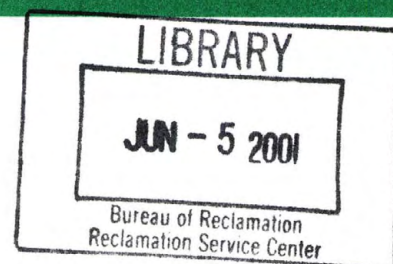


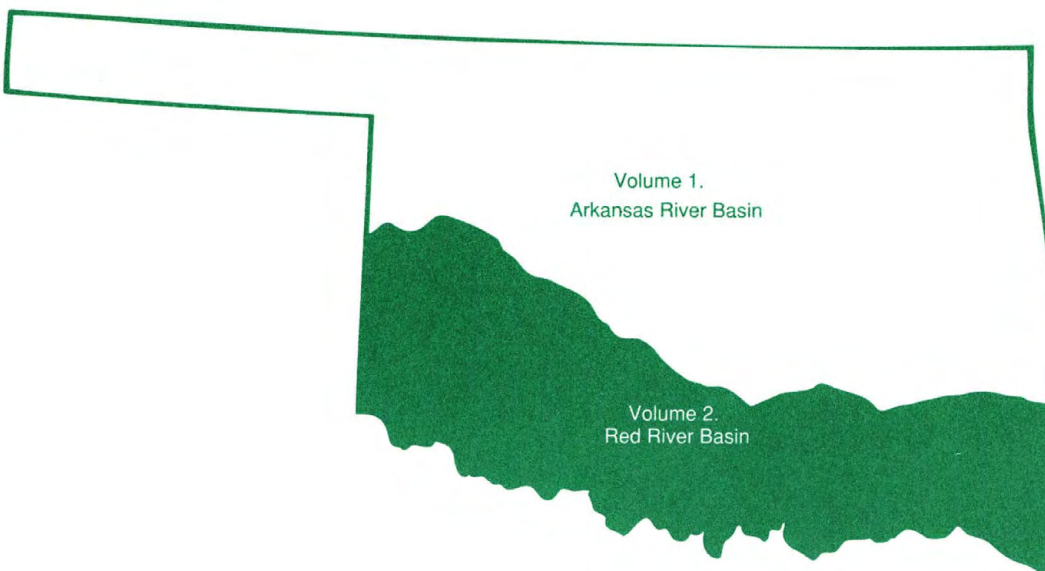


Water Resources Data Oklahoma Water Year 2000



Volume 2. Red River Basin and Ground-Water Wells

Water-Data Report OK-00-2



CALENDAR FOR WATER YEAR 2000

1999

OCTOBER

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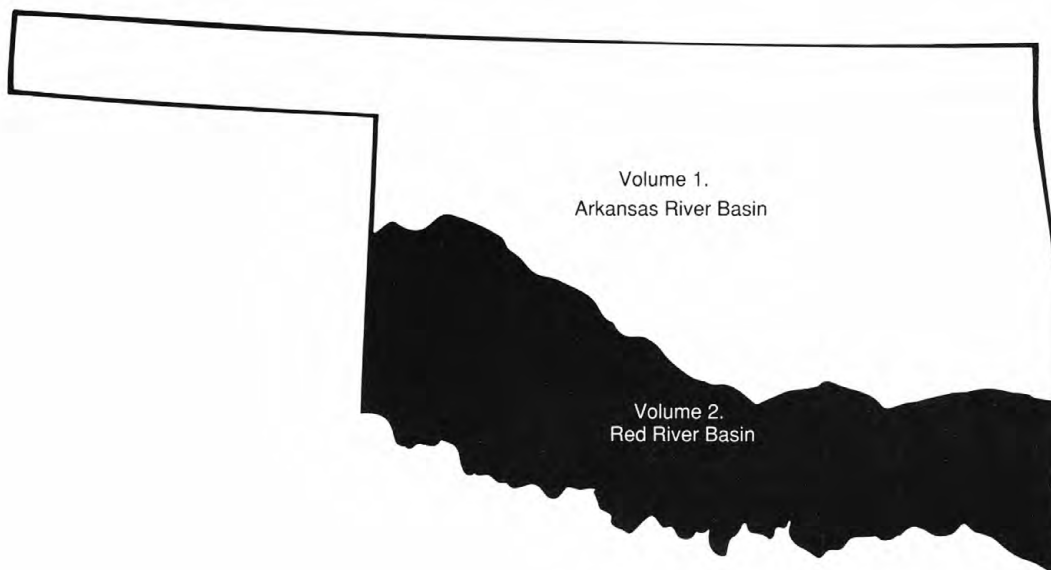
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Water Resources Data Oklahoma Water Year 2000

Volume 2. Red River Basin and Ground-Water Wells

By R.L. Blazs, D.M. Walters, T.E. Coffey, D.L. Boyle and J.J. Wellman

Water-Data Report OK-00-2



U.S. DEPARTMENT OF THE INTERIOR

GALE A. NORTON, *Secretary*

U.S. GEOLOGICAL SURVEY

Charles G. Groat, Director

For information on the water program in Oklahoma write to
District Chief, Water Resources Division
U.S. Geological Survey
202 N.W. 66 St., Building 7
Oklahoma City, Oklahoma 73116

PREFACE

This hydrologic-data report for Oklahoma is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface-water and ground-water data-collection networks in each state, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by state, local, and federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines.

The data were collected, computed, and processed by the following personnel:

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P.A. Carpenter	J.R. Hanlon	M.L. Schneider	J.J. Wellman
T.E. Coffey	R.E. Johnson		

L.A. Alf typed the text of the report.

This report was prepared in cooperation with the State of Oklahoma and with other agencies under the general supervision of Robert L. Blazs, Hydrologic Records Section Chief, and Kathy D. Peter, District Chief.

Data for Oklahoma are in two volumes as follows:

Volume 1. Arkansas River Basin

Volume 2. Red River Basin and Ground-Water Records

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
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13. ABSTRACT (Maximum 200 words) Volumes 1 and 2 of the water resources data for the 2000 water year for Oklahoma consists of record of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes or reservoirs; and water levels of ground-water wells. This report contains discharge records for 134 gaging stations; stage and contents for 16 lakes or reservoirs and 2 gage height stations; water quality for 56 gaging stations; 25 partial-record or miscellaneous streamflow stations and 4 ground-water sites. Also included are lists of discontinued surface-water discharge and water-quality sites. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Oklahoma.				
14. SUBJECT TERMS *Oklahoma, *Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperature, Sampling sites, Water analyses, Ground water, Gage height			15. NUMBER OF PAGES 214	
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3. Locations of ground-water wells, water year 2000 23

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

[Letters after station names designate type of data: (d) discharge,

(c) chemical, (b) biological, (m) microbiological, (s) sediment, (t) temperature, (e) elevation, gage heights, or contents]

LOWER MISSISSIPPI RIVER BASIN

	Station Number	Page
<u>MISSISSIPPI RIVER</u>		
<u>RED RIVER BASIN</u>		
Red River:		
Salt Fork Red River at Mangum (d)	07300500	24
Bitter Creek near Martha (d)	07300530	26
Bitter Creek West of Altus (d)	07300580	28
Salt Fork Red River near Elmer (d)	07301110	30
North Fork Red River:		
Sweetwater Creek near Sweetwater (d)	07301420	32
North Fork Red River near Carter (d)	07301500	34
Lake Altus at Lugert (e)	07302500	36
North Fork Red River below Altus Dam near Lugert (d)	07303000	38
Elm Fork of the North Fork Red River near Carl (d)	07303400	40
North Fork Red River near Headrick (d)	07305000	42
Otter Creek:		
West Otter Creek at Snyder Lake near Mountain Park (d)	07305500	44
Otter Creek near Snyder (d)	07307010	46
North Fork Red River near Tipton (d)	07307028	48
Red River near Burkburnett, TX (dc)	07308500	50
Cache Creek:		
Lake Ellsworth near Elgin (e)	07308990	60
Medicine Creek:		
Lake Lawtonka near Lawton (e)	07309500	62
East Cache Creek near Walters (d)	07311000	64
West Cache Creek:		
Blue Beaver Creek near Cache (d)	07311200	66
Deep Red Run near Randlett (d)	07311500	68
Red River near Terral (dc)	07315500	70
Mud Creek near Courtney (d)	07315700	74
Red River near Gainesville, TX (dcmst)	07316000	76
Washita River near Cheyenne (d)	07316500	86
Washita River near Hammon (d)	07324200	88
Foss Reservoir near Foss (e)	07324300	90
Washita River near Foss (d)	07324400	92
Washita River near Clinton (d)	07325000	94
Washita River at Carnegie (d)	07325500	96
Cobb Creek near Eakly (d)	07325800	98
Fort Cobb Reservoir near Fort Cobb (e)	07325900	100
Cobb Creek near Fort Cobb (d)	07326000	102

**SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH
RECORDS ARE PUBLISHED IN THIS VOLUME**

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

LOWER MISSISSIPPI RIVER BASIN

	Station Number	Page
<u>MISSISSIPPI RIVER</u>		
RED RIVER BASIN		
Red River:		
Washita River at Anadarko (d)	07326500	104
Little Washita River above SCS Pond No. 26 near Cyril (d)	073274406	106
Little Washita River Tributary near Cyril (d)	073274408	108
SCS Pond No. 26 near Cyril (e)	07327441	110
Little Washita River near Cyril (d)	07327442	112
Little Washita River Tributary near Cement (d)	073274458	114
SCS Pond No. 31 near Cement (e)	07327446	116
Little Washita River near Cement (d)	07327447	118
Boggy Creek near Ninnekah (d)	07327483	120
SCS Pond No. 11 near Ninnekah (e)	07327484	122
Little Washita East of Ninnekah (d)	07327550	124
Washita River at Alex (d)	07328100	126
Criner Creek:		
North Criner Creek near Criner (d)	07328180	128
Washita River near Pauls Valley (d)	07328500	130
Wildhorse Creek near Hoover (d)	07329700	132
Rock Creek at Sulphur (d)	07329852	134
Washita River near Dickson (dct)	07331000	136
Red River at Denison Dam near Denison, TX (dct)	07331600	146
Blue River near Blue (d)	07332500	156
Muddy Boggy Creek:		
Atoka Reservoir near Stringtown	07333010	158
Muddy Boggy Creek near Farris (d)	07334000	160
Clear Boggy Creek:		
Big Springs Creek:		
Byrds Mill Spring near Fittstown (d)	07334200	162
Muddy Boggy Creek near Unger (d)	07335300	164
Red River at Arthur City, TX (d)	07335500	166
Kiamichi River near Big Cedar (d)	07335700	168
Kiamichi River near Clayton (d)	07335790	170
Kiamichi River near Antlers (d)	07336200	172
Little River:		
Glover River near Glover (d)	07337900	174
Little River below Lukfata Creek near Idabel (d)	07338500	176
Mountain Fork at Smithville (d)	07338750	178
Mountain Fork at Highway 259A near Broken Bow (t)	07338905	180
Mountain Fork at Presbyterian Falls near Eagletown (t)	07338960	182
Mountain Fork near Eagletown (dt)	07339000	184

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

	Station Number	Page
<u>CADDO COUNTY</u>		
Albert	351452098290601	188
<u>COMANCHE COUNTY</u>		
Cache	343540098342001	189
<u>DELAWARE COUNTY</u>		
Grove	363334094395301	190
<u>PONTOTOC COUNTY</u>		
Fittstown	343457096404501	191

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

The following continuous-record surface-water discharge stations (gaging stations) in Oklahoma have been discontinued. Daily streamflow records were collected and published for the period of record, expressed in water years, shown for each station. Discontinued project stations with less than 2 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Sandy Creek near Eldorado, OK	07299710	280	1960-63
Turkey Creek at Olustee, OK	07301100	317	1960-63
North Fork Red River near Sayre, OK	07301481	2,159	1978-87
North Fork Red River near Granite, OK	07302000	2,494	1904-08, 1938-44
Elm Fork of North Fork Red River near Reed, OK	07303420	579	1965-67
Elk Creek near Hobart, OK	07304500	549	1904-08, 1950-93
Elm Fork of North Fork Red River near Mangum, OK	07303500	838	1905-08, 1930-31, 1938-47, 1965-67, 1968-76
Otter Creek at Mountain Park, OK	07306500	164	1946-51
East Cache Creek near Elgin, OK	07309000	248	1956-58
Little Medicine Bluff Creek near Lawton, OK	07310000	7.00	1913-19
Medicine Bluff Creek near Lawton, OK	07310500	101	1913-19
Little Beaver Creek near Duncan, OK	07313000	158	1949-64
Beaver Creek near Waurika, OK	07313500	563	1953-93
Cow Creek at Waurika, OK	07313600	193	1966-70
Walnut Bayou near Burneyville, OK	07315900	314	1961-63, 1969-71
Sandstone Creek subwater shed 16A near Cheyenne, OK	07317500	8.78	1952-71
Sandstone Creek subwater shed 16 near Cheyenne, OK	07318000	20.3	1953-69
Sandstone Creek subwater shed 14 near Cheyenne, OK	07318500	1.02	1953-70
Sandstone Creek subwater shed 17 near Cheyenne, OK	07319000	10.1	1953-70
Sandstone Creek near Berlin, OK	07319500	44.9	1953-72
Sandstone Creek subwater shed 10A near Elk City, OK	07320000	2.87	1952-70
Sandstone Creek subwater shed 6 near Elk City, OK	07320500	6.46	1953-70
Sandstone Creek subwater shed 5 near Elk City, OK	07321000	3.89	1953-70
Sandstone Creek subwater shed 3 near Elk City, OK	07321500	0.62	1953-70
Sandstone Creek subwater shed 9 near Elk City, OK	07322000	3.50	1952-70
East Branch Sandstone Creek near Elk City, OK	07322500	23.0	1951-72

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Sandstone Creek near Cheyenne, OK	07323000	87.1	1952-74
Sandstone Creek subwater shed 1 near Cheyenne, OK	07324000	5.33	1952-70
Barnitz Creek near Arapaho, OK	07324500	243	1946-63
Lake Creek near Eakly, OK	07325850	52.0	1970-78
Willow Creek near Albert, OK	07325860	28.0	1971-78
Sugar Creek near Gracemont, OK	07327000	208	1956-74
Spring Creek near Gracemont	07327050	34.4	1991-94
Chetonia Creek Tributary below Cyril, OK	07327445	3.35	1990-91
Little Washita River near Ninnekah, OK	07327490	208	1964-85
Little Washita River at Ninnekah, OK	07327500	227	1952-63
Washita River near Tabler, OK	07328000	4,706	1940-52
Winter Creek near Alex, OK	07328070	33.0	1965-87
Washington Creek near Pauls Valley	07328550	7.56	1991-94
Rush Creek at Purdy	07329000	145	1940-54 1982-94
Rush Creek near Maysville, OK	07329500	206	1955-76
Antelope Spring at Sulphur, OK	07329849	0	1986-89
Outflow from Vendome Well at Sulphur, OK	07329851	0	1986-89
Rock Creek at Dougherty, OK	07329900	138	1957-67
Caddo Creek near Ardmore	07330500	298	1936-50 1996-97
Caddo Creek Site 7CMP near Gene Autry	07330700	326	1996-98
Washita River near Berwyn, OK	07330000	6,815	1924-26
Mill Creek near Ravia, OK	07331250	89.2	1969-71
Red River at Denison Dam near Denison, TX	07331600	39,720	1959-89
Red River near Colbert, OK	07332000	39,777	1924-59
Blue River near Connerville, OK	07332390	162	1977-79
Blue River at Milburn, OK	07332400	203	1966-87
Coal Creek near Lehigh, OK	07332900	8.10	1978-81
Muddy Boggy Creek at Atoka, OK	07332950	445	1979-81
North Boggy Creek near Stringtown, OK	07333000	136	1956-59
Chickasaw Creek near Stringtown, OK	07333500	32.7	1956-68
McGee Creek near Stringtown, OK	07333800	86.6	1956-68
McGee Creek near Farris, OK	07333910	176	1978-82

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

xi

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Clear Boggy Creek near Wapanucka, OK	07334500	516	1940-43
Clear Boggy Creek near Caney, OK	07335000	720	1943-89
Tenmile Creek near Miller, OK	07336000	68	1956-70
Kiamichi River near Belzoni, OK	07336500	1,423	1926-72
Red River near DeKalb, TX	07336820	47,348	1967-98
Little River near Wright City, OK	07337500	645	1930-31, 1945-89
Little River near Idabel, OK	07338000	1,173	1930-46

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following stations are discontinued surface-water-quality discontinued stations. Stations with one year's record or less are not included. Information regarding these stations may be obtained from the District Office at address given on back of title page of this report.

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Prairie Dog Town Fork Red River near Lakeview, TX	07299495	6,794	1987-88
Prairie Dog Town Fork Red River at Estelline, TX	07299505	7,293	1987-88
Jonah Creek near Newlin, TX	07299510	46.3	1987-88
Jonah Creek near Estelline, TX	07299512	57.1	1987-88
Prairie Dog Town Fork Red River near Childress, TX	07299540	7,725	1987-88
Salt Creek near Childress, TX	07299542	113	1987-88
Buck Creek at Loco, TX	07299545	175	1987-88
Buck Creek near Loco, TX	07299548	205	1987-88
Buck Creek near Childress, TX	07299550	222	1987-88
Red River near Hollis, OK	07299565	8,154	1986-88
Red River near Quanah, TX	07299570	8,321	1986-88
Groesbeck Creek near Quanah, TX	07299580	322	1986-88
Bitter Creek near Hollis, OK	07299705	10.4	1986-88
Sandy Creek near Gould, OK	07299707	169	1987-88
Sandy Creek near Louis, OK	072997087	224	1987-88
Tributary to Sandy Creek near Lincoln, OK	07299709	6.32	1987-88
Sandy Creek at Lincoln, OK	072997092		1986-88
Sandy Creek near Lincoln, OK	072997095	255	1987-88
Sandy Creek near Eldorado, OK	07299710	280	1986-88
Sandy Creek at Eldorado, OK	07299712	297	1987-88
Sandy Creek South of Eldorado, OK, formerly published as Sandy Creek in Eldorado Township, OK	07299714	312	1987-88
Sandy Creek Southeast of Eldorado, OK, formerly published as Sandy Creek near Oklahoma-Texas State-line	07299716	320	1986-88
Wanderers Creek near Odell, TX	07299732	156	1986, 1988
Gypsum Creek North of Eldorado, OK, formerly published as Tributary to Gypsum Creek near Jackson Co Line, OK	07299760	2.12	1986-88
Gypsum Creek near Duke, OK	07299764	14	1986-88
Tributary to Gypsum Creek near Eldorado, OK	07299766	4.53	1986-88
Gypsum Creek near Prairie Hill, OK	07299768	28.1	1987-88
Gypsum Creek at Creta, OK	07299770	34.6	1987-88
Gypsum Creek near Creta, OK	07299775	56.1	1987-88

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Gypsum Creek near Olustee, OK	07299780	99.2	1986-88
Salt Fork Red River near Wellington, TX	07300000	1,222	1987-88
Panther Creek near Wellington, TX	07300005	4.61	1987-88
Salt Fork Red River near Dodson, TX	07300120	1,297	1987-88
Tributary to Salt Fork Red River near Madge, OK	07300140	4.79	1986-88
Salt Fork Red River near Madge, OK	07300145	1,388	1986-88
Bear Creek near Vinson, OK	07300150	7.24	1987-88
Salt Fork Red River near Vinson, OK	07300400	14.21	1959-63, 1976-78, 1987-88
Cave Creek near Reed, OK	07300470	46.7	1986-88
Mulberry Creek near Mangum, OK	07300485	9.3	1986-88
Fish Creek near Mangum, OK	07300495	5.3	1987-88
Salt Fork Red River at Mangum, OK	07300500	1,566	1938-51, 1953-56, 1959-70, 1972, 1974-79, 1986-89
Bitter Creek near Altus, OK	07300600		1986-88
Turkey Creek near McQueen, OK	07300960	51.5	1987-88
Turkey Creek Near Gould, OK, formerly published as Turkey Creek at Jackson-Harmon County-line, OK	07300965	76.9	1987-88
Turkey Creek near Duke, OK	07300970	84.8	1986-88
Tributary to Turkey Creek near Duke, OK	07300975	56.5	1987-88
Turkey Creek at U.S. Highway 62 near Duke, OK	07300980	148	1986-88
Cottonwood Creek near Duke, OK	07300985	54.5	1986-88
Spring Branch at Duke, OK	07300990	14	1986-88
Turkey Creek near Prairie Hill, OK	07300995	238	1987-88
Tributary to Turkey Creek near Prairie Hill, OK	07300997	13.7	1987-88
Horse Branch near Victory, OK	07301020	25.3	1986-88
Tributary to Horse Branch Northwest of Victory, OK, (formerly published as Trib to Horse Branch in Duke Twnp near Victory, OK)	07301030	8.39	1986-88
Tributary to Horse Branch at Victory, OK	07301040	0.23	1986, 1988
Turkey Creek near Altus, OK	07301050	309	1986-88
Turkey Creek at Olustee, OK	07301100	317	1986-88
Tributary to Salt Fork Red River near Elmer, OK	07301105		1986-88
Salt Fork Red River near Elmer, OK	07301110	1,878	1979-94
Red River near Elmer, OK	07301150	16,459	1986-88

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
North Fork Red River near Texola, OK	07301315	1,284	1976-77
Sweetwater Creek near Sweetwater, OK	07301420	424	1986-90
North Fork Red River near Erick, OK	07301450		1960-63
North Fork Red River near Sayre, OK	07301481	2,159	1987-90
North Fork Red River near Carter, OK	07301500	2,337	1948-53, 1959-63, 1968-80, 1985-90
North Fork Red River near Granite, OK	07302000	2,494	1938-44
Altus Canal Blw Lake Altus near Lugert, OK	07302510		1949-50
North Fork Red River Blw Altus Dam near Lugert, OK	07303000	2,515	1962-63, 1975-80, 1987-88
Elm Fork North Fork Red R at Salton Crossing, OK	07303395		1959-61, 1973-79
Elm Fork of the North Fork Red River near Carl, OK	07303400	416	1960-63 1968-82 1994-97
Fish Creek near Vinson, OK	07303402	31.5	1978-79
Salt Creek near Vinson, OK	07303404	5.64	1978-79
Elm Fork N Fork Red Rvr near Vinson, OK	07303406	428	1978-81
Elm Fork of North Fork Red River near Reed, OK	07303420	579	1978, 1981-82
Elm Fork of North Fork Red River near Mangum, OK	07303500	838	1938-47, 1951, 1960-65, 1968-80
Elk Creek near Hobart, OK	07304500	549	1949-51, 1955, 1958-63, 1969-90
North Ford Red River near Headrick, OK	07305000	4,244	1951-57, 1958-63, 1968-93
West Otter Creek at Snyder Lk near Mt. Park, OK	07305500	132	1947, 1960, 1988
Otter Creek near Snyder, OK	07307010	217	1959-63, 1987-89
North Fork Red River near Tipton, OK	07307028	4,691	1960, 1985-89
East Cache Creek near Elgin, OK	07309000	248	1975-80

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

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DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
East Cache Creek near Walters, OK	07311000	675	1947, 48, 1951-55, 1958-63, 1970-93
Blue Beaver Creek near Cache, OK	07311200	24.6	1964-96
Deep Red Run near Randlett, OK	07311500	617	1987-90
Beaver Creek near Lawton, OK	07312900		1947-48, 1961
Little Beaver Creek near Duncan, OK	07313000	158	1947-51, 1955, 1960, 1962-63
Beaver Creek near Waurika, OK	07313500	563	1986-90
Mud Creek near Courtney, OK	07315700	572	1985-90
Washita River near Reydon, OK	07316350	498	1949, 1977
Washita River near Cheyenne, OK	07316500	794	1938-40, 1942-47, 1950, 1960-61, 1969-73, 1985-90
Sandstone Creek SWS 17 near Cheyenne, OK	07319000	10.1	1968-70
Sandstone Creek SWS 10a near Elk City, OK	07320000	2.87	1975, 1979
Sandstone Creek SWS 1 near Cheyenne, OK	07324000	5.33	1968-70, 1979
Washita River near Moorewood, OK	07324150		1969-71
Quartermaster Creek near Hammon, OK	07324190		1969-71
Washita River near Hammon, OK	07324200	1,387	1969-87, 1989-90
Washita River near Foss, OK	07324400	1,551	1928, 1946-48, 1950-51, 1956-57, 1969-87, 1989-90
Barnitz Creek near Arapaho, OK	07324500	243	1947-49, 1951-52, 1955
Washita River near Clinton, OK	07325000	1,977	1938-45, 1947-50, 1959-63, 1975, 1987-90

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Washita River at Carnegie, OK	07325500	3,129	1942-51, 1955-90
Spring Creek near Eakly, OK	07325753		1960-61
Cobb Creek near Eakly, OK	07325800	132	1987-90
Cobb Creek near Fort Cobb, OK	07326000	313	1943-48, 1950-51, 1959-60, 1962-63, 1986-90
Washita River at Anadarko, OK	07326500	3,656	1954, 1962-80, 1987-90
Tonkawa Creek near Anadarko, OK	07326720	26	1967-71
Sugar Creek near Gracemont, OK	07327000	208	1949-50, 1960, 1962-74
Delaware Creek near Anadarko, OK No. 131	07327040	40.1	1962-77
Salt Creek near Chickasha, OK	07327150	23.8	1967-77
Washita River near Chickasha, OK	07327300		1959-61
West Salt Creek near Chickasha, OK	07327320	22	1967-71
West Bitter Creek near Tabler, OK	07327420	59.4	1960-61, 1964-71
Spring Creek near Blanchard, OK	07327432	1	1968-71
Spring Creek near Tabler, OK	07327435	2	1967-71
Spring Creek Trib near Middleberg, OK	07327437		1968-71
East Bitter Creek near Tabler, OK	07327440	35.2	1960-61, 1964-77
Little Washita River near Ninnekah, OK	07327490	208	1948-52, 1954-55, 1963-78
Little Washita River at Ninnekah, OK	07327500	227	1960-63
Washita River near Tabler, OK	07328000	4,706	1942-53
Winter Creek near Alex, OK	07328070	33	1985-87
Washita River at Alex, OK	07328100	4,787	1962-80, 1986, 1989-90
Finn Creek near Payne, OK	07328250		1960-61
Washington Creek near Pauls Valley	07328550	7.56	1991-94
Rush Creek at Purdy, OK	07329000	145	1938-53, 1985-90

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

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DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Rush Creek near Maysville, OK	07329500	206	1938-39, 1944, 1953-75, 1977
Wildhorse Creek near Hennepin, OK	07329660		1949-50
Wildhorse Creek near Hoover, OK	07329700	604	1954-55, 1962-63, 1969-71, 1985-90
Honey Creek near Turner Falls, OK	07329790		1949, 1951
Honey Creek near Davis, OK	07329810	18.7	1953, 1955-56
Rock Creek N of Sulphur, OK	07329843		1958-60
Outflow from Vendome Well at Sulphur, OK	07329851		1985-90
Rock Creek at Sulphur, OK	07329852	44.1	1990-95
Rock Creek S of Platt Natl Pk near Sulphur, OK	07329853		1959-60
Rock Creek at Dougherty, OK	07329900	138	1951-57, 1960-63
Caddo Creek near Ardmore, OK	07330500	298	1996-98
Caddo Creek Site 6PT near Ardmore, OK	07330610		1996-97
Sand Creek Site 1WW near Ardmore, OK	07330615		1997
Sand Creek Site 2WW near Ardmore, OK	07330618		1997
Sand Creek Site 3CMP near Ardmore, OK	07330625		1996-97
Sand Creek Site 3A near Ardmore, OK	07330630		1996-97
Sand Creek Site 3B near Ardmore, OK	07330635		1996-97
Sand Creek Site 4CMP near Ardmore, OK	07330665		1996-97
Sand Creek Site 5CMP near Ardmore, OK	07330680		1996-97
Caddo Creek Site 7CMP near Gene Autry, OK	07330700	326	1996-98
Caddo Creek Site 8CMP near Gene Autry, OK	07330720		1996-97
Caddo Creek Site 9A near Gene Autry, OK	07330790		1996-97
Caddo Creek Site 9CMP near Gene Autry, OK	07330800		1997
Washita River near Dickson, OK	07331000	7,202	1944-95
Mill Creek near Ravia, OK	07331250	89.2	1968-69
Washita River near Tishomingo, OK	07331290		1953-55
Pennington Creek near Reagan, OK	07331300	65.7	1951-55, 1957-59
Butcher Pen Creek near Tishomingo, OK	07331450		1960-61

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Red River at Denison Dam near Denison, TX	07331600	39,720	1942-43, 1945-49, 1959-85
Red River near Colbert, OK	07332000	39,777	1930-31, 1936-62
Blue River at Connerville, OK	07332350		1951-56, 1961-62, 1977-79
Blue River near Connerville, OK	07332390	162	1977-79
Blue River at Armstrong, OK	07332450	224	1976-77
Blue River near Blue, OK	07332500	476	1936, 1938-42, 1944-50, 1953-80
Muddy Boggy Creek near Coalgate, OK	07332850		1961-62
Coal Creek near Lehigh, OK	07332900	8.1	1905, 1977-81
Muddy Boggy Creek at Atoka, OK	07332950	445	1978-81
Chickasaw Creek near Stringtown, OK	07333500	32.7	1955-58, 1960
Mcgee Creek near Farris, OK	07333910	176	1908, 1976-82
Muddy Boggy Creek near Farris, OK	07334000	1,087	1938-81
Byrds Mill Spring near Fittstown, OK	07334200		1953, 1955, 56, 1990-93
Clear Boggy Creek near Tupelo, OK	07334400	248	1957-58, 1960-62, 1983
Leader Creek at Tupelo, OK	07334420	64.3	1958, 1960
Clear Boggy Creek near Wapanucka, OK	07334500	516	1940-42
Clear Boggy Creek Abv Caney Creek near Caney, OK	07334800		1976-77
Clear Boggy Creek near Caney, OK	07335000	720	1943-80
Muddy Boggy Creek near Unger, OK	07335300	2273	1961-62, 1985-90
Red River at Arthur City, TX	07335500	44,531	1938-80, 1982
Kiamichi River near Big Cedar, OK	07335700	40.1	1966-96

WATER RESOURCES DATA — OKLAHOMA, 2000
DISCONTINUED SURFACE-WATER DISCHARGE OR SURFACE-WATER-QUALITY STATIONS

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DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
RED RIVER BASIN			
Kiamichi River near Clayton, OK	07335790	708	1976-77
Kiamichi River near Antlers, OK	07336200	1,138	1962, 1972-81
Kiamichi River near Belzoni, OK	07336500	1,423	1938-40, 1943-72
Kiamichi River near Sawyer, OK	07336700		1961-62, 1975, 1977-80
Red River near Valliant, OK	07336730		1921, 1923, 1970-76
Red River near Millerton, OK	07336760		1970-76
Red River near DeKalb, TX	07336820	47,348	1968-98
Little River near Cloudy, OK	07337100	324	1976-80
Little River near Ringold, OK	07337200		1961-62
Little River near Wright City, OK	07337500	645	1945-47, 1949, 1961-73, 1975-77
Glover River near Glover, OK	07337900	315	1961-80
Little River Blw Lukfata Creek, near Idabel, OK	07338500	1,226	1930-31, 1938-40, 1944-54, 1960-80
Mountain Fork near Smithville, OK	07338840		1976-80
Mountain Fork near Eagletown, OK	07339000	787	1938-40, 1944-45, 1947-48, 1960-70, 1973, 1975-80
Mountain Fork Blw Eagletown, OK	07339010		1960-63
Little River near Cerro Gordo, Ar	07339100		1976, 1978
Blue R at Pexton Ranch near Milburn, OK	341835096342901		1976, 1978
Coal Ck Trib near Lehigh	342652096152202		1977-81
Coal Ck Tributary	342743096154701		1977-81
Little Blue Creek at Pontotoc, OK	342914096370701	11.6	1977-78
Blue River at Ford, OK	343554096250801		1976-77



Measurement equipment used during high water

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Oklahoma each water year (Oct. 1 to Sept. 30). These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Oklahoma."

Volumes 1 and 2 of this report includes records on both surface water and ground water in the State. Specifically they contain: (1) Discharge records for 134 streamflow-gaging stations, and 25 partial-record or miscellaneous streamflow stations, (2) stage and content records for 16 lakes, reservoirs and gage height records for 2 stations; (3) water-quality records for 56 streamflow-gaging stations; (4) water-level records for 4 observation well.

This series of annual reports for Oklahoma began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to include, in one volume, data on quantity and quality of surface water. Data on ground-water levels were added to this format from 1975-79 and 1990 to present.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Oklahoma were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface Water Supply of the United States, Parts 7A and 7B." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 under the title "Ground-Water Levels in the United States," and 1980 to 1989 under the title "Ground-Water Levels in Observation Wells in Oklahoma." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, CO 80225.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is

identified as "U.S. Geological Survey Water-Data Report OK-00-2" For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Beginning with the 1990 water year, all water-data reports also will be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc.

A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

COOPERATION

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

Oklahoma Water Resources Board.
Oklahoma Conservation Commission
Oklahoma City Water Utilities Trust.
City of Tulsa.
Oklahoma State University
Oklahoma Geological Survey.

The following Federal agencies assisted in the data collection program by providing funds or services:

Corps of Engineers, U.S. Army
Bureau of Reclamation, U.S. Department of 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; Mountain Park Master Conservancy District; Oklahoma Gas and Electric Company; the cities of Ada, Henryetta, and Lawton.**

Organizations that supplied data are acknowledged in the station descriptions.

SPECIAL NETWORKS AND PROGRAMS

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

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

The National Trends Network (NTN) is a network of stations for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, diverse, and geographically distributed part of the Nation's ground- and surface-water resources, and to identify, describe, and explain the major natural and human factors that affect these observed conditions and trends.

