	28.0	29.0	29.0
4	26.0	14.0	10.0	6.0	6.0	11.0	12.0	18.0	21.0	21.0	28.0	26.0
5	25.0	15.0	9.0	8.0	7.0	10.0	11.0	20.0	24.0	27.0	26.0	25.0
6	26.0	16.0	8.0	7.0	5.0	9.0	10.0	20.0	20.0	26.0	28.0	28.0
7	27.0	16.0	10.0	9.0	7.0	8.0	11.0	19.0	25.0	29.0	24.0	29.0
8	26.0	17.0	10.0	11.0	6.0	10.0	11.0	20.0	23.0	22.0	25.0	27.0
9	25.0	16.0	8.0	10.0	6.0	6.0	12.0	18.0	24.0	27.0	28.0	28.0
10	24.0	18.0	9.0	8.0	8.0	5.0	13.0	18.0	23.0	27.0	27.0	29.0
11	23.0	18.0	8.0	---	9.0	9.0	18.0	20.0	23.0	28.0	27.0	28.0
12	24.0	15.0	7.0	---	7.0	12.0	18.0	19.0	22.0	29.0	29.0	27.0
13	23.0	14.0	5.0	---	9.0	13.0	17.0	21.0	23.0	28.0	28.0	24.0
14	23.0	13.0	4.0	8.0	7.0	10.0	14.0	19.0	22.0	27.0	28.0	27.0
15	24.0	14.0	10.0	7.0	8.0	13.0	15.0	17.0	24.0	26.0	26.0	26.0
16	19.0	14.0	9.0	5.0	7.0	15.0	14.0	17.0	20.0	26.0	27.0	28.0
17	20.0	15.0	8.0	10.0	10.0	12.0	17.0	19.0	23.0	28.0	28.0	27.0
18	16.0	15.0	8.0	7.0	9.0	11.0	15.0	19.0	21.0	---	29.0	28.0
19	16.0	16.0	9.0	5.0	11.0	9.0	11.0	18.0	23.0	---	27.0	26.0
20	15.0	15.0	11.0	6.0	10.0	8.0	10.0	19.0	26.0	29.0	26.0	17.0
21	14.0	14.0	9.0	5.0	9.0	10.0	13.0	20.0	25.0	28.0	29.0	18.0
22	15.0	16.0	13.0	4.0	12.0	10.0	14.0	22.0	23.0	27.0	28.0	22.0
23	20.0	13.0	9.0	6.0	6.0	9.0	17.0	21.0	26.0	29.0	28.0	18.0
24	14.0	9.0	11.0	8.0	8.0	11.0	15.0	23.0	24.0	28.0	27.0	20.0
25	13.0	11.0	10.0	9.0	10.0	10.0	19.0	24.0	24.0	26.0	29.0	25.0
26	19.0	10.0	9.0	6.0	7.0	12.0	18.0	25.0	24.0	28.0	27.0	19.0
27	18.0	10.0	7.0	5.0	8.0	8.0	16.0	24.0	25.0	27.0	29.0	22.0
28	19.0	9.0	7.0	6.0	9.0	10.0	17.0	25.0	26.0	28.0	27.0	27.0
29	19.0	9.0	8.0	7.0	---	10.0	15.0	22.0	25.0	29.0	28.0	25.0
30	18.0	13.0	7.0	7.0	---	11.0	18.0	20.0	26.0	28.0	25.0	20.0
31	18.0	---	5.0	8.0	---	13.0	---	22.0	---	27.0	30.0	---
MEAN	21.0	14.0	9.0	7.0	8.0	10.5	14.5	20.0	23.0	27.0	27.5	25.0
WTR YR 1983		MEAN	17.5	MAX	30.0	MIN	4.0					

ARKANSAS RIVER BASIN

07246400 ROBERT S. KERR LOCK AND DAM (ARKANSAS RIVER) NEAR SALLISAW, OK

LOCATION.--Lat 35°20'57", long 94°46'43", in SW 1/4 SW 1/4, sec. 9, T.10N., R.24 E., LeFlore County, Hydrologic Unit 11110104, from lock wall at dam, 0.5 mi (0.8 km) upstream from gage on bridge on U.S. Highway 59, 3.5 mi (5.6 km) downstream from Sans Bois Creek, 7.5 mi (12.1 km) south of Sallisaw, and at mile 395.4 (636.2 km).

DRAINAGE AREA.--147,756 mi² (382,688 km²) of which 22,241 mi² (57,604 km²) is probably noncontributing.

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

REVISED RECORDS.--OK-77-1: Drainage area.

REMARKS.--Monthly samples were collected in open-mouthed samplers at a single point. Specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	OXYGEN DEMAND, CHEM- ICAL (HIGH LEVEL) (MG/L)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 22...	1750	80020	--	8.6	17.5	7.5	79	49	150	57	42
NOV 19...	1700	80020	1050	7.5	11.5	9.8	92	--	160	70	47
DEC 10...	1125	80020	1050	7.6	10.0	8.0	71	68	150	57	43
JAN 21...	1125	80020	1220	8.5	.0	16.8	117	15	170	55	48
FEB 11...	1210	80020	375	7.6	2.0	10.4	73	21	110	34	34
MAR 26...	1120	80020	775	7.6	14.0	9.9	96	18	160	46	46
APR 22...	1150	80020	725	8.4	16.5	11.2	115	70	150	54	45
MAY 26...	1045	80020	1090	7.4	22.5	--	--	22	160	60	44
JUL 14...	1100	80020	620	7.9	29.0	9.2	121	27	150	48	45
AUG 11...	0945	80020	870	7.7	29.0	4.8	63	<10	170	54	48
SEP 02...	0950	80020	898	7.9	28.5	7.3	96	<10	170	64	48

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
OCT 22...	10	150	68	6	4.9	89	68	230	568	.77
NOV 19...	11	130	63	5	5.0	93	68	200	511	.70
DEC 10...	10	130	65	5	4.7	92	66	210	529	.72
JAN 21...	11	170	68	6	4.6	110	72	260	629	.86
FEB 11...	6.5	31	37	1	4.0	78	35	43	222	.30
MAR 26...	9.9	94	56	3	4.0	110	61	150	418	.57
APR 22...	10	93	56	3	4.0	100	58	140	413	.56
MAY 26...	11	160	68	6	5.2	95	74	240	595	.81
JUL 14...	9.3	63	47	2	4.7	103	52	97	347	.47
AUG 11...	11	100	56	4	5.6	111	62	160	472	.64
SEP 02...	12	110	58	4	5.1	106	70	170	459	.62

ARKANSAS RIVER BASIN

07246615 COAL CREEK NEAR SPIRO, OK

LOCATION.--Lat 35°15'11", long 94°45'18", on south edge of NW 1/4 sec.15, T.9 N., R.24 E., LeFlore County, Hydrologic Unit 11110104, on right downstream side of bridge on U.S. Highway 59 and State Highway 9, 0.4 mi (0.6 km) southeast of junction of U.S. Highway 59 and State Highway 9, 7.1 mi (11.4 km) west of Spiro, and at mile 2.0 (3.2 km).

DRAINAGE AREA.--18.1 mi² (46.9 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 446.80 ft (136.185 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,960 ft³/s (112 m³/s) June 2, 1979, gage height, 11.95 ft (3.642 m); no flow at times in 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,600 ft³/s (45.3 m³/s) at 1915 Jan. 30, gage height, 8.95 ft (2.728 m), no other peak above base of 1,000 ft³/s (28.3 m³/s); minimum 0.15 ft³/s (0.004 m³/s) Sept. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.35	134	36	2.1	56	9.0	3.4	1.6	9.7	2.2	1.1	.21		
2	.52	30	18	2.0	47	7.4	3.3	2.0	5.8	1.4	1.1	.22		
3	.47	18	12	9.4	45	8.3	4.5	1.6	25	1.6	.92	.25		
4	.47	45	8.3	9.8	26	18	3.8	1.9	121	1.3	.84	.25		
5	.47	20	6.1	5.2	20	10	3.5	1.6	23	1.1	.84	.25		
6	1.3	12	5.5	4.2	12	20	3.0	1.4	11	.92	.68	.25		
7	1.1	7.9	6.2	3.1	10	28	2.7	1.7	7.4	51	.68	.27		
8	.73	6.5	5.8	2.4	15	17	2.8	1.5	5.1	32	1.2	.30		
9	.61	15	5.4	2.6	26	12	2.7	1.3	3.9	9.2	1.4	.30		
10	.61	9.6	4.2	2.2	17	10	2.6	1.2	3.4	4.5	1.2	.25		
11	.54	7.8	3.9	1.8	15	10	2.8	1.3	9.2	2.7	.92	.20		
12	.54	6.3	3.9	1.7	24	10	2.3	9.1	8.8	1.9	.84	.20		
13	13	5.2	3.7	1.7	45	8.8	2.2	342	4.8	2.0	.84	.18		
14	39	4.4	4.0	1.6	45	186	2.2	83	3.2	1.4	.76	.15		
15	5.2	4.5	4.2	1.7	33	50	2.1	85	23	.84	.54	.15		
16	12	3.9	3.5	1.8	83	29	3.6	63	119	1.2	.54	.19		
17	343	3.9	3.2	1.4	39	18	12	52	14	.76	.47	.25		
18	61	3.1	2.6	1.4	23	14	3.5	20	6.6	.84	.30	.42		
19	17	3.2	2.6	1.6	16	13	2.8	13	4.5	.68	.30	.25		
20	8.7	2.5	2.6	1.9	14	11	3.2	7.2	3.7	.61	.35	.32		
21	5.4	2.3	2.6	2.2	12	8.5	2.3	4.6	3.0	.68	.35	.35		
22	4.2	2.4	3.2	35	9.9	7.0	1.9	3.6	2.6	.68	.30	.32		
23	4.7	2.9	4.4	17	8.5	6.6	1.5	3.3	2.7	.61	.20	.38		
24	3.5	2.3	4.3	8.2	7.5	6.1	2.1	3.6	2.0	.54	.20	.36		
25	3.3	2.4	3.3	7.0	6.3	5.3	1.9	3.4	5.5	.47	.25	.26		
26	7.8	2.6	3.0	5.1	8.0	4.9	2.7	3.5	5.1	.41	.21	.25		
27	5.1	3.5	3.0	4.3	15	4.4	2.7	3.0	2.6	.47	.16	.25		
28	3.5	2.3	2.6	4.1	12	3.9	1.8	66	2.0	.41	.22	.20		
29	2.8	2.1	2.0	3.4	---	3.7	1.7	16	1.6	.61	.25	.23		
30	2.3	176	1.9	860	---	3.9	2.3	7.8	1.6	1.2	.25	.25		
31	98	---	2.1	281	---	4.0	---	14	---	1.1	.25	---		
TOTAL	647.21	541.6	174.1	1286.9	690.2	547.8	89.9	820.2	440.8	125.33	18.46	7.71		
MEAN	20.9	18.1	5.62	41.5	24.6	17.7	3.00	26.5	14.7	4.04	.60	.26		
MAX	343	176	36	860	83	186	12	342	121	51	1.4	.42		
MIN	.35	2.1	1.9	1.4	6.3	3.7	1.5	1.2	1.6	.41	.16	.15		
CFSM	1.36	1.18	.36	2.69	1.60	1.15	.19	1.72	.95	.26	.04	.02		
IN.	1.56	1.31	.42	3.11	1.67	1.32	.22	1.98	1.06	.30	.04	.02		
AC-FT	1280	1070	345	2550	1370	1090	178	1630	874	249	37	15		
CAL YR 1981	TOTAL	4489.18	MEAN	12.3	MAX	536	MIN	.30	CFSM	.80	IN.	10.84	AC-FT	8900
WTR YR 1982	TOTAL	5390.21	MEAN	14.8	MAX	860	MIN	.15	CFSM	.96	IN.	13.02	AC-FT	10690

ARKANSAS RIVER BASIN

07247500 FOURCHE MALINE NEAR RED OAK, OK

LOCATION.--Lat 34°54'45", long 95°09'20", in NW 1/4 NW 1/4 sec.13, T.5 N., R.20 E., Latimer County, Hydrologic Unit 11110105, on downstream side of left abutment of county road bridge, 0.1 mi (0.2 km) downstream from Little Fourche Maline, 5.0 mi (8.0 km) southwest of Red Oak, and at mile 41.2 (66.3 km).

DRAINAGE AREA.--122 mi² (316 km²).

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1631: 1940.

GAGE.--Water-stage recorder. Datum of gage is 540.80 ft (164.836 m), National Geodetic Vertical Datum of 1929. Prior to April 25, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good. Some regulation by several floodretarding structures.

AVERAGE DISCHARGE.--44 years, 126 ft³/s (3.568 m³/s), 14.02 in/yr (356 mm/yr), 91,290 acre-ft/yr (113 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 41,500 ft³/s (1,175 m³/s) May 19, 1960, gage height, 24.79 ft (7.556 m), from floodmarks, from rating curve extended above 25,000 ft³/s (709 m³/s); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1935 reached a stage of 25.4 ft (7.742 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Jan. 30	2130	*5,440 154	*17.35 5.288	May 14	0015	3,940 112	16.54 5.041

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1460	399	11	1620	106	29	14	240	18	.98	.20
2	1.1	878	189	10	1190	94	26	13	142	17	.72	.18
3	1.3	553	110	27	1160	89	24	12	303	13	.64	.18
4	1.9	354	78	27	977	149	20	11	1010	12	.46	.16
5	2.2	183	62	19	858	102	19	9.2	789	10	.45	.10
6	6.5	125	53	19	674	105	16	8.6	623	8.7	.38	.01
7	24	95	47	16	578	133	14	7.9	501	257	.40	.00
8	25	78	43	14	528	118	14	7.1	399	390	.45	.00
9	12	106	38	14	483	104	12	6.2	227	119	.51	.04
10	8.3	111	34	15	367	88	11	5.6	202	48	.60	.04
11	5.8	90	31	11	189	77	11	4.8	93	30	1.9	.12
12	5.4	75	29	10	174	70	9.8	83	81	23	1.3	.13
13	25	64	27	9.3	285	63	8.8	2340	68	19	1.1	.10
14	1060	57	25	8.7	263	477	8.2	2950	58	16	.71	.11
15	681	51	24	8.6	249	564	7.6	1640	52	13	.45	.57
16	544	47	23	8.0	346	296	36	1030	259	11	.31	.57
17	1270	43	20	7.1	350	173	155	910	187	9.3	.24	.46
18	1750	38	18	7.2	240	127	42	843	88	7.8	.21	13
19	872	34	18	7.3	173	105	36	726	63	6.6	.18	.57
20	643	30	17	7.7	140	90	29	537	51	5.5	.17	1.1
21	455	28	16	8.2	118	76	22	356	43	4.7	.17	.99
22	215	25	16	74	101	64	18	145	37	3.8	.15	.50
23	179	22	17	103	88	56	16	109	32	3.0	.14	.26
24	118	21	16	75	76	50	13	265	28	2.2	.14	.14
25	85	19	16	58	66	44	11	159	26	1.7	.14	.13
26	81	18	15	47	85	39	11	100	36	1.6	.11	.07
27	69	15	14	41	104	34	10	71	32	1.5	.12	.03
28	60	15	13	35	105	33	9.0	1220	25	1.3	.25	.00
29	53	15	12	31	---	31	10	868	32	1.9	.28	.00
30	47	245	11	2220	---	30	11	483	25	1.9	.26	.00
31	689	---	12	3480	---	33	---	350	---	1.1	.25	---
TOTAL	8991.0	4895	1443	6429.1	11587	3620	659.4	15284.4	5752	1058.6	14.17	19.76
MEAN	290	163	46.5	207	414	117	22.0	493	192	34.1	.46	.66
MAX	1750	1460	399	3480	1620	564	155	2950	1010	390	1.9	13
MIN	1.1	15	11	7.1	66	30	7.6	4.8	25	1.1	.11	.00
AC-FT	17830	9710	2860	12750	22980	7180	1310	30320	11410	2100	28	39
CAL YR 1981	TOTAL	37441.44	MEAN	103	MAX	2060	MIN	.43	AC-FT	74270		
WTR YR 1982	TOTAL	59753.43	MEAN	164	MAX	3480	MIN	.00	AC-FT	118500		

ARKANSAS RIVER BASIN

07247550 RED OAK CREEK NEAR RED OAK, OK

LOCATION.--Lat 34°56'23", long 95°01'58", on west line in NW 1/4, NW 1/4 sec.6, T.5 N., R.22 E., Latimer County, Hydrologic Unit 11110105, on right downstream side of bridge on county road, 0.7 mi (1.1 km) south of intersection with U.S. Highway 270, and 2.5 mi (4.0 km) southeast of Red Oak.

DRAINAGE AREA.--12.8 mi² (33.2 km²).

PERIOD OF RECORD.--July 1978 to September 30, 1982. Discontinued.

GAGE.--Water-stage recorder. Elevation of gage is 527.69 ft (160.840 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,960 ft³/s (112 m³/s) June 3, 1982, gage height, 12.72 ft (3.877 m); no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 900 ft³/s (25.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 17	1645	1,260 35.7	10.03 3.057	May 13	0945	1,510 42.7	10.49 3.197
Jan. 30	1430	1,450 41.0	10.38 3.164	June 3	2315	*3,960 112	*12.72 3.877

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.00	94	30	.32	51	12	1.0	.33	14	19	.40	.00		
2	.00	30	16	.32	61	8.3	.89	.45	5.9	5.6	.28	.00		
3	.00	20	10	5.7	45	8.8	1.4	.36	667	3.7	.20	.00		
4	.00	33	5.9	6.2	23	26	1.0	.26	441	2.8	.06	.00		
5	.00	18	3.9	1.9	17	11	.67	.17	36	1.9	.03	.00		
6	14	12	3.5	1.2	8.8	17	.53	.15	24	1.5	.01	.00		
7	6.1	8.4	3.3	.99	5.9	17	.45	.13	16	74	.00	.00		
8	1.0	7.3	2.9	.59	16	10	.42	.12	12	21	.00	.00		
9	.34	10	1.7	.49	27	6.5	.46	.08	52	7.3	.00	.00		
10	.34	9.4	1.2	.40	18	5.2	.46	.06	152	3.3	.00	.00		
11	.24	6.8	1.0	.20	15	5.3	.46	.04	29	1.8	.00	.00		
12	.32	5.3	1.0	.17	30	5.3	.50	83	32	.93	12	.00		
13	59	4.2	.76	.17	45	3.5	.66	913	20	.60	8.8	.00		
14	66	3.9	.91	.14	35	108	.48	107	15	.49	1.6	.00		
15	16	3.5	1.0	.18	24	40	.35	81	15	.46	.46	.00		
16	42	2.9	.96	.21	58	25	51	23	39	.38	.21	.00		
17	467	3.3	.81	.17	32	16	37	15	19	.27	.17	.00		
18	57	3.0	.61	.17	19	13	6.8	9.8	13	.25	.13	.00		
19	20	3.9	.48	.21	12	11	6.6	6.1	9.6	.17	.06	.00		
20	12	3.9	.46	.27	8.9	8.8	4.7	3.1	7.3	.12	.05	.00		
21	6.6	3.9	.46	.36	6.2	5.7	1.5	1.9	6.0	.06	.02	.00		
22	6.4	3.3	.73	59	4.0	3.6	.71	1.7	4.7	.02	.01	.00		
23	8.3	3.3	1.0	30	2.8	2.4	.48	2.5	3.4	.00	.00	.00		
24	4.0	2.9	1.0	15	1.9	2.3	.38	4.1	2.7	.00	.00	.00		
25	2.9	2.8	.83	11	6.1	2.1	.31	4.1	2.6	.00	.00	.00		
26	12	2.3	.73	6.3	21	1.3	.32	2.0	3.6	.00	.00	.00		
27	6.5	1.6	.67	5.2	26	1.0	.31	.80	3.4	.00	.00	.00		
28	2.6	1.5	.61	3.7	20	1.0	.25	181	8.3	.00	.00	.00		
29	2.2	1.6	.56	2.4	---	1.0	.52	27	8.0	.00	.00	.00		
30	2.8	131	.46	728	---	1.0	.48	14	17	.83	.00	.00		
31	254	---	.38	122	---	1.0	---	25	---	.77	.00	---		
TOTAL	1069.64	437.0	93.82	1002.96	639.6	380.1	121.09	1507.25	1678.5	147.25	24.49	.00		
MEAN	34.5	14.6	3.03	32.4	22.8	12.3	4.04	48.6	56.0	4.75	.79	.00		
MAX	467	131	30	728	61	108	51	913	667	74	12	.00		
MIN	.00	1.5	.38	.14	1.9	1.0	.25	.04	2.6	.00	.00	.00		
CFSM	2.70	1.14	.24	2.53	1.78	.96	.32	3.80	4.37	.37	.06	.00		
IN.	3.11	1.27	.27	2.91	1.86	1.10	.35	4.38	4.88	.43	.07	.00		
AC-FT	2120	867	186	1990	1270	754	240	2990	3330	292	49	.00		
CAL YR 1981	TOTAL	4719.52	MEAN	12.9	MAX	921	MIN	.00	CFSM	1.01	IN.	13.72	AC-FT	9360
WTR YR 1982	TOTAL	7101.70	MEAN	19.5	MAX	913	MIN	.00	CFSM	1.52	IN.	20.64	AC-FT	14090

ARKANSAS RIVER BASIN

07248000 WISTER LAKE NEAR WISTER, OK

LOCATION.--Lat 34°56'10", long 94°43'10", in SE 1/4 NE 1/4 sec.1, T.5 N., R.24 E., LeFlore County, Hydrologic Unit 11110105, in control tower near right end of Wister Dam on Poteau River, 2.0 mi (3.2 km) south of Wister, 2.7 mi (4.3 km) upstream from Caston Creek, and at mile 60.9 (98.0 km).

DRAINAGE AREA.--993 mi² (2,572 km²).

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1970, published as Wister Reservoir near Wister.

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

REMARKS.--Reservoir is formed by an earthen dam with outlets of an uncontrolled, concrete, chute-type spillway and six 7.0 ft (2.13 m) x 12.0 ft (3.66 m) vertical liftgates. Regulated storage began Oct. 4, 1949, conservation pool was first filled Dec. 19, 1949. Capacity, 429,600 acre-ft (530 hm³) at elevation 502.5 ft (153.16 m) crest of spillway and 29,950 acre-ft (36.9 hm³) at elevation 471.6 ft (143.74 m) conservation pool. Figures given herein represent total contents. Reservoir is used for flood control and recreation. Revised capacity table used since Oct. 1, 1973.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 507,400 acre-ft (626 hm³) May 27, 1957, elevation, 505.73 ft (154.147 m); minimum since conservation pool was first filled, 4,020 acre-ft (5.0 hm³) Oct. 16, 1961, elevation, 456.97 ft (139.284 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 185,800 acre-ft (229 hm³) Feb. 5, elevation, 489.47 ft (149.190 m); minimum, 26,500 acre-ft (32.7 hm³) Apr. 26, elevation, 471.46 ft (143.701 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

471	24,720	483	106,500
475	43,240	487	152,400
479	69,990	489	179,100

RESERVOIR STORAGE, (ACRE-FEET) WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61990	71480	68570	26980	159800	35300	28120	27630	112300	63090	61700	62210
2	61850	72610	67170	27220	174200	34010	28450	27630	105000	62870	61560	61990
3	61630	78290	64510	27550	182600	31710	28860	27670	118400	62580	61560	61920
4	61560	75600	61590	27380	185200	30170	29660	27670	169000	62360	61480	61850
5	61410	72070	58290	27470	182000	30130	29830	27670	181900	62070	61410	61630
6	61990	68960	54040	27060	175200	30390	29450	27750	183900	61850	61270	61560
7	62070	67100	50660	27220	167000	30390	28990	27750	179800	65570	61190	61410
8	62070	65040	47060	27260	159400	29490	28490	27630	171900	66250	61340	61190
9	62210	63760	43570	27260	152500	28400	28030	27550	165400	66710	61770	60980
10	62210	63240	39940	27220	144500	28080	27790	27380	164800	66400	62210	60910
11	61990	63020	36870	27100	135600	28030	27380	27380	156900	65720	62360	60550
12	62210	62870	34430	27140	128000	28200	27220	28900	152600	64890	63090	60550
13	63090	63020	31760	27060	121500	28030	27220	83250	145500	64360	63320	60470
14	64060	63020	30050	26980	115100	35930	27140	149300	136400	64060	63390	60400
15	65570	63020	29530	26980	107800	47830	27140	172400	128900	63760	63320	60330
16	67330	63020	29070	27020	104800	50170	29450	182600	125200	63470	63240	60190
17	103700	62800	28360	27060	104100	47000	30830	183500	120700	63240	63090	60120
18	145300	62730	27950	27140	97560	42910	31580	177800	113000	62800	62950	60120
19	155900	62580	27790	27180	88410	39210	31890	168600	104400	62800	62870	60190
20	156500	62210	27670	27300	78120	35980	31530	158400	95220	62580	62730	60050
21	149300	61990	27550	27670	67950	32480	30910	152000	88130	62430	62580	59830
22	142400	61630	27510	30260	58780	30000	30000	150900	81310	62290	62510	59830
23	131900	61700	27380	36180	50660	29660	28990	150100	75680	62070	62290	59620
24	120200	61770	27300	39060	43020	29410	27910	144700	71750	61920	61990	59840
25	109100	62360	27300	38230	38230	28650	26940	135700	69200	61770	61850	59270
26	97260	62210	27300	35150	35690	28120	26700	125900	67480	61560	61770	59270
27	87030	62360	27260	31710	34860	27750	27060	115900	65640	61560	62290	58990
28	77440	62430	27220	29320	34860	27340	27430	121300	64590	61630	62290	58850
29	70300	62800	27180	28900	---	27260	27470	124600	63760	61630	62360	58850
30	67020	67330	27100	58710	---	27470	27550	123100	63240	61560	62360	58710
31	66860	---	27100	128800	---	27910	---	118500	---	61630	62360	---
MAX	156500	78290	68570	128800	185200	50170	31890	183500	183900	66710	63390	62210
MIN	61410	61630	27100	26980	34860	27260	26700	27380	63240	61560	61190	58710
†	478.60	478.66	471.61	485.06	473.38	471.81	471.72	484.14	478.12	477.90	478.00	477.49
††	+4,720	+470	-40,230	+101,700	-93,940	-6,950	-360	+90,950	-55,260	-1,610	+730	-3,650

CAL YR 1981 MAX 238200 MIN 26980, †† -1,020
WTR YR 1982 MAX 185200 MIN 26700, †† -3,430

† Elevation, in feet, at end of month

†† Change in contents, in acre-feet

ARKANSAS RIVER BASIN

07248500 POTEAU RIVER NEAR WISTER, OK

LOCATION.--Lat 34°56'15", long 94°42'54", in NW 1/4 NW 1/4 sec.6, T.5 N., R.25 E., LeFlore County, Hydrologic Unit 11110105, on left bank of outflow channel 700 ft (213.4 m) downstream from Wister Dam, 2.2 mi (3.5 km) south-east of Wister, 2.6 mi (4.2 km) upstream from Caston Creek, and at mile 60.8 (97.8 km).

DRAINAGE AREA.--993 mi² (2,572 km²).

PERIOD OF RECORD.--May 1938 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to May 21, 1951, records below about 500 ft³/s (14.2 m³/s) include flow from Caston Creek, drainage area, 70 mi² (181 km²).

REVISED RECORDS.--WSP 1117: Drainage area. WSP 1241: 1939, 1943 (M), 1945 (M).

GAGE.--Water-stage recorder. Datum of gage is 445.43 ft (135.767 m), National Geodetic Vertical Datum of 1929. See WSP 1921 for history of changes prior to June 28, 1953.

REMARKS.--Records good. Flow completely regulated by Wister Lake since October 1949 (station 07248000).

COOPERATION.--Gage height record and 17 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Wister Dam) 11 years (water years 1939-49), 1,325 ft³/s (37.52 m³/s), 960,000 acre-ft/yr (1.18 km³/yr), (since regulation by Wister Dam) 33 years (water years 1950-82), 1,047 ft³/s (29.65 m³/s), 758,600 acre-ft/yr (935 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 78,600 ft³/s (2,230 m³/s) May 16, 1945, gage height, 37.16 ft (11.326 m), site and datum then in use; no flow at times in 1938-39, 1943, 1947, 1953-54, 1961, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1935 reached a stage of 43.0 ft (13.11 m) at site 0.1 mi (0.2 km) upstream at datum 13.11 ft (3.996 m) lower, estimated as 38.5 ft (11.73 m) at site 1.6 mi (2.6 km) downstream at datum 12.41 ft (3.783 m) lower, on basis of fall determined for flood in 1943, discharge not determined.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,020 ft³/s (199 m³/s) May 28, gage height, 8.01 ft (2.441 m) maximum gage height, 10.48 ft (3.194 m) June 4 (Backwater); minimum daily discharge, 10 ft³/s (0.28 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	834	1890	52	66	1830	163	121	6180	245	30	17
2	20	1290	2340	52	1010	2270	242	121	5170	156	30	17
3	18	2420	2330	52	2410	2550	230	118	4030	156	30	18
4	17	2940	2310	154	3360	2280	233	119	32	156	30	18
5	16	2920	2280	270	4750	1680	404	118	523	156	29	18
6	16	2260	2260	197	5880	1220	566	119	2190	105	29	17
7	16	1520	2230	57	5820	1220	564	120	3750	60	29	16
8	16	1510	2210	75	5770	1520	561	120	5050	288	29	15
9	15	1110	2180	99	6030	1490	481	117	5850	510	29	15
10	15	669	2150	99	6130	1010	362	118	3300	501	29	16
11	15	523	1870	97	6030	791	358	117	5220	491	28	16
12	15	380	1550	95	5960	659	281	118	5190	492	30	16
13	15	263	1500	95	5890	650	176	130	5160	320	25	14
14	15	263	1060	95	5810	659	172	65	5110	159	23	14
15	257	263	419	69	5710	698	171	13	5070	159	23	15
16	725	259	415	39	4870	2210	156	1090	5030	133	23	14
17	668	259	411	38	4440	3610	134	3050	5000	109	23	14
18	30	259	308	38	5850	3550	134	5220	4960	109	24	15
19	29	257	165	38	5980	3220	299	6820	4880	88	24	15
20	2510	245	158	39	6100	2660	448	6710	4810	58	22	15
21	5410	251	156	38	5910	2610	540	5930	3990	45	19	16
22	5740	251	153	267	5330	2070	694	3310	3410	31	18	15
23	6130	118	147	474	4710	774	682	3290	2960	31	16	13
24	6600	27	115	482	4280	693	672	4950	2280	31	16	13
25	6450	27	95	1480	3330	813	659	6380	1600	31	16	12
26	6280	25	95	2370	2570	695	291	6280	1100	32	17	11
27	5400	25	95	2320	1830	530	15	6160	1090	30	17	12
28	4890	24	95	1700	1830	527	48	4720	754	30	17	12
29	3960	24	95	876	---	407	122	3200	534	30	16	11
30	1900	554	93	480	---	133	122	4200	428	30	17	10
31	834	---	75	66	---	32	---	5610	---	30	17	---
TOTAL	58045	21770	31250	12303	127656	45061	9980	78554	104651	4802	725	440
MEAN	1872	726	1008	397	4559	1454	333	2534	3488	155	23.4	14.7
MAX	6600	2940	2340	2370	6130	3610	694	6820	6180	510	30	18
MIN	15	24	75	38	66	32	15	13	32	30	16	10
AC-FT	115100	43180	61980	24400	253200	89380	19800	155800	207600	9520	1440	873
CAL YR 1981	TOTAL	370354	MEAN	1015	MAX	6800	MIN	15	AC-FT	734600		
WTR YR 1982	TOTAL	495237	MEAN	1357	MAX	6820	MIN	10	AC-FT	982300		

ARKANSAS RIVER BASIN

07248600 CASTON CREEK AT WISTER, OK

LOCATION.--Lat 34°57'27", long 94°44'18", on SW 1/4 SE 1/4 sec.26, T.6 N., R.24 E., LeFlore County, Hydrologic Unit 11110105, at pier on left downstream side of county road bridge 0.15 mi (0.24 km) downstream from Mountain Creek, and 0.8 mi (1.3 km) along county road southwest of intersection with U.S. Highway 270 at Wister, and at mile 2.4 (3.9 km).

DRAINAGE AREA.--72.9 mi² (188.8 km²).

PERIOD OF RECORD.--October 1978 to September 30, 1982. Discontinued.

GAGE.--Water-stage recorder. Datum of gage is 447.35 ft (136.352 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 12,900 ft³/s (365 m³/s) June 3, 1982, gage height, 17.77 ft (5.416 m). No flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,700 ft³/s (48.1 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 17	1730	9,120 258	15.70 4.785	June 3	2345	*12,900 365	*17.77 5.416
Jan. 31	--	8,000 227	15.00 4.572	June 10	0115	2,770 78.4	10.76 3.280

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	.09	281	218	7.0	900	91	13	6.4	120	2.5	.32	.16		
2	.06	179	125	7.4	500	78	13	6.6	73	2.0	.32	.11		
3	.04	126	85	50	350	72	12	6.1	1410	1.5	.27	.05		
4	.04	97	58	42	130	116	11	5.7	2750	1.1	.21	.02		
5	.02	71	43	31	120	88	10	5.2	666	.88	.19	.00		
6	.16	52	37	25	100	87	8.8	4.6	566	.71	.18	.00		
7	.18	40	33	20	90	83	7.7	4.6	438	117	.16	.00		
8	.20	33	29	18	80	72	7.0	4.4	353	46	.24	.00		
9	.18	29	25	17	90	62	6.6	3.6	263	15	.25	.00		
10	.26	26	22	16	78	57	6.0	3.3	784	9.1	.19	.00		
11	.24	23	20	15	75	54	5.9	3.0	204	6.5	.16	.00		
12	.29	21	18	14	85	50	5.7	2.9	230	4.8	.28	.00		
13	.73	19	17	13	70	46	5.7	2420	123	3.9	2.7	.00		
14	26	17	17	12	60	391	5.3	1890	63	3.2	.56	.00		
15	19	16	16	12	56	281	5.2	1400	55	2.7	.37	.00		
16	24	15	14	11	54	191	4.6	500	159	2.3	.27	.00		
17	2680	14	13	10	50	138	162	310	63	2.0	.22	.00		
18	780	13	11	9.6	45	106	26	160	38	1.7	.19	.00		
19	609	11	10	9.4	40	85	26	120	26	1.5	.18	.00		
20	440	11	9.7	9.2	35	69	20	100	19	.71	.16	.00		
21	184	8.9	9.8	52	30	53	14	100	15	.37	.13	.00		
22	198	8.5	10	94	29	42	10	170	13	.30	.14	.00		
23	160	8.2	10	50	28	35	8.6	140	9.6	.26	.10	.00		
24	78	8.1	9.2	35	28	32	8.0	160	7.7	.20	.06	.00		
25	61	8.1	8.3	25	40	28	7.4	100	7.9	.19	.02	.00		
26	65	7.5	8.0	21	88	23	7.4	70	7.1	.18	.02	.00		
27	48	6.7	8.1	19	112	21	6.9	48	5.6	.19	.33	.00		
28	38	6.6	7.5	18	110	18	6.6	555	4.4	.21	.38	.00		
29	32	6.7	7.2	30	---	17	6.9	279	3.6	.24	.19	.00		
30	28	317	6.6	312	---	16	6.9	132	3.1	.36	.13	.00		
31	38	---	6.8	1900	---	15	---	148	---	.38	.24	---		
TOTAL	5510.49	1480.3	912.2	2904.6	3473	2517	444.2	8858.4	8480.0	227.98	36.88	.34		
MEAN	178	49.3	29.4	93.7	124	81.2	14.8	286	283	7.35	1.19	.01		
MAX	2680	317	218	1900	900	391	162	2420	2750	117	28	.16		
MIN	.02	6.6	6.6	7.0	28	15	4.6	2.9	3.1	.18	.02	.00		
CFSM	2.44	.68	.40	1.29	1.70	1.11	.20	3.92	3.88	.10	.02	.00		
IN.	2.81	.76	.47	1.48	1.77	1.28	.23	4.52	4.33	.12	.02	.00		
AC-FT	10930	2940	1810	5760	6890	4990	881	17570	16820	452	73	.7		
CAL YR 1981	TOTAL	28679.10	MEAN	78.6	MAX	2870	MIN	.02	CFSM	1.08	IN.	14.63	AC-FT	56880
WTR YR 1982	TOTAL	34845.39	MEAN	95.5	MAX	2750	MIN	.00	CFSM	1.31	IN.	17.78	AC-FT	69120

RED RIVER BASIN

07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51'32", long 99°30'28", in SW 1/4 SE 1/4 sec.34, T.5 N, R.22 W., Greer County, Hydrologic Unit 11120202, near left bank on downstream side of pier of bridge on Stage Highway 34, 0.5 mi (0.8 km) south of Mangum, 13.0 mi (20.9 km) downstream from Fish Creek, and at mile 35.5 (57.1 km).

DRAINAGE AREA.--1,566 mi² (4,056 km²) of which 209 mi² (541 km²) is probably noncontributing.

PERIOD OF RECORD.--April 1905 to June 1906, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1938.

GAGE.--Water-stage recorder. Datum of gage is 1,490.87 ft (454.417 m) National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Apr. 11, 1905, to June 30, 1906, nonrecording gage at site 0.2 mi (0.3 km) upstream at different datum. Oct. 1, 1937, to Nov. 8, 1938, nonrecording gage at present site and datum.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--45 years, (water years 1938-82), 89.9 ft³/s (2,546 m³/s), 62,520 acre-ft/yr (77.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 72,000 ft³/s (2,040 m³/s) May 16, 1957, gage height, 14.55 ft (4.435 m); maximum gage height 14.7 ft (4.48 m) June 16, 1938; no flow at times in each year except 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,720 ft³/s (162 m³/s) May 12, gage height, 10.19 ft (3.106 m), no peaks above base of 6,000 ft³/s (170 m³/s); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	12	25	16	26	18	35	11	162	156	334	.00
2	.00	24	33	16	25	18	28	29	108	133	217	.00
3	.00	30	31	17	22	19	21	29	88	128	116	.00
4	.00	26	25	17	22	19	17	21	84	121	71	.00
5	.00	23	22	17	16	19	13	19	82	118	43	.00
6	.00	20	20	16	14	17	11	166	79	149	31	.00
7	.00	17	19	15	14	17	9.4	176	74	690	27	.00
8	.00	19	19	12	16	17	8.8	137	72	162	20	.00
9	.00	19	18	11	17	17	8.1	67	67	71	19	.00
10	.00	17	18	8.5	15	17	9.9	33	64	53	19	.00
11	2.8	14	18	11	8.8	17	11	17	1630	47	14	.00
12	22	18	18	12	8.0	17	11	1370	2020	41	11	.00
13	9.0	17	19	12	8.0	17	8.8	411	444	41	7.6	.00
14	9.0	15	21	13	8.0	24	7.9	150	226	38	5.0	.00
15	18	15	21	14	17	33	7.0	88	167	34	3.9	.50
16	38	14	21	12	52	34	6.0	1020	110	29	3.5	.00
17	315	13	20	13	46	40	4.8	1880	89	25	3.1	.00
18	93	12	19	13	41	40	4.3	1140	1340	21	2.7	.00
19	47	11	19	20	35	30	3.6	361	1580	19	2.3	.00
20	30	9.4	19	38	35	25	2.8	166	558	17	1.9	.00
21	22	9.0	20	53	31	21	2.6	200	639	13	1.5	.00
22	18	8.8	21	46	29	18	2.6	148	718	13	1.1	.00
23	14	9.0	21	34	26	16	2.6	107	442	12	.70	.00
24	12	8.9	22	28	21	15	2.6	93	744	10	.00	.00
25	11	8.3	21	24	18	14	2.6	72	622	8.5	.00	.00
26	10	8.1	20	22	18	12	2.6	59	392	8.5	.00	.00
27	9.4	7.7	19	19	18	19	3.1	87	322	11	.00	.00
28	8.5	8.1	19	17	18	25	4.8	853	527	13	.00	.00
29	8.4	11	18	19	---	28	5.3	433	472	12	.00	.00
30	8.0	25	16	47	---	35	7.1	265	213	182	.00	.00
31	8.2	---	16	36	---	37	---	303	---	1420	.00	---
TOTAL	713.30	449.3	638	648.5	624.8	695	264.3	9911	14135	3796.0	955.30	.50
MEAN	23.0	15.0	20.6	20.9	22.3	22.4	8.81	320	471	122	30.8	.02
MAX	315	30	33	53	52	40	35	1880	2020	1420	334	.50
MIN	.00	7.7	16	8.5	8.0	12	2.6	11	64	8.5	.00	.00
AC-FT	1410	891	1270	1290	1240	1380	524	19660	28040	7530	1890	.0
CAL YR 1981	TOTAL	9911.06	MEAN	27.2	MAX	960	MIN	.00	AC-FT	19660		
WTR YR 1982	TOTAL	32831.00	MEAN	89.9	MAX	2020	MIN	.00	AC-FT	65120		

RED RIVER BASIN

07301110 SALT FORK RED RIVER NEAR ELMER, OK

LOCATION.--Lat 34°28'44", long 99°22'55", in NW 1/4 NE 1/4 sec.15, T.1 S., R.21 W., Jackson County, Hydrologic Unit 11120202, on right bank at bridge on State Highway 5, 1.7 mi (2.7 km) west of Elmer, and at mile 3.5 (5.6 km).

DRAINAGE AREA.--1,878 mi² (4,864 km²), of which 209 mi² (541 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1, 1979, to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,258.55 ft (383.606 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,900 ft³/s (1,070 m³/s) May 30, 1980, gage height, 15.11 ft (4.606 m); minimum daily discharge, 0.08 ft³/s (0.002 m³/s) Sept. 4, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,720 ft³/s (105 m³/s) June 12, gage height, 8.66 ft (2.640 m), no peak above base of 6,000 ft³/s (170 m³/s); minimum daily discharge, 0.35 ft³/s (0.010 m³/s) Oct.1

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	6.8	26	21	91	9.4	38	46	596	263	1060	55
2	.50	7.3	34	21	44	9.4	38	14	275	185	488	59
3	1.0	7.0	32	20	30	9.4	32	11	154	139	278	57
4	1.4	14	36	18	18	8.0	28	20	107	113	174	59
5	1.2	11	31	18	30	8.4	22	22	88	90	110	66
6	1.1	13	26	18	30	11	18	52	78	76	76	72
7	1.9	15	24	13	24	8.4	16	43	65	387	65	70
8	1.9	17	20	9.0	18	8.4	13	74	56	438	77	66
9	2.0	11	20	9.8	19	8.0	12	86	46	245	151	70
10	1.9	9.0	20	7.0	13	8.0	12	54	36	136	71	70
11	5.8	8.0	20	10	12	8.0	14	38	182	91	58	64
12	21	8.0	18	14	14	8.7	15	677	3020	75	54	68
13	59	8.7	18	15	17	6.8	15	1630	2580	78	48	72
14	19	8.4	18	14	26	25	13	542	980	72	40	55
15	7.7	8.7	20	8.0	36	94	11	310	391	59	39	122
16	964	8.4	21	7.0	54	46	9.4	937	190	47	41	164
17	466	9.0	18	7.0	59	9.0	8.4	1600	133	37	45	113
18	697	17	18	7.0	48	55	8.0	1880	711	33	47	50
19	179	13	18	13	38	22	8.4	1270	2680	31	46	35
20	81	12	18	10	32	16	8.4	408	2390	36	50	20
21	44	11	20	16	31	22	8.4	179	1190	35	48	18
22	28	11	18	34	28	22	7.7	175	1110	8.7	37	17
23	20	11	18	41	26	26	7.3	339	764	69	42	18
24	17	10	18	32	21	24	7.0	226	909	64	41	14
25	13	10	17	28	17	21	6.6	116	1380	64	35	13
26	11	9.8	18	22	17	18	6.4	96	1320	67	40	13
27	10	9.0	18	20	13	21	6.4	86	499	73	41	12
28	9.4	9.0	16	18	9.4	25	5.9	858	365	74	50	10
29	7.7	10	14	13	---	28	5.6	1370	483	82	57	10
30	6.8	18	24	28	---	34	15	569	439	132	57	9.4
31	6.8	---	22	74	---	35	---	485	---	1300	61	---
TOTAL	2686.45	321.1	659	585.8	815.4	654.9	415.9	14213	23217	4599.7	3527	1541.4
MEAN	86.7	10.7	21.3	18.9	29.1	21.1	13.9	458	774	148	114	51.4
MAX	964	18	36	74	91	94	38	1880	3020	1300	1060	164
MIN	.35	6.8	14	7.0	9.4	6.8	5.6	11	36	8.7	35	9.4
CAL YR 1981	TOTAL	28689.33	MEAN	78.6	MAX	3700	MIN	.08				
WTR YR 1982	TOTAL	53236.65	MEAN	146	MAX	3020	MIN	.35				

RED RIVER BASIN

07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to Jan. 1982.

WATER TEMPERATURE: October 1978 to Jan. 1982.

REMARKS.--Samples were collected by a local observer on a daily basis. Additional samples were collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 7,530 micromhos July 18, 1981; minimum daily, 300 micromhos May 15, 1980.

WATER TEMPERATURE: Maximum daily, 39.5°C June 18, 1981; minimum daily, 0.0°C on several days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)
OCT 21...	0930	80020	52	2330	7.8	16.5	8.9	97	310	230	810	690
DEC 30...	0900	80020	13	--	7.8	2.5	12.8	99	K37	44	1700	1550
FEB 09...	0915	80020	20	3390	7.8	.5	10.2	75	29	180	1600	1420
APR 27...	1300	80020	7.7	3980	7.9	18.0	10.6	118	230	420	1700	1580
JUN 09...	1030	80020	48	--	8.0	26.5	9.1	120	160	270	1400	1290
AUG 24...	1100	80020	46	2820	8.1	28.0	--	--	--	--	830	684

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT 21...	220	63	180	32	3	8.9	120	620	280	.50	8.9	1540
DEC 30...	470	130	330	29	4	6.4	160	1400	600	.50	6.3	3470
FEB 09...	420	140	370	33	4	7.9	210	1400	580	.50	12	3070
APR 27...	410	170	480	38	5	8.4	150	1500	720	.40	2.5	3610
JUN 09...	390	110	240	27	3	8.2	136	1200	340	.50	15	2570
AUG 24...	200	81	280	42	4	8.6	150	680	470	.50	9.7	1890

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS P04)
OCT 21...	1500	2.1	.860	.110	.14	.63	.120	.37	.100	.070	.21
DEC 30...	3000	4.7	1.20	.390	.50	1.3	.290	.89	.240	.220	.67
FEB 09...	3100	4.2	1.30	1.60	2.1	3.1	.550	1.7	.430	.420	1.3
APR 27...	3400	4.9	<.100	.060	.08	1.8	.170	.52	.030	.020	.06
JUN 09...	2400	3.5	<.100	.150	.19	2.1	.120	.37	.110	<.010	--
AUG 24...	1800	2.6	.220	.070	.09	1.8	.140	.43	.020	.030	.09

07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, SUS- PENDE RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV. (UG/L AS CR)
OCT 21...	7	3	4	200	100	100	0	0	1	20	10
DEC 30...	--	--	--	--	--	--	--	--	--	--	--
FEB 09...	3	1	2	100	.00	200	<1	--	<1	10	0
APR 27...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	5	1	4	<100	--	200	1	0	1	20	--
AUG 24...	5	0	5	<0	--	<100	<1	--	1	20	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, SUS- PENDE RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)
OCT 21...	10	4	3	1	20	10	10	12000	12000	20	13
DEC 30...	--	--	--	--	--	--	--	--	--	--	--
FEB 09...	10	1	0	1	6	4	2	450	400	50	4
APR 27...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	<10	3	--	<1	4	1	3	1600	1600	40	<1
AUG 24...	<10	<1	--	<1	2	0	2	440	410	30	<1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV. (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)
OCT 21...	11	2	300	290	10	.4	.3	.1	12	9	3
DEC 30...	--	--	--	--	--	--	--	--	--	--	--
FEB 09...	--	<1	190	40	150	.2	--	<.1	4	3	1
APR 27...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	--	1	90	60	30	.2	--	<.1	<1	--	1
AUG 24...	--	1	40	20	20	.1	.0	.2	6	3	3

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, SUS- PENDE RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 21...	2	0	2	0	0	0	70	40	30	--	--
DEC 30...	--	--	--	--	--	--	--	--	--	13	70
FEB 09...	5	0	5	<1	--	<1	40	30	10	13	70
APR 27...	--	--	--	--	--	--	--	--	--	--	--
JUN 09...	3	0	3	<1	--	<1	30	10	20	117	89
AUG 24...	3	0	3	<1	--	<1	20	0	30	18	90

RED RIVER BASIN

07301481 NORTH FORK RED RIVER NEAR SAYRE, OK

LOCATION.--Lat 35°17'05", long 99°37'18", in SE 1/4 NW 1/4 sec.3, T.9 N., R.23 W., Beckham County, Hydrologic Unit 11120302, on left bank at end of downstream bridge of Interstate 40, 1.2 mi (1.9 km) upstream from Deep Fork Creek 1.8 mi (2.9 km) southeast of Sayre, and at mile 124.7 (200.6 km).

DRAINAGE AREA.--2,159 mi² (5,592 km²) of which 399 mi² (1,033 km²) is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,775.98 ft (541.319 m) Oklahoma State Highway Department datum. Supplementary nonrecording gage 1.0 mi (1.6 km) upstream on State Highway 283 (read by observer).

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s (360 m³/s) May 28, 1978, gage height, 9.00 ft (2.743 m); no flow in 1978 and 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 8,630 ft³/s (244 m³/s) May 16, gage height, 10.80 ft (3.292 m) from upstream wire-weight gage but peak may have been higher; minimum daily discharge, 0.40 ft³/s (0.011 m³/s) on Oct. 1-9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	36	60	38	42	33	45	43	51	122	161	1.2
2	.40	45	70	36	42	33	38	41	22	78	56	1.0
3	.40	53	56	34	41	31	32	32	25	55	65	1.0
4	.40	44	45	33	39	31	30	34	39	65	25	1.0
5	.40	34	40	30	38	31	28	1750	32	38	13	.90
6	.40	33	39	25	35	31	27	893	30	46	8.8	.90
7	.40	32	36	23	35	32	27	235	26	40	9.0	.90
8	.40	33	32	23	36	34	29	182	28	39	8.8	.90
9	.40	93	32	23	40	37	30	67	20	34	7.8	.90
10	.50	111	33	23	45	38	29	43	20	30	7.3	.90
11	2.5	74	36	24	50	36	28	26	121	25	6.2	.80
12	2.3	58	37	25	66	33	25	66	74	34	6.7	1.0
13	400	51	40	26	82	33	23	988	86	28	5.9	1.2
14	100	46	40	26	88	37	21	530	62	23	4.8	1.0
15	120	40	40	27	88	43	20	195	25	22	4.0	1.0
16	100	36	38	29	80	50	19	3900	16	19	3.3	.90
17	78	32	35	31	62	51	18	5230	20	18	3.0	1.0
18	60	30	35	35	52	51	17	1240	769	16	3.8	1.0
19	50	24	39	39	47	50	16	537	477	16	3.8	1.2
20	43	22	41	42	44	45	16	609	464	13	3.8	1.3
21	39	20	43	45	40	39	16	544	452	13	3.8	1.0
22	34	20	43	49	36	38	17	320	376	12	3.6	.90
23	26	18	40	40	33	31	20	220	344	12	3.0	.90
24	23	18	39	37	30	29	23	150	1600	11	2.3	.90
25	21	18	38	35	29	29	24	109	640	11	1.9	.90
26	20	17	36	36	30	36	23	60	590	11	2.2	.90
27	20	17	36	37	30	45	22	56	530	12	1.9	.80
28	21	18	36	40	31	52	13	408	331	13	1.8	.70
29	22	23	36	44	---	53	19	140	249	14	1.7	.80
30	24	35	37	42	---	53	28	50	186	53	1.6	.80
31	26	---	37	42	---	49	---	147	---	510	1.3	---
TOTAL	1235.90	1131	1245	1039	1311	1214	723	18845	7705	1433	432.1	28.60
MEAN	39.9	37.7	40.2	33.5	46.8	39.2	24.1	608	257	46.2	13.9	.95
MAX	400	111	70	49	88	53	45	5230	1600	510	161	1.3
MIN	.40	17	32	23	29	29	13	26	16	11	1.3	.70
AC-FT	2450	2240	2470	2060	2600	2410	1430	37380	15280	2840	857	57
CAL YR 1981	TOTAL	8214.31	MEAN	22.5	MAX	700	MIN	.00	AC-FT	16290		
WTR YR 1982	TOTAL	36342.60	MEAN	99.6	MAX	5230	MIN	.40	AC-FT	72090		

RED RIVER BASIN

07301500 NORTH FORK RED RIVER NEAR CARTER, OK

LOCATION.--Lat 35°10'05", long 99°30'25", in NW 1/4 SE 1/4 sec.15, T.8 N., R.22 W., Beckham County, Hydrologic Unit 11120302, near left bank on downstream side of pier of bridge on State Highway 34, 3.0 mi (4.8 km) south of Carter, 10.8 mi (17.4 km) downstream from Timber Creek, and at mile 110.5 (177.8 km).

DRAINAGE AREA.--2,337 mi² (6,053 km²), of which 399 mi² (1,033 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1944 to September 1962. Annual maximum and occasional low-flow measurements, water years 1963-64. August 1964 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,673.71 ft (510.147 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--36 years, (1944-62, 1964-82) 120 ft³/s (3.398 m³/s), 86,590 acre-ft/yr (107 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,400 ft³/s (1,510 m³/s) May 26, 1959, maximum gage height, 14.98 ft (4.566 m) May 17, 1977; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,200 ft³/s (90.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 6	0130	4,120 117	8.44 2.573	May 17	1200	*14,100 399	*12.58 3.834

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	50	38	36	41	34	79	40	517	360	580	2.9
2	.00	58	63	37	46	36	70	40	359	279	234	2.3
3	.41	69	53	38	40	37	57	34	284	223	144	2.6
4	.05	60	45	37	15	35	46	29	248	188	103	1.8
5	.00	50	40	35	17	34	41	479	231	163	86	1.3
6	.00	42	38	33	25	32	35	1720	207	152	79	.83
7	.00	40	37	28	30	32	31	374	188	163	76	1.1
8	.00	39	35	24	36	33	31	234	171	142	70	1.1
9	.00	41	34	18	41	34	29	127	148	124	61	.67
10	.00	97	34	15	45	43	30	92	125	114	55	.53
11	1.6	76	35	18	48	44	32	86	440	107	50	.53
12	4.1	53	35	21	55	39	31	561	460	104	44	.46
13	2.6	46	39	17	66	36	29	724	339	101	38	.40
14	1.1	43	41	30	70	55	26	684	322	93	33	.40
15	3.1	42	42	25	87	74	25	351	208	87	29	.67
16	248	39	45	20	211	72	24	4470	166	80	26	.53
17	714	36	44	24	136	87	21	11500	157	72	23	.46
18	903	33	41	39	82	68	20	2660	883	66	21	.34
19	350	32	37	38	68	57	20	1510	1370	61	19	.92
20	160	27	36	44	58	47	19	1050	575	60	17	.83
21	130	26	39	49	50	41	18	468	984	56	15	.60
22	100	25	41	92	45	36	18	382	1010	52	13	.46
23	62	24	43	67	41	34	17	351	714	49	12	.12
24	35	22	47	51	37	33	17	340	2480	46	11	.00
25	32	23	47	43	34	33	21	394	1240	44	10	.00
26	33	22	44	38	33	31	29	323	1580	40	9.0	.00
27	32	21	45	39	33	42	24	351	1210	44	8.0	.00
28	32	21	42	37	33	55	23	1150	665	47	7.0	.00
29	30	26	39	47	---	65	22	818	587	59	6.0	.00
30	33	35	38	67	---	77	28	552	448	67	5.0	.00
31	36	---	38	48	---	85	---	891	---	234	4.0	---
TOTAL	2942.96	1218	1275	1155	1523	1461	913	32785	18316	3477	1888.0	21.85
MEAN	94.9	40.6	41.1	37.3	54.4	47.1	30.4	1058	611	112	60.9	.73
MAX	903	97	63	92	211	87	79	11500	2480	360	580	2.9
MIN	.00	21	34	15	15	31	17	29	125	40	4.0	.00
AC-FT	5840	2420	2530	2290	3020	2900	1810	65030	36330	6900	3740	43
CAL YR 1981	TOTAL	10161.21	MEAN	27.8	MAX	903	MIN	.00	AC-FT	20150		
WTR YR 1982	TOTAL	66975.81	MEAN	183	MAX	11500	MIN	.00	AC-FT	132800		

RED RIVER BASIN

07302500 LAKE ALTUS AT LUGERT, OK

LOCATION.--Lat 34°53'15", long 99°17'47", in SW 1/4 SE 1/4 sec.22, T.5 N., R.20 W., Kiowa County, Hydrologic Unit 11120303, on upstream face of Altus Dam on North Fork Red River, 1.0 mi (1.6 km) west of Lugert, 2.6 mi (4.2 km) upstream from Elm Fork of North Fork, and at mile 73.5 (118.3 km).