Assessment activities have begun in about two-thirds of the study units and ultimately will be conducted in 60 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative

hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

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

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF THE RECORDS

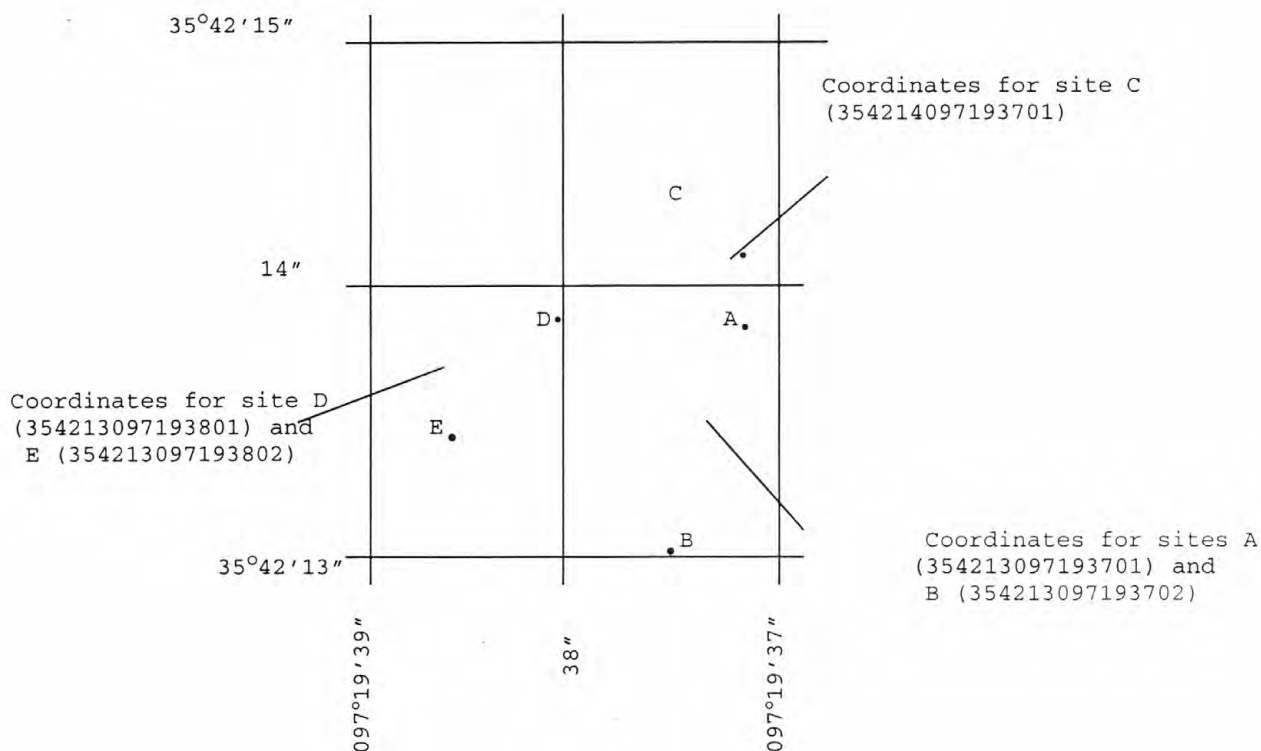
The surface-water and ground-water records published in this report are for the 2000 water year that began Oct. 1, 1999 and ended Sept. 30, 2000. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface water and water levels for ground water. The locations of the stations where the data were collected are shown in figures 1-3. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order System

Since Oct. 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank



System for numbering miscellaneous and ground-water sites (latitude and longitude)

of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete number for each station, such as 07152500, which appears just to the left of the station name, includes the two-digit Part number "07" plus the up to 13-digit downstream-order number "152500." The Part number designates the major river basin; for example, part "07" is the Lower Mississippi River basin.

Latitude-Longitude System

The identification numbers for wells and springs are

assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the sites within a 1-second grid. This site-identification number, once assigned, is a pure number, and has no locational significance. In instances where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure above.)

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharge may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They

may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

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

Data Collection and Computation

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

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals or with electronic data loggers. Measurements of discharge are made with current meters using methods adapted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

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

Daily mean discharges are computed by applying the

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

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.

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

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

Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data

reports prior to the 1992 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a program to reformat the annual water-data report to most current user needs and data preferences.

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

Station Manuscript

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

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

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

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

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of

discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

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

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

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

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

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

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

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity

table when daily contents are given.

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

Data Table of Daily Mean Values

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

Statistics of Monthly Mean Data

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

Summary Statistics

A table titled "SUMMARY STATISTICS" follows the

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

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data also are given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

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

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

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

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

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

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

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

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

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

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

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

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

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

Inches (INCHES) indicates the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge is exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge is exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge is exceeded 90 percent of the time for the designated period.

Hydrograph

A hydrograph for the current year follows the table for most stations. Streamflow hydrographs are semi-log plot of mean daily values with no flow days showing as blanks. Lake hydrographs are rectangular plot of 2400-hour readings.

Data collected at partial-record stations follow the information for continuous-record sites. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally

made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called miscellaneous sites.

Identifying Estimated Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated."

Accuracy of the Records

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

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

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft³/s; to the nearest tenth between 1.0 and 10 ft³/s; to whole numbers between 10 and 1,000 ft³/s; and to 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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

Other Records Available

The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 22092, maintains an index of these sites as well as an index of records of discharge collected by other agencies but not published by the Geological Survey. Information on records at specific sites can be obtained from that office upon request.

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the Oklahoma District office. Also, most of the daily mean discharges are in computer-readable form.

Records of Surface-Water Quality

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

Classification of Records

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

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

Arrangement of Records

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

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are detailed in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These references are listed in PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS section of this report. Additional guidance is provided in technical memoranda. These methods are consistent with ASTM standards and generally follow ISO standards.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S. Geological Survey District Office whose address is given on the back of the title page of this report.

Water Temperature

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

Sediment

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

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 and in predicting long-term sediment-discharge characteristics of the stream. Methods used in the computation of sediment records are described in the TWRI Book 3, Chapters C1 and C3. These methods are consistent with ASTM standards and generally follow ISO standards.

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

Laboratory Measurements

Samples for biochemical-oxygen (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. Sediment samples are analyzed in Missouri District Sediment Laboratory. All other samples are analyzed in the Geological Survey laboratories in Arvada, Colo. Methods used to analyze sediment samples and to compute sediment records are described in the TWRI, Book 5, Chapter C1. Methods used by the U.S. Geological Survey laboratories are given in the TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

In March 1989 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values for those years have not been corrected for this bias.

Data Presentation

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

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

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

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

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

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

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

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

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

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

Remarks Codes

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

PRINTED OUTPUT	REMARK
E	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (nonideal colony count).
L	Biological organism count less than 0.5 percent (organisms may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant.

Water Quality-Control Data

Data generated from the quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this district are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS.

These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

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

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

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

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

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

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

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

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

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

Replicate Samples--Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a

duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

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

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

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

Dissolved Trace-Element Concentrations

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

Nutrient Calculations

The values for many nitrogen parameters are calculated from other parameters. In some of these calculations, dissolved values are considered equivalent to total values.

Records of Ground-Water Levels

These data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers. Locations of the observation wells in this network in Oklahoma are shown in figure 3.

Although, in this report, records of water levels are presented for fewer than 10 wells, records are obtained through cooperative efforts of many Federal, State, and local agencies for several hundred observation wells throughout Oklahoma and are placed in computer storage. Information about the availability of the data in the water-level file may be obtained from the District chief, Oklahoma District. (See address on back of front page.)

Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability. Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears in the upper left corner of the table. The secondary identification number is the local well number, an alphanumeric number, derived from the township-range location of the well.

Water-level records are obtained from direct measurements with a steel tape or punched tape of the water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in each well description.

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

Data Presentation

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

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

AQUIFER.--This entry designates by name the aquifer(s) open to the well.

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

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of

casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) sea level; it is reported with a precision depending on the method determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It is used to acknowledge the assistance of local (non-Survey) observers.

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

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

An abbreviated table of mean daily water levels follows the station description for each well equipped with a digital recorder. For wells with no recorder, actual measurements are listed. Water levels are reported in feet below land-surface datum. A rectangular hydrograph of mean daily water levels for the last three years follows the table for recorder wells. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by blanks in place of the water level.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

<http://www.water.usgs.gov>

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

DEFINITIONS OF TERMS

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

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

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

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

Aroclor is the registered trade mark for a group of polychlorinated biphenyls which were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific four-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type and the last two digits represent the weight percent of the hydrogen substituted chlorine.

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

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

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

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$ on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

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

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

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m³), and periphyton and benthic organisms in grams per square meter (g/m²).

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

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

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

Bottom material: See Bed material.

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

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

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

Code Numbers have been assigned for agencies collecting and analysing samples, and are listed in water-quality tables of this report as follows:

1028 Oklahoma District, Water Resources Division (WRD), U.S. Geological Survey

80020 National Water Quality Laboratory, WRD, U.S. Geological Survey

Contents are 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.

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

Cubic feet per second per square mile [(ft³/s)/mi²] or 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.

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.

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

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

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

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

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

water.

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

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

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

HWM is a high-water mark or flood mark.

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

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

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

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

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

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

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

Organism is any living entity.

Organism count/area refers to the number of organisms

collected and enumerated in a sample and adjusted to the number per unit area habitat, usually square meter (m²), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

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

Parameter Code is a 5-digit number used in the U.S. Geological Survey's data system, National Water Information System (NWIS), to uniquely identify a specific constituent. The codes used in NWIS are the same as those used in the U.S. Environmental Protection Agency's data system, STORET.

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

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

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

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

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

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

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

Pesticides are chemical compounds used to control

undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

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

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

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

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

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

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

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

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen release (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2 \cdot \text{time})$] for periphyton and macrophytes and

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

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

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of 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 are likely to produce different analytical results.

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

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

Sea level 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 "National Geodetic Vertical Datum of 1929 (NGVD of 1929)," "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 or Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

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

characteristics, land usage, and quantity and intensity of precipitation.

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

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

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

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

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

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

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

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

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

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance

is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and the 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 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 multiplet samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton.

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

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

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-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 are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

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

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

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

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

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

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a

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

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

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

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, Oct. 1 through Sept. 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending Sept. 30, 1995, is called the “1995 water year.”

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

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

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

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| <p>1-D1. <i>Water temperature--influential factors, field measurement, and data presentation</i>, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.</p> <p>1-D2. <i>Guidelines for collection and field analysis of ground-water samples for selected unstable constituents</i>, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.</p> <p>2-D1. <i>Application of surface geophysics to ground-water investigations</i>, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.</p> <p>2-D2. <i>Application of seismic-refraction techniques to hydrologic studies</i>, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.</p> <p>2-E1. <i>Application of borehole geophysics to water-resources investigations</i>, by W. S. Keys and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.</p> <p>2-E2. <i>Borehole geophysics applied to ground-water investigations</i>, by W. S. Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.</p> <p>2-F1. <i>Application of drilling, coring, and sampling techniques to test holes and wells</i>, by Eugene Shuter and W. E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.</p> | <p>3-A1. <i>General field and office procedures for indirect discharge measurements</i>, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.</p> <p>3-A2. <i>Measurement of peak discharge by the slope-area method</i>, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.</p> <p>3-A3. <i>Measurement of peak discharge at culverts by indirect methods</i>, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.</p> <p>3-A4. <i>Measurement of peak discharge at width contractions by indirect methods</i>, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.</p> <p>3-A5. <i>Measurement of peak discharge at dams by indirect methods</i>, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.</p> <p>3-A6. <i>General procedure for gaging streams</i>, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.</p> <p>3-A7. <i>Stage measurement at gaging stations</i>, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.</p> <p>3-A8. <i>Discharge measurements at gaging stations</i>, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.</p> <p>3-A9. <i>Measurement of time of travel in streams by dye tracing</i>, by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.</p> <p>3-A10. <i>Discharge ratings at gaging stations</i>, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.</p> <p>3-A11. <i>Measurement of discharge by the moving-boat method</i>, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.</p> <p>3-A12. <i>Fluorometric procedures for dye tracing</i>, Revised, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 34 pages.</p> <p>3-A13. <i>Computation of continuous records of streamflow</i>, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.</p> <p>3-A14. <i>Use of flumes in measuring discharge</i>, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.</p> |
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- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
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- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 31 pages.
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- 3-B4. *Supplement 1. Regression modeling of ground-water flow - Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R. L. Cooley: USGS--TWRI Book 3, Chapter B4. 1993. 8 pages.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.
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- 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.J. Fishman and L. C. Friedman, editors: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.
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- 5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R. L. Wershaw, M. J. Fishman, R. R. Grabbe, and L. E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.

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Volume 2: RED RIVER BASIN

- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.
- 6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S. A. Leake and D. E. Prudic: USGS--TWRI Book 6, Chapter A2. 1991. 68 pages.
- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L. J. Torak: USGS--TWRI Book 6, Chapter A3. 1993. 136 pages.
- 6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R. L. Cooley: USGS--TWRI Book 6, Chapter A4. 1992. 108 pages.
- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L. J. Torak: USGS--TWRI Book 6, Chapter A5, 1993. 243 pages.
- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffranek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

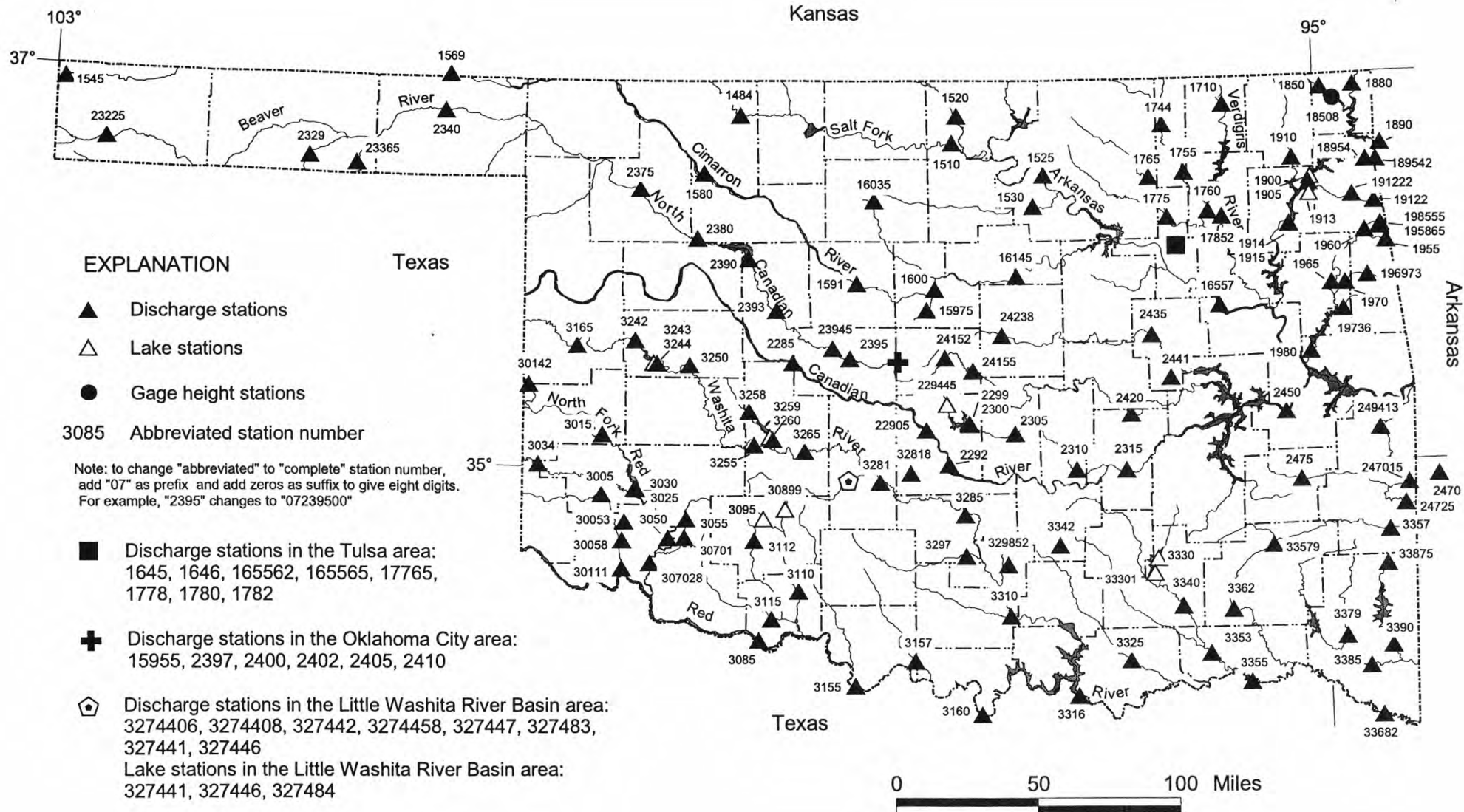


Figure 1.--Locations of continuous surface-water stations for water-year 2000.

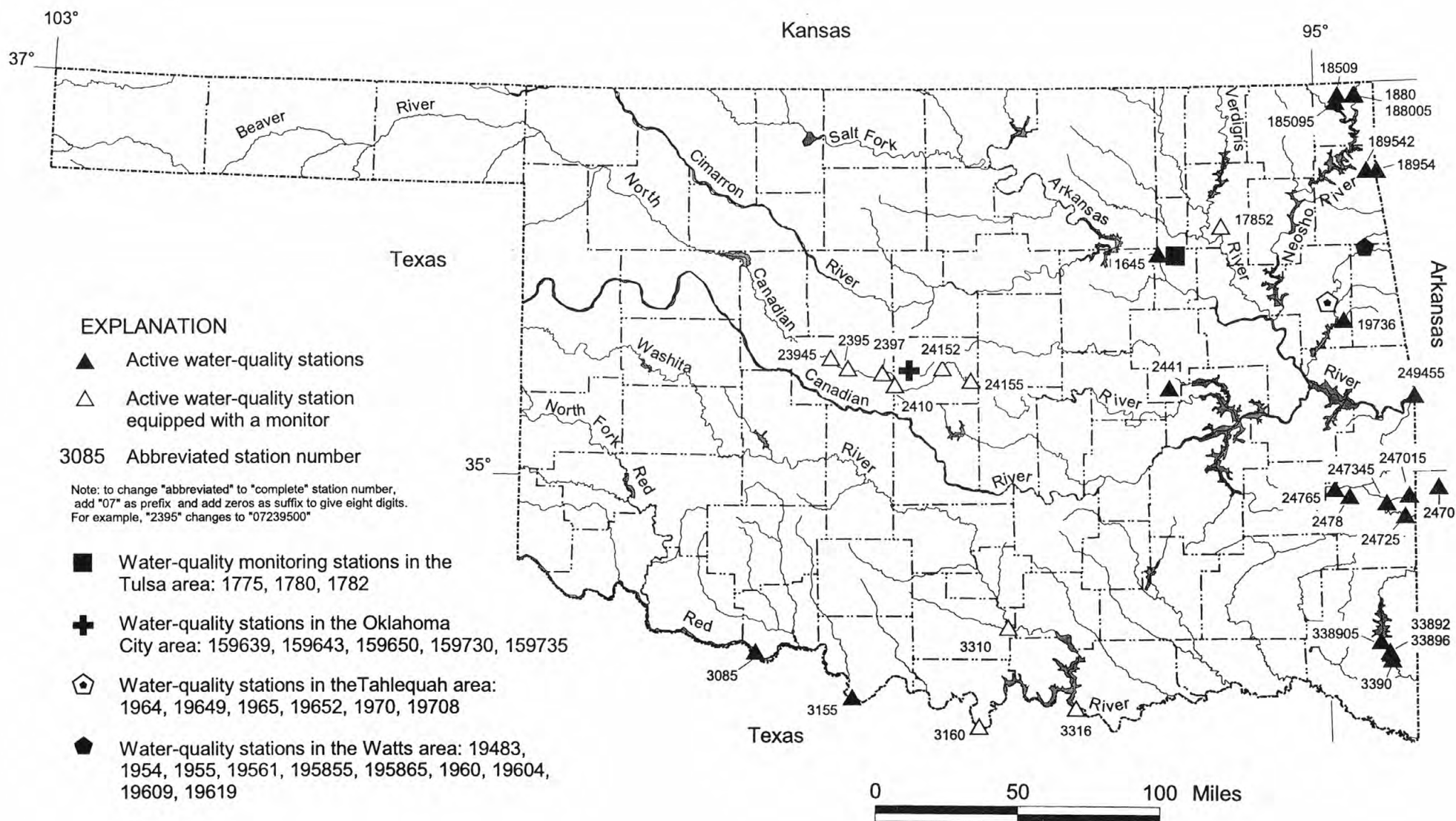


Figure 2.—Locations of water-quality stations for water-year 2000.

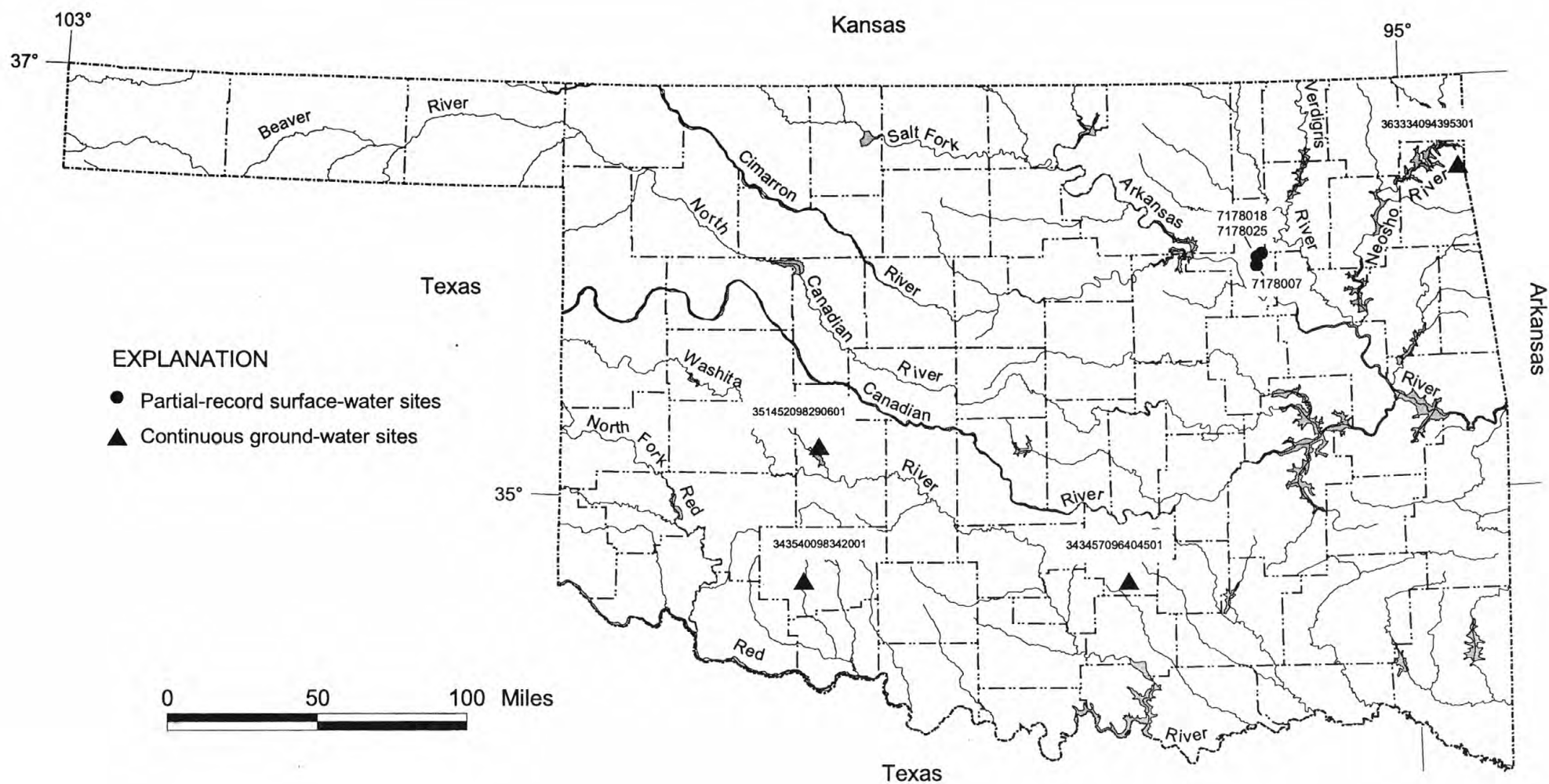


Figure 3.--Locations of partial-record surface-water stations and ground-water wells for water-year 2000.

RED RIVER BASIN

07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51'30", long 99°30'30", 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 State Highway 34, 0.5 mi south of Mangum, 13.0 mi downstream from Fish Creek, and at mile 35.5.

DRAINAGE AREA.--1,566 mi², of which 209 mi² 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 above sea level (levels by U.S. Bureau of Reclamation). Apr. 11, 1905 to June 30, 1906, nonrecording gage at site 0.2 mi upstream at different datum. Oct. 1, 1937 to Nov. 8, 1938, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharge. Records fair. U.S. Geological Survey satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
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No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

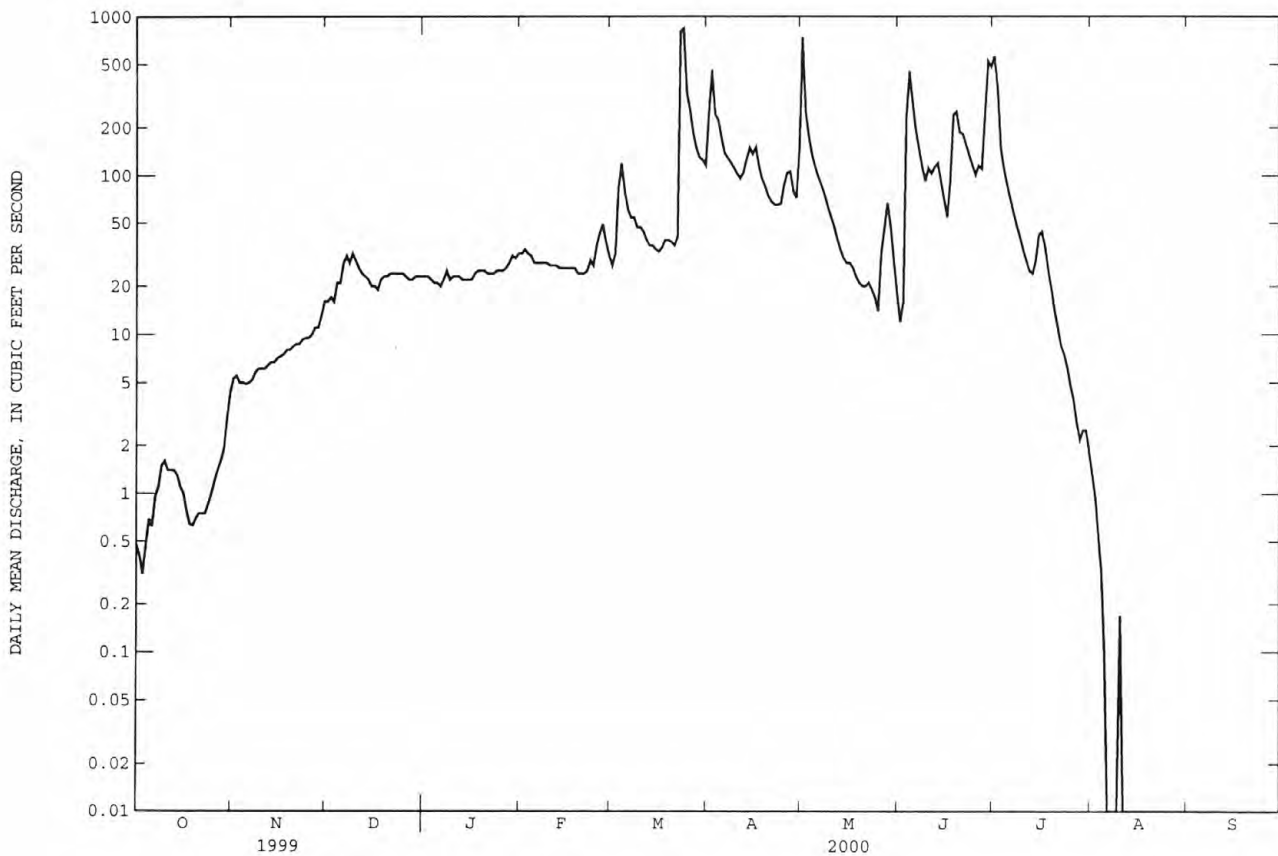
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	5.3	16	23	32	27	250	737	12	559	1.3	.00
2	.41	5.5	17	23	34	32	461	247	16	352	.93	.00
3	.31	5.0	16	22	32	83	241	175	230	147	.54	.00
4	.47	5.0	21	21	31	119	223	135	454	110	.33	.00
5	.69	4.9	21	21	28	80	172	114	286	87	.10	.00
6	.62	5.0	28	20	28	61	139	98	193	71	.00	.00
7	.96	5.2	31	22	28	54	129	87	147	58	.00	.00
8	1.1	5.8	28	25	28	54	121	76	114	48	.00	.00
9	1.5	6.1	32	22	28	47	112	64	92	41	.01	.00
10	1.6	6.1	29	23	27	47	103	55	111	34	.17	.00
11	1.4	6.1	26	23	27	44	96	48	103	29	.00	.00
12	1.4	6.4	24	23	27	39	104	40	113	25	.00	.00
13	1.4	6.7	23	22	26	36	126	34	119	24	.00	.00
14	1.3	6.7	22	22	26	36	149	30	91	29	.00	.00
15	1.1	7.1	20	22	26	34	137	28	70	42	.00	.00
16	1.0	7.3	20	22	26	33	150	28	54	44	.00	.00
17	.78	7.5	19	24	26	35	114	26	92	35	.00	.00
18	.64	8.0	22	25	26	39	95	23	240	25	.00	.00
19	.63	8.0	23	25	24	39	85	21	251	19	.00	.00
20	.70	8.4	23	25	24	38	74	20	186	14	.00	.00
21	.75	8.7	24	24	24	36	68	20	182	11	.00	.00
22	.75	8.7	24	24	25	41	65	21	155	8.5	.00	.00
23	.75	9.3	24	24	29	803	65	19	134	7.5	.00	.00
24	.86	9.5	24	25	27	835	66	17	116	6.2	.00	.00
25	1.0	9.5	24	25	36	328	87	14	101	4.8	.00	.00
26	1.2	10	23	25	43	255	104	32	115	3.9	.00	.00
27	1.4	11	22	26	49	183	106	46	110	2.8	.00	.00
28	1.6	11	22	28	38	148	79	67	246	2.2	.00	.00
29	1.9	13	23	31	31	130	72	48	520	2.5	.00	.00
30	3.0	16	23	30	---	125	154	29	483	2.5	.00	.00
31	4.3	---	23	32	---	116	---	18	---	1.8	.00	---
TOTAL	36.00	232.8	717	749	856	3977	3947	2417	5136	1846.7	3.38	0.00
MEAN	1.16	7.76	23.1	24.2	29.5	128	132	78.0	171	59.6	.11	.000
MAX	4.3	16	32	32	49	835	461	737	520	559	1.3	.00
MIN	.31	4.9	16	20	24	27	65	14	12	1.8	.00	.00
AC-FT	71	462	1420	1490	1700	7890	7830	4790	10190	3660	6.7	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

	MEAN	77.7	32.1	38.6	47.4	56.7	55.8	106	261	239	65.2	40.2	50.9
MAX	919	196	148	199	263	344	1292	1389	1602	575	539	424	
(WY)	1961	1987	1992	1960	1998	1998	1997	1957	1941	1953	1995	1995	
MIN	.000	.000	.000	.000	.000	.12	.000	.000	.000	.000	.000	.000	
(WY)	1941	1940	1940	1940	1953	1971	1955	1953	1952	1963	1943	1939	

07300500 SALT FORK RED RIVER AT MANGUM, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1938 - 2000
ANNUAL TOTAL	22426.07	19917.88	
ANNUAL MEAN	61.4	54.4	89.3
HIGHEST ANNUAL MEAN			277 1941
LOWEST ANNUAL MEAN			12.3 1940
HIGHEST DAILY MEAN	1260 Jun 25	835 Mar 24	22600 May 28 1978
LOWEST DAILY MEAN	.18 Sep 2	.00 several days	^a .00 Oct 2 1937
ANNUAL SEVEN-DAY MINIMUM	.27 Sep 8	.00 Aug 11	.00 Aug 14 1938
INSTANTANEOUS PEAK FLOW		1990 Mar 23	72000 May 16 1957
INSTANTANEOUS PEAK STAGE		7.87 Mar 23	14.70 Jun 16 1938
ANNUAL RUNOFF (AC-FT)	44480	39510	64690
10 PERCENT EXCEEDS	141	134	130
50 PERCENT EXCEEDS	38	24	18
90 PERCENT EXCEEDS	.88	.00	.00

^aNo flow at times in most years.

RED RIVER BASIN

07300530 BITTER CREEK NEAR MARTHA, OK

LOCATION.--Lat 34°43'00", long 99°22'09", in SW $\frac{1}{4}$ sec.23. T.3 N, R.21 W., Jackson County, Hydrologic Unit 11120202, on left bank of creek on county road, 1.0 mi east and 0.5 mi south of Martha, and at mile 17.4.

DRAINAGE AREA.--42.7 mi².

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

REVISED RECORDS.--WDR OK-00-2: 1999 (M)

GAGE.--Water-stage recorder. Datum of gage is 1,347.52 ft above sea level.

REMARKS.--No estimated daily discharge. Records fair. Flow affected by irrigation from Lake Altus.

REVISIONS.--The maximum discharge for the water year 1999 has been revised to 4,250 ft³/s, June 23, 1999, gage height, 13.04 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	3.9	2.6	3.5	2.7	4.2	178	555	19	26	26	28
2	3.2	3.0	2.6	3.2	2.7	20	94	35	20	41	24	27
3	2.9	2.7	2.5	3.2	2.6	9.5	19	22	15	13	24	24
4	3.3	2.7	4.0	3.2	2.5	5.1	11	15	12	8.8	29	22
5	3.3	2.5	3.4	3.2	2.5	4.3	8.3	12	7.6	8.0	32	17
6	2.8	2.6	2.8	3.1	2.5	4.0	6.6	11	6.7	7.6	29	19
7	2.6	2.5	2.6	3.1	2.5	9.0	5.7	9.4	6.2	7.0	32	15
8	2.4	2.4	4.2	3.4	2.6	11	4.8	8.4	5.7	6.4	35	18
9	2.9	2.4	86	3.4	2.5	4.5	4.8	7.4	5.7	6.1	30	15
10	2.5	2.4	31	3.1	2.5	3.6	4.6	7.2	50	5.5	26	14
11	2.3	2.4	7.7	3.1	2.5	3.4	4.4	6.9	10	5.0	27	11
12	2.3	2.3	5.8	2.9	2.5	3.4	6.0	6.1	6.0	4.9	27	14
13	2.2	2.3	5.1	2.8	2.5	3.4	4.4	5.7	5.3	7.5	27	17
14	2.2	2.3	4.9	2.7	2.5	3.3	4.0	5.3	4.9	21	28	17
15	2.2	2.3	4.6	2.9	2.5	3.3	27	5.4	4.7	27	26	15
16	2.1	2.5	4.5	2.9	2.6	3.4	81	5.4	4.6	30	29	15
17	2.1	2.6	4.5	2.8	2.5	4.0	11	5.2	13	23	25	7.7
18	2.2	2.4	4.2	3.0	2.5	3.7	7.0	4.8	12	21	23	5.8
19	2.4	2.3	4.1	2.8	2.4	3.4	5.5	4.4	8.0	19	20	5.3
20	2.4	2.3	4.0	2.7	2.4	3.3	4.1	4.6	6.9	20	23	4.9
21	2.3	2.3	3.9	2.6	2.5	3.0	3.4	4.4	5.8	22	25	4.6
22	2.4	2.5	4.0	2.7	7.0	7.3	3.5	4.1	5.9	28	28	4.6
23	2.2	2.7	3.8	2.6	9.0	1140	3.7	3.9	5.5	27	30	4.0
24	2.2	2.5	3.6	2.6	3.1	364	3.2	3.5	5.1	27	32	5.3
25	2.1	2.4	3.6	2.8	79	29	6.1	3.3	4.4	25	34	4.3
26	2.1	2.6	3.6	2.6	16	17	5.5	3.7	5.3	27	30	4.0
27	2.1	2.5	3.5	2.8	6.6	13	3.4	6.7	27	27	28	4.0
28	2.1	2.4	3.5	2.7	5.3	11	2.5	14	124	26	26	3.8
29	7.2	2.4	3.6	2.6	4.7	9.4	2.2	18	39	32	25	3.7
30	51	2.4	3.8	2.7	---	8.1	424	19	13	32	27	3.4
31	6.9	---	3.4	2.7	---	7.4	---	19	---	31	27	---
TOTAL	134.8	75.5	231.4	90.4	183.7	1719.0	948.7	835.8	458.3	611.8	854	353.4
MEAN	4.35	2.52	7.46	2.92	6.33	55.5	31.6	27.0	15.3	19.7	27.5	11.8
MAX	51	3.9	86	3.5	79	1140	424	555	124	41	35	28
MIN	2.1	2.3	2.5	2.6	2.4	3.0	2.2	3.3	4.4	4.9	20	3.4
AC-FT	267	150	459	179	364	3410	1880	1660	909	1210	1690	701

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2000, BY WATER YEAR (WY)

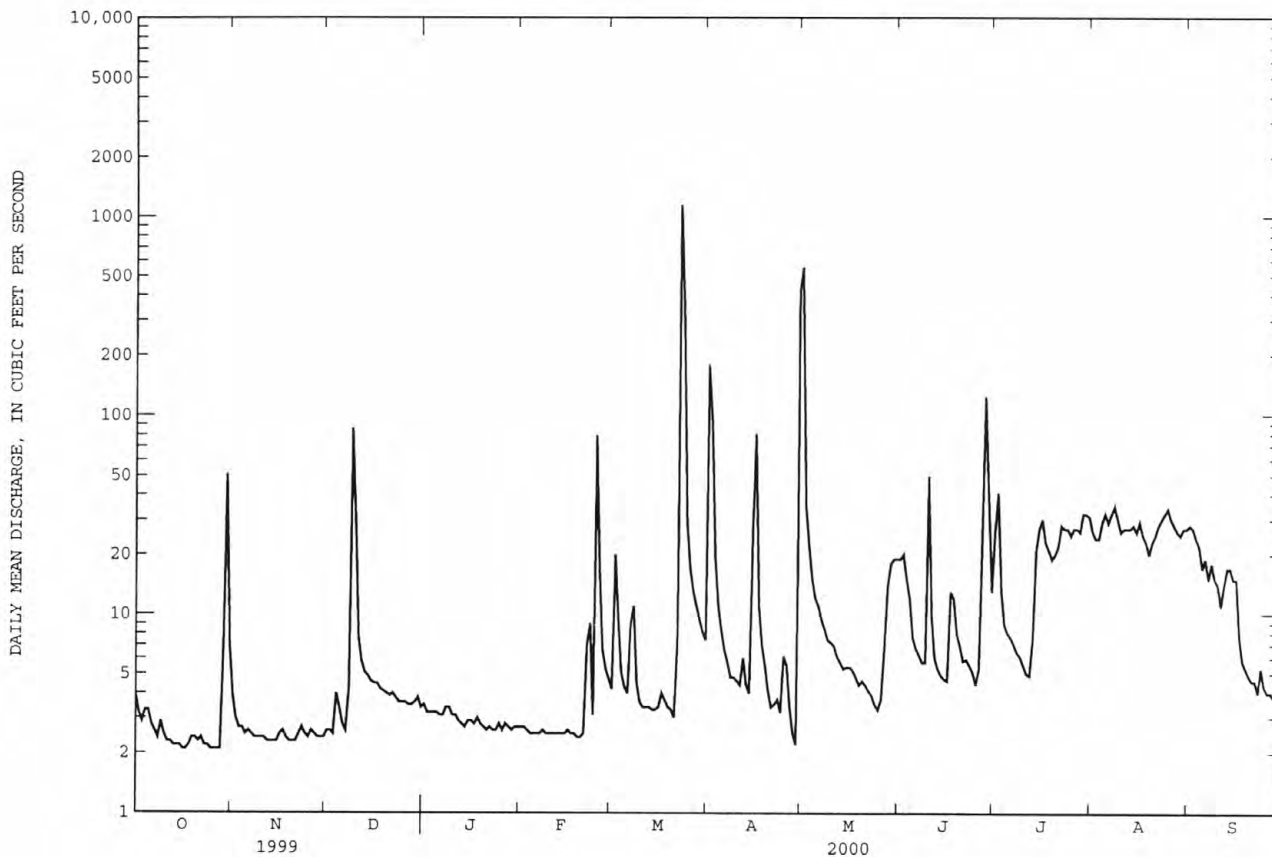
	1998	1999	2000	1998	1999	2000	1998	1999	2000	1998	1999	2000
MEAN	4.73	6.54	5.43	3.47	5.55	30.3	20.2	42.0	38.5	21.3	24.7	9.74
MAX	5.11	10.6	7.46	4.02	6.33	55.5	31.6	57.0	82.6	22.4	27.5	11.8
(WY)	1999	1999	2000	1999	2000	2000	2000	1999	1999	1998	2000	2000
MIN	4.35	2.52	3.39	2.92	4.74	5.06	8.79	27.0	15.3	19.7	21.5	8.02
(WY)	2000	2000	1999	2000	1999	1999	1999	2000	2000	2000	1998	1998

RED RIVER BASIN

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07300530 BITTER CREEK NEAR MARTHA, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1998 - 2000	
ANNUAL TOTAL	7102.8		6496.8			
ANNUAL MEAN	19.5		17.8		18.8	
HIGHEST ANNUAL MEAN					19.8	
LOWEST ANNUAL MEAN					17.8	
HIGHEST DAILY MEAN	1440	Jun 23	1140	Mar 23	1440	Jun 23 1999
LOWEST DAILY MEAN	1.8	Jan 18,20	2.1	Oct 16,17,25-28	1.8	Jan 18 1999
ANNUAL SEVEN-DAY MINIMUM	1.9	Jan 15	2.2	Oct 22	1.9	Jan 15 1999
INSTANTANEOUS PEAK FLOW			2220	Mar 23	4250	Jun 23 1999
INSTANTANEOUS PEAK STAGE			12.37	Mar 23	13.04	Jun 23 1999
ANNUAL RUNOFF (AC-FT)	14090		12890		13620	
10 PERCENT EXCEEDS	28		28		28	
50 PERCENT EXCEEDS	4.6		4.6		5.5	
90 PERCENT EXCEEDS	2.3		2.4		2.5	



RED RIVER BASIN

07300580 BITTER CREEK WEST OF ALTUS, OK

LOCATION.--Lat 34°37'24", long 99°22'56", in SW 1/4 sec.23. T.2 N, R.21 W., Jackson County, Hydrologic Unit 11120202, on left bank of creek on county road, 2.8 mi west and 1.0 mi south of Altus, and at mile 7.5.

DRAINAGE AREA.--68.1 mi².

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

REVISED RECORDS.--WDR OK-00-1: 1999(M)

GAGE.--Water-stage recorder. Datum of gage is 1,331.91 ft above sea level.

REMARKS.--Records fair. Flow affected at times by irrigation from Lake Altus.

REVISIONS.-- The maximum for water year 1999 has been revised to 2,710 ft³/s, June 23, 1999, gage geight, 14.78 ft; revised daily values 1999 water year are listed below.

May 25	116	June 20	64
May 26	728	June 21	115
May 27	810	June 22	254
May 28	2070	June 23	1490
May 29	455	June 24	876
		June 25	372

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e5.0	4.6	e4.1	3.3	7.0	195	1030	23	64	32	32
2	e8.5	e4.0	4.8	e4.0	3.2	28	212	279	26	82	28	31
3	e6.0	e3.8	4.1	e3.9	3.1	37	40	41	30	40	29	25
4	e5.0	e3.7	5.3	e3.9	3.0	11	23	26	22	23	28	24
5	4.7	e3.6	6.4	e3.9	2.7	8.3	19	21	16	15	28	18
6	5.3	e3.7	5.9	e3.8	2.8	7.4	17	19	12	14	29	20
7	3.3	e3.7	5.8	e3.8	2.9	7.6	15	17	11	13	29	21
8	3.0	e3.6	3.6	e4.0	2.8	22	14	15	11	13	34	20
9	4.1	e3.5	152	e3.9	2.9	10	13	14	11	12	33	19
10	3.6	e3.6	55	e3.8	2.7	7.1	14	13	61	12	31	18
11	e3.2	3.6	e18	e3.6	e2.8	6.2	13	13	27	10	29	14
12	e2.9	3.5	e9.8	e3.5	e2.9	6.0	26	12	12	13	29	15
13	e2.9	3.5	e7.0	3.4	3.1	5.9	14	11	9.8	19	27	19
14	e2.8	3.7	e6.2	e3.3	3.2	6.2	12	11	9.4	33	28	20
15	e2.8	3.9	e6.2	3.2	2.9	5.9	12	11	9.2	31	26	19
16	e2.7	4.0	e6.0	3.4	2.6	6.0	129	11	9.9	29	28	18
17	e2.7	4.1	e6.0	3.2	2.9	7.1	26	11	44	33	29	13
18	e2.6	4.1	e5.8	3.2	3.0	6.7	15	10	23	26	27	10
19	e2.7	4.0	e5.6	3.4	2.6	6.0	13	9.7	27	23	26	8.8
20	e2.8	4.1	e5.4	3.1	2.5	5.6	12	9.8	17	25	26	8.4
21	e2.8	4.3	e5.2	3.2	2.7	5.5	10	10	12	22	23	8.1
22	e2.8	4.7	e5.3	3.4	3.3	7.2	10	9.7	9.6	25	25	e8.1
23	e2.9	4.9	e5.2	3.5	8.6	1250	11	9.9	11	29	27	e8.0
24	e2.8	4.9	e5.0	3.4	5.9	1590	9.9	9.3	9.8	29	29	e7.5
25	e2.7	4.9	e4.8	3.6	91	84	10	6.9	9.4	31	33	e8.0
26	e2.6	5.1	e4.5	4.1	45	33	14	11	9.4	29	29	e8.1
27	e2.6	5.2	e4.3	4.4	12	24	11	8.3	14	34	30	8.1
28	e2.6	4.9	e4.0	3.5	8.6	21	9.8	13	182	32	26	7.5
29	e10	4.3	e4.0	3.3	7.8	19	8.8	20	99	35	25	6.8
30	84	4.2	e4.1	3.2	---	16	195	23	24	39	26	6.2
31	e10	---	e4.2	3.2	---	15	---	21	---	37	27	---
TOTAL	209.4	124.1	374.1	111.2	242.8	3271.7	1123.5	1726.6	791.5	872	876	449.6
MEAN	6.75	4.14	12.1	3.59	8.37	106	37.5	55.7	26.4	28.1	28.3	15.0
MAX	84	5.2	152	4.4	91	1590	212	1030	182	82	34	32
MIN	2.6	3.5	3.6	3.1	2.5	5.5	8.8	6.9	9.2	10	23	6.2
AC-FT	415	246	742	221	482	6490	2230	3420	1570	1730	1740	892

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2000, BY WATER YEAR (WY)

MEAN	6.22	10.1	10.4	8.46	7.82	56.5	24.2	59.7	50.6	25.4	32.1	15.2
MAX	6.75	16.1	12.1	13.3	8.37	106	37.5	94.2	101	28.1	40.4	20.5
(WY)	2000	1999	2000	1999	2000	2000	2000	1999	1999	2000	1999	1999
MIN	5.68	4.14	8.69	3.59	7.25	7.52	11.0	29.1	24.6	22.3	27.7	10.1
(WY)	1999	2000	1999	2000	1999	1999	1999	1998	1998	1999	1998	1998

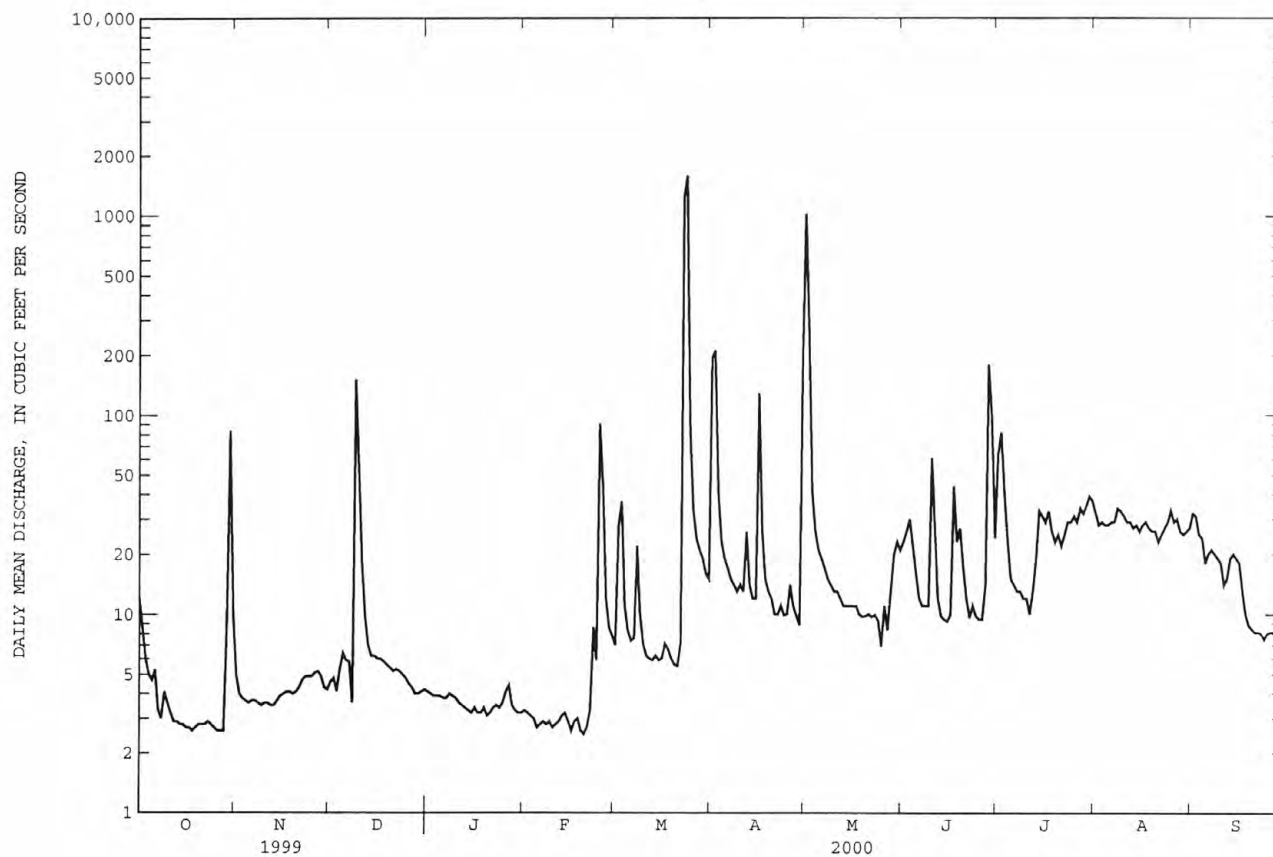
e Estimated

RED RIVER BASIN

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07300580 BITTER CREEK WEST OF ALTUS, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1998 - 2000	
ANNUAL TOTAL	12975.7		10172.5		28.4	
ANNUAL MEAN	35.5		27.8		29.1	
HIGHEST ANNUAL MEAN					27.8	
LOWEST ANNUAL MEAN					27.8	
HIGHEST DAILY MEAN	2070	May 28	1590	Mar 24	1590	Mar 24 2000
LOWEST DAILY MEAN	2.6	Oct 18	2.5	Feb 20	2.5	Feb 20 2000
ANNUAL SEVEN-DAY MINIMUM	2.7	Oct 22	2.7	Oct 22	2.7	Oct 22 1999
INSTANTANEOUS PEAK FLOW			2730	Mar 23	2730	Mar 23 2000
INSTANTANEOUS PEAK STAGE			14.79	Mar 23	14.79	Mar 23 2000
ANNUAL RUNOFF (AC-FT)	25740		20180		20600	
10 PERCENT EXCEEDS	41		32		37	
50 PERCENT EXCEEDS	9.5		9.8		11	
90 PERCENT EXCEEDS	4.0		3.1		3.9	



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 west of Elmer, and at mile 3.5.

DRAINAGE AREA.--1,878 mi², of which 209 mi² is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,258.55 ft above sea level.

REMARKS.--No estimated daily discharge. Records fair. Low flows sustained at times by irrigation returns from Lake Altus.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	65	18	40	37	47	448	1520	49	577	87	51
2	28	44	19	39	39	49	1350	1310	71	1420	78	81
3	17	32	21	38	41	114	703	637	209	1140	76	96
4	17	27	26	35	40	72	325	431	156	449	79	72
5	15	24	25	39	39	143	228	330	333	244	58	60
6	13	23	26	37	35	105	190	266	211	167	61	52
7	12	22	26	35	34	84	162	221	142	125	59	57
8	16	20	30	37	33	88	132	186	97	96	72	66
9	1020	19	543	39	32	89	115	158	74	78	59	49
10	225	18	491	41	31	72	103	140	84	58	63	49
11	81	17	166	39	30	64	90	124	165	55	57	43
12	50	17	90	40	29	62	110	107	97	62	61	37
13	35	17	69	40	29	61	114	97	70	60	57	44
14	28	16	60	39	29	59	117	87	68	81	57	56
15	24	16	54	38	29	57	131	80	54	86	50	57
16	22	16	49	39	29	59	279	73	38	77	45	49
17	20	16	49	38	28	64	264	67	209	74	47	43
18	19	17	46	37	28	63	144	60	133	57	48	36
19	19	16	45	38	26	62	112	55	231	50	52	32
20	19	17	45	36	26	63	96	52	240	45	55	22
21	19	17	45	37	27	60	91	49	153	46	74	14
22	19	17	45	37	35	66	88	45	144	48	54	11
23	18	17	43	37	52	2270	82	40	119	57	47	11
24	18	17	44	36	45	4460	79	36	95	55	61	144
25	18	17	43	37	92	1690	91	31	72	64	59	41
26	18	18	43	36	221	675	88	30	59	76	75	24
27	18	19	41	36	74	428	94	85	61	67	63	22
28	17	18	41	36	66	311	100	70	403	79	65	17
29	17	18	40	35	56	245	86	73	527	75	52	17
30	533	18	41	35	---	190	524	80	493	93	45	18
31	169	---	40	37	---	157	---	59	---	92	53	---
TOTAL	2586	635	2364	1163	1312	12029	6536	6599	4857	5753	1869	1371
MEAN	83.4	21.2	76.3	37.5	45.2	388	218	213	162	186	60.3	45.7
MAX	1020	65	543	41	221	4460	1350	1520	527	1420	87	144
MIN	12	16	18	35	26	47	79	30	38	45	45	11
AC-FT	5130	1260	4690	2310	2600	23860	12960	13090	9630	11410	3710	2720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2000, BY WATER YEAR (WY)

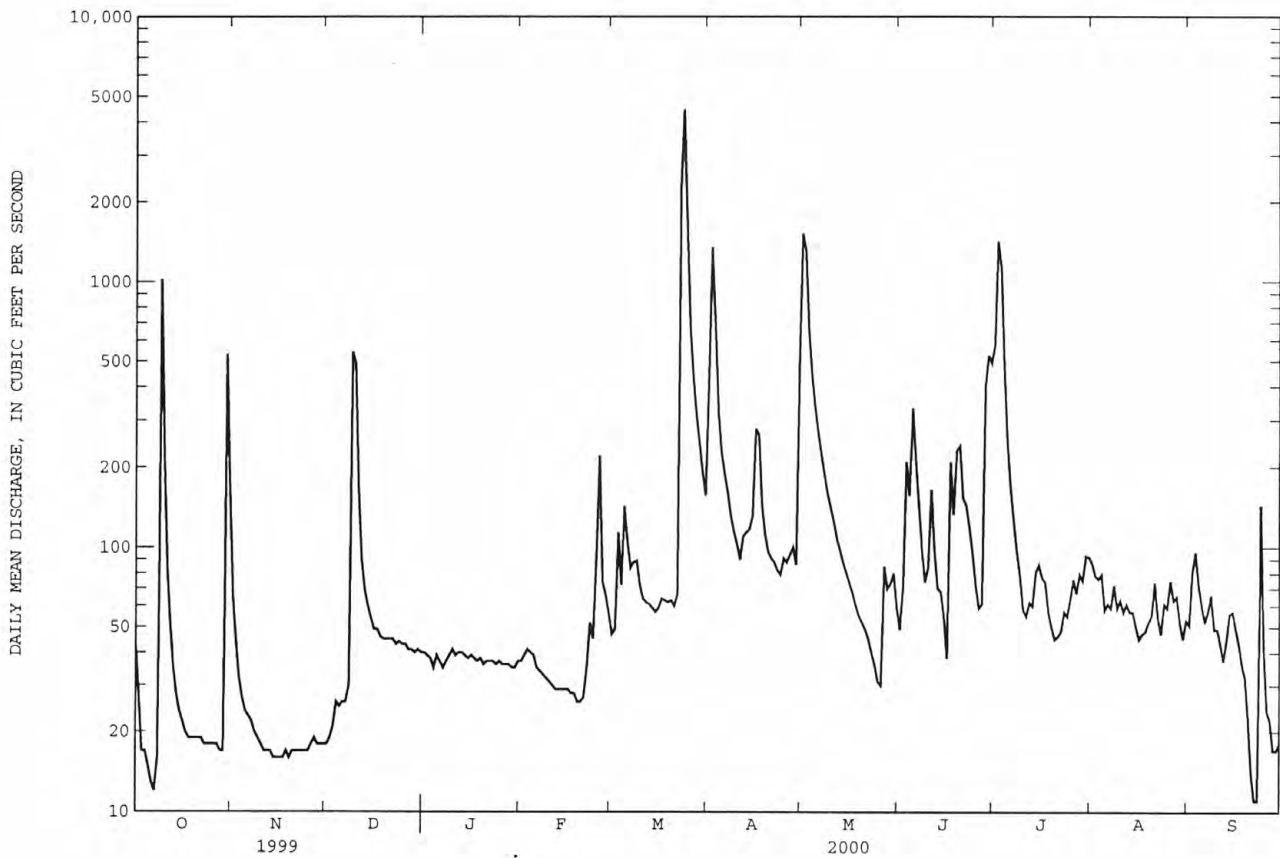
	MEAN	246	132	135	126	168	213	279	563	670	190	283	203
MAX	1828	680	701	362	697	1100	2108	2566	2836	641	1681	950	
(WY)	1987	1987	1992	1993	1997	1998	1997	1980	1995	1993	1995	1986	
MIN	3.79	4.72	16.5	13.3	13.7	21.1	13.9	7.51	61.1	9.25	4.19	7.90	
(WY)	1985	1985	1983	1981	1981	1982	1982	1984	1994	1981	1981	1981	

RED RIVER BASIN

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07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1980 - 2000	
ANNUAL TOTAL	62421		47074		267	
ANNUAL MEAN	171		129		594	1997
HIGHEST ANNUAL MEAN					71.2	1983
HIGHEST DAILY MEAN	3520	Jun 25	4460	Mar 24	28200	Aug 3 1995
LOWEST DAILY MEAN	12	Oct 7	11	Sep 22,23	.08	Sep 4 1981
ANNUAL SEVEN-DAY MINIMUM	16	Nov 13	16	Nov 13	.12	Aug 30 1981
INSTANTANEOUS PEAK FLOW			5030	Mar 24	44900	Oct 20 1983
INSTANTANEOUS PEAK STAGE			6.96	Mar 24	^a 16.06	May 29 1987
ANNUAL RUNOFF (AC-FT)	123800		93370		193700	
10 PERCENT EXCEEDS	279		226		469	
50 PERCENT EXCEEDS	87		55		85	
90 PERCENT EXCEEDS	18		18		15	

^aFrom high-water mark.

RED RIVER BASIN

07301420 SWEETWATER CREEK NEAR SWEETWATER, OK

LOCATION.--Lat 35°25'20", long 99°58'08", in NW 1/4 NE 1/4 sec.20, T.11 N, R.26 W., Roger Mills-Beckham County line, Hydro-logic Unit 11120302, on right bank downstream bridge piling of State Highway 152, 0.4 mi downstream from Freezeout Creek, 3.3 mi west of Sweetwater, and at mile 16.0.

DRAINAGE AREA.--424 mi², of which 20 mi² is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 2,087.76 ft above sea level.

REMARKS.--Records good. U.S. Bureau of Reclamations' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	6.9	14	21	25	22	64	34	10	122	11	.84
2	4.3	7.3	14	20	24	32	94	34	27	90	9.7	.76
3	3.9	7.8	15	21	24	57	79	35	35	75	8.9	.73
4	4.0	8.3	16	21	23	44	62	34	40	62	8.3	.71
5	4.3	8.4	21	22	23	37	54	33	37	51	7.4	.67
6	4.3	8.8	22	21	23	32	48	32	27	44	6.7	.66
7	4.1	9.2	22	21	24	30	42	31	22	39	6.4	.67
8	3.7	9.6	24	21	23	33	38	28	18	35	6.0	.68
9	3.8	9.9	25	22	23	34	37	26	15	31	5.6	.67
10	3.8	10	24	21	22	31	37	24	19	28	5.3	.66
11	3.7	11	23	21	22	28	35	24	64	25	4.9	.64
12	3.7	11	22	21	22	26	37	22	107	24	4.4	.62
13	3.6	11	22	21	22	26	40	20	99	24	4.0	.65
14	3.6	11	21	21	22	25	40	20	67	23	3.8	.63
15	3.4	11	21	21	22	25	43	19	45	21	3.4	.62
16	3.4	12	21	21	22	23	58	19	35	20	3.9	.63
17	3.5	13	21	21	21	25	64	19	43	19	3.3	.63
18	3.7	13	20	21	21	28	50	19	91	17	2.8	.63
19	4.2	12	21	22	21	28	43	17	65	16	2.6	.63
20	5.1	13	21	21	21	26	37	17	74	15	2.3	.63
21	5.9	13	21	21	22	25	33	17	58	14	2.1	.67
22	6.4	13	21	21	23	30	32	17	45	13	1.7	.70
23	6.2	14	21	21	24	117	32	16	38	13	1.5	.69
24	6.3	14	21	21	25	205	31	15	32	13	1.5	.81
25	6.3	14	21	21	37	125	38	13	28	12	1.3	.85
26	6.7	14	21	21	45	87	46	15	49	12	1.3	.87
27	6.8	14	21	22	33	71	50	15	131	11	1.2	.88
28	6.6	14	21	23	29	61	43	15	184	11	1.1	1.1
29	6.9	14	21	e22	25	54	37	14	220	12	.99	1.2
30	6.8	14	21	e21	---	49	35	13	208	11	.92	1.2
31	6.9	---	21	e23	---	48	---	11	---	12	.90	---
TOTAL	150.8	342.2	641	659	713	1484	1379	668	1933	915	125.21	22.33
MEAN	4.86	11.4	20.7	21.3	24.6	47.9	46.0	21.5	64.4	29.5	4.04	.74
MAX	6.9	14	25	23	45	205	94	35	220	122	11	1.2
MIN	3.4	6.9	14	20	21	22	31	11	10	11	.90	.62
AC-FT	299	679	1270	1310	1410	2940	2740	1320	3830	1810	248	44

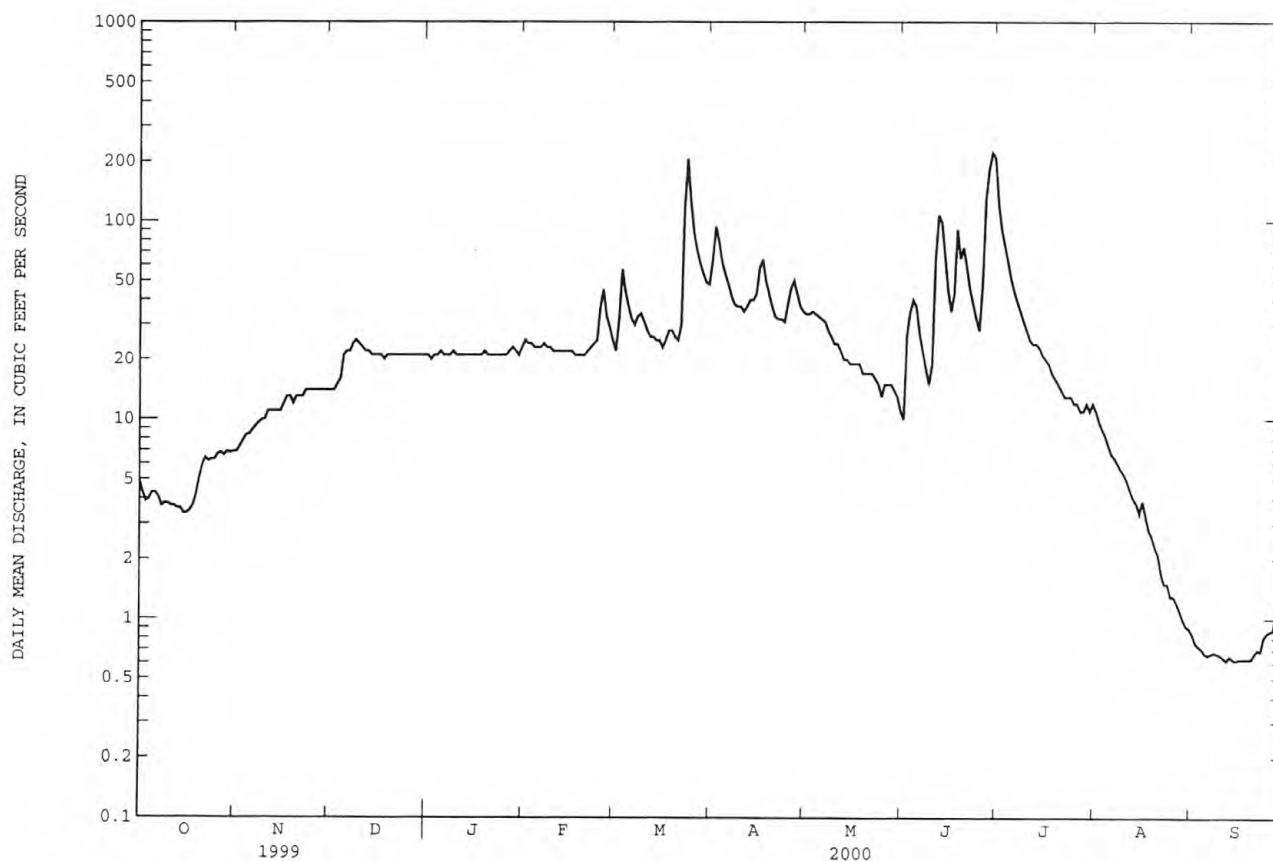
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2000, BY WATER YEAR (WY)

	MEAN	16.4	21.5	25.3	28.0	30.1	39.0	39.6	40.9	40.8	13.3	7.71	11.7
MAX	72.2	61.1	51.5	53.7	51.3	85.6	126	150	115	31.6	38.7	51.6	
(WY)	1987	1987	1998	1998	1987	1998	1997	1997	1995	1997	1995	1988	
MIN	.20	5.23	6.73	11.2	15.2	17.9	16.2	18.1	7.08	.97	.080	.084	
(WY)	1995	1995	1995	1995	1995	1991	1991	1991	1994	1994	1994	1994	

e Estimated

07301420 SWEETWATER CREEK NEAR SWEETWATER, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1986 - 2000
ANNUAL TOTAL	8971.32	9032.54	
ANNUAL MEAN	24.6	24.7	26.4
HIGHEST ANNUAL MEAN			53.0 1997
LOWEST ANNUAL MEAN			10.9 1994
HIGHEST DAILY MEAN	175 May 3	220 Jun 29	755 May 25 1997
LOWEST DAILY MEAN	.40 Sep 1,2	.62 Sep 12,15	.00 at times
ANNUAL SEVEN-DAY MINIMUM	.46 Aug 28	.63 Sep 14	.00 Sep 28 1994
INSTANTANEOUS PEAK FLOW		244 Jun 29	1940 Jun 3 1995
INSTANTANEOUS PEAK STAGE		10.42 Jun 29	15.89 Jun 3 1995
INSTANTANEOUS LOW FLOW			.00 Aug 27 1994
ANNUAL RUNOFF (AC-FT)	17790	17920	19120
10 PERCENT EXCEEDS	49	48	49
50 PERCENT EXCEEDS	21	21	20
90 PERCENT EXCEEDS	2.2	1.3	2.1



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, on left bank on downstream side of roadway on State Highway 34, 3.0 mi south of Carter, 10.8 mi downstream from Timber Creek, and at mile 110.5.