DRAINAGE AREA.--2,515 mi² (6,514 km²), of which 399 mi² (1,033 km²) is probably noncontributing.

PERIOD OF RECORD.--December 1943 to September 1950 (monthly records only), October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Nov. 19, 1948, nonrecording or float gage at same site and datum.

REMARKS.--Reservoir is formed by concrete and coursed masonry dam. Storage began in December 1943. Capacity, 134,600 acre-ft (166 hm³) at elevation 1,559.0 ft (475.18 m) crest of uncontrolled spillway and 72,500 acre-ft (89.4 hm³) at elevation 1,547.0 ft (471.53 m) crest of controlled spillway. Dead storage, 1,660 acre-ft (2.05 hm³) below elevation 1,517.5 ft (462.53 m) sill of headgate at irrigation canal. Figures given herein represent total contents. Reservoir is used for flood control, municipal water supply for city of Altus, and irrigation of about 48,000 acres (194 km²). Revised capacity table used since Jan. 1, 1969. From 1927 to 1943, a dam to form reservoir for municipal water supply was at same site. Elevation of crest was 1,514.31 ft (461.56 m).

COOPERATION.--Data on diversions furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 170,600 ft³/s (210 hm³) May 19, 1951, elevation 1,562.10 ft (476.128 m); minimum after initial storage, 4,690 acre-ft (5.78 hm³) Aug. 25, 1944, elevation, 1,520.2 ft (463.357 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents 131,300 acre-ft (162 hm³) July 13, elevation 1,558.48 ft (475.025 m); minimum 11,980 acre-ft (14.8 hm³) Oct. 6-10, elevation, 1,525.73 ft (465.043 m).

Capacity table (elevation, in feet, and contents, in acre-feet):

1525	10,750	1540	46,560
1529	18,160	1548	76,680
1534	29,420	1559	134,500

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12070	14400	16850	18620	21300	23820	26490	27320	92730	129200	115300	85020
2	12050	14620	16890	18720	21450	23930	26720	27340	93370	129400	115400	84110
3	12020	14890	16950	18790	21590	24060	26650	27320	93910	129800	115400	82800
4	12000	15080	17030	18790	21670	24150	26840	27460	94350	129800	115600	82030
5	12000	15190	17090	18870	21720	24180	26840	27630	94690	130100	115400	81170
6	11980	15280	17170	18930	21720	24180	26790	29540	95030	130600	115200	80330
7	11980	15420	17230	18950	21720	24180	26910	30810	95530	130900	114700	79420
8	11980	15530	17250	18950	21720	24220	26910	31580	95840	131000	114200	78550
9	11980	15550	17230	18950	21720	24310	26910	32020	96190	130900	113400	77500
10	11980	15570	17330	18950	21720	24360	26960	32400	96400	131100	112500	76590
11	12020	15670	17450	18950	21720	24420	26840	32940	98680	131300	111500	75970
12	12140	15750	17510	18950	21720	24470	27080	35790	99750	131300	110200	75340
13	12200	15860	17650	18950	21720	24710	27120	37050	100300	131300	108900	75090
14	12260	15940	17690	18950	21970	24900	26940	38990	100600	131100	107500	75130
15	12290	16040	17710	18950	22220	25010	27050	39840	101400	131100	106100	75220
16	12380	16100	17730	18950	22330	25080	27150	43650	101600	130600	104700	75170
17	12800	16140	17770	18950	22650	25120	27100	53210	102300	130000	103200	75170
18	13080	16210	17770	19020	22880	25210	27080	67250	104200	129200	101800	75050
19	13390	16310	17840	19060	23060	25440	27100	73420	107500	127900	100600	75090
20	13750	16390	17920	19080	23160	25560	27030	76680	109100	126800	99690	74970
21	14010	16450	18040	19080	23270	25580	26980	78640	110700	125500	98660	74840
22	14100	16490	18140	19210	23400	25630	26980	79720	111900	124100	97490	74630
23	14160	16450	18180	19360	23450	25650	26860	80770	112900	122600	97090	74590
24	14190	16390	18290	19480	23580	25740	26750	81760	117800	120900	95230	74550
25	14190	16350	18370	19590	23730	25810	26980	82440	121000	119500	93610	74380
26	14180	16370	18430	19700	23780	25800	26980	83340	123900	117900	92040	74170
27	14190	16430	18540	19780	23800	25950	27030	84700	126100	116800	90770	74130
28	14210	16490	18540	19820	23820	26000	27100	86890	127300	115500	89340	74050
29	14180	16650	18580	20260	---	26070	27080	89100	128000	114500	88250	74050
30	14160	16750	18620	21030	---	26230	27240	90430	128800	114700	87170	73920
31	14290	---	18620	21220	---	26420	---	91360	---	114800	86040	---
MAX	14290	16750	18620	21220	23820	26420	27240	91360	128800	131300	115600	85020
MIN	11980	14400	16850	18620	21300	23820	26490	27320	92730	114500	86040	73920
†	1,527.02	1,528.30	1,529.22	1,530.40	1,531.62	1,532.76	1,533.11	1,551.22	1,558.07	1,555.69	1,550.10	1,547.34
††	+2,220	+2,460	+1,870	+2,600	+2,600	+2,600	+820	+64,120	+37,440	-14,000	-28,760	-12,120
CAL YR 1981	MAX	37220	MIN	11980, ††	-10,530							
WTR YR 1982	MAX	131300	MIN	11980, ††	+61,850							

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

RED RIVER BASIN

07303000 NORTH FORK RED RIVER BELOW ALTUS DAM, NEAR LUGERT, OK

LOCATION.--Lat 34°53'26", long 99°18'22", in SW 1/4 sec.22, T.5 N., R.20 W., Greer County, Hydrologic Unit 11120303, on right bank at State Highway 44A bridge, 3,500 ft (1,067 m) downstream from Altus Dam, 1.9 mi (3.1 km) upstream from Elm Fork of North Fork, 2.0 mi (3.2 km) west of Lugert, and at mile 72.8 (117.1 km).

DRAINAGE AREA.--2,515 mi² (6,514 km²), of which 399 mi² (1,033 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1930 to December 1932 (published as "at Lugert Dam"), December 1943 to September 1950 (published as spill from Lake Altus), October 1950 to September 1962, August 1964 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,471.81 ft (448.608 m) National Geodetic Vertical Datum of 1929. Mar. 19, 1930, to Dec. 21, 1932, nonrecording gage at former Lugert Dam, 0.7 mi (1.1 km) upstream at datum 1,504.31 ft (458.514 m) National Geodetic Vertical Datum of 1929, unadjusted.

REMARKS.--Records poor. Some regulation at low flow by Lugert Lake prior to December 1943, capacity 13,500 acre-ft (16.6 km³) and completely regulated thereafter by Lake Altus (station 07302500). Diversions at Lake Altus bypass most of streamflow. Seepage from Altus Dam not included for period February 1953 to September 1977.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s (456 m³/s) May 18, 1951, gage height, 12.70 ft (3.87 m), maximum gage height, 16.37 ft (4.990 m) May 21, 1977 (backwater from Elm Fork of the North Fork Red River); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 16, 1928, reached a stage of 14.5 ft (4.42 m), site and datum in use 1930-32, discharge, 14,300 ft³/s (405 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.89 ft³/s (0.025 m³/s) June 19, gage height, 5.37 ft (1.637 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.42	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.32	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.09	.00	.00	.00	.16	.00	.00	.00
12	.00	.00	.00	.00	.09	.00	.00	.00	.28	.00	.00	.00
13	.04	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.09	.05	.00	.00	.00	.00	.00	.00
15	.19	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
16	.38	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
17	.53	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
18	.53	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.50	.00	.00	.00	.00	.00	.00	.00	.60	.00	.00	.00
20	.33	.00	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00
21	.15	.00	.00	.00	.00	.00	.00	.00	.46	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.71	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.55	---	.00	---	.00	---	.00	.00	---
TOTAL	2.65	.00	.00	1.26	2.20	.05	.00	.00	1.86	.00	.00	.00
MEAN	.08	.00	.00	.04	.08	.00	.00	.00	.06	.00	.00	.00
MAX	.53	.00	.00	.71	.42	.05	.00	.00	.60	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	5.3	.00	.00	2.5	4.4	.1	.00	.00	3.7	.00	.00	.00
CAL YR 1981	TOTAL	34.43	MEAN	.09	MAX	3.0	MIN	.00	AC-FT	68		
WTR YR 1982	TOTAL	8.02	MEAN	.02	MAX	.71	MIN	.00	AC-FT	16		

RED RIVER BASIN

07303400 ELM FORK OF NORTH FORK RED RIVER NEAR CARL, OK

LOCATION.--Lat 35°00'42", long 99°54'12", in SW 1/4 NW 1/4 sec.12, T.6 N., R.26 W., Harmon County, Hydrologic Unit 11120304, near left bank on downstream side of pier of bridge on State Highway 30, 4.0 mi (6.4 km) northeast of Carl, and at mile 54.0 (86.9 km).

DRAINAGE AREA.--416 mi² (1,077 km²).

PERIOD OF RECORD.--Water years 1960-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1968 to September 1979.

WATER TEMPERATURE: July 1968 to September 1979.

INSTRUMENTATION.--Water-quality monitor October 1971 to September 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
OCT								
07...	1044	80020	6.0	104000	7.4	14.5	--	--
NOV								
24...	0930	80020	7.7	35100	7.7	8.5	10.2	108
DEC								
16...	1100	80020	9.6	31500	7.4	7.0	10.7	109
29...	0915	80020	6.6	33700	7.8	.0	9.1	78
JAN								
12...	1215	80020	8.6	43800	7.6	1.0	4.3	39
FEB								
10...	1405	80020	20	31000	7.7	2.5	11.5	101
MAR								
24...	0925	80020	8.8	36300	7.8	12.5	9.2	108
APR								
29...	0930	80020	7.9	31700	7.8	14.5	9.2	108
MAY								
25...	1245	80020	58	9340	7.8	26.0	7.4	101
JUN								
15...	1350	80020	43	10900	7.9	25.0	6.4	68
JUL								
14...	1030	80020	23	--	7.9	25.0	--	--
AUG								
26...	1240	80020	4.0	60900	8.2	31.0	5.2	94
SEP								
22...	1340	80020	3.8	65300	8.4	26.0	6.7	113

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	SODIUM, DIS- SOLVED (MG/L AS NA)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT							
07...	960	32000	2400	55000	94600	129	1530
NOV							
24...	660	8000	1800	14000	26400	35.9	549
DEC							
16...	660	6600	1700	13000	23100	31.4	596
29...	650	7100	1900	14000	24400	33.2	435
JAN							
12...	840	10000	2400	19000	32800	44.6	762
FEB							
10...	620	7900	1800	14000	24400	33.2	1320
MAR							
24...	710	8200	2000	15000	25500	34.7	606
APR							
29...	660	7400	--	13000	22700	30.9	484
MAY							
25...	590	1500	1600	2500	6380	8.7	999
JUN							
15...	590	1800	1400	3400	7100	9.7	824
JUL							
14...	670	4300	1800	7500	14900	20.3	925
AUG							
26...	880	13000	2100	24000	41600	56.6	449
SEP							
22...	840	16000	2200	26000	46000	62.6	472

RED RIVER BASIN

07303420 ELM FORK OF NORTH FORK RED RIVER NEAR REED, OK

LOCATION.--Lat 34°57'40", long 99°41'40", on the west line of SW 1/4 NW 1/4 SW 1/4, sec.25, T.6 N., R.24 W., Greer County, Hydrologic Unit 11120304, at bridge on county road, 4.5 mi (7.2 km) north of Reed.

DRAINAGE AREA.--579 mi² (1,500 km²).

PERIOD OF RECORD.--June to September 1978, October 1981 to September 1982 (discontinued).

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June to August 1978.

WATER TEMPERATURE: June to August 1978.

pH: June to August 1978.

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT												
07...	1346	80020	3.0	44600	7.8	16.5	--	9.0	112	--	--	930
NOV												
24...	1400	80020	8.2	39000	7.8	13.0	1.0	7.2	86	3100	2970	780
DEC												
16...	1450	80020	11	34100	7.8	11.5	--	10.0	114	--	--	710
29...	1245	80020	9.9	35200	7.8	5.5	--	10.4	101	--	--	730
JAN												
12...	1120	80020	2.7	40800	7.6	2.0	--	9.8	91	3500	--	900
FEB												
10...	1030	80020	4.9	30300	7.6	1.5	--	12.2	103	--	--	690
MAR												
24...	1300	80020	9.8	37000	7.9	19.5	--	10.2	140	--	--	790
APR												
29...	1335	80020	8.1	34800	7.8	21.0	--	7.3	99	--	--	730
MAY												
25...	0945	80020	136	9950	7.8	21.5	--	8.5	106	--	--	580
JUN												
15...	0945	80020	68	7680	7.8	21.5	--	7.8	98	--	--	590
JUL												
14...	1415	80020	24	18700	7.9	29.0	--	--	--	--	--	700
AUG												
26...	0945	80020	4.3	48700	7.7	26.5	--	5.8	92	--	--	1000
SEP												
22...	1550	80020	3.8	58000	8.1	28.0	--	6.2	105	--	--	1100

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAR (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT											
07...	--	11000	--	--	--	--	2300	18000	34000	46.2	275
NOV											
24...	270	9300	87	76	31	93	2100	16000	30100	40.9	666
DEC											
16...	--	7500	--	--	--	--	1800	15000	25100	34.1	759
29...	--	7500	--	--	--	--	880	11000	24400	33.2	652
JAN											
12...	310	9600	--	73	--	--	2500	18000	30600	41.6	223
FEB											
10...	--	8100	--	--	--	--	1900	14000	23700	32.2	314
MAR											
24...	--	8000	--	--	--	--	2000	14000	25400	34.5	672
APR											
29...	--	7900	--	--	--	--	--	14000	25800	35.1	564
MAY											
25...	--	1700	--	--	--	--	1600	2800	6680	9.1	2450
JUN											
15...	--	1300	--	--	--	--	1200	2100	5350	7.3	982
JUL											
14...	--	3700	--	--	--	--	1900	6500	13300	18.1	862
AUG											
26...	--	10000	--	--	--	--	2500	19000	32200	43.8	374
SEP											
22...	--	14000	--	--	--	--	2500	23000	40800	55.5	419

RED RIVER BASIN

07304500 ELK CREEK NEAR HOBART, OK

LOCATION.--Lat 34°54'51", long 99°06'49", in NE 1/4 NE 1/4 sec.17, T.5 N., R.18 W., Kiowa County, Hydrologic Unit 11120303, near right bank on downstream side of pier of county road bridge, 7.0 mi (11.3 km) downstream from Little Elk Creek, 7.5 mi (12 km) south of Hobart, and at mile 10.9 (17.5 km).

DRAINAGE AREA.--549 mi² (1,422 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1904 to March 1908, October 1949 to current year.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1905.

GAGE.--Water-stage recorder. Datum of gage is 1,429.4 ft (435.68 m) National Geodetic Vertical Datum of 1929. See WSP 1920 for history of changes prior to Apr. 28, 1951.

REMARKS.--Records poor. Part of high flows are diverted into West Otter Creek above station.

AVERAGE DISCHARGE.--36 years, (water years 1905-07, 1950-82), 73.5 ft³/s (2.082 m³/s), 53,270 acre-ft/yr (65.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft³/s (634 m³/s) Oct. 4, 1955, gage height, 30.75 ft (9.373 m), from floodmarks, from rating curve extended above 5,300 ft³/s (150 m³/s) on basis of field estimate of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,130 ft³/s (202 m³/s) May 18, gage height, 28.38 ft (8.650 m), minimum daily discharge, 0.30 ft³/s (0.008 m³/s) Oct.1-3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	274	21	11	189	17	18	17	1510	76	48	18
2	.30	240	16	11	18	16	18	11	1000	57	47	18
3	.30	60	14	10	52	15	17	9.5	750	45	46	17
4	12	36	13	10	40	13	16	11	500	33	44	16
5	5.0	27	12	12	29	12	15	12	300	25	42	14
6	1.4	20	11	9.3	27	10	13	12	200	20	36	15
7	2.1	18	10	8.8	24	11	15	8.3	175	16	29	15
8	6.9	38	10	9.1	292	10	12	6.7	163	15	24	15
9	4.4	40	10	10	38	10	12	6.3	152	14	40	15
10	3.3	36	10	8.0	37	9.5	12	6.5	146	13	25	15
11	484	16	9.0	7.2	38	9.5	12	8.3	657	12	22	15
12	1020	15	9.0	8.2	29	9.0	12	308	1310	200	18	15
13	269	15	18	7.6	17	9.0	11	1920	412	100	15	15
14	48	14	16	7.5	17	140	13	344	220	70	13	20
15	757	13	12	8.6	16	80	14	202	161	72	12	69
16	1170	12	11	7.3	122	45	13	406	147	69	11	38
17	1400	11	10	8.2	28	25	11	3460	132	66	11	18
18	368	10	10	10	76	15	9.0	5700	758	62	10	17
19	59	9.0	10	9.9	28	9.0	8.0	2040	2000	58	9.8	16
20	35	8.9	10	9.4	18	5.0	7.2	3470	1000	56	9.6	16
21	24	20	10	10	18	2.5	7.4	1940	2100	55	9.3	19
22	21	15	13	14	80	1.7	8.4	359	760	53	9.0	17
23	16	14	12	11	19	.84	7.8	83	500	51	8.8	15
24	14	13	11	10	59	.84	7.2	68	1000	51	8.5	15
25	12	12	10	8.7	38	.90	6.8	55	750	47	8.2	15
26	11	11	10	5.6	29	.90	7.2	50	500	44	8.0	14
27	9.9	11	10	16	20	50	8.4	150	250	42	19	14
28	9.9	10	24	10	18	35	8.0	2550	150	41	19	14
29	9.9	10	30	11	---	30	9.0	1820	100	41	18	13
30	9.9	30	12	743	---	25	18	726	95	52	18	12
31	28	---	12	776	---	20	---	1260	---	51	18	---
TOTAL	5811.60	1058.9	396.0	1798.4	1416	637.68	346.4	27019.6	17898	1607	656.2	545
MEAN	187	35.3	12.8	58.0	50.6	20.6	11.5	872	597	51.8	21.2	18.2
MAX	1400	274	30	776	292	140	18	5700	2100	200	48	69
MIN	.30	8.9	9.0	5.6	16	.84	6.8	6.3	95	12	8.0	12
AC-FT	11530	2100	785	3570	2810	1260	687	53590	35500	3190	1300	1080
CAL YR 1981	TOTAL	13547.28	MEAN	37.1	MAX	1530	MIN	.05	AC-FT	26870		
WTR YR 1982	TOTAL	59190.78	MEAN	162	MAX	5700	MIN	.30	AC-FT	117400		

RED RIVER BASIN

221

07304500 ELK CREEK NEAR HOBART, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-52, 1954-63, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1949 to September 1951, October 1958 to September 1963, November 1969 to current year.

WATER TEMPERATURE: October 1949 to September 1951, October 1958 to September 1963, November 1969 to current year.

REMARKS.--Samples were collected by a local observer on a daily basis. Additional samples were collected monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Nov. 27, 1958; minimum daily, 136 micromhos May 15, 1980.

WATER TEMPERATURE: Maximum daily, 35.0°C July 8, 1951; minimum daily, -0.5°C on several days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,300 micromhos Sept. 9; minimum daily, 206 micromhos Oct. 16.

WATER TEMPERATURE: Maximum daily, 28.5°C June 8; minimum daily, 0.0°C at times during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)
OCT										
22...	1350	80020	21	902	7.5	14.5	10.9	111	--	--
NOV										
19...	1305	80020	8.6	1370	7.8	13.0	10.2	103	610	302
DEC										
30...	1415	80020	12	1660	8.2	6.5	12.0	103	700	397
JAN										
11...	1615	80020	7.4	--	8.2	1.0	12.1	91	770	441
FEB										
11...	1450	80020	38	1320	8.1	3.5	9.5	77	--	--
MAR										
23...	0845	80020	.84	1660	8.3	12.0	11.8	117	--	--
APR										
28...	1400	80020	9.2	2060	8.7	19.5	8.0	92	770	465
MAY										
26...	0900	80020	50	890	7.4	22.0	6.6	81	320	167
JUN										
09...	1530	80020	146	1360	7.8	27.0	8.4	112	--	--
JUL										
15...	1140	80020	72	--	7.9	27.0	--	--	800	473
AUG										
27...	0845	80020	21	2340	7.8	26.5	8.2	109	--	--
SEP										
23...	1445	80020	15	2310	8.2	24.5	6.9	88	950	617

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT										
22...	--	--	--	--	--	--	--	--	--	--
NOV										
19...	140	63	110	28	2	8.2	310	400	120	.30
DEC										
30...	150	77	120	27	2	5.7	300	490	150	.50
JAN										
11...	170	84	130	27	2	7.1	330	550	140	.50
FEB										
11...	--	--	--	--	--	--	--	--	--	--
MAR										
23...	170	--	120	--	--	--	--	500	150	--
APR										
28...	170	85	160	31	3	6.8	310	590	180	.40
MAY										
26...	76	32	45	23	1	6.5	155	180	56	.30
JUN										
09...	--	--	--	--	--	--	--	--	--	--
JUL										
15...	170	91	130	26	2	6.2	327	610	110	.50
AUG										
27...	--	--	--	--	--	--	--	--	--	--
SEP										
23...	200	110	190	30	3	5.6	336	690	--	.40

RED RIVER BASIN

07304500 ELK CREEK NEAR HOBART, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILICA, DIS- SOLVED (MG/L AS SI02)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BORON, DIS- SOLVED (UG/L AS B)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)
OCT 22...	--	--	--	--	--	5	140	<1	.00
NOV 19...	16	1100	1000	1.5	--	--	--	--	--
DEC 30...	6.5	1180	1200	1.6	--	--	--	--	--
JAN 11...	4.6	1440	1300	2.0	--	--	--	--	--
FEB 11...	--	--	--	--	--	4	240	2	10
MAR 23...	--	1280	--	1.7	--	--	--	--	--
APR 28...	.3	1450	1400	2.0	--	--	--	--	--
MAY 26...	11	528	500	.72	--	--	--	--	--
JUN 09...	--	--	--	--	--	5	230	<1	<10
JUL 15...	16	1410	1300	1.9	--	--	--	--	--
AUG 27...	--	--	--	--	<100	6	550	<2	<10
SEP 23...	13	1610	1700	2.2	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07304500 ELK CREEK NEAR HOBART, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2160	2130	2000	2070	1970	2030	1650	1800	665	1000	2350	2570
2	2150	2120	1960	2030	1660	2050	1810	1840	1140	1220	2360	2590
3	2230	2110	1860	2010	1700	2090	1920	1880	1140	1400	2340	2580
4	2150	2130	1760	2020	1950	2130	2010	1940	1130	1490	2330	2570
5	1960	2100	1770	2080	1720	2110	2000	1880	1370	1560	2330	2590
6	2090	2130	1860	2030	1520	2170	2060	1870	1450	1720	2300	2610
7	2150	2180	1880	2070	1560	2180	1920	1860	1580	1630	2290	2630
8	2180	2150	1960	2050	1620	2190	2110	1860	1600	1590	2280	2640
9	2200	2190	2090	2080	1820	2180	2120	1850	1550	1510	2250	2650
10	2240	2160	2000	2110	1980	2100	2100	1810	1630	1600	2290	2660
11	2270	2120	2040	2120	1950	2040	1910	1830	1320	1610	2350	2640
12	1220	2110	2020	---	2070	1990	1920	1830	666	1640	2330	1260
13	1250	2140	2140	---	2000	2030	1960	1830	737	1640	2390	1000
14	1650	2120	2110	---	2010	2080	2000	1740	703	1640	2380	1540
15	2100	2140	2150	2110	2030	2080	1980	510	373	1710	2400	1890
16	2170	2170	2160	2100	2050	1980	1930	811	737	1680	2460	2110
17	2200	2200	2140	2100	2070	2070	1970	896	793	1700	2480	2390
18	2250	2240	2020	2110	2090	1860	1900	1200	993	1710	2470	2440
19	2240	2230	2120	2050	2100	1980	1890	1330	1160	1860	2480	2470
20	2320	2200	2150	2090	2140	1970	1880	1330	1340	1940	2440	2520
21	2330	2180	2160	2080	2120	1800	1870	1540	1460	2070	2430	2550
22	2250	2140	2150	2100	2130	1710	1890	427	1530	2110	2470	2580
23	2210	2140	2140	2110	2110	1690	1880	733	1560	2150	2520	2600
24	2260	2240	2120	2090	2060	1830	1870	1050	1610	2120	2510	2590
25	2260	2230	2070	2070	2090	1930	1850	1080	1690	2110	2500	2600
26	2300	2140	2100	2080	2110	1420	1830	1120	1700	2170	2490	2560
27	2280	2060	2100	2060	2130	720	1830	885	820	2210	2520	2550
28	2260	2080	2160	---	2020	682	1850	1420	290	2220	2530	2520
29	2230	2150	2150	2040	---	840	1780	864	420	2260	2540	2490
30	2190	2040	2100	2070	---	1180	1730	365	710	2230	2550	2450
31	2200	---	2100	2100	---	1440	---	732	---	2270	2570	---
MEAN	2130	2150	2050	2080	1950	1820	1910	1360	1130	1800	2420	2390
WTR YR 1983		MEAN	1930	MAX	2660	MIN	290					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	16.0	9.5	1.5	3.0	10.0	12.5	20.5	16.0	24.5	25.5	24.0
2	20.5	13.0	10.0	.5	1.0	11.0	7.5	17.5	17.0	24.5	26.0	22.0
3	20.5	9.0	9.5	.5	1.0	14.0	9.0	16.0	20.5	25.0	25.0	21.0
4	19.5	7.0	8.0	1.0	1.5	14.0	11.5	16.0	21.0	25.5	25.5	22.0
5	20.5	6.5	8.0	---	1.5	12.0	7.5	17.0	23.0	23.0	25.5	23.0
6	21.0	8.0	7.0	---	1.5	11.0	7.0	17.0	18.5	24.0	25.5	22.0
7	18.0	11.0	6.5	3.5	.5	11.0	7.5	18.0	18.0	22.0	25.0	24.0
8	21.0	13.5	5.0	5.5	2.5	11.0	7.0	17.0	19.0	23.0	25.0	24.5
9	16.5	14.0	3.0	5.0	4.0	9.5	7.0	17.0	21.0	23.0	25.0	22.5
10	14.5	14.5	5.5	4.5	5.5	8.0	8.5	17.5	21.0	24.5	25.5	22.5
11	13.0	16.0	4.0	4.5	5.0	8.0	12.0	17.0	20.0	24.0	26.0	26.0
12	14.5	10.5	2.0	---	4.0	9.0	14.0	19.5	21.0	24.5	26.5	22.0
13	18.5	7.0	1.5	---	4.0	11.0	13.0	20.5	21.0	25.0	26.0	20.5
14	13.0	6.0	3.0	---	6.0	13.0	8.5	18.5	21.0	24.0	26.5	19.0
15	13.5	4.0	4.0	4.0	9.0	15.0	9.5	14.0	18.5	23.5	26.0	21.0
16	14.0	5.0	4.0	3.0	7.5	12.5	11.0	14.0	21.0	23.5	26.0	21.5
17	15.0	7.0	4.0	3.5	7.5	7.5	12.0	15.5	21.5	24.5	26.0	22.5
18	15.5	9.0	5.5	2.0	7.0	8.0	13.0	15.0	22.0	25.0	26.5	23.0
19	16.5	9.5	4.5	2.5	8.5	8.0	13.5	16.0	23.0	25.0	24.5	22.0
20	11.0	10.5	4.0	2.0	10.5	5.0	12.0	18.5	24.0	25.5	24.0	18.5
21	11.5	8.5	4.0	2.0	9.0	4.5	13.5	17.5	24.0	24.5	25.0	12.0
22	10.5	11.0	4.0	2.0	8.5	4.0	14.5	16.0	25.0	24.5	25.0	12.5
23	10.5	9.0	6.0	1.5	9.0	6.0	15.0	18.0	24.5	25.5	25.0	13.0
24	11.0	5.5	8.0	3.0	10.0	7.0	14.0	19.0	24.0	25.5	25.0	15.0
25	11.0	5.0	4.5	3.0	9.0	8.0	15.0	20.0	24.0	25.5	25.0	17.0
26	11.5	5.0	2.5	4.0	8.0	9.0	14.5	21.0	24.0	26.5	25.0	18.5
27	12.5	4.5	3.0	3.0	8.0	6.0	18.0	22.0	23.0	25.5	25.0	19.5
28	14.0	4.0	2.0	3.0	8.0	7.0	19.0	22.5	23.0	25.0	24.5	20.0
29	11.0	4.5	1.0	4.0	---	9.0	18.0	22.5	21.0	25.5	25.0	20.0
30	11.0	5.5	1.0	6.0	---	9.0	20.0	20.0	22.5	26.0	25.0	19.0
31	14.0	---	1.5	7.0	---	9.0	---	16.0	---	26.5	25.5	---
MEAN	15.0	8.5	4.5	3.0	5.5	9.5	12.0	18.0	21.5	24.5	25.5	20.5
WTR YR 1983		MEAN	14.0	MAX	26.5	MIN	.5					

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK

LOCATION.--Lat 34°38'04", long 99°05'47", in NW 1/4 NE 1/4 sec.21, T.2 N., R.18 W., Tillman County, Hydrologic Unit 11120303, near left bank on downstream side of pier of bridge on old U.S. Highway 62, 2.5 mi (4.0 km) east of Headrick, 12.9 mi (20.8 km) upstream from Otter Creek, and at mile 33.0 (53.1 km).

DRAINAGE AREA.--4,244 mi² (10,992 km²), of which 399 mi² (1,033 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1905 to March 1908, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to July 1905, published as "near Snyder".

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1905-07.

GAGE.--Water-stage recorder. Datum of gage is 1,294.83 ft (394.664 m) National Geodetic Vertical Datum of 1929. Prior to July 18, 1905, nonrecording gage at site 0.2 mi (0.3 km) downstream at different datum. July 18, 1905, to Mar. 30, 1908, nonrecording gage at Navaajo damsite 10.4 mi (16.7 km) upstream at different datum. Oct. 1, 1937, to Jan. 29, 1969, water-stage recorder at present site at datum 5.0 ft (1.52 m) higher.

REMARKS.--Records fair. Flow regulated since December 1943 by storage and diversion at Lake Altus, 39.5 mi (63.6 km) above station (station 07302500). Diversions for irrigation of about 48,000 acres (194 km²) above station; some return flow may re-enter at Stinking Creek, 16 mi (26 km) below station.

AVERAGE DISCHARGE.--(Prior to regulation by Lake Altus) 8 years (1906-07, 1938-43), 455 ft³/s (12.89 m³/s), 329,600 acre-ft/yr (406 hm³/yr); (since regulation by Lake Altus) 38 years (water years 1945-82), 266 ft³/s (7.533 m³/s), 192,700 acre-ft/yr (238 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s (991 m³/s) May 28, 1977, gage height, 17.26 ft (5.261 m) present datum; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 21.1 ft (6.43 m) present datum occurred sometime prior to 1927, from information by State Highway Department.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,900 ft³/s (309 m³/s) May 19, gage height, 13.87 ft (4.228 m); minimum daily, 3.3 ft³/s (.093 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	54	45	27	805	48	56	57	1470	230	123	41
2	3.7	116	55	27	280	43	56	54	1030	420	128	40
3	3.3	404	50	25	168	40	50	45	505	400	99	39
4	3.7	205	41	26	168	38	49	52	375	384	99	38
5	4.1	174	40	27	167	36	44	47	316	365	97	37
6	4.1	63	36	24	156	35	42	58	281	334	97	35
7	9.2	83	37	13	130	36	42	758	257	302	99	33
8	7.3	85	36	8.8	116	35	39	400	240	964	88	33
9	7.6	80	34	8.0	119	36	38	284	228	338	85	32
10	7.6	66	33	8.0	119	35	41	187	215	197	85	32
11	14	64	30	8.4	121	34	43	142	358	272	83	31
12	283	61	30	12	123	34	38	156	3980	248	72	31
13	578	57	31	14	112	32	36	2130	5070	223	70	32
14	235	50	31	24	81	92	37	3480	1530	201	69	31
15	249	49	30	19	67	427	35	949	799	201	57	44
16	902	48	29	19	60	170	31	562	568	194	57	63
17	767	44	28	25	50	107	29	2330	461	168	55	77
18	2530	41	28	26	52	88	30	7770	781	156	46	52
19	288	38	25	28	52	60	29	8120	2580	156	44	44
20	102	38	34	28	49	40	25	3380	3840	152	44	42
21	136	37	31	35	46	39	24	4360	1650	136	37	39
22	116	37	28	29	44	33	25	1890	2370	132	44	38
23	89	37	29	32	56	46	25	666	1300	121	44	38
24	75	36	30	32	60	54	25	459	2550	118	44	36
25	65	35	31	30	42	58	24	339	5530	116	48	36
26	60	34	31	31	66	48	23	277	3260	114	48	35
27	55	34	28	27	63	56	23	265	1220	109	45	34
28	55	34	27	25	56	64	23	1490	1050	116	45	32
29	55	36	26	35	---	63	22	3500	865	100	45	31
30	56	41	28	70	---	60	46	1530	654	107	44	30
31	54	---	26	737	---	57	---	799	---	130	42	---
TOTAL	6818.3	2181	1018	1480.2	3428	2044	1050	46536	45333	7204	2083	1156
MEAN	220	72.7	32.8	47.7	122	65.9	35.0	1501	1511	232	67.2	38.5
MAX	2530	404	55	737	805	427	56	8120	5530	964	128	77
MIN	3.3	34	25	8.0	42	32	22	45	215	100	37	30
AC-FT	13520	4330	2020	2940	6800	4050	2080	92300	89920	14290	4130	2290
CAL YR 1981	TOTAL	32119.5		MEAN	88.0	MAX	3460	MIN	3.0	AC-FT	63710	
WTR YR 1982	TOTAL	120331.5		MEAN	330	MAX	8120	MIN	3.3	AC-FT	238700	

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-52, 1954-63, 1968 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1959 to September 1963, July 1968 to current year.

WATER TEMPERATURE: November 1959 to September 1963, July 1968 to current year.

INSTRUMENTATION.--Water-quality monitor from August 1959-September 1981.

REMARKS.--In addition to water quality monitor, samples were collected by a local observer on a daily basis.

Partial analyses were made on those samples at or about the 5th, 15th, and 25th of each month. An additional sample was collected bi-monthly and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field. Mean daily sulfate, chloride, and dissolved solids concentrations, and loads for those parameters were calculated from specific conductance values.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 23,300 micromhos June 8, 1974; minimum daily, 325 micromhos May 30, 1980.

WATER TEMPERATURE: Maximum daily, 38.0°C July 19, 1969, Aug. 4, 1977; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 15,700 micromhos May 5; minimum daily, 462 micromhos Oct. 13.

WATER TEMPERATURE: Maximum daily, 35.0°C July 23; minimum daily, 0.0°C on several days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT												
05...	0930	80020	4.1	8050	7.9	21.0	--	--	--	--	--	980
15...	0827	80020	56	2810	8.0	20.0	--	--	--	--	--	440
20...	1515	80020	102	--	7.6	21.0	500	8.1	98	210	200	520
25...	0850	80020	64	5120	8.2	11.0	--	--	--	--	--	730
NOV												
05...	0816	80020	174	2800	8.0	11.0	--	--	--	--	--	580
15...	0907	80020	49	8610	8.3	12.0	--	--	--	--	--	1000
25...	0823	80020	35	9910	7.7	10.0	--	--	--	--	--	1200
DEC												
05...	0905	80020	40	12100	8.4	5.0	--	--	--	--	--	1300
15...	0844	80020	30	11200	8.3	5.0	--	--	--	--	--	1300
25...	0900	80020	31	11200	8.4	2.0	--	--	--	--	--	1300
28...	1430	80020	27	10300	8.4	6.0	1.4	11.1	97	K20	K28	1300
JAN												
05...	0942	80020	27	11700	8.3	.5	--	--	--	--	--	1300
15...	0930	80020	27	11500	8.3	.0	--	--	--	--	--	1300
25...	1000	80020	29	12700	8.3	5.0	--	--	--	--	--	1400
FEB												
05...	0953	80020	168	3940	8.1	.0	--	--	--	--	--	590
09...	1520	80020	208	4580	8.0	1.0	230	11.8	90	K170	260	660
15...	0947	80020	66	7800	8.3	7.0	--	--	--	--	--	920
25...	0900	80020	33	7340	8.2	5.0	--	--	--	--	--	990
MAR												
05...	0915	80020	36	10200	7.9	4.0	--	--	--	--	--	1100
16...	0900	80020	225	3450	7.9	12.0	--	--	--	--	--	440
25...	0800	80020	61	9070	8.1	9.0	--	--	--	--	--	1100
APR												
05...	0900	80020	42	11400	8.3	12.0	--	--	--	--	--	1300
15...	0707	80020	31	11400	8.2	20.0	--	--	--	--	--	1300
25...	0841	80020	23	11200	8.0	15.0	--	--	--	--	--	1300
28...	0830	80020	22	10600	8.0	17.5	2.1	10.2	117	80	250	1200
MAY												
05...	0814	80020	45	15700	7.4	17.0	--	--	--	--	--	1700
15...	0743	80020	880	1730	7.7	20.0	--	--	--	--	--	520
18...	1710	1028	8890	1210	6.4	20.0	--	7.7	91	--	--	--
25...	0852	80020	347	3990	7.6	22.0	--	--	--	--	--	880
JUN												
05...	0918	80020	320	2980	8.1	17.0	--	--	--	--	--	760
10...	0900	80020	216	4490	8.0	22.0	130	7.2	89	190	--	1000
15...	0841	80020	836	1810	7.8	24.0	--	--	--	--	--	650

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
OCT												
05...	860	250	86	1400	75	20	9.6	120	790	2400	--	--
15...	359	140	22	420	67	9	8.8	82	340	660	--	--
20...	438	170	22	310	56	6	7.2	78	420	500	.30	6.7
25...	606	220	45	860	72	14	8.5	130	540	1400	--	--
NOV												
05...	495	190	26	370	58	7	9.8	87	510	600	--	--
15...	839	280	75	1500	76	21	10	170	690	2600	--	--
25...	977	310	95	1800	77	24	11	190	810	3000	--	--
DEC												
05...	1090	330	110	2300	80	29	11	190	830	4000	--	--
15...	1040	320	110	2100	78	27	9.6	210	830	3600	--	--
25...	1030	320	110	2100	78	27	9.9	220	830	3600	--	--
28...	1080	330	110	2100	78	26	9.9	200	850	3800	.40	1.1
JAN												
05...	1060	310	120	2200	79	28	10	210	860	3800	--	--
15...	1090	330	120	2100	77	26	10	230	890	3600	--	--
25...	1140	330	130	2500	80	30	10	220	1000	4000	--	--
FEB												
05...	460	170	40	200	42	4	8.9	130	430	1100	--	--
09...	521	180	51	910	75	16	9.1	140	480	1500	.30	10
15...	701	230	84	1400	77	21	9.2	220	700	2300	--	--
25...	772	240	95	1300	74	19	8.5	220	660	2200	--	--
MAR												
05...	944	260	110	1900	79	26	11	160	840	3100	--	--
16...	336	110	39	560	73	12	7.5	100	280	950	--	--
25...	869	250	110	1700	77	23	11	210	840	2700	--	--
APR												
05...	1080	310	120	2200	79	28	11	190	940	3600	--	--
15...	1100	320	120	2100	78	26	11	190	940	3500	--	--
25...	1100	320	120	2100	78	26	11	190	940	3500	--	--
28...	1040	300	120	2000	78	25	10	200	850	3000	.40	<1.9
MAY												
05...	1560	440	150	3100	80	34	15	163	1300	5300	--	--
15...	--	170	23	180	43	4	8.4	--	430	260	--	--
18...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	270	50	590	59	9	8.4	--	650	950	--	--
JUN												
05...	--	210	58	400	53	7	7.9	--	500	580	--	--
10...	779	270	80	660	59	9	8.1	226	640	1100	.40	14
15...	--	210	31	150	33	3	9.0	--	530	230	--	--

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)
OCT											
05...	5080	--	6.9	--	--	--	--	--	--	--	--
15...	1680	--	2.3	--	--	--	--	--	--	--	--
20...	1490	1500	2.0	.350	.070	.09	.96	.130	.40	.080	.050
25...	3160	--	4.3	--	--	--	--	--	--	--	--
NOV											
05...	1910	--	2.6	--	--	--	--	--	--	--	--
15...	5360	--	7.3	--	--	--	--	--	--	--	--
25...	6240	--	8.5	--	--	--	--	--	--	--	--
DEC											
05...	7580	--	10.3	--	--	--	--	--	--	--	--
15...	7060	--	9.6	--	--	--	--	--	--	--	--
25...	7060	--	9.6	--	--	--	--	--	--	--	--
28...	7260	7300	9.9	.120	.110	.14	.70	.280	.86	.260	.230
JAN											
05...	7650	--	10.4	--	--	--	--	--	--	--	--
15...	7280	--	9.9	--	--	--	--	--	--	--	--
25...	8150	--	11.1	--	--	--	--	--	--	--	--
FEB											
05...	2400	--	3.3	--	--	--	--	--	--	--	--
09...	3250	3200	4.4	.670	.190	.24	1.1	.170	.52	.120	.100
15...	4890	--	6.7	--	--	--	--	--	--	--	--
25...	4580	--	6.2	--	--	--	--	--	--	--	--
MAR											
05...	6490	--	8.8	--	--	--	--	--	--	--	--
16...	2010	--	2.7	--	--	--	--	--	--	--	--
25...	5760	--	7.8	--	--	--	--	--	--	--	--
APR											
05...	7100	--	9.7	--	--	--	--	--	--	--	--
15...	6980	--	9.5	--	--	--	--	--	--	--	--
25...	7110	--	9.7	--	--	--	--	--	--	--	--
28...	6580	--	8.9	<.100	<.060	.08	1.0	.090	.28	.040	.040
MAY											
05...	10400	--	14.1	--	--	--	--	--	--	--	--
15...	1190	--	1.6	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
25...	2660	--	3.6	--	--	--	--	--	--	--	--
JUN											
05...	1950	--	2.7	--	--	--	--	--	--	--	--
10...	2940	2900	4.0	1.20	.080	.10	1.3	.160	.49	.110	.050
15...	1280	--	1.7	--	--	--	--	--	--	--	--

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

[illegible]

RED RIVER BASIN

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8330	10500	13300	11300	8230	10000	4080	7520	2760	1680	6160	1310
2	8240	10600	12500	10600	9320	9990	4580	8680	4460	2380	5980	1280
3	8310	10700	10700	10500	7010	9960	5220	7090	3840	3050	5810	1280
4	8270	10500	9640	10300	10100	9620	5720	6160	5080	3610	5730	1280
5	8370	10300	10200	10400	7460	9540	5980	6080	5850	6420	5490	1310
6	8390	10700	10600	---	7190	9880	6240	5430	5370	5460	5290	1300
7	8540	11000	10700	10700	8220	14300	7100	5800	6470	4110	6270	1320
8	8460	11000	11000	10700	9150	10500	6480	6540	6940	4500	7530	1310
9	8360	10900	11400	10500	9240	7620	7120	5770	9440	4880	6560	1310
10	8390	10800	11200	10400	9960	11600	7150	5400	13100	5240	7150	1320
11	8940	10300	10900	---	9600	8560	7630	5210	5650	5300	7660	1300
12	6650	10200	11100	---	9140	8000	7790	5200	4020	5560	7000	1300
13	7970	10900	11000	---	9200	8620	8050	8860	2700	5470	5460	1570
14	11900	11500	11200	---	9480	9190	8300	5320	2200	5400	4030	7070
15	15200	11900	11300	10900	9860	9560	8340	7550	1810	5560	3960	3970
16	12400	12200	11300	10700	10000	8120	8300	4610	2770	5540	2310	1570
17	9720	12400	11100	10600	10200	8270	8230	2530	2220	5700	2030	6970
18	9190	12200	11100	10300	10000	10600	8310	3900	3330	5890	1910	1550
19	9330	12000	11200	10100	9860	8340	8170	4150	4140	5970	1860	1450
20	9890	11800	11200	9830	9970	10300	8260	4750	4750	5960	2160	1340
21	9900	11700	11000	10400	9450	9120	7750	4870	5280	5930	2010	7760
22	9800	11000	10800	9850	9400	8740	7810	3090	5920	5920	1610	1280
23	9990	11400	10800	10600	9900	9110	8130	4800	6310	6190	1690	1300
24	10200	11700	10800	10900	9780	10000	8310	1190	6020	6150	1640	1310
25	10200	11200	10700	11400	9460	9920	8140	1300	6550	6220	1530	1250
26	10300	11000	10100	11000	10000	6420	9160	3600	4820	6270	1520	1310
27	10300	9800	10700	11100	9740	3010	9940	3780	6230	6260	1460	1290
28	10200	10400	10100	11100	9950	1090	9330	6730	2670	6260	1460	1250
29	10100	11000	10800	10800	---	1350	9060	2900	663	---	1300	1250
30	10400	11300	11000	10700	---	2020	7330	2430	1440	6370	1470	1230
31	10400	---	11100	10300	---	3230	---	1050	---	6250	1370	---
MEAN	9570	11100	11000	10600	9320	8280	7530	4910	4760	5320	3790	2010
WTR YR 1983		MEAN	7300	MAX	15200	MIN	663					

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	16.0	12.0	1.0	2.0	11.0	11.0	21.0	18.0	25.0	33.0	23.0
2	27.0	14.0	12.0	.0	.0	12.0	5.0	15.0	18.0	25.0	26.0	28.0
3	19.0	7.0	8.0	1.0	.0	16.0	7.0	16.0	22.0	24.0	29.0	24.0
4	20.0	7.0	7.0	1.0	1.0	15.0	10.0	17.0	23.0	26.0	27.0	23.0
5	22.0	7.0	7.0	.0	2.0	12.0	8.0	17.0	22.0	25.0	31.0	23.0
6	20.0	5.0	5.0	---	2.0	10.0	5.0	18.0	17.0	24.0	28.0	22.0
7	22.0	15.0	5.0	.5	.0	11.0	6.0	20.0	17.0	29.0	27.0	24.0
8	20.0	14.0	4.0	2.0	3.0	10.0	6.0	17.0	17.0	29.0	32.0	23.0
9	13.0	17.0	2.0	6.0	5.0	8.0	4.0	16.0	18.0	27.0	32.0	23.0
10	12.0	15.0	4.0	5.0	5.0	8.0	5.0	16.0	17.0	28.0	34.0	22.0
11	12.0	22.0	3.0	---	5.0	7.0	10.0	16.0	24.0	23.0	32.0	24.0
12	15.0	8.0	1.0	---	3.0	12.0	12.0	21.0	22.0	32.0	36.0	22.0
13	16.0	5.0	.0	---	3.0	10.0	12.0	23.0	21.0	24.0	35.0	21.0
14	15.0	4.0	4.0	---	6.0	13.0	7.0	17.0	23.0	22.0	30.0	21.0
15	22.0	5.0	3.0	3.0	7.0	15.0	8.0	17.0	23.0	23.0	32.0	26.0
16	---	6.0	5.0	3.0	7.0	9.0	10.0	17.0	23.0	29.0	36.0	27.0
17	17.0	8.0	5.0	2.0	8.0	6.0	11.0	16.0	28.0	24.0	33.0	23.0
18	15.0	10.0	4.0	3.0	8.0	6.0	13.0	20.0	25.0	28.0	30.0	23.0
19	16.0	12.0	5.0	3.0	8.0	9.0	10.0	18.0	24.0	29.0	23.0	23.0
20	8.0	10.0	3.0	2.0	9.0	4.0	7.0	27.0	24.0	26.0	28.0	21.0
21	11.0	8.0	5.0	2.0	8.0	8.0	10.0	17.0	24.0	26.0	26.0	17.0
22	12.0	14.0	4.0	3.0	8.0	6.0	16.0	18.0	25.0	23.0	32.0	14.0
23	12.0	5.0	8.0	2.0	9.0	6.0	14.0	18.0	26.0	23.0	26.0	13.0
24	11.0	3.0	4.0	3.0	10.0	7.0	12.0	20.0	22.0	24.0	26.0	18.0
25	---	5.0	1.0	2.0	9.0	8.0	17.0	23.0	27.0	27.0	26.0	20.0
26	13.0	5.0	1.0	4.0	9.0	10.0	19.0	22.0	24.0	30.0	25.0	19.0
27	13.0	3.0	8.0	2.0	7.0	8.0	18.0	23.0	24.0	34.0	27.0	22.0
28	13.0	2.0	1.0	3.0	6.0	8.0	17.0	23.0	24.0	23.0	23.0	22.0
29	13.0	4.0	.0	5.0	---	9.0	7.0	24.0	22.0	---	29.0	25.0
30	13.0	8.0	.0	6.0	---	9.0	7.0	22.0	23.0	31.0	23.0	22.0
31	14.0	---	.0	5.0	---	12.0	---	17.0	---	26.0	25.0	---
MEAN	15.5	9.0	4.0	2.5	5.5	9.5	10.0	19.0	22.0	26.5	29.0	22.0
WTR YR 1983		MEAN	15.0	MAX	36.0	MIN	.0					

RED RIVER BASIN

07305500 WEST OTTER CREEK AT SNYDER LAKE, NEAR MOUNTAIN PARK, OK

LOCATION.--Lat 34°44'02", long 98°59'10", in SE 1/4 NE 1/4 sec.16, T.3 N., R.17 W., Kiowa County, Hydrologic Unit 11120303, near east end of Snyder Dam, 0.8 mi (1.3 km) upstream from small tributary, 3 mi (5 km) northwest of Mountain Park, and at mile 26.0 (41.8km).

DRAINAGE AREA.--132 mi² (342 km²).

PERIOD OF RECORD.--April 1903 to March 1908, October 1951 to September 1971, July 1972 to current year. Published as Otter Creek near Mountain Park 1903-8 and as Otter Creek at Snyder Lake, near Mountain Park 1951-60. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1731: 1960 (M). WSP 1920: 1959-60. WRD OK-78-2: 1977.

GAGE.--Water-stage recorder and broad-crested masonry spillway. Datum of gage is 1,361.06 ft (414.851 m), National Geodetic Vertical Datum of 1929. April 1903 to March 1908, nonrecording gage at site 1.8 mi (2.9 km) downstream at different datum. October 1951 to September 1971 at intake tower at same site and datum. July 1972 to August 1976, 700 ft (213.4 m) downstream at datum 1,344.00 ft (409.651 m).

REMARKS.--Records fair. The city of Snyder diverted about 130 acre-ft (160,000 m³) annually prior to October 1958 and none thereafter. Flow completely regulated since June 1975 by Tom Steed Reservoir.

AVERAGE DISCHARGE.--(Prior to regulation by Tom Steed Reservoir) 27 years (water years 1904-7, 1911, 1973-75) 23.0 ft³/s (0.651 m³/s), 16,660 acre-ft/yr (20.5 hm³/yr); (since regulation by Tom Steed Reservoir) 7 years (water years 1976-82) 3.93 ft³/s (0.111 m³/s) 2,850 acre-ft/yr (3.51 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,200 ft³/s (402 m³/s) June 6, 1953, gage height, 19.50 ft, (5.944 m), from floodmarks, from rating curve extended above 1,600 ft³/s (45.3 m³/s) on basis of contracted-opening and flow-over-dam measurements of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 238 ft³/s (6.74 m³/s) July 12, 13, gage height, 12.79 ft (3.898 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.79	1.4	1.1	.20	.00	.00	1.1	8.1	.51	225	2.6	1.0
2	.64	6.8	2.2	3.5	.04	.00	3.4	7.1	1.3	225	3.2	.71
3	2.6	9.2	2.2	6.1	.00	.00	1.6	8.3	.43	209	1.5	.65
4	3.5	11	1.1	8.9	.00	.00	3.5	7.1	.07	209	1.6	.88
5	3.5	10	3.5	13	.00	.00	1.8	11	1.4	151	2.2	.63
6	1.2	6.6	5.0	8.9	.00	.00	.00	4.6	1.1	64	2.1	.91
7	1.2	5.9	10	.00	.00	.00	.00	3.6	1.5	7.9	.34	.72
8	2.2	4.5	7.1	.00	.00	.00	.00	5.1	1.4	6.8	.29	.64
9	2.4	.00	7.1	.00	.00	.00	.00	5.3	2.0	72	1.4	.64
10	3.5	.00	13	.00	.04	.00	.00	5.0	1.1	195	1.6	.66
11	8.2	.00	13	.06	.15	.00	.21	5.4	15	226	1.6	.60
12	4.2	.09	10	.36	.20	.00	.00	11	13	224	.72	.56
13	3.5	1.0	16	1.4	.63	.00	.00	11	4.9	226	1.1	.65
14	.02	.50	7.1	4.9	2.2	.45	.00	10	3.5	117	.71	.71
15	43	.20	10	15	2.8	5.5	.00	5.1	2.0	7.4	.50	.57
16	38	.08	13	15	4.8	9.5	.00	7.2	.36	6.7	.25	.68
17	36	.35	.00	19	5.0	15	.00	22	7.7	4.3	.40	1.3
18	13	.39	.00	30	5.6	17	.03	12	18	4.2	.05	.00
19	12	.00	3.5	37	4.9	19	.00	6.4	23	3.7	.45	.21
20	29	.00	10	35	5.5	11	.00	5.7	13	6.0	.35	.09
21	22	.00	16	35	6.7	2.3	.00	3.8	16	4.0	.48	.09
22	.47	.00	2.2	33	8.3	.09	.00	2.9	8.3	2.5	.44	.30
23	3.4	.04	.10	12	5.8	.33	.00	7.8	47	2.5	.77	.39
24	17	.00	1.4	16	1.2	1.1	.00	6.4	38	2.7	.78	.32
25	14	1.1	3.6	7.8	.00	.33	.00	2.7	9.9	2.5	.03	.32
26	5.1	.00	8.9	5.1	.00	.00	.50	3.5	7.3	2.9	.62	.33
27	16	.00	14	8.7	.00	.00	3.9	6.9	46	2.4	.80	.18
28	23	.50	.21	8.5	.00	.00	7.4	17	112	2.5	1.1	.17
29	20	1.1	.11	17	---	.00	2.7	5.1	191	2.2	1.2	.13
30	19	5.0	.66	7.5	---	1.3	12	3.5	226	3.4	1.2	.15
31	12	---	1.2	.00	---	1.0	---	2.3	---	2.2	1.3	---
TOTAL	360.42	65.75	183.28	348.92	53.86	83.90	38.14	222.9	812.77	2219.8	31.68	15.19
MEAN	11.6	2.19	5.91	11.3	1.92	2.71	1.27	7.19	27.1	71.6	1.02	.51
MAX	43	11	16	37	8.3	19	12	22	226	226	3.2	1.3
MIN	.02	.00	.00	.00	.00	.00	.00	2.3	.07	2.2	.03	.00
AC-FT	715	130	364	692	107	166	76	442	1610	4400	63	30
CAL YR 1981	TOTAL	684.43	MEAN	1.88	MAX	43	MIN	.00	AC-FT	1360		
WTR YR 1982	TOTAL	4436.61	MEAN	12.2	MAX	226	MIN	.00	AC-FT	8800		

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Okla., Hydrologic Unit 11130102, on left bank at downstream side of bridge on U.S. Highways 277 and 281, 2.5 mi (4.0 km) northeast of Burkburnett, and at mile 933 (1,501 km).

DRAINAGE AREA.--20,570 mi² (53,280 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

PERIOD OF RECORD.--July 1924 to August 1925 (monthly discharge only), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft (290.343 m) National Geodetic Vertical Datum of 1929. July 11, 1924, to Aug. 31, 1925, nonrecording gage at site 1,000 ft (305 m) downstream at same datum. Dec. 16, 1959, to Jan. 11, 1960, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records fair. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--22 years (water years 1961-82), 866 ft³/s (24.53 m³/s), 627,400 acre-ft/yr (774 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,800 ft³/s (1,780 m³/s) Oct. 19, 1965, gage height, 11.46 ft (3.493 m); maximum gage height, 12.64 ft (3.853 m) July 27, 1975; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 3, 1957, reached a stage of 13.54 ft (4.127 m), from levels to floodmarks. According to local residents, higher stages occurred in 1891 and June 1941.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
May 19	2000	11,800 334	8.62 2.627	June 21	0300	11,900 337	8.75 2.667
May 24	1800	9,980 283	8.33 2.539	June 27	1000	9,920 281	8.77 2.673
May 29	1000	*13,000 368	8.72 2.658	Aug. 1	1300	9,860 279	8.76 2.670
June 13	0900	12,200 346	8.79 2.679				

Minimum daily discharge, 18 ft³/s (0.51 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	61	100	91	197	162	129	46	3630	1970	7290	239
2	29	56	97	92	315	154	126	46	3240	1640	3810	184
3	24	57	106	96	618	146	116	47	3820	1480	2610	155
4	19	57	119	95	404	143	107	46	2140	1330	1910	131
5	18	124	132	90	290	139	98	163	1770	991	1300	118
6	22	305	133	86	190	139	95	530	1170	890	991	106
7	58	178	133	80	169	143	90	1150	903	854	752	101
8	61	139	121	79	162	139	87	639	878	878	592	95
9	51	143	108	77	186	139	82	404	699	900	583	95
10	39	126	102	74	169	136	82	538	583	1600	965	95
11	33	90	94	67	136	136	84	505	710	1560	1430	90
12	90	72	93	72	150	136	87	505	2280	1070	785	84
13	1220	101	97	82	232	143	87	2900	11400	890	538	93
14	1600	122	101	87	217	184	79	4380	7810	854	419	143
15	1730	126	106	92	204	557	74	1680	4690	785	350	313
16	1220	126	113	98	190	916	72	2060	3250	710	315	2270
17	1500	126	110	104	182	639	67	4260	2420	620	294	2440
18	3990	119	109	110	169	488	63	7460	2630	464	276	1700
19	2020	116	110	107	169	390	61	10100	3810	370	265	1000
20	1770	117	110	107	165	307	57	8650	6880	325	252	554
21	1120	113	117	113	165	247	51	7020	8990	301	243	390
22	636	107	107	116	162	190	51	7360	7140	279	222	301
23	364	103	104	116	158	174	51	6260	5690	257	214	237
24	297	101	103	113	146	136	49	9160	5990	247	225	195
25	222	96	102	113	146	119	47	6120	4460	237	196	174
26	166	90	96	113	165	107	44	3200	6120	325	187	150
27	130	83	96	113	178	104	49	2740	7060	251	174	119
28	114	85	93	107	174	104	53	2560	5960	248	173	116
29	102	86	93	104	---	104	51	11000	4140	274	160	104
30	89	107	100	101	---	119	46	9440	2750	301	215	84
31	80	---	96	104	---	129	---	5600	---	574	500	---
TOTAL	18850	3332	3301	2999	5808	6869	2235	116569	123013	23475	28236	11876
MEAN	608	111	106	96.7	207	222	74.5	3760	4100	757	911	396
MAX	3990	305	133	116	618	916	129	11000	11400	1970	7290	2440
MIN	18	56	93	67	136	104	44	46	583	237	160	84
AC-FT	37390	6610	6550	5950	11520	13620	4430	231200	244000	46560	56010	23560
CAL YR 1981	TOTAL	173842	MEAN	476	MAX	19300	MIN	14	AC-FT	344800		
WTR YR 1982	TOTAL	346563	MEAN	949	MAX	11400	MIN	18	AC-FT	687400		

RED RIVER BASIN

07311000 EAST CACHE CREEK NEAR WALTERS, OK

LOCATION.--Lat 34°21'44", long 98°16'56", on south line of SE 1/4 SE 1/4 sec.19, T.2 S., R.10 W., Cotton County, Hydrologic Unit 11130202, at right bank on downstream side of bridge on State Highway 53, 1.8 mi (2.9 km) east of Walters, 12.2 mi (19.6 km) upstream from West Cache Creek, and at mile 19.7 (31.7 km).

DRAINAGE AREA.--675 mi² (1,748 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1938 to December 1963; October 1969 to current year. Prior to October 1969, published as Cache Creek near Walters.

GAGE.--Water-stage recorder. Datum of gage is 938.2 ft (285.963 m) Oklahoma State Highway Department datum. Prior to Jan. 8, 1939, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow partly regulated by Lake Lawtonka, capacity 42,300 acre-ft (52.2 hm³) on Medicine Creek prior to late 1953, and 63,000 acre-ft (77.7 hm³) thereafter, by Lake Thomas, capacity, 8,300 acre-ft (10.2 hm³) on Little Medicine Creek, and since March 1961 by Lake Ellsworth, capacity, 94,500 acre-ft (117 hm³) on East Cache Creek. Low flow sustained by sewage from cities of Lawton and Walters.

AVERAGE DISCHARGE.--38 years, 163 ft³/s (4.616 m³/s), 118,100 acre-ft/yr (146 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,200 ft³/s (799 m³/s) May 18, 1951, gage height, 29.72 ft (9.059 m); no flow at times in 1939-40.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1906 reached a stage about the same as on May 18, 1951, and on May 17, 1947, gage height, 29.62 ft (9.028 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,270 ft³/s (121 m³/s) May 26, gage height, 27.12 ft (8.266 m); minimum daily discharge, 9.5 ft³/s (0.27 m³/s) Oct. 1

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	47	51	29	250	28	72	71	2630	382	190	175
2	17	58	98	31	90	27	66	94	2190	311	165	172
3	18	46	58	26	46	26	60	47	1140	250	139	163
4	19	42	44	34	39	25	55	36	870	214	117	78
5	58	41	43	33	40	24	52	31	711	185	100	39
6	29	40	41	28	41	23	38	684	571	213	86	35
7	23	42	40	27	41	23	37	1980	482	423	72	38
8	102	57	38	27	41	23	37	379	446	650	68	29
9	114	78	37	25	42	24	36	162	640	458	65	32
10	31	54	35	30	43	25	36	87	586	396	63	31
11	27	37	34	30	42	28	44	63	598	381	60	31
12	638	35	33	25	42	54	58	630	1090	374	59	27
13	1480	34	32	25	41	120	45	1200	1060	410	48	26
14	790	34	37	25	41	140	42	460	938	872	44	27
15	299	33	47	25	40	72	40	230	767	492	44	29
16	1770	33	46	42	40	40	37	117	925	420	39	35
17	1940	36	44	39	39	34	31	200	925	350	40	31
18	402	36	38	29	39	31	25	1000	690	275	39	27
19	163	41	31	30	38	31	22	842	1030	223	40	26
20	103	37	45	33	37	32	21	595	1160	178	41	27
21	80	33	38	32	36	36	28	450	1230	145	47	27
22	71	47	39	29	34	62	25	3000	2240	118	58	26
23	62	50	32	28	33	160	22	3500	1220	95	60	26
24	59	44	33	32	32	440	19	3600	816	77	64	26
25	54	39	33	33	32	436	17	3800	717	61	66	26
26	55	40	33	34	32	442	22	4180	865	50	122	26
27	53	44	33	33	31	220	30	3440	1070	41	167	27
28	51	42	30	33	30	150	30	2930	795	33	170	27
29	49	36	30	36	---	110	32	3370	603	30	192	27
30	47	43	26	58	---	92	31	3480	474	28	208	27
31	46	---	27	92	---	80	---	2610	---	50	177	---
TOTAL	8659.5	1279	1226	1033	1332	3058	1110	43268	29479	8185	2850	1343
MEAN	279	42.6	39.5	33.3	47.6	98.6	37.0	1396	983	264	91.9	44.8
MAX	1940	78	98	92	250	442	72	4180	2630	872	208	175
MIN	9.5	33	26	25	30	23	17	31	446	28	39	26
AC-FT	17180	2540	2430	2050	2640	6070	2200	85820	58470	16230	5650	2660
CAL YR 1981	TOTAL	27417.5	MEAN	75.1	MAX	1940	MIN	9.5	AC-FT	54380		
WTR YR 1982	TOTAL	102822.5	MEAN	282	MAX	4180	MIN	9.5	AC-FT	203900		

RED RIVER BASIN

07311000 EAST CACHE CREEK NEAR WALTERS, OK

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947, 1948, 1951-55, 1958-63, 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1951 to September 1953, October 1969 to March 1977.

WATER TEMPERATURE: October 1951 to September 1953, October 1969 to March 1977.

REMARKS.--Samples were collected at times during the year and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT												
07...	0900	80020	23	482	7.3	17.5	--	6.2	67	130	21	39
19...	1545	80020	146	340	7.5	19.5	--	7.6	85	130	7	39
NOV												
17...	0925	80020	33	729	7.3	13.5	15	8.4	84	230	36	69
23...	1400	80020	50	716	7.7	--	--	--	--	--	--	70
DEC												
16...	1515	80020	48	767	7.8	9.5	--	6.5	60	240	27	70
JAN												
11...	1300	80020	40	752	7.7	2.5	2.9	10.9	85	220	34	68
FEB												
17...	1400	80020	39	698	7.2	8.0	--	7.7	68	200	10	60
MAR												
24...	1115	80020	440	482	6.8	13.0	--	8.3	82	180	47	51
MAY												
21...	1800	80020	450	370	7.5	26.5	--	6.3	80	120	0	37
JUN												
17...	0920	80020	895	382	8.0	23.0	160	6.2	80	150	28	46
AUG												
13...	0815	80020	44	758	7.5	29.0	31	4.8	33	260	--	76

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)
OCT											
07...	8.1	38	37	2	9.9	110	55	36	280	.38	17
19...	7.2	25	29	1	6.4	120	26	17	233	.32	92
NOV											
17...	13	64	37	2	8.1	190	86	63	443	.60	39
23...	--	60	--	--	--	--	--	--	--	.41	--
DEC											
16...	15	69	38	2	9.6	210	80	74	456	.62	59
JAN											
11...	13	67	38	2	8.7	190	81	61	459	.62	50
FEB											
17...	12	65	40	2	9.6	190	75	73	402	.55	42
MAR											
24...	12	43	34	1	6.7	130	64	35	279	.38	331
MAY											
21...	6.3	24	29	1	6.2	123	12	25	186	.25	226
JUN											
17...	8.2	21	23	.8	5.3	121	41	32	247	.34	597
AUG											
13...	16	79	39	2	6.1	--	72	66	521	.71	62

RED RIVER BASIN

07311200 BLUE BEAVER CREEK NEAR CACHE, OK
(Hydrologic bench-mark station)

LOCATION.--Lat 34°37'24", long 98°33'48", in NE 1/4 NE 1/4 sec.28, T.2 N., R.13 W., Comanche County, Hydrologic Unit 11130203, on downstream side of right bank pier on old U.S. Highway 62, 3,000 ft (914.4 m) upstream from St. Louis-San Francisco Railway Co. bridge, 4.0 mi (6.4 km) east of Cache, and at mile 12.0 (19.3 km).

DRAINAGE AREA.--24.6 mi² (63.7 km²).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,215.26 ft (370.411 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Minor regulation by Lake Rush, Lake Jed Johnson, and Lake Ketch, combined surface-area 132 acres (534,000 m²).

AVERAGE DISCHARGE.--18 years, 9.74 ft³/s (0.276 m³/s), 7,060 acre-ft/yr (8.70 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s (385 m³/s) Aug. 28, 1977, gage height, 18.02 ft (5.492 m) from floodmarks, from rating curve extended above 250 ft³/s (7.08 m³/s) on basis of contracted opening; no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1907, that of Aug. 28, 1977, according to local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 16	0600	620 17.6	9.90 3.018	May 21	0045	*3,490 98.8	*13.20 4.023
May 12	1430	695 19.7	10.07 3.069	May 23	1615	2,210 62.6	12.04 3.670
May 17	0315	2,950 83.5	12.75 3.886	May 31	0600	574 16.3	9.70 2.957
May 19	0915	800 22.7	10.29 3.136	Sept. 15	0545	2,130 60.3	11.96 3.645

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.9	2.4	1.1	.79	1.8	5.3	3.2	95	10	.36	.00
2	.00	2.8	1.9	1.1	.83	1.8	5.9	3.2	65	9.3	.29	.00
3	.00	3.8	1.7	1.1	.79	1.7	4.8	2.9	55	7.9	.25	.00
4	.00	3.1	1.5	1.0	.69	1.6	6.1	2.7	47	6.6	.19	.00
5	.00	2.4	1.5	1.0	.69	1.5	5.8	12	38	5.9	.16	.00
6	.00	2.0	1.5	.94	.69	1.5	5.3	83	32	5.0	.12	.00
7	.00	2.0	1.4	.87	.72	1.5	5.2	47	25	8.3	.11	.00
8	.00	1.9	1.4	.89	.79	1.6	4.6	37	21	5.4	.17	.00
9	.00	1.8	1.5	.92	.90	1.6	4.0	26	17	3.8	.14	.00
10	.00	3.3	1.5	.92	.85	1.6	4.3	19	14	2.4	.10	.00
11	14	2.8	1.4	.90	.88	1.6	4.0	15	39	1.9	.08	.00
12	54	2.2	1.4	.90	.90	1.6	3.9	201	59	1.7	.06	.00
13	36	1.9	1.4	.90	.81	1.5	3.4	234	41	1.6	.04	.00
14	18	1.7	1.4	.96	.77	2.4	3.2	78	29	1.3	.02	.03
15	62	1.7	1.4	1.0	.82	2.1	3.1	48	22	1.2	.00	541
16	288	1.6	1.4	1.1	.93	2.0	2.9	44	20	1.0	.00	94
17	108	1.6	1.3	1.0	1.1	2.0	2.7	983	17	.85	.00	47
18	52	1.5	1.3	1.1	1.1	2.0	2.7	156	69	.76	.00	28
19	31	1.5	1.3	1.1	1.1	1.9	2.5	297	152	.69	.00	18
20	20	1.5	1.3	.92	1.2	2.0	2.3	204	80	.62	.00	12
21	14	1.6	1.3	.85	1.3	2.0	2.3	651	188	.49	.00	9.1
22	12	1.6	1.3	.88	1.4	2.1	2.3	147	81	.42	.00	7.1
23	9.5	1.7	1.3	.84	1.4	2.5	2.3	666	52	.34	.00	5.4
24	6.2	1.6	1.3	.81	1.4	2.5	2.3	457	42	.27	.00	4.1
25	4.5	1.6	1.3	.76	1.6	2.4	2.5	193	33	.25	.00	3.4
26	3.9	1.5	1.3	.77	2.6	2.2	2.4	104	26	.24	.00	2.9
27	3.5	1.4	1.2	.75	2.4	3.8	2.4	76	21	.25	.00	2.6
28	2.8	1.4	1.1	.69	2.0	3.8	2.3	260	18	.27	.00	2.3
29	2.3	1.4	1.1	.70	---	4.2	2.3	100	14	.26	.00	2.0
30	2.2	3.4	1.1	.86	---	4.5	2.9	65	12	.63	.00	1.8
31	2.0	---	1.1	.88	---	4.6	---	234	---	.48	.00	---
TOTAL	745.90	60.2	43.3	28.51	31.45	69.9	106.0	5449.0	1424	80.12	2.09	780.73
MEAN	24.1	2.01	1.40	.92	1.12	2.25	3.53	176	47.5	2.58	.07	26.0
MAX	288	3.8	2.4	1.1	2.6	4.6	6.1	983	188	10	.36	541
MIN	.00	1.4	1.1	.69	.69	1.5	2.3	2.7	12	.24	.00	.00
AC-FT	1480	119	86	57	62	139	210	10810	2820	159	4.1	1550
CAL YR 1981	TOTAL	3460.40	MEAN	9.48	MAX	359	MIN	.00	AC-FT	6860		
WTR YR 1982	TOTAL	8821.20	MEAN	24.2	MAX	983	MIN	.00	AC-FT	17500		

RED RIVER BASIN

07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT 20...	1150	80020	20	122	7.2	18.5	8.8	98	.85	82	130	41
FEB 08...	1300	80020	.85	230	7.1	2.5	13.9	108	--	K11	100	63
MAY 05...	1030	80020	3.0	158	6.8	21.0	8.1	98	--	K32	K21	51

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)
OCT 20...	7	12	2.8	8.0	29	.6	1.4	35	8.0	5.3	.30
FEB 08...	4	17	4.9	--	--	--	1.5	59	18	17	.40
MAY 05...	0	14	3.8	11	31	.7	1.3	58	12	6.3	.50

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)
OCT 20...	17	93	76	.13	5.0	--	.100	.110	<.060	<.060	.08
FEB 08...	15	--	160	.89	--	<.020	<.100	<.100	<.060	.060	.08
MAY 05...	11	109	95	.15	.87	--	<.100	<.100	<.060	.100	.13

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS TOTAL (MG/L AS P04)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 20...	--	1.4	.66	.74	1.5	6.6	.020	.06	.020	--	--
FEB 08...	.23	.34	.05	.29	--	--	.010	.03	<.010	.010	2.1
MAY 05...	.30	.56	.16	.40	--	--	<.010	--	<.010	--	3.0

RED RIVER BASIN

07311500 DEEP RED RUN NEAR RANDLETT, OK

LOCATION.--Lat 34°13'15", long 98°27'10", in SW 1/4 SW 1/4 sec.10, T.4 S., R.12 W., Cotton County, Hydrologic Unit 11130203, near right bank on downstream side of pier of bridge on U.S. Highway 277, 2.8 mi (4.5 km) north of Randlett, and at mile 4.8 (7.7 km).

DRAINAGE AREA.--617 mi² (1,598 km²).

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

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1631: 1956. WSP 1920: 1951.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 924.49 ft (281.785 m) Oklahoma State Highway Department datum. Prior to Nov. 10, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--33 years, 113 ft³/s (3.200 m³/s), 81,870 acre-ft/yr (101 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,700 ft³/s (1,370 m³/s) Sept. 22, 1969, gage height, 27.51 ft (8.385 m), from rating curve extended above 13,000 ft³/s (368 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage somewhat exceeding 27 ft (8.2 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)				
May 14	2030	3,500	99.1	22.19	6.764	May 24	2245	*10,000	283	*24.26	7.394
May 19	1530	2,890	81.8	21.80	6.645	May 30	1145	2,660	75.3	21.16	6.450
May 22	1945	2,640	74.8	21.09	6.428	June 14	1430	2,640	74.8	21.10	6.431

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	3.1	.38	.29	4.2	.65	1.4	2.1	1160	37	1760	12
2	.00	2.9	.38	.29	18	.74	2.0	2.2	1720	35	943	10
3	.00	2.7	.36	.29	18	.91	2.5	1.7	625	33	43	8.6
4	.00	2.3	.36	.29	10	.91	2.4	1.1	160	31	25	7.3
5	.00	2.0	.34	.31	6.2	.87	2.3	2.4	100	31	17	6.6
6	.00	1.6	.34	.31	3.4	.83	1.8	92	76	27	21	5.9
7	.00	1.1	.32	.29	2.5	.83	1.8	593	64	25	19	3.9
8	.00	1.1	.32	.37	1.9	.83	2.0	274	54	22	18	.23
9	.00	.34	.30	.39	1.7	.83	1.8	56	48	39	17	.00
10	.00	.20	.30	.37	1.3	.83	1.7	30	43	36	15	.00
11	.00	.16	.28	.34	1.2	.88	2.1	16	40	26	10	3.5
12	2.5	.16	.26	.34	1.3	.94	1.8	128	284	20	5.7	3.1
13	250	.13	.24	.34	1.4	.84	1.8	2050	1560	16	4.4	3.0
14	277	.13	.20	.34	1.3	275	1.9	3280	2570	11	4.2	3.0
15	150	.13	.20	.34	1.2	98	2.1	2770	1200	14	3.6	6.1
16	145	.16	.21	.32	1.2	36	2.3	702	493	15	3.2	408
17	247	.13	.21	.34	1.1	22	2.4	1000	207	16	2.9	762
18	222	.04	.20	.36	.96	20	1.8	2340	138	15	3.0	129
19	46	.00	.20	.39	.89	11	2.1	2840	205	12	3.4	35
20	21	.00	.20	.39	.94	6.6	2.0	1570	154	10	3.4	19
21	11	.00	.29	.39	.91	3.8	1.7	601	433	9.4	2.8	13
22	6.4	.00	.34	.45	.89	2.5	1.9	1920	610	9.0	3.3	9.5
23	4.1	.00	.29	.88	.90	1.7	1.7	2650	147	9.3	3.6	6.5
24	3.6	.00	.29	2.4	.76	1.3	1.6	4190	599	9.0	4.3	4.9
25	2.0	.00	.29	2.5	.82	1.2	1.6	7170	819	8.8	5.8	3.8
26	1.1	.00	.31	2.3	1.0	1.2	1.6	3660	180	8.6	6.2	3.4
27	.72	.00	.36	2.1	.91	1.8	1.5	1370	78	8.6	6.7	3.1
28	.06	.00	.36	1.7	.71	1.5	2.8	832	56	8.6	8.4	2.6
29	.94	.40	.31	1.4	---	1.2	3.9	1940	48	8.6	8.4	2.3
30	3.6	.40	.34	4.3	---	1.2	3.2	2550	41	8.6	7.8	2.1
31	3.8	---	.32	7.3	---	1.2	---	1180	---	369	11	---
TOTAL	1397.82	19.18	9.10	32.42	85.59	498.09	61.5	45813.5	13912	928.5	2990.1	1477.43
MEAN	45.1	.64	.29	1.05	3.06	16.1	2.05	1478	464	30.0	96.5	49.2
MAX	277	3.1	.38	7.3	18	275	3.9	7170	2570	369	1760	762
MIN	.00	.00	.20	.29	.71	.65	1.4	1.1	40	8.6	2.8	.00
AC-FT	2770	38	18	64	170	988	122	90870	27590	1840	5930	2930
CAL YR 1981	TOTAL	37095.22	MEAN	102	MAX	7740	MIN	.00	AC-FT	73580		
WTR VR 1982	TOTAL	67225.23	MEAN	184	MAX	7170	MIN	.00	AC-FT	133300		

RED RIVER BASIN

07313400 WAURIKA LAKE NEAR WAURIKA, OK

LOCATION.--Lat 34°13'57", long 98°02'51", in SW 1/4 SW 1/4 sec.4, T.4 S., R.8 W., Jefferson County, Hydrologic Unit 11130208, 3,050 ft (930 m) east of outlet works on Beaver Creek, 5.5 mi (8.8 km) north of Waurika and at mile 27.0 (43.4 km).

DRAINAGE AREA.--562 mi² (1,456 km²).

PERIOD OF RECORD.--August 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1977, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by an earth dam with a concrete outlet structure and emergency spillway. Storage began Aug. 1, 1977. Capacity 469,300 acre-ft (579 hm³) at elevation 970.0 ft (295.66 m), crest of uncontrolled spillway and 203,100 acre-ft (250 hm³) at elevation 951.4 ft (289.99 m), top of conservation pool. Dead storage, 3,400 acre-ft (4.19 hm³) below elevation 910.0 ft (277.3 m). Reservoir is used for flood control, irrigation, water supply, water quality, fish and wildlife, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 298,200 acre-ft (368 hm³) June 1, 1982, elevation, 955.40 ft (291.206 m); minimum since first major filling, 59,170 acre-ft (73.0 hm³) Dec. 4-5, 1978, elevation, 931.56 ft (283.939 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 248,200 acre-ft (306 hm³) June 1, elevation, 955.40 ft (291.206 m); minimum, 128,200 acre-ft (158 hm³) Oct. 9-11, elevation, 943.09 ft (287.454 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

943	127,500	949	178,800
946	151,300	950	188,500
948	169,100	955	243,400

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128900	146000	145800	144600	146200	147700	153700	153200	248200	210600	204300	197600
2	128500	146000	145700	144600	147000	147700	154000	153200	246300	208000	204100	197900
3	128200	146000	145700	144700	147100	148000	153700	153300	243200	206100	203900	197600
4	128200	145900	145500	144700	146700	147100	153500	153300	239900	204600	203700	197400
5	128200	145900	145300	144500	146800	148000	153700	155500	235700	203500	203600	196900
6	128200	145900	145300	144900	146600	147800	153300	158500	232500	202700	203400	196800
7	128500	145900	145300	144500	146500	147600	152900	159500	228300	210200	203100	196600
8	128400	147100	145300	144400	146800	147500	153300	160000	224900	216200	202700	196300
9	128200	146200	145300	144400	146500	147400	152900	160100	221600	216900	202400	196100
10	128200	146100	145200	144200	146400	147500	153200	160200	217300	216000	202100	195700
11	128200	146000	145300	143900	146400	147500	153200	160300	216100	214400	201800	195300
12	129700	145900	145300	144000	146700	148100	153400	167300	215200	212800	201500	195200
13	132700	145900	145300	143900	146700	147700	153500	180500	212100	210500	201400	195200
14	133800	145800	145300	143800	146700	151200	153400	190400	209100	208300	201000	195200
15	135200	145900	145300	143800	147100	152200	153400	191800	207100	206600	200900	196400
16	139600	145900	145800	144300	147100	152400	154000	193500	205800	205400	200900	195800
17	145200	145900	145300	144300	147100	152500	153700	201200	205000	204800	200800	196200
18	145600	145900	144900	143900	147100	152800	153100	213300	205000	204000	200100	195300
19	145600	146000	144700	143700	147100	153300	153600	217800	205900	203300	200100	194900
20	145500	145700	144600	143600	147100	153300	152800	221600	205400	203100	200000	194700
21	145800	145600	144900	143700	147400	153200	152800	221800	207500	203000	199800	194200
22	145800	145600	145200	144000	147400	153100	152800	226700	210200	203000	199700	193800
23	145400	145600	145000	143900	147400	153000	152600	229400	209300	202800	199700	193700
24	144900	145500	144900	143900	147700	153000	152000	234700	208500	202500	199500	193900
25	145300	145300	144600	144000	147700	153100	152800	238600	215000	202300	198900	193600
26	145000	145600	144900	143700	147700	152800	152600	238100	221300	202100	198600	193400
27	144900	145300	145200	144000	147700	153100	152400	238700	220400	202300	199700	193600
28	144800	145300	144900	143700	147700	153100	153100	244600	218800	202300	198600	193700
29	144700	145200	144800	143800	---	153300	153200	247200	216200	202300	198200	193700
30	144700	145900	144500	146000	---	153800	153200	245900	213400	203400	198100	193100
31	145800	---	144800	146100	---	153700	---	245600	---	204300	198000	---
MAX	145800	147100	145800	146100	147700	153800	154000	247200	248200	216900	204300	197900
MIN	128200	145200	144500	143600	146200	147100	152000	153200	205000	202100	198000	193100
†	945.32	945.34	945.20	945.36	945.56	946.27	946.21	955.18	952.37	951.52	950.91	950.44
††	-16,800	+100	-1,100	+1,300	+1,600	+6,000	-500	+92,400	-32,200	-9,100	-6,300	-4,900

CAL YR 1981 MAX 147100 MIN 112400, †† +30,700
WTR YR 1982 MAX 248200 MIN 128200, †† +64,100

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

RED RIVER BASIN

07313500 BEAVER CREEK NEAR WAURIKA, OK

LOCATION.--Lat 34°13'00", long 98°02'57", on north line of NW 1/4 NW 1/4 sec.16, T.4 S., R.8 W., Jefferson County, Hydrologic Unit 11130208, on left bank on downstream side of bridge on State Highway 5, 4.5 mi (7.2 km) northwest of Waurika, 6.2 mi (10.0 km) upstream from Cow Creek, and at mile 25.8 (45.1 km).

DRAINAGE AREA.--563 mi² (1,458 km²).

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

REVISED RECORDS.--WSP 1731: 1954 (M).

GAGE.--Water-stage recorder. Datum of gage is 874.17 ft (266.447 m) Oklahoma State Highway Department datum. Prior to Apr. 5, 1966, water-stage recorder at same site at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair. Flow regulated by Waurika Lake (07313400) 1.2 mi (1.9 km) upstream beginning August 1977.

AVERAGE DISCHARGE.--(Prior to regulation by Waurika Lake) 23 years, (water years 1954-76) 107 ft³/s (3.030 m³/s), 77,520 acre-ft/yr (95.6 hm³/yr); (Since regulation by Waurika Lake) 5 years, (water years 1978-82) 35.6 ft³/s (1.008 m³/s), 25,790 acre-ft/yr (31.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,200 ft³/s (912 m³/s) May 20, 1955, gage height, 27.42 ft (8.358 m), present datum; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1951, reached a stage of 27.7 ft (8.44 m), present datum, from floodmark, discharge 65,300 ft³/s (1,850 m³/s) by contracted-opening measurement of peak flow. A similar stage was reached prior to 1889, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,170 ft³/s (61.5 m³/s) May 27, gage height, 21.27 ft (6.483 m); no flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.56	.80	.03	10	.22	.00	.00	1220	1290	.68	.00
2	.00	.50	.80	.00	2.8	.30	.00	.00	2020	1150	.00	.05
3	.00	.40	.74	.00	.67	.30	.00	.00	2030	854	.00	.00
4	.00	.40	.68	.00	.20	.25	.00	.00	1980	690	.00	.00
5	.00	.35	.62	.00	.17	.20	.00	1.5	2040	391	.00	.00
6	.00	.30	.56	.00	.15	.15	.00	19	2030	188	.00	.00
7	.00	.25	.50	.00	.12	.15	.00	.58	2040	136	.00	.00
8	.00	.20	.45	.00	.15	.13	.00	.05	2010	1.9	.00	.00
9	.00	.15	.40	.00	.22	.10	.00	.00	2020	268	.00	.00
10	.00	.25	.40	.00	.30	.06	.02	.00	2000	586	.00	.00
11	.00	.20	.80	.00	.42	.05	.00	.00	1830	591	.00	.00
12	.00	.15	.92	.00	.60	.05	.00	5.8	1560	708	.00	.00
13	.00	.10	.86	.00	.50	.00	.00	150	1550	905	.00	.00
14	.00	.10	.80	.00	.43	8.6	.00	3.2	1550	910	.00	.00
15	2.5	.05	.74	.00	.33	1.0	.00	.40	1340	836	.00	.81
16	3.1	.00	.62	.00	.32	.42	.00	.25	867	444	.00	.00
17	1.6	.00	.56	.00	.30	.25	.00	31	693	290	.00	.00
18	1.4	.00	.45	.01	.27	.15	.00	2.4	401	288	.00	.00
19	1.0	.00	.40	.08	.30	.08	.00	126	388	212	.00	.00
20	.80	.00	.35	.40	.30	.01	.00	477	379	1.8	.00	.00
21	.74	.00	.35	.40	.30	.05	.00	942	385	1.2	.00	.00
22	.62	.00	.35	.41	.30	.02	.00	1320	614	.74	.00	.00
23	.50	.00	.35	.38	1.0	.00	.00	1200	962	.00	.00	.00
24	.45	.00	.33	.35	.55	.00	.00	1250	1000	.00	.00	.00
25	.40	.00	.32	.38	1.1	.00	.00	845	1030	.00	.00	.00
26	.35	.00	.29	.40	.64	.00	.00	1300	999	.00	.00	.00
27	.25	.00	.27	.30	.33	.03	.00	1940	1140	.00	.00	.00
28	.15	.00	.26	.07	.24	.05	.03	358	1310	.00	.00	.00
29	.10	.00	.24	.02	---	.05	.05	480	1300	.00	.00	.00
30	.05	.30	.22	2.0	---	.00	.00	1310	1300	.00	.00	.00
31	.56	---	.08	5.0	---	.00	---	1150	---	18	.00	---
TOTAL	14.57	4.26	15.51	10.23	23.01	12.67	.10	12912.18	39988	10760.64	.68	.86
MEAN	.47	.14	.50	.33	.82	.41	.00	417	1333	347	.02	.03
MAX	3.1	.56	.92	5.0	10	8.6	.05	1940	2040	1290	.68	.81
MIN	.00	.00	.08	.00	.12	.00	.00	.00	379	.00	.00	.00
AC-FT	29	8.4	31	20	46	25	.2	25610	79320	21340	1.3	1.7
CAL YR 1981	TOTAL	268.73	MEAN	.74	MAX	87	MIN	.00	AC-FT	533		
WTR YR 1982	TOTAL	63742.71	MEAN	175	MAX	2040	MIN	.00	AC-FT	126400		

RED RIVER BASIN

07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Hydrologic Unit 11130201, on left bank on downstream side of bridge abutment (revised) on U.S. Highway 81, 0.5 mi (0.8 km) downstream from Chicago, Rock Island, and Pacific Railroad Co. bridge, 1.2 mi (1.9 km) south of Terral, 3.6 mi (5.8 km) downstream from Little Wichita River, and at mile 872 (1,403 km).

DRAINAGE AREA.--28,723 mi² (74,393 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

PERIOD OF RECORD.--January 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft (234.790 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 12, 1939, nonrecording gage at same site and datum.

REMARKS.--Water-discharge records good. Many small diversions for irrigation, oilfield, and municipal uses upstream from station.

AVERAGE DISCHARGE.--44 years (water years 1939-82), 2,148 ft³/s (60.83 m³/s), 1,556,000 acre-ft/yr (1.92 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197,000 ft³/s (5,580 m³/s) June 8, 1941, gage height, 28.12 ft (8.571 m); minimum, 43 ft³/s (1.22 m³/s) Mar. 15, 1939. Maximum stage since at least 1891, that of June 8, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1935, reached a stage of 27.2 ft (8.29 m); floods in 1891 and May 1, 1908, are reported to have reached about the same stage.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 21,000 ft³/s (595 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 14	0400	*58,000 1,640	21.31 6.495	May 26	2400	42,300 1,200	19.78 6.029
May 14	2400	36,000 1,020	18.72 5.706	May 30	1800	27,800 787	18.28 5.572
May 19	1000	27,400 776	17.70 5.395	June 21	2000	24,800 702	18.82 5.736
May 22	1500	28,900 818	17.93 5.465	June 25	1500	25,000 708	18.88 5.755

Minimum discharge, 125 ft³/s (3.54 m³/s) Oct. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	426	258	211	744	324	700	430	13000	7640	2470	586
2	136	420	277	214	738	316	457	313	12100	6820	11400	657
3	148	399	302	214	685	291	360	275	13500	5830	4890	636
4	150	382	259	212	500	268	313	276	10400	4900	2750	613
5	157	350	264	206	350	249	294	287	6420	4030	2090	549
6	162	318	271	209	359	236	272	2900	4240	2980	1530	453
7	229	318	269	197	356	229	261	8950	3400	3580	1210	394
8	520	455	287	190	451	224	252	10600	2980	4390	1010	368
9	902	400	282	190	383	221	243	5880	2690	4730	874	357
10	805	352	262	178	378	227	240	2230	2440	3120	785	340
11	516	343	248	170	382	237	252	1500	2670	2880	771	322
12	819	324	240	160	354	221	258	1570	4540	3120	960	309
13	14300	312	236	150	327	230	254	16800	14000	2820	1110	298
14	39300	304	236	150	319	468	254	32400	18400	2730	820	290
15	11100	297	236	150	349	3040	246	26500	15400	2740	688	319
16	10600	280	240	150	342	2750	239	17200	16300	2890	612	357
17	10200	270	242	155	328	1730	232	17900	10700	1950	559	2620
18	10700	268	239	182	314	1480	227	25800	5960	1370	524	3390
19	8580	258	240	237	302	1160	224	26700	7450	1220	504	2270
20	3990	246	238	223	292	917	214	25400	19100	1020	483	1270
21	3010	241	238	208	286	734	207	23800	23800	754	468	812
22	2250	236	235	215	281	635	208	27100	23300	668	457	575
23	1540	238	230	257	280	576	208	26100	20200	628	451	477
24	1090	234	229	266	268	552	206	27200	22900	599	448	413
25	918	234	228	259	270	525	205	35600	24000	569	441	391
26	839	242	224	242	280	501	212	41400	21000	553	437	363
27	686	233	222	236	285	517	211	38600	16700	551	432	338
28	565	226	220	237	318	518	210	26400	15300	557	494	320
29	521	225	215	233	---	594	221	21800	13700	545	514	304
30	474	244	215	258	---	851	310	25600	8980	555	574	294
31	458	---	214	331	---	801	---	19600	---	680	597	---
TOTAL	125794	9075	7596	6490	10521	21622	7990	537111	375570	77419	41353	20685
MEAN	4058	303	245	209	376	697	266	17330	12520	2497	1334	690
MAX	39300	455	302	331	744	3040	700	41400	24000	7640	11400	3390
MIN	129	225	214	150	268	221	205	275	2440	545	432	290
AC-FT	249500	18000	15070	12870	20870	42890	15850	1065000	744900	153600	82020	41030
CAL YR 1981	TOTAL	481819	MEAN	1320	MAX	39300	MIN	129	AC-FT	955700		
WTR YR 1982	TOTAL	1241226	MEAN	3401	MAX	41400	MIN	129	AC-FT	2462000		

RED RIVER BASIN

07315700 MUD CREEK NEAR COURTNEY, OK

LOCATION.--Lat 34°00'20", long 97°34'00", in NW 1/4 SE 1/4 sec.25, T.6 S., R.4 W., Jefferson County, Hydrologic Unit, 11130201, on downstream side of bridge on State Highway 89, 4.0 mi (6.4 km) downstream from North Mud Creek, 6.0 mi (9.7 km) northwest of Courtney, and at mile 11.5 (18.5 km).

DRAINAGE AREA.--572 mi² (1,481 km²).

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

CORRECTIONS.--The maximum gage height for the water year 1977 has been corrected to 24.65 ft (7.513 m), superseding figure published in the report for 1977.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 727.72 ft (221.809 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1968, auxiliary water-stage recorder 2.0 mi (3.2 km) downstream from base gage.

REMARKS.--Records good.

AVERAGE DISCHARGE.--22 years, 129 ft³/s (3.653 m³/s), 93,460 acre-ft/yr (115 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft³/s (946 m³/s) May 1, 1974, gage height, 31.37 ft (9.562 m); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1957, reached a stage of 30.6 ft (9.33 m).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,300 ft³/s (36.8 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 13	1915	9,690 274	27.63 8.422	May 24	1100	3,680 104	25.03 7.629
Oct. 16	1900	*24,500 694	*30.20 9.205	May 28	1845	19,100 541	29.40 8.961
Feb. 16	1245	1,600 45.3	23.19 7.068	June 28	0930	2,790 79.0	24.26 7.394
May 7	2015	6,860 194	26.86 8.187	July 10	2015	1,470 41.6	22.54 6.870
May 13	2030	19,100 541	29.40 8.961				

Minimum daily discharge, 0.01 ft³/s (<0.001 m³/s) Oct. 3, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	659	17	6.6	477	93	29	9.6	1610	401	689	12
2	.02	135	48	6.6	424	55	23	91	589	128	878	8.5
3	.01	89	102	6.8	606	39	19	64	294	90	319	6.6
4	.02	55	54	7.1	298	33	18	28	204	70	77	5.2
5	.01	35	28	6.9	135	27	16	25	151	59	49	4.3
6	.02	21	16	6.8	68	23	14	1130	122	50	44	3.7
7	1.9	16	12	6.3	44	21	13	6130	103	204	37	3.3
8	.34	14	11	6.0	30	19	12	5230	90	959	31	3.1
9	.21	221	10	6.3	29	17	12	3460	78	1140	26	2.9
10	.63	169	9.1	6.3	26	16	12	1000	68	1400	22	2.7
11	1.0	162	8.3	6.3	23	16	13	173	65	808	19	2.6
12	311	66	8.0	6.0	23	16	15	183	107	165	16	2.5
13	4630	39	8.6	5.8	24	15	15	10400	523	111	15	2.3
14	5010	25	9.2	5.5	32	46	16	14000	414	87	13	2.3
15	1450	18	9.4	5.5	37	222	15	6350	150	92	12	2.4
16	10400	15	9.5	5.6	1180	870	13	3760	140	85	12	2.3
17	8290	13	9.9	5.6	679	561	12	3210	80	82	11	2.7
18	4140	11	9.5	5.4	85	135	11	5470	85	63	11	3.7
19	2350	9.4	9.2	5.4	50	83	11	5940	69	51	10	3.1
20	379	7.9	8.9	5.7	38	62	10	4010	141	43	9.6	2.7
21	106	7.5	8.6	6.1	34	40	9.0	2390	520	41	8.9	2.4
22	73	7.3	8.5	6.6	30	30	7.9	933	1130	40	9.0	4.3
23	58	7.2	8.5	6.6	27	24	7.9	1860	1020	40	8.6	4.9
24	46	7.2	8.2	6.6	24	21	8.2	3480	953	39	7.9	5.4
25	35	7.2	7.8	6.7	27	19	7.9	3090	886	38	7.1	5.6
26	27	7.0	7.4	7.9	39	18	7.5	1940	1430	36	5.7	5.6
27	19	6.7	7.4	7.8	130	19	7.2	1340	1860	35	5.8	5.4
28	16	6.5	7.8	7.5	134	25	7.8	7800	2610	34	5.5	5.5
29	14	6.3	7.5	7.2	---	36	8.6	11300	1650	33	5.1	5.2
30	13	7.1	7.3	11	---	55	10	5600	912	33	16	5.0
31	331	---	7.1	297	---	41	---	3360	---	46	23	---
TOTAL	37702.20	1850.3	483.7	493.5	4753	2697	381.0	113756.6	18054	6503	2403.2	128.2
MEAN	1216	61.7	15.6	15.9	170	87.0	12.7	3670	602	210	77.5	4.27
MAX	10400	659	102	297	1180	870	29	14000	2610	1400	878	12
MIN	.01	6.3	7.1	5.4	23	15	7.2	9.6	65	33	5.1	2.3
AC-FT	74780	3670	959	979	9430	5350	756	225600	35810	12900	4770	254
CAL YR 1981	TOTAL	91256.07	MEAN	250	MAX	10400	MIN	.00	AC-FT	181000		
WTR YR 1982	TOTAL	189205.70	MEAN	518	MAX	14000	MIN	.01	AC-FT	375300		

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW 1/4 sec.36, T.9 S., R.1 E., Love County, Okla., Hydrologic Unit 11130201, near center of span on downstream side of bridge on U.S. Highway 77, 0.2 mi (0.3 km) downstream from Gulf, Colorado and Santa Fe Railway Co. bridge, 5.0 mi (8.0 km) downstream from Fish Creek, 4.5 mi (7.2 km) southwest of Thackerville, Okla., 7.0 mi (11.0 km) north of Gainesville, and at mile 791.5 (1,273.5 km).

DRAINAGE AREA.--30,782 mi² (79,725 km²) of which 5,936 mi² (15,374 km²) is probably noncontributing.

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft (191.387 m) National Geodetic Vertical Datum of 1929. Prior to Jan. 17, 1939, and Feb. 13, 1965 to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow slightly regulated by Lake Kemp, in Texas, since 1943 by Lake Altus (station 07302500), since 1946 by Lake Kickapoo, and since 1967 by Lake Arrowhead and Moss Lake, also in Texas.

COOPERATION.--Gage-height record and 18 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--46 years, 2,753 ft³/s (77.96 m³/s), 1,995,000 acre-ft/yr (2.46 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 168,000 ft³/s (4,758 m³/s) June 9, 1941, gage height, 24.15 ft (7.361 m); maximum gage height, 29.45 ft (8.976 m) Oct. 14, 1981, from floodmark; minimum discharge, 48 ft³/s (1.36 m³/s) Jan. 27, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 24,000 ft³/s (680 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 14	0300	*103,000 2,920	*29.45 8.976	June 15	1145	27,200 770	17.24 5.255
May 15	0115	64,000 1,810	21.77 6.635	June 22	1915	39,100 1,110	18.81 5.733
May 29	2115	65,200 1,850	21.92 6.681	June 26	0415	40,100 1,140	18.96 5.779

Minimum daily discharge, 151 ft³/s (4.28 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	169	4600	1350	393	1840	1230	1310	475	37800	18600	2430	600
2	161	4670	811	390	1790	1030	1390	473	26800	15000	3040	710
3	157	2320	669	370	3510	940	1310	634	21100	13600	10900	710
4	154	1590	616	380	3100	801	1030	683	20800	12300	10700	676
5	151	1420	606	380	1880	723	805	552	19200	10300	6060	758
6	177	1230	598	375	1540	656	690	868	15200	8880	4300	710
7	270	1170	547	354	1330	618	619	4970	11000	8030	3290	676
8	414	1080	536	346	948	558	594	16300	8950	9460	2510	631
9	470	1110	529	342	758	541	570	19300	7690	13500	2030	547
10	584	1740	510	337	730	513	554	13100	6750	12200	1630	497
11	648	1500	519	329	744	502	560	7680	6200	8810	1280	375
12	4700	1190	512	302	689	497	552	3960	7040	6610	876	276
13	75900	981	482	283	683	502	531	17300	11200	5350	988	228
14	97000	846	477	287	650	917	519	58000	17200	5290	1060	179
15	85100	801	471	310	625	1140	492	62700	26500	5050	1270	191
16	72900	772	456	332	748	1460	519	44000	24900	8320	1120	242
17	73800	758	446	321	7400	6100	490	31600	25300	5290	1000	191
18	54200	743	430	308	3400	4400	470	36200	19700	4880	937	269
19	35300	697	430	320	1450	2770	460	50600	14300	3680	962	1860
20	23200	681	440	325	1020	2280	440	49400	14000	3100	823	2590
21	11100	657	440	317	884	1910	420	33700	28200	2840	730	1980
22	8100	644	427	354	794	1630	398	31600	36900	2550	689	1350
23	6120	626	430	362	723	1380	374	33400	35700	2290	625	956
24	4410	606	428	350	689	1230	373	35400	31200	2100	594	772
25	3210	585	423	333	868	1100	363	36200	35300	1960	582	663
26	2320	582	417	342	1080	1030	362	51400	39500	1850	576	553
27	1980	564	413	362	1170	1070	371	51600	33800	1810	547	524
28	1730	549	412	371	1280	1100	416	45100	30600	1750	576	519
29	1380	560	397	362	---	1070	486	58900	29200	1630	564	486
30	1180	927	399	637	---	1050	476	58900	26900	1730	536	445
31	1610	---	393	1220	---	1050	---	51200	---	1760	612	---
TOTAL	568595	36199	16014	11794	42323	41798	17944	906195	668930	200520	63837	21164
MEAN	18340	1207	517	380	1512	1348	598	29230	22300	6468	2059	705
MAX	97000	4670	1350	1220	7400	6100	1390	62700	39500	18600	10900	2590
MIN	151	549	393	283	625	497	362	473	6200	1630	536	179
AC-FT	1128000	71800	31760	23390	83950	82910	35590	1797000	1327000	397700	126600	41980
CAL YR 1981	TOTAL	1190691	MEAN	3262	MAX	97000	MIN	151	AC-FT	2362000		
WTR YR 1982	TOTAL	2595313	MEAN	7110	MAX	97000	MIN	151	AC-FT	5148000		

RED RIVER BASIN

07316500 WASHITA RIVER NEAR CHEYENNE, OK

LOCATION.--Lat 35°37'35", long 99°40'05", in SE 1/4 sec.5, T.13 N., R.23 W., Roger Mills County, Hydrologic Unit 11130301, near left bank on downstream side of pier of bridge on U.S. Highway 283, 0.5 mi (0.8 km) downstream from Sergeant Major Creek, 1.0 mi (1.6 km) north of Cheyenne, 5.2 mi (8.4 km) upstream from Dead Indian Creek, and at mile 543.9 (875.1 km).

DRAINAGE AREA.--794 mi² (2,056 km²).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,900.98 ft (579.419 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). May 1, 1938, to Nov. 16, 1946, and Oct. 1, 1947, to Jan. 11, 1948, nonrecording gage at same site and datum. Jan. 12, 1948, to Feb. 3, 1977, at datum 5.00 ft (1.524 m) higher.

REMARKS.--Records fair. Some regulation by numerous flood-retarding structures.

AVERAGE DISCHARGE.--45 years, 29.3 ft³/s (0.830 m³/s), 21,230 acre-ft/yr (26.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,800 ft³/s (1,980 m³/s) Apr. 29, 1954, gage height, 15.24 ft (4.645 m); from rating curve extended above 27,000 ft³/s (765 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3, 1934, reached a stage of 1.0 ft (0.30 m) lower than that in 1954 at site on upstream side of highway fill.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,420 ft³/s (40.2 m³/s) May 16, gage height, 12.50 ft (3.810 m); no flow Oct. 1-14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	5.2	6.4	3.8	11	12	35	5.6	166	189	41	2.9
2	.00	5.3	5.3	5.1	12	13	33	6.8	141	183	37	2.8
3	.00	5.3	5.3	4.3	17	12	32	6.9	130	149	32	2.4
4	.00	5.1	4.7	4.3	13	12	35	5.8	120	98	27	2.7
5	.00	5.0	4.8	5.8	13	11	36	38	100	84	23	2.5
6	.00	5.0	4.7	4.5	13	9.6	35	47	90	77	20	2.3
7	.00	5.2	4.8	4.0	14	13	31	36	82	91	19	2.1
8	.00	5.8	4.7	3.8	15	14	29	29	82	66	19	2.2
9	.00	6.4	4.7	3.6	16	14	25	22	72	60	16	2.1
10	.00	7.2	4.9	3.4	17	10	23	16	77	73	15	2.0
11	.00	7.8	4.9	3.0	19	14	22	14	76	64	14	2.0
12	.00	6.8	4.7	3.0	21	11	20	183	87	59	13	2.3
13	.00	6.4	4.7	3.0	24	11	17	276	79	55	12	2.0
14	.00	5.1	4.6	3.6	22	25	14	295	69	63	11	2.1
15	40	5.1	4.3	4.1	30	22	12	447	69	60	10	2.6
16	21	5.0	4.7	3.5	31	15	11	687	65	52	10	2.8
17	17	5.2	3.6	3.7	28	14	8.1	888	62	47	9.7	2.7
18	12	4.7	3.9	3.8	23	12	7.3	691	118	43	8.7	2.6
19	9.0	4.4	3.9	5.1	21	10	6.3	1110	203	41	8.4	2.5
20	6.0	4.1	3.8	4.9	19	11	5.4	839	245	38	7.8	2.5
21	5.5	4.3	4.9	3.1	18	7.2	4.2	665	360	36	7.1	2.4
22	5.0	4.2	4.2	4.0	17	8.3	2.7	580	275	33	6.7	2.3
23	4.8	4.3	4.2	3.8	17	10	3.1	514	305	28	6.6	2.2
24	4.8	4.0	4.6	3.8	15	11	2.4	475	624	26	5.6	2.1
25	4.8	4.3	4.3	4.1	13	11	3.1	560	514	24	5.0	2.1
26	5.0	4.1	4.2	4.8	12	9.7	3.9	439	519	22	4.7	2.0
27	5.4	3.8	4.4	5.6	12	12	3.3	364	480	22	4.7	1.9
28	4.8	3.7	4.1	4.4	12	20	2.5	362	387	23	3.8	1.7
29	4.8	4.2	3.7	6.0	---	26	3.3	307	278	28	3.7	1.9
30	4.9	6.0	4.5	5.5	---	33	3.3	248	213	35	3.4	1.9
31	5.1	---	4.7	5.9	---	36	---	201	---	44	3.2	---
TOTAL	159.90	153.0	141.2	131.3	495	449.8	468.9	10358.1	6088	1913	408.1	68.6
MEAN	5.16	5.10	4.55	4.24	17.7	14.5	15.6	334	203	61.7	13.2	2.29
MAX	40	7.8	6.4	6.0	31	36	36	1110	624	189	41	2.9
MIN	.00	3.7	3.6	3.0	11	7.2	2.4	5.6	62	22	3.2	1.7
AC-FT	317	303	280	260	982	892	930	20550	12080	3790	809	136
CAL YR 1981	TOTAL	1413.93	MEAN	3.87	MAX	40	MIN	.00	AC-FT	2800		
WTR YR 1982	TOTAL	20834.90	MEAN	57.1	MAX	1110	MIN	.00	AC-FT	41330		

RED RIVER BASIN

07324200 WASHITA RIVER NEAR HAMMON, OK

LOCATION.--Lat 35°39'23", long 99°18'21", on west line of sec.26, T.14 N., R.20 W., Custer County, Hydrologic Unit 11130301, on right bank near county road bridge, 2.2 mi (3.5 km) downstream from Quartermaster Creek, 4.7 mi (7.6 km) northeast of Hammon, and at mile 494.5 (795.7 km).

DRAINAGE AREA.--1,387 mi² (3,592 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,643.22 ft (500.853 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Some regulation by numerous flood-retarding structures.

AVERAGE DISCHARGE.--13 years, 33.5 ft³/s (0.949 m³/s), 24,270 acre-ft/yr (29.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,000 ft³/s (170 m³/s) May 17, 1982, gage height, 23.44 ft (7.145 m), from rating curve extended above 2,500 ft³/s (70.8 m³/s) on basis of slope-area; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,000 ft³/s (170 m³/s) May 17, gage height, 23.44 ft (7.145 m), no peak above base of 1,500 ft³/s (42.5 m³/s); minimum daily discharge, 0.03 ft³/s (0.001 m³/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.56	1.2	2.6	3.7	11	14	5.7	360	110	50	4.1
2	.04	.58	1.1	2.5	4.0	10	15	6.2	300	98	37	4.2
3	.09	.59	1.1	2.6	4.2	9.0	14	6.5	270	90	32	4.5
4	.09	.62	1.0	2.5	4.9	8.0	14	6.5	240	82	31	5.0
5	.04	.64	.90	2.4	5.3	7.0	13	7.2	220	78	26	6.0
6	.03	.66	.85	2.2	5.5	6.0	11	7.4	190	72	21	14
7	.09	.70	.80	2.1	6.0	6.0	10	11	180	68	18	18
8	.12	.73	.80	2.2	9.0	7.0	9.7	16	170	62	16	17
9	.14	.76	.80	2.2	12	7.0	8.5	14	160	60	14	16
10	.16	.80	.80	2.3	14	8.0	8.3	13	160	56	13	15
11	1.2	.82	.81	2.5	19	11	8.3	11	160	52	12	15
12	3.7	.84	.85	2.6	21	25	8.0	33	160	50	11	16
13	5.2	.76	.88	3.0	23	30	7.7	253	150	48	11	16
14	1.8	.70	.90	3.1	25	40	7.4	279	140	46	11	17
15	99	.70	1.0	3.0	30	31	6.5	215	130	45	11	16
16	199	.74	1.1	2.8	32	30	6.0	400	120	44	12	15
17	105	.80	1.1	2.7	30	24	4.6	4340	112	43	13	15
18	34	.84	1.1	2.9	30	20	4.3	3000	700	41	14	14
19	15	.90	1.1	3.0	28	19	3.5	2150	800	40	12	14
20	8.9	.96	1.0	3.4	26	17	2.8	2000	600	40	11	13
21	6.5	1.0	1.0	3.5	27	15	1.6	2010	400	40	10	13
22	7.8	1.0	1.0	3.6	23	14	1.6	1350	414	40	9.0	12
23	3.9	1.1	1.0	3.4	22	14	1.3	961	363	40	7.8	12
24	2.4	1.2	1.1	3.2	21	12	3.3	800	624	40	7.0	12
25	.98	1.3	1.2	2.8	19	12	4.6	700	822	43	6.2	11
26	.97	1.3	1.4	2.5	17	11	4.9	600	600	44	5.8	11
27	1.7	1.3	1.5	2.4	15	12	4.6	551	461	45	5.2	11
28	.74	1.3	1.6	2.4	13	12	5.1	914	440	49	5.0	11
29	.64	1.3	1.9	3.4	---	13	4.6	1000	200	50	4.5	11
30	.58	1.3	2.2	3.5	---	14	4.9	1260	150	52	4.2	11
31	.56	---	2.3	3.6	---	15	---	476	---	61	4.1	---
TOTAL	500.52	26.80	35.39	86.9	489.6	470.0	213.1	23396.5	9796	1729	444.8	369.8
MEAN	16.1	.89	1.14	2.80	17.5	15.2	7.10	755	327	55.8	14.3	12.3
MAX	199	1.3	2.3	3.6	32	40	15	4340	822	110	50	18
MIN	.03	.56	.80	2.1	3.7	6.0	1.3	5.7	112	40	4.1	4.1
AC-FT	993	53	70	172	971	932	423	46410	19430	3430	882	733
CAL YR 1981	TOTAL	1656.19		MEAN	4.54	MAX	199	MIN	.00	AC-FT	3290	
WTR YR 1982	TOTAL	37558.41		MEAN	103	MAX	4340	MIN	.03	AC-FT	74500	

PERIOD OF RECORD.--Water years 1961, 1970 to current year.