PERIOD OF RECORD.--October 1944 to September 1962. Annual maximum and occasional low-flow measurements, water years 1963-64.
August 1964 to current year.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft³/s:

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000, BY WATER YEAR (WY)

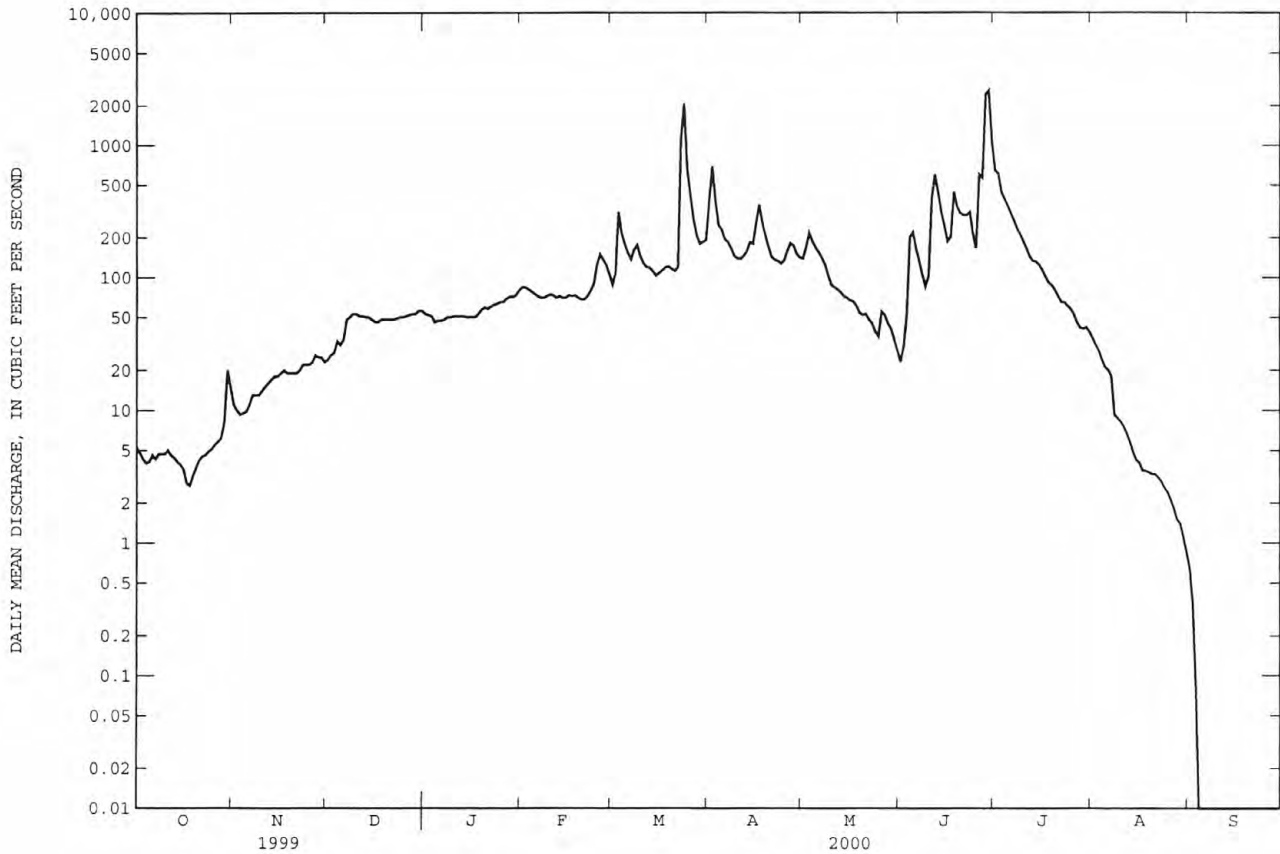
e Estimated

RED RIVER BASIN

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07301500 NORTH FORK RED RIVER NEAR CARTER, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000	
ANNUAL TOTAL	53168.9		42346.72		129	
ANNUAL MEAN	146		116		356	
HIGHEST ANNUAL MEAN					12.9	
LOWEST ANNUAL MEAN					1987	
HIGHEST DAILY MEAN	1520	Jun 1	2590	Jun 29	20700	May 26 1959
LOWEST DAILY MEAN	2.0	Sep 3,8,9	.00	Sep 4-30	.00	at times
ANNUAL SEVEN-DAY MINIMUM	2.1	Sep 3	.00	Sep 4	.00	May 24 1945
INSTANTANEOUS PEAK FLOW			3450	Jun 29	53400	May 26 1959
INSTANTANEOUS PEAK STAGE			7.42	Jun 29	15.08	Jun 4 1995
ANNUAL RUNOFF (AC-FT)	105500		83990		93230	
10 PERCENT EXCEEDS	334		236		227	
50 PERCENT EXCEEDS	111		53		38	
90 PERCENT EXCEEDS	4.3		2.3		.00	



RED RIVER BASIN

07302500 LAKE ALTUS AT LUGERT, OK

LOCATION.--Lat 34°53'08", long 99°17'43", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.22, T.5 N., R.20 W., Kiowa County, Hydrologic Unit 11120302, on upstream face of Altus Dam on North Fork Red River, 1.0 mi west of Lugert, 2.6 mi upstream from Elm Fork of North Fork, and at mile 73.5.

DRAINAGE AREA.--2,515 mi², of which 399 mi² 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 sea level (levels by U.S. 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, 134,500 acre-ft at elevation 1,559.0 ft, crest of uncontrolled spillway, and 72,400 acre-ft at elevation 1,547.0 ft, crest of controlled spillway. Dead storage, 1,660 acre-ft below elevation 1,517.5 ft, 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. 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. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 170,600 acre-ft, May 19, 1951, elevation 1,562.10 ft; minimum after initial storage, 4,690 acre-ft, Aug. 25, 1944, elevation, 1,520.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 139,100 acre-ft, July 6, elevation 1,559.72 ft; minimum, 42,360 acre-ft, Sept. 28, elevation, 1,538.59 ft.

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

1520	3,844	1540	46,780
1525	10,710	1548	76,580
1529	18,130	1559	134,500
1534	29,620	1563	161,000

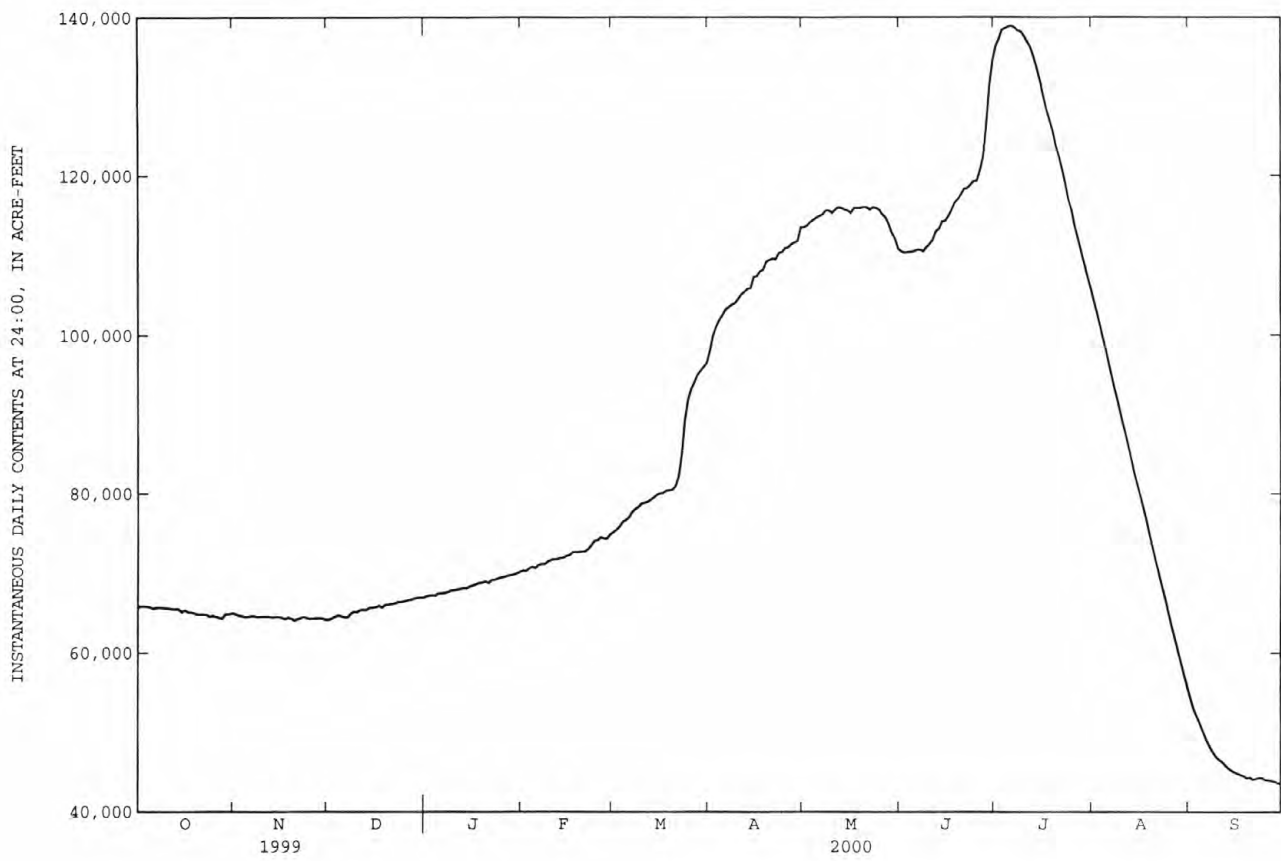
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65700	64930	64160	67070	70300	75130	98000	113500	110500	136300	104400	54300
2	65850	64690	64310	67180	70260	75470	99940	113700	110300	137200	102900	53010
3	65810	64650	64540	67220	70590	75850	101100	114100	110400	138400	101300	52020
4	65810	64500	64690	67180	70790	76450	101900	114400	110400	138600	99530	51140
5	65700	64460	64580	67460	70630	76660	102500	114700	110500	138800	98000	50160
6	65540	64580	64420	67460	71040	77010	103200	114900	110700	138900	96280	49170
7	65700	64620	64460	67500	71160	77660	103500	115100	110700	138700	94580	48340
8	65660	64460	64930	67620	71120	78050	103800	115600	110500	138300	92850	47620
9	65620	64500	65160	67810	71490	78310	104000	115600	111000	138200	91290	47010
10	65620	64500	65080	67850	71650	78750	104500	115300	111400	137600	89510	46590
11	65580	64500	65350	67930	71780	78840	105100	115700	111900	136900	87990	46330
12	65500	64500	65390	68010	71740	78970	105400	116000	113000	136200	86250	45920
13	65500	64420	65350	68130	71940	79240	105800	115900	113300	135000	84500	45500
14	65470	64460	65660	68090	71940	79550	105900	115700	114200	133600	82630	45220
15	65120	64460	65660	68330	72190	79860	107300	115600	114300	132100	81140	44970
16	65350	64420	65700	68450	72270	80030	107400	115300	114900	130200	79630	44810
17	65080	64230	65890	68610	72640	80080	108000	115900	115700	128500	78050	44650
18	65080	64420	65660	68770	72640	80390	108200	115900	116600	127100	76450	44500
19	64960	64310	66010	68810	72640	80430	109200	115900	117000	125700	74660	44250
20	64810	64040	66050	68970	72730	80520	109400	116000	117600	123800	72990	44310
21	64850	64230	66120	68770	72730	80960	109600	116000	118300	122400	71330	44090
22	64850	64380	66160	69130	73060	82220	109500	115700	118400	120800	69730	44150
23	64770	64460	66360	69170	73520	85000	110300	116000	118800	119000	68170	44250
24	64540	64380	66360	69330	74070	89320	110400	115900	119300	116900	66710	44280
25	64650	64270	66470	69460	74150	91820	110900	115700	119300	115600	64960	44000
26	64500	64310	66550	69500	74530	93190	111000	115100	120600	113600	63320	43930
27	64420	64350	66630	69660	74320	94030	111400	114700	122300	112100	61820	43900
28	64310	64350	66790	69740	74360	94970	111600	113900	126200	110500	60290	43840
29	64850	64310	66870	69820	74910	95520	111800	112800	131200	109000	58710	43620
30	64850	64120	66950	69940	---	95980	113500	112100	134400	107400	57160	43530
31	64930	---	66910	70140	---	96480	---	110800	---	106000	55740	---
MAX	65850	64930	66950	70140	74910	96480	113500	116000	134400	138900	104400	54300
MIN	64310	64040	64160	67070	70260	75130	98000	110800	110300	106000	55740	43530
(+)	1545.14	1544.93	1545.65	1546.46	1547.61	1552.27	1555.47	1554.98	1558.99	1554.09	1542.65	1538.97
(++)	-1080	-810	+2790	+3230	+4770	+21570	+17020	-2700	+23600	-28400	-50260	-12210
CAL YR 1999	MAX 140000	MIN 61970	(++)	+5430								
WTR YR 2000	MAX 138900	MIN 43530	(++)	-22480								

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-FEET

07302500 LAKE ALTUS AT LUGERT, OK--Continued



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 downstream from Altus Dam, 1.9 mi upstream from Elm Fork of North Fork, 2.0 mi west of Lugert, and at mile 72.8.

DRAINAGE AREA.--2,515 mi², of which 399 mi² 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 above sea level. Mar. 19, 1930 to Dec. 21, 1932, nonrecording gage at former Lugert Dam, 0.7 mi upstream at datum 1,504.31 ft National Geodetic Vertical Datum of 1929, unadjusted.

REMARKS.--No estimated daily discharge. Records poor. Some regulation at low flow by Lugert Lake prior to December 1943, capacity 13,500 acre-ft 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. Period of statistical summary includes seepage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 16, 1928, reached a stage of 14.5 ft, site and datum in use 1930-32, discharge, 14,300 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

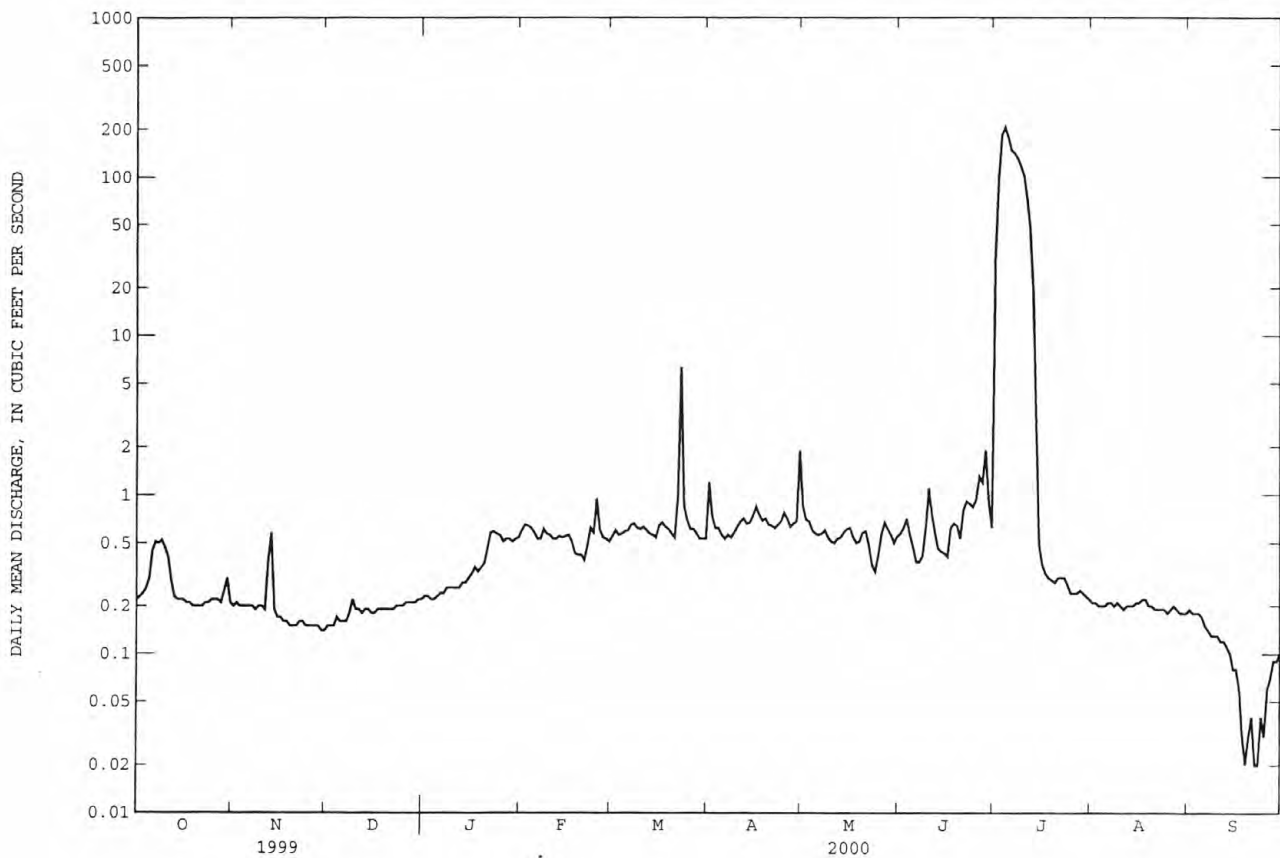
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.20	.15	.23	.60	.55	1.2	.85	.57	31	.21	.19
2	.23	.21	.15	.23	.65	.60	.73	.70	.62	98	.21	.18
3	.24	.20	.15	.22	.64	.56	.62	.68	.71	184	.20	.18
4	.26	.20	.17	.22	.62	.57	.62	.60	.56	204	.20	.18
5	.30	.20	.16	.22	.58	.59	.56	.57	.47	178	.20	.17
6	.45	.20	.16	.24	.53	.60	.53	.56	.38	147	.21	.15
7	.51	.20	.16	.24	.53	.65	.56	.57	.38	141	.21	.14
8	.50	.19	.18	.26	.61	.66	.54	.60	.41	131	.20	.13
9	.52	.20	.22	.26	.57	.62	.58	.54	.61	117	.21	.13
10	.47	.20	.19	.26	.56	.61	.63	.51	1.1	102	.20	.13
11	.41	.19	.19	.26	.53	.63	.68	.50	.76	73	.19	.12
12	.29	.39	.18	.26	.53	.60	.71	.53	.58	47	.20	.12
13	.23	.58	.19	.28	.55	.57	.66	.54	.46	19	.20	.11
14	.22	.19	.19	.28	.54	.56	.67	.58	.44	2.6	.20	.10
15	.22	.17	.18	.30	.55	.54	.74	.61	.43	.48	.21	.08
16	.22	.17	.18	.32	.56	.64	.84	.62	.41	.36	.21	.08
17	.21	.16	.19	.35	.51	.67	.75	.54	.62	.32	.22	.06
18	.21	.16	.19	.33	.43	.63	.69	.50	.66	.30	.22	.03
19	.20	.15	.19	.35	.42	.61	.71	.51	.64	.29	.20	.02
20	.20	.15	.19	.37	.42	.57	.65	.58	.53	.28	.20	.03
21	.20	.15	.19	.46	.39	.54	.64	.59	.80	.30	.19	.04
22	.20	.16	.19	.58	.48	.96	.62	.48	.91	.30	.19	.02
23	.21	.16	.20	.59	.62	6.3	.65	.36	.88	.30	.19	.02
24	.21	.15	.20	.57	.58	.85	.68	.33	.84	.27	.19	.04
25	.22	.15	.20	.56	.95	.69	.77	.42	.93	.24	.18	.03
26	.22	.15	.21	.51	.60	.61	.71	.57	1.3	.24	.19	.06
27	.22	.15	.21	.53	.54	.61	.63	.67	1.2	.24	.20	.07
28	.21	.15	.21	.53	.53	.57	.66	.61	1.9	.25	.19	.09
29	.25	.14	.21	.51	.51	.53	.68	.56	.89	.24	.18	.09
30	.30	.14	.22	.53	---	.53	1.9	.50	.62	.23	.18	.10
31	.21	---	.22	.54	---	.53	---	.55	---	.22	.18	---
TOTAL	8.56	5.81	5.82	11.40	16.13	24.75	21.61	17.33	21.61	1479.46	6.16	2.89
MEAN	.28	.19	.19	.37	.56	.80	.72	.56	.72	47.7	.20	.096
MAX	.52	.58	.22	.59	.95	6.3	1.9	.85	1.9	204	.22	.19
MIN	.20	.14	.15	.22	.39	.53	.33	.33	.38	.22	.18	.02
AC-FT	17	12	12	23	32	49	43	34	43	2930	12	5.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2000, BY WATER YEAR (WY)

	MEAN	6.79	44.0	41.9	42.2	68.6	107	134	175	173	11.9	24.5	.62
MAX	101	698	389	324	477	803	1828	1049	1109	69.7	550	2.58	
(WY)	1987	1987	1998	1998	1998	1998	1997	1993	1989	1987	1995	1990	
MIN	.000	.000	.000	.010	.060	.002	.000	.000	.000	.000	.000	.000	.000
(WY)	1983	1982	1982	1986	1984	1982	1982	1982	1984	1982	1982	1980	

07303000 NORTH FORK RED RIVER BELOW ALTUS DAM, NEAR LUGERT, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1978 - 2000
ANNUAL TOTAL	13488.77	1621.53	
ANNUAL MEAN	37.0	4.43	68.9
HIGHEST ANNUAL MEAN			379
LOWEST ANNUAL MEAN			.022
HIGHEST DAILY MEAN	1240	204	6300
LOWEST DAILY MEAN	.13	.02	.00
ANNUAL SEVEN-DAY MINIMUM	.14	.03	.00
INSTANTANEOUS PEAK FLOW		214	^a 6380
INSTANTANEOUS PEAK STAGE		6.40	^b 13.76
ANNUAL RUNOFF (AC-FT)	26750	3220	49940
10 PERCENT EXCEEDS	55	.73	175
50 PERCENT EXCEEDS	.36	.38	.81
90 PERCENT EXCEEDS	.18	.15	.00

^aMaximum discharge for period of record, 16,000 ft³/s, May 18, 1951.^bMaximum gage height for period of record, 16.37 ft, May 21, 1977 (backwater from Elm Fork of the North Fork Red River).

LOCATION.--Lat 35°00'42", long 99°54'12", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ 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 northeast of Carl, and at mile 54.0.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1731: Drainage area.

REMARKS.--Records poor Oct. 1 to June 30 due to lack of measurements and funding; records fair July 1 to Sept. 30. Satellite
telemeter at station.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
No peak greater than base discharge.							

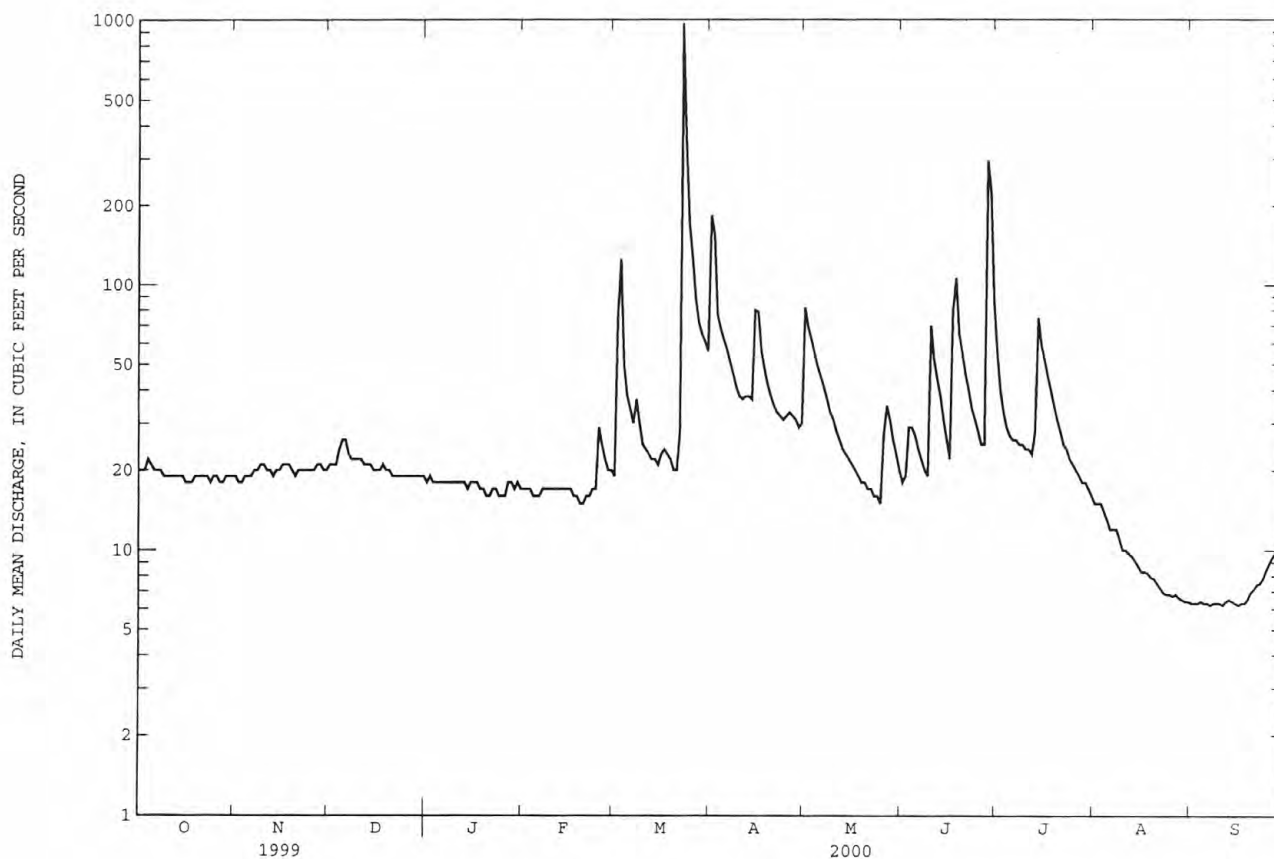
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	19	21	18	17	19	184	82	18	e56	15	6.3
2	20	18	21	19	17	76	156	69	19	e40	15	6.3
3	20	18	21	18	17	125	77	62	29	e33	15	6.3
4	22	19	24	18	16	50	68	55	29	e29	14	6.4
5	21	19	26	18	16	38	62	49	27	e27	13	6.3
6	20	19	26	18	16	34	57	45	24	e26	12	6.3
7	20	20	23	18	17	30	51	41	22	e26	12	6.2
8	20	20	22	18	17	37	46	37	20	e25	12	6.3
9	19	21	22	18	17	30	41	33	19	e25	11	6.3
10	19	21	22	18	17	25	38	31	70	e24	10	6.3
11	19	20	22	18	17	24	37	28	52	24	10	6.2
12	19	20	21	18	17	23	38	26	44	23	9.7	6.4
13	19	19	21	18	17	22	38	24	38	28	9.5	6.5
14	19	20	21	17	17	22	37	23	31	75	9.1	6.4
15	19	20	20	18	17	21	80	22	26	59	8.7	6.3
16	18	21	20	18	17	23	79	21	22	52	8.3	6.2
17	18	21	20	18	16	24	56	20	80	45	8.3	6.3
18	18	21	21	17	16	23	48	19	106	40	8.2	6.3
19	19	20	20	17	15	22	42	18	65	35	7.9	6.5
20	19	19	20	16	15	20	38	18	55	31	7.8	6.9
21	19	20	19	16	16	20	35	17	46	28	7.5	7.1
22	19	20	19	17	16	28	33	17	40	25	7.2	7.4
23	19	20	19	17	17	969	32	16	34	24	6.9	7.5
24	18	20	19	16	17	337	31	16	31	22	6.8	7.8
25	19	20	19	16	29	169	32	15	28	21	6.8	8.4
26	19	20	19	16	25	126	33	27	25	20	6.7	8.9
27	18	21	19	18	22	88	32	35	25	19	6.8	9.4
28	18	21	19	18	20	72	31	31	297	18	6.6	9.8
29	19	20	19	17	20	65	29	26	225	18	6.5	11
30	19	20	19	18	---	61	30	23	87	17	6.4	11
31	19	---	19	17	---	56	---	20	---	16	6.4	---
TOTAL	594	597	643	542	513	2679	1591	966	1634	951	291.1	215.3
MEAN	19.2	19.9	20.7	17.5	17.7	86.4	53.0	31.2	54.5	30.7	9.39	7.18
MAX	22	21	26	19	29	969	184	82	297	75	15	11
MIN	18	18	19	16	15	19	29	15	18	16	6.4	6.2
AC-FT	1180	1180	1280	1080	1020	5310	3160	1920	3240	1890	577	422

MEAN	37.2	28.9	23.4	22.2	25.0	35.0	65.0	94.7	110	29.1	38.2	48.5
MAX	208	91.0	54.9	61.4	64.7	127	351	662	844	133	171	125
(WY)	1961	1975	1960	1998	1998	1998	1997	1977	1995	1968	1995	1962
MIN	2.61	5.97	7.95	10.0	8.97	7.29	5.77	7.39	4.11	.30	.48	.98
(WY)	1971	1971	1971	1971	1972	1972	1971	1965	1970	1970	1976	1970

e Estimated

07303400 ELM FORK OF NORTH FORK RED RIVER NEAR CARL, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000	
ANNUAL TOTAL	17623.8		11216.4		46.4	
ANNUAL MEAN	48.3		30.6		107	
HIGHEST ANNUAL MEAN					1995	
LOWEST ANNUAL MEAN					10.6	
HIGHEST DAILY MEAN	730	May 26	969	Mar 23	17100	Jun 3 1995
LOWEST DAILY MEAN	8.2	Aug 1,2	6.2	Sep 7,11,16	.02	Jul 17 1971
ANNUAL SEVEN-DAY MINIMUM	8.7	Jul 29	6.3	Sep 5	.02	Jul 16 1971
INSTANTANEOUS PEAK FLOW			1780	Mar 23	62300	Jun 3 1995
INSTANTANEOUS PEAK STAGE			4.51	Mar 23	18.80	Jun 3 1995
ANNUAL RUNOFF (AC-FT)	34960		22250		33630	
10 PERCENT EXCEEDS	92		52		63	
50 PERCENT EXCEEDS	31		20		18	
90 PERCENT EXCEEDS	14		7.9		5.6	



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 east of Headrick, 12.9 mi upstream from Otter Creek, and at mile 33.0.

DRAINAGE AREA.--4,244 mi², of which 399 mi² is probably noncontributing.

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 above sea level. Prior to July 18, 1905, nonrecording gage at site 0.2 mi downstream at different datum. July 18, 1905, to Mar. 30, 1908, nonrecording gage at Navajo damsite 10.4 mi upstream at different datum. Oct. 1, 1937, to Jan. 29, 1969, water-stage recorder at present site at datum 5.0 ft higher.