SPECIFIC CONDUCTANCE: October 1969 to September 1979.

WATER TEMPERATURE: October 1969 to September 1979.

REMARKS.--Samples were collected by a local observer on a weekly basis. A partial analysis was made bimonthly on one of these samples. Additional samples were collected semi-annually and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	PH (STANDARD UNITS)	TEMPERATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATURATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
NOV												
13...	1630	80020	.76	2240	7.6	15.0	--	--	--	--	--	--
17...	1445	80020	.80	2040	7.7	14.0	6.4	84	1400	1210	310	160
DEC												
07...	1600	80020	.80	2360	8.0	10.0	--	--	--	--	--	--
MAY												
27...	1545	80020	551	854	7.8	24.5	7.8	99	350	184	86	32
30...	1800	80020	1010	1120	7.9	24.5	--	--	--	--	--	--
JUN												
09...	1815	80020	160	--	--	--	--	--	--	--	--	--
20...	1010	80020	305	1310	7.6	22.0	--	--	--	--	--	--
AUG												
23...	1600	80020	7.8	2300	8.1	27.0	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
NOV 13...	--	--	--	--	--	1200	38	--	--	2080	--	2.8
17...	47	7	.6	10	220	1200	29	.30	14	1970	1900	2.7
DEC 07...	--	--	--	--	--	1200	60	--	--	2010	--	2.7
MAY 27...	36	18	.9	7.7	163	260	24	.30	13	555	560	.75
30...	--	--	--	--	--	360	35	--	--	819	--	1.1
JUN 09...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	510	37	--	--	1020	--	1.4
AUG 23...	--	--	--	--	--	1200	99	--	--	2010	--	2.7

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07324200 WASHITA RIVER NEAR HAMMON, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07324200 WASHITA RIVER NEAR HAMMON, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---			---	---	---	---	1880	---	---	---	---
2	---			---	---	---	---	---	---	---	---	2440
3	---			1940	---	---	1790	---	---	2120	---	---
4	---			---	---	---	---	---	---	---	---	---
5	---			---	---	---	---	---	---	---	---	---
6	---			---	---	1380	---	---	---	---	---	---
7	---			1910	---	---	---	---	---	---	2220	---
8	---			---	---	---	---	2160	---	---	---	---
9	---			---	---	---	---	---	---	---	---	---
10	---			---	1680	---	---	---	---	---	---	---
11	1540			1920	---	---	---	---	---	---	---	---
12	---			---	---	---	---	---	815	---	---	---
13	2140			---	1720	---	---	---	---	---	---	---
14	---			---	---	---	---	---	---	---	---	2660
15	---			---	---	---	---	---	---	---	---	---
16	---			1920	---	---	---	---	---	---	---	---
17	---			---	---	---	---	---	---	---	---	---
18	---			---	---	---	---	---	---	2140	---	2580
19	---			---	---	---	---	---	---	---	---	---
20	---			---	---	1630	---	---	1640	---	---	---
21	---			---	---	---	---	---	---	---	2170	---
22	---			---	---	---	---	1740	---	---	---	---
23	---			---	1760	---	---	---	---	---	---	---
24	---			---	---	---	---	---	---	---	---	---
25	---			---	---	---	---	---	---	---	---	---
26	---			---	---	---	---	---	1930	---	---	2580
27	---			---	---	1640	---	---	---	---	---	---
28	---			1850	---	---	---	---	---	---	---	---
29	---			---	---	---	---	---	---	2300	---	---
30	---			1820	---	---	---	---	---	---	---	---
31	---			---	---	---	---	---	---	---	---	---
MEAN	1840			1890	1720	1550	1790	1930	1460	2190	2200	2570
WTR YR 1983	MEAN	1930		MAX	2660		MIN	815				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---		---	---	---	---	---	22.0	---	---	---	---
2	---		---	---	---	---	---	---	---	---	---	29.0
3	---		---	3.0	---	---	13.5	---	---	29.0	---	---
4	---		---	---	---	---	---	---	---	---	---	---
5	---		---	---	---	---	---	---	---	---	---	---
6	---		---	---	---	15.5	---	---	---	---	---	---
7	---		---	5.0	---	---	---	---	---	---	29.0	---
8	---		---	---	---	---	---	21.0	---	---	---	---
9	---		---	---	---	---	---	---	---	---	---	---
10	---		---	---	9.0	---	---	---	---	---	---	---
11	16.0		---	6.0	---	---	---	---	---	---	---	---
12	---		---	---	---	---	---	---	21.0	---	---	---
13	17.0		.5	---	9.0	---	---	---	---	---	---	---
14	---		---	---	---	---	---	---	---	---	---	25.0
15	---		---	---	---	---	---	---	---	---	---	---
16	---		---	4.5	---	---	---	---	---	---	---	---
17	---		---	---	---	---	---	---	---	---	---	---
18	---		---	---	---	---	---	---	---	28.5	---	26.0
19	---		---	---	---	---	---	---	---	---	---	---
20	---		---	---	---	8.0	---	---	38.0	---	---	---
21	---		---	---	---	---	---	---	---	---	30.0	---
22	---		---	---	---	---	---	22.0	---	---	---	---
23	---		---	---	12.0	---	---	---	---	---	---	---
24	---		---	---	---	---	---	---	---	---	---	---
25	---		---	---	---	---	---	---	---	---	---	---
26	---		---	---	---	---	---	---	27.0	---	---	22.0
27	---		---	---	---	9.0	---	---	---	---	---	---
28	---		---	---	---	---	---	---	---	---	---	---
29	---		---	---	---	---	---	---	---	28.0	---	---
30	---		---	---	---	---	---	---	---	---	---	---
31	---		---	---	---	---	---	---	---	---	---	---
MEAN	16.5		.5	4.5	10.0	11.0	13.5	21.5	28.5	28.5	29.5	25.5
WTR YR 1983	MEAN	18.0		MAX	38.0		MIN	.5				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

RED RIVER BASIN

07324300 FOSS RESERVOIR NEAR FOSS, OK

LOCATION.--Lat 35°32'18", long 99°10'40", in S 5 sec.2, T.12 N., R.19 W., Custer County, Hydrologic Unit 11130301, near right end of dam on Washita River, 0.5 mi (0.8 km) upstream from Oak Creek, 3.5 mi (5.6 km) west of Stafford, 6.0 mi (9.7 km) north of Foss, and at mile 474.4 (763.3 km).

DRAINAGE AREA.--1, 496 mi² (3,875 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to October, 1961, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam. Outlet consists of four 6.0 ft x 7.5 ft high pressure gates and one uncontrolled spillway. Storage began Feb. 13, 1961. Capacity, 436,500 acre-ft (538 hm³) at elevation 1,668.6 ft (508.59 m) crest of drop inlet and 256,100 acre-ft (316 hm³) at elevation 1,652.0 ft (503.530 m) conservation pool. Dead storage, 12,420 acre-ft (15.3 hm³) below elevation 1,597.2 ft (486.83 m) sill of gated outlet. Figures given herein represent total contents. Reservoir is designed for flood control, municipal water supply (inactive), and irrigation release. Revised capacity table used after Sept. 30, 1964. Water-quality samples were collected at 3 profile sites in the Reservoir--see partial-record stations 353325099111001, 353405099132501, and 353615099135001.

COOPERATION.--Elevations and data on diversions furnished by Foss Reservoir Master Conservancy District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 195,800 acre-ft (241 hm³) June 29, 1977, elevation, 1,644.53 ft (501.253 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 183,500 acre-ft (226 hm³) May 29, elevation, 1,642.82 ft (500.732 m); minimum, 139,900 acre-ft (172 hm³) Jan. 29, elevation 1,635.95 ft (498.638 m).

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30.....	1636.30	142,300	---	---
Oct. 31.....	1636.70	144,600	+ 2,300	128
Nov. 30.....	1636.50	143,400	- 1,200	110
Dec. 31.....	1636.30	142,300	- 1,100	120
CAL YR 81.....	---	---	+11,900	1,769
Jan. 31.....	1636.10	141,100	- 1,200	166
Feb. 28.....	1636.20	141,700	+ 600	265
Mar. 31.....	1636.40	142,800	+ 1,100	206
Apr. 30.....	1636.20	141,700	- 1,100	241
May 31.....	1642.40	180,700	+39,000	231
June 30.....	1639.90	164,100	-16,600	196
July 31.....	1640.00	164,700	+ 600	247
Aug. 31.....	1639.60	162,200	- 2,500	214
Sept. 30.....	1639.00	158,400	- 3,800	150
WTR YR 82.....	---	---	+16,100	2,274

* Elevation at 0800 on the following day.

RED RIVER BASIN

07324400 WASHITA RIVER NEAR FOSS, OK

LOCATION.--Lat 35°32'20", long 99°10'10", in SW 1/4 SW 1/4 sec.1, T.12 N., R.19 W., Custer County, Hydrologic Unit 11130302, on left bank on downstream side of pile bent of county road bridge, 0.4 mi (0.6 km) downstream from Oak Creek, 0.9 mi (1.4 km) downstream from Foss Dam, 2.5 mi (4.0 km) west of Stafford, 6.0 mi (9.7 km) north of Foss, and at mile 473.5 (761.9 km).

DRAINAGE AREA.--1,551 mi² (4,017 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1956 to April 1957, February to December 1958, July 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,560 ft (475.5 m) from preliminary survey by Topographic Division.

REMARKS.--Records poor. Except for 55 mi² (142.4 km²) intervening area, flow completely regulated since 1961 by Foss Reservoir (station 07324300).

AVERAGE DISCHARGE.--21 years, (water years 1962-82), 21.9 ft³/s (0.620 m³/s), 15,870 acre-ft/yr (19.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 14,000 ft³/s (396 m³/s) Apr. 9, 1957, gage height, 20.40 ft (6.218 m), from rating curve extended above 3,600 ft³/s (102 m³/s) on basis of velocity-area study; no flow at times in 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1959 reached a stage of 23.4 ft (7.13 m), from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1190 ft³/s (33.7 m³/s) May 31, gage height, 18.77 ft (5.721 m); minimum daily discharge, 3.0 ft³/s (0.085 m³/s) Feb. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	11	11	8.6	4.8	3.6	4.6	6.6	1040	492	15	4.6
2	6.9	9.0	11	8.6	4.7	3.7	5.1	6.5	1090	373	12	4.8
3	7.3	8.7	9.4	8.6	4.6	3.7	5.5	6.5	918	331	10	4.4
4	7.3	8.7	8.6	8.8	4.3	3.7	6.9	4.1	889	321	8.6	5.1
5	6.8	8.3	7.6	8.7	4.2	3.7	6.2	16	879	318	8.2	5.1
6	6.2	7.5	9.4	6.4	4.0	3.9	6.0	9.7	875	240	7.9	5.1
7	6.1	8.2	8.9	5.4	4.0	3.7	6.2	5.3	871	50	9.9	4.8
8	6.1	10	8.4	7.8	4.0	3.9	6.4	4.8	867	77	9.4	4.6
9	6.4	9.8	8.1	7.7	3.9	4.0	5.6	3.8	860	128	9.2	4.3
10	7.0	9.4	7.4	7.6	3.7	4.4	5.7	3.8	864	166	8.7	4.3
11	9.6	9.5	7.4	6.0	3.7	4.6	6.0	68	877	181	8.5	4.1
12	15	9.0	7.4	5.4	3.7	4.5	6.1	468	877	190	8.0	4.7
13	6.7	8.9	7.4	4.9	4.0	4.1	5.8	33	872	200	7.1	4.9
14	6.5	8.6	7.4	4.5	4.5	7.1	5.5	20	869	195	6.8	4.2
15	138	8.6	7.4	4.0	4.6	5.3	5.2	18	869	185	6.6	4.3
16	122	8.7	7.4	3.8	4.7	4.4	5.4	685	843	160	7.5	4.9
17	8.9	7.6	7.4	3.8	4.8	4.6	5.6	658	833	100	7.6	5.3
18	5.1	8.1	7.4	4.0	4.7	5.0	5.9	376	834	70	7.3	5.7
19	4.4	9.3	7.6	4.0	4.5	5.0	6.1	554	667	25	7.2	5.7
20	4.4	10	7.8	4.3	4.4	4.8	6.5	399	602	15	6.3	5.7
21	4.4	10	7.9	4.4	4.4	4.4	6.5	625	461	12	5.8	5.0
22	3.9	10	7.7	4.5	4.1	4.1	6.0	924	342	11	5.9	4.9
23	4.4	10	7.8	4.6	3.0	3.8	5.9	884	341	11	6.0	5.4
24	4.6	11	8.1	4.6	3.8	4.1	5.3	878	435	10	5.1	4.6
25	5.0	10	8.1	4.7	3.6	4.6	5.2	912	710	10	3.6	4.4
26	4.6	11	7.9	4.7	3.5	4.6	5.2	915	733	10	4.9	4.4
27	4.4	10	7.9	4.8	3.6	5.5	5.5	931	711	10	6.0	4.3
28	4.9	10	7.5	5.0	4.0	4.1	5.7	1020	696	15	6.2	3.9
29	5.1	12	8.3	5.0	---	4.8	4.8	1050	614	98	6.1	4.5
30	5.8	12	8.1	5.0	---	5.5	6.7	1180	547	30	5.7	4.3
31	8.5	---	8.3	5.0	---	5.1	---	1180	---	19	4.9	---
TOTAL	444.9	284.9	252.0	175.2	115.8	138.3	173.1	13845.1	22886	4053	232.0	142.3
MEAN	14.4	9.50	8.13	5.65	4.14	4.46	5.77	447	763	131	7.48	4.74
MAX	138	12	11	8.8	4.8	7.1	6.9	1180	1090	492	15	5.7
MIN	3.9	7.5	7.4	3.8	3.0	3.6	4.6	3.8	341	10	3.6	3.9
AC-FT	882	565	500	348	230	274	343	27460	45390	8040	460	282
CAL YR 1981	TOTAL	3621.0	MEAN	9.92	MAX	257	MIN	3.3	AC-FT	7180		
WTR YR 1982	TOTAL	42742.6	MEAN	117	MAX	1180	MIN	3.0	AC-FT	84780		

[illegible]

RED RIVER BASIN

07324400 WASHITA RIVER NEAR FOSS, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07324400 WASHITA RIVER NEAR FOSS, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1710	---	---	---	---	---	---	---	---	1700	---
2	---	---	---	---	---	---	---	1710	---	---	---	---
3	---	---	---	1870	---	---	---	---	---	---	---	---
4	1430	---	---	---	---	---	1730	---	---	1620	---	---
5	---	---	---	---	---	---	---	---	---	---	---	2110
6	---	---	1690	---	---	---	---	---	1700	---	---	---
7	---	---	---	---	1910	1820	---	---	---	---	---	---
8	---	1720	---	---	---	---	---	---	---	---	1330	---
9	---	---	---	---	---	---	---	1740	---	---	---	---
10	---	---	---	1850	---	---	---	---	---	---	---	---
11	1670	---	---	---	---	---	1700	---	---	1580	---	---
12	---	---	---	---	---	---	---	---	---	---	---	2100
13	---	---	1770	---	---	---	---	---	---	---	---	---
14	---	---	---	---	1780	1810	---	---	---	---	---	---
15	---	1750	---	---	---	---	---	---	---	---	1820	---
16	---	---	---	---	---	---	---	1670	---	---	---	---
17	---	---	---	1880	---	---	---	---	---	---	---	---
18	1680	---	---	---	---	---	1720	---	---	1500	---	---
19	---	---	---	---	---	---	---	---	---	---	---	2150
20	---	---	1760	---	---	1800	---	---	1650	---	---	---
21	---	---	---	---	1770	---	---	---	---	---	---	---
22	---	1810	---	---	---	---	---	1590	---	---	1770	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	1890	---	---	---	---	---	---	---	---
25	1670	---	---	---	---	---	1710	---	---	1700	---	---
26	---	---	---	---	---	---	---	---	---	---	---	2020
27	---	---	1810	---	---	---	---	---	1650	---	---	---
28	---	---	---	---	1790	1600	---	---	---	---	---	---
29	---	1870	---	---	---	---	---	---	---	---	2170	---
30	---	---	---	---	---	---	---	1610	---	---	---	---
31	---	---	---	1820	---	---	---	---	---	---	---	---
MEAN	1610	1770	1760	1860	1810	1760	1720	1660	1670	1600	1760	2100
WTR YR 1983		MEAN		MAX	2170	MIN		1330				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	14.0	---	---	---	---	---	---	---	---	23.0	---
2	---	---	---	---	---	---	---	13.0	---	---	---	---
3	---	---	---	3.0	---	---	---	---	---	---	---	---
4	16.0	---	---	---	---	---	8.0	---	---	24.0	---	---
5	---	---	---	---	---	---	---	---	---	---	---	22.0
6	---	---	6.0	---	---	---	---	---	19.0	---	---	---
7	---	---	---	---	1.0	9.0	---	---	---	---	---	---
8	---	22.0	---	---	---	---	---	---	---	---	23.0	---
9	---	---	---	---	---	---	---	15.0	---	---	---	---
10	---	---	---	4.0	---	---	---	---	---	---	---	---
11	11.0	---	---	---	---	---	8.0	---	---	23.0	---	---
12	---	---	---	---	---	---	---	---	---	---	---	23.0
13	---	---	6.0	---	---	---	---	---	---	---	---	---
14	---	---	---	---	5.0	9.0	---	---	---	---	---	---
15	---	4.0	---	---	---	---	---	---	---	---	23.0	---
16	---	---	---	---	---	---	---	14.0	---	---	---	---
17	---	---	---	2.0	---	---	---	---	---	---	---	---
18	15.0	---	---	---	---	---	9.0	---	---	22.0	---	---
19	---	---	---	---	---	---	---	---	---	---	---	22.0
20	---	---	4.0	---	---	4.0	---	---	20.0	---	---	---
21	---	---	---	---	6.0	---	---	---	---	---	---	---
22	---	8.0	---	---	---	---	---	26.0	---	---	23.0	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	3.0	---	---	---	---	---	---	---	---
25	10.0	---	---	---	---	---	11.0	---	---	23.0	---	---
26	---	---	---	---	---	---	---	---	---	---	---	17.0
27	---	---	4.0	---	---	---	---	---	20.0	---	---	---
28	---	---	---	---	6.0	5.0	---	---	---	---	---	---
29	---	5.0	---	---	---	---	---	---	---	---	24.0	---
30	---	---	---	---	---	---	---	17.0	---	---	---	---
31	---	---	---	5.0	---	---	---	---	---	---	---	---
MEAN	13.0	10.5	5.0	3.5	4.5	7.0	9.0	17.0	19.5	23.0	23.0	21.0
WTR YR 1983		MEAN	13.0	MAX	26.0	MIN		1.0				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

RED RIVER BASIN

07325000 WASHITA RIVER NEAR CLINTON, OK

LOCATION.--Lat 34°31'52", long 98°57'57", in SW 1/4 NE 1/4 sec.11, T.12 N., R.17 W., Custer County, Hydrologic Unit 11130302, on downstream side of pier of bridge on U.S. Highway 183, 0.5 mi (0.8 km) north of Clinton, 0.8 mi (1.3 km) upstream from Beaver Creek, 4.8 mi (7.7 km) downstream from Barnitz Creek, and at mile 447.4 (719.9 km).

DRAINAGE AREA.--1,977 mi² (5,120 km²).

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1221: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,467.60 ft (447.324 m) National Geodetic Vertical Datum of 1929. See WSP 1920 for history of changes prior to Mar. 19, 1941.

REMARKS.--Records fair. Flow regulated since February 1961 by Foss Reservoir (station 07324300) and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--(Prior to regulation by Foss Reservoir) 25 years (water years 1936-60), 146 ft³/s (4.135 m³/s), 105,700 acre-ft/yr (130 hm³/yr); (since regulation by Foss Reservoir) 22 years (water years 1961-82), 61.2 ft³/s (1.733 m³/s), 44,340 acre-ft/yr (54.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66,800 ft³/s (1,890 m³/s) May 16, 1951, gage height, 31.09 ft (9.476 m), from rating curve extended above 7,900 ft³/s (224 m³/s) by contracted-opening measurement of peak flow; no flow at times in 1952-56, 1964, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3-4, 1934, reached a stage of 33.9 ft (10.33 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,890 ft³/s (167 m³/s) May 27, gage height, 24.42 ft (7.443 m); minimum daily discharge, 11 ft³/s (0.31 m³/s) at times

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	78	28	22	35	23	22	18	1780	620	54	28
2	11	48	27	22	29	23	20	18	1550	424	49	28
3	23	35	24	22	26	23	19	18	1240	318	45	27
4	38	31	23	22	23	22	19	16	980	289	41	27
5	15	29	23	22	35	22	18	17	917	276	38	27
6	11	27	22	22	27	22	18	23	898	269	37	27
7	11	26	23	22	28	22	17	21	871	414	36	26
8	11	25	22	22	29	22	17	19	842	432	36	27
9	11	29	22	22	26	23	17	17	821	305	35	33
10	11	29	22	22	28	22	17	15	796	227	35	32
11	34	26	22	24	32	23	18	30	787	192	34	31
12	45	26	23	26	33	23	18	2110	787	190	33	30
13	26	26	23	26	33	22	18	962	786	187	32	28
14	16	26	23	26	38	26	18	297	772	99	32	26
15	631	26	23	26	37	31	18	225	770	84	30	200
16	794	26	23	26	40	38	17	1920	762	79	31	90
17	290	25	23	25	35	28	18	5110	753	73	31	75
18	108	25	23	26	33	26	17	3930	753	66	32	57
19	69	24	22	27	32	25	16	2180	751	60	31	51
20	56	23	22	27	30	24	15	1970	665	58	30	47
21	48	23	22	27	29	22	15	1350	586	56	29	44
22	42	23	23	26	27	21	15	1550	380	56	29	42
23	37	23	23	25	26	21	14	1630	346	50	28	40
24	35	23	23	24	25	21	15	2120	380	48	27	38
25	33	23	23	23	24	21	15	1510	360	46	28	36
26	33	23	23	20	24	22	16	1320	500	44	29	35
27	32	22	23	20	24	23	15	1210	580	44	29	34
28	30	22	23	20	23	25	15	1760	580	50	29	34
29	28	23	22	19	---	26	14	1610	596	103	29	33
30	27	27	22	93	---	25	16	1480	596	75	28	33
31	27	---	22	60	---	23	---	1970	---	60	28	---
TOTAL	2594	842	712	836	831	740	507	36426	23185	5294	1035	1286
MEAN	83.7	28.1	23.0	27.0	29.7	23.9	16.9	1175	773	171	33.4	42.9
MAX	794	78	28	93	40	38	22	5110	1780	620	54	200
MIN	11	22	22	19	23	21	14	15	346	44	27	26
AC-FT	5150	1670	1410	1660	1650	1470	1010	72250	45990	10500	2050	2550
CAL YR 1981	TOTAL	9592.4	MEAN	26.3	MAX	794	MIN	7.6	AC-FT	19030		
WTR YR 1982	TOTAL	74288	MEAN	204	MAX	5110	MIN	11	AC-FT	147400		

RED RIVER BASIN

07325500 WASHITA RIVER AT CARNEGIE, OK

LOCATION.--Lat 35°07'02", long 98°33'49", in NW 1/4 NW 1/4 sec.3, T.7 N., R.13 W., Caddo County, Hydrologic Unit 11130302, on downstream side of right pier of bridge on State Highway 9, 1,300 ft (396.2 m) upstream from Running Creek, 2.7 mi (4.3 km) east of Carnegie, and at mile 353.9 (569.4 km). Records include flow of Running Creek.

DRAINAGE AREA.--3,129 mi² (8,104 km²), includes that of Running Creek.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1087: 1938. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,249.23 ft (380.765 m) National Geodetic Vertical Datum of 1929. Prior to October 1942, water-stage recorder at site 8.0 mi (12.9 km) upstream at datum 24.57 ft (7.489 m) higher.

REMARKS.--Records fair. Some diversion above station for irrigation. October 1942 to May 1949, occasional fluctuation caused by powerplant at Carnegie, 7.5 mi (12.1 km) above station. Some regulation by Foss Reservoir since February 1961 (station 07324300), and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--(Prior to regulation by Foss Reservoir) 23 years (water years 1936-60), 314 ft³/s (8.892 m³/s), 277,500 acre-ft/yr (342 hm³/yr); (since regulation by Foss Reservoir) 21 years (water years 1962-82), 241 ft³/s (6.825 m³/s), 174,600 acre-ft/yr (215 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) May 18, 1949, gage height, 26.21 ft (7.989 m), from rating curve extended above 35,500 ft³/s (1,010 m³/s) on basis of contracted-opening measurement of peak flow; no flow at times in 1956 and 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 23, 1903, reached a stage of about 29 ft (8.8 m) at former site and datum, from information by local resident; flood of May 18, 1949, reached a stage of 20.9 ft (6.37 m), from floodmark, at that site and datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 17	1330	3,160 89.5	16.21 4.941	June 25	0715	3,400 96.3	16.98 5.176
May 21	0330	*11,300 320	*22.45 6.843				

Minimum daily discharge, 18 ft³/s (0.51 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	180	130	81	1230	78	103	83	4200	1200	305	120
2	20	341	142	81	737	77	98	92	5020	1060	256	114
3	18	206	114	82	464	76	92	83	4100	992	228	110
4	416	175	102	82	332	78	93	83	2520	872	207	105
5	205	141	95	81	194	76	92	79	2040	759	192	98
6	114	123	90	78	143	74	85	83	1750	699	185	96
7	71	114	89	78	181	73	83	84	1630	683	185	94
8	49	124	88	76	174	73	82	96	1520	1110	187	92
9	40	214	87	71	138	72	83	88	1410	1080	229	91
10	36	224	85	65	100	72	82	83	1330	913	194	90
11	88	147	85	68	108	71	82	81	1290	739	178	89
12	568	124	85	65	138	71	80	112	1770	631	154	86
13	594	115	86	75	132	69	81	1230	2200	568	152	80
14	296	107	89	80	135	226	82	2370	1580	553	143	79
15	529	103	89	75	140	779	81	1240	1350	523	138	567
16	2160	101	87	73	143	423	76	739	1270	433	131	545
17	3090	97	84	70	138	257	73	2790	1210	379	128	223
18	2160	95	82	79	120	204	72	4270	1260	349	127	169
19	946	93	83	75	116	175	70	6250	1690	326	124	154
20	617	91	83	84	114	149	69	9330	2360	306	128	150
21	426	89	85	89	106	132	67	10700	2300	288	116	137
22	318	87	86	89	100	115	65	7470	2370	276	114	131
23	259	86	85	85	91	102	67	6290	1870	265	107	126
24	216	86	84	80	86	97	66	5770	2660	255	105	120
25	182	86	84	84	86	94	66	5340	3250	240	133	119
26	162	85	84	76	96	93	66	4570	2560	233	153	114
27	148	84	82	79	80	96	70	3410	1860	228	146	112
28	138	84	82	79	79	100	72	4470	1620	222	153	109
29	129	86	82	89	---	107	71	5250	1440	221	140	107
30	120	99	80	833	---	107	80	5600	1320	242	135	104
31	114	---	82	1880	---	105	---	4630	---	294	131	---
TOTAL	14252	3787	2791	4982	5701	4321	2349	92766	62750	16939	5004	4331
MEAN	460	126	90.0	161	204	139	78.3	2992	2092	546	161	144
MAX	3090	341	142	1880	1230	779	103	10700	5020	1200	305	567
MIN	18	84	80	65	79	69	65	79	1210	221	105	79
AC-FT	28270	7510	5540	9880	11310	8570	4660	184000	124500	33600	9930	8590
CAL YR 1981	TOTAL	55154.6	MEAN	151	MAX	3090	MIN	5.4	AC-FT	109400		
WTR YR 1982	TOTAL	219973	MEAN	603	MAX	10700	MIN	18	AC-FT	436300		

RED RIVER BASIN

07325500 WASHITA RIVER AT CARNEGIE, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1953 to September 1976.

WATER TEMPERATURE: October 1953 to September 1976.

REMARKS.--Samples were collected by a local observer on a weekly basis. A partial analysis was made bimonthly on one of these samples. Additional samples were collected semi-annually and specific conductance, pH, water temperature, and dissolved oxygen were determined in the field.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 23...	1450	80020	257	1050	7.5	14.5	10.5	109	450	343	120
NOV 13...	0900	80020	116	1610	8.4	9.0	--	--	--	--	--
DEC 27...	1200	80020	82	2410	8.1	3.0	--	--	--	--	--
MAY 13...	1100	80020	1260	2170	7.0	20.0	--	--	--	--	--
26...	1100	80020	4650	914	7.3	22.0	6.2	76	390	284	96
JUL 02...	0900	80020	1060	1720	7.6	26.0	--	--	--	--	--
AUG 07...	1400	80020	185	2370	7.4	30.0	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
OCT 23...	37	34	14	.7	6.6	110	370	33	.30	6.9
NOV 13...	--	--	--	--	--	--	710	77	--	--
DEC 27...	--	--	--	--	--	--	1000	110	--	--
MAY 13...	--	--	--	--	--	--	960	100	--	--
26...	37	31	14	.7	7.5	109	330	22	.20	11
JUL 02...	--	--	--	--	--	--	700	70	--	--
AUG 07...	--	--	--	--	--	--	1000	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)
OCT 23...	716	680	.97	.690	3.1	.020	.07	.710	500	3
NOV 13...	1160	--	1.6	--	--	--	--	--	--	--
DEC 27...	2040	--	2.8	--	--	--	--	--	--	--
MAY 13...	1930	--	2.6	--	--	--	--	--	--	--
26...	588	600	.80	.220	.97	.020	.07	.240	<100	3
JUL 02...	1410	--	1.9	--	--	--	--	--	--	--
AUG 07...	1940	--	2.6	--	--	--	--	--	--	--

RED RIVER BASIN

07325500 WASHITA RIVER AT CARNEGIE, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

07325500 WASHITA RIVER AT CARNEGIE, OK--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	1700	---	---	1160	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	2350	---	---	---	---	---	---	---	---	2700
4	---	2530	---	---	1810	2370	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	1780	---	2440	---
6	---	---	---	---	---	---	2260	---	---	---	---	---
7	---	---	---	2420	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	1950	---	---	---	---
9	2260	---	---	---	---	---	---	---	---	1740	---	---
10	---	---	2450	---	---	---	---	---	---	---	---	2490
11	---	---	---	---	2200	2520	---	---	---	---	---	---
12	---	2420	---	---	---	---	---	---	1060	---	---	---
13	---	---	---	---	---	---	---	2040	---	---	2480	---
14	---	---	---	2430	---	---	---	---	---	---	---	---
15	2150	---	---	---	---	---	2230	---	---	---	---	---
16	---	---	---	---	---	---	---	---	930	---	---	---
17	---	---	2450	---	---	---	---	---	---	2150	---	---
18	---	---	---	---	2310	2340	---	---	---	---	---	2370
19	---	2400	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	1810	---	---	2400	---
21	---	---	---	2450	---	---	---	---	---	---	---	---
22	2380	---	---	---	---	---	2070	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	2440	---	---	---	---	---	---	---	---	---
25	---	2360	---	---	---	2360	---	---	---	---	---	---
26	---	---	---	---	2340	---	---	---	1720	---	---	---
27	---	---	---	2410	---	---	---	1580	---	---	2460	---
28	---	---	---	---	---	---	---	---	---	---	---	2540
29	---	---	---	---	---	---	1900	---	---	---	---	---
30	2370	---	---	---	---	---	---	---	---	---	---	---
31	---	---	2430	---	---	---	---	---	---	2360	---	---
MEAN	2290	2430	2420	2430	2170	2400	2030	1850	1370	1850	2450	2530
WTR YR 1983		MEAN	2190	MAX	2700		MIN	930				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	11.0	---	---	29.0	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	11.0	---	---	---	---	---	---	---	---	25.0
4	---	10.0	---	---	1.0	14.0	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	25.0	---	30.0	---
6	---	---	---	---	---	---	9.0	---	---	---	---	---
7	---	---	---	6.0	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	22.0	---	---	---	---
9	23.0	---	---	---	---	---	---	---	---	27.0	---	---
10	---	---	6.0	---	---	---	---	---	---	---	---	---
11	---	---	---	---	4.0	14.0	---	---	---	---	---	---
12	---	14.0	---	---	---	---	---	---	20.0	---	---	---
13	---	---	---	---	---	---	---	24.0	---	---	34.0	---
14	---	---	---	8.0	---	---	---	---	---	---	---	---
15	20.0	---	---	---	---	---	16.0	---	---	---	---	---
16	---	---	---	---	---	---	---	---	24.0	---	---	---
17	---	---	5.0	---	---	---	---	---	---	26.0	---	---
18	---	---	---	---	10.0	10.0	---	---	---	---	---	27.0
19	---	13.0	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	21.0	---	---	27.0	---
21	---	---	---	3.0	---	---	---	---	---	---	---	---
22	16.0	---	---	---	---	---	17.0	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	8.0	---	---	---	---	---	---	---	---	---
25	---	6.0	---	---	---	10.0	---	---	---	---	---	---
26	---	---	---	---	10.0	---	---	---	27.0	---	---	---
27	---	---	---	4.0	---	---	---	28.0	---	---	31.0	---
28	---	---	---	---	---	---	---	---	---	---	---	21.0
29	---	---	---	---	---	---	22.0	---	---	---	---	---
30	20.0	---	---	---	---	---	---	---	---	---	---	---
31	---	---	4.0	---	---	---	---	---	---	28.0	---	---
MEAN	20.0	11.0	7.0	5.5	6.5	12.0	15.0	24.0	24.0	27.5	30.5	24.5
WTR YR 1983		MEAN	17.0	MAX	34.0		MIN	1.0				

NOTE: NUMBER OF MISSING DAYS OF RECORD EXCEEDED 20% OF YEAR

RED RIVER BASIN

07325800 COBB CREEK NEAR EAKLY, OK

LOCATION.--Lat 35°17'26", long 98°35'35", in NW 1/4 NE 1/4 sec.5, T.9 N., R.13 W., Caddo County, Hydrologic Unit 11130302, near left downstream abutment of bridge, on State Highway 152, .5 mi (0.8 km) downstream from Fivemile Creek, 3.0 mi (4.8 km) upstream from Fort Cobb Reservoir, 2.4 mi (3.9 km) southwest of Eakly, and at mile 22.9 (36.8 km).

DRAINAGE AREA.--132 mi² (342 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 1,369.70 ft (417.485 m) National Geodetic Vertical Datum of 1929. Oct. 29, 1980 to Aug. 11, 1982 gage at site 0.5 mi (0.8 km) downstream at same datum.

REMARKS.--Records poor. Some regulation by three small reservoirs having combined surface-area of 262 acres (1.06 km²) and capacity of 3,100 acre-ft (3.82 hm³).

AVERAGE DISCHARGE.--14 years, 21.3 ft³/s (0.603 m³/s), 15,430 acre-ft/yr (19.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 8,680 ft³/s (2,410 m³/s) May 17, 1982, gage height 21.08 ft (6.425 m) from floodmark, no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,680 ft³/s (246 m³/s) May 17, gage height, 21.08 ft (6.425 m); minimum daily, 0.86 ft³/s (0.024 m³/s) Oct. 1

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.86	45	22	11	25	11	14	17	60	12	7.0	5.0
2	.94	19	16	11	24	11	14	14	30	11	7.0	4.9
3	237	14	14	12	23	13	15	13	18	10	7.0	4.8
4	242	16	13	11	21	12	13	12	14	10	7.0	4.6
5	16	12	13	10	22	12	12	11	13	9.5	7.0	4.6
6	9.3	11	13	11	17	12	12	16	13	10	10	4.6
7	7.7	9.9	14	11	15	12	12	14	12	16	8.5	4.6
8	7.9	50	13	8.3	15	12	11	12	12	12	7.5	4.6
9	7.9	33	14	7.7	16	12	11	11	12	9.0	7.2	4.6
10	7.9	16	14	8.5	18	11	11	9.6	12	18	7.0	4.6
11	134	13	14	9.0	14	12	11	9.0	20	9.0	6.9	4.5
12	65	12	14	9.9	14	12	10	259	16	20	6.9	4.8
13	16	12	15	9.6	16	11	9.9	173	14	13	6.8	4.9
14	11	11	15	10	16	140	9.6	66	13	9.5	6.5	6.3
15	156	12	14	13	17	33	9.9	41	12	8.2	6.5	85
16	295	13	14	12	17	20	11	817	12	7.9	6.5	6.7
17	84	12	14	15	15	17	11	2690	12	7.6	6.5	6.2
18	31	12	13	16	15	15	9.9	483	40	7.6	6.4	5.9
19	17	12	12	16	14	15	9.3	150	30	7.4	6.3	5.9
20	11	13	12	16	13	13	9.3	50	22	7.4	6.3	5.9
21	8.5	11	12	17	12	11	9.0	30	17	7.2	6.2	5.6
22	7.7	11	14	17	12	11	8.7	20	15	7.2	6.2	5.6
23	5.8	11	17	17	12	11	8.7	800	13	7.2	6.0	5.6
24	5.6	11	13	16	11	11	9.0	500	40	7.2	5.8	5.6
25	6.1	11	11	16	11	11	10	200	35	7.0	5.6	5.6
26	6.6	11	11	17	11	12	10	100	30	7.0	5.4	5.6
27	5.6	12	12	17	11	14	9.9	60	22	7.0	5.4	5.6
28	5.1	11	12	18	11	16	11	200	18	7.0	5.3	5.6
29	4.9	11	10	19	---	15	10	80	15	7.0	5.2	5.6
30	4.8	26	10	207	---	15	14	30	14	7.0	5.2	5.6
31	40	---	12	39	---	14	---	100	---	7.0	5.0	---
TOTAL	1458.20	473.9	417	628.0	438	547	326.2	6987.6	606	292.9	202.1	239.0
MEAN	47.0	15.8	13.5	20.3	15.6	17.6	10.9	225	20.2	9.45	6.52	7.97
MAX	295	50	22	207	25	140	15	2690	60	20	10	85
MIN	.86	9.9	10	7.7	11	11	8.7	9.0	12	7.0	5.0	4.5
AC-FT	2890	940	827	1250	869	1080	647	13860	1200	581	401	474
CAL YR 1981	TOTAL	6610.27	MEAN	18.1	MAX	686	MIN	.50	AC-FT	13110		
WTR YR 1982	TOTAL	12615.90	MEAN	34.6	MAX	2690	MIN	.86	AC-FT	25020		

RED RIVER BASIN

07325900 FORT COBB RESERVOIR NEAR FORT COBB, OK

LOCATION.--Lat 35°09'30", long 98°27'40", in SE 4 sec.21, T.8 N., R.12 W., Caddo County, Hydrologic Unit 11130302, in control house at right center of dam on Cobb Creek, 4.0 mi (6.4 km) northwest of Fort Cobb, and at mile 7.5 (12.1 km).

DRAINAGE AREA.--304 mi² (787 km²).

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

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to October, 1961, nonrecording gage at same datum.

REMARKS.--Reservoir is formed by earth dam. Outlet consists of two sets of controlled 5 ft x 5 ft steel gages and an uncontrolled concrete spillway. Storage began Mar. 30, 1959. Conservation pool was first filled in June 1962. Capacity, 143,700 acre-ft (177 hm³) at elevation 1,354.8 ft (412.94 m) crest of drop inlet, 80,010 acre-ft (98.7 hm³) at elevation 1,342.0 ft (409.04 m) conservation pool, and 1,664 acre-ft (2.05 hm³) at elevation 1,300.0 ft (396.24 m) crest of gated outlet. Figures given herein represent total contents. Reservoir is used for flood control, for municipal and industrial water supply, and for irrigation releases. Revised capacity table used since May 1, 1964.

COOPERATION.--Elevations and data on diversions furnished by Fort Cobb Reservoir Master Conservancy District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 114,200 acre-ft (141 hm³) June 4, 1982, elevation, 1,349.44 ft (411.309 m); minimum since conservation pool was first filled, 54,650 acre-ft (67.4 hm³) Oct. 19, 1972, elevation 1,335.06 ft (406.926 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 114,200 acre-ft (141 hm³) June 4, elevation, 1,349.44 ft (411.309 m); minimum, 61,300 acre-ft (75.6 hm³) Oct. 3, elevation 1,337.05 ft (407.533 m).

MONTH-END ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30.....	1337.16	61,680	---	---
Oct. 31.....	1338.06	64,870	+ 3,190	1,182
Nov. 30.....	1338.13	65,120	+ 250	761
Dec. 31.....	1337.99	64,610	- 510	947
CAL YR 81.....	---	---	- 40	11,496
Jan. 31.....	1339.00	68,300	+ 3,690	722
Feb. 28.....	1339.18	68,970	+ 670	670
Mar. 31.....	1339.34	69,570	+ 600	932
Apr. 30.....	1339.16	68,900	- 670	774
May 31.....	1349.27	113,320	+44,420	667
June 30.....	1344.90	92,460	-20,860	728
July 31.....	1342.15	80,620	-11,840	936
Aug. 31.....	1341.37	77,450	- 3,170	1,064
Sept. 30.....	1340.79	75,150	- 2,300	805
WTR YR 82.....	---	---	+13,470	10,188

*Elevation at 0800 on following day.

RED RIVER BASIN

07326000 COBB CREEK NEAR FORT COBB, OK

LOCATION.--Lat 35°08'37", long 98°26'33", in NE 1/4 NE 1/4 sec.27, T.8 N., R.12 W., Caddo County, Hydrologic Unit 11130302, on left bank 10 ft (3.0 m) upstream from county road bridge, 0.3 mi (0.5 km) upstream from Punjo Creek, 1.2 mi (1.9 km) downstream from Fort Cobb Dam, 3.0 mi (4.8 km) north of Fort Cobb, and at mile 5.8 (9.3 km).

DRAINAGE AREA.--313 mi² (811 km²). Area at site used prior to Oct. 1, 1969, 319 mi² (826 km²).

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1960, published as Pond Creek near Fort Cobb.

REVISED RECORDS.--WSP 1087: 1938. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,259.49 ft (383.893 m) U.S. Bureau of Reclamation datum. Oct. 1, 1939, to Aug. 29, 1940, nonrecording gage and Aug. 30, 1940, to Sept. 30, 1969, water-stage recorder at site 0.8 mi (1.3 km) downstream at datum 6.92 ft (2.109 m) lower.

REMARKS.--Records fair except for period of no gage height record, July 12-Sept. 28, which is poor. Flow regulated since March 1959 by Fort Cobb Reservoir (station 07325900).

AVERAGE DISCHARGE.--(Prior to regulation by Fort Cobb Reservoir) 19 years (water years 1940-58), 50.2 ft³/s (1.42 m³/s) 36,340 acre-ft/yr (44.8 hm³/yr); (since regulation by Fort Cobb Reservoir) 24 years (water years 1959-82), 18.1 ft³/s (0.513 m³/s), 13,110 acre-ft/yr (16.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s (991 m³/s) May 17, 1949, gage height, 18.72 ft (5.706 m), from floodmark in gage well at former site and datum, from rating curve extended above 4,300 ft³/s (122 m³/s) on basis of contracted-opening measurements at gage heights 16.62 ft (5.066 m), 17.58 ft (5.358 m) and 18.72 ft (5.706 m), at former site and datum; minimum daily, 0.2 ft³/s (0.006 m³/s) Sept. 20, 24-28, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1937, reached a stage of 19.3 ft (5.88 m), site and datum used in 1939, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 1,060 ft³/s (30.0 m³/s) June 8, gage height 11.13 ft (3.392 m); minimum daily discharge, 0.47 ft³/s (0.013 m³/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	2.2	2.4	2.0	2.3	4.3	3.4	2.9	2.2	796	3.0	3.0
2	1.7	2.1	2.2	2.1	2.7	5.2	2.8	2.9	2.6	559	3.0	3.0
3	1.8	2.1	2.6	2.0	2.3	5.1	2.6	2.9	2.6	559	3.0	3.1
4	1.6	1.8	2.4	2.0	2.2	4.9	3.9	2.9	114	559	2.5	3.0
5	.54	2.0	2.3	2.0	2.4	4.7	3.3	3.5	467	559	2.5	3.0
6	.47	1.8	2.7	1.9	2.4	4.7	3.6	4.7	573	559	2.5	3.0
7	3.0	1.8	2.6	1.8	2.5	4.6	4.2	3.6	726	559	2.5	3.0
8	.93	2.4	2.7	2.3	2.6	4.8	3.7	3.6	1020	559	2.5	3.0
9	.57	2.2	2.6	2.2	2.6	5.6	3.0	3.7	960	464	2.5	3.0
10	1.8	2.2	1.9	2.0	2.4	5.1	2.8	3.8	960	366	2.5	2.5
11	4.3	2.2	2.6	2.0	2.5	4.4	2.8	4.2	810	366	2.0	2.5
12	2.3	2.3	2.1	2.1	2.7	4.2	2.8	13	560	161	2.0	2.5
13	1.9	2.1	2.8	2.2	3.0	4.1	2.8	4.8	560	3.0	2.0	2.5
14	1.9	2.2	2.2	2.0	3.0	5.3	2.8	4.2	560	3.0	2.0	2.5
15	7.1	2.3	1.9	2.1	3.0	3.9	2.8	4.0	560	3.0	2.0	3.0
16	2.6	2.3	2.1	2.1	3.0	3.8	2.8	7.3	740	3.0	2.0	2.5
17	1.9	2.2	2.0	2.0	3.0	3.6	2.6	31	948	3.0	2.0	2.5
18	2.2	2.4	2.0	2.0	3.0	3.5	2.8	3.9	948	3.0	2.0	2.5
19	1.7	2.3	2.2	4.3	3.1	3.3	2.8	4.2	948	3.0	2.0	2.5
20	1.8	2.6	2.4	2.0	3.1	3.3	2.8	3.7	948	3.0	2.0	2.5
21	1.6	2.6	1.9	1.9	3.1	3.0	2.8	4.0	804	2.5	2.0	2.5
22	2.0	2.5	1.9	1.8	3.1	2.8	3.1	3.0	582	2.5	2.0	2.5
23	1.8	2.5	2.0	1.9	3.1	3.0	3.1	4.2	582	2.5	2.0	2.5
24	1.7	2.3	2.1	2.1	3.1	3.3	3.1	4.5	263	2.5	2.5	2.0
25	2.1	2.7	2.1	2.4	3.1	2.9	3.1	3.3	4.9	2.5	2.5	2.0
26	1.7	2.6	2.0	2.1	3.2	3.1	3.0	4.0	1.6	2.5	2.5	2.0
27	1.9	2.3	2.0	2.1	3.2	3.4	3.0	4.0	1.5	2.5	2.5	2.0
28	1.8	2.2	2.0	2.2	3.7	3.0	3.0	17	130	2.5	2.5	2.1
29	1.7	2.6	2.1	2.4	---	3.0	3.0	2.4	419	2.5	2.5	1.4
30	1.8	3.3	2.1	4.2	---	3.1	2.9	2.1	656	2.5	2.5	1.9
31	2.1	---	2.1	2.4	---	2.8	---	11	---	3.0	3.0	---
TOTAL	62.01	69.1	69.0	68.6	79.4	121.8	91.2	174.3	15853.4	6118.0	73.0	76.0
MEAN	2.00	2.30	2.23	2.21	2.84	3.93	3.04	5.62	528	197	2.35	2.53
MAX	7.1	3.3	2.8	4.3	3.7	5.6	4.2	31	1020	796	3.0	3.1
MIN	.47	1.8	1.9	1.8	2.2	2.8	2.6	2.1	1.5	2.5	2.0	1.4
AC-FT	123	137	137	136	157	242	181	346	31450	12140	145	151
CAL YR 1981	TOTAL	847.13	MEAN	2.32	MAX	31	MIN	.20	AC-FT	1680		
WTR YR 1982	TOTAL	22855.81	MEAN	62.6	MAX	1020	MIN	.47	AC-FT	45330		

RED RIVER BASIN

07326500 WASHITA RIVER AT ANADARKO, OK

LOCATION.--Lat 35°05'06", long 98°14'35", in NW 1/4 sec.15, T.7 N., R.10 W., Caddo County, Hydrologic Unit 11130302 at left bank 35 ft (10.7 m) upstream from bridge on U.S. Highway 281 at north edge of Anadarko, 8.1 mi (13.0 km) upstream from Sugar Creek, and at mile 305.2 (491.1 km).

DRAINAGE AREA.--3,656 mi² (9,460 km²).

PERIOD OF RECORD.--October 1902 to September 1908; June 1924 to June 1925, published as "near Anadarko", October 1935 to February 1938; October 1963 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: 1903, 1907-08, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,150.00 ft (350.520 m) National Geodetic Vertical Datum of 1929. October 26, 1902, to June 30, 1908, nonrecording gage at former bridge 125 ft (38.1 m) downstream at datum estimated to be 2.8 ft (0.85 m) higher. May 25, 1924, to June 30, 1925, nonrecording gage at county road bridge 14 mi (22.5 km) downstream at different datum. Jan. 10, 1936, to Mar. 7, 1938, non-recording gage on upstream side of bridge on U.S. Highway 281 at datum 1.88 ft (0.573 m) higher.

REMARKS.--Records fair. Some regulation by low-water dams upstream and since March 1959, by Fort Cobb Reservoir (station 07325900), since February 1961, by Foss Reservoir (station 07324300), and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--27 years (water years 1903-08, 1936-37, 1964-82), 375 ft³/s (10.62 m³/s), 271,700 acre-ft/yr (335 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s (821 m³/s) May 25, 1903, gage height, 26.8 ft (8.17 m), affected by backwater, site and datum then in use; no flow Aug. 1, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1949, reached an elevation of 1,176.7 ft (358.66 m), from floodmark, at right bank on downstream side of bridge on U.S. Highway 281.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage Height (ft)	Gage Height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage Height (ft)	Gage Height (m)
Oct. 18	1000	3,090	87.5	13.91	4.240	May 26	0645	*6,260	177	*19.71	6.008

Minimum daily discharge, 50 ft³/s (1.42 m³/s) Oct. 1-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	102	99	100	1680	133	122	113	5080	2230	313	145
2	50	99	100	100	1090	133	122	110	4890	2210	319	142
3	50	176	117	100	810	133	121	107	4700	2000	321	139
4	50	205	132	100	564	133	117	107	4650	1860	316	135
5	51	181	133	100	423	136	113	102	3960	1730	303	132
6	245	152	126	100	299	136	113	102	3470	1590	288	128
7	204	130	118	100	235	136	112	102	3170	1500	274	126
8	121	119	112	100	206	136	108	100	2990	1410	262	124
9	87	115	108	100	217	136	107	94	2960	1510	331	121
10	82	118	105	100	185	136	107	94	2860	1620	336	121
11	82	177	105	95	170	139	109	94	2760	1430	247	118
12	94	182	104	92	168	148	111	94	2670	1280	221	118
13	233	155	102	94	168	152	114	153	2630	1120	211	115
14	616	135	102	100	164	164	115	1400	2880	896	201	115
15	462	126	102	107	158	239	116	2200	2780	763	195	115
16	479	119	102	113	164	694	118	991	2530	701	189	372
17	2010	117	102	105	171	615	116	1230	2410	635	184	513
18	3020	118	102	105	173	392	115	3290	2440	559	179	261
19	2200	116	102	102	171	299	113	4460	2480	512	175	159
20	935	111	102	102	164	256	113	5000	2610	487	171	135
21	624	108	100	102	158	217	113	4870	3000	459	170	136
22	426	106	100	105	149	188	113	5230	3230	440	166	131
23	303	105	100	107	145	168	113	5590	3120	423	164	127
24	236	103	100	110	142	148	113	5900	3040	408	161	126
25	195	102	100	110	138	130	113	6130	3280	392	157	123
26	167	102	100	110	131	122	113	6240	3780	378	154	121
27	146	101	100	110	120	118	113	6090	3430	363	151	118
28	129	99	100	107	135	118	113	5690	2840	351	148	116
29	116	99	100	107	---	118	110	4970	2470	338	148	115
30	109	99	100	311	---	119	110	4780	2300	324	148	114
31	104	---	100	1090	---	122	---	4900	---	314	146	---
TOTAL	13676	3777	3275	4384	8498	6014	3406	80333	95410	30233	6749	4561
MEAN	441	126	106	141	304	194	114	2591	3180	975	218	152
MAX	3020	205	133	1090	1680	694	122	6240	5080	2230	336	513
MIN	50	99	99	92	120	118	107	94	2300	314	146	114
AC-FT	27130	7490	6500	8700	16860	11930	6760	159300	189200	59970	13390	9050
CAL YR 1981	TOTAL	58809	MEAN	161	MAX	3020	MIN	34	AC-FT	116600		
WTR YR 1982	TOTAL	260316	MEAN	713	MAX	6240	MIN	50	AC-FT	516300		

RED RIVER BASIN

07327490 LITTLE WASHITA RIVER NEAR NINNEKAH, OK

LOCATION.--Lat 34°56'41", long 97°57'08", in SE 1/4 SE 1/4 sec.32, T.6 N., R.7 W., Grady County, Hydrologic Unit 11130302, at left bank on downstream side of bridge on U.S. Highway 81, 1.0 mi (1.6 km) upstream from Rock Creek, 1.5 mi (2.4 km) west of Ninneka, 5.5 mi (8.8 km) south of Chickasha, and at mile 8.4 (13.5 km).

DRAINAGE AREA.--208 mi² (539 km²).

PERIOD OF RECORD.--October 1963 to current year.

REVISED RECORDS.--WRD Okla. 1971, 1964-65 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,065.94 ft (324.899 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Small diversions above station for irrigation.

COOPERATION.--Records furnished by Agricultural Research Service.

AVERAGE DISCHARGE.--19 years, 29.8 ft³/s (0.844 m³/s), 21,590 acre-ft/yr (26.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,560 ft³/s (214 m³/s) May 10, 1964, gage height, 20.65 ft (6.294 m); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 15	1900	1,580 44.7	14.10 4.298	May 17	0715	*2,070 58.6	*16.22 4.944
May 12	2300	1,900 53.8	15.38 4.688	May 24	1445	1,520 43.0	14.56 4.438

Minimum daily discharge, 5.3 ft³/s (0.15 m³/s) Oct. 4, 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	62	31	20	43	24	20	41	157	57	18	8.7
2	6.1	46	26	20	38	23	19	22	99	54	17	8.7
3	5.5	39	23	22	44	23	20	18	94	51	16	8.7
4	5.3	37	22	23	35	23	18	15	81	47	16	7.8
5	5.3	34	22	22	32	24	17	118	70	46	15	7.4
6	5.5	33	22	20	28	24	18	454	61	42	16	7.0
7	8.2	33	23	16	28	25	17	96	61	253	19	7.0
8	14	72	22	16	28	24	18	43	59	77	20	7.0
9	12	71	23	16	28	24	18	36	53	46	20	7.0
10	10	44	23	16	24	25	19	30	50	42	19	7.0
11	243	38	23	16	24	27	21	29	268	38	17	7.0
12	551	57	24	16	28	28	20	322	317	34	16	7.8
13	140	27	24	15	42	31	18	559	105	33	16	7.8
14	59	20	27	15	40	53	18	107	70	31	13	9.4
15	533	21	27	16	39	53	17	63	71	28	13	215
16	476	21	25	16	38	44	18	59	62	26	11	68
17	174	20	22	16	37	38	18	1120	53	22	11	28
18	75	20	20	18	34	31	16	287	165	21	12	24
19	48	20	20	27	30	31	16	254	188	21	12	23
20	37	20	20	28	28	31	15	128	94	20	12	22
21	33	20	22	25	27	27	13	180	198	18	12	20
22	35	19	24	33	27	25	13	128	113	16	11	20
23	34	20	24	28	26	23	14	102	70	15	10	20
24	30	18	22	24	26	24	15	709	126	15	10	19
25	30	17	22	24	25	25	16	373	251	15	10	19
26	31	17	22	21	24	26	17	355	108	16	10	19
27	31	17	22	20	24	32	15	419	74	19	11	18
28	32	19	22	19	24	38	18	507	64	19	16	17
29	31	20	20	19	---	38	20	174	60	19	12	16
30	31	27	20	104	---	27	44	89	60	18	12	16
31	44	---	20	79	---	23	---	387	---	18	10	---
TOTAL	2777.5	929	709	770	871	914	546	7224	3302	1177	433	672.3
MEAN	89.6	31.0	22.9	24.8	31.1	29.5	18.2	233	110	38.0	14.0	22.4
MAX	551	72	31	104	44	53	44	1120	317	253	20	215
MIN	5.3	17	20	15	24	23	13	15	50	15	10	7.0
AC-FT	5510	1840	1410	1530	1730	1810	1080	14330	6550	2330	859	1330
CAL YR 1981	TOTAL	9900.30	MEAN	27.1	MAX	763	MIN	.00	AC-FT	19640		
WTR YR 1982	TOTAL	20324.8	MEAN	55.7	MAX	1120	MIN	5.3	AC-FT	40310		

RED RIVER BASIN

07328070 WINTER CREEK NEAR ALEX, OK

LOCATION.--Lat 34°59'35", long 97°45'40", in NE 1/4 sec.18, T.6 N., R.5 W., Grady County, Hydrologic Unit 11130303, at left bank 1,000 ft (304.8 m) downstream from county road bridge, 0.7 mi (1.1 km) downstream from East Winter Creek, 3.2 mi (5.2 km) upstream from mouth, and 5.5 mi (8.9 km) north of Alex.