REMARKS.--Records poor Oct. 1 to June 30 due to lack of measurements and funding; records fair July 1 to Sept. 30. Flow regulated since December 1943 by storage and diversion at Lake Altus, 39.5 mi upstream from station (station 07302500). Diversions for irrigation of about 48,000 acres upstream from station; some return flow may re-enter at Stinking Creek, 16 mi downstream from station. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 21.1 ft, present datum, occurred sometime prior to 1927, from information provided by Oklahoma State Highway Department.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	98	46	74	71	93	421	4400	e105	714	e56	16
2	35	74	47	74	68	103	2200	855	e100	423	e54	15
3	36	59	45	73	68	147	1760	468	e160	733	53	15
4	43	55	55	71	67	103	900	367	e130	741	52	15
5	45	52	55	71	65	186	567	326	e100	519	49	14
6	41	48	78	71	64	181	427	e285	e90	457	47	13
7	37	47	64	70	65	129	362	e260	e100	415	45	13
8	41	45	68	73	64	137	322	e215	e95	389	42	13
9	47	43	1350	71	63	221	314	e190	e90	e350	41	13
10	42	43	1640	71	63	152	292	e170	e110	e310	39	12
11	38	43	439	70	61	123	281	e160	e100	e270	37	11
12	35	43	229	70	60	105	278	e155	e100	e230	35	11
13	34	43	163	69	61	88	274	e152	e120	e180	33	11
14	34	43	134	69	61	80	273	e150	e150	e130	30	12
15	32	44	118	69	61	74	287	e148	e140	e100	29	11
16	30	42	107	70	61	70	296	145	e100	e90	28	10
17	27	41	101	70	61	73	326	e130	e200	e85	28	9.7
18	28	40	95	69	61	73	347	e128	300	e80	27	9.4
19	29	40	91	68	60	71	288	e125	1340	e76	26	9.1
20	29	40	88	66	60	72	e200	e122	658	e74	24	8.8
21	29	40	86	66	60	73	e180	e119	412	e72	24	9.4
22	31	42	85	67	69	78	e170	e104	e310	e72	23	9.8
23	31	43	84	66	113	3580	e165	e100	e250	e71	23	9.5
24	32	43	83	63	90	9380	e160	e94	e200	e69	21	26
25	31	45	82	65	88	3830	e165	e90	e190	e67	21	19
26	31	48	81	65	206	1090	e160	e91	e180	e65	21	16
27	31	46	79	69	175	690	e155	e92	e200	e63	19	14
28	30	45	78	70	154	705	e160	e90	400	e61	18	14
29	33	46	77	70	118	495	e180	e130	2090	e59	18	13
30	116	46	75	69	---	439	900	e180	1710	e59	16	13
31	175	---	74	71	---	389	---	e133	---	e58	16	---
TOTAL	1288	1427	5897	2150	2338	23030	12810	10174	10230	7082	995	385.7
MEAN	41.5	47.6	190	69.4	80.6	743	427	328	341	228	32.1	12.9
MAX	175	98	1640	74	206	9380	2200	4400	2090	741	56	26
MIN	27	40	45	63	60	70	155	90	90	58	16	8.8
AC-FT	2550	2830	11700	4260	4640	45680	25410	20180	20290	14050	1970	765

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000, BY WATER YEAR (WY)

	MEAN	362	160	140	119	176	251	346	997	814	245	179	271
MAX	5608	1743	984	793	1375	2785	5366	6104	4659	2016	2522	1675	
(WY)	1987	1987	1998	1998	1997	1998	1997	1977	1995	1950	1995	1965	
MIN	.000	.000	.20	.84	4.06	4.27	.64	.31	10.3	.25	.000	.000	
(WY)	1953	1953	1955	1953	1953	1955	1971	1953	1966	1970	1952	1952	

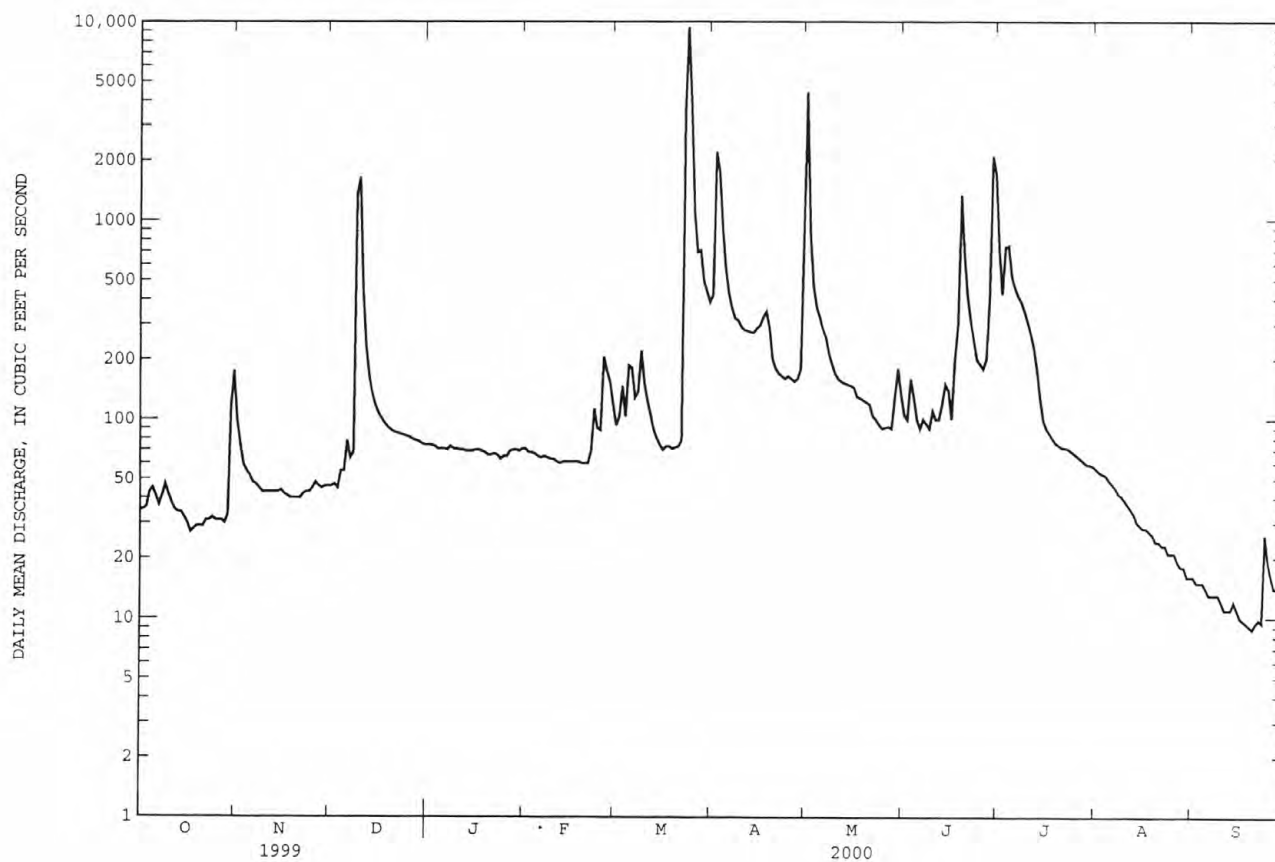
e Estimated

RED RIVER BASIN

43

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000	
ANNUAL TOTAL	110625		77806.7		^a 339	
ANNUAL MEAN	303		213		1562	
HIGHEST ANNUAL MEAN					50.0	
LOWEST ANNUAL MEAN					41600	
HIGHEST DAILY MEAN	6810	May 28	9380	Mar 24	1970	1987
LOWEST DAILY MEAN	27	Oct 17	8.8	Sep 20	May 10 1993	
ANNUAL SEVEN-DAY MINIMUM	29	Oct 16	9.4	Sep 17	at times	
INSTANTANEOUS PEAK FLOW			10400	Mar 24	59000	Aug 2 1946
INSTANTANEOUS PEAK STAGE			13.23	Mar 24	19.07	Oct 4 1986
ANNUAL RUNOFF (AC-FT)	219400		154300		245500	Oct 4 1986
10 PERCENT EXCEEDS	576		374		602	
50 PERCENT EXCEEDS	92		71		64	
90 PERCENT EXCEEDS	40		21		6.6	

^aPrior to regulation water years 1906-07, 1938-43 455 ft³/s.^bNo flow at times in most years.

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 sec.16, T.3 N., R.17 W., Kiowa County, Hydrologic Unit 11120303, near east end of Snyder Dam, 0.8 mi upstream from small tributary, 3 mi northwest of Mountain Park, and at mile 26.0.

DRAINAGE AREA.--132 mi².

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. WDR OK-78-2: 1977.

GAGE.--Water-stage recorder and broad-crested masonry spillway. Datum of gage is 1,361.06 ft above sea level. April 1903 to March 1908, nonrecording gage at site 1.8 mi downstream at different datum. October 1951 to September 1971 at intake tower at same site and datum. July 1972 to August 1976, 700 ft downstream at datum 1,344.00 ft.

REMARKS.--No estimated daily discharge. Records poor. The city of Snyder diverted about 130 acre-ft annually prior to October 1958 and none thereafter. Flow completely regulated since June 1975 by Tom Steed Reservoir.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.50	1.4	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.58	.84	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.38	.50	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.20	.50	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.20	.21	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.20	.20	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.14	.20	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
16	.00	.00	.04	.00	.00	.00	.07	.00	.00	.00	.00	.00
17	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	6.5	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	1.1	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.69	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.20	3.7	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.20	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.25	0.00	0.00	11.42	6.17	4.06	0.00	0.00	0.00	0.00
MEAN	.0000	.0000	.0008	.0000	.0000	.37	.21	.13	.0000	.0000	.0000	.0000
MAX	.00	.00	.10	.00	.00	6.5	3.7	1.4	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.5	.00	.00	23	12	8.1	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2000, BY WATER YEAR (WY)

	MEAN	8.69	14.3	9.81	2.95	9.91	13.1	4.96	36.6	42.3	4.63	5.17	4.25
MAX		105	252	143	61.9	180	165	39.6	384	421	71.6	123	65.6
(WY)		1987	1987	1993	1993	1987	1988	1998	1987	1987	1982	1995	1995
MIN		.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000
(WY)		1976	1976	1976	1976	1977	1977	1977	1979	1988	1976	1976	1976

RED RIVER BASIN

07307010 OTTER CREEK NEAR SNYDER, OK

LOCATION.--Lat 34°38'16", long 98°59'54", in NW 1/4 sec.21. T.2 N, R.17 W., Kiowa County, Hydrologic Unit 11120303, on downstream right abutment of bridge on State Highway 62, 1.5 miles downstream from confluence of West and East Otter Creeks, 3.5 miles southwest of Snyder and at mile 18.0.

DRAINAGE AREA.--217 mi².

PERIOD OF RECORD.--July to September 2000. September 1984 to June 2000 operated as high flow site, records available in district office.

GAGE.--Water-stage recorder. Datum of gage is 1,310.00 ft above sea level.

REMARKS.--Records poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 5, 1996 reached a stage of 15.22 ft.

EXTREMES FOR CURRENT PERIOD.--(July to September) Maximum discharge, 21 ft³/s, July 3, gage height, 6.79 ft; minimum daily discharge, no flow, Aug. 2 to Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

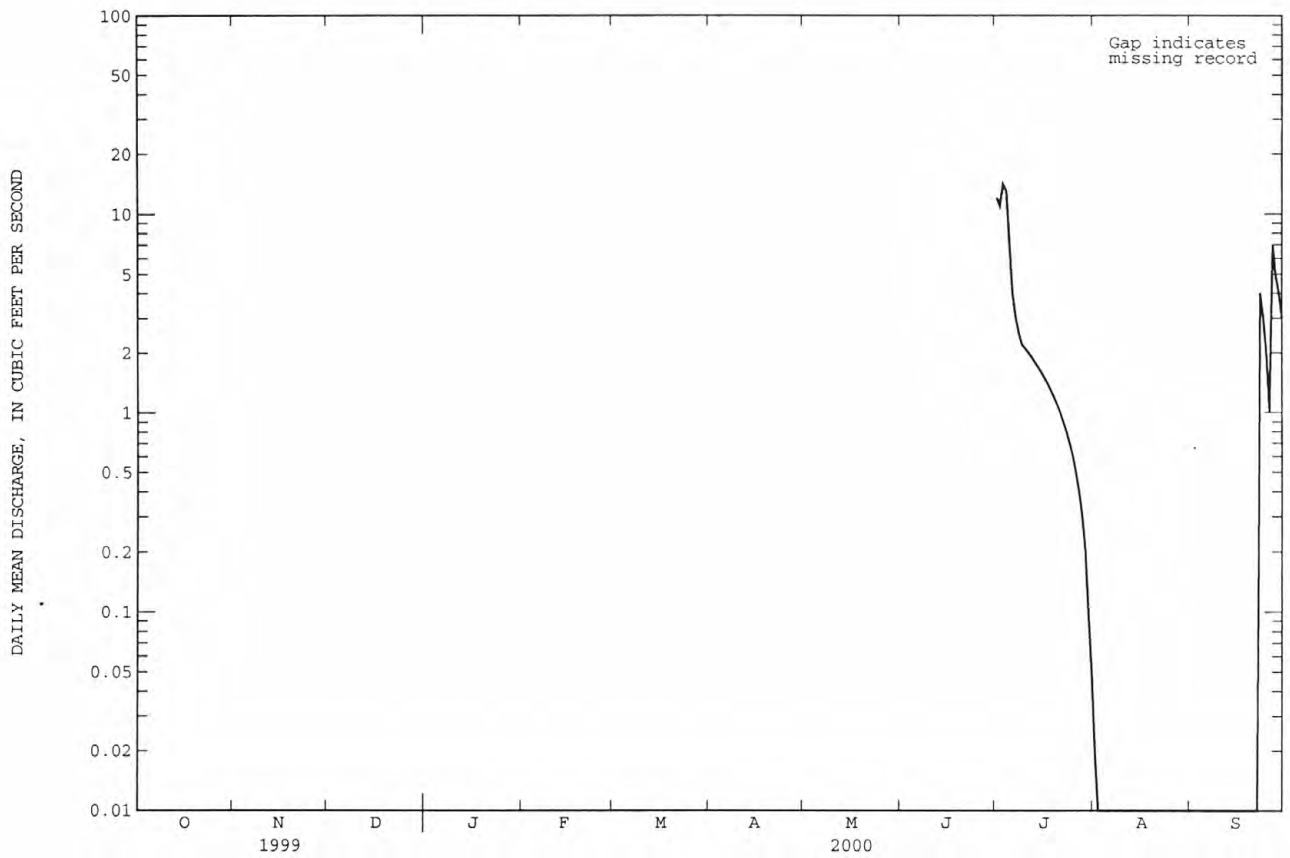
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	12	e.02	e.00
2	---	---	---	---	---	---	---	---	---	11	e.00	e.00
3	---	---	---	---	---	---	---	---	---	14	e.00	e.00
4	---	---	---	---	---	---	---	---	---	13	e.00	e.00
5	---	---	---	---	---	---	---	---	---	6.9	e.00	e.00
6	---	---	---	---	---	---	---	---	---	e4.0	e.00	e.00
7	---	---	---	---	---	---	---	---	---	e3.0	e.00	e.00
8	---	---	---	---	---	---	---	---	---	e2.5	e.00	e.00
9	---	---	---	---	---	---	---	---	---	e2.2	e.00	e.00
10	---	---	---	---	---	---	---	---	---	e2.1	e.00	e.00
11	---	---	---	---	---	---	---	---	---	e2.0	e.00	e.00
12	---	---	---	---	---	---	---	---	---	e1.9	e.00	e.00
13	---	---	---	---	---	---	---	---	---	e1.8	e.00	e.00
14	---	---	---	---	---	---	---	---	---	e1.7	e.00	e.00
15	---	---	---	---	---	---	---	---	---	e1.6	e.00	e.00
16	---	---	---	---	---	---	---	---	---	e1.5	e.00	e.00
17	---	---	---	---	---	---	---	---	---	e1.4	e.00	e.00
18	---	---	---	---	---	---	---	---	---	e1.3	e.00	e.00
19	---	---	---	---	---	---	---	---	---	e1.2	e.00	e.00
20	---	---	---	---	---	---	---	---	---	e1.1	e.00	e.00
21	---	---	---	---	---	---	---	---	---	e1.0	e.00	e.00
22	---	---	---	---	---	---	---	---	---	e.90	e.00	e.00
23	---	---	---	---	---	---	---	---	---	e.80	.00	e4.0
24	---	---	---	---	---	---	---	---	---	e.70	e.00	e3.0
25	---	---	---	---	---	---	---	---	---	e.60	e.00	e2.0
26	---	---	---	---	---	---	---	---	---	e.50	e.00	e1.0
27	---	---	---	---	---	---	---	---	---	e.40	e.00	7.0
28	---	---	---	---	---	---	---	---	---	e.30	e.00	e5.0
29	---	---	---	---	---	---	---	---	---	e.20	e.00	e4.0
30	---	---	---	---	---	---	---	---	---	e.10	e.00	e3.0
31	---	---	---	---	---	---	---	---	---	e.05	e.00	---
TOTAL	---	---	---	---	---	---	---	---	---	91.75	0.02	29.00
MEAN	---	---	---	---	---	---	---	---	---	2.96	.001	.97
MAX	---	---	---	---	---	---	---	---	---	14	.02	7.0
MIN	---	---	---	---	---	---	---	---	---	.05	.00	.00
AC-FT	---	---	---	---	---	---	---	---	---	182	.04	58

e Estimated

RED RIVER BASIN

47

07307010 OTTER CREEK NEAR SNYDER, OK--Continued



RED RIVER BASIN

07307028 NORTH FORK RED RIVER NEAR TIPTON, OK

LOCATION.--Lat 34°30'25", long 99°12'28", in NW 1/4 NE 1/4 sec.5. T.1 S, R.19 W., Tillman County, Hydrologic Unit 11120303, near left bank on downstream side of bridge pier on State Highway 5, 3.8 mi west of intersection of State Highways 5 and 5C in Tipton, 4.8 mi downstream from Otter Creek, and at mile 15.3.

DRAINAGE AREA.--4,691 mi², of which 399 mi² is probably noncontributing.

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

GAGE.--Water-stage recorder. Datum of gage is 1,234.45 ft above sea level.

REMARKS.--Records fair. Flow regulated since December 1943 by storage and diversion at Lake Altus 54.2 mi upstream (station 07302500). Diversions for irrigation of about 48,000 acres upstream from station. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e51	197	57	107	87	125	658	5480	113	1580	138	59
2	e52	142	57	102	86	174	1460	2880	112	783	133	61
3	e51	92	56	99	86	268	2410	2090	189	765	119	57
4	e60	74	69	98	82	227	1500	1060	134	1180	106	49
5	e70	67	74	96	81	169	816	709	108	880	105	44
6	52	63	101	95	78	270	524	574	106	658	99	41
7	e51	60	97	95	78	202	e400	454	117	709	100	43
8	e50	58	80	100	78	187	e365	378	106	571	93	38
9	e90	56	2310	98	78	194	e346	316	96	499	106	41
10	e110	55	3530	95	77	267	e323	261	137	448	104	35
11	e90	56	2350	94	76	169	e310	235	106	419	98	31
12	e75	54	785	95	74	147	e322	218	113	407	84	27
13	e62	53	398	90	74	118	e300	191	132	359	86	27
14	e50	52	271	89	75	105	e295	174	169	306	83	26
15	e40	53	220	87	76	96	e318	167	149	272	83	25
16	e36	53	191	89	76	90	e355	162	114	244	79	20
17	e35	52	170	88	76	104	e371	152	478	214	79	18
18	e33	52	157	86	74	93	e393	140	248	212	79	16
19	e34	49	148	87	72	90	e345	134	1560	194	79	15
20	e34	50	138	82	71	88	e250	131	1120	187	75	14
21	e34	50	132	82	68	89	e220	123	615	177	82	15
22	e35	51	132	80	107	99	e200	116	429	192	80	14
23	e35	52	131	82	266	4290	e185	111	313	189	72	14
24	e36	53	131	79	179	7730	e176	105	244	190	63	104
25	e35	54	125	87	179	5290	e184	98	212	180	63	35
26	e34	55	122	79	136	2070	e180	106	191	156	61	29
27	32	56	118	81	249	1120	e175	105	217	151	64	25
28	34	56	116	92	182	898	e180	97	652	155	63	22
29	36	56	115	91	162	641	e195	151	1590	160	62	20
30	334	56	111	87	---	477	1580	195	2910	139	59	18
31	297	---	107	85	---	404	---	141	---	130	58	---
TOTAL	2068	1927	12599	2797	3083	26291	15336	17254	12780	12706	2655	983
MEAN	66.7	64.2	406	90.2	106	848	511	557	426	410	85.6	32.8
MAX	334	197	3530	107	266	7730	2410	5480	2910	1580	138	104
MIN	32	49	56	79	68	88	175	97	96	130	58	14
AC-FT	4100	3820	24990	5550	6120	52150	30420	34220	25350	25200	5270	1950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2000, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	722	422	410	304	430	732	715	1207	1512	342	521	599					
MAX	5784	2276	1287	1126	1773	3268	5020	5347	5560	738	3932	1796					
(WY)	1987	1987	1992	1998	1998	1998	1997	1993	1995	1993	1995	1995					
MIN	15.1	30.8	84.6	68.2	70.1	54.8	49.3	62.6	115	49.3	39.5	13.5					
(WY)	1985	1985	1986	1986	1995	1986	1986	1984	1994	1984	1985	1984					

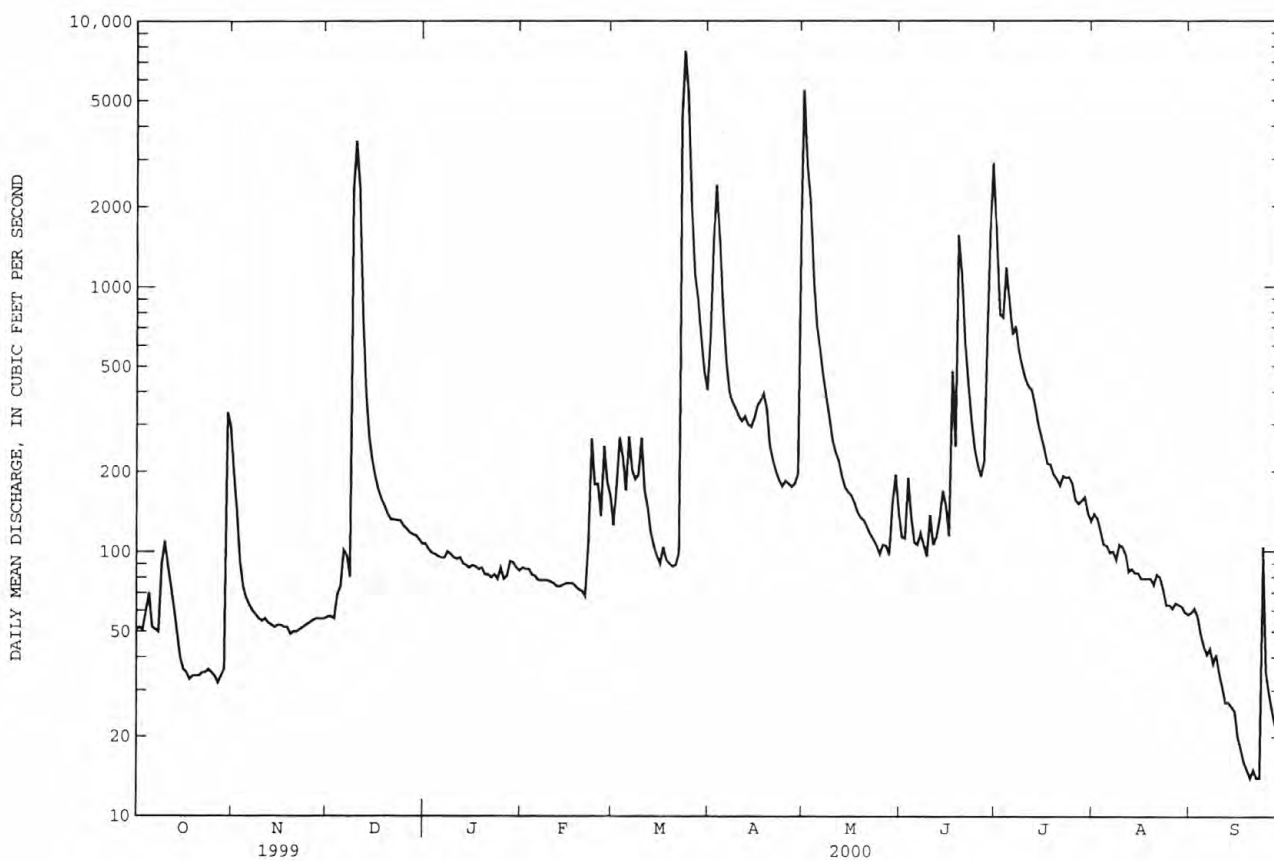
e Estimated

RED RIVER BASIN

49

07307028 NORTH FORK RED RIVER NEAR TIPTON, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1984 - 2000	
ANNUAL TOTAL	148265		110479		660	
ANNUAL MEAN	406		302		1987	1987
HIGHEST ANNUAL MEAN					132	1994
LOWEST ANNUAL MEAN					39100	May 30 1987
HIGHEST DAILY MEAN	6770	May 29	7730	Mar 24	57200	Oct 5 1986
LOWEST DAILY MEAN	32	Oct 27	14	Sep 20,22,23	19.18	May 10 1993
INSTANTANEOUS PEAK STAGE			14.77	Mar 24	3.7	Sep 7 1985
INSTANTANEOUS LOW FLOW						
ANNUAL RUNOFF (AC-FT)	294100		219100		478000	
10 PERCENT EXCEEDS	997		572		1340	
50 PERCENT EXCEEDS	140		105		190	
90 PERCENT EXCEEDS	51		41		58	

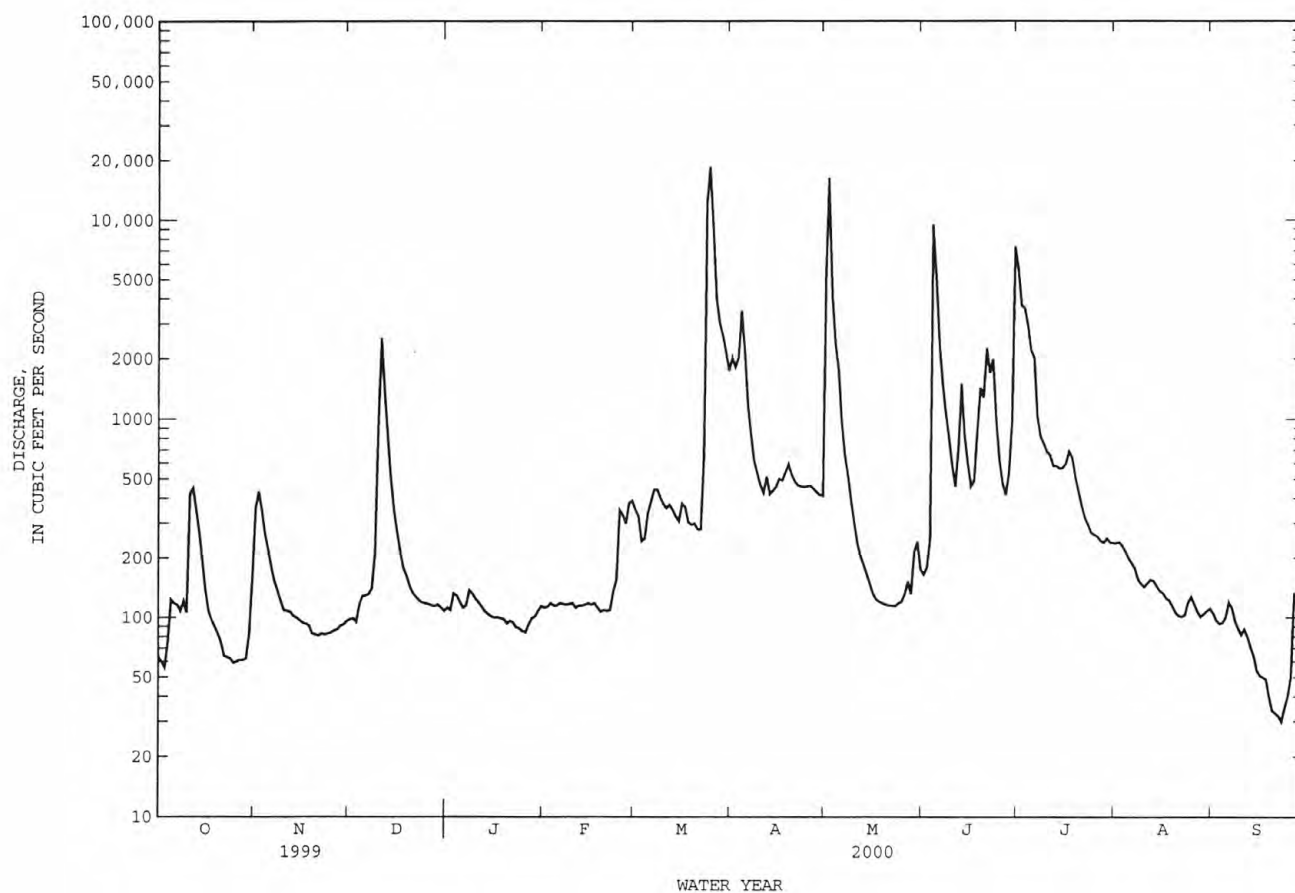


RED RIVER BASIN

51

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000	
ANNUAL TOTAL	347414		233840		1260	
ANNUAL MEAN	952		639		4424	1987
HIGHEST ANNUAL MEAN					178	1964
LOWEST ANNUAL MEAN					144000	Jun 6 1995
HIGHEST DAILY MEAN	17100	May 29	18500	Mar 25	.00	Jul 19 1964
LOWEST DAILY MEAN	56	Oct 3	30	Sep 23	.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	61	Oct 23	35	Sep 19	174000	Jun 6 1995
INSTANTANEOUS PEAK FLOW			22800	May 2	16.90	Oct 21 1983
INSTANTANEOUS PEAK STAGE			8.52	May 2	.00	Jul 19 1964
INSTANTANEOUS LOW FLOW					912700	
ANNUAL RUNOFF (AC-FT)	689100		463800		2500	
10 PERCENT EXCEEDS	2200		1320		310	
50 PERCENT EXCEEDS	365		146		54	
90 PERCENT EXCEEDS	95		83			



RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: May 1968 to current year.

BIOCHEMICAL DATA: Oct 1974 to Aug 1994.

PESTICIDE DATA: Oct 1973 to Sep 1982, Oct 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Jul 1968 to Sep 1981, Oct 1994 to current year.

WATER TEMPERATURE: Jul 1968 to Sep 1981, Oct 1994 to current year.

INSTRUMENTATION.--Water-quality monitor Dec 1968 to Sep 1981 and Oct 1994 to current year.

REMARKS.--Records fair. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1991 to 2000. The standard error of estimate for dissolved solids is 3%, chloride is 7%, sulfate is 14% and for hardness is 10%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 17,400 microsiemens, Jul 30, 1972; minimum, 462 microsiemens, Feb 24, 1997.

WATER TEMPERATURE: Maximum, 36.5 C, Jul 14 and 18, 1998; minimum, 0.0 C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 11,700 microsiemens, Jun 2; minimum, 1,840 microsiemens, Dec 13.

WATER TEMPERATURE: Maximum, 36.0 C, Sep 4; minimum, 0.0 C, Jan 5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE PER CENT (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
OCT											
21...	1215	75	8000	8.3	15.8	12.4	132	1400	1300	360	112
NOV											
22...	1003	83	8150	8.2	13.5	10.7	110	1500	1400	380	130
DEC											
03...	1505	93	8490	7.9	16.6	12.0	132	1600	1500	430	133
20...	1130	147	6100	6.7	4.1	13.9	111	1200	1000	310	92
FEB											
22...	1350	120	8820	8.5	16.1	11.8	128	1600	1400	410	131
MAR											
21...	1400	279	7950	8.3	14.2	11.9	123	1400	1300	380	119
APR											
14...	1425	437	6150	8.4	19.2	13.1	150	1200	1100	320	100
MAY											
23...	1430	114	7080	8.1	28.1	7.9	108	1400	1200	350	118
JUN											
02...	1345	184	10500	8.0	25.9	8.6	113	1400	1300	380	116
JUL											
17...	1000	657	6440	8.2	25.1	7.0	90	1200	1200	320	106
AUG											
08...	1105	151	6060	8.1	25.8	8.6	111	1200	1100	310	115
SEP											
08...	1515	91	5140	8.2	31.0	7.5	106	1200	1100	290	116

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L) (70301)
OCT											
21...	1140	13	11	--	--	100	1100	2000	.40	5.4	4850
NOV											
22...	1260	14	9.6	--	--	92	1300	2100	.35	4.0	5280
DEC											
03...	1290	14	8.9	--	--	110	1300	2200	.35	2.2	5510
20...	992	13	8.6	--	--	160	860	1500	.35	14	3830
FEB											
22...	1340	15	9.6	--	--	120	1300	2200	.38	.26	5560
MAR											
21...	1160	13	9.1	--	--	110	1300	2000	.34	1.3	4980
APR											
14...	989	12	8.6	--	--	100	1100	1600	.32	7.6	4130
MAY											
23...	1030	12	9.2	--	--	120	1200	1700	.40	5.9	4530
JUN											
02...	1640	19	11	--	--	100	1400	2800	.44	6.3	6470
JUL											
17...	917	11	9.5	98	80	--	1100	1500	.41	11	3970
AUG											
08...	836	10	9.5	109	90	--	1100	1300	.48	11	3800
SEP											
08...	712	9	9.9	115	94	--	1100	1100	.59	15	3380

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) (00608)	NITRO- GEN, TOTAL (MG/L) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L) (00625)	PHOS- PHORUS DIS- SOLVED (MG/L) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) (00671)
OCT 21...	59	--	<.010	<.050	<.020	--	--	.67	.068	E.032	<.010
NOV 22...	39	--	<.010	<.050	<.020	--	--	.23	<.050	<.050	<.010
DEC 03...	27	--	<.010	.099	<.020	.70	--	.60	<.050	<.050	<.010
20...	120	1.42	.021	1.44	.092	2.3	.78	.87	.205	.097	.067
FEB 22...	24	--	<.010	<.050	<.020	--	--	.85	.060	<.050	<.010
MAR 21...	53	--	<.010	<.050	<.020	--	--	1.2	.142	<.050	<.010
APR 14...	158	--	<.010	<.050	<.020	--	--	.96	.150	<.050	<.010
MAY 23...	27	--	<.010	<.050	<.020	--	--	.73	.083	<.050	<.010
JUN 02...	136	--	<.010	<.050	.023	--	.98	1.0	.184	<.050	<.010
JUL 17...	45	--	<.010	<.050	<.020	--	--	.87	.136	<.050	<.010
AUG 08...	34	--	<.010	<.050	<.020	--	--	.93	.065	<.050	<.010
SEP 08...	<10	--	<.010	<.050	<.020	--	--	1.0	.066	<.050	<.010

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L) AS PO4) (00660)	ARSENIC TOTAL (UG/L) AS AS) (01002)	ARSENIC DIS- SOLVED (UG/L) AS AS) (01000)	BARIUM, TOTAL, RECOV- ERABLE (UG/L) AS BA) (01007)	BARIUM, DIS- SOLVED (UG/L) AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L) AS CD) (01027)	CADMIUM DIS- SOLVED (UG/L) AS CD) (01025)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L) AS CR) (01034)	CHRO- MIUM, DIS- SOLVED (UG/L) AS CR) (01030)	COPPER, TOTAL RECOV- ERABLE (UG/L) AS CU) (01042)	COPPER, DIS- SOLVED (UG/L) AS CU) (01040)
OCT 21...	--	E2	E1	130	126	<1	<24	<1	<1.0	2	<30
NOV 22...	--	3	4	92	87	<1	<40	1	<1.0	6	<50
DEC 03...	--	E2	3	72	14	<1	<24	<1	2.6	6	<10
20...	.21	5	4	160	135	<1	<8.0	3	<1.0	5	<10
FEB 22...	--	3	5	61	63	<1	<40	<2	<1.6	<1	<50
MAR 21...	--	4	7	81	77	<1	<.14	3	<.80	<1	<1.3
APR 14...	--	5	--	150	--	<1	--	1	--	1	--
MAY 23...	--	4	3	130	125	M	<.28	<2	<1.6	1	<2.6
JUN 02...	--	4	--	150	--	<1	--	4	--	2	--
JUL 17...	--	5	4	140	126	<1	<.14	<1	<1.0	2	E.87
AUG 08...	--	4	6	100	99	M	<.14	2	E.44	<1	E.78
SEP 08...	--	8	--	93	--	<1	--	<1	--	E1	--

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)
OCT 21...	410	<30	1	<300	50	14	<.10	<.2	<200	<120	3
NOV 22...	350	<50	1	<500	39	18	<.15	<.2	<200	<200	7
DEC 03...	160	<10	2	<100	18	E1.4	<.30	<.2	52	<40	7
20...	1700	<10	2	<160	73	7.6	<.30	<.2	E26	<40	5
FEB 22...	150	<50	<1	<500	22	12	<.30	<.2	E23	<200	6
MAR 21...	440	<40	<1	<1.0	28	10	<.30	<.2	2	E1.0	10
APR 14...	1500	--	<2	--	81	--	<.30	--	<39	--	5
MAY 23...	270	<50	<10	<2.0	36	E8.5	<.30	<.2	2	<2.8	4
JUN 02...	850	--	3	--	120	--	<.30	--	<39	--	E1
JUL 17...	500	<40	E1	<1.0	54	E1.5	<.30	<.2	E2	<1.4	6
AUG 08...	200	<30	<1	<1.0	34	E4.6	<.30	E.2	E2	<1.4	3
SEP 08...	180	--	<1	--	48	--	<.30	--	<39	--	4

DATE	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN) (01092)	ZINC, DIS- SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
OCT 21...	E2	<1	<1.0	<160	<60	--	--	--	--	--	--
NOV 22...	8	<1	<1.0	<160	<100	--	--	--	--	--	--
DEC 03...	7	<1	<1.0	E20	<20	--	--	--	--	--	--
20...	5	<2	<2.0	E23	E14	--	--	--	--	--	--
FEB 22...	5	<2	<2.0	<31	<100	--	--	--	--	--	--
MAR 21...	--	<1	<1.0	<31	<80	--	--	--	--	--	--
APR 14...	--	<1	--	E16	--	--	--	--	--	--	--
MAY 23...	5	<1	<2.0	<31	<100	<.040	<.10	<1.00	<.100	<.100	<.100
JUN 02...	--	<2	--	E19	--	--	--	--	--	--	--
JUL 17...	3	<1	<1.0	<93	<80	<.040	<.10	<1.00	<.100	<.100	<.100
AUG 08...	3	<1	<1.0	<93	<60	<.040	<.10	<1.00	<.100	<.100	<.100
SEP 08...	--	<1	--	<31	--	--	--	--	--	--	--

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR- DANE, TECH- NICAL TOTAL (UG/L) (39350)	DI- ELDRIN TOTAL (UG/L) (39380)	ENDO- SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE- HYDE TOTAL (UG/L) (34366)	HEPTA- CHLOR, TOTAL (UG/L) (39410)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX- APHENE, TOTAL (UG/L) (39400)
OCT 21...	--	--	--	--	--	--	--	--	--	--	--
NOV 22...	--	--	--	--	--	--	--	--	--	--	--
DEC 03...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
FEB 22...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	--	--	--	--	--	--	--	--	--	--	--
APR 14...	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	125	<2.00
JUN 02...	--	--	--	--	--	--	--	--	--	--	--
JUL 17...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	--	<2.00
AUG 08...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	--	<2.00
SEP 08...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDO- SULFAN- I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA- HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO- SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA- CHLOR- IDE TOTAL (UG/L) (39338)	CHLOR- DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA- CHLOR- IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR- DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT 21...	--	--	--	--	--	--	--	--	--	--	--
NOV 22...	--	--	--	--	--	--	--	--	--	--	--
DEC 03...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
FEB 22...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	--	--	--	--	--	--	--	--	--	--	--
APR 14...	--	--	--	--	--	--	--	--	--	--	--
MAY 23...	<.100	<.030	112	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN 02...	--	--	--	--	--	--	--	--	--	--	--
JUL 17...	<.100	<.030	--	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
AUG 08...	<.100	<.030	161	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
SEP 08...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1999 TO SEPTEMBER 2000

MONTH YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT- ANCE (MICRO- SIEMENS)	DIS- SOLVED SOLIDS (MG/L)	DIS- SOLVED SOLIDS (TONS)	DIS- SOLVED CHLORIDE (MG/L)	DIS- SOLVED CHLORIDE (TONS)	DIS- SOLVED SULFATE (MG/L)	DIS- SOLVED SULFATE (TONS)	HARDNESS (CA, MG) (MG/L)
OCT. 1999	3954	6350	4020	42900	1500	15920	1100	11260	1200
NOV. 1999	4136	6210	3930	43920	1400	16150	1000	11690	1200
DEC. 1999	9927	4890	3100	83180	1100	29680	860	23050	1000
JAN. 2000	3306	8020	5060	45180	2000	17580	1200	11040	1400
FEB. 2000	4546	8660	5450	66930	2200	26730	1300	15670	1500
MAR. 2000	61395	3340	2130	352400	700	116700	640	106800	740
APR. 2000	24520	4450	2820	186900	990	65570	800	52940	930
MAY 2000	35727	3370	2150	207200	720	69820	640	61590	740
JUNE 2000	47498	6210	3930	504500	1400	185700	1000	134100	1200
JULY 2000	32201	5220	3310	288200	1200	101400	940	81300	1100
AUG. 2000	4470	5950	3770	45550	1300	16260	1000	12610	1200
SEPT 2000	2160	6090	3860	22520	1400	8140	1100	6140	1200
TOTAL	233840	**	**	1889400	**	669600	**	528200	**
WTD. AVG.	639	4720	2990	**	1100	**	840	**	970

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	9240	8780	9120	6980	5870	6250	8600	8010	8300	7590	7470	7510
2	9260	8970	9120	6330	2690	3520	8700	8290	8490	7630	7490	7580
3	9160	8890	9050	5000	2920	4050	8520	8340	8440	---	---	e7640
4	9080	7650	8390	5500	4760	5150	8580	7480	7920	---	---	e7700
5	8140	7500	7930	4760	4510	4570	7770	7500	7640	---	---	e7780
6	7500	6330	6900	4880	4550	4670	7750	7460	7640	8010	7880	7950
7	7170	6550	6860	5680	4880	5250	7830	7320	7570	8060	7740	7950
8	7170	6500	6890	6150	5680	5970	8610	7530	8300	7750	7640	7690
9	7190	6590	6880	6500	6150	6290	---	---	e8400	7790	7700	7740
10	7200	6950	7090	6870	6500	6670	---	---	e8120	7870	7690	7770
11	7790	3280	6250	7220	6870	7030	---	---	e4600	7890	7760	7820
12	3280	2270	2800	7300	7220	7260	---	---	e2050	7910	7790	7850
13	5810	2260	3500	7370	7240	7280	---	---	e1860	8010	7900	7950
14	8550	5810	7190	7470	7360	7400	2640	1840	2120	8230	7980	8140
15	8530	5620	6890	7510	7440	7480	3770	2640	3270	8230	8060	8150
16	5620	5280	5400	7610	7320	7470	4390	3770	4150	8110	7980	8050
17	6490	5510	5990	7960	7520	7800	4940	4390	4660	7990	7810	7930
18	6990	6490	6790	8110	7920	8010	5570	4940	5260	7930	7860	7900
19	7360	6980	7190	8060	7830	7930	5860	5570	5700	7970	7760	7900
20	7700	7360	7510	8570	7960	8290	6130	5860	6040	8030	7910	7960
21	7800	7680	7720	8560	8430	8490	6310	6130	6220	8020	7920	7980
22	7990	7790	7870	8430	8000	8280	6480	6310	6390	8060	7990	8020
23	8080	7950	8020	8400	8180	8310	6650	6480	6580	8130	8060	8100
24	8210	8050	8120	8310	7980	8120	6790	6520	6730	8240	8130	8200
25	8300	8120	8200	8080	7970	8020	6930	6790	6880	8290	8220	8250
26	8330	8170	8240	8040	7940	7970	7010	6900	6940	9070	8910	9010
27	8520	8330	8410	7940	7720	7830	7180	6940	7100	---	---	e8410
28	8520	8360	8460	8080	7490	7900	7320	7180	7250	---	---	e8500
29	8500	8200	8440	8100	7950	8020	7370	7270	7320	---	---	e8600
30	8510	6800	7450	8250	8000	8120	7440	7330	7380	---	---	e8680
31	6800	5970	6250	---	---	---	7530	7400	7460	---	---	e8770
MONTH	9260	2260	7260	8570	2690	6980	---	---	6350	---	---	8050
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	e8880	---	---	9230	2610	2560	2590	---	---	6780
2	---	---	e8950	10800	9730	10200	2600	2580	2590	---	---	e2060
3	---	---	e9040	9920	8290	9080	2580	2310	2500	2110	1910	1990
4	---	---	e9080	8290	7940	8090	2390	2320	2360	2740	2080	2420
5	---	---	e9100	8460	8240	8370	2400	2370	2390	2740	2290	2410
6	---	---	e9120	8250	6240	7170	2640	2390	2430	3120	2380	2680
7	---	---	e9150	---	---	e6950	---	---	e3700	4170	3120	3600
8	---	---	e9100	8840	7090	8040	---	---	e4800	4740	4170	4480
9	---	---	e9080	8870	8400	8630	---	---	e5300	---	---	e4820
10	---	---	e9050	9560	8560	9190	---	---	e5950	---	---	e5350
11	---	---	e9040	8830	7500	8010	---	---	e6480	5750	5430	5610
12	---	---	e9020	7500	7130	7260	---	---	e6290	6090	5750	5870
13	---	---	e9000	7160	6610	6860	---	---	e6380	6410	6090	6250
14	---	---	e8950	6610	6330	6490	6470	6090	6200	6520	6410	6470
15	---	---	e8900	6670	6340	6430	6610	6420	6500	6540	6430	6490
16	---	---	e8850	7090	6670	6930	---	---	e7850	6580	6460	6510
17	8820	8530	8690	7320	7080	7160	---	---	8360	6700	6480	6570
18	8640	8490	8560	7540	7320	7450	9020	8490	8740	6760	6500	6680
19	8740	8590	8660	7540	7430	7480	8560	6820	7920	---	---	e6840
20	8800	8640	8730	7750	7540	7620	7680	6730	7160	---	---	e7000
21	8830	8710	8770	7980	7750	7900	7700	6670	7320	---	---	e7180
22	8840	7880	8470	8270	7910	8120	6790	6390	6600	---	---	e7390
23	8100	7670	7830	7910	4580	5810	6840	6650	6730	---	---	e7100
24	8420	8100	8320	4580	2350	3190	6800	6080	6440	8160	7680	7840
25	---	---	e9520	2940	2380	2520	6840	6040	6510	8720	8150	8310
26	---	---	e7370	2510	2460	2480	6960	6790	6860	8790	7540	8060
27	---	---	e7670	2530	2500	2510	7030	6910	6960	8810	7780	8230
28	---	---	e8310	2580	2530	2550	6950	6760	6860	8940	8810	8870
29	---	---	e8780	2620	2560	2590	6990	6810	6890	9080	8690	8920
30	---	---	---	2630	2620	2630	7130	6910	7040	8690	7610	7960
31	---	---	---	2630	2600	2610	---	---	---	7960	7170	7490
MONTH	---	---	8760	---	---	6440	---	---	5820	---	---	6070

RED RIVER BASIN

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07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	11600	7020	8590	7310	4660	5750	---	---	e6040	5740	5600	5670
2	11700	9710	10900	4660	4270	4520	---	---	e5650	5670	5530	5600
3	9710	6800	8570	4270	3770	3950	---	---	e5600	5610	5460	5540
4	6800	5680	5950	4340	3350	3840	---	---	e5670	5530	5390	5460
5	6900	5200	6530	4160	3350	3590	5740	5580	5690	5460	5360	5410
6	6800	6140	6690	4510	3980	4230	5890	5740	5830	5440	5310	5380
7	6690	6300	6460	3980	3830	3880	6030	5870	5930	5400	5240	5330
8	6740	6340	6550	4760	3920	4240	6120	6010	6070	5330	5100	5240
9	7060	6740	6880	5140	4760	5050	6150	5990	6060	5350	5240	5280
10	7560	7050	7260	5500	5120	5290	6200	6080	6140	5500	5350	5410
11	8230	7480	7810	5760	5500	5670	6190	6000	6080	5580	5500	5540
12	9240	8150	8360	5850	5310	5770	6120	5940	6030	5710	5580	5640
13	10000	9240	9920	5940	5800	5870	6050	5880	5970	5840	5710	5770
14	9950	9130	9410	6040	5920	5960	6040	5820	5930	5970	5840	5900
15	9180	8950	9080	6030	5740	5860	6020	5770	5880	6170	5970	6070
16	9900	8950	9380	5980	5780	5890	5970	5820	5900	6410	6160	6270
17	8990	7110	7950	6480	5980	6290	6100	5940	6020	6510	6290	6370
18	7500	4980	5990	8340	6420	7710	6170	6090	6130	6800	6510	6620
19	4980	3940	4500	---	---	e8270	6210	6120	6170	6990	6780	6860
20	5550	4320	4900	---	---	e8400	6260	6140	6210	7080	6890	6980
21	5680	2580	4130	---	---	e8550	6270	6170	6220	7050	6820	6940
22	---	---	e2430	---	---	e8750	6280	6180	6240	6950	6630	6830
23	---	---	e2600	---	---	e9000	6300	6160	6240	6940	6560	6690
24	---	---	e3200	---	---	e9130	6240	6090	6180	7100	6940	7000
25	---	---	e5600	8910	8430	8610	6170	6040	6110	7200	7070	7130
26	---	---	e6600	8450	8110	8260	6120	5990	6060	7180	6970	7090
27	---	---	e7160	8110	7890	7990	6080	5940	6010	8080	7100	7730
28	7600	7130	7380	7890	7420	7630	6010	5870	5940	8220	8020	8110
29	7130	6300	6640	7600	6840	7150	5940	5790	5870	8090	5630	7870
30	7600	5860	7010	6880	6550	6720	5860	5730	5800	5630	4080	4300
31	---	---	---	6590	6220	6440	5810	5680	5750	---	---	---
MONTH	---	---	6810	---	---	6400	---	---	5980	8220	4080	6200

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	23.3	14.0	18.3	17.3	13.1	14.8	14.8	7.5	11.1	12.8	6.8	9.8
2	25.4	14.9	19.3	13.8	9.4	11.6	17.6	11.6	14.3	14.0	10.3	11.9
3	24.7	14.0	18.1	13.8	8.0	10.9	16.7	9.7	13.3	12.1	.2	7.6
4	16.8	11.8	14.2	16.5	9.6	12.8	14.7	7.3	12.2	---	---	---
5	23.7	13.4	17.9	19.7	12.0	15.6	9.0	4.9	6.8	7.2	.0	3.7
6	24.8	16.4	20.1	21.4	14.8	17.9	9.5	2.8	6.0	8.5	2.5	5.4
7	22.7	14.7	18.4	22.0	15.7	18.6	11.6	4.1	7.6	7.6	3.3	5.7
8	25.1	16.1	19.7	20.1	15.6	17.6	15.0	7.8	11.0	11.6	7.6	9.1
9	25.4	17.6	21.1	19.6	13.7	16.6	---	---	---	12.1	5.7	8.4
10	28.0	18.4	22.7	22.0	14.3	17.9	---	---	---	11.0	4.8	8.0
11	25.7	19.8	22.7	22.3	15.4	18.8	---	---	---	11.5	5.8	8.6
12	26.1	20.3	23.1	22.1	15.2	18.6	---	---	---	13.0	6.1	9.4
13	25.8	19.7	22.7	22.2	15.5	18.7	---	---	---	10.8	6.2	8.5
14	25.1	18.8	22.0	22.7	15.2	18.7	8.3	5.0	6.6	9.8	4.4	7.2
15	25.4	18.9	21.8	20.5	13.8	17.1	7.0	2.2	4.7	14.1	5.7	9.7
16	22.2	16.7	20.1	20.4	13.2	16.7	6.8	2.5	4.6	15.6	10.4	12.8
17	16.7	10.5	12.4	19.4	13.6	16.3	7.7	4.6	6.1	16.4	10.8	13.1
18	15.0	11.5	12.9	20.0	13.3	16.3	7.5	4.7	6.0	13.2	10.6	11.8
19	18.2	10.0	13.9	16.7	11.0	14.1	7.9	4.0	6.0	13.0	8.3	10.7
20	19.5	10.3	14.7	16.2	9.6	12.7	6.3	3.2	4.8	10.9	6.1	8.2
21	21.6	11.6	16.2	17.6	9.8	13.4	6.6	1.7	4.1	9.0	4.9	7.1
22	21.1	13.0	16.9	16.2	11.8	14.3	7.1	2.1	4.6	11.0	7.4	9.1
23	19.8	12.5	15.8	14.5	9.8	12.1	8.3	2.7	5.5	11.9	7.4	9.5
24	18.7	11.0	14.6	12.1	6.9	9.4	9.4	4.2	6.8	8.8	5.0	6.8
25	20.6	10.7	15.3	12.6	5.6	8.9	9.0	4.5	6.9	7.3	5.2	6.3
26	22.1	13.0	17.2	13.4	5.9	9.4	11.5	6.7	8.8	6.3	3.3	4.7
27	19.7	13.2	16.4	15.2	7.7	11.2	10.1	5.9	7.9	3.4	1.9	2.4
28	21.7	14.6	17.6	15.2	8.5	11.8	10.7	4.5	7.6	2.3	1.4	1.9
29	22.2	15.2	18.4	14.6	8.5	11.4	11.5	6.2	8.9	5.4	2.0	3.4
30	17.3	11.6	13.8	13.6	8.1	10.7	11.0	7.3	9.2	---	---	---
31	14.1	11.5	12.7	---	---	---	11.2	5.6	8.5	---	---	---
MONTH	28.0	10.0	17.8	22.7	5.6	14.5	---	---	---	---	---	---

RED RIVER BASIN

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

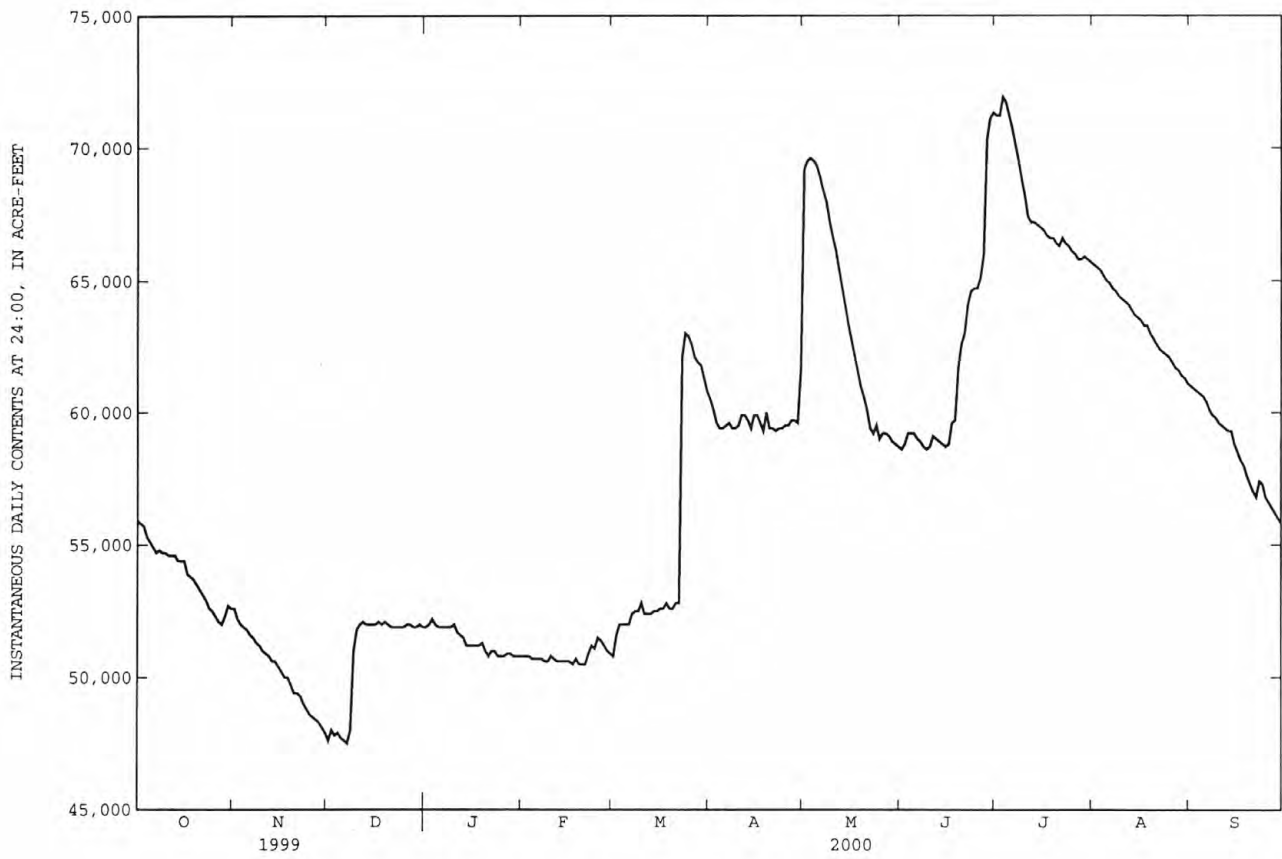
TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	---	---	---	---	---	---	22.0	17.5	19.2
2	---	---	---	17.3	11.6	14.2	---	---	---	18.3	16.5	17.2
3	---	---	---	14.3	8.1	9.8	---	---	---	20.9	16.7	18.5
4	---	---	---	15.6	6.1	10.6	---	---	---	23.8	18.8	21.1
5	---	---	---	15.8	9.2	12.5	---	---	---	23.4	20.7	21.9
6	---	---	---	20.2	12.0	15.9	---	---	---	27.2	21.6	24.0
7	---	---	---	19.5	16.1	17.6	---	---	---	28.5	22.9	25.4
8	14.7	7.7	11.2	18.6	12.3	15.7	---	---	---	28.1	23.2	25.4
9	16.0	8.8	12.3	19.0	11.1	15.1	---	---	---	26.2	21.2	24.0
10	17.8	10.9	14.1	16.4	10.0	13.6	---	---	---	26.6	20.0	23.1
11	14.2	8.5	11.0	15.4	6.9	10.9	---	---	---	29.6	22.5	25.7
12	12.5	5.6	9.3	16.5	8.5	12.2	---	---	---	28.0	22.5	25.5
13	13.7	9.8	11.5	18.7	9.6	13.9	---	---	---	24.1	18.3	21.5
14	14.0	7.3	10.6	18.7	13.7	15.8	21.8	14.8	17.9	23.6	16.7	20.1
15	16.2	8.6	12.1	22.0	13.6	17.3	20.4	16.8	18.4	25.6	17.2	21.1
16	14.1	10.1	12.2	17.5	7.8	12.3	20.8	12.0	16.7	26.3	21.5	23.7
17	17.7	11.0	14.0	9.1	6.7	7.9	20.1	15.5	17.7	24.6	21.6	22.9
18	16.8	9.7	13.4	11.3	6.1	8.4	25.7	17.0	21.0	26.3	21.1	23.0
19	14.3	6.3	10.1	15.8	6.2	10.8	26.8	21.0	23.7	21.3	17.6	19.1
20	14.3	8.5	11.1	17.8	8.8	13.0	23.4	16.0	19.9	27.9	16.6	21.7
21	16.6	10.3	13.1	13.9	12.4	13.1	23.8	16.7	20.1	30.8	21.3	25.5
22	17.7	14.1	15.4	14.9	11.7	13.0	20.5	16.8	18.3	30.0	22.8	26.1
23	18.6	11.0	14.8	18.2	14.0	15.7	21.4	14.9	18.1	30.0	21.9	25.7
24	20.4	12.1	16.3	17.8	14.3	16.1	25.3	16.5	20.5	31.6	22.5	26.4
25	18.5	16.3	17.5	---	---	---	26.1	18.6	22.2	30.6	24.6	27.3
26	17.2	14.5	15.7	---	---	---	25.2	18.8	21.7	30.1	22.3	26.0
27	17.1	12.8	15.0	---	---	---	24.2	18.9	21.2	28.8	23.7	26.1
28	---	---	---	---	---	---	26.0	17.3	21.3	32.6	23.2	27.5
29	---	---	---	---	---	---	24.0	18.5	20.9	31.4	23.4	27.2
30	---	---	---	---	---	---	21.4	18.6	20.0	31.5	23.5	27.1
31	---	---	---	---	---	---	---	---	---	29.9	23.7	26.5
MONTH	---	---	---	---	---	---	---	---	---	32.6	16.5	23.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	30.2	23.0	26.1	26.2	24.6	25.3	34.0	24.3	28.6	33.7	24.7	28.6
2	26.8	23.7	25.2	28.4	24.5	26.0	34.4	24.7	29.1	34.5	25.0	29.2
3	25.2	22.7	23.7	28.8	25.6	27.0	---	---	---	35.2	25.1	29.6
4	25.1	22.9	23.8	29.7	25.6	27.5	---	---	---	36.0	26.1	30.6
5	26.0	22.6	24.3	29.8	25.5	27.5	32.2	24.0	27.7	31.9	26.5	29.2
6	25.9	21.8	23.8	30.4	26.1	28.0	32.7	24.6	28.2	31.6	23.7	27.1
7	26.6	21.6	23.9	31.2	26.2	28.5	33.1	24.2	28.1	32.5	22.5	26.7
8	27.0	21.5	24.1	31.5	26.5	28.7	33.3	23.3	27.6	31.8	23.1	26.7
9	26.8	23.1	24.6	31.5	26.0	28.3	31.2	24.3	27.4	32.2	22.6	26.6
10	26.6	23.1	24.4	31.5	25.3	28.2	33.6	24.9	28.7	32.3	23.4	27.0
11	28.7	23.3	25.3	32.0	26.0	28.9	34.6	24.6	29.2	31.8	23.3	26.4
12	28.5	23.9	26.0	33.4	26.1	29.2	34.7	25.7	29.9	31.1	23.4	26.5
13	28.1	24.3	26.0	34.8	28.1	30.5	34.3	26.1	29.3	32.5	23.4	27.2
14	25.1	23.6	24.1	34.9	27.6	31.0	31.5	22.6	26.5	35.4	24.3	29.1
15	28.8	21.9	25.1	35.9	28.6	32.0	33.1	23.3	27.6	29.5	23.1	26.2
16	29.4	24.3	26.5	34.0	28.5	30.8	33.5	24.7	28.7	29.0	18.4	24.0
17	25.9	20.5	22.2	30.3	25.2	27.6	33.5	25.3	29.2	28.3	18.5	22.7
18	22.3	20.4	21.4	32.9	25.1	28.6	34.4	25.0	29.4	27.9	17.0	21.8
19	24.9	21.4	22.8	34.8	26.2	30.2	31.9	25.2	28.1	26.9	16.8	21.3
20	27.8	23.4	25.3	36.0	27.7	31.2	31.2	21.0	25.8	25.3	18.3	20.9
21	27.2	24.7	25.9	33.1	24.9	28.8	32.2	22.7	26.7	27.7	16.2	21.2
22	---	---	---	30.1	24.1	27.1	32.2	23.7	27.2	30.6	21.1	25.0
23	---	---	---	31.8	24.3	27.4	32.6	23.9	27.7	29.7	19.5	24.0
24	---	---	---	32.1	23.6	27.4	35.0	24.3	28.9	19.5	13.2	16.7
25	---	---	---	29.5	22.6	25.7	34.5	25.4	29.5	20.7	9.4	14.5
26	---	---	---	31.9	23.0	26.9	33.8	24.9	28.8	24.8	11.4	17.4
27	---	---	---	28.0	24.3	26.1	32.5	23.8	27.8	24.8	14.0	18.9
28	27.1	24.1	25.5	31.3	23.3	26.7	32.9	23.6	27.7	26.4	16.0	20.8
29	25.5	23.9	24.9	31.1	24.1	27.3	33.1	24.0	28.0	25.4	16.4	20.6
30	26.6	23.6	25.1	31.0	24.6	27.5	32.6	24.5	28.2	24.6	15.8	19.8
31	---	---	---	31.4	23.6	27.3	31.6	23.8	27.4	---	---	---
MONTH	---	---	---	36.0	22.6	28.2	---	---	---	36.0	9.4	24.2



07335500 Fed River near Arthur City, Tx May 1990

07308990 LAKE ELLSWORTH NEAR ELGIN, OK--Continued



RED RIVER BASIN

07309500 LAKE LAWTONKA NEAR LAWTON, OK

LOCATION.--Lat 34°44'10", long 98°30'11", in NE 1/4 NW 1/4, sec.18, T.3 N., R.12 W., Comanche County, Hydrologic Unit 11130202, near left end of dam on Medicine Creek, northwest of Medicine Park and at mile 12.2.

DRAINAGE AREA.--93 mi².

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete dam. Storage began in 1905. Capacity, 85,660 acre-ft at elevation 1,355.55 ft, top of dam; and 59,590 acre-ft at elevation 1,345.55 ft, top of gates; 38,980 acre-ft at elevation 1,335.55 ft, top of spillway. Reservoir is used for municipal water supply and recreation. Satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 63,600 acre-ft, Mar. 16, 1998, elevation 1,347.27 ft; minimum, 46,300 acre-ft, Oct. 15, 1998, elevation, 1,339.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 59,900 acre-ft, June 28, 29, gage height, 1,345.69 ft; minimum contents, 47,600 acre-ft, Feb. 22, gage height, 1,340.14 ft.

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

1300	1,540	1340	47,300
1310	7,190	1345	58,300
1325	22,900	1350	69,800
1335	37,950	1355	83,990

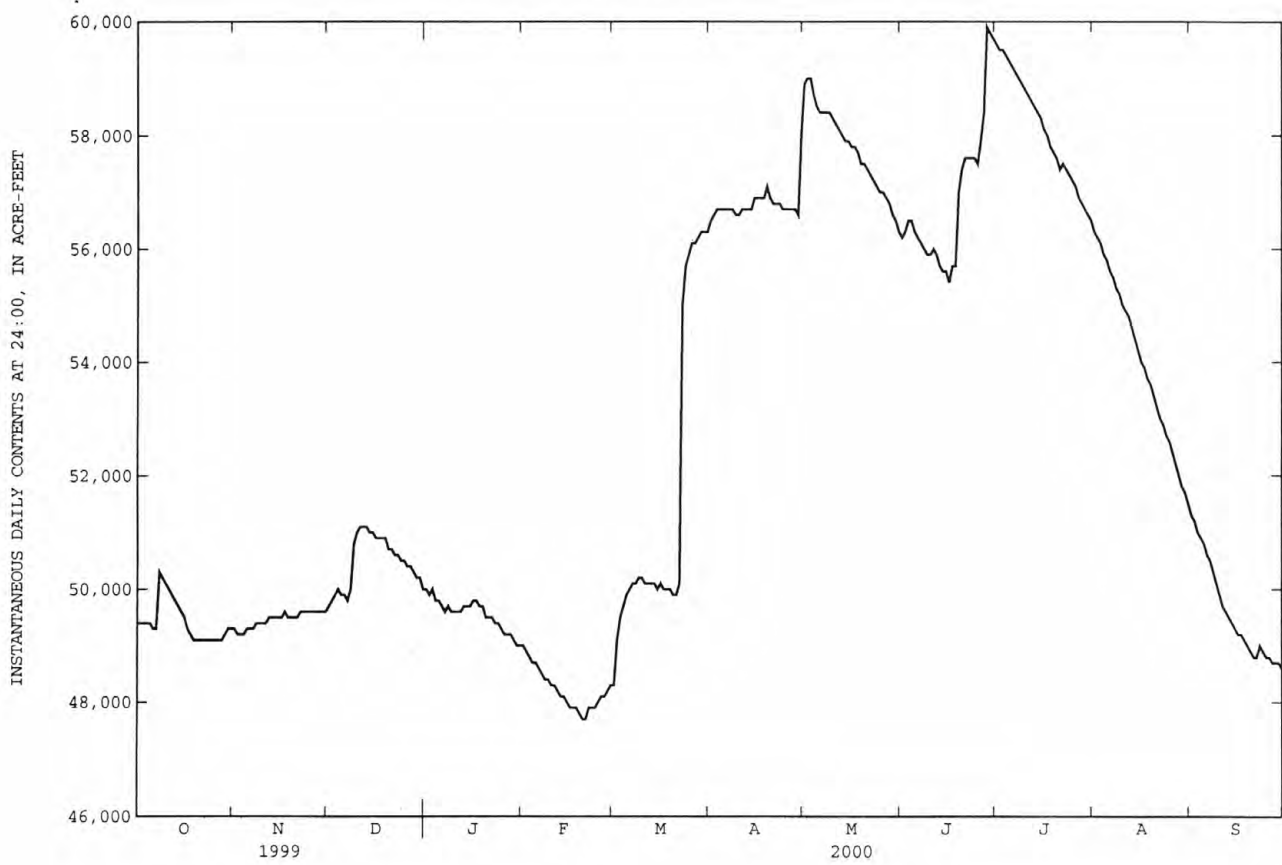
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49400	49300	49700	50000	49000	48300	56500	58900	56200	59600	56300	51300
2	49400	49200	49800	49900	48900	49100	56600	59000	56300	59500	56200	51200
3	49400	49200	49900	50000	48800	49500	56700	59000	56500	59500	56100	51000
4	49400	49200	50000	49800	48700	49700	56700	58700	56500	59400	55900	50900
5	49400	49300	49900	49800	48700	49900	56700	58500	56300	59300	55800	50800
6	49300	49300	49900	49700	48600	50000	56700	58400	56200	59200	55600	50600
7	49300	49300	49800	49600	48500	50100	56700	58400	56100	59100	55500	50500
8	50300	49400	50000	49700	48400	50100	56700	58400	56000	59000	55300	50300
9	50200	49400	50800	49600	48400	50200	56600	58400	55900	58900	55200	50100
10	50100	49400	51000	49600	48300	50200	56600	58300	55900	58800	55000	49900
11	50000	49400	51100	49600	48300	50100	56700	58200	56000	58700	54900	49700
12	49900	49500	51100	49600	48200	50100	56700	58100	55900	58600	54800	49600
13	49800	49500	51100	49700	48100	50100	56700	58000	55700	58500	54600	49500
14	49700	49500	51000	49700	48100	50100	56700	57900	55600	58400	54400	49400
15	49600	49500	51000	49700	48000	50000	56900	57900	55600	58300	54200	49300
16	49500	49500	50900	49800	47900	50100	56900	57800	55400	58100	54000	49200
17	49300	49600	50900	49800	47900	50000	56900	57800	55700	58000	53900	49200
18	49200	49500	50900	49700	47900	50000	56900	57700	55700	57800	53700	49100
19	49100	49500	50900	49700	47800	50000	57100	57500	57000	57700	53600	49000
20	49100	49500	50700	49500	47700	49900	56900	57500	57400	57600	53400	48900
21	49100	49500	50700	49500	47700	49900	56800	57400	57600	57400	53200	48800
22	49100	49600	50600	49500	47900	50100	56800	57300	57600	57500	53000	48800
23	49100	49600	50600	49400	47900	55000	56800	57200	57600	57400	52900	49000
24	49100	49600	50500	49400	47900	55700	56700	57100	57600	57300	52700	48900
25	49100	49600	50500	49300	48000	55900	56700	57000	57500	57200	52600	48800
26	49100	49600	50400	49200	48100	56100	56700	57000	57900	57100	52400	48800
27	49100	49600	50400	49200	48100	56100	56700	56900	58400	56900	52200	48700
28	49100	49600	50300	49200	48200	56200	56700	56800	59900	56800	52000	48700
29	49200	49600	50200	49100	48300	56300	56600	56600	59800	56700	51800	48700
30	49300	49600	50200	49000	---	56300	58000	56500	59700	56600	51700	48600
31	49300	---	50000	49000	---	56300	---	56300	---	56500	51500	---
MAX	50300	49600	51100	50000	49000	56300	58000	59000	59900	59600	56300	51300
MIN	49100	49200	49700	49000	47700	48300	56500	56300	55400	56500	51500	48600
(+)	1340.88	1341.04	1341.22	1340.77	1340.44	1344.08	1344.86	1344.10	1345.59	1344.16	1341.88	1340.59
(++)	-200	+300	+400	-1000	-700	+8000	+1700	-1700	+3400	-3200	-5000	-2900

CAL YR 1999 MAX 60300 MIN 47100 (++) +2100
WTR YR 2000 MAX 59900 MIN 47700 (++) -900

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-FEET

07309500 LAKE LAWTONKA NEAR LAWTON, OK--Continued



RED RIVER BASIN

07311000 EAST CACHE CREEK NEAR WALTERS, OK

LOCATION.--Lat 34°21'44", long 98°16'56", on south line of SE $\frac{1}{4}$ SE $\frac{1}{4}$ 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 east of Walters, 12.2 mi upstream from West Cache Creek, and at mile 19.7.