DRAINAGE AREA.--33 mi² (86 km²).

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

GAGE.--Water-stage recorder and broad crest V-notch weir. Datum of gage is 1,040.00 ft (316.992 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1977 at datum 8.20 ft (2.499m) higher.

REMARKS.--Records good. Flow regulated by 16 flood-retarding structures, combined capacity, 1,050 acre-ft (1.29 hm³). Minor diversions for irrigation above station.

AVERAGE DISCHARGE.--18 years, 8.62 ft³/s (0.244 m³/s), 6,240 acre-ft/yr (7.69 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,080 ft³/s (172 m³/s) May 27, 1978, gage height, 17.35 ft (5.288 m); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 309 ft³/s (8.75 m³/s) May 17, gage height, 12.70 ft (3.871 m), no peak above base of 500 ft³/s (14.2 m³/s); minimum daily discharge, 0.21 ft³/s (0.006 m³/s) Oct.1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.21	11	4.9	3.0	19	4.4	4.3	31	25	11	5.3	2.0
2	.22	5.1	3.9	3.0	16	4.6	4.3	22	22	9.5	5.1	2.0
3	.22	4.2	3.7	3.7	13	4.7	3.9	15	21	8.2	3.7	2.0
4	.24	4.1	3.2	3.7	10	4.7	3.6	11	19	6.8	3.0	2.0
5	1.6	3.7	3.0	3.2	8.0	4.4	3.8	33	17	6.0	2.6	2.0
6	4.6	3.2	3.0	3.0	7.0	4.3	3.2	116	15	5.5	2.5	2.0
7	4.7	3.0	3.0	2.8	7.0	4.2	3.0	68	14	51	3.0	2.0
8	4.3	48	3.0	2.6	7.7	4.2	3.4	54	13	19	3.2	2.0
9	3.4	71	3.0	2.7	7.3	4.2	3.3	37	11	14	2.9	2.0
10	2.0	40	3.0	2.0	6.0	4.0	3.4	25	10	11	2.7	2.0
11	5.8	29	3.0	1.9	6.5	4.1	3.5	19	18	8.8	2.6	2.0
12	9.8	20	3.0	2.7	7.6	4.2	3.5	38	19	7.9	2.6	2.0
13	5.2	14	2.9	2.9	6.9	4.7	3.6	96	14	7.1	2.2	2.0
14	3.7	10	3.2	2.7	6.8	8.4	3.5	57	11	6.5	2.2	2.0
15	28	8.2	3.5	3.2	6.8	7.1	3.3	41	16	6.0	2.1	100
16	9.5	6.5	3.5	2.4	6.4	6.3	3.1	30	14	5.1	2.2	60
17	5.5	5.7	3.3	2.3	6.2	5.5	3.1	165	11	4.7	2.5	35
18	4.9	5.1	3.0	3.0	5.8	5.5	2.8	90	11	4.2	2.5	10
19	3.8	3.9	3.2	3.5	5.5	5.1	2.9	91	24	3.7	2.5	7.0
20	3.2	3.2	3.2	3.5	5.7	4.8	3.1	61	13	3.5	2.5	4.0
21	2.7	3.2	3.5	3.5	5.8	4.4	2.8	47	52	3.3	2.5	3.0
22	2.7	3.2	3.7	9.8	5.8	3.8	2.7	35	23	3.0	2.5	2.5
23	2.4	3.3	3.3	5.3	5.7	3.5	2.7	27	16	3.2	2.5	2.5
24	2.2	3.1	3.2	4.6	5.5	3.6	2.9	69	54	3.0	2.5	2.5
25	2.1	3.0	3.2	4.2	4.9	4.0	4.0	60	77	2.9	2.5	2.5
26	2.3	3.0	3.3	3.9	4.6	3.2	3.9	52	48	2.7	2.3	2.3
27	2.2	3.0	3.3	3.5	4.7	5.7	3.5	48	36	2.6	2.3	2.3
28	2.0	3.0	3.2	3.5	4.7	5.7	6.2	69	26	2.7	2.2	2.1
29	2.0	3.2	2.9	3.3	---	5.2	9.4	47	19	3.0	2.2	2.0
30	2.0	6.8	2.9	58	---	5.0	41	35	14	3.3	2.2	2.0
31	4.8	---	3.0	28	---	4.7	---	38	---	3.9	2.2	---
TOTAL	128.29	333.7	101.0	185.4	206.9	148.2	147.7	1627	683	233.1	83.8	267.7
MEAN	4.14	11.1	3.26	5.98	7.39	4.78	4.92	52.5	22.8	7.52	2.70	8.92
MAX	28	71	4.9	58	19	8.4	41	165	77	51	5.3	100
MIN	.21	3.0	2.9	1.9	4.6	3.2	2.7	11	10	2.6	2.1	2.0
AC-FT	254	662	200	368	410	294	293	3230	1350	462	166	531
CAL YR 1981	TOTAL	1283.92	MEAN	3.52	MAX	71	MIN	.10	AC-FT	2550		
WTR YR 1982	TOTAL	4145.79	MEAN	11.4	MAX	165	MIN	.21	AC-FT	8220		

RED RIVER BASIN

07328100 WASHITA RIVER AT ALEX, OK

LOCATION.--Lat 34°55'35", long 97°46'30", in NW 1/4 sec.7, T.5 N., R.5 W., Grady County, Hydrologic Unit 11130303, near left bank on downstream side of county road bridge, 1.0 mi (1.6 km) north of Alex, 3.8 mi (6.1 km) downstream from Winter Creek, and at mile 226.5 (362.4 km).

DRAINAGE AREA.--4,787 mi² (12,398 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 1,000.00 ft (304.800 m) above mean sea level.

REMARKS.--Records poor. Some regulation by Fort Cobb Reservoir (station 07325900), by Foss Reservoir (07324300), and by numerous flood-retarding structures.

COOPERATION.--Records furnished by Agricultural Research Service prior to January 1978.

AVERAGE DISCHARGE.--18 years, 405 ft³/s (11.47 m³/s), 293,400 acre-ft/yr (362 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,350 ft³/s (265 m³/s) May 7, 1969, gage height, 17.83 ft, (5.435 m); maximum gage height 18.34 ft (5.590 m); June 2, 1973; no flow Aug. 13-18, 1970, Aug. 30 to Sept. 1, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,800 ft³/s (108 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 16	0600	4,840 137	13.30 4.054	May 29	0245	*8,000 227	*16.31 4.971
May 17	2145	6,390 181	14.52 4.426	June 25	1345	4,370 124	12.41 3.783
May 25	0315	7,530 213	15.81 4.819				

Minimum daily discharge, 25 ft³/s (0.71 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	365	214	158	1650	131	146	386	7020	2160	448	180
2	32	310	216	159	2010	141	149	220	6690	2180	467	178
3	25	275	200	159	1620	134	138	167	6910	2070	475	174
4	38	266	194	161	1150	128	136	139	6860	1800	465	167
5	34	429	216	162	821	124	129	164	6280	1690	409	164
6	53	334	221	156	522	124	121	1620	5290	1580	382	161
7	58	293	208	150	371	119	117	914	3700	2260	370	159
8	155	525	195	144	315	119	118	533	3080	2370	406	155
9	175	1780	187	140	315	119	117	371	2870	1710	403	148
10	120	657	181	140	308	117	115	286	2850	1800	395	152
11	132	447	178	140	293	114	114	243	2940	1660	502	147
12	1800	405	175	140	298	114	113	380	3210	1470	402	152
13	1260	454	174	140	275	117	112	2520	2770	1310	327	155
14	455	348	173	140	268	600	108	1450	2700	1140	315	152
15	1220	289	175	140	268	371	105	1560	3040	977	289	670
16	3900	259	177	140	264	268	102	2380	2660	919	277	539
17	1970	242	174	150	261	503	97	4970	2300	873	266	455
18	1960	230	170	150	242	661	97	5460	2370	801	253	635
19	2640	215	170	150	236	444	96	4870	2750	717	248	611
20	2440	204	169	161	220	320	89	5130	2680	667	242	387
21	1540	197	167	158	206	257	86	5030	3230	617	230	286
22	1170	197	158	194	189	220	84	5200	3680	574	226	258
23	922	193	159	153	180	194	82	5160	3520	545	224	246
24	698	186	162	150	167	177	81	6050	3720	513	206	234
25	555	183	162	156	156	161	85	7130	4210	489	199	220
26	472	179	159	155	153	152	88	6390	4200	468	196	213
27	405	172	159	148	144	143	83	6800	4220	448	194	208
28	345	171	159	147	141	148	89	7410	3660	428	214	202
29	310	173	159	143	---	164	124	7790	2660	427	206	195
30	277	200	159	1210	---	164	260	7370	2280	453	197	189
31	266	---	156	1990	---	150	---	7500	---	439	187	---
TOTAL	25463	10178	5526	7584	13043	6698	3381	105593	114350	35555	9620	7842
MEAN	821	339	178	245	466	216	113	3406	3812	1147	310	261
MAX	3900	1780	221	1990	2010	661	260	7790	7020	2370	502	685
MIN	25	171	156	140	141	114	81	139	2280	427	187	147
AC-FT	50510	20190	10960	15040	25870	13290	6710	209400	226800	70520	19080	15550
CAL YR 1981	TOTAL	91490	MEAN	251	MAX	3900	MIN	14	AC-FT	181500		
WTR YR 1982	TOTAL	344833	MEAN	945	MAX	7790	MIN	25	AC-FT	684000		

RED RIVER BASIN

07328500 WASHITA RIVER NEAR PAULS VALLEY, OK

LOCATION.--Lat 34°45'17", long 97°15'04", in SE 1/4 sec.1. T.3 N., R.1 W., Garvin County, Hydrologic Unit 11130303, on downstream side of left pier of bridge on U.S. Highway 77, 2 mi (3 km) northwest of Pauls Valley, 6 mi (10 km) downstream from Owl Creek, 7 mi (11 km) upstream from Washington Creek, and at mile 146.5 (235.7 km).

DRAINAGE AREA.--5,330 mi² (13,805 km²).

PERIOD OF RECORD.--May to December 1899 (gage heights only), October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as "at Pauls Valley, Indian Territory" in 1899.

GAGE.--Water-stage recorder. Datum of gage is 854.61 ft (260.485 m) National Geodetic Vertical Datum of 1929. During 1899, nonrecording gage at site 9 mi (14 km) downstream at different datum. Mar. 29, 1938, to Jan. 25, 1939, nonrecording gage and Jan. 26, 1939, to Oct. 6, 1948, water-stage recorder at site 0.7 mi (1.1 km) upstream at datum 1.53 ft (0.466 m) higher. Mar. 11, 1975 to Jan. 26, 1981, water-stage recorder at site 200 ft (61.0 km) upstream and at same datum.

REMARKS.--Records fair. Some diversion for irrigation above station. Some regulation since March 1959, by Fort Cobb Reservoir (station 07325900), since February 1961, by Foss Reservoir (station 07234300), and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--45 years, 685 ft³/s (19.39 m³/s), 496,300 acre-ft/yr (612 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,800 ft³/s (1,010 m³/s) May 18, 1957, gage height, 27.34 ft (8.333 m); maximum gage height, 29.88 ft (9.107 m) May 11, 1950; no flow in 1956, 1964, 1966-67, 1970-72.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stream is reported to have receded to no flow in 1882 and in 1897 (from information by local resident).

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 5,000 ft³/s (142 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 17	0130	5,730 162	12.65 3.856	June 1	0145	*11,100 314	*17.34 5.285
May 17	1615	8,780 249	15.53 4.734				

Minimum daily discharge, 27 ft³/s (0.76 m³/s) Oct. 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	221	299	120	1720	101	124	366	10200	2470	561	259
2	48	216	263	120	1620	97	112	415	8050	2330	562	254
3	47	203	257	116	1880	95	102	282	7250	2390	568	256
4	47	172	252	115	1630	95	92	255	7130	2230	546	247
5	35	175	231	115	1260	94	87	264	6690	1940	544	234
6	27	178	225	117	929	93	80	2500	6170	1820	543	222
7	35	209	249	108	756	93	70	2090	5100	2250	536	216
8	42	230	247	101	632	93	61	1070	3780	3040	537	157
9	70	1300	229	93	549	93	64	811	3170	2850	541	140
10	152	1220	216	85	461	93	66	791	3030	2120	539	129
11	186	574	208	97	426	93	64	783	3030	1900	527	140
12	164	423	201	102	414	93	57	783	3610	1750	508	137
13	1910	352	200	101	410	92	56	2490	3310	1600	509	129
14	1200	385	201	99	373	942	53	3340	2830	1420	497	134
15	721	363	199	100	370	707	48	2040	2820	1290	459	155
16	2620	313	194	103	358	707	43	2030	3050	1120	427	408
17	4550	282	188	101	333	426	41	6800	2640	994	410	505
18	1900	266	183	101	302	404	41	8000	2370	923	403	443
19	1930	255	174	161	272	527	40	6960	2710	828	395	525
20	2390	247	173	199	233	392	38	6040	2880	750	383	516
21	2020	251	172	182	206	316	35	5450	3260	706	351	425
22	1420	259	167	169	190	268	33	5170	3650	668	335	337
23	879	242	163	163	171	244	31	5170	3830	627	325	291
24	627	242	157	192	153	236	31	7050	3690	622	305	289
25	502	231	153	172	134	182	31	9920	4550	607	290	268
26	405	223	147	154	119	154	37	8440	4640	582	260	253
27	333	216	139	140	112	140	38	7520	4400	586	240	234
28	280	210	135	134	108	142	38	9830	4360	609	237	224
29	233	208	134	157	---	142	44	8810	3710	599	269	218
30	203	292	130	530	---	142	109	8270	2840	582	275	208
31	264	---	125	1930	---	140	---	9860	---	583	269	---
TOTAL	25290	9958	6011	6177	16121	7436	1766	133600	128750	42786	13151	7953
MEAN	816	332	194	199	576	240	58.9	4310	4292	1380	424	265
MAX	4550	1300	299	1930	1880	942	124	9920	10200	3040	568	525
MIN	27	172	125	85	108	92	31	255	2370	582	237	129
AC-FT	50160	19750	11920	12250	31980	14750	3500	265000	255400	84870	26090	15770
CAL YR 1981	TOTAL	101825		MEAN	279	MAX	4550	MIN	14	AC-FT	202000	
WTR YR 1982	TOTAL	398999		MEAN	1093	MAX	10200	MIN	27	AC-FT	791400	

RED RIVER BASIN

07329000 RUSH CREEK AT PURDY, OK

LOCATION.--Lat 34°41'42", long 97°35'54", in SE 1/4 SE 1/4 sec.27, T.3 N., R.4 W., on left downstream bank near end of bridge on State Highway 76, 0.8 mi (1.3 km) south of Purdy, 8.5 mi (13.7 km) south of Lindsay, and at mile 27.3 (43.9 km).

DRAINAGE AREA.--145 mi² (376 km²)

PERIOD OF RECORD.--October 1939 to December 1953, February 1982 to current year. Prior to May 1940 monthly discharges only, published in WSP 1311.

REVISED RECORD.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1004.12 ft (306.056 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1942, nonrecording gage at site 1.2 mi (1.9 km) downstream at datum 9.42 ft (2.871 m) lower. Oct. 1, 1942 to Aug. 22, 1943 and May 11, 1950 to Sept. 18, 1952 nonrecording gage 1.2 mi (1.9 km) downstream at datum 14.42 ft (4.395 m) lower, Aug. 23, 1943 to May 10, 1950 and Sept. 19, 1952 to Dec. 31, 1953 water-stage recorder at site 1.2 mi (1.9 km) downstream at datum 14.42 ft (4.395 m) lower.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--14 yrs (water years 1940-1953), 72.0 ft³/s (2.039 m³/s), 52,130 acre-ft/yr (64.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s (850 m³/s) May 10, 1950, gage height, 27.00 ft (8.230 m), from floodmarks and from rating extended above 5,000 ft³/s (142 m³/s) on the basis of a slope-area measurement at 27.00 ft (8.230 m). No flow at times in 1939, 1940, 1953.

EXTREMES FOR CURRENT PERIOD.--Period Feb. 1 to Sept. 30, maximum discharge, 3,280 ft³/s (92.9 m³/s) May 24, gage height, 18.60 ft (5.669 m); minimum daily discharge, 1.3 ft³/s (0.04 m³/s) Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, PERIOD FEBRUARY 1982 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					45	10	20	40	1090	91	21	3.5
2					40	10	20	41	409	72	19	4.6
3					32	11	15	38	261	68	18	4.2
4					29	9.8	12	31	203	48	14	3.5
5					22	9.2	19	46	184	40	12	3.3
6					23	8.7	14	417	167	32	9.5	3.5
7					22	8.2	11	177	150	570	11	3.0
8					20	8.2	10	101	133	190	14	3.0
9					16	8.4	10	66	116	140	32	2.8
10					20	8.4	11	46	98	114	19	2.8
11					19	9.2	12	38	91	91	13	2.8
12					19	9.5	12	311	84	79	13	2.8
13					19	9.8	12	949	77	57	9.2	2.6
14					19	231	11	517	70	44	8.2	2.6
15					20	73	11	252	64	38	9.2	8.2
16					19	54	11	181	71	34	8.4	5.8
17					19	44	9.5	1430	60	29	7.7	4.4
18					18	37	9.0	888	83	22	8.2	5.1
19					16	31	9.0	549	93	19	8.0	3.5
20					15	25	8.0	324	94	16	7.7	2.3
21					33	20	7.5	236	100	15	7.5	1.8
22					31	16	7.0	1250	112	13	7.3	1.7
23					29	13	6.2	589	140	12	6.7	1.6
24					26	13	6.5	1470	88	11	6.2	1.5
25					21	12	7.3	640	148	13	5.1	1.4
26					16	21	8.0	1700	155	11	5.1	1.3
27					12	26	7.5	1100	143	11	5.1	3.3
28					10	27	8.4	2100	128	12	5.1	3.0
29					---	26	9.5	1300	113	13	4.9	2.6
30					---	26	31	3250	100	16	4.4	2.1
31					---	23	---	1340	---	20	4.0	---
TOTAL					630	838.4	345.4	21417	4825	1941	323.5	94.6
MEAN					22.5	27.0	11.5	691	161	62.6	10.4	3.15
MAX					45	231	31	3250	1090	570	32	8.2
MIN					10	8.2	6.2	31	60	11	4.0	1.3

RED RIVER BASIN

07329700 WILDHORSE CREEK NEAR HOOVER, OK

LOCATION.--Lat 34°32'29", long 97°14'49", on west line of SW 1/4 sec.19, T.1 N., R.1 E., Garvin County, Hydrologic Unit 11130303, on downstream left bank at bridge on State Highway 19A, 1.5 mi (2.4 km) north of Hoover, 1.8 mi (2.9 km) downstream from Sandy Creek, and at mile 7.9 (12.7 km).

DRAINAGE AREA.--604 mi² (1,564 km²).

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1944, 1951-69. October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 803.3 ft (244.85 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Flow regulated by Duncan, Clear Creek, Humphries and Fuqua Lakes, combined surface-area, 3,340 acres (13.5 km²), and capacity, 44,800 acre-ft (55.2 hm³), and numerous flood-retarding structures.

AVERAGE DISCHARGE.--13 years, 184 ft³/s (5.211 m³/s), 133,300 acre-ft/yr (164 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,700 ft³/s (530 m³/s) May 20, 1977, gage height, 24.70 ft (7.529 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (113 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 16	1130	7,320 207	18.51 5.642	May 22	1300	6,410 182	16.97 5.172
May 6	0415	*14,800 419	*23.51 7.166	May 24	2230	5,420 153	15.44 4.706
May 13	0745	10,600 300	20.53 6.258	May 29	0115	6,040 171	16.42 5.005
May 17	1115	9,260 262	19.62 5.980	June 25	1015	4,500 127	13.92 4.243

Minimum daily discharge, 3.2 ft³/s (.091 m³/s) Apr. 22-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	512	153	19	227	26	12	101	1880	861	146	22
2	4.1	291	84	18	237	26	11	95	1440	315	104	21
3	4.1	201	62	18	261	25	9.6	42	1320	258	84	22
4	4.1	183	50	18	131	23	8.3	19	1150	191	70	22
5	4.1	152	45	17	81	21	7.6	824	937	167	63	21
6	5.2	110	42	16	60	19	7.0	9230	858	145	58	20
7	5.3	100	41	14	56	19	6.4	2600	792	1860	63	20
8	5.1	139	40	12	54	18	6.7	1220	719	2120	70	20
9	4.8	735	38	12	48	18	6.4	886	651	1680	72	19
10	4.5	296	37	10	35	18	7.1	767	586	948	59	19
11	4.0	172	37	10	38	18	8.2	659	1000	740	54	18
12	14	136	37	10	45	18	7.6	2760	1490	582	50	17
13	1070	124	37	9.8	45	17	6.8	7610	825	450	46	16
14	452	129	38	9.8	41	587	6.6	3780	573	374	43	16
15	1100	122	36	9.7	40	603	6.3	2000	476	352	41	17
16	4540	112	35	9.7	42	205	5.5	1620	1280	282	38	25
17	2250	110	31	9.7	42	128	4.7	5930	667	226	37	21
18	1180	110	27	9.7	40	81	4.4	3800	453	185	37	20
19	624	106	26	10	35	55	4.6	2930	394	157	37	18
20	422	98	27	13	33	38	4.3	2160	341	136	36	18
21	346	88	27	12	30	25	3.4	1680	1280	124	35	18
22	310	75	27	13	28	18	3.2	4990	1650	110	33	18
23	282	59	26	11	26	14	3.2	2210	678	102	31	16
24	258	49	24	9.0	26	14	3.2	2920	446	95	29	15
25	237	44	24	8.1	23	13	3.8	3760	2890	88	28	15
26	218	42	24	8.1	29	11	5.2	2940	1160	87	27	15
27	196	38	23	7.6	30	15	5.0	2280	755	80	27	15
28	128	37	23	6.8	26	28	3.8	10900	2120	85	31	14
29	92	37	22	6.8	---	20	4.1	5070	865	80	31	15
30	80	84	19	211	---	17	26	2900	630	84	30	14
31	608	---	19	382	---	14	---	2370	---	155	25	---
TOTAL	14456.4	4491	1181	930.8	1809	2152	202.0	91053	30306	13119	1535	547
MEAN	466	150	38.1	30.0	64.6	69.4	6.73	2937	1010	423	49.5	18.2
MAX	4540	735	153	382	261	603	26	10900	2890	2120	146	25
MIN	4.0	37	19	6.8	23	11	3.2	19	341	80	25	14
AC-FT	28670	8910	2340	1850	3590	4270	401	180600	60110	26020	3040	1080
CAL YR 1981	TOTAL	46994.4	MEAN	129	MAX	4540	MIN	3.5	AC-FT	93210		
WTR YR 1982	TOTAL	161782.2	MEAN	443	MAX	10900	MIN	3.2	AC-FT	320900		

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK

LOCATION.--Lat 34°13'59", long 96°58'38", in SE 1/4 SW 1/4 sec.3, T.4 S., R.3 E., Carter County, Hydrologic Unit 11130303, on right bank 500 ft (152.4 m) upstream from bridge on U.S. Highway 177, 1.2 mi (1.9 km) downstream from Caddo Creek, 3.2 mi (5.1 km) north of Dickson, 12.0 mi (19.3 km) northeast of Ardmore, and at mile 63.5 (102.2 km).

DRAINAGE AREA.--7,202 mi² (18,653 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to Oct. 1, 1979, published as Washita River near Durwood.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1281: 1935(M).

GAGE.--Water-stage recorder. Datum of gage is 650.57 ft (198.294 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Feb. 16, 1939, nonrecording gage at site 500 ft (152.4 m) downstream at same datum. Dec. 15, 1950, to Feb. 19, 1952, nonrecording gage at same site and datum. Feb. 20, 1952, to Apr. 23, 1975, water-stage recorder at site 500 ft (152.4 m) downstream at same datum.

REMARKS.--Records good. Some diversions above station for irrigation. Some regulation since March 1959 by Fort Cobb Reservoir (station 07325900), since February 1961 by Foss Reservoir (station 07324300), and by numerous flood-retarding structures.

AVERAGE DISCHARGE.--54 years, 1,379 ft³/s (39.05 m³/s), 999,100 acre-ft/yr (1.23 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,000 ft³/s (2,780 m³/s) May 19, 1957, gage height, 42.30 ft (12.893 m), from floodmark; maximum gage height, 44.37 ft (13.524 m) Oct. 31, 1941; no flow Aug. 28, Sept. 14 to Oct. 1, Oct. 7-12, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10,000 ft³/s (283 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 13	1500	28,800 816	26.74 8.150	May 18	0315	23,400 663	24.13 7.355
Oct. 17	1140	24,300 688	24.57 7.489	May 25	1500	26,800 759	25.77 7.855
May 6	2015	24,900 705	23.06 7.029	May 29	0945	*41,800 1,180	*31.53 9.610
May 13	2100	27,100 767	25.94 7.907	June 26	0100	11,700 331	17.31 5.276

Minimum daily discharge, 49 ft³/s (1.39 m³/s) Oct. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	5930	853	337	3150	812	525	387	19000	4050	2190	336
2	50	2410	782	331	3050	772	511	896	16400	3580	1430	322
3	49	2170	636	334	4190	738	518	910	14400	3350	1120	315
4	54	2100	571	331	3090	605	476	682	13100	3260	1070	306
5	57	1110	534	321	2240	575	451	587	11700	2980	983	313
6	61	853	518	324	1710	550	431	14400	10600	2770	943	288
7	82	632	506	321	1440	526	408	15100	9280	3770	914	279
8	92	658	498	312	1380	510	404	7440	7400	6700	895	271
9	82	2360	502	302	1270	498	389	5160	6000	5840	863	267
10	81	3260	434	267	1050	494	388	3910	5030	4410	853	263
11	88	1980	412	231	949	490	397	3100	5070	3580	777	252
12	1420	1270	401	226	932	530	390	3570	7680	3300	767	245
13	21300	1050	394	226	906	554	384	24700	6520	2890	704	245
14	16900	890	394	239	895	787	421	22400	5070	2540	681	238
15	6690	848	398	281	853	2240	421	13000	4390	2240	618	260
16	15300	817	398	299	3800	1580	409	8280	5370	1860	571	262
17	21700	747	380	287	2050	1490	401	14700	4950	1660	528	272
18	14200	686	363	296	1630	1160	389	21300	4000	1530	505	567
19	7660	636	353	302	1320	1000	388	16800	3760	1430	479	526
20	7510	592	347	337	1130	1140	335	13500	4240	1310	467	502
21	7250	563	353	367	1060	993	296	10700	4740	1200	447	615
22	6020	546	357	401	993	842	279	10700	8180	1130	430	592
23	4690	526	360	377	932	743	269	11100	6020	1090	411	475
24	3860	502	353	357	895	699	263	11300	5320	1040	392	386
25	3260	471	347	357	879	663	261	24600	7480	982	376	343
26	2600	518	344	363	922	570	283	18300	9390	927	363	320
27	1360	518	340	340	938	551	273	15500	6820	879	351	305
28	1140	510	340	334	874	577	283	29500	7100	804	359	290
29	906	514	334	324	---	590	286	38500	6630	807	356	284
30	719	1130	327	900	---	565	281	22700	4940	809	371	271
31	2600	---	327	2900	---	554	---	18900	---	1760	371	---
TOTAL	147835	36797	13456	12924	44528	24398	11210	402622	230580	74478	21585	10210
MEAN	4769	1227	434	417	1590	787	374	12990	7686	2403	696	340
MAX	21700	5930	853	2900	4190	2240	525	38500	19000	6700	2190	615
MIN	49	471	327	226	853	490	261	387	3760	804	351	238
AC-FT	293200	72990	26690	25630	88320	48390	22240	798600	457400	147700	42810	20250
CAL YR 1981	TOTAL	357200	MEAN	979	MAX	21700	MIN	49	AC-FT	708500		
WTR YR 1982	TOTAL	1030623	MEAN	2824	MAX	38500	MIN	49	AC-FT	2044000		

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA. WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

07331500 LAKE TEXOMA NEAR DENISON, TX

LOCATION.--Lat 33°49'05", long 96°34'20", in NE 1/4 sec.33, T.8 S., R.7 E., Bryan County, Okla., Hydrologic Unit 11130210, in control tower of Denison Dam on Red River, 1.2 mi (1.9 km) upstream from Shawnee Creek, 1.8 mi (2.9 km) upstream from Sand Creek, 4.0 mi (6.4 km) northwest of Denison, 6.0 mi (9.7 km) southwest of Colbert, and at mile 725.9 (1,168.0 km).

DRAINAGE AREA.--39,719 mi² (102,872 km²) of which 5,936 mi² (15,374 km²) is probably noncontributing.

PERIOD OF RECORD.--July 1942 to current year. Month-end contents only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is at National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1944, nonrecording gage at same site and datum. Prior to Oct. 1, 1948, supplementary nonrecording gage in Cumberland pool at the same datum.

REMARKS.--Reservoir is formed by a rolled-fill earth dam. The controlled outlet consists of eight 20-foot diameter conduits and the uncontrolled outlet is a concrete, ogee-type weir spillway. Flow was diverted through conduits July 27, 1942; regulated storage began Oct. 31, 1943; power-pool was first filled March 15, 1945. Capacity, based on 1969 survey, 5,312,000 acre-ft (6.55 km³) at elevation 640.0 ft (195.07 m), crest of spillway, 2,643,000 acre-ft (3.26 km³) at elevation 617.0 ft (188.06 m) maximum power pool; 1,031,000 acre-ft (1.27 km³) at elevation 590.0 ft (179.83 m), minimum power pool, in Denison pool. Dead storage, 11,000 acre-ft (13.6 hm³) at elevation 610.0 ft (185.93 m) in Cumberland pool. When contents are below 2,105,000 acre-ft (2.60 km³), the reservoir is divided into two pools by protective levees around the Cumberland oilfield on the Washita River arm with bottom outlet channel for the upper pool (known as Cumberland pool) at elevation 610 ft (185.9 m). At higher elevations the two pools are considered as being at a common level, contents being computed from gage in Denison pool. Figures given herein represent total contents of both pools. Reservoir is used principally for flood control and power development. Revised capacity table, based on survey in 1969, used since Oct. 1, 1977.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,991,300 acre-ft (7.39 km³) June 5, 1957, elevation, 643.18 ft (196.041 m). Minimum contents since power pool was first filled, 1,565,100 acre-ft (1.93 km³) Sept. 16, 1964; minimum elevation, 599.96 ft (182.868 m) Mar. 1, 2, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,258,000 acre-ft (5.25 km³) June 3, elevation, 632.15 ft (192.679 m). Minimum, 2,187,000 acre-ft (2.70 km³) Oct. 3, elevation, 611.15 ft (186.278 m).

Capacity table (elevation, in feet, and contents, in acre-ft)

611	2,176,000	622	3,117,000
614	2,399,000	627	3,649,000
617	2,643,000	632	4,240,000

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2197000	3294000	2680000	2480000	2436000	2564000	2584000	2489000	4243000	3544000	2699000	2570000
2	2192000	3241000	2679000	2482000	2453000	2565000	2588000	2488000	4250000	3490000	2698000	2566000
3	2188000	3179000	2678000	2486000	2458000	2574000	2591000	2478000	4242000	3429000	2695000	2560000
4	2188000	3115000	2672000	2473000	2469000	2576000	2595000	2472000	4230000	3368000	2699000	2559000
5	2187000	3052000	2664000	2467000	2476000	2578000	2599000	2469000	4204000	3302000	2698000	2558000
6	2192000	2995000	2664000	2468000	2482000	2576000	2592000	2480000	4160000	3237000	2691000	2558000
7	2201000	2945000	2663000	2456000	2486000	2577000	2587000	2487000	4103000	3210000	2690000	2556000
8	2202000	2929000	2659000	2445000	2496000	2580000	2580000	2521000	4039000	3150000	2693000	2552000
9	2204000	2880000	2656000	2439000	2489000	2581000	2573000	2556000	3975000	3095000	2686000	2549000
10	2205000	2862000	2648000	2425000	2490000	2579000	2575000	2580000	3900000	3039000	2680000	2546000
11	2204000	2854000	2646000	2398000	2487000	2583000	2574000	2591000	3840000	2976000	2671000	2544000
12	2237000	2840000	2642000	2383000	2491000	2587000	2571000	2624000	3791000	2908000	2664000	2542000
13	22712000	2827000	2642000	2373000	2493000	2590000	2566000	2739000	3748000	2858000	2657000	2536000
14	3002000	2810000	2638000	2367000	2498000	2609000	2558000	2842000	3709000	2842000	2650000	2529000
15	3261000	2798000	2631000	2364000	2503000	2618000	2558000	2982000	3703000	2833000	2648000	2529000
16	3681000	2780000	2631000	2356000	2518000	2621000	2558000	3100000	3700000	2826000	2643000	2518000
17	3692000	2762000	2614000	2357000	2527000	2625000	2555000	3170000	3701000	2816000	2633000	2511000
18	4031000	2749000	2597000	2358000	2538000	2634000	2559000	3222000	3678000	2803000	2632000	2509000
19	4086000	2739000	2581000	2359000	2544000	2635000	2557000	3284000	3638000	2791000	2625000	2512000
20	4083000	2726000	2574000	2354000	2550000	2637000	2558000	3351000	3580000	2774000	2620000	2510000
21	4063000	2719000	2570000	2356000	2557000	2642000	2549000	3390000	3573000	2761000	2613000	2511000
22	4020000	2712000	2558000	2361000	2557000	2638000	2540000	3421000	3564000	2753000	2609000	2513000
23	3959000	2706000	2545000	2355000	2561000	2636000	2529000	3449000	3563000	2744000	2601000	2512000
24	3884000	2697000	2537000	2357000	2560000	2630000	2520000	3525000	3560000	2732000	2595000	2509000
25	3812000	2688000	2529000	2354000	2565000	2623000	2520000	3590000	3597000	2718000	2588000	2508000
26	3724000	2685000	2525000	2349000	2564000	2615000	2512000	3683000	3601000	2706000	2584000	2507000
27	3632000	2677000	2518000	2344000	2563000	2614000	2503000	3777000	3597000	2693000	2578000	2504000
28	3536000	2672000	2508000	2341000	2561000	2605000	2509000	3885000	3629000	2695000	2582000	2502000
29	3441000	2671000	2499000	2341000	---	2596000	2496000	3984000	3630000	2690000	2582000	2500000
30	3349000	2684000	2490000	2400000	---	2595000	2489000	4097000	3593000	2686000	2580000	2499000
31	3347000	---	2490000	2430000	---	2589000	---	4209000	---	2690000	2575000	---
MAX	4086000	3294000	2680000	2486000	2565000	2642000	2599000	4209000	4250000	3544000	2699000	2570000
MIN	2187000	2671000	2490000	2341000	2436000	2564000	2489000	2469000	3560000	2686000	2575000	2499000
†	624.23	617.46	615.16	614.40	616.05	616.38	615.15	631.75	626.50	617.52	616.21	615.21
††	+1,145,000	-663,000	-194,000	-60,000	+131,000	+28,000	-100,000	+1,720,000	-616,000	-903,000	-115,000	-76,000

CAL YR 1981 MAX 4086000 MIN 2187000, †† -91,000
WTR YR 1982 MAX 4250000 MIN 2187000, †† +297,000

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

RED RIVER BASIN

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

LOCATION.--Lat 33°49'08", long 96°33'47", Grayson County, Hydrologic Unit 11140101, on right bank 1,800 ft (548.6 m) downstream from Denison Dam powerhouse, 0.4 mi (0.6 km) upstream from Shawnee Creek (spillway flow return), 4.5 mi (7.2 km) north of Denison, and at mile 725.5 (1,167.3 km).

DRAINAGE AREA.--39,720 mi² (102,875 km²) of which 5,936 mi² (15,374 km²) is probably noncontributing. At site used prior to October 1961, drainage area 39,777 mi² (103,022 km²), of which 5,936 mi² (15,374 km²) was probably noncontributing.

PERIOD OF RECORD.--October 1923 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1934, published as "near Denison, Tex.", and October 1934 to September 1961, published as "near Colbert, Okla.". Gage-height records collected at various sites in this vicinity 1892-93, 1906-28, 1931-49 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 807: 1935 (M). WSP 1211: Drainage area. WSP 1241: 1924-29, 1932-33, 1934 (M), 1935.

GAGE.--Water-stage recorder. Datum of gage is 500.00 ft (152,400 m) National Geodetic Vertical Datum of 1929. Oct. 9, 1923, to Sept. 24, 1934, nonrecording gage, and July 29, 1942, to Sept. 30, 1961, water-stage recorder at county road bridge 2.5 mi (4.0 km) downstream at datum 6.85 ft (2.088 m) higher prior to Oct. 1, 1931, at datum 7.07 ft (2.155 m) higher Oct. 1, 1931, to Sept. 24, 1934, and at datum 2.64 ft (0.805 m) lower July 29, 1942, to Sept. 30, 1961. Sept. 25, 1934, to July 28, 1942, water-stage recorder at railway bridge 1.9 mi (3.1 km) downstream at datum 7.36 ft (2.243 m) higher.

REMARKS.--Records good. Flow regulated since October 1943 by Lake Texoma (station 07331500).

COOPERATION.--Gage-height record and 19 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Denison Dam) 20 years, 1924-43, 5,684 ft³/s (161 m³/s), 4,118,000 acre-ft/yr (5.08 km³/yr); (since regulation by Denison Dam) 38 years (water years 1945-82), 4,366 ft³/s (123.6 m³/s), 3,163,000 acre-ft/yr (3.90 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 201,000 ft³/s (5,690 m³/s) May 21, 1935, gage height, 31.8 ft (9.69m) at site and datum then in use; maximum gage height, 32.0 ft (9.75 m) Apr. 25, 1942 (at site and datum used in 1943); minimum daily discharge, 12 ft³/s (0.340 m³/s) Jan. 10, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 26, 1908, reached a stage of 45.5 ft (13.87 m) at site and datum used July 29, 1942, to Sept. 30, 1961, from record of U.S. Weather Bureau.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53,000 ft³/s (1,500 m³/s) Oct. 28, gage height, 19.25 ft (5.867 m); minimum daily, 43 ft³/s (1.22 m³/s) Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2010	37800	3280	2460	4420	1880	3880	1180	35500	41200	2660	2700
2	1400	37000	3410	2010	3490	1830	3500	1740	39800	41200	5540	3170
3	108	36800	3450	2030	5920	873	83	6040	42800	41100	6160	3470
4	99	36800	3520	4590	3110	58	46	4680	39900	41100	7100	401
5	105	36800	4490	3460	3190	1630	1900	5320	39600	41000	7370	329
6	102	32600	2690	3090	493	1500	1550	5430	45100	41000	7440	430
7	129	26800	3080	4600	1610	103	3940	6330	47600	41400	3610	1040
8	61	27200	3390	4890	1280	1240	4870	4980	47500	41000	3290	2220
9	51	25300	3210	4910	4670	999	4810	3150	47300	41000	5160	1480
10	48	17800	3170	7290	2550	2460	2090	4680	47100	41000	5580	1670
11	46	10700	3370	10500	3080	83	56	5520	47100	40900	5400	931
12	106	10700	3510	10500	2600	116	3040	5870	42000	41000	4770	972
13	2360	10200	1700	5020	647	53	4620	2380	36100	33400	5170	2880
14	3130	10700	3740	2950	91	53	4430	209	36100	15600	4670	2830
15	1000	10700	3300	2810	3160	2570	1840	118	37000	10700	2800	3260
16	1470	10700	3360	2640	457	2840	3880	5250	29500	10700	4410	4440
17	355	10700	7450	118	3360	1350	115	15200	26500	10700	5640	4640
18	3310	10600	7620	890	2210	3050	44	24500	29100	10700	3120	486
19	13400	5480	7100	46	1730	5050	2790	27300	34200	10700	3670	57
20	25700	5540	4890	3160	89	3090	94	27300	38900	10700	3860	3260
21	34400	5460	4830	3080	61	489	4870	29900	39000	10500	3680	832
22	37300	5460	6680	2720	2150	4620	4890	32700	35700	7070	2890	251
23	39100	5440	7670	850	593	2760	5760	31800	35700	7580	4440	767
24	45100	5460	4810	200	2310	5240	3720	23600	36200	7060	2870	3220
25	47900	5480	4920	2820	5520	5410	2820	20500	36100	7730	4060	70
26	47600	5440	3920	3220	6170	3920	4970	16600	35700	6780	2910	43
27	50100	5450	4520	2860	5060	5580	4590	17100	35600	4090	2210	394
28	52600	3010	5060	1620	4040	5270	5710	16600	18400	5100	931	2580
29	52400	3560	5020	2530	---	5740	2660	21400	20400	5070	61	3210
30	50700	5540	4160	826	---	3610	4160	28100	41200	5440	1560	929
31	44400	---	3490	280	---	5370	---	30100	---	3950	2040	---
TOTAL	556590	461220	134810	98970	74061	78837	91728	425577	1122700	676470	125072	52962
MEAN	17950	15370	4349	3193	2645	2543	3058	13730	37420	21820	4035	1765
MAX	52600	37800	7670	10500	6170	5740	5760	32700	47600	41400	7440	4640
MIN	46	3010	1700	46	61	53	44	118	18400	3950	61	43
AC-FT	1104000	914800	267400	196300	146900	156400	181900	844100	2227000	1342000	248100	105100
CAL YR 1981	TOTAL	2059159	MEAN	5642	MAX	52600	MIN	38	AC-FT	4084000		
WTR YR 1982	TOTAL	3898997	MEAN	10680	MAX	52600	MIN	43	AC-FT	7734000		

RED RIVER BASIN

07332400 BLUE RIVER AT MILBURN, OK

LOCATION.--Lat 34°15'04", long 96°33'05", in SW 1/4 SW 1/4 sec.35, T.3 S., R.7 E., Johnston County, Hydrologic Unit 11140102, on downstream side of left pier of bridge on State Highway 48A, 0.5 mi (0.8 km) north of Milburn, and at mile 84.9 (136.6 km).

DRAINAGE AREA.--203 mi² (526 km²).

PERIOD OF RECORD.--October 1965 to current year. Occasional low-flow measurements made in water years 1956-61. Prior to October 1975 published as Blue Creek near Milburn.

GAGE.--Water-stage recorder. Datum of gage is 649.65 ft (198.013 m), Oklahoma State Highway Department datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--17 years, 141 ft³/s (3.993 m³/s), 9.43 in/yr (240 mm/yr), 102,200 acre-ft/yr (126 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,100 ft³/s (994 m³/s) Oct. 8, 1970, gage height, 27.87 ft (8.495 m); minimum daily, 15 ft³/s (0.42 m³/s) Aug. 22, 24, 25, Sept. 1, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,200 ft³/s (62.3 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 13	1130	*34,200 969	*27.44 8.364	May 13	0915	4,660 132	21.44 6.535
Oct. 16	0115	23,800 674	26.56 8.095	May 28	1230	14,200 402	25.43 7.751
Jan. 30	1745	2,810 79.6	17.05 5.197	June 21	1445	2,620 74.2	16.46 5.017

Minimum daily discharge, 34 ft³/s (0.96 m³/s) Oct. 2-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	966	225	100	399	150	112	81	558	176	135	60
2	34	304	155	102	475	145	148	81	457	167	102	58
3	34	230	142	102	404	144	150	80	590	161	95	57
4	34	207	133	100	231	138	114	77	853	154	91	55
5	35	194	130	98	187	135	111	78	483	147	87	54
6	36	183	130	97	164	139	107	507	391	144	85	54
7	40	174	129	95	161	137	106	224	354	347	83	53
8	39	286	125	94	164	133	106	108	332	215	84	53
9	36	433	122	94	166	130	105	92	311	164	84	52
10	36	242	120	92	155	130	107	85	297	148	81	52
11	36	195	120	93	151	129	107	82	386	141	79	53
12	121	182	118	92	187	129	104	242	602	134	78	52
13	17100	174	118	91	183	126	103	3000	347	130	76	51
14	2490	168	121	88	165	710	102	647	297	127	75	50
15	1050	164	116	86	158	243	100	321	286	124	73	61
16	10400	159	115	84	792	170	99	255	506	120	71	55
17	4420	154	111	84	326	147	95	410	363	118	70	53
18	1430	152	109	85	208	140	94	407	280	115	70	50
19	471	148	108	83	178	136	96	282	262	112	69	52
20	352	141	109	83	167	131	93	241	253	109	68	52
21	297	139	111	84	161	124	89	243	951	113	67	49
22	286	139	111	94	155	120	86	298	705	106	67	49
23	258	138	109	89	150	118	84	218	288	102	66	49
24	234	136	107	86	144	119	84	735	665	100	65	48
25	224	136	106	85	167	116	84	768	729	98	64	48
26	217	135	107	84	197	112	84	428	436	96	63	47
27	204	130	105	84	186	124	82	984	259	95	62	48
28	196	129	104	83	162	132	82	7420	241	97	73	47
29	189	130	102	83	---	120	82	1950	215	94	68	47
30	185	449	101	1390	---	120	81	623	190	110	62	46
31	664	---	102	1010	---	115	---	706	---	198	60	---
TOTAL	41183	6517	3721	5015	6343	4762	2997	21673	12887	4262	2373	1555
MEAN	1328	217	120	162	227	154	99.9	699	430	137	76.5	51.8
MAX	17100	966	225	1390	792	710	150	7420	951	347	135	61
MIN	34	129	101	83	144	112	81	77	190	94	60	46
CFSM	6.54	1.07	.59	.80	1.12	.76	.49	3.44	2.12	.67	.38	.26
IN.	7.55	1.19	.68	.92	1.16	.87	.55	3.97	2.36	.78	.43	.28
AC-FT	81690	12930	7380	9950	12580	9450	5940	42990	25560	8450	4710	3080

CAL YR 1981	TOTAL	75462	MEAN	207	MAX	17100	MIN	34	CFSM	1.02	IN.	13.83	AC-FT	149700
WTR YR 1982	TOTAL	113288	MEAN	310	MAX	17100	MIN	34	CFSM	1.53	IN.	20.76	AC-FT	224700

RED RIVER BASIN

07332500 BLUE RIVER NEAR BLUE, OK

LOCATION.--Lat 33°59'49", long 96°14'27", on line between sec.27 and 34, T.6 S., R.10 E., Bryan County, Hydrologic Unit 11140102, near left bank on downstream side of pier of bridge on U.S. Highway 70, 1.0 mi (1.6 km) west of Blue, 7.0 mi (11.3 km) east of Durant, 7.7 mi (12.4 km) upstream from Caddo Creek, and at mile 38.8 (62.1 km).

DRAINAGE AREA.--476 mi² (1,233 km²).

PERIOD OF RECORD.--June 1936 to current year. Monthly discharge only for some periods, published in WSP 1311, 1731.

REVISED RECORDS.--WSP 957: 1938. WSP 1241: 1936, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 503.36 ft (153.424 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1945, nonrecording gage and Mar. 13, 1945, to Feb. 2, 1960, water-stage recorder at site 1.2 mi (1.9 km) downstream at datum 5.00 ft (1.524 m) lower.

REMARKS.--Records good. Some regulation at low flow by State Fish Hatchery, 16.0 mi (25.7 km) above station. Small diversion above station for municipal water supply of city of Durant.

COOPERATION.--Gage-height record and 21 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--46 years, 301 ft³/s (8.524 m³/s), 8.59 in/yr (218 mm/yr), 218,100 acre-ft/yr (269 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,200 ft³/s (1,850 m³/s) Oct. 14, 1981, gage height, 44.20 ft (13.472 m), from high water mark; no flow (estimated) Aug. 3, 4, 1936, result of regulation at fish hatchery, and no flow Sept. 19 to Oct. 16, 1956.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,000 ft³/s (113 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 14	0400	*65,200 1,850	*44.20 13.472	Jan. 31	0400	12,200 346	27.67 8.434
Oct. 16	2000	31,200 884	36.02 10.979	May 13	2130	9,030 256	25.23 7.690
Nov. 1	1015	6,840 194	23.94 7.297	May 25	0400	4,660 132	20.73 6.319
Nov. 9	0730	4,120 117	20.13 6.136	May 30	1330	5,890 167	22.39 6.824

Minimum daily discharge, 30 ft³/s (0.85 m³/s) Oct. 2-4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	32	6070	2090	128	5610	466	165	102	1860	282	970	71		
2	30	3390	645	133	1770	339	287	104	799	247	452	67		
3	30	851	318	136	2050	302	989	101	589	225	195	65		
4	30	552	254	167	1030	274	417	96	1460	211	157	62		
5	31	452	226	123	577	243	233	91	1050	195	138	61		
6	32	391	222	110	427	238	190	161	632	183	128	57		
7	51	342	217	101	358	237	167	609	444	304	120	57		
8	87	1560	212	94	404	229	160	440	375	528	119	57		
9	51	3790	200	89	485	212	158	196	328	331	123	58		
10	46	1580	187	88	381	202	157	143	294	237	121	58		
11	40	685	181	79	327	199	170	122	280	313	113	57		
12	159	476	178	72	380	198	172	536	1230	202	109	56		
13	5330	400	175	96	522	194	149	6750	972	181	105	53		
14	45500	360	182	96	434	315	140	7060	432	186	99	52		
15	9590	333	191	100	356	1770	133	3850	481	172	98	47		
16	15500	313	180	103	1040	694	125	755	2610	159	95	48		
17	17000	295	168	81	1940	398	125	984	696	149	85	55		
18	5490	280	157	88	761	299	116	1270	468	143	83	55		
19	3880	270	149	118	477	263	139	1060	304	138	83	56		
20	1050	252	148	98	383	252	136	635	263	132	84	56		
21	615	231	152	102	338	228	118	453	523	127	82	58		
22	1910	222	162	619	312	199	104	1350	1800	127	83	54		
23	1140	221	159	444	295	182	97	2480	1110	131	80	51		
24	532	219	147	189	269	178	101	3030	1900	117	76	49		
25	416	215	139	132	325	176	106	4500	2130	111	68	49		
26	379	214	137	112	860	168	110	2440	1490	105	63	49		
27	349	212	139	103	1090	166	103	1980	777	104	66	49		
28	304	199	138	96	832	216	96	2800	464	100	72	48		
29	275	194	131	93	---	238	109	3630	429	101	71	49		
30	256	1040	126	3650	---	198	109	5300	339	114	83	47		
31	1880	---	123	10400	---	182	---	2800	---	172	74	---		
TOTAL	112015	25609	7833	18040	24033	9455	5381	55828	26529	5827	4295	1651		
MEAN	3613	854	253	582	858	305	179	1801	884	188	139	55.0		
MAX	45500	6070	2090	10400	5610	1770	989	7060	2610	528	970	71		
MIN	30	194	123	72	269	166	96	91	263	100	63	47		
CFSM	7.59	1.79	.53	1.22	1.80	.64	.38	3.78	1.86	.39	.29	.12		
IN.	8.75	2.00	.61	1.41	1.88	.74	.42	4.36	2.07	.46	.34	.13		
AC-FT	222200	50800	15540	35780	47670	18750	10670	110700	52620	11560	8520	3270		
CAL YR 1981	TOTAL	205930	MEAN	564	MAX	45500	MIN	30	CFSM	1.18	IN.	16.09	AC-FT	408500
WTR YR 1982	TOTAL	296496	MEAN	812	MAX	45500	MIN	30	CFSM	1.71	IN.	23.17	AC-FT	588100

RED RIVER BASIN

07333910 MCGEE CREEK NEAR FARRIS, OK

LOCATION.--Lat 34°18'54", long 95°52'30", in NW 1/4 NE 1/4 sec.7, T.3 S., R.14 E., Atoka County, Hydrologic Unit 11140103, on left bank 0.1 mi (0.2 km) downstream from Crooked Creek, 1.1 mi (1.8 km) downstream from Potapo Creek, 3.7 mi (6.0 km) northwest of Farris and at mile 3.5 (5.6 km).

DRAINAGE AREA.--176 mi² (456 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1977 to May 1982 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 461.96 ft (140.805 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair below 200 ft³/s (5.66 m³/s) and poor above.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft³/s (430 m³/s) May 21, 1979, gage height, 33.08 ft (10.083 m) Maximum gage height 38.39 ft (11.701 m) Oct. 16, 1981 due to backwater from Muddy Boggy Creek. No flow at times.

EXTREMES FOR CURRENT PERIOD.--Oct. 1, 1981 to May 31, 1982: Maximum discharge 14,200 ft³/s (402 m³/s) Oct. 13; maximum gage height, 38.39 ft (11.701 m) Oct. 16, backwater from Muddy Boggy Creek; minimum daily discharge, 0.08 ft³/s (0.002 m³/s) Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	1130	845	9.0	456	300	19	7.8				
2	.10	326	295	8.7	394	190	21	7.8				
3	.09	278	158	9.9	332	138	111	7.5				
4	.09	228	102	19	176	237	88	7.2				
5	.08	137	71	43	282	138	57	6.6				
6	.09	95	55	29	167	121	47	6.9				
7	.09	70	47	22	109	98	37	7.2				
8	.09	1510	41	18	109	75	32	6.3				
9	.09	1040	35	16	269	62	29	5.8				
10	.09	343	31	14	196	52	29	5.3				
11	.09	357	26	13	130	45	28	4.8				
12	.29	211	24	12	132	40	26	19				
13	2530	139	22	11	268	36	26	3110				
14	2220	101	21	11	213	624	24	609				
15	464	78	21	9.8	152	537	24	310				
16	3370	62	21	9.1	882	271	22	300				
17	1720	52	20	8.8	479	147	21	302				
18	1210	44	19	7.8	403	101	69	275				
19	519	37	17	7.5	259	78	77	148				
20	340	31	15	6.9	178	65	34	96				
21	198	28	15	7.1	138	54	20	925				
22	168	24	14	595	106	42	16	4420				
23	310	22	14	545	84	34	12	882				
24	145	20	13	250	69	29	10	1720				
25	90	19	13	145	113	26	9.2	1470				
26	68	18	12	96	491	23	9.0	753				
27	61	17	12	71	575	22	8.5	1310				
28	50	15	11	56	488	21	8.3	2390				
29	39	15	10	45	---	21	8.1	694				
30	33	879	10	4460	---	21	7.8	435				
31	1910	---	9.7	1500	---	20	---	566				
TOTAL	15446.30	7326	2019.7	8055.6	7650	3668	929.9	20807.2				
MEAN	498	244	65.2	260	273	118	31.0	671				
MAX	3370	1510	845	4460	882	624	111	4420				
MIN	.08	15	9.7	6.9	69	20	7.8	4.8				
AC-FT	30640	14530	4010	15980	15170	7280	1840	41270				
CAL YR 1981	TOTAL	56609.65	MEAN	155	MAX	3370	MIN	.08	AC-FT	112300		

RED RIVER BASIN

07333910 MCGEE CREEK NEAR FARRIS, OK--Continued

WATER-QUALITY RECORDS

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

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: September 1976 to current year.

pH: September 1976 to September 1979.

WATER TEMPERATURE: September 1976 to current year.

INSTRUMENTATION.--Water-quality monitor September 1976 to September 1980 (discontinued).

REMARKS.--In addition to water-quality monitor, samples were collected on a monthly basis. Specific conductance, water temperature, pH and dissolved oxygen were determined in the field.