DRAINAGE AREA.--675 mi².

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 above sea level (Oklahoma State Highway Department). Prior to Jan. 8, 1939, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow partly regulated by Lake Lawtonka, capacity, 42,300 acre-ft on Medicine Creek prior to late 1953, and 63,000 acre-ft thereafter by Lake Thomas, capacity 8,300 acre-ft on Little Medicine Creek; and since March 1961 by Lake Ellsworth, capacity 94,500 acre-ft on East Cache Creek. Low flow sustained by sewage effluent from cities of Lawton and Walters. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1906 reached an approximate stage of 29.7 ft, information from local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	86	27	49	42	44	348	164	40	307	17	4.0
2	23	43	20	50	39	44	418	1510	33	299	17	4.2
3	21	32	16	49	39	e45	402	551	29	354	14	4.3
4	14	30	17	84	43	e47	349	117	175	197	10	8.2
5	14	29	31	55	47	e46	337	217	144	229	8.7	13
6	15	28	32	43	47	e45	192	259	80	228	8.4	13
7	15	28	25	42	47	e49	103	269	e50	308	9.1	12
8	15	27	26	42	49	47	90	300	39	293	13	13
9	16	28	31	52	44	e46	83	286	37	266	14	14
10	31	26	602	56	38	e45	84	284	36	258	13	13
11	46	27	280	51	38	e46	77	285	34	251	13	13
12	31	28	90	49	37	e45	77	275	37	245	13	25
13	27	25	67	48	37	e44	98	263	e35	220	12	8.6
14	25	18	59	49	41	e46	91	250	36	64	8.0	8.6
15	25	17	54	48	45	e45	178	246	34	32	6.7	10
16	24	17	53	48	46	e46	222	244	32	27	6.5	8.3
17	20	17	54	49	46	e46	225	252	42	24	6.1	8.1
18	15	16	54	48	48	e45	104	238	379	23	5.8	7.7
19	14	18	52	49	48	e46	222	234	134	22	5.6	6.6
20	14	23	53	49	47	e45	159	235	191	21	5.5	5.6
21	16	29	51	48	47	e44	76	162	256	20	12	4.8
22	26	29	51	50	46	e45	64	170	113	20	13	8.8
23	25	29	51	50	52	e600	60	224	110	19	14	15
24	25	30	50	48	91	e2300	56	217	96	23	12	15
25	24	27	50	48	57	e520	55	90	77	23	12	21
26	24	27	50	47	108	e430	48	52	67	20	12	21
27	24	27	48	48	73	383	46	65	65	19	8.2	17
28	23	26	48	49	51	362	44	51	355	15	6.0	12
29	19	27	49	54	47	574	92	41	1030	11	4.9	10
30	14	27	50	46	---	426	55	38	623	12	4.4	9.4
31	50	---	49	41	---	285	---	38	---	17	4.1	---
TOTAL	698	841	2190	1539	1440	6881	4455	7627	4409	3867	309.0	334.2
MEAN	22.5	28.0	70.6	49.6	49.7	222	148	246	147	125	9.97	11.1
MAX	50	86	602	84	108	2300	418	1510	1030	354	17	25
MIN	14	16	16	41	37	44	44	38	29	11	4.1	4.0
AC-FT	1380	1670	4340	3050	2860	13650	8840	15130	8750	7670	613	663

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

	MEAN	232	101	133	104	154	272	249	586	459	102	61.5	151
MAX	2738	898	1796	916	1356	2120	1243	2654	2619	483	285	1637	
(WY)	1984	1987	1992	1998	1987	1998	1990	1987	1962	1975	1971	1986	
MIN	.000	.15	.15	.63	2.20	2.09	7.81	5.13	12.6	9.25	3.75	.000	
(WY)	1940	1940	1940	1940	1940	1940	1939	1939	1939	1954	1954	1939	

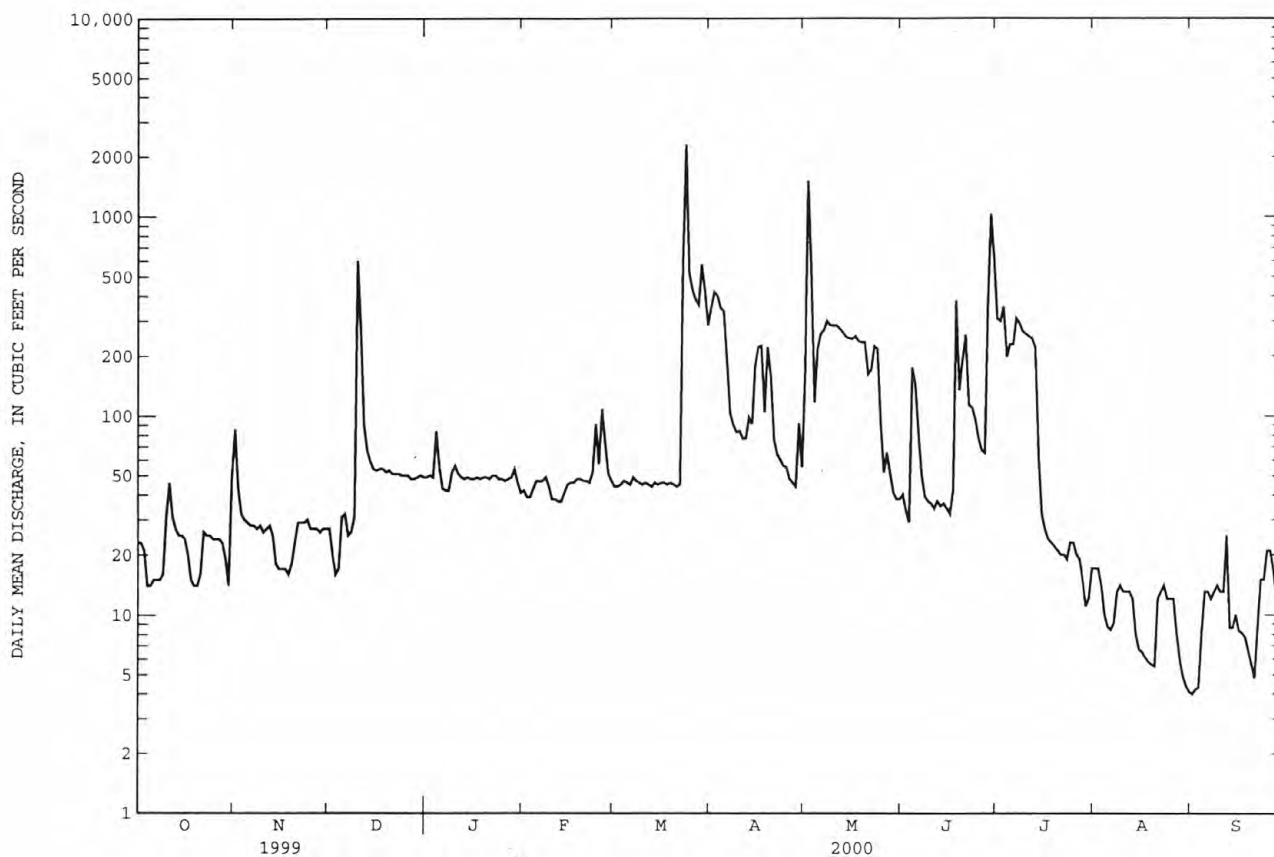
e Estimated

RED RIVER BASIN

65

07311000 EAST CACHE CREEK NEAR WALTERS, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000	
ANNUAL TOTAL	59984		34590.2		219	
ANNUAL MEAN	164		94.5		911	
HIGHEST ANNUAL MEAN					12.6	
LOWEST ANNUAL MEAN					1987	
HIGHEST DAILY MEAN	2570	Jun 23	2300	Mar 24	34600	Oct 21 1983
LOWEST DAILY MEAN	14	Oct 4	4.0	Sep 1	^a .00	Jul 24 1939
ANNUAL SEVEN-DAY MINIMUM	16	Oct 3	4.6	Aug 28	.00	Aug 1 1939
INSTANTANEOUS PEAK FLOW			2540	Mar 24	50900	Oct 21 1983
INSTANTANEOUS PEAK STAGE			^b 19.90	Mar 24	30.66	Oct 21 1983
ANNUAL RUNOFF (AC-FT)	119000		68610		158300	
10 PERCENT EXCEEDS	346		258		413	
50 PERCENT EXCEEDS	49		45		36	
90 PERCENT EXCEEDS	23		12		11	

^aNo flow at times in 1939-40.^bFrom high-water mark.

RED RIVER BASIN

07311200 BLUE BEAVER CREEK NEAR CACHE, OK
(Hydrologic benchmark 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 upstream from St. Louis-San Francisco Railway Co. bridge, 4.0 mi east of Cache, and at mile 12.0.

DRAINAGE AREA.--24.6 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,215.26 ft above sea level.

REMARKS.--No estimated daily discharge. Records good. Minor regulation by Lake Rush, Lake Jed Johnson, and Lake Ketch, combined surface-area 132 acres.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1907, that of Aug. 28, 1977, according to local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 23	1045	649	10.05	Jun 19	1645	748	10.25

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.16	.08	.79	.74	.74	16	31	.40	34	.17	.00
2	.16	.10	.26	.91	.74	1.4	19	18	.43	29	.15	.00
3	.16	.11	.10	1.1	.76	.82	18	14	1.6	21	.11	.00
4	.19	.08	.25	.74	.74	.74	15	12	.79	15	.05	.00
5	.21	.08	.08	.79	.74	.76	13	10	.70	11	.00	.00
6	.19	.08	.11	.74	.74	.79	12	9.0	.59	8.6	.00	.00
7	.16	.08	.08	.75	.74	1.6	11	7.9	.59	6.7	.00	.00
8	.16	.08	.11	1.1	.74	1.6	12	6.8	.58	5.6	.00	.00
9	.16	.08	12	.91	.74	.92	10	5.9	.51	4.3	.00	.00
10	.16	.08	8.7	.89	.74	.89	8.5	5.6	.59	3.0	.00	.00
11	.16	.08	4.2	.84	.74	.87	8.0	5.1	.66	2.3	.00	.00
12	.16	.08	2.8	.82	.74	.89	8.3	4.1	.59	1.5	.00	.00
13	.11	.08	2.0	.74	.74	.86	8.1	3.5	.43	1.2	.00	.00
14	.06	.08	1.7	.74	.74	.93	7.6	3.1	.42	.87	.00	.00
15	.00	.08	1.2	.79	.74	.85	7.6	2.9	.40	.74	.00	.00
16	.00	.08	.92	.74	.61	.86	12	2.7	.41	.63	.00	.00
17	.00	.08	.77	.74	.58	.89	13	2.6	1.4	.53	.00	.00
18	.00	.08	.74	.74	.95	.92	12	2.5	3.8	.45	.00	.00
19	.00	.08	.74	.74	.74	.89	11	2.0	187	.40	.00	.00
20	.00	.08	.74	.74	.74	.99	9.7	2.1	134	.35	.00	.00
21	.00	.08	.74	.74	.74	1.0	9.0	2.1	39	.32	.00	.00
22	.00	.08	.74	.78	1.2	1.1	7.8	1.6	23	.37	.00	.00
23	.00	.08	.74	.78	1.3	413	7.2	1.2	16	.40	.00	.00
24	.00	.08	.74	.74	.77	129	6.3	.87	12	.31	.00	.00
25	.00	.08	.74	.74	1.0	50	6.0	.77	8.7	.27	.00	.00
26	.00	.08	.74	.74	.74	33	5.7	1.1	6.7	.26	.00	.00
27	.00	.08	.74	1.0	.74	25	5.5	.78	43	.21	.00	.00
28	.00	.08	.74	.91	.74	20	5.4	.67	198	.20	.00	.00
29	.00	.08	.74	.83	.74	19	5.4	.62	80	.27	.00	.00
30	.21	.08	.74	.74	---	16	7.0	.56	47	.22	.00	.00
31	.23	---	.74	.74	---	14	---	.42	---	.20	.00	---
TOTAL	2.64	2.53	45.72	25.09	22.71	740.31	297.1	161.49	809.29	150.20	0.48	0.00
MEAN	.085	.084	1.47	.81	.78	23.9	9.90	5.21	27.0	4.85	.015	.000
MAX	.23	.16	12	1.1	1.3	413	19	31	198	34	.17	.00
MIN	.00	.08	.08	.74	.58	.74	5.4	.42	.40	.20	.00	.00
AC-FT	5.2	5.0	91	50	45	1470	589	320	1610	298	1.0	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2000, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
MEAN	14.9	7.62	9.72	8.24	12.7	24.5	18.9	33.7	23.9	1.78	2.12	6.97
MAX	193	61.1	108	53.2	67.1	142	88.0	176	125	14.1	27.5	50.9
(WY)	1987	1987	1992	1973	1987	1998	1990	1982	1989	1999	1977	1991
MIN	.000	.000	.000	.000	.000	.000	.017	.026	.012	.000	.000	.000
(WY)	1965	1966	1966	1966	1966	1966	1971	1971	1971	1964	1964	1964

LOCATION.--Lat 34°13'15", long 98°27'10", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ 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 north of Randlett, and at mile 4.8.

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1993, published as Deep Red Run near Randlett.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 924.49 ft above sea level (Oklahoma State Highway Department). Prior to Nov. 10, 1949, nonrecording gage at same site and datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage somewhat exceeding 27 ft, from information provided by local residents.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
No peak greater than base discharge.							

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	1.0	e.26	1.2	.98	1.5	6.4	20	1.8	59	.86	e.00
2	e.00	.84	.25	1.1	.98	1.6	5.5	129	1.4	38	.86	e.00
3	e.00	.68	e.24	1.1	.99	1.5	5.2	84	1.2	30	.86	e.00
4	e.00	1.3	e.22	1.1	.98	1.2	5.7	44	40	26	.76	e.00
5	e.00	1.1	e.20	5.4	1.0	1.1	11	26	73	25	.72	e.00
6	e.00	1.1	e.19	3.9	1.1	1.1	6.6	16	19	23	e.64	e.00
7	e.00	.98	e.14	2.3	1.1	1.1	4.2	10	7.1	9.5	.53	e.00
8	e.00	.98	e.12	1.9	1.1	1.2	3.2	7.4	4.5	4.6	e.48	e.00
9	e.00	.92	8.2	1.3	1.1	1.1	2.5	5.5	2.6	3.4	e.40	e.00
10	.35	.86	248	1.1	.98	1.1	2.2	4.2	1.5	4.9	e.35	e.00
11	41	.77	198	1.1	.98	1.1	1.9	3.7	.98	4.2	e.30	e.00
12	13	.75	59	1.1	.98	1.1	2.1	3.0	.87	3.5	e.26	e.00
13	3.9	.73	21	1.0	.98	1.1	1.9	2.6	.81	3.8	e.20	e.00
14	2.3	.63	6.8	.98	.98	1.4	2.0	2.4	.75	3.4	e.15	e.00
15	1.5	.61	3.7	.98	.99	1.6	2.7	1.9	.73	5.6	e.09	e.00
16	1.1	.53	2.7	.98	1.1	1.5	4.4	1.3	.64	3.7	e.00	e.00
17	1.0	.53	2.3	.92	.98	1.6	48	1.0	.80	2.9	e.00	e.00
18	.92	.43	1.8	.86	.98	1.6	36	.94	258	2.5	e.00	e.00
19	.78	.43	1.6	.86	.98	1.3	18	.86	214	2.2	e.00	e.00
20	.65	.42	1.4	.82	.98	1.4	9.5	.86	72	1.8	e.00	e.00
21	.62	e.40	1.4	.75	.98	1.7	5.4	.86	55	1.7	e.00	e.00
22	.53	e.38	5.7	.75	.98	1.7	3.8	.86	28	1.8	e.00	e.00
23	.53	.36	7.3	.75	1.0	309	3.1	.92	18	1.9	e.00	e.00
24	.44	.34	6.7	.75	1.0	1620	2.5	.98	7.9	1.7	e.00	e.00
25	.43	.34	6.4	.76	2.0	776	2.3	.91	4.1	2.1	e.00	e.00
26	.42	e.32	6.5	.75	2.2	114	2.0	.95	2.6	2.1	e.00	e.00
27	.34	e.30	6.2	.83	1.6	56	2.0	.98	1.9	1.6	e.00	e.00
28	e.30	e.29	6.2	.86	1.3	33	1.9	.86	1.2	2.1	e.00	e.00
29	e.27	e.28	5.7	.86	1.2	16	2.0	3.7	6.4	2.0	e.00	e.00
30	.40	e.27	3.3	.97	---	7.7	1.9	2.7	100	1.4	e.00	e.00
31	.84	---	1.7	.98	---	6.0	---	2.0	---	.96	e.00	---
TOTAL	71.62	18.87	613.22	39.01	32.50	2967.3	205.9	380.38	926.78	276.36	7.46	0.00
MEAN	2.31	.63	19.8	1.26	1.12	95.7	6.86	12.3	30.9	8.91	.24	.000
MAX	41	1.3	248	5.4	2.2	1620	48	129	258	59	.86	.00
MIN	.00	.27	.12	.75	.98	1.1	1.9	.86	.64	.96	.00	.00
AC-FT	142	37	1220	77	64	5890	408	754	1840	548	15	.00

MEAN	250	84.4	71.2	57.8	81.4	143	137	475	440	60.2	68.0	182
MAX	3345	994	1493	568	1020	1540	1398	2800	4654	795	1109	1453
(WY)	1984	1987	1992	1998	1987	1998	1990	1987	1995	1991	1995	1969
MIN	.000	.000	.000	.000	.022	.10	.003	.061	.000	.000	.000	.000
(WY)	1953	1955	1955	1953	1981	1980	1955	1971	1966	1964	1952	1952

e Estimated

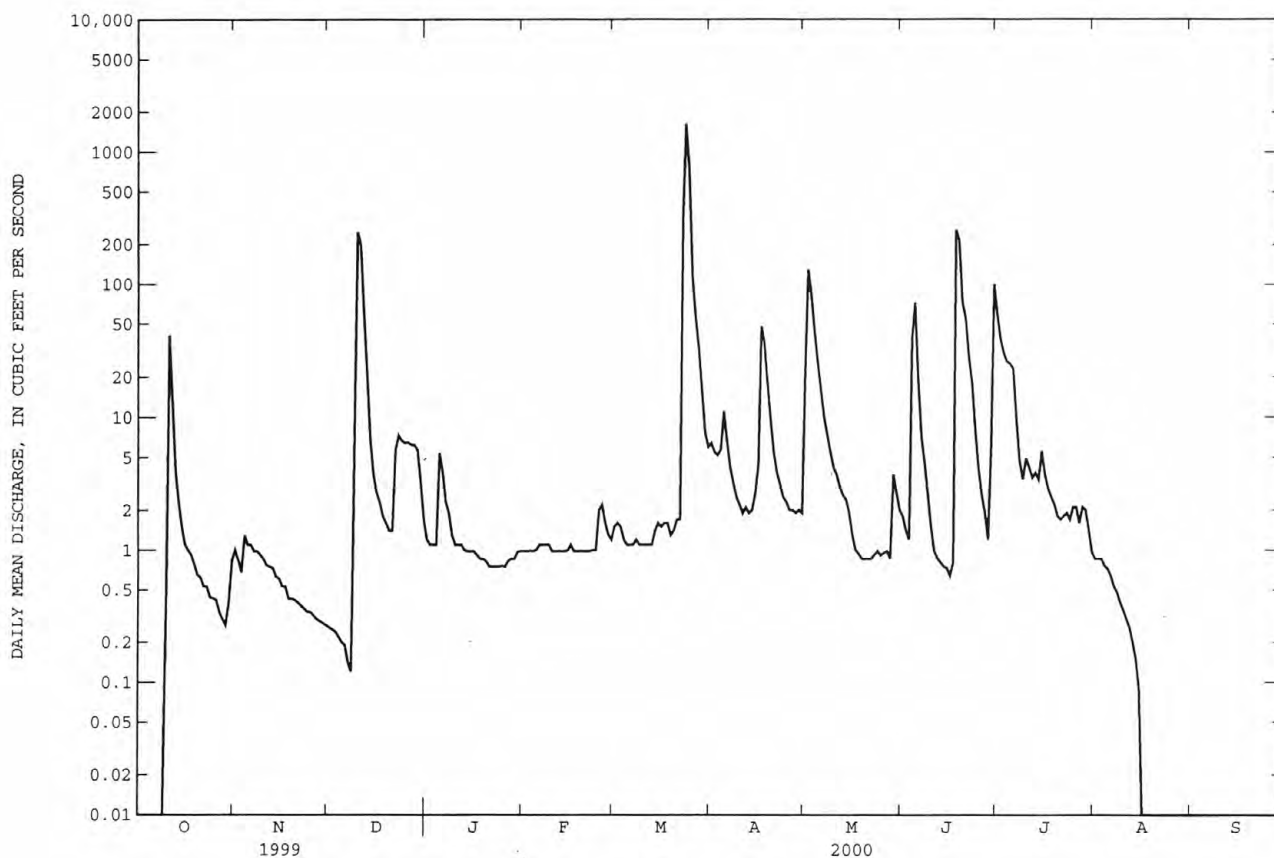
RED RIVER BASIN

69

07311500 DEEP RED CREEK NEAR RANDLETT, OK--Continued
(Formerly published as Deep Red Run near Randlett)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1950 - 2000
ANNUAL TOTAL	28812.62	5539.40	
ANNUAL MEAN	78.9	15.1	171
HIGHEST ANNUAL MEAN			904
LOWEST ANNUAL MEAN			15.1
HIGHEST DAILY MEAN	4140 May 30	1620 Mar 24	46300 Oct 20 1983
LOWEST DAILY MEAN	.00 Aug 16	.00 at times	.00 at times
ANNUAL SEVEN-DAY MINIMUM	.00 Aug 16	.00 Oct 1	.00 Oct 3 1951
INSTANTANEOUS PEAK FLOW		1870 Mar 24	72300 Oct 20 1983
INSTANTANEOUS PEAK STAGE		16.59 Mar 24	^a 29.58 May 29 1987
ANNUAL RUNOFF (AC-FT)	57150	10990	124000
10 PERCENT EXCEEDS	116	16	185
50 PERCENT EXCEEDS	2.4	1.1	4.8
90 PERCENT EXCEEDS	.00	.00	.00

^aDue to backwater from West Cache Creek.



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 at downstream side of bridge abutment on U.S. Highway 81, 0.5 mi downstream from Chicago, and Rock Island Railroad Co. bridge, 1.2 mi south of Terral, 3.6 mi downstream from Little Wichita River, and at mile 872.

DRAINAGE AREA.--28,723 mi² of which 5,936 mi² probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 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 above sea level. Prior to Jan 12, 1939, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Apr 1938, at least 10% of contributing drainage area has been regulated by upstream reservoirs. There are many small diversions upstream from station for irrigation, oil field operations, and for municipal uses.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1935, reached a stage of 27.2 ft, although floods in 1891 and on May 1, 1908, are reported to have reached about the same stage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	333	163	292	304	429	1940	566	509	7330	336	139
2	198	480	163	290	279	418	1830	5490	488	6160	314	138
3	192	612	168	317	271	378	1710	8330	554	4460	285	139
4	190	643	177	296	271	351	3030	5470	551	4620	288	137
5	224	503	183	296	276	337	5210	4410	6990	4080	279	133
6	230	396	182	308	274	371	3350	3500	5280	2710	257	106
7	231	336	205	313	271	429	2530	2580	3540	2810	231	104
8	230	291	212	308	271	463	1860	2070	2520	2330	235	99
9	212	266	218	322	267	446	1490	1780	1830	1720	226	111
10	249	242	237	333	274	443	1250	1560	1400	1400	221	129
11	402	226	687	327	263	429	1060	1370	1090	1190	232	124
12	291	213	3380	314	247	386	1070	1220	921	1020	224	104
13	384	200	2610	302	239	361	1100	1080	816	923	216	89
14	491	201	1650	291	234	378	1140	979	1550	831	212	123
15	402	191	1010	299	234	367	932	934	1570	796	208	123
16	337	187	758	308	231	331	904	872	1090	750	208	83
17	285	180	614	312	237	299	962	820	955	579	200	91
18	245	172	527	307	297	295	1070	786	928	506	182	98
19	221	166	482	303	299	296	1040	771	1190	532	179	108
20	201	155	428	308	300	319	997	734	2810	493	171	109
21	192	155	396	273	259	343	1060	728	3460	420	169	84
22	186	160	375	282	256	335	916	715	4240	387	159	59
23	175	156	378	288	273	340	765	650	3590	366	152	65
24	162	159	354	290	274	2590	670	605	3190	369	152	59
25	158	159	356	289	324	18300	620	630	2400	352	162	54
26	166	166	337	286	354	12400	583	679	1490	344	178	54
27	165	159	323	340	463	6360	557	587	1090	351	192	57
28	168	160	310	304	452	4850	537	557	899	348	172	67
29	164	162	311	301	417	3470	543	588	853	341	153	75
30	210	163	305	324	---	2740	533	578	1490	357	141	141
31	274	---	297	305	---	2560	---	494	---	354	133	---
TOTAL	7439	7592	17796	9428	8411	61814	41259	52133	59284	49229	6467	3002
MEAN	240	253	574	304	290	1994	1375	1682	1976	1588	209	100
MAX	491	643	3380	340	463	18300	5210	8330	6990	7330	336	141
MIN	158	155	163	273	231	295	533	494	488	341	133	54
AC-FT	14760	15060	35300	18700	16680	122600	81840	103400	117600	97650	12830	5950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

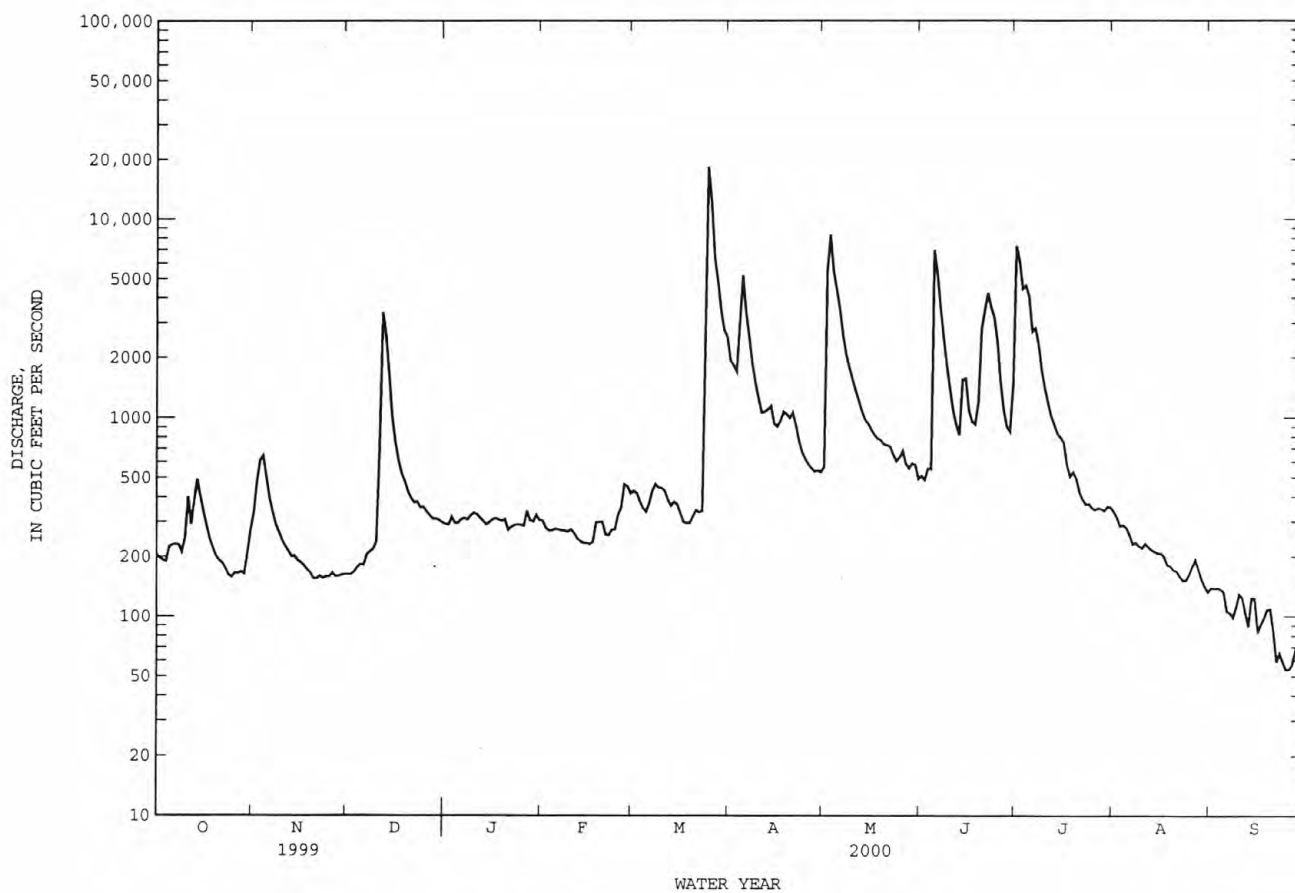
MEAN	2957	1488	1130	939	1353	2041	2626	6540	6250	1671	1335	2011
MAX	23900	9713	11810	5306	9320	14710	18080	43580	37460	8077	14730	9653
(WY)	1987	1987	1992	1992	1987	1998	1990	1957	1941	1950	1995	1986
MIN	108	102	91.2	76.5	136	66.1	142	134	517	158	155	100
(WY)	1953	1940	1939	1940	1953	1940	1971	1971	1966	1964	1970	2000

RED RIVER BASIN

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07315500 RED RIVER NEAR TERRAL, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000	
ANNUAL TOTAL	549247		323854		2527	
ANNUAL MEAN	1505		885		8925	1987
HIGHEST ANNUAL MEAN					523	1953
LOWEST ANNUAL MEAN					215000	Jun 7 1995
HIGHEST DAILY MEAN	11600	Jun 27	18300	Mar 25	46	Mar 20 1940
LOWEST DAILY MEAN	155	Nov 20	54	Sep 25	47	Mar 18 1940
ANNUAL SEVEN-DAY MINIMUM	159	Nov 19	59	Sep 22	236000	Jun 7 1995
INSTANTANEOUS PEAK FLOW			20000	Mar 25	33.60	Oct 22 1983
INSTANTANEOUS PEAK STAGE			14.46	Mar 25	1831000	
ANNUAL RUNOFF (AC-FT)	1089000		642400		5570	
10 PERCENT EXCEEDS	4170		2440		603	
50 PERCENT EXCEEDS	629		332		177	
90 PERCENT EXCEEDS	201		155			



RED RIVER BASIN

07315500 RED RIVER NEAR TERRELL, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Oct 1967 TO Sep 1997.

BIOLOGICAL DATA: May 1997 to Sep 1997; Oct 1999 to Sep 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
FEB 04...	1140	266	6260	8.2	8.2	14.0	122	K5	K8
APR 27...	1500	549	--	--	22.6	9.1	--	56	K56
JUN 15...	1100	1580	8900	8.0	23.1	7.5	93	440	K100
AUG 10...	0925	226	6000	8.0	26.4	7.1	93	K39	K9



07331000 Washita River at Dickson May 1990

RED RIVER BASIN

07315700 MUD CREEK NEAR COURTNEY, OK

LOCATION.--Lat 34°00'15", long 97°34'00", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ 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 downstream from North Mud Creek, 6.0 mi northwest of Courtney, and at mile 11.5.

DRAINAGE AREA.--572 mi².

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

REVISED RECORDS.--WDR OK-78-2: Maximum gage height.

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 727.72 ft above sea level. Prior to Oct. 1, 1968, auxiliary water-stage recorder 2.0 mi downstream from base gage.