COOPERATION.--Samples were collected by the U.S. Geological Survey and some analyses were furnished by the Oklahoma Water Resources Board.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)
OCT 05...	1300	80020	.08	132	7.1	27.5	8.4	108	.82	200	120	34
NOV 17...	1400	80020	51	95	6.7	12.0	10.4	98	--	K8	K26	--
DEC 15...	1300	80020	22	98	--	9.0	--	--	--	K17	79	28
JAN 20...	1025	80020	6.9	147	7.4	3.0	11.4	87	--	K4	K16	26
FEB 09...	1200	80020	326	67	7.1	2.0	14.1	102	--	K250	K460	17
MAR 16...	1400	80020	245	74	7.2	18.0	9.2	103	1.3	K2900	K2200	24
APR 27...	1000	80020	8.5	124	7.2	17.5	9.2	98	--	50	780	35

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	CALCIUM SUS- PENDE D (MG/L AS CA)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	MAGNE- SIUM, SUS- PENDE D TOTAL (MG/L AS MG)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)
OCT 05...	0	2.4	.0	7.4	3.3	.00	3.7	6.9	7.6	31	.6	3.1
NOV 17...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 15...	10	1.6	.0	6.7	.80	.00	2.8	1.7	5.9	30	.5	.7
JAN 20...	0	2.1	.0	5.5	1.6	.00	2.9	3.3	6.5	35	.6	.6
FEB 09...	6	3.4	.0	4.0	1.7	.00	1.8	4.0	4.6	35	.5	.9
MAR 16...	7	2.4	.0	5.6	2.5	.10	2.4	4.4	6.1	34	.6	1.8
APR 27...	9	4.0	.0	7.4	4.2	.30	3.9	8.7	10	37	.8	2.1

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT 05...	2.7	36	<5.0	9.0	.20	4.4	65	--	.09	<.020	.140	.090
NOV 17...	--	13	5.0	5.1	.10	7.0	72	--	.10	--	.250	--
DEC 15...	1.1	18	9.0	7.0	.10	7.3	59	51	.08	<.020	<.090	<.070
JAN 20...	.90	29	17	13	.10	4.4	80	68	.11	<.020	<.100	.090
FEB 09...	1.1	11	8.0	4.7	.10	5.7	37	37	.05	--	.240	<.060
MAR 16...	1.8	17	7.0	5.7	.10	7.1	67	46	.09	<.020	.190	.120
APR 27...	1.7	26	14	12	.10	3.8	90	69	.12	<.020	<.100	<.060

RED RIVER BASIN

07333910 MCGEE CREEK NEAR FARRIS, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ALUM- INUM, SUS- PENDE RECOV- ERABLE (UG/L AS AL)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC SUS- PENDE TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM SUS- PENDE RECOV- ERABLE (UG/L AS CD)
OCT 05...	.12	.59	.68	.010	--	--	--	1	0	1	0	--
NOV 17...	--	--	--	.020	1100	100	1000	--	--	--	--	--
DEC 15...	.09	--	.50	.020	1000	900	100	<1	--	<1	1	--
JAN 20...	.12	.35	.44	.040	--	--	--	--	--	<1	<1	--
FEB 09...	.08	--	.37	.500	--	--	--	1	--	<1	1	--
MAR 16...	.15	.98	1.1	.030	--	--	--	1	--	<1	1	0
APR 27...	.08	--	.53	.030	--	--	--	1	0	1	<1	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, SUS- PENDE RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, SUS- PENDE RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, SUS- PENDE RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, SUS- PENDE RECOV- ERABLE (UG/L AS PB)
OCT 05...	<1	10	10	.00	4	3	1	380	220	160	2	2
NOV 17...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 15...	<1	<10	--	<10	6	5	1	910	860	50	1	0
JAN 20...	<1	<10	--	10	18	16	2	920	680	240	4	3
FEB 09...	<1	<10	--	<10	8	--	<1	1600	1500	61	7	--
MAR 16...	1	10	--	<10	10	8	2	3400	3200	160	10	--
APR 27...	<3	30	--	<10	29	28	1	4200	4100	140	7	6

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, SUS- PENDE RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY SUS- PENDE RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	NICKEL, SUS- PENDE RECOV- ERABLE (UG/L AS NI)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SELE- NIUM, SUS- PENDE TOTAL (UG/L AS SE)
OCT 05...	0	70	50	17	.0	.0	.0	8	6	2	0	0
NOV 17...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 15...	3	30	0	30	.1	--	<.1	1	--	<1	<1	--
JAN 20...	1	40	20	16	<.1	--	<.1	2	0	3	<1	--
FEB 09...	<1	30	20	8	.2	--	<.1	--	--	--	<1	--
MAR 16...	<1	70	50	20	<.1	--	<.1	8	5	3	<1	--
APR 27...	1	190	120	68	.1	--	<.1	25	24	1	<1	--

RED RIVER BASIN

07333910 MCGEE CREEK NEAR FARRIS, OK--Continued

WATER-QUALITY RECORDS

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, SUS- PENDE RECOV- ERABLE (UG/L AS ZN)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)	CARBON, ORGANIC SUS- PENDE TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 05...	0	--	--	20	--	<3	--	7.4	1.0	--	--
NOV 17...	<1	--	--	--	--	--	--	17	.90	--	--
DEC 15...	<1	<1	<1	70	30	36	5.7	5.4	.20	--	--
JAN 20...	<1	--	--	30	--	<3	--	--	--	13	68
FEB 09...	<1	--	--	30	--	<3	--	5.5	.50	171	48
MAR 16...	<1	--	--	50	30	20	--	8.1	1.1	133	94
APR 27...	<1	--	--	40	--	<12	--	4.6	.80	90	95

RED RIVER BASIN

07334000 MUDDY BOGGY CREEK NEAR FARRIS, OK

LOCATION.--Lat 34°16'17", long 95°54'43", in NE 1/4 NW 1/4 sec.26, T.3 S., R.13 E., Atoka County, Hydrologic Unit 11140103, on downstream side of left bank pier of main span of bridge on State Highway 3, 1.3 mi (2.1 km) downstream from McGee Creek, 2.8 mi (4.5 km) northwest of Farris, and at mile 57.7 (92.8 km).

DRAINAGE AREA.--1,087 mi² (2,815 km²).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 444.58 ft (135.508 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1945, nonrecording gage, and Mar. 13, 1945, to Sept. 30, 1961, water-stage recorder at same site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records poor. Some regulation since June 1959 by Atoka Reservoir, capacity, 125,000 acre-ft (154 hm³), on North Boggy Creek, drainage area, 176 mi² (456 km²); pipeline diversions to Oklahoma City since November 1963, normal capacity, 60 mgd (227, 100 m³/s).

COOPERATION.--Gage-height records and 18 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--45 years, 885 ft³/s (25.06 m³/s), 641,200 acre-ft/yr (791 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,900 ft³/s (1,750 m³/s) June 17, 1945, gage height, 44.94 ft (13.698 m), datum then in use, from rating curve extended above 37,000 ft³/s (1,050 m³/s); no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 10,000 ft³/s (283 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 16	1800	*45,000 1,270	*44.56 13.582	May 13	2030	16,000 453	36.63 11.165
Nov. 1	0745	13,300 377	32.77 9.988	May 29	0730	12,500 354	32.30 9.845
Nov. 9	0615	11,500 326	30.18 9.199	June 1	0130	12,400 351	31.50 9.601
Jan. 30	2100	20,800 589	39.62 12.076	June 4	1500	11,800 334	30.40 9.266

Minimum daily discharge, 0.45 ft³/s (0.013 m³/s) Oct. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	12600	5100	47	14700	987	155	52	10700	1120	825	13
2	.70	9730	3150	45	13700	666	139	52	6190	412	240	9.6
3	.70	7510	1100	50	12700	511	685	52	3820	260	119	7.0
4	.60	3000	614	79	7630	581	400	52	10400	210	79	5.7
5	.45	1290	416	107	2920	443	237	50	9080	182	58	4.7
6	.45	963	305	92	1450	405	221	50	4560	151	45	4.4
7	.80	742	250	76	891	346	164	928	1890	2310	42	5.6
8	1.0	3600	218	69	701	305	125	948	1050	5790	28	4.1
9	1.0	10600	197	64	950	260	117	380	748	5760	26	3.8
10	1.0	7940	169	55	798	223	114	183	568	5040	21	3.6
11	1.0	4450	150	48	586	201	105	123	963	1180	18	3.5
12	1.9	1900	136	47	543	195	97	148	2520	429	16	5.8
13	1700	1220	124	45	928	181	92	11000	1300	290	14	4.5
14	18300	859	120	41	1290	1100	88	13900	862	213	13	4.2
15	17900	624	118	40	971	3670	84	11800	504	164	12	11
16	38200	486	114	39	2260	3660	79	11200	543	138	11	7.0
17	35100	389	106	38	5830	1240	75	6140	534	109	11	4.8
18	27000	323	113	38	4370	867	85	3270	449	85	10	3.9
19	18600	269	95	38	1800	644	86	3170	345	64	9.3	4.5
20	15800	280	77	38	1060	525	80	1310	276	54	8.6	4.7
21	9030	216	72	41	750	442	85	688	816	47	7.9	3.4
22	2490	172	68	1050	561	368	92	5010	702	40	7.5	4.0
23	2590	155	64	1600	429	279	74	3430	1560	37	7.0	5.2
24	2000	143	63	768	328	213	66	3230	2210	32	6.6	5.8
25	1290	135	60	422	439	188	60	4600	3910	27	6.2	6.1
26	1070	129	56	285	1270	221	68	2750	4860	24	5.9	5.5
27	946	124	52	205	1730	151	58	4580	2840	22	5.6	5.2
28	842	122	49	165	1530	144	56	7890	1400	22	60	4.9
29	759	118	48	136	---	139	56	11400	883	24	42	4.6
30	658	2030	47	9130	---	133	54	10300	1860	29	27	4.3
31	4080	---	47	18200	---	139	---	11100	---	248	18	---
TOTAL	198365.40	72119	13298	33098	83115	19427	3897	129786	78343	24513	1799.6	164.4
MEAN	6399	2404	429	1068	2968	627	130	4187	2611	791	58.1	5.48
MAX	38200	12600	5100	18200	14700	3670	685	13900	10700	5790	825	13
MIN	.45	118	47	38	328	133	54	50	276	22	5.6	3.4
AC-FT	393500	143000	26380	65650	164900	38530	7730	257400	155400	48620	3570	326
CAL YR 1981	TOTAL 364945.20	MEAN 1000	MAX 38200	MIN .45	AC-FT 723900							
WTR YR 1982	TOTAL 657925.40	MEAN 1803	MAX 38200	MIN .45	AC-FT 1305000							

RED RIVER BASIN

07334200 BYRD'S MILL SPRING NEAR FITTSTOWN, OK

LOCATION.--Lat 34°35'45", long 96°39'55", in SW 1/4 SW 1/4 sec.34, T.2 N., R.6 E., Pontotoc County, Hydrologic Unit 11140104, upstream from weir outlet of spring, 0.5 mi (0.8 km) upstream from Big Spring Creek, 2.0 mi (3.2 km) west of Fittstown, and 12.0 mi (19.3 km) south of Ada.

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

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 1,021.17 ft (311.253 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair. Records do not include diversion of about 6 to 10 ft³/s (0.17 to 0.28 m³/s) by city of Ada for municipal water supply, a part of which is discharged as effluent to Sandy Creek, tributary to Canadian River. Records of zero flow do not include seepage of up to 0.10 ft³/s (0.003 m³/s).

AVERAGE DISCHARGE.--23 years, 7.18 ft³/s (0.203 m³/s), 5,202 acre-ft/yr (6.41 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30 ft³/s (0.85 m³/s) May 30, 1960, gage height, 3.22 ft (0.981 m); no flow at times in 1959, 1964-67, 1977, 1978, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18 ft³/s (0.51 m³/s) Nov. 11-15, gage height, 3.13 ft (0.954 m); maximum gage height, 3.14 ft (0.957 m) June 12-16; minimum daily discharge, 1.2 ft³/s (0.034 m³/s) Oct. 10-11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	17	16	13	13	13	12	10	13	14	11	6.8
2	1.5	17	16	13	13	13	13	10	13	13	11	6.8
3	1.6	17	16	13	13	13	13	10	13	13	11	6.8
4	1.5	17	16	13	13	13	13	10	14	13	11	6.8
5	1.5	17	15	13	13	13	13	10	14	13	10	6.7
6	1.3	17	15	13	12	13	13	10	14	13	9.6	6.7
7	1.3	17	15	14	12	13	13	10	14	13	8.6	6.7
8	1.3	17	15	14	12	13	13	10	14	13	8.3	6.7
9	1.3	17	15	14	12	13	13	10	14	13	8.1	6.7
10	1.2	17	14	14	12	13	13	10	14	13	8.1	6.7
11	1.2	18	14	14	13	13	13	10	15	13	8.1	6.6
12	1.3	18	14	14	13	13	13	10	15	13	8.1	6.6
13	4.8	18	14	13	13	13	13	10	15	13	8.1	6.6
14	5.2	18	14	13	13	13	13	10	15	13	8.1	6.6
15	5.6	18	14	13	13	12	13	10	15	12	7.7	6.6
16	8.4	17	15	13	13	12	13	10	15	12	7.7	6.6
17	11	17	14	13	13	12	13	10	14	12	7.7	6.6
18	12	17	14	13	13	12	13	11	14	12	7.5	6.5
19	13	17	14	13	13	12	12	10	14	12	7.3	6.5
20	14	17	13	13	13	12	13	10	14	12	7.3	6.5
21	14	17	13	13	13	12	11	10	14	12	7.3	6.5
22	14	17	13	12	13	12	11	11	14	12	7.3	6.5
23	15	17	13	12	13	12	12	11	14	11	7.3	6.5
24	16	17	13	12	13	12	12	11	14	11	7.2	6.4
25	16	17	13	12	13	12	12	11	14	11	6.9	6.4
26	16	17	13	12	13	13	11	11	14	11	6.9	6.4
27	17	17	13	12	13	13	11	11	14	11	6.9	6.4
28	17	17	13	12	13	13	11	13	14	11	6.9	6.3
29	17	16	13	13	---	13	11	13	14	11	6.9	6.3
30	17	16	13	13	---	12	10	13	14	11	6.9	6.3
31	17	---	13	13	---	12	---	13	---	11	6.8	---
TOTAL	266.6	513	436	402	359	390	370	329	423	378	251.6	197.1
MEAN	8.60	17.1	14.1	13.0	12.8	12.6	12.3	10.6	14.1	12.2	8.12	6.57
MAX	17	18	16	14	13	13	13	13	15	14	11	6.8
MIN	1.2	16	13	12	12	12	10	10	13	11	6.8	6.3
AC-FT	529	1020	865	797	712	774	734	653	839	750	499	391
CAL YR 1981	TOTAL	1735.70	MEAN	4.76	MAX	18	MIN	.12	AC-FT	3440		
WTR YR 1982	TOTAL	4315.3	MEAN	11.8	MAX	18	MIN	1.2	AC-FT	8560		

RED RIVER BASIN

07335000 CLEAR BOGGY CREEK NEAR CANEY, OK

LOCATION.--Lat 34°15'09", long 96°12'19", in NW 1/4 SE 1/4 sec.36, T.3 S., R.10 E., Atoka County, Hydrologic Unit 11140104, on downstream side of left pier of bridge on old U.S. Highways 69 and 75, 0.5 mi (0.8 km) downstream from Caney Creek, 1.5 mi (2.4 km) north of Caney, and at mile 24.1 (38.8 km).

DRAINAGE AREA.--720 mi² (1,865 km²).

PERIOD OF RECORD.--October 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 485.05 ft (147.843 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1945, nonrecording gage at same site and datum.

REMARKS.--Records good.

COOPERATION.--Gage-height record and 34 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--40 years, 491 ft³/s (13.91 m³/s), 9.26 in/yr (235 mm/yr), 355,700 acre-ft/yr (439 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,500 ft³/s (1,510 m³/s) Oct. 14, 1981, gage height, 26.60 ft (8.108 m); no flow at times in several years.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 26.9 ft (8.20 m) occurred in February 1938, from information by local resident.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 4,500 ft³/s (127 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Oct. 14	0700	*53,500 1,520	*26.60 8.108	May 15	0030	12,800 362	23.35 7.117
Oct. 16	0900	47,800 1,350	26.28 8.010	May 24	2230	4,760 135	20.98 6.395
Nov. 1	0300	5,740 163	22.32 6.803	May 27	0500	5,160 146	21.69 6.611
Nov. 8	2045	4,510 128	20.33 6.197	May 31	1400	7,680 217	22.76 6.937
Feb. 1	1630	8,710 247	22.52 6.864				

Minimum daily discharge 4.0 ft³/s (0.11 m³/s) Oct. 4-8.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	5.4	5270	2540	115	5520	615	193	96	4710	648	963	32		
2	4.5	4980	1100	114	6350	493	189	92	2960	524	395	27		
3	4.5	3480	702	126	4810	439	718	90	2310	432	255	26		
4	4.0	2060	517	132	3270	395	388	88	3020	377	206	25		
5	4.0	1640	407	122	2120	346	241	82	3330	325	157	20		
6	4.0	1390	342	115	1720	329	180	236	2350	287	139	19		
7	4.0	1200	306	106	1400	316	148	969	1400	625	124	19		
8	4.0	2010	282	97	1130	297	136	597	1160	892	113	26		
9	4.3	3540	262	92	1040	276	130	338	1050	583	105	26		
10	4.5	2690	240	83	874	247	131	236	902	374	97	20		
11	6.3	1530	228	76	728	231	139	191	826	293	89	20		
12	28	1170	218	87	757	229	139	356	1890	280	85	19		
13	6720	967	211	81	886	224	134	5820	1190	251	81	21		
14	41500	775	212	77	882	848	127	10900	730	219	73	23		
15	21800	658	216	83	591	3120	119	9870	572	194	67	24		
16	33200	578	218	72	2130	1580	115	5300	646	178	63	24		
17	19400	506	211	69	2730	931	109	3680	707	145	63	24		
18	16500	452	193	81	1860	694	102	3610	509	114	63	23		
19	13000	406	178	81	1110	530	107	2670	438	98	53	26		
20	10400	359	169	84	861	445	106	1830	392	89	50	26		
21	6700	326	165	88	717	378	100	1470	1650	78	47	22		
22	4650	308	167	369	615	321	98	2710	2000	78	45	20		
23	3800	292	163	372	536	284	93	1880	1030	73	42	20		
24	3180	277	155	240	469	258	87	2830	2210	67	38	21		
25	2820	262	147	199	482	236	86	4180	2900	65	35	21		
26	2560	247	143	168	812	209	88	3200	2900	64	32	19		
27	2260	232	140	159	973	204	89	4690	1720	137	31	18		
28	2000	216	131	181	849	227	90	4730	1320	70	27	20		
29	1860	207	129	177	---	244	92	5080	1120	67	26	19		
30	1700	1160	122	317	---	247	92	6540	866	129	34	18		
31	2960	---	120	706	---	219	---	6720	---	856	43	---		
TOTAL	197087.5	39188	10334	4869	46222	15412	4566	91081	48808	8612	3641	668		
MEAN	6358	1306	333	157	1651	497	152	2938	1627	278	117	22.3		
MAX	41500	5270	2540	706	6350	3120	718	10900	4710	892	963	32		
MIN	4.0	207	120	69	469	204	86	82	392	64	26	18		
CFSM	8.83	1.81	.46	.22	2.29	.69	.21	4.08	2.26	.39	.16	.03		
IN.	10.18	2.02	.53	.25	2.39	.80	.24	4.71	2.52	.44	.19	.03		
AC-FT	390900	77730	20500	9660	91680	30570	9060	180700	96810	17080	7220	13200		
CAL YR 1981	TOTAL	314966.3	MEAN	863	MAX	41500	MIN	4.0	CFSM	1.20	IN.	16.27	AC-FT	624700
WTR YR 1982	TOTAL	470488.5	MEAN	1289	MAX	41500	MIN	4.0	CFSM	1.79	IN.	24.31	AC-FT	933200

RED RIVER BASIN

07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'32", long 95°30'08", in NW 1/4 sec.11,T.8 S., R.17 E., Choctaw County, Okla., Hydrologic Unit 11140101, on right downstream bank of bridge on U.S. Highway 271 at Arthur City, 10.6 mi (17.1 km) downstream from Muddy Boggy River, 26.0 mi (41.8 km) upstream from Kiamichi River, and at mile 633.1 (1,018.7 km).

DRAINAGE AREA.--44,531 mi² (115,335 km²), of which 5,936 mi² (15,374 km²) is probably noncontributing.

PERIOD OF RECORD.--January to September 1905 (gage heights and discharge measurements only), October 1905 to December 1911, July 1936 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site since 1891 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1241: Drainage area. WSP 1311: 1906-11.

GAGE.--Water-stage recorder. Datum of gage is 380.07 ft (115.845 m) National Geodetic Vertical Datum of 1929. 1905-11, nonrecording gage at St. Louis-San Francisco Railway Co. bridge 200 ft (61.0 m) upstream at same datum. July 1, 1936, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated since October 1943 by Lake Texoma (station 07331500), 92.8 mi (149.3 km) above station.

COOPERATION.--Gage-height record and 30 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Denison Dam) 13 years, (water years 1906-11, 1937-43) 9,266 ft³/s (262.4 m³/s) 6,713,000 acre-ft/yr (8.28 km³/yr); (since regulation of Denison Dam) 38 years, (water years 1945-82), 7,890 ft³/s (223.4 m³/s), 5,716,000 acre-ft/yr (7.05 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 400,000 ft³/s (11,300 m³/s) May 28, 1908, gage height, 43.2 ft (13.17 m) from gating curve extended about 41,000 ft³/s (1,160 m³/s) on basis of records for later years; minimum, 130 ft³/s Dec. 11, 12, 1956, gage height, 4.49 ft (1.369 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 142,000 ft³/s (4,020 m³/s) May 14, gage height, 26.65 ft (8.123 m); minimum daily, 487 ft³/s (13.8 m³/s) Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3830	86400	12300	5510	42700	14300	5880	5290	55200	42100	9350	1170
2	2970	91500	15000	5190	31600	10300	6740	5290	58400	49400	11500	2440
3	2510	69500	12100	4240	29000	7070	8350	3710	61300	46000	9490	3050
4	2080	60600	9810	3810	28700	6830	7680	3160	64200	43900	7950	3530
5	1450	59500	7320	3690	27000	5970	4950	5990	62400	43200	8090	3220
6	770	59600	6640	5560	22500	4630	2870	6420	57500	43000	8230	2160
7	614	52300	6770	5300	19500	4550	2850	7300	62300	44500	8490	1100
8	666	48100	5460	4920	14900	4790	3440	8670	65200	54600	7580	824
9	836	63100	5370	6100	12400	3620	4250	10400	62900	56800	5220	937
10	1470	58300	5340	6140	9560	4290	5900	8030	58200	53300	4770	2000
11	983	39900	5090	6420	9310	3320	5560	5470	54500	51800	6120	2340
12	789	27700	5050	8800	7430	3540	4120	7780	59700	49200	6630	2030
13	867	24500	5150	11200	7150	3040	2460	59300	57600	45600	6390	2090
14	17600	21800	5090	9480	7510	3250	2900	128000	49800	41800	5800	1390
15	63500	17100	3650	6590	6150	5990	5020	77000	45400	23900	5750	2210
16	43400	15300	4810	4730	5490	7240	5400	36700	65800	14600	5270	3210
17	89700	14500	4890	4110	7050	9600	5780	29900	68900	13000	3920	3770
18	93200	13800	5320	3660	9870	8920	4920	35900	43300	12500	5150	4530
19	82400	13400	8130	2500	11500	6150	3180	48200	33500	12200	6060	5200
20	72700	10800	8490	1980	10200	5560	1710	49400	36000	12000	3890	3240
21	75400	8450	7800	1870	7880	6980	2440	46100	41600	11900	4530	1290
22	83100	8030	6410	4760	4420	5560	2490	45700	54200	11700	4630	1990
23	80200	7490	6720	9290	3310	3770	3950	51600	50500	10100	4330	2290
24	77500	7300	7560	9450	3740	4740	6260	54200	46600	8880	3880	1380
25	72300	7200	8250	5730	3410	5120	6980	62400	49900	8940	4660	869
26	69400	7110	6300	3510	4940	5730	6220	61100	54700	8550	3750	2440
27	63600	7090	5780	3320	12300	6750	4890	49800	52700	9180	4600	2240
28	61800	7030	5190	4420	15700	5920	6040	40700	48800	8150	3470	779
29	60300	6060	5540	4520	---	6570	6150	37400	39200	6550	3140	487
30	59400	6870	6210	5020	---	6570	6770	37800	19200	6830	2270	1080
31	62000	---	5960	32000	---	6960	---	47400	---	7320	1100	---
TOTAL	1247335	920330	213500	193820	375220	187630	146150	1076110	1579500	851500	176010	65286
MEAN	40240	30680	6887	6252	13400	6053	4872	34710	52650	27470	5678	2176
MAX	93200	91500	15000	32000	42700	14300	8350	128000	68900	56800	11500	5200
MIN	614	6060	3650	1870	3310	3040	1710	3160	19200	6550	1100	487
AC-FT	2474000	1825000	423500	384400	744200	372200	289900	2134000	3133000	1689000	349100	129500
CAL YR 1981	TOTAL	37/1590	MEAN	10330	MAX	93200	MIN	614	AC-FT	7481000		
WTR YR 1982	TOTAL	7032391	MEAN	19270	MAX	128000	MIN	487	AC-FT	13949000		

RED RIVER BASIN

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK
(Hydrologic bench-mark station)

LOCATION.--Lat 34°38'18", long 94°36'45", in SW 1/4 SE 1/4 sec.18, T.2 N., R.26 E., LeFlore County, Hydrologic Unit 11140105, in Ouachita National Forest, on downstream side of right bank pier of bridge on State Highway 63, 0.2 mi (0.3 km) upstream from Rattlesnake Creek, 1.1 mi (1.8 km) upstream from Big Branch, 2.1 mi (3.4 km) east of Big Cedar, and at mile 157.6 (253.6 km).

DRAINAGE AREA.--40.1 mi² (103.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 886.97 ft (270.348 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--17 years, 75.1 ft³/s (2.127 m³/s), 25.43 in/yr (646 mm/yr), 54,410 acre-ft/yr (67.1 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft³/s (609 m³/s) Dec. 10, 1971, gage height, 17.08 ft (5.206 m); from rating curve extended above 9,000 ft³/s (255 m³/s); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Jan. 30	1400	*15,600 442	*16.52 5.035	June 4	0115	3,680 104	10.92 3.328
May 13	0100	12,900 365	15.61 4.758				

No flow at times.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	3.0	525	184	9.6	353	107	27	16	206	25	3.4	.02		
2	2.8	219	120	19	260	118	224	16	142	11	2.4	.00		
3	2.5	138	92	35	229	115	252	14	636	7.5	1.7	.00		
4	2.4	104	73	34	170	147	145	12	1110	5.8	1.3	.00		
5	2.5	82	61	34	138	123	112	11	281	4.4	1.1	.00		
6	2.6	66	52	37	112	113	85	12	166	3.8	.92	.00		
7	2.5	54	46	35	95	97	69	23	117	5.8	.86	.00		
8	2.9	47	39	33	94	85	62	16	85	9.6	.99	.00		
9	3.2	42	34	32	99	76	52	13	63	6.3	1.1	.00		
10	3.4	35	30	30	86	71	44	11	51	4.8	.86	.00		
11	3.5	31	27	27	79	65	37	9.1	45	4.4	1.1	.00		
12	3.8	27	25	20	110	61	33	215	86	3.2	.86	.00		
13	5.2	24	23	15	118	58	31	5960	53	2.6	.74	.00		
14	36	21	22	27	117	751	27	811	39	2.1	.57	.00		
15	22	20	20	28	117	360	24	298	33	1.7	.42	.00		
16	149	18	18	28	229	204	21	166	82	1.4	.38	.08		
17	193	17	16	28	215	145	23	116	57	1.3	.29	.08		
18	267	16	14	28	157	115	20	89	45	1.1	.27	.00		
19	110	16	14	27	123	97	33	72	36	.92	.24	.00		
20	68	14	13	25	104	83	27	57	30	.74	.21	.00		
21	51	13	13	21	88	68	22	46	26	.57	.15	.00		
22	46	12	16	337	75	57	19	161	22	.51	.12	.00		
23	38	12	16	274	65	49	18	115	16	.42	.07	.00		
24	31	11	14	176	59	44	16	89	13	.42	.02	.00		
25	29	10	13	134	65	38	17	129	11	.38	.00	.00		
26	33	11	13	107	66	33	20	147	9.6	.34	.00	.00		
27	27	10	12	91	65	30	18	118	7.5	.34	.00	.00		
28	24	9.6	11	80	77	27	16	265	7.2	.86	.14	.00		
29	22	11	10	73	---	24	20	317	7.9	1.4	.34	.00		
30	20	215	10	3700	---	26	17	180	9.6	4.8	.21	.00		
31	22	---	10	931	---	29	---	293	---	4.6	.11	---		
TOTAL	1228.3	1830.6	1061	6475.6	3565	3416	1531	9797.1	3492.8	118.10	20.87	.18		
MEAN	39.6	61.0	34.2	209	127	110	51.0	316	116	3.81	.67	.01		
MAX	267	525	184	3700	353	751	252	5960	1110	25	3.4	.08		
MIN	2.4	9.6	10	9.6	59	24	16	9.1	7.2	.34	.00	.00		
CFSM	.99	1.52	.85	5.21	3.17	2.74	1.27	7.88	2.89	.10	.02	.00		
IN.	1.14	1.70	.98	6.01	3.31	3.17	1.42	9.09	3.24	.11	.02	.00		
AC-FT	2440	3630	2100	12840	7070	6780	3040	19430	6930	234	41	.4		
CAL YR 1981	TOTAL	25529.2	MEAN	69.9	MAX	1290	MIN	1.1	CFSM	1.74	IN.	23.68	AC-FT	50640
WTR YR 1982	TOTAL	32536.55	MEAN	89.1	MAX	5960	MIN	.00	CFSM	2.22	IN.	30.18	AC-FT	64540

RED RIVER BASIN

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued
(Hydrologic bench-mark station)

WATER-QUALITY RECORDS

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	NITRO- GEN DIS- SOLVED (MG/L AS N)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CAC03)
OCT												
06...	1100	80020	2.6	41	6.2	23.0	6.4	77	--	74	63	9
NOV												
18...	1100	80020	16	40	7.3	13.0	8.6	85	.50	K10	280	5
DEC												
15...	1217	80020	20	39	6.3	7.5	11.7	101	--	--	--	5
JAN												
21...	1225	80020	21	28	5.7	7.0	11.7	99	--	K69	K26	8
FEB												
23...	1235	80020	59	22	7.6	12.0	10.6	101	--	K13	K23	4
MAR												
17...	1200	80020	145	21	6.7	15.0	10.0	103	--	54	120	5
APR												
14...	1315	80020	26	26	6.3	20.0	9.2	106	--	39	360	6
MAY												
27...	1500	80020	120	24	6.3	19.0	9.2	103	--	87	280	9
JUN												
10...	1230	80020	52	23	6.7	24.0	8.4	102	--	140	680	6
JUL												
14...	1300	80020	2.0	29	6.6	28.0	6.7	88	--	54	140	9

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SI02)
OCT												
06...	0	1.6	1.3	2.2	31	.3	1.0	13	<5.0	2.0	.10	7.9
NOV												
18...	5	.80	.80	1.9	41	.4	.60	.000	<5.0	1.7	.10	8.2
DEC												
15...	0	1.0	.70	2.3	44	.4	.70	8.0	5.0	2.1	.00	7.2
JAN												
21...	0	2.4	.60	1.6	27	.2	.60	9.0	<5.0	1.7	.10	7.2
FEB												
23...	0	.70	.60	1.7	43	.4	.60	9.0	6.0	1.8	.10	7.3
MAR												
17...	0	.80	.70	1.6	38	.3	.70	11	6.0	1.0	<.10	7.5
APR												
14...	0	1.4	.70	1.9	36	.3	.80	7.0	6.0	1.8	<.10	7.5
MAY												
27...	0	2.5	.70	2.5	35	.4	.90	9.0	7.0	1.6	<.10	8.7
JUN												
10...	0	1.0	.80	1.8	36	.3	1.0	10	<5.0	1.6	<.10	8.8
JUL												
14...	--	2.1	1.0	2.3	32	.3	1.0	<8.0	<5.0	2.1	<.10	8.4

RED RIVER BASIN

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued
(Hydrologic bench-mark station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,NH4 + ORG. SUSP. TOTAL (MG/L AS N)
OCT 06...	28	--	.04	.110	<.100	.080	.080	.10	.47	.37	.55	.10
NOV 18...	20	--	.03	.120	.120	.120	.100	.13	.24	.28	.36	.00
DEC 15...	8	24	.01	<.090	<.090	<.070	.070	.09	--	.20	.52	.25
JAN 21...	13	--	.02	<.090	<.090	.100	.140	.18	.15	.17	.25	.00
FEB 23...	20	24	.03	<.100	<.100	.110	.110	.14	.68	.44	.79	.24
MAR 17...	21	25	.03	<.100	<.100	<.060	<.060	.08	--	--	.24	.00
APR 14...	18	24	.02	<.100	<.100	<.060	<.060	.08	--	--	.52	.00
MAY 27...	39	29	.05	<.100	<.100	.120	.100	.13	.38	.40	.50	.00
JUN 10...	25	--	.03	<.100	<.100	.060	.070	.09	.84	.53	.90	.30
JUL 14...	35	--	.05	<.100	<.100	.060	<.060	.08	.74	--	.80	.10

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, TOTAL (MG/L AS PO4)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)
OCT 06...	.45	.66	2.9	.020	.06	.010	--	--	--	--	--	--
NOV 18...	.38	.48	2.1	.010	.03	<.010	--	--	--	--	--	--
DEC 15...	.27	--	--	.030	.09	.010	--	--	--	--	--	--
JAN 21...	.31	--	--	.020	.06	.020	<1	<1	<100	11	<1	<1
FEB 23...	.55	--	--	.020	.06	.020	--	--	--	--	--	--
MAR 17...	.26	--	--	.000	.00	.010	--	--	--	--	--	--
APR 14...	2.7	--	--	<.010	--	<.010	--	--	--	--	--	--
MAY 27...	.50	--	--	<.010	--	.030	--	--	--	--	--	--
JUN 10...	.60	--	--	.070	.21	.080	<1	<1	<100	12	1	<1
JUL 14...	.70	--	--	.030	.09	<.010	--	--	--	--	--	--

RED RIVER BASIN

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued
(Hydrologic bench-mark station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982[illegible]

RED RIVER BASIN

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued
(Hydrologic bench-mark station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

[illegible]

RED RIVER BASIN

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued
(Hydrologic bench-mark station)

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	PER- THANE IN BOTTOM MATERIL (UG/KG)	TOX- APHENE, TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT 06...	--	--	--	--	--	--	--	--	--
NOV 18...	--	--	--	--	--	--	--	--	--
DEC 15...	--	--	--	--	--	--	--	--	--
JAN 21...	--	--	--	--	--	--	--	--	--
FEB 23...	--	--	--	--	--	--	--	--	--
MAR 17...	--	--	--	--	--	--	--	--	--
APR 14...	--	--	--	--	--	--	--	--	--
MAY 27...	--	--	--	--	--	--	--	--	--
JUN 10...	<.01	<.01	<.01	<.1	<.01	<.1	<1.00	<1	<10
JUL 14...	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TOTAL TRI- THION (UG/L)	2,4-D, TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	SILVEX, TOTAL (UG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 06...	--	--	--	--	--	4	56
NOV 18...	--	--	--	--	--	4	88
DEC 15...	--	--	--	--	--	6	35
JAN 21...	--	--	--	--	--	3	75
FEB 23...	--	--	--	--	--	4	64
MAR 17...	--	--	--	--	--	10	66
APR 14...	--	--	--	--	--	4	82
MAY 27...	--	--	--	--	--	18	34
JUN 10...	<.01	<.01	<.01	<.01	<.01	7	69
JUL 14...	--	--	--	--	--	6	72

RED RIVER BASIN

07335790 KIAMICHI RIVER AT CLAYTON, OK

LOCATION.--Lat 34°34'30", long 95°20'26', in NE 1/4 SE 1/4 sec.7, T.1 N., R.19 E., Pushmataha County, Hydrologic Unit 11140105, on left bank near downstream bridge abutment on U.S. Highway 271 approximately 1 mi (1.6 km) southeast of Clayton at mile 101.6 (163.5 km).

DRAINAGE AREA.--708 mi² (1,833.7 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 520.00 ft (158.496 m).

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 24,800 ft³/s (702 m³/s) June 7, 1981, gage height, 20.21 ft (6.160 m); minimum daily discharge 0.63 ft³/s (0.018 m³/s) Sept. 30, 1982.

EXTREMES FOR CURRENT PERIOD.--November to September 1981: Maximum discharge 24,800 ft³/s (702 m³/s) June 7, gage height 20.21 ft (6.160 m), minimum daily discharge 9.6 ft³/s (0.27 m³/s) on July 29.

Water year 1982: Maximum discharge 18,800 ft³/s (532 m³/s) Feb. 1, gage height 17.07 ft (5.203 m), minimum daily discharge 0.63 ft³/s (0.018 m³/s) Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		---	149	106	67	8060	540	203	1540	1050	317	56
2		---	134	101	267	3190	437	517	1880	2650	226	46
3		---	120	94	213	1810	377	368	1190	627	171	42
4		---	113	87	161	4560	352	271	1040	344	128	37
5		---	105	81	151	2790	304	245	4330	260	98	33
6		---	104	81	147	1630	277	296	16300	401	76	85
7		---	101	82	145	1200	238	316	22100	430	338	81
8		---	6560	81	140	976	217	283	9290	749	416	61
9		---	12000	81	149	802	203	638	2280	666	321	47
10		---	3820	79	4710	655	184	9800	1470	381	179	39
11		--	1960	73	2940	560	176	4300	1070	287	127	33
12		---	1380	64	1390	480	163	1700	843	220	98	29
13		---	1030	61	1010	421	146	1090	667	168	77	28
14		---	792	58	815	372	128	1280	513	149	63	28
15		---	629	53	673	333	121	961	380	124	50	29
16		---	515	51	566	328	113	698	507	94	43	35
17		---	414	48	484	292	104	583	903	72	130	38
18		---	360	47	423	348	98	507	578	58	334	28
19		---	314	46	374	484	96	420	389	46	361	25
20		---	292	269	45	329	393	328	293	38	280	22
21		284	226	48	305	328	87	271	229	31	185	19
22		239	199	54	288	297	97	232	186	27	133	17
23		237	190	65	270	271	821	195	152	23	98	16
24		245	176	69	254	267	1100	521	126	19	78	15
25		236	160	69	218	237	643	960	104	17	64	14
26		196	149	69	202	213	423	1500	89	14	54	13
27		176	138	65	191	202	316	987	76	12	62	12
28		168	132	56	4600	184	249	634	63	11	65	36
29		170	122	53	---	1470	216	1010	54	9.6	63	37
30		159	118	52	---	1380	193	2590	47	1350	89	33
31		---	110	52	---	815	---	2710	---	762	76	---
TOTAL		---	32589	2071	21482	35348	8512	36414	68689	11089.6	4800	1034
MEAN		---	1051	66.8	767	1140	284	1175	2290	358	155	34.5
MAX		---	12000	106	4710	8060	1100	9800	22100	2650	416	85
MIN		---	101	45	67	184	87	195	47	9.6	43	12
AC-FT		---	64640	4110	42610	70110	16880	72230	136200	22000	9520	2050

RED RIVER BASIN

07335790

KIAMICHI RIVER AT CLAYTON, OK--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	3630	2630	89	17900	1300	188	110	3610	82	51	6.0
2	16	4000	902	85	6490	1190	188	110	2440	76	56	5.0
3	16	2980	691	100	4870	1070	495	107	2460	88	43	4.3
4	16	2220	585	166	4030	1510	804	98	6540	93	33	3.7
5	16	1550	516	186	3460	1440	503	92	6420	72	27	3.2
6	16	884	471	189	3000	1170	398	85	2240	57	22	2.7
7	17	565	436	156	2730	1060	315	80	1280	668	19	2.7
8	17	469	386	144	2470	860	280	76	867	1460	16	2.4
9	17	1180	331	137	2460	732	258	84	612	628	14	2.0
10	17	1170	290	123	2320	629	233	85	460	263	14	1.9
11	17	742	266	108	1590	578	213	77	456	178	13	1.6
12	17	455	244	110	1440	557	188	92	2800	132	12	1.6
13	46	332	224	110	1730	523	178	9220	1420	103	11	1.4
14	2270	283	217	105	1470	2210	362	16600	674	84	9.7	4.3
15	2670	240	213	103	1180	3630	152	15400	467	69	9.3	8.2
16	3160	209	193	98	1790	2080	137	5090	1510	58	8.2	6.8
17	7840	199	187	91	2680	1370	140	4340	1430	49	7.5	4.7
18	15800	171	169	91	1900	1050	155	3880	734	43	7.5	3.7
19	6760	160	147	91	1500	878	168	3390	487	36	6.2	2.9
20	4410	139	135	91	1240	727	168	2910	371	31	6.2	2.5
21	3970	121	126	94	1070	589	164	2080	307	27	5.7	2.1
22	4000	113	126	1830	902	483	142	2370	271	25	6.0	2.0
23	3960	106	126	3840	757	408	123	2600	231	24	5.2	1.6
24	3570	96	126	2280	644	370	109	5000	194	24	4.5	1.3
25	3050	94	126	1430	543	324	103	3130	171	23	3.9	1.0
26	2590	87	123	998	1170	301	136	2080	173	26	3.9	.95
27	1860	85	114	770	1330	263	142	1890	153	22	3.3	.71
28	1030	78	111	642	1350	254	116	5020	131	22	5.4	.98
29	445	77	103	532	---	229	115	5340	111	24	6.0	.88
30	345	1960	96	6780	---	217	114	3260	94	96	6.2	.63
31	1270	---	91	16800	---	206	---	3470	---	62	6.0	---
TOTAL	69247	24395	10501	38369	74016	28208	6787	98166	39114	4645	441.7	83.75
MEAN	2234	813	339	1238	2643	910	226	3167	1304	150	14.2	2.79
MAX	15800	4000	2630	16800	17900	3630	804	16600	6540	1460	56	8.2
MIN	16	77	91	85	543	206	103	76	94	22	3.3	.63
AC-FT	137400	48390	20830	76100	146800	55950	13460	194700	77580	9210	876	166
CAL YR 1981	TOTAL 293582.6		MEAN	804	MAX	22100	MIN	9.6	AC-FT	582300		
WTR YR 1982	TOTAL 393973.45		MEAN	1079	MAX	17900	MIN	.63	AC-FT	781400		

RED RIVER BASIN

07336200 KIAMICHI RIVER NEAR ANTLERS, OK

LOCATION.--Lat 34°14'55", long 95°36'18", in SW 1/4 sec.35, T.3 S., R.16 E., Pushmataha County, Hydrologic Unit 11140105, on right bank, 50 ft (15,240 m) downstream from bridge on U.S. Highway 271 and State Highway 2, 2.0 mi (3.2 km) northeast of Antlers, 7.7 mi (12.4 km) downstream from Tenmile Creek, 5.4 mi (8.7 km) upstream from Cedar Creek and at mile 59.6 (95.9 km).

DRAINAGE AREA.--1,138 mi² (2,947 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 419.82 ft (127.961 m), National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Small diversion above station for municipal water supply of city of Antlers.

COOPERATION.--Gage-height record, 15 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--10 years, 1,484 ft³/s (42.03 m³/s), 17.70 in/yr (450 mm/yr), 1,075,000 acre-ft/yr (1.33 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) Mar. 28, 1977, gage height, 38.33 ft (11.683 m); no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 18,000 ft³/s (510 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage Height (ft)	Gage Height (m)	Date	Time	Discharge (ft ³ /s)	Discharge (m ³ /s)	Gage Height (ft)	Gage Height (m)
Oct. 18	1330	22,500	637	23.23	7.081	May 14	0400	27,600	782	27.12	8.266
Jan. 31	1000	*30,200	855	*28.58	8.711						

Minimum daily discharge, 0.65 ft³/s (0.018 m³/s) Sept. 13-15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	11	11700	6270	151	22400	2160	330	192	6710	187	176	6.4		
2	15	6910	3840	145	17100	1870	312	175	4030	164	176	5.5		
3	28	4630	2240	151	7890	1640	380	162	3410	148	109	4.4		
4	28	3410	1420	170	5880	2400	791	160	11700	128	79	3.8		
5	24	2510	1010	238	4780	2510	881	150	10700	122	64	3.1		
6	21	1710	807	281	4010	1970	642	138	5140	125	50	2.6		
7	20	1060	682	281	3460	1720	519	138	2530	548	39	2.5		
8	18	1410	617	257	3200	1470	441	131	1610	1590	33	2.1		
9	16	4380	547	221	3320	1210	394	111	1190	1370	30	1.5		
10	13	2990	478	201	3260	1040	361	104	943	632	27	1.2		
11	11	1760	429	194	2630	927	331	102	933	343	24	1.1		
12	13	1180	383	181	2070	865	304	173	3300	247	21	.85		
13	334	832	350	173	2330	802	282	14500	3660	193	18	.65		
14	5220	643	333	168	2390	2580	261	25500	1600	158	16	.65		
15	4380	539	322	163	1880	5090	242	19700	985	131	14	.65		
16	11200	464	306	154	2220	3860	224	14000	2230	110	13	.82		
17	12700	404	290	153	4050	2390	208	5090	2460	94	12	.82		
18	21400	365	268	148	3260	1680	202	4170	1780	81	11	.82		
19	15300	320	244	143	2410	1370	248	3730	1150	70	11	.82		
20	5690	289	224	142	1910	1140	269	3250	775	61	10	.82		
21	4630	262	214	149	1600	969	267	2490	1020	54	10	1.0		
22	4580	236	208	2160	1350	815	244	8350	780	47	9.0	1.0		
23	5380	223	204	5490	1060	693	227	9440	466	44	8.0	1.0		
24	4110	212	203	4150	889	615	227	6250	419	41	7.1	1.0		
25	3740	197	199	2440	925	556	228	5970	395	39	5.5	1.0		
26	3160	189	192	1630	1760	498	232	3840	371	35	5.5	1.0		
27	2610	183	187	1190	2590	448	232	4480	297	32	5.0	1.0		
28	1790	174	179	977	2420	416	227	6280	269	30	10	1.0		
29	1010	168	174	843	---	390	217	9760	257	30	8.8	1.0		
30	591	2510	164	9610	---	369	197	5380	221	29	8.3	1.0		
31	4340	---	158	29100	---	353	---	5100	---	43	7.5	---		
TOTAL	112383	51860	23142	61454	113044	44816	9920	159016	71331	6926	1017.7	51.10		
MEAN	3625	1729	747	1982	4037	1446	331	5130	2378	223	32.8	1.70		
MAX	21400	11700	6270	29100	22400	5090	881	25500	11700	1590	176	6.4		
MIN	11	168	158	142	889	353	197	102	221	29	5.0	.65		
CFSM	3.19	1.52	.66	1.74	3.55	1.27	.29	4.51	2.09	.20	.03	.00		
IN.	3.67	1.70	.76	2.01	3.70	1.46	.32	5.20	2.33	.23	.03	.00		
AC-FT	222900	102900	45900	121900	224200	88890	19680	315400	141500	13740	2020	101		
CAL YR 1981	TOTAL	451375	MEAN	1237	MAX	21800	MIN	11	CFSM	1.09	IN.	14.75	AC-FT	895300
WTR YR 1982	TOTAL	654960.80	MEAN	1794	MAX	29100	MIN	.65	CFSM	1.58	IN.	21.41	AC-FT	1299000

RED RIVER BASIN

07336600 HUGO LAKE NEAR HUGO, OK

LOCATION.--Lat 34°00'42", long 95°22'49", in NW 1/4 SW 1/4 sec.25, T.6 S., R.18 E., Choctaw County, Hydrologic Unit 11140105, on upstream face of Hugo Dam on Kiamichi River, 700 ft (213 m) to left of spillway, 7.0 mi (11.3 km) east of Hugo, and at mile 17.6 (28.3 km).

DRAINAGE AREA.--1,709 mi² (4,426 km²).

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

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

REMARKS.--Reservoir is formed by rolled earth dam. The outlet works consists of a gate-controlled concrete gravity ogee weir with six 40-ft (12.2 m) by 50-ft (15.2 m) gates. Regulated storage began Jan. 18, 1974; conservation pool was first filled Mar. 12, 1974. Total capacity, 1,561,500 acre-ft (1.93 km³) at elevation 452.5 ft (137.92 m), top of dam, 966,700 acre-ft (1.19 km³) at elevation 437.5 ft (133.35 m), top of flood control pool. Dead storage 21,080 acre-ft (26.0 hm³) at elevation 387.5 ft (118.11 m), crest of gated spillway. Figures given herein represent total contents. Reservoir is used for flood control, water supply, recreation and conservation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 580,300 acre-ft (716 hm³) June 18, 1982, elevation, 425.09 ft (129.567 m); minimum since conservation pool was first filled, 88,860 acre-ft (110 hm³) Nov. 15, 1978, elevation, 398.47 ft (121.454 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 580,300 acre-ft (716 hm³) June 18, elevation, 425.09 ft (129.567 m); minimum, 128,200 acre-ft (158 hm³) Sept. 30, elevation, 402.17 ft (122.581 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

402	126,100	415	334,000
407	192,700	420	447,100
410	239,900	425	577,800

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132300	284800	178600	160300	313700	172200	157800	161200	532300	362200	159900	143100
2	131400	300700	179400	161600	340900	163500	163700	161100	525700	341100	160300	142900
3	130400	311400	175900	162000	332200	160000	165000	160800	518400	321600	160100	142200
4	130400	318400	171700	161600	310000	161000	166200	160300	539500	303100	159900	141500
5	130100	319700	167900	161400	287600	162700	167300	159900	556600	285300	159500	140900
6	130200	307600	164300	162700	261300	162700	162600	161400	568200	267500	159100	140400
7	130300	287300	161200	161600	235700	161500	160600	160600	561600	255000	158400	139900
8	129800	269700	158600	161000	212600	160300	159900	159900	556600	241100	157800	139400
9	129800	258500	158500	161600	193000	158700	158900	159200	554700	227100	157600	138900
10	129800	243600	157800	160600	177200	158400	159100	158800	548200	212000	156900	138300
11	129100	277500	158100	159300	169500	158900	159100	158300	542400	196300	156200	137700
12	129900	209900	158700	159800	168700	159500	159500	165700	554200	179800	155700	137100
13	132000	194800	159100	159300	170200	159900	159600	233400	562100	170300	154900	136700
14	140300	181500	160000	158700	172100	165700	159500	308700	556400	166800	154500	136300
15	149200	169400	159900	158300	173000	171400	159700	358100	547900	164100	153800	136300
16	169400	161100	161500	158000	173600	170700	161600	392300	570700	163700	153100	135300
17	197500	159100	160800	157200	172800	164500	160800	403700	577800	163400	152700	135000
18	233000	159600	160400	157400	169200	160300	160800	405400	575600	163000	151100	134600
19	267600	160400	160100	158000	166400	159700	161200	403700	557500	162300	150900	134100
20	280400	159700	160100	158400	165400	161000	161400	400100	531600	162200	150100	133800
21	289400	159500	160700	161100	163100	161800	161400	391100	513100	161600	149400	133100
22	298700	159300	161200	171300	160700	161600	161000	406300	499600	161100	148900	132300
23	308700	159600	161100	180400	161200	161200	160600	423200	484100	161000	148300	131700
24	315800	159500	161000	187000	164300	161000	160000	452400	466800	160600	147500	131400
25	324700	159600	161100	186500	165600	160600	161000	472600	453900	160000	146800	130800
26	325700	161600	161400	181600	167600	159300	161600	489900	442100	159300	146100	130100
27	317000	160700	161200	176300	171500	159600	161500	508100	431400	158900	145600	129200
28	302200	161100	161400	170000	174500	159100	161500	528700	420100	158400	145700	128900
29	286500	162700	161200	166800	---	158000	161500	538400	406100	157800	144900	128700
30	269400	169100	161100	189800	---	158800	161400	526000	385600	157600	144500	128200
31	264300	---	161600	262500	---	158500	---	530000	---	158300	143800	---
MAX	325700	319700	179400	262500	340900	172200	167300	538400	577800	362200	160300	143100
MIN	129100	159100	157800	157200	160700	158000	157800	158300	385600	157600	143800	128200
†	411.39	405.35	404.80	411.29	405.75	404.57	404.78	423.23	417.38	404.55	403.43	402.17
††	+131,800	-95,200	-7,500	+100,900	-88,000	-16,000	+2,900	+368,600	-144,400	-227,300	-14,500	-15,600
CAL YR 1981	MAX	325700	MIN	129100	††	+1,700						
WTR YR 1982	MAX	577800	MIN	128200	††	-4,300						

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

RED RIVER BASIN

07336820 RED RIVER NEAR DE KALB, TX

LOCATION.--Lat 33°41'15", long 94°41'39", Bowie County, Tex.-McCurtain County, Okla. State line, Hydrologic Unit 11140106, near left bank at downstream side of bridge on U.S. Highway 259, 4.8 mi (7.7 km) upstream from North Mill Creek, 13 mi (21 km) north of De Kalb, and at mile 556.9 (896.1 km).

DRAINAGE AREA.--47,348 mi² (122,631 km²), of which 5,936 mi² (15,374 km²) probably is noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 302.92 ft (92.330 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Water-discharge records good. At times, flood peaks may be affected by storage in Lake Texoma (station 07331500) located approximately 169 mi (272 km) upstream, and low flows may be affected by releases for generation of electric power. Gage-height telemeter at station.

AVERAGE DISCHARGE.--14 years (water years 1969-82), 11,630 ft³/s (329.4 m³/s), 8,426,000 acre-ft/yr (10.4 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 189,000 ft³/s (5,350 m³/s) Dec. 11, 1971, gage height, 31.55 ft (9.616 m), from graph based on gage readings; minimum, 213 ft³/s (6.03 m³/s) Nov. 30, 1979, from graph based on gage readings.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1957, 205,000 ft³/s (5,800 m³/s) June 1957, gage height, 32.2 ft (9.81 m), from rating curve extended above 186,500 ft³/s (5,280 m³/s). The greatest flood since 1936 occurred in February 1938, stage unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 130,000 ft³/s (3,680 m³/s) May 15 at 1100 hours, gage height, 28.83 ft (8.787 m); minimum, 527 ft³/s (14.9 m³/s) Oct. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3600	81200	8220	6390	38000	21000	7480	5750	57400	36600	12200	2370
2	4120	101000	14600	5800	46100	22100	7560	6000	61600	53600	16000	2010
3	4280	102000	19100	5570	46000	20400	8220	4830	65900	61400	17700	1980
4	3590	82100	17300	5190	49300	16500	10000	4650	68300	59700	15200	2820
5	3000	66100	14500	4670	51900	13100	10700	3640	65200	56900	10600	3420
6	2540	63800	10900	4470	48600	12200	9940	3810	60200	55400	9620	3720
7	1900	67000	9490	4750	43500	10900	7600	5290	59100	55300	9530	3100
8	1130	63700	9070	5430	38100	9780	5760	5830	64100	58400	9480	2080
9	645	56800	7660	5240	33000	9620	5300	6680	65900	64300	9160	1400
10	563	70300	7150	5310	28400	8620	5070	8020	62600	67900	6660	963
11	737	69400	6530	5900	23500	6890	5820	8660	60200	65500	5550	462
12	1520	52400	6250	6050	18800	6080	6280	6750	60300	62600	5810	2040
13	1260	40400	5880	7060	13800	5810	5690	24300	58500	58900	6960	2160
14	2720	34300	5810	10400	11000	6460	4580	95400	54500	53400	6960	1650
15	15700	29200	5800	10400	10800	7580	3750	128000	54400	45900	6610	2190
16	45400	24800	5280	8110	10400	8520	4470	99500	75800	32000	6150	1580
17	48100	20300	5100	5870	10300	12200	5550	50200	84200	21300	5780	2340
18	80700	16600	5700	4930	12200	15300	6620	37300	74800	17500	5060	3270
19	92300	15400	6350	4560	15800	15300	6240	46600	53700	15900	4700	3840
20	84900	14400	7080	4130	16700	11400	5390	59300	49600	15300	5920	4620
21	76900	13000	7890	3270	15100	7910	3880	60900	54400	15100	5530	4790
22	77300	10400	8460	3510	13500	8170	3160	58300	61000	15000	4140	2920
23	81000	9180	7530	5480	10600	8200	3760	61400	63900	14700	5040	1700
24	83200	8750	6750	9700	7300	6710	3400	68400	62800	13400	4710	2260
25	76400	8140	6970	12100	5340	5790	4620	71500	60300	11900	4570	2140
26	73100	7830	8190	11200	6450	6810	5700	81100	60200	10500	4470	1590
27	73700	7930	7910	9360	8320	6490	6240	79400	63000	10100	4760	1380
28	74100	7730	6650	8190	15500	7290	5540	63300	62200	10300	4490	2490
29	75000	7650	6080	8630	---	7530	4910	51000	57400	10400	4210	2170
30	76000	7520	5850	8400	---	7040	5470	49000	46800	8040	3970	1330
31	74000	---	6040	9830	---	7810	---	52300	---	8620	3570	---
TOTAL	1239405	1159330	256090	209900	648310	319510	178700	1307110	1848300	1085860	225110	70785
MEAN	39980	38640	8261	6771	23150	10310	5957	42160	61610	35030	7262	2360
MAX	92300	102000	19100	12100	51900	22100	10700	128000	84200	67900	17700	4790
MIN	563	7520	5100	3270	5340	5790	3160	3640	46800	8040	3570	462
AC-FT	2458000	2300000	508000	416300	1286000	633700	354500	2593000	3666000	2154000	446500	140400
WTR YR 1981	TOTAL	4597295	MEAN	12600	MAX	102000	MIN	563	AC-FT	9119000		
WTR YR 1982	TOTAL	8548410	MEAN	23420	MAX	128000	MIN	462	AC-FT	16960000		

RED RIVER BASIN

07337300 PINE CREEK LAKE NEAR WRIGHT CITY, OK

LOCATION.--Lat 34°06'43", long 95°04'46", in NE 1/4 NW 1/4 sec.23, T.5 S., R.21 E., McCurtain County, Hydrologic Unit 11140107, at left of outlet works of dam on Little River, 4.7 mi (7.6 km) upstream from bridge on State Highway 98, 5.0 mi (8.0 km) northwest of Wright City, and at mile 145.3 (233.8 km).

DRAINAGE AREA.--635 mi² (1,645 km²).

PERIOD OF RECORD.--June 1969 to current year. Prior to October 1970, published as Pine Creek Reservoir near Wright City.

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

REMARKS.--Reservoir is formed by rolled earth dam; regulated storage began June 1, 1969; conservation pool was first filled Jan. 7, 1970. Total capacity, 1,136,000 acre-ft (1.40 km³) at elevation 509.0 ft (153.14 m), top of dam, 465,800 acre-ft (574 hm³) at elevation 480.0 ft (146.30 m), crest of spillway, 53,800 acre-ft (66.3 hm³) at elevation 438.0 ft (133.50 m) top of conservation pool, 7,140 acre-ft (8.80 hm³) dead storage at elevation 414.0 ft (126.19 m). Figures given herein represent total contents. Reservoir is designed for flood control, municipal and industrial water supply, and recreation.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 348,410 acre-ft (430 hm³) Dec. 16, 1971, elevation, 474.57 ft (144.039 m); minimum since conservation pool was first filled, 28,220 acre-ft (34.8 hm³) Oct. 21, 1972, elevation, 429.34 ft (130.863 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 220,600 acre-ft (272 hm³) May 25, elevation, 462.30 ft (140.909 m); minimum, 52,410 acre-ft (64.6 hm³) Oct. 12-13, elevation, 437.64 ft (133.392 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

438	53,750	445	85,440
439	57,610	448	102,600
442	70,490	462	217,470

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53940	64230	62310	55190	128200	60360	56160	71890	191100	73740	64100	57970
2	53900	68290	60520	55540	130500	59130	58010	72170	181300	73550	64010	57810
3	53640	67980	57970	55960	125900	57140	61100	72170	170800	73360	63540	57530
4	53560	65230	56240	55930	118000	56160	62990	72220	166400	73170	63070	57370
5	53530	62020	56240	55960	109300	55770	64190	72270	158400	72830	62730	57140
6	53450	59460	56200	55930	99790	56310	64400	72500	148600	72500	62520	57020
7	53340	57970	55930	55730	89970	56550	64920	72450	137900	73690	62310	56860
8	52750	56310	55580	55650	80730	55960	65670	72450	126600	73690	62100	56700
9	52670	55080	55080	55620	72310	54580	66110	72500	115100	73550	61890	56550
10	52630	55040	54470	55270	64400	53940	66590	72550	103900	73310	61680	56350
11	52450	55000	54130	55150	59330	53940	67040	72600	95950	72980	61430	56240
12	52410	54890	53980	55120	58170	54170	67480	89140	97410	72600	61260	56000
13	53150	54770	53830	55040	58850	55930	67840	156500	93410	72170	61020	55850
14	54700	54770	53640	54930	59330	62990	68110	173000	88040	71700	60770	55580
15	56080	54730	53600	54890	59700	67130	68560	181300	83580	71190	60520	55500
16	58850	54730	53980	54540	60560	65270	69020	184100	91650	70630	60230	55190
17	63070	54700	53980	54470	60930	61260	69020	183300	90130	70170	59950	55120
18	69480	54620	53980	54430	58370	56630	69160	179100	85280	69660	59660	55000
19	71560	54390	54090	54390	56940	54540	69660	171600	81090	69200	59460	54850
20	69710	54200	54200	54320	56740	54850	69980	160200	77500	68660	59290	54580
21	66110	54200	54510	55270	56040	54890	70170	149200	75580	68070	59090	54390
22	62440	54280	54700	62820	55310	54810	70300	191500	74170	67480	59090	54240
23	60520	54430	54700	68660	54620	54540	70490	204700	73310	66990	59010	54090
24	59500	54430	54700	70540	54280	54200	70540	216200	73070	66410	58730	53940
25	58290	54510	54770	70030	54280	53790	71050	220600	73170	65800	58570	53790
26	56780	54620	55000	67480	55580	53860	71230	219600	73310	65270	58410	53600
27	55650	54510	55040	64580	57370	54240	71420	216800	73360	64750	58450	53450
28	55120	54510	55120	61310	59620	54620	71510	213300	73550	64230	58490	53340
29	55080	54510	55080	59330	---	55000	71750	206300	73740	63540	58330	53270
30	54930	58530	55080	82280	---	55380	71790	196700	73790	63160	58210	53120
31	56390	---	55230	120900	---	55690	---	196500	---	63330	58090	---
MAX	71560	68290	62310	120900	130500	67130	71790	220600	191100	73740	64100	57970
MIN	52410	54200	53600	54320	54280	53790	56160	71890	73070	63160	58090	53120
†	438.69	439.23	438.39	450.80	439.50	438.51	442.28	459.92	442.70	440.39	439.12	437.83
††	+2,380	+2,140	-3,300	+65,670	-61,280	-3,930	+16,100	+124,710	-122,710	-10,460	-5,240	-4,970

CAL YR 1981 MAX 173200 MIN 52410, †† -24,120
WTR YR 1982 MAX 220,600 MIN 52410, †† -890

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

RED RIVER BASIN

07337500 LITTLE RIVER NEAR WRIGHT CITY, OK

LOCATION.--Lat 34°04'10", long 95°02'47", in NE 1/4 NW 1/4 sec.6, T.6 S., R.22 E., McCurtain County, Hydrologic Unit 11140107, on left bank on downstream side of bridge on State Highway 98, 1.8 mi (2.9 km) upstream from White Oak Creek, 2.0 mi (3.2 km) west of Wright City, 4.7 mi (97.6 km) downstream from Pine Creek Lake, and at mile 140.6 (226.2 km).

DRAINAGE AREA.--645 mi² (1,671 km²).

PERIOD OF RECORD.--October 1929 to September 1931, October 1944 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 346.76 ft (105.692 m) National Geodetic Vertical Datum of 1929. Oct. 12, 1929, to Sept. 30, 1931, nonrecording gage at railroad bridge 1.0 mi (1.6 km) downstream at datum 4.15 ft (1.265 m) higher. Dec. 6, 1944, to July 30, 1951, nonrecording gage at present site and datum.

REMARKS.--Records fair. Except for 10 mi² (25.9 km²) intervening area, flow completely regulated since June 1969 by Pine Creek Lake (station 07337300).

COOPERATION.--Gage-height record and 14 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Pine Creek Lake) 27 years (water years 1930-69), 917 ft³/s (25.97 m³/s), 664,400 acre-ft/yr (819 hm³/yr); (since regulation by Pine Creek Lake) 12 years (water years 1971-82) 886 ft³/s (25.09 m³/s), 641,900 acre-ft/yr (791 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 78,200 ft³/s (2,210 m³/s) May 6, 1961, gage height, 45.60 ft (13.899 m); maximum gage height, 45.77 ft (13.951 m) Sept. 16, 1950; no flow at times in 1930, 1954, 1956, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 6,620 ft³/s (187 m³/s) May 28, gage height, 22.97 ft (7.001 m); maximum gage height, 25.06 ft (7.638 m) May 22 (from backwater); minimum daily discharge 7.4 ft³/s (0.21 m³/s) Aug. 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	462	429	46	992	730	50	24	5330	153	107	10
2	21	317	2080	37	1830	1460	81	24	6200	153	113	9.0
3	21	1140	2160	36	4310	1910	146	27	6190	153	159	9.0
4	21	2180	1660	45	5650	2090	113	27	6190	147	191	8.5
5	21	2180	499	110	5670	1700	99	26	6290	147	198	9.0
6	21	1820	486	126	5590	1130	199	24	5550	147	113	8.8
7	24	1070	479	125	5480	1050	220	23	5430	226	76	8.2
8	24	1030	472	126	5400	1070	96	22	5340	338	63	9.7
9	27	893	468	126	5380	1400	59	23	5740	303	55	9.9
10	27	280	462	119	5140	1170	55	23	5660	276	40	11
11	27	240	421	115	3860	688	51	22	5060	257	30	11
12	30	231	272	121	1790	608	50	22	3700	249	27	11
13	36	207	262	119	820	444	45	23	3520	249	24	13
14	96	130	255	121	793	474	40	23	3410	249	21	14
15	55	117	189	122	787	1090	39	24	3440	249	19	15
16	178	110	42	122	1010	2760	55	283	3830	249	19	19
17	198	108	33	122	1810	3180	51	1400	2930	242	19	19
18	119	109	30	125	2660	3130	41	3170	3420	242	12	17
19	130	106	30	126	2140	2230	50	4490	2840	242	9.9	19
20	1120	95	31	128	1050	608	48	5950	2080	234	9.0	17
21	2150	30	42	141	998	565	40	6020	2250	226	7.8	14
22	2210	18	47	604	981	552	36	5630	1330	226	8.0	14
23	2010	18	45	1110	937	535	30	90	903	226	9.0	14
24	1120	19	49	1080	682	534	30	90	462	226	8.7	17
25	1050	20	53	1340	596	501	31	1360	249	226	7.4	15
26	1030	21	54	2150	510	288	37	3760	191	226	8.3	14
27	948	20	50	2160	498	128	36	5840	172	226	7.7	14
28	615	22	51	2130	504	75	35	6500	166	226	18	13
29	517	21	48	1710	---	62	30	6560	159	219	14	13
30	257	53	49	1090	---	50	27	6420	159	205	12	12
31	185	---	51	998	---	51	---	6050	---	119	11	---
TOTAL	14309	13067	11299	16630	67868	32263	1920	63970	98191	6856	1416.8	388.1
MEAN	462	436	364	536	2424	1041	64.0	2064	3273	221	45.7	12.9
MAX	2210	2180	2160	2160	5670	3180	220	6560	6290	338	198	19
MIN	21	18	30	36	498	50	27	22	159	119	7.4	8.2
AC-FT	28380	25920	22410	32990	134600	63990	3810	126900	194800	13600	2810	770
CAL YR 1981	TOTAL	242619.2	MEAN	665	MAX	6650	MIN	9.6	AC-FT	481200		
WTR YR 1982	TOTAL	328177.9	MEAN	899	MAX	6560	MIN	7.4	AC-FT	650900		

RED RIVER BASIN

07337900 GLOVER CREEK NEAR GLOVER, OK

LOCATION.--Lat 34°05'51", long 94°54'07", in NW 1/4 NE 1/4 sec.28, T.5 S., R.23 E., McCurtain County, Hydrologic Unit 11140107, near right bank on downstream side of pier of bridge on State Highways 3 and 7, 2.0 mi (3.2 km) north of Glover, 11.0 mi (17.7 km) northwest of Broken Bow, and at mile 9.2 (14.8 km).

DRAINAGE AREA.--315 mi² (816 km²).

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

GAGE.--Water-stage recorder. Datum of gage is 378.70 ft (115.428 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

COOPERATION.--Gage-height record and 14 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--22 years, 449 ft³/s (12.72 m³/s), 19.36 in/yr (492 mm/yr), 325,300 acre-ft/yr (401 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 98,600 ft³/s (2,790 m³/s) Dec. 10, 1971, gage height, 29.72 ft (9.059 m); no flow at times in 1966, 1968, 1970, 1972, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1961 reached a stage of 28.84 ft (8.790 m), from floodmark. Flood in 1908 was higher than in May 1961, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 8,000 ft³/s (227 m³/s) and maximum (*):

Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)	Date	Time	Discharge (ft ³ /s) (m ³ /s)	Gage Height (ft) (m)
Jan. 31	0230	26,000	736	May 22	1500	27,500	779
May 13	0945	*32,900	932	June 4	0915	8,600	244
			*18.68				9.45
			5.694				2.880

Minimum daily discharge 1.6 ft³/s (0.045 m³/s) Sept. 22-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	6.0	4580	1440	36	2520	848	127	83	1940	52	97	5.6		
2	6.0	1580	710	37	1470	729	521	78	1050	44	68	5.4		
3	6.2	788	484	40	1300	607	1260	73	823	37	49	5.9		
4	6.2	530	353	60	984	884	690	66	4410	33	37	5.7		
5	6.5	385	268	95	788	860	518	61	2000	29	29	4.9		
6	5.1	288	214	97	633	773	370	58	1080	26	24	4.4		
7	4.0	221	184	93	508	686	288	55	768	31	20	4.1		
8	4.3	179	163	87	457	559	241	52	578	37	19	3.5		
9	5.5	152	143	80	540	503	216	50	459	41	17	3.4		
10	6.5	132	124	73	582	441	187	54	372	44	16	2.8		
11	6.2	117	110	66	510	394	174	51	324	35	15	2.5		
12	6.0	102	101	60	482	356	174	111	2420	29	14	2.5		
13	8.6	91	93	60	604	329	174	19800	1040	25	13	2.3		
14	59	82	90	56	613	2790	174	8150	638	23	13	2.3		
15	155	74	86	55	566	2070	174	3010	479	22	13	2.2		
16	424	68	81	53	712	1140	174	1660	1660	20	12	2.0		
17	857	62	76	48	986	800	174	1040	1100	18	12	2.3		
18	1100	57	69	49	747	618	178	811	637	18	11	2.0		
19	527	53	63	48	599	503	203	746	465	16	9.7	2.0		
20	302	49	57	46	494	430	269	648	358	15	9.1	2.1		
21	201	44	55	52	427	360	256	542	290	14	8.3	1.8		
22	168	40	53	2200	369	303	225	12100	265	15	8.1	1.6		
23	166	39	52	2410	320	256	194	5380	228	16	7.3	1.6		
24	201	37	52	1130	280	225	166	2500	185	14	6.6	1.6		
25	168	35	51	758	260	203	141	2140	174	12	6.2	1.8		
26	153	35	48	560	351	182	280	1500	152	12	5.6	1.8		
27	146	34	44	433	507	163	117	2510	144	15	5.6	1.8		
28	132	32	43	357	859	148	108	2270	131	9.6	7.3	1.9		
29	112	31	41	300	---	141	98	1980	153	9.9	6.8	1.8		
30	98	263	40	1410	---	132	86	1230	81	14	6.8	2.0		
31	187	---	38	10300	---	129	---	2320	---	138	6.0	---		
TOTAL	5233.1	10180	5426	21149	19468	18562	7957	71129	24404	864.5	572.4	85.6		
MEAN	169	339	175	682	695	599	265	2294	813	27.9	18.5	2.85		
MAX	1100	4580	1440	10300	2520	2790	1260	19800	4410	138	97	5.9		
MIN	4.0	31	38	36	260	129	86	50	81	9.6	5.6	1.6		
CFSM	.54	1.08	.56	2.17	2.21	1.90	.84	7.28	2.58	.09	.06	.01		
IN.	.62	1.20	.64	2.50	2.30	2.19	.94	8.40	2.88	.10	.07	.01		
AC-FT	10380	20190	10760	41950	38610	36820	15780	141100	48410	1710	1140	170		
CAL YR 1981	TOTAL	130908.4	MEAN	359	MAX	9640	MIN	4.0	CFSM	1.14	IN.	15.46	AC-FT	259700
WTR YR 1982	TOTAL	185030.6	MEAN	507	MAX	19800	MIN	1.6	CFSM	1.61	IN.	21.85	AC-FT	367000

RED RIVER BASIN

07338500 LITTLE RIVER BELOW LUKFATA CREEK NEAR IDABEL, OK

LOCATION.--Lat 33°56'28", long 94°45'30", in SE 1/4 SE 1/4 sec. 14, T.7 S., R.24 E., McCurtain County, Hydrologic Unit 11140107, on left bank at downstream side of bridge on U.S. Highway 70 just downstream from Lukfata Creek, 5.0 mi (8.0 km) northeast of Idabel, and at mile 103.4 (166.4 km).

DRAINAGE AREA.--1,226 mi² (3,175 km²).

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

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 312.08 ft (95.122 m) National Geodetic Vertical Datum of 1929. Oct. 1, 1946 to Oct. 26, 1950, and for stages below 9.0 ft (2.7 m) Oct. 26, 1950, to Oct. 10, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since June 1969 by Pine Creek Lake (station 07337300) 41.9 mi (67.4 km) upstream.

COOPERATION.--Gage-height record and 17 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--(Prior to regulation by Pine Creek Lake) 22 years, (water years 1947-68), 1,622 ft³/s (45.95 m³/s), 1,174,000 acre-ft/yr (1.45 km³/yr); (since regulation by Pine Creek Lake) 12 years (water years 1971-82), 1,692 ft³/s (47.92 m³/s), 1,226,000 acre-ft/yr (1.51 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft³/s (2,920 m³/s) Dec. 10, 1971, gage height, 39.39 ft (12.06 m); minimum, 0.4 ft³/s (0.011 m³/s) Sept. 15, 16, Sept. 21 to Oct. 1, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1938 reached a stage of 39.7 ft (12.10 m), from information by local resident, discharge, 86,000 ft³/s (2,440 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,100 ft³/s (371 m³/s) May 15, gage height, 28.08 ft (8.559 m); minimum daily discharge, 22 ft³/s (0.62 m³/s) Sept. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	5670	1110	129	8650	2140	219	178	8950	454	1510	38
2	44	6090	2550	131	7180	2420	310	167	8370	394	2060	34
3	36	3190	3010	144	5320	2950	2160	163	7850	350	935	31
4	33	2940	2820	150	5950	4020	2080	161	7620	313	566	29
5	33	2950	1860	152	6680	4040	1160	151	8420	288	451	28
6	30	2600	959	248	6830	3360	900	143	8530	265	386	28
7	30	1800	880	298	6690	2570	824	137	8000	265	222	29
8	33	1540	835	291	6480	2140	640	131	7400	711	152	29
9	41	1470	798	280	6460	2160	445	126	6920	616	130	28
10	44	1180	765	271	6480	2140	389	115	6580	467	110	28
11	42	595	733	254	6280	1620	358	110	6340	595	100	29
12	42	529	640	243	5340	1260	320	199	5960	609	93	29
13	48	506	480	240	4400	1070	292	5860	5960	445	86	29
14	2040	448	458	235	3700	1560	271	11900	5100	392	80	30
15	1070	360	454	227	2800	3970	254	12800	4420	369	74	33
16	1100	336	403	232	2500	3950	251	10600	6970	358	68	41
17	2430	323	235	237	3100	4340	389	5760	7560	350	62	41
18	2130	310	167	235	3570	4320	355	3270	5700	339	56	40
19	1540	294	155	232	3810	4060	369	4300	4590	331	53	43
20	1200	268	142	248	2780	2580	486	5320	3530	326	47	38
21	2040	254	141	268	1820	1230	515	6280	2950	315	42	32
22	2580	187	141	1160	1680	1080	445	6720	3100	313	39	27
23	2760	131	148	4350	1600	995	366	9480	1890	310	39	25
24	2220	118	161	4030	1350	943	310	11300	1180	304	37	23
25	1680	117	159	2750	1170	904	274	9870	711	298	33	22
26	1560	118	155	2780	1310	722	285	6870	584	295	31	22
27	1450	115	152	2940	1590	461	288	6140	486	298	28	24
28	1190	112	150	2800	2150	313	257	7400	549	298	34	26
29	801	110	142	2700	---	254	222	8230	519	288	41	26
30	526	166	139	2090	---	237	197	8570	451	304	49	24
31	694	---	133	5120	---	229	---	8680	---	326	46	---
TOTAL	29519	34827	21075	35465	117670	64038	15631	151131	147190	11586	7660	906
MEAN	952	1161	680	1144	4203	2066	521	4875	4906	374	247	30.2
MAX	2760	6090	3010	5120	8650	4340	2160	12800	8950	711	2060	43
MIN	30	110	133	129	1170	229	197	110	451	265	28	22
AC-FT	58550	69080	41800	70340	233400	127000	31000	299800	292000	22980	15190	1800
CAL YR 1981	TOTAL	459960	MEAN	1260	MAX	10700	MIN	30	AC-FT	912300		
WTR YR 1982	TOTAL	636698	MEAN	1744	MAX	12800	MIN	22	AC-FT	1263000		

RED RIVER BASIN

07338900 BROKEN BOW LAKE NEAR BROKEN BOW, OK

LOCATION.--Lat 34°08'35", long 94°41'00", in SW 1/4 sec.3, T.5 S., R.25 E., McCurtain County, Hydrologic Unit 11140108, at intake structure on upstream side of dam on Mountain Fork, 9.0 mi (14.5 km) northeast of Broken Bow, and at mile 20.3 (32.7 km).

DRAINAGE AREA.--754 mi² (1,953 km²).

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1970, published as Broken Bow Reservoir near Broken Bow.

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

REMARKS.--Reservoir is formed by a rolled earth and gravel structure. Outlet works consists of power-generated turbines and a concrete ogee weir controlled by eight 40 ft (12.2 m) by 40 ft (12.2 m) taintor gates. Regulated storage began Oct. 3, 1968; conservation pool was first filled Jan. 30, 1969. Total capacity, 1,368,000 acre-ft (1.69 km³) at elevation 627.5 ft (191.26 m), top of flood pool and spillway gages, 918,100 acre-ft (1.13 km³) at elevation 599.5 ft (182.73 m), top of power pool, and 448,200 acre-ft (553 hm³) at elevation 559.0 ft (170.38 m), bottom of power pool. Figures given herein represent total contents. Reservoir is used for flood control, power development and water supply.

COOPERATION.--Records furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,178,000 acre-ft (1.45 km³) Dec. 17, 1971, elevation, 616.41 ft (187.882 m); minimum since conservation pool was first filled, 672,000 acre-ft (829 hm³) Oct. 21, 1972, elevation 580.48 ft (176.930 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,057,000 acre-ft (1.30 km³) May 17, elevation 608.85 ft (185.577 m); minimum, 741,400 acre-ft (914 hm³) Oct. 13, elevation, 586.22 ft (178.680 m).

Capacity table (elevation, in feet, and contents, in acre-ft):

587	751,100	598	897,000
590	789,300	603	968,600
594	842,100	609	1,059,000

RESERVOIR STORAGE, (ACRE-FEET)

WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
2400-HR VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	747000	818500	851400	816500	873800	862700	879200	863900	1006000	911300	877600	809100
2	746600	826400	853200	817400	877200	862000	880800	861700	1005000	909000	874600	809900
3	746100	833400	855600	817600	879700	864000	883200	858700	1006000	908600	871000	808500
4	746100	836600	856700	816100	879600	864900	884800	858900	1039000	908500	866000	807900
5	744900	838700	857600	811800	875200	865000	885000	858700	1044000	908200	860600	806600
6	744900	839800	858900	809600	875300	866500	879800	859500	1040000	905800	855500	806500
7	743800	840700	858700	804500	874900	867600	873400	858600	1031000	906300	855300	804300
8	743400	842100	857000	800500	874700	867500	868200	858700	1019000	906600	855500	803700
9	742600	842600	853600	801200	870800	866900	867900	858700	1006000	905500	854500	802300
10	742800	843000	850600	796800	865300	864300	868800	856800	992000	905400	852300	799600
11	742400	843400	847700	786500	860400	862500	869500	854900	978600	905500	850200	799300
12	741500	843700	846700	778300	853200	860800	867500	862700	976100	904400	849000	799200
13	746400	844000	847200	772000	854000	864200	867200	954300	968800	902100	848700	796500
14	755400	844100	845000	771000	857800	896000	868000	1037000	955100	899800	848700	794100
15	756700	844600	843000	771600	856100	905100	868600	1046000	949000	897800	848700	794000
16	760600	844600	841100	771500	863400	910300	871600	1055000	949200	895300	844500	796300
17	770500	844800	838000	772000	868800	913300	874700	1054000	946300	894700	841000	794800
18	779600	844800	834200	772600	869200	915000	877800	1049000	941700	894400	838300	795000
19	782100	844600	830700	773300	871300	915700	882800	1038000	936500	891900	832700	794800
20	784200	843400	828600	771900	873900	918500	885700	1027000	930500	889100	830600	793200
21	785100	843400	827100	772400	876700	920200	885900	1014000	925900	886800	828400	792800
22	787100	843700	824300	781200	874700	918500	884000	1022000	924200	884700	826700	790800
23	787100	843300	823100	791300	871700	915900	882100	1030000	922000	883600	823600	790600
24	787500	843300	822600	797500	869500	915200	876700	1034000	919600	883200	822000	788400
25	788800	842900	822700	800600	865600	912000	875700	1032000	918100	883400	821900	788300
26	787900	843300	823100	798400	868800	907800	874100	1027000	918400	881600	820100	788000
27	787400	842300	823100	798800	860100	906100	872400	1021000	918600	878000	818500	786200
28	787100	842300	820600	800100	862800	900300	864400	1014000	917200	876700	818500	786100
29	786100	842600	819100	801700	---	894800	863100	1010000	915200	875800	818300	786000
30	785700	845600	817600	818000	---	888600	864300	1001000	913300	875800	816800	784000
31	791300	---	816500	862100	---	884800	---	999300	---	877000	812000	---
MAX	791300	845600	858900	862100	879700	920200	885900	1055000	1044000	911300	877600	809900
MIN	741500	818500	816500	771000	853200	860800	863100	854900	913300	875800	812000	784000
†	590.15	594.26	592.08	595.48	595.53	597.13	595.64	605.07	599.16	596.56	591.74	589.59
††	+43,400	+54,300	-29,100	+45,600	+700	+22,000	-20,500	+135,000	-86,000	-36,300	-65,000	-28,000

CAL YR 1981 MAX 1032000 MIN 741500, †† -31,900
WTR YR 1982 MAX 1055000 MIN 741500, †† +36,100

† Elevation, in feet, at end of month

†† Change in contents, in acre-ft

RED RIVER BASIN

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK

LOCATION.--Lat 34°02'30", long 94°37'15", in SE 1/4 SE 1/4 sec.7, T.6 S., R.26 E., McCurtain County, Hydrologic Unit 11140108, near center of span on downstream side of pier of bridge on U.S. Highway 70, 2.0 mi (3.2 km) west of Eagletown, 10.7 mi (17.2 km) downstream from Broken Bow Dam, and at mile 8.9 (14.3 km).

DRAINAGE AREA.--787 mi² (2,040 km²).

PERIOD OF RECORD.--March 1924 to December 1925, October 1929 to current year. Published as Mountain Fork River near Broken Bow 1924-25 and as Mountain Fork River near Eagletown 1929-60. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1924-26, 1930 (M), 1936-37 (M), 1938, 1939 (M) 1942 (M).

GAGE.--Water-stage recorder. Datum of gage is 333.87 ft (101.763 m) National Geodetic Vertical Datum of 1929. See WSP 1920 for history of changes prior to July 23, 1950.

REMARKS.--Records good. Except for 33 mi² (85 km²) intervening area, flow completely regulated since October 1968 by Broken Bow Lake (station 07338900).

COOPERATION.--Gage-height record and 8 discharge measurements furnished by Corps of Engineers; records computed by Geological Survey.

AVERAGE DISCHARGE.--Prior to regulation by Broken Bow Dam, 40 years (water years 1925, 1930-68), 1,291 ft³/s (36.56 m³/s), 934,600 acre-ft/yr (1.15 km³/yr); since regulation by Broken Bow Dam, 13 years (water years 1970-82), 1,364 ft³/s (38.63 m³/s), 988,200 acre-ft/yr (1.22 km³/s).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 101,000 ft³/s (2,850 m³/s) May 20, 1960, gage height, 26.73 ft (8.147 m); from rating curve extended above 65,000 ft³/s (1,840 m³/s); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 18-19, 1915, reached a stage of 26.4 ft (8.05 m), from information by local resident, discharge, 92,500 ft³/s (2,620 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,640 ft³/s (245 m³/s) Apr. 7, gage height, 7.79 ft (2.374 m); minimum daily discharge 81 ft³/s (2.29 m³/s) Jan. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	1970	394	626	996	1450	3210	902	1450	1240	167	1980
2	351	445	198	139	1930	2470	2960	147	3070	1180	726	944
3	169	213	672	91	2740	1100	3930	474	3940	914	1990	247
4	156	224	149	534	2830	1880	1250	855	5070	301	2810	472
5	148	176	578	2010	4710	2740	2020	141	3320	139	2890	187
6	226	214	130	1990	2250	1650	3780	370	5080	525	2780	470
7	192	316	108	2540	2840	314	4320	246	5810	810	1430	336
8	328	177	1280	3400	1300	1670	3960	432	6980	154	190	716
9	183	165	1680	1000	3420	2380	1690	150	7630	268	183	303
10	332	176	2370	619	4790	2260	840	562	8020	494	626	848
11	170	167	1870	1500	3980	2330	163	901	8150	137	1220	892
12	169	215	993	2220	5330	2290	700	468	5490	175	1050	161
13	313	171	864	3930	2720	985	1590	2000	5090	726	537	502
14	1110	211	865	2310	1110	204	463	1660	7720	992	150	1430
15	298	169	1440	364	1750	1720	342	288	5110	1100	126	847
16	690	157	1620	107	2260	2680	874	105	4420	1280	686	178
17	593	165	1280	90	3350	1820	450	1340	3700	885	1950	200
18	209	161	2270	85	3700	1140	120	3960	3600	283	1670	675
19	179	154	1980	81	2570	1430	96	6980	3540	380	2250	150
20	339	135	1980	244	981	599	86	6860	3560	1420	2010	166
21	171	470	1130	504	280	149	1080	7200	3640	1390	1140	545
22	238	111	1690	1070	1020	1170	1780	6270	1710	1100	927	202
23	233	106	1180	569	2440	1820	1770	1360	1490	892	1190	620
24	480	294	346	217	2640	1240	3540	1650	1560	590	871	257
25	185	98	499	588	3160	1620	1670	3200	1510	138	461	743
26	190	255	124	2040	3530	2670	1640	6940	682	214	303	147
27	628	97	85	1860	3120	1580	1680	7090	140	1050	858	177
28	727	370	511	427	1170	3080	4000	7080	669	1090	545	575
29	810	111	1220	522	---	2640	1970	7180	1330	646	150	138
30	700	111	992	376	---	3560	1520	7180	1380	810	192	207
31	643	---	771	484	---	2180	---	5430	---	676	1620	---
TOTAL	12200	7804	31269	32537	72917	54821	53494	89421	114861	21999	33698	15315
MEAN	394	260	1009	1050	2604	1768	1783	2885	3829	710	1087	511
MAX	1110	1970	2370	3930	5330	3560	4320	7200	8150	1420	2890	1980
MIN	148	97	85	81	280	149	86	105	140	137	126	138
AC-FT	24200	15480	62020	64540	144600	108700	106100	177400	227800	43640	66840	30380
CAL YR 1981	TOTAL	448684	MEAN	1229	MAX	7460	MIN	78	AC-FT	890000		
WTR YR 1982	TOTAL	540336	MEAN	1480	MAX	8150	MIN	81	AC-FT	1072000		

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which stream flow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potential of a stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations

Station No.	Station name	Location	Drain- age area (mi ²)	Period of record	Measurements	
					Date	Discharge (ft ³ /s)
ARKANSAS RIVER BASIN						
07148360	Greenwood Creek near Winchester, OK	Lat 36°55'23", long 98°47'27", in SW 1/4 NW 1/4 sec.11, T.28 N., R.14 N., Woods County, at county road bridge 2.4 mi (3.9 km) south of Winchester and at mile 1.9 (3.1 km).	41.2	1972-82	10-06-81	0.71
					01-28-82	3.4
					04-15-82	1.9
07165507	Rock Creek at Sapulpa, OK	Lat 35°59'07", long 96°06'48", in NE 1/4 NW 1/4 sec.2, T.17 N., R.11 E., Creek County, at bridge on U.S. High- way Alt. 75, 0.2 mi (0.3 km) south of junction with State Highway 117, 0.3 mi (0.5 km) downstream from Biren Creek, 2.3 mi (3.7 km) upstream from mouth.	67.3	1979-82	10-27-81	0.45
					11-24-81	.26
					12-08-81	.47
					01-14-82	.31
					02-23-82	5.2
					03-09-82	.68
					04-13-82	.57
					07-09-82	1.1
					08-04-82	1.6
09-01-82	.76					
07178500	Dog Creek near Claremore, OK	Lat 36°15'40", long 95°36'05", in SW 1/4 SE 1/4 sec.16, T.21 N., R.16 E., Rogers County, at bridge on State Highway 88, 0.8 mi (1.3 km) upstream from Cat Creek, 1.5 mi (2.4 km) south- east of junction with U.S. Highway 66 in Claremore, 3.0 mi (4.8 km) down- stream from Lake Claremore, 5.9 mi (9.5 km) upstream from Panter Creek.	63.6	1981-82	10-20-81	0.17
					12-15-81	2.3
					01-15-82	.53
					02-10-82	13.0
					04-14-82	.35
					05-05-82	.09
					06-23-82	.53
					08-11-82	.0
					09-21-82	.0

DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-station gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relations for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain, but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station Number	Station Name	Location	Drain- age area (mi ²)	Period of Record	Annual Maximum		
					Date	Gage height (feet)	Dis- charge (ft ³ /s)
ARKANSAS RIVER BASIN							
07150870	Salt Fork Arkansas River tributary near Eddy, Okla.	Lat 36°41'42", long 97°25'30", in SW 1/4 SW 1/4 sec.28, T.26 N., R.2 W., Kay County, at culvert on U.S. Highway 60, 3.0 mi (4.8 km) southeast of Eddy.	2.35	1964-82	05-18-82	12.10	170
07154650	Tesequite Creek near Kenton, Okla.	Lat 36°53'52", long 102°54'04", in NE 1/4 SE 1/4 sec.13, T.5N., R.1 E., Cimarron County, at county road bridge 3.9 mi (6.3 km) east of Kenton.	25.4	1964-82	06-30-82	13.23	459
07155100	Cold Springs Creek near Wheelless, Okla.	Lat 36°46'20", long 102°48'16", in SE 1/4 NE 1/4 sec.35, T.4 N., R.2 E., Cimarron County, at county road multi-barrel culvert, 6.0 mi (9.7 km) northeast of Wheelless.	11.0	1964-82	06-12-82	11.64	160
07157550	West Fork Creek near Knowles, Okla.	Lat 36°52'30", long 100°07'20", in SE 1/4 SE 1/4 sec.22, T.5 N., R.27 E., Beaver County, at county road culvert, 4.2 mi (6.8 km) east of Knowles.	4.22	1964-82	04-29-82	12.80	86
07158500	Preacher Creek near Dover, Okla.	Lat 36°02'37", long 98°00'48", in NW 1/4 NW 1/4 sec.13, T.18 N., R.8 W., Kingfisher County, at county road bridge, 7.1 mi (11.4 km) northwest of Dover.	14.5	1952-57† 1964-82	05-17-82	4.85	232
07159200	Kingfisher Creek near Kingfisher, Okla.	Lat 35°50'30", long 98°03'57", in NW 1/4 SW 1/4 sec.28, T.16 N., R.8 W., Kingfisher County, at county road bridge, 7.6 mi (12.2 km) west of Kingfisher.	157	1967-70† 1971-82			
07160550	West Beaver Creek near Orlando, Okla.	Lat 36°08'45", long 97°28'05", in NW 1/4 NE 1/4 sec. 12, T.19 N., R.3 W., Logan County, at county road bridge, 5.0 mi (8.0 km) west of Orlando.	13.9	1964-82	05-07-82	11.60	4,400
07171120	Clear Creek tributary near Hollow, Okla.	Lat 36°52'50", long 95°16'00", in SW 1/4 NW sec.27, T.28 N., R.19 E., Craig County, on downstream side of multi-barrel box culvert on State Highway 10, 1.2 mi (1.9 km) south-east of Hollow.	2.19	1966-75 1980-82			
07174720	Hogshooter Creek tributary near Bartlesville, Okla.	Lat 36°43'40", long 95°50'52", in SE 1/4 SE 1/4 sec.18, T.26 N., R.14 E., Washington County, at multi-barrel culvert on U.S. Highway 60, 4.9 mi (7.9 km) east of junction with U.S. Highway 75 southeast of Bartlesville.	.94	1965-82	05-25-82	9.03	466
07188140	Flint Branch near Peoria, Okla.	Lat 36°52'25", long 94°41'35", in SW 1/4 SW 1/4 sec.26, T.28 N., R.24 E., Ottawa County, at upstream side of dam, 3.2 mi (5.1 km) southwest of Peoria.	4.90	1964-82	01-30-82	13.75	375
07189700	Horse Creek at Afton, Okla.	Lat 36°41'50", long 94°57'20", in NE 1/4 NW 1/4 sec.33, T.26 N., R.22 E., Ottawa County, on downstream side of bridge on U.S. Highway 60 at east edge of Afton.	21.9	1966-82	01-30-82	9.89	1,160
07194515	Mill Creek near Park Hill, Okla.	Lat 35°48'08", long 98°47'15", in NW 1/4 NW 1/4 sec.3, T.15 N., R.21 E., Cherokee County, at multi-barrel culvert on U.S. Highway 62, 6.3 mi (10.1 km) southwest of junction with State Highway 82 near Park Hill.	2.57	1965-82	06-04-82	7.33	557

DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS

Crest-stage partial-record stations

Annual maximum discharge at crest-stage partial-record stations

Station Number	Station Name	Location	Drainage area (mi ²)	Period of Record	Annual Maximum		
					Date	Gage height (feet)	Discharge (ft ³ /s)
ARKANSAS RIVER BASIN							
07228290	Rough Creek near Thomas, Okla.	Lat 35°48'08", long 98°47'15", in NW 1/4 SW 1/4 sec.3, T.15 N., R.15 W., Custer County, at county road bridge, 4.7 mi (7.6 km) northwest of Thomas.	10.4	1964-82	05-17-82	10.86	1,540
07228930	Worley Creek near Tuttle, Okla.	Lat 35°17'28", long 97°45'10", in SE 1/4 SW 1/4 sec.32, T.10N., R.5 W., Grady County, at multi-barrel culvert on State Highway 37, 3.3 mi (5.3 km) east of Tuttle.	11.2	1965-72 1978-82	05-17-82	14.24	2,200
07229420	Julian Creek tributary near Asher, Okla.	Lat 34°59'09", long 96°58'48", in SW 1/4 SW 1/4 sec.15, T.6 N., R.3 E., Pottawatomie County, at multi-barrel culvert on Stage Highway 39, 3.4 mi (5.5 km) west of Asher.	2.28	1964-82	05-14-82	13.48	436
07231320	Leader Creek tributary near Atwood, Okla.	Lat 34°57'10", long 96°20'21", in NW 1/4 NW 1/4 sec.34, T.6 N., R.9 E., Hughes County, at multi-barrel culvert on State Highway 12, 0.7 mi (1.1 km) southwest of Atwood.	.72	1964-82	07-07-82	13.14	678
07231950	Pine Creek near Higgins, Okla.	Lat 34°47'40", long 95°20'50", in NW 1/4 NE 1/4 sec.30, T.4 N., R.19 E., Latimer County, at bridge on State Highway 63, 5.4 mi (8.7 km) east of Higgins.	9.99	1964-82	10-14-81	12.67	4,280
07232550	South Fork tributary near Guymon, Okla.	Lat 36°40'06", long 101°29'54", in SW 1/4 NE 1/4 sec.1, T.2 N., R.14 E., Texas County, at multiple culvert on Chicago, Rock Island, and Pacific Railroad, 1.8 mi (2.9 km) southwest of junction of U.S. Highways 54 and 64 at Guymon.	.26	1964-82	04-30-82	7.94	81
07234050	North Fork Clear Creek tributary near Balko, Okla.	Lat 36°37'01", long 100°39'50", in SW 1/4 SW 1/4 sec.23, T.2N., R.22 E., Beaver County, at multi-barrel culvert on State Highway 3, 1.5 mi (2.4 km) southeast of Balko.	4.22	1964-82	06-15-82	12.42	310
07234290	Clear Creek tributary near Catesby, Okla.	Lat 36°29'30", long 99°57'20", in SE 1/4 SW 1/4 sec.2, T.23 N., R.26 W., Ellis County, on downstream side of county road bridge, 0.1 mi (0.2 km) east of Catesby.	8.51	1966-82	05-17-82	3.15	92
07237750	Cottonwood Creek near Vici, Okla.	Lat 36°08'45", long 99°12'00", in SE 1/4 SW 1/4 sec.2, T.19 N., R.19 W., Dewey County, at bridge on U.S. Highway 60, 5.4 mi (8.7 km) east of Vici.	11.8	1964-82	05-17-82	7.56	564
07237800	Bent Creek near Seiling, Okla.	Lat 36°11'26", long 99°00'36", in NW 1/4 SE 1/4 sec.21, T.20N., R.17 W., Woodward County, at bridge on U.S. Highway 183 and 270, 6 mi (10 km) northwest of Seiling.	139	1964-70† 1971-82	-----	<12.90	<1,300
07241880	Sand Creek near Cromwell, Okla.	Lat 35°20'56", long 96°29'40", in SE 1/4 SE 1/4 sec.7, T.10 N., R.8 E., Seminole County, at bridge on State Highway 99A, 2.2 mi (3.5 km) west of Cromwell.	9.48	1964-82	05-13-82	13.43	1,720
07242160	Alabama Creek near Weleetka, Okla.	Lat 35°21'40", long 96°08'55", in NW 1/4 NE 1/4 sec.9, T.10 N., R.11 E., Okfuskee County, at county road multi-barrel culvert, 2.0 mi (3.2 km) north of Weleetka.	16.5	1965-74 1976-82	05-17-82	11.74	2,430
07243550	Adams Creek near Beggs, Okla.	Lat 35°44'55", long 96°02'15", in NE 1/4 SE 1/4 sec.28, T.15 N., R.12 E., Okmulgee County, at county road bridge, 2.0 mi (3.2 km) northeast of Beggs.	5.90	1965-82	06-03-82	12.38	2,430
07246630	Big Black Fox Creek near Long, Okla.	Lat 35°31'15", long 94°37'10", in NE 1/4 NE 1/4 sec.14, T.12 N., R.25 E., Sequoyah County, at county road bridge, 2.3 mi (3.7 km) northwest of Long.	5.32	1964-82	06-09-82	8.27	718
RED RIVER BASIN							
07300150	Bear Creek near Vinson, Okla.	Lat 34°54'10", long 99°58'50", in NW 1/4 NE 1/4 sec.19, T.5 N., R.26 W., Harmon County, at bridge on State Highway 9, 6.9 mi (11.1 km) west of Vinson.	7.24	1964-82	06-12-82	13.27	2,870
07301455	Turkey Creek near Erick, Okla.	Lat 35°12'05", long 99°47'55", in NW 1/4 NW 1/4 sec.1, T.8 N., R.25 W., Beckham County, at county road multi-barrel culvert, 3.8 mi (6.1 km) southeast of Erick.	19.8	1964-72 1978-82	-----	<2.00	<68

DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS

Crest-stage partial-record stations

Annual maximum discharge at crest-stage partial-record stations

		Annual Maximum						
Station Number	Station Name	Location	Drainage area (mi ²)	Period of Record	Date	Gage height (feet)	Discharge (ft ³ /s)	
RED RIVER BASIN								
07301480	Short Creek near Sayre, Okla.	Lat 35°18'20", long 99°39'15", in SW 1/4 SE 1/4 sec.29, T.10 N., R.23 W., Beckham County, at county road multi-barrel culvert, 0.9 mi (1.4 km) northwest of Sayre.	9.12	1964-82	---	<11.17	<8.0	
07312850	Nine Mile Beaver Creek near Elgin, Okla.	Lat 34°46'40", long 98°15'25", in SE 1/4 NW 1/4 sec.33, T.4 N., R.10 W., Comanche County, at multi-barrel culvert on State Highway 17, 2.0 mi (3.2 km) east of Elgin.	6.29	1964-82	07-31-82	4.82	373	
07313600	Cow Creek at Waurika, Okla.	Lat 34°10'55", long 98°00'05", in SE 1/4 NE 1/4 sec.26, T.4 S., R.8 W., Jefferson County, at Chicago, Rock Island and Pacific Railway Co. bridge, near north edge of Waurika.	193	1967-70† 1971-82	---	22.60	5,250	
07315680	Cottonwood Creek tributary near Loco, Okla.	Lat 34°18'40", long 97°34'00", in SE 1/4 NE 1/4 sec.12, T.3 S., R.4 W., Stephens County, at multi-barrel culvert on State Highway 53, 6.6 mi (10.6 km) southeast of Loco.	1.74	1964-82	05-13-82	10.12	1,000	
07316140	Brier Creek near Powell, Okla.	Lat 33°59'54", long 96°49'35", in NW 1/4 NW 1/4 sec.31, T.6 S., R.5 E., Marshall County, at bridge on State Highway 32, 3.6 mi (5.8 km) northeast of Powell.	12.0	*1965-82 * maximum discharge and peak of record	10-13,14-81	20.20	14,100	
07329870	Honey Creek near Davis, Okla.	Lat 34°26'50", long 97°07'40", in NW 1/4 NE 1/4 sec.30, T.1 S., R.2 E., Murray County, at bridge on State Highway 77D 4.0 mi (6.4 km) south of Davis.	18.7	1964-82	10-13-81	17.20	16,200	
07335310	Rock Creek near Boswell, Okla.	Lat 33°57'57", long 95°52'02", in NE 1/4 NE 1/4 sec.7, T.7 S., R.14 E., Choctaw County, at culvert on State Highway 109, 4.2 mi (6.7 km) south of Boswell.	.94	1965-82	05-13-82	6.60	442	
07336000	Tenmile Creek near Miller, Okla.	Lat 34°17'55", long 95°44'40", in NW 1/4 sec.16, T.3 S., R.15 E., Pushmataha County, at county road bridge, 1.2 mi (1.9 km) south of Miller.	68	1957-70† 1971-82	10-14-81	17.96	3,480	
07336520	Frazier Creek near Oleta, Okla.	Lat 34°11'50", long 95°21'00", in NW 1/4 NE 1/4 sec.19, T.4 S., R.19 E., Pushmataha County, at bridge on State Highway 3, 0.5 mi (0.8 km) west of Oleta.	19.4	1965-82	05-13-82	13.82	3,030	
07338520	Yanubbee Creek near Broken Bow, Okla.	Lat 34°03'35", long 94°44'22", in NW 1/4 SW 1/4, sec.6, T.6 S., R.25 E., McCurtain County, at bridge on U.S. Highway 259, 2.3 mi (3.7 km) north of Broken Bow.	9.10	1964-82	05-13-82	10.51	1,370	
07338780	Mountain Fork tributary near Smithville, Okla.	Lat 34°29'48", long 94°40'06", in NW 1/4 SE 1/4 sec.3, T.1 S., R.25 E., McCurtain County, at multi-barrel culvert on U.S. Highway 259, 2.5 mi (4.0 km) northwest of Smithville.	.68	1965-82	05-13-82	10.78	1,030	

† Operated as a continuous-record station.

* Revised.

ANALYSES OF SAMPLES AT WATER-QUALITY PARTIAL-RECORD STATIONS

Water-quality partial-record stations are particular sites where chemical-quality, biological and/or sediment data are collected systematically over a period of years for use in hydrologic analyses. The data are collected usually less than quarterly.

ARKANSAS RIVER BASIN

351307097132401 LAKE THUNDERBIRD DAMSITE CROSS SECTION SITE NO. 1

LOCATION.--Lat 35°13'07", long 97°13'24".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
04...	1234	97900	1.00	415	8.1	11.0	10.2	95
04...	1247	97900	25.0	402	8.4	10.0	9.6	87
04...	1249	97900	20.0	408	8.4	10.0	9.8	89
04...	1251	97900	15.0	397	8.7	10.0	9.9	90
04...	1253	97900	10.0	398	8.7	10.0	10.0	91
04...	1259	97900	5.00	407	8.4	10.5	10.1	94
MAR								
12...	0925	98900	34.0	369	8.3	7.5	8.8	78
12...	0926	98900	26.0	369	8.3	7.5	10.4	92
12...	0927	98900	20.0	369	8.3	7.5	10.3	91
12...	0928	98900	13.0	369	8.2	7.5	10.4	92
12...	0929	98900	7.00	368	8.2	7.5	10.3	91
12...	0930	98900	1.00	370	8.2	7.5	10.6	94
JUN								
30...	1107	130000	1.00	385	8.6	27.0	9.0	117
30...	1109	130000	5.00	385	8.6	26.5	7.8	100
30...	1111	130000	10.0	390	8.4	25.0	6.2	79
30...	1113	130000	15.0	385	8.4	24.0	4.7	60
30...	1118	130000	20.0	385	8.4	23.5	3.2	41
30...	1120	130000	25.0	375	8.3	22.5	2.0	25
30...	1125	130000	30.0	385	8.2	22.0	.8	10
30...	1130	130000	35.0	385	8.1	21.5	.6	7
30...	1132	130000	40.0	400	7.5	21.5	.6	7
30...	1135	130000	45.0	400	7.6	21.5	.6	7
30...	1137	130000	48.0	400	7.6	21.5	.6	7
AUG								
31...	1105	116000	1.00	394	7.9	27.5	6.2	83
31...	1108	116000	5.00	431	8.2	28.0	5.5	73
31...	1112	116000	10.0	431	8.1	27.5	5.7	76
31...	1115	116000	15.0	430	8.0	27.5	5.5	73
31...	1117	116000	20.0	430	7.9	27.5	5.7	76
31...	1120	116000	25.0	428	8.2	28.0	4.7	63
31...	1123	116000	28.0	430	7.9	27.0	2.2	29

ARKANSAS RIVER BASIN

351320097131801 LAKE THUNDERBIRD DAMSITE CROSS SECTION SITE NO. 2

LOCATION.--Lat 35°13'20", long 97°13'18".

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

REMARKS.--Samples were collected in a Kemmerer sampler. Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCAR- BONATE (MG/L AS CACO3)
DEC											
04...	1331	97900	60.0	411	8.3	10.0	27	9.8	89	170	7
04...	1332	97900	55.0	400	8.3	10.0	--	9.9	90	--	--
04...	1333	97900	50.0	398	8.3	10.5	--	10.0	93	--	--
04...	1334	97900	45.0	397	8.3	10.5	--	10.0	93	--	--
04...	1340	97900	40.0	395	8.3	10.5	--	10.1	94	--	--
04...	1343	97900	35.0	403	8.4	10.0	--	10.1	92	--	--
04...	1345	97900	30.0	408	8.4	10.0	9.0	10.1	92	160	2
04...	1346	97900	25.0	430	8.7	10.5	--	10.2	94	--	--
04...	1347	97900	20.0	395	8.5	10.5	--	10.4	96	--	--
04...	1350	97900	15.0	400	8.4	10.5	--	10.4	96	--	--
04...	1351	97900	10.0	404	8.4	11.0	--	10.5	98	--	--
04...	1353	97900	5.00	415	8.3	10.5	--	10.6	98	--	--
04...	1357	97900	1.00	406	8.3	10.5	--	10.6	98	160	2
MAR											
12...	0953	98900	38.0	369	8.2	7.5	450	9.6	85	170	7
12...	0954	98900	33.0	370	8.2	7.5	--	10.4	92	--	--
12...	0955	98900	26.0	368	8.2	7.5	--	10.4	92	--	--
12...	0956	98900	20.0	368	8.2	7.5	7.6	10.4	92	160	0
12...	0957	98900	13.0	370	8.2	7.5	--	10.4	92	--	--
12...	0958	98900	7.00	370	8.2	8.0	--	10.5	94	--	--
12...	0959	98900	1.00	370	8.2	8.0	5.1	10.5	94	170	0
JUN											
30...	1215	130000	1.00	400	8.2	27.0	2.0	9.6	123	150	1
30...	1218	130000	5.00	400	8.2	26.5	--	8.0	102	--	--
30...	1220	130000	10.0	400	8.0	25.5	--	7.1	91	--	--
30...	1223	130000	15.0	390	7.7	25.0	--	6.2	79	--	--
30...	1225	130000	20.0	390	7.4	24.0	--	4.6	59	--	--
30...	1227	130000	25.0	395	7.2	24.0	55	4.3	55	160	8
30...	1229	130000	30.0	395	7.1	23.5	--	3.8	49	--	--
30...	1231	130000	35.0	400	7.0	23.0	--	2.9	37	--	--
30...	1233	130000	40.0	395	6.8	23.0	--	2.2	28	--	--
30...	1235	130000	45.0	400	7.2	22.5	--	2.2	28	--	--
30...	1238	130000	52.0	400	7.4	22.0	7.8	1.4	18	160	9
AUG											
31...	1138	116000	1.00	379	8.2	28.0	1.1	6.0	80	170	9
31...	1144	116000	5.00	388	8.1	28.0	--	6.0	80	--	--
31...	1147	116000	10.0	386	8.0	28.0	--	5.2	69	--	--
31...	1150	116000	15.0	380	7.8	28.0	3.4	5.1	68	170	9
31...	1152	116000	20.0	384	7.7	27.5	--	4.9	65	--	--
31...	1200	116000	25.0	386	8.1	28.0	--	4.6	61	--	--

ARKANSAS RIVER BASIN

351320097131801 LAKE THUNDERBIRD DAMSITE CROSS SECTION SITE NO. 2--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
DEC											
04...	29	23	23	22	.8	5.7	160	5.0	30	223	.30
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	27	23	20	20	.7	5.5	160	<5.0	30	223	.30
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	--	--	--	--	--	--	--	--	--	--	--
04...	27	23	20	20	.7	5.5	160	6.0	30	226	.31
MAR											
12...	29	23	21	21	.7	6.1	160	7.0	36	227	.31
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	28	23	20	20	.7	5.3	170	<5.0	20	234	.32
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	30	23	21	21	.7	5.4	170	<5.0	34	234	.32
JUN											
30...	30	19	17	19	.6	4.6	152	11	24	212	.29
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	31	20	18	19	.6	4.9	152	10	25	217	.30
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	31	20	17	18	.6	4.6	151	10	24	208	.28
AUG											
31...	31	22	18	18	.6	4.8	159	10	28	228	.31
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	31	22	18	18	.6	4.9	159	11	24	222	.30
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)
AUG											
31...	1204	116000	30.0	387	8.0	27.5	--	4.5	60	--	--
31...	1206	116000	34.0	382	7.7	27.0	14	2.2	54	170	9

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
AUG											
31...	--	--	--	--	--	--	--	--	--	--	--
31...	31	22	18	18	.6	4.7	159	10	23	208	.28

ARKANSAS RIVER BASIN

351333097131201 LAKE THUNDERBIRD DAMSITE CROSS SECTION NO. 3

LOCATION.--Lat 35°13'33", long 97°13'12".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
04...	1448	97900	28.0	410	8.4	10.5	10.6	98
04...	1450	97900	25.0	408	8.2	11.0	10.5	98
04...	1453	97900	20.0	405	8.2	11.0	10.6	99
04...	1455	97900	15.0	408	8.2	11.0	10.4	97
04...	1459	97900	10.0	426	8.1	11.5	9.9	93
04...	1500	97900	5.00	415	8.1	11.5	9.9	93
04...	1501	97900	1.00	408	8.0	12.0	10.5	100
MAR								
12...	1030	98900	30.0	369	8.2	8.0	10.8	96
12...	1031	98900	26.0	369	8.2	8.0	10.8	96
12...	1032	98900	20.0	369	8.2	8.0	10.7	96
12...	1033	98900	13.0	369	8.2	8.0	10.7	96
12...	1034	98900	7.00	369	8.2	8.0	10.7	96
12...	1035	98900	1.00	369	8.2	8.0	10.7	96
JUN								
30...	1245	130000	1.00	390	7.8	27.0	8.8	113
30...	1247	130000	5.00	390	7.9	27.0	8.4	108
30...	1250	130000	10.0	395	7.8	26.0	8.2	105
30...	1252	130000	15.0	400	7.6	25.0	5.8	74
30...	1254	130000	20.0	395	7.6	24.0	5.2	67
30...	1256	130000	25.0	395	7.5	24.0	4.5	58
30...	1258	130000	30.0	400	7.4	24.0	4.2	54
30...	1300	130000	35.0	390	7.4	23.5	4.2	54
30...	1302	130000	40.0	400	7.4	22.5	2.2	28
30...	1305	130000	45.0	400	7.3	22.0	1.3	17
30...	1307	130000	50.0	400	7.3	22.0	.8	10
30...	1309	130000	55.0	405	7.3	21.0	.4	6
AUG								
31...	1225	116000	1.00	380	8.1	28.0	6.2	83
31...	1227	116000	5.00	381	8.2	28.0	5.9	79
31...	1229	116000	10.0	379	8.1	28.0	5.2	69
31...	1232	116000	15.0	377	7.9	27.5	5.7	76
31...	1234	116000	20.0	383	7.9	28.0	5.7	76
31...	1237	116000	25.0	382	8.0	27.5	5.6	75
31...	1240	116000	26.0	386	8.2	27.5	5.5	73

ARKANSAS RIVER BASIN

351317097145101 LAKE THUNDERBIRD LITTLE RIVER CROSS SECTION

LOCATION.--Lat 35°13'17", long 97°14'51".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
04...	1557	97900	1.00	408	--	10.0	10.2	93
04...	1600	97900	5.00	408	--	10.0	10.1	92
04...	1601	97900	10.0	397	--	10.0	10.0	91
04...	1602	97900	15.0	403	--	9.5	10.1	91
04...	1603	97900	20.0	405	--	10.0	10.0	91
04...	1604	97900	25.0	407	--	10.0	9.8	89
04...	1605	97900	30.0	408	--	10.0	9.6	87
MAR								
12...	1236	98900	35.0	368	8.2	8.5	3.0	27
12...	1238	98900	30.0	368	8.2	8.5	10.2	92
12...	1240	98900	25.0	368	8.2	8.5	10.4	94
12...	1241	98900	20.0	368	8.2	8.5	10.4	94
12...	1242	98900	15.0	369	8.2	8.5	10.4	94
12...	1243	98900	10.0	369	8.2	8.5	10.6	95
12...	1244	98900	5.00	369	8.2	8.5	10.6	95
12...	1245	98900	1.00	369	8.2	8.5	10.6	95
JUN								
30...	1335	130000	1.00	400	8.0	27.0	9.6	123
30...	1338	130000	5.00	395	8.0	27.0	8.4	108
30...	1340	130000	10.0	395	7.9	26.5	7.5	96
30...	1342	130000	15.0	395	7.8	25.0	5.8	74
30...	1343	130000	20.0	400	7.6	24.0	3.9	50
30...	1344	130000	25.0	400	7.6	23.5	3.8	49
30...	1346	130000	30.0	390	7.6	23.0	2.8	36
30...	1348	130000	30.0	400	7.6	22.5	2.7	35
30...	1350	130000	40.0	400	7.0	22.0	.4	4
AUG								
31...	1405	116000	1.00	385	8.1	28.0	5.9	80
31...	1406	116000	5.00	387	8.0	28.0	5.7	77
31...	1408	116000	10.0	390	8.0	28.0	5.8	78
31...	1411	116000	15.0	386	8.0	27.5	5.7	77
31...	1414	116000	20.0	390	7.9	27.5	5.2	70
31...	1417	116000	25.0	394	7.6	27.5	3.3	45
31...	1421	116000	30.0	393	7.5	27.0	2.6	35
31...	1424	116000	35.0	393	7.6	27.0	2.6	35
31...	1428	116000	38.0	401	7.7	26.5	.7	9

ARKANSAS RIVER BASIN

351255097151001 LAKE THUNDERBIRD CLEAR CREEK CROSS SECTION

LOCATION.--Lat 35°12'55", long 97°15'10".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
04...	1611	97900	1.00	408	--	10.0	10.8	98
04...	1612	97900	5.00	402	--	9.5	10.4	94
04...	1613	97900	10.0	398	--	9.0	10.1	90
04...	1614	97900	15.0	394	--	10.0	10.2	93
04...	1615	97900	20.0	408	--	10.0	10.3	94
04...	1616	97900	25.0	408	--	9.5	10.1	91
04...	1617	97900	28.0	408	--	9.5	9.8	88
MAR								
12...	1342	98900	1.00	369	8.2	9.0	12.6	116
12...	1343	98900	5.00	368	8.2	9.0	11.2	103
12...	1345	98900	10.0	367	8.2	9.0	11.4	105
12...	1346	98900	15.0	367	8.2	9.0	11.0	101
12...	1347	98900	20.0	367	8.2	9.0	11.0	101
12...	1348	98900	25.0	367	8.2	8.5	11.0	101
12...	1350	98900	29.0	366	8.2	8.5	3.0	27
JUN								
30...	1433	130000	1.00	380	8.0	27.0	10.2	131
30...	1435	130000	5.00	390	8.1	27.0	8.4	108
30...	1437	130000	10.0	395	8.0	26.0	6.9	88
30...	1438	130000	15.0	390	8.0	25.5	6.0	77
30...	1440	130000	20.0	390	8.0	24.0	3.8	49
30...	1441	130000	25.0	390	7.9	23.0	2.6	33
30...	1443	130000	30.0	395	7.9	22.5	1.8	22
30...	1445	130000	35.0	395	7.6	22.0	1.1	15
30...	1446	130000	40.0	390	7.6	22.0	1.1	15
30...	1448	130000	43.0	390	7.6	22.0	.7	9
AUG								
31...	1540	116000	1.00	397	7.7	28.5	5.6	76
31...	1545	116000	5.00	390	7.7	28.0	5.0	68
31...	1547	116000	10.0	398	7.7	28.0	4.5	61
31...	1549	116000	15.0	399	7.7	28.0	4.4	59
31...	1552	116000	20.0	400	7.6	27.5	4.4	59
31...	1555	116000	25.0	396	7.2	27.0	1.1	15
31...	1558	116000	26.0	398	7.0	27.0	.5	7

ARKANSAS RIVER BASIN

351318097155901 LAKE THUNDERBIRD LITTLE RIVER ABOVE CLEAR CREEK

LOCATION.--Lat 35°13'18", long 97°15'59".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
04...	1621	97900	1.00	382	--	10.0	10.8	98
04...	1623	97900	5.00	391	--	10.0	10.5	95
04...	1626	97900	10.0	400	--	9.5	10.4	94
04...	1628	97900	15.0	394	--	9.0	10.4	93
04...	1630	97900	20.0	397	--	9.0	10.0	89
04...	1632	97900	25.0	396	--	9.0	9.8	88
04...	1635	97900	28.0	390	--	9.0	9.2	82
MAR								
12...	1313	98900	25.0	373	8.2	9.5	4.4	41
12...	1315	98900	20.0	372	8.2	9.0	10.4	95
12...	1318	98900	15.0	372	8.2	9.5	10.4	96
12...	1319	98900	10.0	372	8.2	9.5	10.4	96
12...	1320	98900	5.00	372	8.2	9.5	10.6	98
12...	1321	98900	1.00	373	8.2	9.5	12.6	117
JUN								
30...	1400	130000	1.00	400	7.6	27.0	9.2	117
30...	1402	130000	5.00	395	7.8	27.0	8.9	114
30...	1403	130000	10.0	400	7.8	26.0	6.5	83
30...	1405	130000	15.0	400	7.8	25.0	5.3	68
30...	1406	130000	20.0	395	7.6	24.0	4.0	51
30...	1407	130000	25.0	395	7.6	23.5	3.1	38
30...	1409	130000	30.0	405	7.6	23.0	1.1	15
30...	1411	130000	34.0	390	7.3	22.5	.7	9
AUG								
31...	1455	116000	1.00	396	8.2	28.0	6.3	85
31...	1457	116000	5.00	395	8.2	28.0	5.8	78
31...	1459	116000	10.0	387	8.2	28.0	5.2	70
31...	1501	116000	15.0	390	8.1	28.0	5.0	68
31...	1505	116000	20.0	394	8.1	27.5	4.4	59
31...	1507	116000	25.0	395	7.9	27.5	3.4	45
31...	1510	116000	28.0	404	7.7	26.5	.6	8

ARKANSAS RIVER BASIN

351442097140201 LAKE THUNDERBIRD HOG CREEK CROSS SECTION

LOCATION.--Lat 35°14'42", long 97°14'02".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals quarterly.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
04...	1525	97900	25.0	388	8.4	10.0	9.4	85
04...	1539	97900	20.0	397	--	10.0	9.6	87
04...	1541	97900	15.0	408	--	10.0	10.4	95
04...	1542	97900	10.0	400	--	10.0	10.4	95
04...	1543	97900	5.00	405	--	10.0	10.4	95
04...	1544	97900	1.00	407	--	10.0	10.9	99
MAR								
12...	1110	98900	26.0	371	8.2	8.5	3.6	32
12...	1111	98900	20.0	370	8.2	9.0	9.8	90
12...	1112	98900	13.0	370	8.2	9.0	10.1	93
12...	1113	98900	6.00	370	8.2	9.0	10.2	94
12...	1114	98900	1.00	370	8.2	9.0	10.3	94
AUG								
31...	1300	116000	1.00	391	8.2	28.0	6.4	85
31...	1303	116000	5.00	384	8.1	28.5	5.8	77
31...	1305	116000	10.0	381	8.1	28.0	5.5	73
31...	1308	116000	15.0	383	8.1	28.0	5.4	72
31...	1310	116000	20.0	383	8.2	28.0	5.8	77
31...	1312	116000	23.0	381	8.2	28.0	4.9	65

ARKANSAS RIVER BASIN

360544098354701 CANTON LAKE CROSS SECTION NO. 1 SITE NO. 1

LOCATION.--Lat 36°05'44", long 98°35'47".

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

REMARKS.--Samples were collected quarterly in a Kemmerer sampler. Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
DEC											
07...	1439	45700	1.00	1640	8.3	10.0	11.3	109	420	--	94
07...	1441	45700	5.00	1600	8.2	9.5	11.6	112	--	--	--
07...	1442	45700	10.0	1610	8.2	9.0	11.6	112	430	293	94
07...	1444	45700	15.0	1620	8.2	8.5	11.2	108	--	--	--
07...	1446	45700	20.0	1600	8.3	8.0	11.2	108	--	--	--
07...	1448	45700	22.0	1630	8.3	7.5	10.8	104	420	277	91
MAR											
09...	1237	56700	1.00	1690	8.0	5.5	11.0	94	450	280	100
09...	1239	56700	5.00	1540	8.0	7.5	11.2	96	--	--	--
09...	1240	56700	10.0	1620	8.0	7.0	11.4	97	--	--	--
09...	1242	56700	15.0	1650	8.0	7.0	11.3	97	450	285	110
09...	1244	56700	20.0	1630	8.2	6.5	11.4	97	--	--	--
09...	1247	56700	24.0	1690	8.2	6.0	11.3	97	440	271	100
JUN											
24...	1012	125000	1.00	1450	7.7	23.0	8.1	101	380	222	92
24...	1022	125000	5.00	1400	7.9	23.0	7.8	97	--	--	--
24...	1024	125000	10.0	1380	8.2	23.0	6.8	85	--	--	--
24...	1026	125000	15.0	1310	8.4	23.0	6.7	84	380	219	94
24...	1029	125000	20.0	1320	8.4	22.5	4.8	60	--	--	--
24...	1032	125000	25.0	1310	8.4	22.0	1.7	21	--	--	--
24...	1036	125000	30.0	1320	8.4	22.0	.7	9	--	--	--
24...	1038	125000	32.0	1380	8.4	22.0	.5	6	380	217	93
AUG											
19...	1240	112000	1.00	1560	8.2	28.0	6.4	86	390	212	94
19...	1247	112000	5.00	1540	8.3	27.5	6.0	81	--	--	--
19...	1250	112000	10.0	1510	8.3	27.0	5.5	74	--	--	--
19...	1252	112000	15.0	1560	8.1	27.0	4.9	66	360	189	90
19...	1256	112000	20.0	1530	8.0	27.0	4.5	60	--	--	--
19...	1302	112000	25.0	1550	7.8	27.0	4.0	54	370	196	91

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
DEC										
07...	46	230	53	5	9.8	--	330	270	1050	1.4
07...	--	--	--	--	--	--	--	--	--	--
07...	48	200	49	4	9.3	140	330	280	1060	1.4
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	46	190	49	4	9.2	140	320	270	--	--
MAR										
09...	46	180	46	4	9.2	170	350	250	1070	1.5
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	46	190	47	4	8.5	170	340	250	1060	1.4
09...	--	--	--	--	--	--	--	--	--	--
09...	45	180	46	4	8.5	170	330	250	1050	1.4
JUN										
24...	36	130	42	3	7.7	156	260	190	843	1.1
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	36	130	42	3	7.6	164	260	200	859	1.1
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
24...	36	140	44	3	7.8	164	270	200	850	1.1
AUG										
19...	37	150	45	3	8.5	176	240	190	946	1.3
19...	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
19...	34	140	45	3	8.4	176	250	200	870	1.1
19...	--	--	--	--	--	--	--	--	--	--
19...	35	150	46	3	8.8	176	240	200	892	1.1

ARKANSAS RIVER BASIN

360558098351501 CANTON LAKE CROSS SECTION NO. 1 SITE NO. 2

LOCATION.--Lat 36°05'58", long 98°35'15".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
07...	1459	45700	1.00	1640	8.5	11.0	12.0	118
07...	1503	45700	5.00	1640	8.5	8.0	10.8	106
07...	1505	45700	10.0	1620	8.5	8.0	11.3	111
07...	1506	45700	15.0	1620	8.5	7.5	11.4	112
07...	1509	45700	20.0	1620	8.5	7.5	11.3	111
MAR								
09...	1300	56700	1.00	1670	8.3	6.5	10.9	93
09...	1308	56700	5.00	1650	8.2	7.0	11.3	97
09...	1312	56700	10.0	1680	8.2	6.0	11.3	97
09...	1314	56700	15.0	1690	8.3	6.5	11.2	96
09...	1319	56700	20.0	1680	8.3	6.0	11.3	97
09...	1321	56700	24.0	1670	8.3	5.5	11.1	95
JUN								
24...	1050	125000	1.00	1350	8.0	23.0	7.5	94
24...	1052	125000	5.00	1300	8.0	23.0	7.1	89
24...	1054	125000	10.0	1300	8.0	22.5	6.7	84
24...	1059	125000	15.0	1350	7.9	22.5	6.6	82
24...	1102	125000	20.0	1300	7.7	22.0	6.7	84
24...	1110	125000	25.0	1310	7.8	22.0	6.6	82
24...	1112	125000	28.0	1350	7.8	22.0	3.3	41
AUG								
19...	1332	112000	1.00	1550	8.5	27.0	7.8	105
19...	1334	112000	5.00	1560	8.5	27.0	7.6	102
19...	1335	112000	10.0	1550	8.5	27.0	7.5	101
19...	1337	112000	15.0	1540	8.5	27.0	7.5	101
19...	1338	112000	20.0	1550	8.5	27.0	7.7	104
19...	1340	112000	25.0	1560	7.8	26.5	7.7	104

ARKANSAS RIVER BASIN

360612098344001 CANTON LAKE CROSS SECTION NO. 1 SITE NO. 3

LOCATION.--Lat 36°06'12", long 98°34'40".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
07...	1520	45700	1.00	1630	8.5	10.0	11.2	107
07...	1524	45700	5.00	1630	8.5	8.5	10.9	104
07...	1526	45700	10.0	1640	8.5	7.5	10.4	99
07...	1527	45700	15.0	1640	8.5	7.5	10.6	101
07...	1529	45700	17.0	1630	8.5	7.0	10.4	99
MAR								
09...	1330	56700	1.00	1690	8.3	6.0	10.9	93
09...	1331	56700	5.00	1670	8.4	6.0	11.0	94
09...	1336	56700	10.0	1660	8.4	5.5	11.0	94
09...	1337	56700	15.0	1670	8.4	5.5	11.0	94
09...	1338	56700	21.0	1660	8.4	5.5	10.8	92
JUN								
24...	1115	125000	1.00	1300	7.6	23.0	7.4	92
24...	1117	125000	5.00	1350	7.7	23.0	6.4	80
24...	1119	125000	10.0	1350	7.8	22.5	6.1	76
24...	1121	125000	15.0	1350	7.8	22.5	5.7	72
24...	1123	125000	20.0	1300	7.8	22.5	4.9	62
24...	1124	125000	25.0	1350	7.8	22.0	4.0	50
24...	1126	125000	27.0	1350	7.8	22.0	3.9	49
AUG								
19...	1349	112000	1.00	1550	8.1	27.0	8.9	120
19...	1350	112000	5.00	1540	8.0	27.0	8.5	115
19...	1352	112000	10.0	1550	7.9	27.0	7.9	107
19...	1354	112000	15.0	1560	7.8	27.0	7.4	100
19...	1356	112000	20.0	1550	7.7	27.0	6.9	93
19...	1358	112000	23.0	1540	7.9	27.0	5.3	72

ARKANSAS RIVER BASIN

360744098364101 CANTON LAKE CROSS SECTION NO. 2 SITE NO. 1

LOCATION.--Lat 36°07'44", long 98°36'41".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
07...	1552	45700	1.00	1620	8.5	10.0	11.1	106
07...	1556	45700	5.00	1640	8.4	8.0	10.8	103
07...	1558	45700	10.0	1640	8.4	7.5	10.8	103
MAR								
09...	1400	56700	1.00	1700	8.5	6.5	10.9	93
09...	1403	56700	5.00	1700	8.4	7.0	11.2	96
09...	1405	56700	10.0	1700	8.4	6.5	11.2	96
09...	1407	56700	15.0	1710	8.4	6.0	11.1	95
JUN								
24...	1130	125000	1.00	1350	7.8	23.5	7.1	89
24...	1132	125000	5.00	1350	7.8	23.5	7.2	90
24...	1134	125000	10.0	1350	7.8	23.0	7.1	89
24...	1136	125000	15.0	1300	7.7	23.0	6.3	79
24...	1138	125000	17.0	1350	7.6	23.0	6.0	75
AUG								
19...	1410	112000	1.00	1550	8.0	27.5	9.2	124
19...	1412	112000	5.00	1500	7.9	27.5	9.1	123
19...	1414	112000	10.0	1540	8.0	27.0	8.3	112
19...	1416	112000	15.0	1480	8.0	27.0	8.4	114

ARKANSAS RIVER BASIN

360808098362101 CANTON LAKE CROSS SECTION NO. 2 SITE NO. 2

LOCATION.--Lat 36°08'08", long 98°36'21".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
07...	1603	45700	1.00	1600	8.4	10.0	11.2	107
07...	1606	45700	5.00	1630	8.5	8.5	11.2	107
07...	1609	45700	10.0	1630	8.4	7.5	11.8	112
MAR								
09...	1418	56700	1.00	1680	8.2	7.0	11.0	94
09...	1420	56700	5.00	1700	8.2	6.5	10.9	93
09...	1422	56700	10.0	1680	8.2	6.0	11.0	94
09...	1423	56700	16.0	1690	8.2	6.0	10.7	91
JUN								
24...	1145	125000	1.00	1400	8.7	24.0	7.4	95
24...	1146	125000	5.00	1350	8.5	24.0	7.2	92
24...	1147	125000	10.0	1400	8.5	24.0	7.4	95
24...	1148	125000	15.0	1400	8.5	24.0	7.5	96
24...	1149	125000	18.0	1410	8.5	24.0	7.4	95
AUG								
19...	1420	112000	1.00	1350	8.1	28.0	9.5	128
19...	1422	112000	5.00	1440	8.0	28.0	9.4	127
19...	1424	112000	10.0	1500	8.0	27.5	9.4	127
19...	1426	112000	15.0	1520	7.9	27.5	9.1	123

ARKANSAS RIVER BASIN

360828098360501 CANTON LAKE CROSS SECTION NO. 2 SITE NO. 3

LOCATION.--Lat 36°08'28", long 98°36'05".

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

REMARKS.-- Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
07...	1620	45700	1.00	1620	8.5	8.5	11.8	109
07...	1623	45700	5.00	1630	8.5	7.5	11.6	107
07...	1626	45700	11.0	1630	8.4	7.5	11.8	109
MAR								
09...	1152	56700	1.00	1670	8.2	7.0	10.8	92
09...	1153	56700	5.00	1610	8.3	7.0	11.0	94
09...	1154	56700	10.0	1620	8.2	6.0	10.9	93
09...	1155	56700	16.0	1620	8.2	5.5	10.7	91
AUG								
19...	1430	112000	1.00	1520	8.2	27.5	10.0	135
19...	1432	112000	5.00	1520	8.2	27.5	9.8	132
19...	1434	112000	10.0	1540	8.1	27.5	9.7	131
19...	1436	112000	15.0	1520	8.1	27.5	9.1	123

ARKANSAS RIVER BASIN

360809098391601 CANTON LAKE CROSS SECTION NO. 3 SITE NO. 1

LOCATION.--Lat 36°08'09", long 98°39'16".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
07...	1640	45700	1.00	1650	8.5	9.0	11.3	106
07...	1643	45700	5.00	1630	8.5	8.5	11.8	110
MAR								
09...	1454	56700	1.00	1610	8.4	7.0	11.0	94
09...	1456	56700	5.00	1620	8.4	7.0	11.2	96
09...	1458	56700	7.00	1610	8.4	6.5	11.0	94
JUN								
24...	1202	125000	1.00	1400	8.4	24.0	6.7	86
24...	1203	125000	5.00	1370	8.2	24.0	6.5	83
24...	1204	125000	10.0	1350	8.4	24.0	6.4	82
AUG								
19...	1616	112000	1.00	1540	8.2	27.5	9.4	127
19...	1620	112000	5.00	1540	8.1	27.5	9.3	126
19...	1624	112000	13.0	1540	8.1	27.0	8.0	108

ARKANSAS RIVER BASIN

360828098390701 CANTON LAKE CROSS SECTION NO. 3 SITE NO. 2

LOCATION.--Lat 36°08'28", long 98°39'07".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
07...	1645	45700	1.00	1640	8.5	8.0	11.4	104
07...	1647	45700	4.00	1630	8.5	8.0	11.4	104
MAR								
09...	1507	56700	1.00	1640	8.4	7.0	10.8	92
09...	1509	56700	5.00	1630	8.4	7.0	10.8	92
09...	1511	56700	7.00	1620	8.4	6.0	11.0	94
JUN								
24...	1210	125000	1.00	1410	8.4	24.0	6.9	88
24...	1211	125000	5.00	1400	8.4	24.0	6.8	87
24...	1212	125000	10.0	1400	8.2	24.0	6.9	88
24...	1213	125000	12.0	1400	8.2	24.0	6.9	88
AUG								
19...	1605	112000	1.00	1500	8.2	28.5	9.5	128
19...	1609	112000	8.00	1520	8.2	28.0	9.2	124

ARKANSAS RIVER BASIN

360844098390000 CANTON LAKE CROSS SECTION NO. 3 SITE NO. 3

LOCATION.--Lat 36°08'44", long 98°39'00".

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
07...	1655	45700	1.00	1620	8.5	8.0	11.4	104
07...	1658	45700	3.00	1620	8.5	8.0	11.3	103
MAR								
09...	1519	56700	1.00	1620	8.4	7.5	11.0	94
09...	1522	56700	6.00	1620	8.4	7.0	11.1	95
JUN								
24...	1216	125000	1.00	1400	8.3	24.0	6.6	85
24...	1217	125000	5.00	1430	8.4	24.0	6.4	82
24...	1218	125000	10.0	1420	8.4	24.0	6.4	82
AUG								
19...	1548	112000	1.00	1520	8.2	28.5	10.4	140
19...	1550	112000	5.00	--	--	--	10.2	138
19...	1555	112000	6.00	1520	8.1	28.5	9.4	127

RED RIVER BASIN

353325099111000 FOSS RESERVOIR AT SITE NO. 1 NEAR FOSS, OK

LOCATION.--Lat 35°33'25", long 99°11'10", in SW 1/4 sec.35, T.13 N., R.19 W., Custer County, Hydrologic Unit 11130301, over old river channel, 600 ft (183 m) from left edge of water on a bearing of 250° from concrete structure at north end of dam.

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

REMARKS.--Samples were collected quarterly in a Kemmerer sampler near bottom, mid-depth, and surface. Specific conductance, water temperature, pH, and dissolved oxygen were determined in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
DEC											
08...	1040	143000	1.00	1820	8.1	9.0	10.9	101	960	826	170
08...	1046	143000	5.00	1830	8.0	9.0	10.8	100	--	--	--
08...	1051	143000	10.0	1810	8.0	9.0	10.6	98	--	--	--
08...	1054	143000	15.0	1830	8.0	9.0	10.6	98	--	--	--
08...	1058	143000	20.0	1830	8.0	9.0	10.6	98	--	--	--
08...	1104	143000	25.0	1830	8.0	9.0	10.6	98	1000	872	170
08...	1107	143000	30.0	1830	8.0	9.0	10.6	98	--	--	--
08...	1112	143000	35.0	1830	8.0	9.0	10.5	97	--	--	--
08...	1118	143000	40.0	1820	8.1	9.0	10.4	96	--	--	--
08...	1122	143000	47.0	1810	8.1	9.0	10.4	96	1000	--	180
MAR											
10...	1035	142000	1.00	2090	8.0	7.0	9.6	83	1100	937	200
10...	1038	142000	5.00	2040	8.0	8.5	9.6	83	--	--	--
10...	1042	142000	10.0	2080	8.0	7.0	9.8	85	--	--	--
10...	1047	142000	15.0	2070	8.0	7.0	9.7	84	--	--	--
10...	1052	142000	20.0	2100	8.2	7.0	9.8	85	--	--	--
10...	1058	142000	25.0	2110	8.1	6.5	9.8	85	1100	922	190
10...	1100	142000	30.0	2090	8.1	6.0	9.8	85	--	--	--
10...	1104	142000	35.0	2110	8.1	6.0	9.6	83	--	--	--
10...	1106	142000	40.0	2110	8.0	6.0	9.7	84	--	--	--
10...	1108	142000	45.0	2110	8.0	6.0	9.7	84	--	--	--
10...	1113	142000	51.0	2110	8.0	6.0	9.8	85	1100	937	200
JUN											
23...	1410	163000	1.00	1700	8.0	23.0	9.3	116	830	692	150
23...	1422	163000	5.00	1750	8.0	24.0	9.6	120	--	--	--
23...	1426	163000	10.0	1750	8.0	24.0	9.6	120	--	--	--
23...	1428	163000	15.0	1750	6.8	23.0	8.6	108	--	--	--
23...	1430	163000	20.0	1750	6.8	23.0	8.5	106	--	--	--
23...	1432	163000	25.0	1750	6.8	23.0	8.0	100	--	--	--
23...	1434	163000	30.0	1650	6.8	23.0	7.8	98	790	655	150
23...	1436	163000	35.0	1650	6.8	22.0	5.6	70	--	--	--
23...	1438	163000	40.0	1650	6.8	22.0	5.1	64	--	--	--
23...	1440	163000	45.0	1600	6.8	22.0	5.1	64	--	--	--
23...	1442	163000	50.0	1600	6.8	22.0	5.0	62	--	--	--
23...	1445	163000	55.0	1650	6.8	21.5	5.7	71	--	--	--
23...	1449	163000	60.0	1650	6.8	21.5	5.5	69	850	723	160
AUG											
18...	1030	164000	1.00	1740	8.2	27.0	6.7	88	740	605	140
18...	1100	164000	5.00	1610	--	27.0	7.2	95	--	--	--
18...	1107	164000	10.0	1600	8.6	27.0	6.8	89	--	--	--

RED RIVER BASIN

353325099111000 FOSS RESERVOIR AT SITE NO. 1 NEAR FOSS, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS S04)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
DEC										
08...	130	99	18	1	14	140	940	52	1750	2.4
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	140	100	17	1	15	140	950	56	1740	2.4
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	--	--	--	--	--	--	--	--	--	--
08...	140	110	19	2	15	--	950	54	1750	2.4
MAR										
10...	140	110	18	1	16	140	1100	48	1780	2.4
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	140	110	18	2	14	130	1000	57	1560	2.1
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
10...	140	110	18	1	14	140	1100	46	1790	2.4
JUN										
23...	110	84	18	1	12	136	780	40	1330	1.8
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	100	79	18	1	12	132	760	40	1290	1.8
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
23...	110	84	17	1	12	130	820	42	--	--
AUG										
18...	96	75	18	1	12	141	700	42	1230	1.7
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	HARD- NESS (MG/L AS CAC03)	HARD- NESS NONCAR- BONATE (MG/L AS CAC03)	CALCIUM DIS- SOLVED (MG/L AS CA)
AUG											
18...	1110	164000	15.0	1780	--	27.0	6.8	89	--	--	--
18...	1113	164000	20.0	1800	8.7	27.0	6.6	87	--	--	--
18...	1116	164000	25.0	1760	--	27.0	6.2	82	--	--	--
18...	1120	164000	30.0	1810	8.7	27.0	6.2	82	750	613	140
18...	1124	164000	35.0	1780	--	26.0	2.8	37	--	--	--
18...	1130	164000	40.0	1800	8.6	25.0	.9	12	--	--	--
18...	1132	164000	45.0	1850	--	27.0	.9	12	--	--	--
18...	1135	164000	50.0	1810	8.2	28.0	.9	12	--	--	--
18...	1140	164000	53.0	1830	8.2	25.5	.9	12	790	646	150

RED RIVER BASIN

353325099111000 FOSS RESERVOIR AT SITE NO. 1 NEAR FOSS, OK--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINEITY LAB (MG/L AS CAC03)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)
AUG										
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	98	82	19	1	12	141	700	41	1280	1.7
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	100	86	19	1	13	141	730	41	1340	1.8

RED RIVER BASIN

353405099132500 FOSS RESERVOIR AT SITE NO. 2 NEAR FOSS OK

LOCATION.--Lat 35°34'05", long 99°13'25", in SE 1/4 sec.28, T.13 N., R.19 W., Custer County, Hydrologic Unit 11130301, over old river channel, 900 ft (274 m) from left edge of water on a bearing 155° from campgrounds on north shore.

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
08...	1158	143000	1.00	1820	8.1	10.0	10.6	100
08...	1200	143000	5.00	1820	8.1	10.0	10.8	102
08...	1201	143000	10.0	1830	8.1	9.5	11.0	104
08...	1203	143000	15.0	1830	8.1	9.0	11.1	105
08...	1204	143000	20.0	1810	8.1	9.0	10.9	103
08...	1208	143000	25.0	1820	8.2	9.5	10.8	102
08...	1210	143000	30.0	1830	8.2	9.0	10.6	100
08...	1212	143000	35.0	1820	8.2	9.0	10.4	98
08...	1214	143000	40.0	1800	8.2	9.0	10.4	98
MAR								
10...	1130	142000	1.00	2090	8.2	7.0	9.8	85
10...	1132	142000	5.00	2090	8.2	7.0	9.7	84
10...	1135	142000	10.0	2080	8.2	6.0	9.8	85
10...	1138	142000	15.0	2100	8.2	6.0	9.8	85
10...	1140	142000	20.0	2100	8.2	6.0	9.7	84
10...	1142	142000	25.0	2100	8.2	6.0	9.8	85
10...	1143	142000	30.0	2100	8.2	5.5	9.8	85
10...	1145	142000	35.0	2110	8.1	6.0	9.6	83
10...	1148	142000	41.0	2110	8.1	6.0	9.6	83
JUN								
23...	1520	163000	1.00	1750	8.6	24.5	9.9	124
23...	1525	163000	5.00	1750	8.6	24.5	10.0	125
23...	1533	163000	10.0	1750	8.6	24.0	10.0	125
23...	1538	163000	15.0	1800	8.6	24.0	8.7	109
23...	1540	163000	20.0	1650	8.6	23.0	7.1	89
23...	1542	163000	25.0	1650	8.2	22.5	7.0	88
23...	1544	163000	30.0	1700	8.4	22.0	6.7	84
23...	1546	163000	35.0	1630	8.3	22.0	6.0	75
23...	1548	163000	40.0	1600	8.2	21.5	5.0	62
23...	1550	163000	45.0	1650	8.2	21.0	3.0	38
23...	1552	163000	48.0	1700	8.2	21.0	2.0	25
AUG								
18...	1320	164000	1.00	1800	8.7	28.5	7.2	94
18...	1322	164000	5.00	1790	--	28.0	8.1	106
18...	1323	164000	10.0	1800	8.7	27.5	8.1	106
18...	1324	164000	15.0	1780	--	27.5	7.9	104
18...	1326	164000	20.0	1800	8.6	27.0	7.2	95
18...	1328	164000	25.0	1790	--	28.5	6.5	86
18...	1332	164000	28.0	1770	--	28.5	7.0	92

RED RIVER BASIN

353615099135000 FOSS RESERVOIR AT SITE NO. 3 NEAR FOSS, OK

LOCATION.--Lat 35°36'15", long 99°13'50", in SE 1/4 sec.17, T.13 N., R.19 W., Custer County, Hydrologic Unit 11130301, over old river channel, 600 ft (183 m) from left edge of water on a bearing 240° from small tributary on north shore.

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

REMARKS.--Specific conductance, pH, water temperature and dissolved oxygen were measured in the field at 5-ft. intervals.

WATER QUALITY DATA, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982

DATE	TIME	RESER- VOIR STORAGE (AC-FT)	SAM- PLING DEPTH (FEET)	SPE- CIFIC CON- DUCT- ANCE (UMHOS)	PH (STAND- ARD UNITS)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)
DEC								
08...	1251	143000	1.00	1780	8.2	10.5	12.0	114
08...	1253	143000	5.00	1760	8.2	9.0	11.9	113
08...	1255	143000	10.0	1760	8.2	9.0	11.3	108
08...	1256	143000	15.0	1770	8.2	8.5	11.2	107
08...	1258	143000	19.0	1770	8.2	8.5	11.2	107
MAR								
10...	1220	142000	1.00	2120	8.4	7.5	9.2	80
10...	1223	142000	5.00	2090	8.4	8.5	9.4	82
10...	1225	142000	10.0	2100	8.3	7.5	9.3	81
10...	1227	142000	15.0	2120	8.2	7.0	9.3	81
10...	1230	142000	19.0	2120	8.2	6.5	9.1	79
JUN								
23...	1620	163000	1.00	1620	8.6	25.0	9.2	115
23...	1622	163000	5.00	1600	8.6	24.5	7.6	95
23...	1625	163000	10.0	1620	8.6	23.5	6.2	78
23...	1635	163000	15.0	1600	8.6	22.5	3.8	48
23...	1637	163000	20.0	1600	8.5	22.5	3.1	39
23...	1639	163000	25.0	1610	8.4	22.0	2.8	35
23...	1640	163000	29.0	1620	8.4	22.0	2.8	35
AUG								
18...	1355	164000	1.00	1780	8.7	29.5	7.7	95
18...	1358	164000	5.00	1770	--	28.5	6.8	89
18...	1400	164000	10.0	1610	8.7	27.5	5.6	73
18...	1405	164000	15.0	1740	--	27.5	5.4	71
18...	1410	164000	20.0	1710	8.6	27.5	5.3	70
18...	1411	164000	24.0	1640	--	27.5	5.5	72

INDEX

	Page		Page
Accuracy of field data and computed results.....	9	Catoosa, Bird Creek near.....	90
Acre-foot, definition of.....	2	Cells/volume, definition of.....	2
Adams Creek near Beggs.....	309	Cfs-day, definition of.....	2
Alabama Creek near Weleetka.....	309	Chemical oxygen demand, definition of.....	2
Alex, Washita River at.....	268	Cheyenne, Washita River near.....	247
Winter Creek near.....	267	Chikaskia River near Blackwell.....	27
Altus, Lake, at Lurgert.....	216	Chlorophyll, definition of.....	3
Alva, Salt Fork Arkansas River near.....	20	Chouteau, Neosho River near.....	106
Anadarko, Washita River at.....	265	Cimarron River, at Perkins.....	57-61
Antlers, Kiamichi River near.....	298	near Buffalo.....	38-41
Arcadia, Deep Fork near.....	187-189	near Dover.....	44
Arkansas River at Ralston.....	28-32	near Englewood.....	36-37
at Robert S. Kerr Lock and Dam near Salisaw...	313	near Forgan.....	35
at Tulsa.....	64-72	near Kenton.....	34
near Haskell.....	74	near Waynoka.....	43
near Ponca City.....	18	Claremore, Verdigris River near.....	85
Salt Fork, at Tonkawa.....	26	Clayton, Kiamichi River at.....	296-297
near Alva.....	20	Clear Boggy Creek near Caney.....	287
near Jet.....	22-25	Clear Creek near Elmwood.....	149
near Winchester.....	19	tributary near Catesby.....	309
tributary near Eddy.....	308	Clear Creek tributary near Hollow.....	308
Arthur City, TX, Red River at.....	288	Clinton, Washita River near.....	257
Artificial substrate, definition of.....	5	Coal Creek near Spiro.....	204
Ash mass, definition of.....	2	Cobb Creek near Eakly.....	262
Avant, Bird Creek at.....	88	near Fort Cobb.....	264
		Cold Springs Creek near Wheelless.....	308
Bacteria, definition of.....	2	Collection of computation of data (surface water)	7
Barnsdall, Birch Creek below Birch Lake near....	87	and examination of data (water quality).....	10
Birch Lake near.....	86	Color unit, definition of.....	3
Baron Fork at Eldon.....	114	Commerce, Neosho River near.....	95
Bear Creek near Vinson.....	309	Computation, accuracy of results.....	9
Beaver, Beaver River at.....	146-148	Contents, definition of.....	3
Beaver Creek near Waurika.....	243	Continuing water-quality record site,	
Beaver River, at Beaver.....	146-148	definition of.....	10
near Guymon.....	143	Control, definition of.....	3
near Hardesty.....	145	Control structure, definition of.....	3
Beggs, Deep Fork near.....	191-196	Cooperation.....	1
Bed material, definition of.....	2	Cottonwood Creek, at Seward.....	48-55
Bent Creek near Seiling.....	309	near Navina.....	45-47
Big Black Fox Creek near Long.....	309	Cottonwood Creek near Vici.....	309
Big Cabin, Big Cabin Creek near.....	101	Cottonwood Creek tributary near Loco.....	310
Big Cabin Creek, near Big Cabin.....	101	Council Creek near Stillwater.....	62
Big Cedar, Kiamichi River near.....	289-295	Courtney, Mud Creek near.....	245
Biochemical oxygen demand, definition of.....	2	Cow Creek at Waurika.....	310
Biomass, definition of.....	2	Crest-stage partial-record stations.....	308-310
Birch Creek below Birch Lake near Barnsdall.....	87	Cubic foot per second, definition of.....	3
Birch Lake near Barnsdall.....	86	Cubic foot per second per square mile,	
Bird Creek at Avant.....	88	definition of.....	3
near Catoosa.....	90		
near Sperry.....	89	De Kalb, TX, Red River near.....	300
Black Bear Creek, at Pawnee.....	33	Deep Red Run near Randlett.....	241
Blackwell, Chikaskia River near.....	27	Deep Fork near Arcadia.....	187-189
Blocker, Blue Creek near.....	142	near Beggs.....	191-196
Blue, Blue River near.....	280	Definition of terms.....	2-6
Blue Beaver Creek near Cache.....	239-240	Denison, TX, Lake Texoma near.....	277
Blue Creek near Blocker.....	142	Red River at Denison Dam, near.....	278
Blue River at Milburn.....	279	Diatoms, definition of.....	4
near Blue.....	280	Dickson, Washita River near.....	272-276
Blue-green algae, definition of.....	4	Discharge, definition of.....	3
Bottom material, definition of.....	2	Dissolved, definition of.....	3
Bridgeport, Canadian River at.....	118-122	Diversity index, definition of.....	3
Briar Creek near Powell.....	310	Dog Creek near Claremore.....	307
Broken Bow, Broken Bow Lake near.....	305	Dover, Cimarron River near.....	44
Broken Bow Lake near Broken Bow.....	305	Downstream order and station number.....	6
Brooken, Eufaula Lake near.....	197	Drainage area, definition of.....	3
Brushy Creek near Haileyville.....	140	Drainage basin, definition of.....	3
Buffalo, Cimarron River near.....	38-41	Dry Creek near Kendrick.....	190
Buffalo Creek near Lovedale.....	42	Dry mass, definition of.....	2
Burkburnett, TX, Red River near.....	236		
Byrds' Mill Spring near Fittstown.....	286	Eagletown, Mountain Fork near.....	306
		Eakly, Cobb Creek near.....	262
Cache, Blue Beaver Creek near.....	239-240	East Cache Creek near Walters.....	237-238
Calvin, Canadian River at.....	133-139	El Reno, North Canadian River near.....	160
Canadian River, at Bridgeport.....	118-122	Eldon, Baron Fork at.....	114
at Calvin.....	133-139	Elk Creek near Hobart.....	220-223
at Purcell.....	123-125	Elk River near Tiff City, MO.....	98
near Whitefield.....	198-202	Elm Fork of North Fork Red River near Carl.....	218
Caney, Clear Boggy Creek near.....	287	near Reed.....	219
Caney River, near Hulah.....	79	Elmer, Salt Fork Red River near.....	211-213
near Ramona.....	81-84	Elmwood, Clear Creek near.....	149
Canton, Canton Lake near.....	157, 319-327	Englewood, Cimarron River near.....	36-37
North Canadian River at.....	158	Eufaula Lake near Brooken.....	197
Canton Lake near Canton.....	157, 319-327	Explanation of stage and water-discharge records	7
Carl, Elm Fork of North Fork Red River near.....	218	Explanation of water-quality records.....	10
Carnegie, Wshita River at.....	258-261	Farris, McGee Creek near.....	281-284
Carter, North Fork Red River near.....	215	Muddy Boggy Creek near.....	285
Caston Creek at Wister.....	209	Fecal coliform bacteria, definition of.....	2

	Page		Page
Fecal streptococcal bacteria, definition of.....	2	Foss Reservoir near Foss.....	252, 328-332
Fittstown, Byrds' Mill Spring near.....	286	Great Salt Plains Lake near Jet.....	21
Flint Branch near Peoria.....	308	Heyburn Lake near Heyburn.....	73
Flint Creek near Kansas.....	112	Hudson, Lake, near Locust Grove.....	105
Forgan, Cimarron River near.....	35	Hugo Lake near Hugo.....	299
Fort Cobb, Cobb Creek near.....	264	Hulah Lake near Hulah.....	78
Fort Cobb Reservoir near.....	263	Kaw Lake near Ponca City.....	17
Fort Gibson, Fort Gibson Lake near.....	107	Keystone Lake near Sand Springs.....	63
Neosho River below Fort Gibson Lake, near.....	108-110	O' The Cherokees, Lake, at Langley.....	99
Fort Gibson Lake near Fort Gibson.....	107	Oologah Lake near Oologah.....	76
Fort Supply, Fort Supply Lake near.....	150	Optima Lake near Hardesty.....	144
Wolf Creek near.....	151	Overholser, Lake, near Oklahoma City.....	162
Fort Supply Lake near Fort Supply.....	150	Pine Creek Lake near Wright City.....	301
Foss, Foss Reservoir near.....	252, 328-332	Tenkiller Ferry Lake near Gore.....	115
Washita River near.....	253-256	Texoma, Lake, near Denison, TX.....	277
Foss Reservoir near Foss.....	252, 328-332	Thunderbird, Lake, near Norman.....	127, 311-318
Fourche Maline near Red Oak.....	205	Waurika Lake near Waurika.....	242
Frazier Creek near Oleta.....	310	Wister Lake near Wister.....	207
Gage height, definition of.....	3	Langley, Lake O' The Cherokees near.....	99
Gaging station, definition of.....	3	Neosho River near.....	100
Gainesville, TX, Red River near.....	246	Leader Creek tributary near Atwood.....	309
Glover Creek near Glover.....	303	Lenapah, Verdigris River near.....	75
Glover, Glover Creek near.....	303	Little River below Lake Thunderbird near Norman.....	128
Gore, Illinois River near.....	116-117	near Sasakwa.....	130-132
Tenkiller Ferry Lake near.....	115	near Tecumseh.....	129
Great Salt Plains Lake near Jet.....	21	Little River below Lukfata Creek near Idabel.....	304
Green algae, definition of.....	4	near Wright City.....	302
Greenwood Creek near Winchester.....	307	Little Washita River near Ninnekah.....	266
Guymon, Beaver River near.....	143	Locust Grove, Lake Hudson near.....	105
Haileyville, Brushy Creek near.....	140	Lovedale, Buffalo Creek near.....	42
Peaceable Creek near.....	141	Lovell, Skeleton Creek near.....	56
Hammon, Washita River near.....	248-251	Low-flow partial-record stations.....	307
Hardesty, Beaver River near.....	145	Lugert, Lake Altus at.....	216
Optima Lake near.....	144	North Fork Red River below Altus Dam, near.....	217
Hardess, definition of.....	3	Mangum, Salt Fork Red River at.....	210
Harrah, North Canadian River near.....	164-180	McGee Creek near Farris.....	281-284
Haskell, Arkansas River near.....	74	Mean concentration, definition of.....	5
Headrick, North Fork Red River near.....	224-234	Mean discharge, definition of.....	3
Heyburn, Heyburn Lake near.....	73	Miami, Tar Creek at.....	96
Heyburn Lake near Heyburn.....	73	Micrograms per grams, definition of.....	3
Hobart, Elk Creek near.....	220-223	per liter, definition of.....	3
Hogshooter Creek Tributary near Bartlesville....	308	Milburn, Blue River at.....	279
Honey Creek near Davis.....	310	Mill Creek near Park Hill.....	308
Horse Creek at Afton.....	308	Milligrams per liter, definition of.....	3
Hoover, Wildhorse Creek near.....	271	Mountain Fork, near Eagletown.....	306
Hudson, Lake near Locust Grove.....	105	tributary near Smithville.....	310
Hugo, Hugo Lake near.....	299	Mountain Park, West Otter Creek at Snyder Lake	
Hugo Lake near Hugo.....	299	near.....	235
Hulah, Caney River near.....	79	Mud Creek near Courtney.....	245
Hulah, Lake near.....	78	Muddy Boggy Creek near Farris.....	285
Hulah Lake near Hulah.....	78	National Geodetic Vertical Datum of 1929.....	3
Hydrologic bench-mark station, definition of....	7	National stream-quality accounting network,	
Hydrologic conditions.....	1	definition of.....	7
Hydrologic unit, definition of.....	3	Natural substrate, definition of.....	5
Idabel, Little River below Lukfata Creek, near..	304	Navina, Cottonwood Creek near.....	45-47
Illinois River, near Gore.....	116-117	Neosho River below Fort Gibson Lake near	
near Tahlequah.....	113	Fort Gibson.....	108-110
near Watts.....	111	near Chouteau.....	106
Inola, Verdigris River near.....	91-94	near Commerce.....	95
Instantaneous discharge, definition of.....	3	near Langley.....	100
Introduction.....	1	Nine Mile Beaver Creek near Elgin.....	310
Jet, Great Salt Plains Lake near.....	21	Ninnekah, Little Washita River near.....	266
Salt Fork Arkansas River near.....	22-25	Norman, Lake Thunderbird near.....	127, 311-318
Julian Creek Tributary near Asher.....	309	Little River below Lake Thunderbird, near....	128
Kansas, Flint Creek near.....	112	North Canadian River at Canton.....	158
Kaw Lake near Ponca City.....	17	at Woodward.....	152-155
Kendrick, Dry Creek near.....	190	below Lake Overholser near Oklahoma City.....	163
Kenton, Cimarron River near.....	34	near El Reno.....	160
Keystone Lake near Sand Springs.....	63	near Harrah.....	164-180
Kiamichi River At Clayton.....	296-297	near Seiling.....	156
near Antlers.....	298	near Watonga.....	159
near Big Cedar.....	289-295	near Wetumka.....	181-186
Kingfisher Creek near Kingfisher.....	308	North Fork Clear Creek tributary near Balko....	309
Lake Hefner Canal near Oklahoma City.....	161	North Fork Red River, below Altus Dam,	
Lakes and reservoirs:		near Lugert.....	217
Altus, Lake, at Lugert.....	216	near Sayre.....	214
Birch Lake near Barnsdall.....	86	near Carter.....	215
Broken Bow Lake near Broken Bow.....	305	near Headrick.....	224-234
Canton Lake near Canton.....	157, 319-327	Numbering system for miscellaneous sites.....	7
Eufaula Lake near Broken Bow.....	197	O' The Cherokees, Lake, near Langley.....	99
Fort Cobb Reservoir near Fort Cobb.....	263	Okesa, Sand Creek at.....	80
Fort Gibson Lake near Fort Gibson.....	107	Oklahoma City, Lake Hefner Canal near.....	161
Fort Supply Lake near Fort Supply.....	150	Lake Overholser near.....	162
		North Canadian River below Lake Overholser	
		near.....	163
		Oologah, Oologah Lake near.....	76
		Verdigris River near.....	77

INDEX

	Page		Page
Oologah Lake near Oologah.....	76	Spavinaw creek near Sycamore.....	102-104
Optima Lake near Hardesty.....	144	Special Networks and Programs.....	7
Organic mass, definition of.....	2	Specific conductance, definition of.....	5
Organism, definition of.....	4	Sperry, Bird Creek near.....	89
Count/area, definition of.....	4	Spiro, Coal Creek near.....	204
Count/volume, definition of.....	4	Spring River near Quapaw.....	97
Other data available.....	10	Stage discharge relation, definition of.....	5
Overholser, Lake, near Oklahoma City.....	162	Station numbers, definition of.....	6
Partial-record stations.....	307-332	Stillwater, Council Creek near.....	62
Partial-record stations, definition of.....	4	Streamflow, definition of.....	5
Particle size, definition of.....	4	Substrate, definition of.....	5
Particle-size classification, definition of.....	4	Surface area, definition of.....	5
Pauls Valley, Washita River near.....	269	Surficial bed material, definition of.....	5
Pawnee, Black Bear Creek at.....	33	Suspended, definition of.....	5
Peaceable Creek near Haileyville.....	141	Suspended recoverable, definition of.....	5
Percent composition, definition of.....	4	Suspended sediment, definition of.....	5
Perkins, Cimarron River at.....	57-61	Suspended, total, definition of.....	5
Pesticide program, definition of.....	7	Suspended-sediment concentration definition of..	5
Pesticides, definition of.....	4	discharge, definition of.....	5
Phytoplankton, definition of.....	4	load, definition of.....	5
Picocurie, definition of.....	4	Sycamore, Spavinaw Creek near.....	102-104
Pine Creek Lake near Wright City.....	301	Tahlequah, Illinois River near.....	113
Pine Creek near Higgins.....	309	Tar Creek at Miami.....	96
Plankton, definition of.....	4	Taxonomy, definition of.....	6
Ponca City, Arkansas River near.....	18	Tecumseh, Little River near.....	129
Kaw Lake near.....	17	Temperature.....	10
Poteau River near Wister.....	208	Tenkiller Ferry Lake near Gore.....	115
Preacher Creek near Dover.....	308	Tenmile Creek near Miller.....	310
Publications on techniques of water resources		Terms, definition of.....	2-6
investigations.....	11	Terral, Red River near.....	244
Purcell, Canadian River at.....	123-125	Tesquite Creek near Kenton.....	308
Walnut Creek at.....	126	Texoma, Lake, near Denison, TX.....	277
Purdy, Rush Creek at.....	270	Thunderbird, Lake, near Norman.....	127, 311-318
Quapaw, Spring River near.....	97	Tiff City, MO, Elk River near.....	98
Ralston, Arkansas River at.....	28-32	Time-weighted average definition of.....	6
Ramona, Caney River near.....	81-84	Tonkawa, Salt Fork Arkansas River at.....	26
Randlett, Deep Red Run near.....	241	Tons per acre-foot, definition of.....	6
Recoverable from bottom material, definition of..	4	Tons per day, definition of.....	6
Red Oak, Fourche Maline near.....	205	Total, definition of.....	6
Red Oak Creek near.....	206	Total coliform bacteria, definition of.....	2
Red Oak Creek near Red Oak.....	206	Total in bottom material, definition of.....	6
Red River at Arthur City, TX.....	288	Total load, definition of.....	6
at Denison Dam near Denison, TX.....	278	Total organism count, definition of.....	4
near Burkburnett, TX.....	236	Total recoverable, definition of.....	6
near De Kalb, TX.....	300	Total sediment discharge, definition of.....	5
near Gainesville, TX.....	246	Tulsa, Arkansas River at.....	64-72
near Terral.....	244	Turkey Creek near Erick.....	309
North Fork, below Altus Dam, near Lugert.....	217	Verdigris River, near Claremore.....	85
Elm Fork of, near Carl.....	218	near Inola.....	91-94
near Reed.....	219	near Lenapah.....	75
near Sayre.....	214	near Oologah.....	77
near Carter.....	215	Walnut Creek at Purcell.....	126
near Headrick.....	224-234	Walters, East Cache Creek near.....	237-238
Salt Fork, at Mangum.....	210	Washita River, at Alex.....	268
near Elmer.....	211-213	at Anadarko.....	265
Reed, Elm Fork of North Fork Red River near.....	219	at Carnegie.....	258-261
Reservoirs: See Lakes and reservoirs.		near Cheyenne.....	247
Robert S. Kerr Lock and Dam near Sallisaw.....	203	near Clinton.....	257
Rock Creek at Sapulpa.....	307	near Dickson.....	272-276
Rock Creek near Boswell.....	310	near Foss.....	253-256
Rough Creek near Thomas.....	309	near Hammon.....	248-251
Runoff in inches, definition of.....	4	near Pauls Valley.....	269
Rush Creek at Purdy.....	270	Water analysis.....	10
Sallisaw, Robert S. Kerr Lock and Dam near.....	203	Temperature.....	10
Salt Fork Arkansas River at Tonkawa.....	26	Water Quality partial-record stations.....	311-332
near Alva.....	20	Water year, definition of.....	6
near Jet.....	22-25	Watonga, North Canadian River near.....	159
near Winchester.....	19	Watts, Illinois River near.....	111
tributary near Eddy.....	308	Waurika, Beaver Creek near.....	243
Salt Fork Red River near Mangum.....	210	Waurika Lake near.....	242
near Elmer.....	211-213	Waurika Lake near Waurika.....	242
Sand Creek at Okesa.....	80	Waynoka, Cimarron River near.....	43
Sand Creek near Cromwell.....	309	Weighted average, definition of.....	6
Sand Springs, Keystone Lake near.....	63	West Beaver Creek near Orlando.....	308
Sasakwa, Little River near.....	130-132	West Fork Creek near Knowles.....	308
Sayre, North Fork Red River near.....	214	West Otter Creek at Snyder Lake near	
Sediment.....	10	Mountain Park.....	235
Sediment, definition of.....	5	Wet mass, definition of.....	2
Seiling, North Canadian River near.....	156	Wetumka, North Canadian near.....	181-186
Seward, Cottonwood Creek at.....	48-55	Whitefield, Canadian River near.....	198-202
Short Creek near Sayre.....	310	Wildhorse Creek near Hoover.....	271
Skeleton Creek near Lovell.....	56	Winchester, Salt Fork Arkansas River near.....	19
Solute, definition of.....	5	Winter Creek near Alex.....	267
South Fork Tributary near Guymon.....	309	Wister, Caston Creek at.....	209
		Poteau River near.....	208

INDEX

	Page		Page
Wister, Wister Lake near.....	207	Wright City, Pine Creek Lake near.....	301
Wister Lake near Wister.....	207	WSP, definition of.....	6
Wolf Creek near Fort Supply.....	151		
Woodward, North Canadian River at.....	152-155	Yanubbee Creek near Broken Bow.....	310
Worley Creek near Tuttle.....	309		
WRD, definition of.....	6	Zooplankton, definition of.....	4
Wright City, Little River near.....	302		

FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
<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

U.S. DEPARTMENT OF THE INTERIOR
Geological Survey
Rm. 621, 215 Dean A. McGee
Oklahoma City, OK 73102

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300
SPECIAL 4TH CLASS BOOK RATE



INT 413