REMARKS.--Records poor. U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1957, reached a stage of 30.6 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)					
No peak greater than base discharge.												
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000 DAILY MEAN VALUES												
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.00	.48	.00	.04	.08	2.2	1.8	.00	1.2	.00	.00
2	.00	.00	.48	.00	.04	.34	1.9	.52	.00	1.5	.00	.00
3	.00	.00	.46	.07	.04	1.7	1.7	.29	.00	.88	.00	.00
4	.00	20	e.43	.05	.04	.83	1.7	.21	.00	.77	.00	.00
5	.00	13	e.42	.04	.04	.53	1.5	.18	.00	2.3	.00	.00
6	.00	7.4	e.41	.04	.02	.37	1.1	.13	35	31	.00	.00
7	.00	5.5	e.38	.03	.00	.34	1.4	.05	29	13	.00	.00
8	.00	3.8	e.36	.19	.00	.34	2.9	.00	11	5.4	.00	.00
9	.00	2.6	e.35	.14	.00	.25	2.7	.00	5.2	2.3	.00	.00
10	.00	2.0	e.32	.10	.00	.22	2.0	.00	3.3	1.7	.00	.00
11	.00	1.3	e.28	.08	.00	.17	1.8	.00	5.3	1.3	.00	.00
12	.00	1.2	e.24	.08	.00	.11	3.2	.00	3.4	.54	.00	.00
13	.00	1.0	e.19	.05	.00	.10	1.8	.00	1.9	.09	.00	.00
14	.00	.96	e.12	.04	.00	.24	1.6	.00	.74	.00	.00	.00
15	.00	.68	.04	.04	.00	.23	1.5	.00	.26	.00	.00	.00
16	.00	.57	.04	.04	.00	.15	1.9	.00	.47	.00	.00	.00
17	.00	.57	.02	.04	.00	.11	2.4	.00	1.4	.00	.00	.00
18	.00	.64	.01	.04	.00	7.9	3.4	.00	.95	.00	.00	.00
19	.00	.65	.00	.04	.00	11	2.8	.00	34	.00	.00	.00
20	.00	.53	.00	.02	.00	5.7	2.0	.00	42	.00	.00	.00
21	.00	.48	.00	.00	.00	3.5	3.8	.00	18	.00	.00	.00
22	.00	.47	.00	.00	.04	3.0	3.7	.00	51	.00	.00	.00
23	.00	.59	.00	.00	.23	2.4	2.6	.00	59	.00	.00	.00
24	.00	.73	.00	.00	.13	1.9	1.9	.00	15	.00	.00	.00
25	.00	.73	.00	.00	.27	1.4	1.6	.00	6.5	.00	.00	.00
26	.00	.68	.00	.00	.28	1.0	1.4	.00	3.9	.00	.00	.00
27	.00	.60	.00	.06	.25	5.1	1.5	.00	2.9	.00	.00	.00
28	.00	.58	.00	.11	.20	12	1.4	.00	2.5	.00	.00	.00
29	.00	.52	.00	.11	.12	7.0	.92	.00	1.6	.00	.00	.00
30	.00	.51	.00	.06	---	4.4	.84	.00	1.4	.00	.00	.00
31	.00	---	.00	.04	---	2.9	---	.00	---	.00	.00	---
TOTAL	0.03	68.29	5.03	1.51	1.74	75.31	61.16	3.18	335.72	61.98	0.00	0.00
MEAN	.001	2.28	.16	.049	.060	2.43	2.04	.10	11.2	2.00	.000	.000
MAX	.03	20	.48	.19	.28	12	3.8	1.8	59	31	.00	.00
MIN	.00	.00	.00	.00	.00	.08	.84	.00	.00	.00	.00	.00
AC-FT	.06	135	10	3.0	3.5	149	121	6.3	666	123	.00	.00

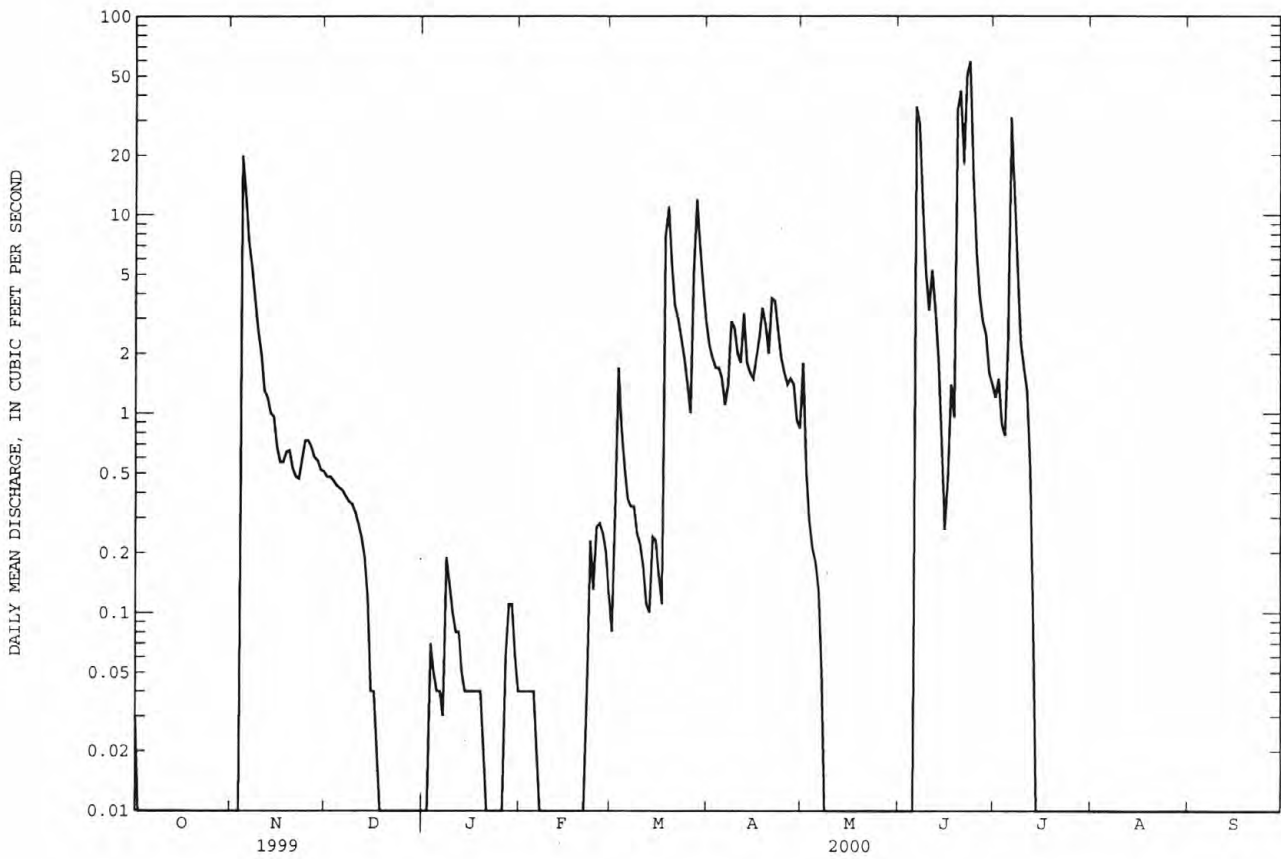
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RED RIVER BASIN

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07315700 MUD CREEK NEAR COURTNEY, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1961 - 2000
ANNUAL TOTAL	19105.36	613.95	190
ANNUAL MEAN	52.3	1.68	614
HIGHEST ANNUAL MEAN			1.68
LOWEST ANNUAL MEAN			1990
HIGHEST DAILY MEAN	1590 Mar 13	59 Jun 23	37800 May 3 1990
LOWEST DAILY MEAN	.00 Aug 11	.00 at times	.00 at times
ANNUAL SEVEN-DAY MINIMUM	.00 Aug 11	.00 Oct 2	.00 Jul 28 1961
INSTANTANEOUS PEAK FLOW		135 Jun 22	49600 May 3 1990
INSTANTANEOUS PEAK STAGE		11.25 Jun 22	33.14 May 29 1987
ANNUAL RUNOFF (AC-FT)	37900	1220	137600
10 PERCENT EXCEEDS	67	2.9	260
50 PERCENT EXCEEDS	.87	.04	7.8
90 PERCENT EXCEEDS	.00	.00	.00



RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW $\frac{1}{4}$ sec.36, T.9 S., R.1 E., Love County, OK, Hydrologic Unit 11130201, on downstream right bank at end of bridge on Interstate 35, 0.2 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi downstream from Fish Creek, 4.5 mi southwest of Thackerville, OK, 7.0 mi north of Gainesville, and at mile 791.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--30,782 mi² of which 5,936 mi² probably is 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 above sea level. Prior to Jan. 17, 1939, and Feb. 13, 1965 to Nov. 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow slightly regulated by Lake Kemp (station 07312000 in Texas), since 1943 by Lake Altus (station 07302500 in Oklahoma), since 1946 by Lake Kickapoo (station 07314000 in Texas), since 1967 by Lake Arrowhead (station 07314800 in Texas) and Moss Lake (station 07315950 in Texas). U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 24,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
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No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	269	294	144	376	375	520	3650	798	615	2110	356	138
2	266	298	147	377	371	499	e3330	780	517	3720	353	132
3	261	298	168	402	357	482	e2790	4510	628	8130	339	126
4	256	376	162	404	345	561	e2500	11900	581	5800	318	122
5	254	570	156	390	319	519	e2380	7300	608	4970	302	119
6	253	753	164	379	304	459	5010	5250	2320	4910	294	114
7	252	677	167	373	307	427	e4810	4220	6810	4020	284	112
8	257	532	174	422	301	441	e3450	3420	4160	3140	271	111
9	265	418	186	457	288	452	e2880	2790	3150	3130	259	109
10	264	358	207	439	300	511	e2370	2390	2530	2610	251	107
11	276	319	229	388	296	502	e2080	2160	2080	2160	241	104
12	274	282	283	377	277	500	1960	1940	1720	1910	231	107
13	311	254	928	413	276	507	1980	1730	1560	1720	219	117
14	374	239	3180	391	271	499	1820	1560	1250	1550	209	112
15	295	222	2580	368	262	e486	1750	1410	1070	1400	202	106
16	446	206	1850	373	256	475	1760	1280	1650	1290	196	101
17	510	194	1370	360	247	466	1580	1180	1850	1200	191	100
18	457	184	1080	354	250	429	1470	1110	1470	1110	190	103
19	397	184	899	356	245	407	1480	1040	1290	901	183	115
20	325	173	768	346	245	371	1580	1010	1160	804	177	111
21	263	160	666	345	302	381	1520	961	1470	781	173	107
22	228	158	597	344	337	459	1460	909	2950	767	171	108
23	200	175	550	344	407	497	1480	853	3540	684	169	106
24	180	157	509	329	412	512	1340	810	4090	603	167	123
25	169	152	478	325	354	2410	1130	749	3210	535	161	115
26	158	144	454	327	336	18400	1000	683	2930	484	154	108
27	149	146	437	359	349	12900	933	827	2260	500	151	109
28	141	151	420	397	362	8930	884	929	1700	462	151	112
29	140	153	408	416	405	6930	811	732	1340	397	145	109
30	176	148	398	405	---	5250	773	611	1220	380	143	106
31	256	---	387	386	---	4220	---	595	---	365	142	---
TOTAL	8322	8375	20146	11722	9156	70402	61961	66437	61729	62543	6793	3369
MEAN	268	279	650	378	316	2271	2065	2143	2058	2018	219	112
MAX	510	753	3180	457	412	18400	5010	11900	6810	8130	356	138
MIN	140	144	144	325	245	371	773	595	517	365	142	100
AC-FT	16510	16610	39960	23250	18160	139600	122900	131800	122400	124100	13470	6680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2000, BY WATER YEAR (WY)

	MEAN	3722	1945	1607	1268	1842	2885	3545	8010	8285	2186	1606	2481
MAX	31080	14020	14990	7258	9984	19590	27400	47780	43510	9857	20730	12880	
(WY)	1942	1942	1992	1998	1987	1998	1990	1957	1941	1950	1995	1986	
MIN	119	137	125	82.4	151	90.5	153	204	640	166	163	108	
(WY)	1953	1955	1940	1940	1953	1940	1971	1971	1966	1964	1970	1956	

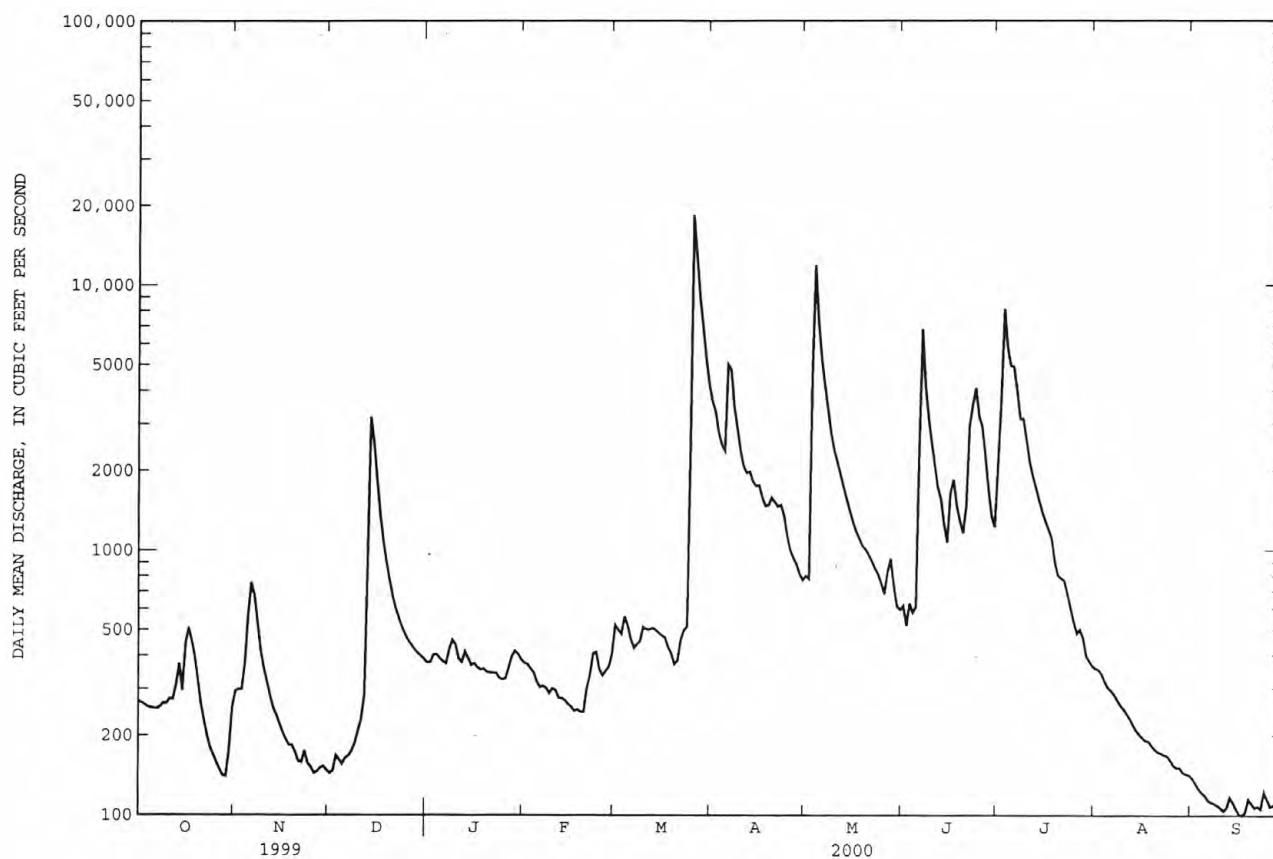
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RED RIVER BASIN

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07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1937 - 2000	
ANNUAL TOTAL	669570		390955		3284	
ANNUAL MEAN	1834		1068		11890	1987
HIGHEST ANNUAL MEAN					651	1953
LOWEST ANNUAL MEAN					232000	May 31 1987
HIGHEST DAILY MEAN	21400	May 31	18400	Mar 26	48	Jan 18 1940
LOWEST DAILY MEAN	140	Oct 29	100	Sep 17	48	Jan 18 1940
ANNUAL SEVEN-DAY MINIMUM	148	Nov 26	106	Sep 15	265000	May 31 1987
INSTANTANEOUS PEAK FLOW			19500	Mar 26	40.08	May 31 1987
INSTANTANEOUS PEAK STAGE			17.03	Mar 26	100	Sep 17 2000
INSTANTANEOUS LOW FLOW			100	Sep 17	2379000	
ANNUAL RUNOFF (AC-FT)	1328000		775500		7270	
10 PERCENT EXCEEDS	5150		2790		855	
50 PERCENT EXCEEDS	703		403		216	
90 PERCENT EXCEEDS	235		145			



RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1994 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1994 to current year.

WATER TEMPERATURE: October 1994 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1994.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 9,030 microsiemens May 6, 1999; minimum, 402 microsiemens Nov. 14, 1994.

WATER TEMPERATURE: Maximum, 36.5°C July 15, 1998; minimum, -0.5°C Jan. 4, 5, 1999.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 8,130 microsiemens June 19; minimum, 1,910 microsiemens Dec. 17, 18, May 7.

WATER TEMPERATURE: Maximum, 35.0°C Sept. 4; minimum, 0.8°C Jan. 30.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

		AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	
JUL												
18...	0835	1028	1028	9.57	1180	749	7.3	8.2	4400	27.6	10	
18...	0837	1028	1028	9.57	1180	749	7.3	8.2	4400	27.7	90	
18...	0839	1028	1028	9.57	1180	749	7.2	8.2	4390	27.7	200	
18...	0841	1028	1028	9.57	1180	749	7.1	8.2	4390	27.7	220	
18...	0843	1028	1028	9.57	1180	749	7.1	8.2	4390	27.7	310	
18...	0845	1028	1028	9.57	1180	749	7.1	8.2	4390	27.7	330	
18...	0847	1028	1028	9.57	1180	749	7.1	8.2	4380	27.7	350	
18...	0849	1028	1028	9.57	1180	749	7.1	8.2	4390	27.7	370	
18...	0851	1028	1028	9.57	1180	749	7.1	8.2	4380	27.7	420	
18...	0853	1028	1028	9.57	1180	749	7.1	8.2	4380	27.7	440	
18...	0855	1028	1028	9.57	1180	749	7.2	8.2	4390	27.7	460	
18...	0857	1028	1028	9.57	1180	749	7.3	8.2	4380	27.7	480	
18...	0859	1028	1028	9.57	1180	749	7.2	8.2	4390	27.7	500	
18...	0901	1028	1028	9.57	1180	749	7.0	8.2	4390	27.7	520	
DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	
OCT												
26...	1610	80020	1028	5.06	156	753	137	12.2	8.3	4740	32.3	19.8
NOV												
16...	1200	80020	1028	8.19	207	755	95	9.1	8.2	3670	22.7	16.6
DEC												
30...	1315	80020	1028	8.51	398	750	110	12.1	8.4	4510	16.2	9.8
JAN												
26...	0920	80020	1028	8.36	328	754	90	10.9	8.1	5560	1.6	6.0
FEB												
29...	0900	80020	1028	8.46	384	751	95	9.3	8.1	5190	20.5	15.0
MAR												
20...	1400	80020	1028	8.41	349	743	110	10.5	8.2	5600	21.0	15.4
APR												
26...	1700	80020	1028	9.40	983	749	125	9.7	8.3	5240	30.0	26.5
MAY												
25...	0930	80020	1028	9.21	782	741	83	6.4	8.0	4130	27.5	26.6
JUN												
08...	1400	80020	1028	11.57	3970	749	90	7.1	7.9	5380	32.7	25.8
JUL												
18...	1030	80020	1028	9.57	1140	749	93	7.1	8.3	4280	38.7	27.7
AUG												
01...	1130	80020	1028	8.68	362	750	104	7.7	8.1	6060	33.4	29.1
SEP												
13...	1315	80020	1028	8.02	123	749	139	10.3	8.3	6130	32.5	28.8

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07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 26...	780	700	201	67.8	8.9	11	685	65	77	90	2	1150
NOV 16...	600	530	144	59.5	7.7	9	491	64	75	92	0	835
DEC 30...	870	690	232	70.1	8.4	10	660	62	180	220	0	1070
JAN 26...	930	820	231	85.7	8.5	12	809	65	110	134	0	1310
FEB 29...	910	790	229	81.2	7.6	11	755	64	116	142	0	1240
MAR 20...	1000	930	272	87.9	8.6	11	800	62	111	135	0	1290
APR 26...	910	830	241	74.4	8.5	11	784	65	80	98	0	1290
MAY 25...	790	700	201	69.7	7.5	9	566	61	91	111	0	904
JUN 08...	1000	940	292	72.1	10.0	15	1090	69	85	103	0	1400
JUL 18...	840	730	225	67.5	9.1	8	532	58	112	137	0	934
AUG 01...	1100	1000	291	96.2	10.4	11	884	63	92	112	0	1450
SEP 13...	1200	1100	286	110	10.2	12	906	63	98	120	0	1440
DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
OCT 26...	.4	1.3	629	.95	<.020	--	--	--	--	<.050	--	<.010
NOV 16...	.4	.6	500	.93	<.020	--	--	--	--	<.050	--	<.010
DEC 30...	.4	9.5	631	.93	<.020	1.45	2.4	--	6.40	1.49	.131	.040
JAN 26...	.4	.5	790	.81	.024	--	--	.03	--	<.050	--	<.010
FEB 29...	.4	1.4	747	1.0	<.020	--	--	--	--	<.050	--	<.010
MAR 20...	.4	.6	854	1.1	<.020	--	--	--	--	<.050	--	<.010
APR 26...	.3	3.6	781	.85	<.020	--	--	--	--	<.050	--	<.010
MAY 25...	.4	4.2	678	--	<.020	--	--	--	--	<.050	--	<.010
JUN 08...	.4	9.3	686	3.9	.039	.613	4.6	.05	2.71	.649	.118	.036
JUL 18...	.6	12.0	704	.95	<.020	--	--	--	--	<.050	--	<.010
AUG 01...	.4	9.4	957	1.2	.023	--	--	.03	--	<.050	--	<.010
SEP 13...	.6	12.1	996	1.4	<.020	--	--	--	--	<.050	--	<.010

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)
OCT 26...	--	--	<.050	<.010	.120	35	3.80	1180	2790	E2.0	3
NOV 16...	--	--	<.050	<.010	.092	40	2.83	1160	2080	2.5	3
DEC 30...	--	.273	.105	.089	.219	65	3.80	3010	2800	3.4	5
JAN 26...	.79	--	<.050	<.010	.109	10	4.50	2930	3310	E1.4	E2
FEB 29...	--	--	<.050	<.010	.109	46	4.26	3250	3130	2.8	4
MAR 20...	--	--	<.050	<.010	.175	57	4.59	3180	3380	2.2	4
APR 26...	--	--	<.050	<.010	.148	57	4.40	8580	3230	3.7	E2
MAY 25...	--	--	<.050	<.010	--	33	3.38	5250	2490	2.3	3
JUN 08...	3.9	.092	E.047	.030	1.82	2930	4.91	38700	3610	4.0	16
JUL 18...	--	.055	<.050	.018	.183	94	3.47	7850	2550	4.5	6
AUG 01...	1.2	--	<.050	<.010	.095	31	5.11	3670	3750	4.1	5
SEP 13...	--	--	<.050	<.010	.115	18	5.20	1270	3820	6.5	7
DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
OCT 26...	112	120	<24.0	<.1	1.0	2	<30	2	<30	350	<300
NOV 16...	97	112	<24.0	<.1	<1.0	<1	<30	2	<30	440	<300
DEC 30...	40	149	<24.0	<.1	E.7	E1	<30	3	<30	870	<300
JAN 26...	102	108	<24.0	<2.0	<.8	<5	<30	<2	<30	250	<300
FEB 29...	100	105	<24.0	<.1	<.8	<1	<30	1	<30	530	<300
MAR 20...	97	100	E1.0	E.1	.8	E1	<30	1	<30	560	<100
APR 26...	120	141	<24.0	E.1	<1.0	<1	<30	2	<40	650	<300
MAY 25...	151	159	<8.0	E.1	<.8	<1	<30	3	<30	450	<300
JUN 08...	237	624	<40.0	.5	<.8	31	<50	23	<50	22500	<500
JUL 18...	131	161	<24.0	<.1	<.8	<1	<30	4	<30	990	<300
AUG 01...	137	142	<40.0	<1.1	1.6	2	<50	2	<50	270	<500
SEP 13...	117	124	<40.0	<.1	<1.6	<1	<50	E1	<50	160	<500

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)
OCT 26...	17	8	68	<.2	<.1	<120	<39	<2.4	<3	<1	<1
NOV 16...	E1	9	67	<.2	<.2	<120	<39	2.5	E2	<1	<1
DEC 30...	E1	8	62	<.2	<.3	<120	<39	E2.1	3	<1	<1
JAN 26...	<2	17	47	<.2	<.3	<120	<39	2.7	3	<2	<1
FEB 29...	12	17	73	<.2	<.3	<120	<39	2.7	4	<1	<1
MAR 20...	1	17	74	<.2	<.3	E26	<39	3.3	3	<1	<1
APR 26...	17	<7	77	E.1	<.3	102	E33	2.8	3	<1	<1
MAY 25...	21	<2	77	<.2	<.3	<120	<39	2.5	E2	<1	<1
JUN 08...	125	22	1640	.3	<.3	<200	<117	3.9	E2	<1	<1
JUL 18...	49	<2	74	<.2	<.3	<120	<117	E2.2	E1	<1	<1
AUG 01...	E1	<2	136	E.1	<.3	<200	<39	3.3	4	<1	<1
SEP 13...	20	4	231	--	<.3	<200	E100	2.0	3	<1	<1

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RED RIVER BASIN

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

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07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	5220	4820	5020	4290	4100	4220	5210	5170	5180	4670	4610	4640
2	5460	5190	5330	4290	4120	4220	5180	4990	5160	4720	4670	4700
3	6330	5420	5740	4230	4010	4120	5030	4870	4980	4720	4500	4640
4	6530	6290	6440	4460	4010	4290	5040	4920	4980	4680	4590	4640
5	6290	6040	6130	4440	4280	4370	5050	4910	4970	4680	4610	4650
6	6130	6000	6060	4290	3700	4110	5090	4920	4950	4760	4650	4720
7	6050	5630	5790	4670	3690	4180	5120	4990	5060	4770	4560	4730
8	5630	5410	5490	4740	4010	4520	5110	4990	5030	4560	4500	4520
9	5460	5350	5410	4010	3200	3520	5060	4960	5020	4650	4520	4590
10	5480	5350	5430	3200	2890	3060	5090	5020	5060	4690	4590	4650
11	5520	5210	5420	3410	2950	3210	5080	4570	4930	4740	4580	4650
12	5230	5020	5100	3850	3260	3550	4570	4370	4460	4760	4510	4690
13	5280	5000	5130	3910	3730	3830	5130	4520	4690	4640	4370	4450
14	5970	5280	5720	3750	3670	3720	5120	2550	3770	5050	4640	4860
15	5870	5370	5610	3670	3600	3620	2550	2150	2310	5120	5030	5090
16	5370	3570	4820	3760	3610	3660	2150	1940	2030	5050	4950	4980
17	4980	3560	3910	4010	3760	3890	1940	1910	1920	5360	5030	5220
18	5810	4530	5370	4200	3990	4110	1990	1910	1950	5360	4970	5170
19	4530	3710	4020	4270	4180	4230	2080	1990	2030	5020	4900	4950
20	3710	3260	3480	4400	4260	4310	2150	2080	2110	5130	5020	5100
21	3580	3220	3320	4540	4380	4450	2420	2150	2250	5190	5120	5160
22	4430	3580	4020	4580	4520	4560	2880	2420	2640	5220	5170	5190
23	5020	4400	4710	4600	4470	4530	3220	2880	3050	5280	5210	5230
24	5300	5020	5220	4550	4480	4500	3510	3220	3380	5320	5280	5290
25	5290	4920	5120	4770	4540	4620	3770	3510	3640	5320	5240	5270
26	4920	4500	4710	4790	4730	4760	3990	3770	3880	5330	5260	5300
27	4590	4480	4530	4850	4740	4800	4220	3990	4120	5360	5190	5250
28	4490	4430	4450	5090	4830	4970	4390	4220	4310	5260	5190	5220
29	4510	4450	4480	5160	5090	5110	4470	4390	4420	5240	5070	5160
30	4530	4330	4410	5230	5140	5200	4560	4470	4510	5150	5070	5120
31	4430	4070	4200	---	---	---	4610	4560	4580	5260	5140	5200
MONTH	6530	3220	4990	5230	2890	4210	5210	1910	3920	5360	4370	4940

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5270	5170	5220	5800	5490	5610	2710	2620	2650	5350	5200	5260
2	5400	5220	5330	5980	5480	5690	2900	2710	2810	5200	4990	5130
3	5540	5400	5440	5970	5500	5660	2870	2720	2780	5280	3920	4860
4	5540	5470	5520	5530	4390	5070	3190	2830	3010	3920	2620	3110
5	5630	5540	5590	4890	4140	4390	3350	3190	3310	2620	2060	2310
6	5650	5510	5590	5220	4890	5090	4410	3310	3590	2060	1940	1980
7	5540	5380	5460	5470	5180	5390	5520	4410	5220	1950	1910	1930
8	5560	5440	5510	5500	5080	5190	5310	4640	4990	2210	1920	2040
9	5680	5560	5620	6660	5500	6130	4640	4200	4370	2350	2210	2310
10	5790	5680	5750	6780	6590	6710	4200	4130	4160	2430	2340	2370
11	5980	5780	5900	6590	5640	5930	4210	3940	4160	2780	2430	2570
12	6100	5960	6030	6290	5750	6120	4190	3940	4130	3190	2780	3000
13	6110	6070	6090	6230	5360	5850	4130	3780	3990	3530	3190	3360
14	6170	6060	6120	5620	5300	5480	4270	3800	4020	3670	3530	3610
15	6280	6150	6230	---	---	e5490	4460	4270	4390	3800	3670	3730
16	6260	6060	6160	---	---	e5500	4590	4390	4490	3910	3780	3870
17	6060	5930	6000	---	---	e5510	4590	4170	4370	3960	3880	3930
18	6000	5900	5920	---	---	e5520	4420	4210	4310	4060	3960	4000
19	6100	5930	6000	---	---	e5540	4730	4420	4590	4120	4050	4090
20	6200	6090	6130	---	---	e5550	5260	4730	5060	4110	4050	4090
21	6250	6120	6160	5470	5080	5310	5220	4850	4990	4200	4060	4100
22	6350	6020	6280	5080	4770	4910	5580	5220	5490	4200	4080	4130
23	6030	4970	5660	4770	4550	4610	6540	5560	5990	4140	4030	4080
24	4970	4630	4830	4840	4550	4650	6770	6280	6640	4140	4030	4080
25	4660	4450	4540	5080	3220	4820	6280	5140	5590	4190	4120	4150
26	5090	4660	4870	3220	2490	2640	5520	5090	5220	4200	4110	4160
27	5170	5090	5140	2490	2360	2430	5760	5520	5700	4110	3960	4010
28	5160	5030	5100	2360	2260	2310	5740	5350	5510	4530	3940	4220
29	5490	5120	5260	2340	2250	2280	5470	5330	5390	4390	3730	3930
30	---	---	---	2450	2330	2390	5490	5340	5440	3810	3690	3740
31	---	---	---	2620	2450	2530	---	---	---	4110	3770	3930
MONTH	6350	4450	5640	---	---	4850	6770	2620	4550	5350	1910	3620

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	5190	4110	4580	4440	2780	3580	6150	6090	6130	6590	6320	6510
2	5630	5190	5510	4460	2680	3500	6130	5940	6040	6490	6330	6430
3	5460	4240	4910	5510	3220	4870	5940	5870	5900	6330	6020	6220
4	4790	4100	4390	5510	4640	5200	5880	5760	5800	6020	5620	5880
5	5550	4790	5020	4640	3660	4020	5810	5710	5760	---	---	e6070
6	6150	5020	5560	3660	3290	3420	---	---	e5770	---	---	e6250
7	5130	4440	4850	3290	3250	3270	---	---	e5780	6250	6190	6210
8	5560	5110	5330	3360	3130	3300	---	---	e5800	6190	6100	6150
9	5770	5560	5670	3130	2940	3010	---	---	e5830	6100	5920	6000
10	5670	5450	5580	---	---	e3540	---	---	e5860	5920	5850	5870
11	5620	5510	5570	---	---	e3570	---	---	e5900	---	---	e5980
12	5610	5510	5550	---	---	e3430	---	---	e5920	---	---	e6100
13	5620	5060	5330	---	---	e3530	---	---	e5940	---	---	e6170
14	5410	5130	5280	---	---	e4070	---	---	e5970	6210	6130	6170
15	5650	5210	5510	---	---	e4310	---	---	e5970	6130	5720	6010
16	6120	5520	5760	---	---	e4480	---	---	e5980	6000	5660	5800
17	7920	6120	7040	---	---	e4580	---	---	e5990	6040	5980	6000
18	7980	7840	7920	---	---	e4390	6040	5970	6010	6090	6000	6030
19	8130	7550	7980	4710	4410	4510	6040	5940	6010	6100	6050	6070
20	7550	7080	7200	5050	4710	4900	5980	5900	5940	6070	6000	6040
21	7180	6590	7020	5130	5050	5090	5930	5780	5890	---	---	e6070
22	6620	3720	5490	5440	5080	5220	---	---	e5940	---	---	e6100
23	3760	3360	3520	5900	5440	5580	---	---	e6000	---	---	e6130
24	3700	2200	2810	6290	5900	6110	---	---	e6060	---	---	e6160
25	4640	3700	4420	7240	6290	6890	---	---	e6120	---	---	e6190
26	4430	4270	4340	7440	7220	7300	---	---	e6180	---	---	e6220
27	4320	2990	3710	7430	6290	7020	---	---	e6240	---	---	e6250
28	3140	2830	2930	6290	5970	6070	---	---	e6300	---	---	e6280
29	4020	3140	3590	6150	6070	6100	---	---	e6370	---	---	e6310
30	4420	4020	4250	6140	6040	6110	6510	6400	6460	---	---	e6340
31	---	---	---	6160	6070	6130	6540	6490	6520	---	---	---
MONTH	8130	2200	5220	---	---	4750	---	---	6010	---	---	6130

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	22.4	16.8	19.5	18.3	14.4	16.1	13.0	9.3	11.1	12.2	8.0	10.1
2	24.2	17.8	20.8	15.0	11.0	12.8	16.0	11.7	13.9	13.6	11.7	12.4
3	25.2	20.1	22.3	13.7	9.4	11.5	18.3	14.2	16.0	13.3	9.4	12.0
4	22.0	17.6	19.7	15.3	10.2	12.7	17.2	13.4	16.4	9.4	6.2	7.7
5	24.0	17.2	20.3	18.1	13.3	15.6	13.4	8.8	10.7	7.5	4.5	6.0
6	23.7	19.0	21.1	19.7	16.2	17.9	10.4	6.4	8.4	8.0	4.6	6.2
7	22.7	18.2	20.3	20.0	17.2	18.5	10.6	6.3	8.4	8.1	5.8	7.1
8	22.7	20.0	21.0	20.1	17.4	18.7	13.7	9.3	11.5	9.4	7.9	8.5
9	25.4	20.2	22.3	19.5	16.6	18.2	14.1	9.8	12.7	10.9	7.2	9.0
10	26.0	20.3	23.0	20.8	16.6	18.7	11.9	8.0	9.8	11.0	7.1	9.1
11	26.6	20.8	23.6	21.5	16.8	19.1	9.7	8.7	9.2	11.5	7.5	9.5
12	26.7	21.2	23.8	21.8	17.2	19.4	9.8	8.8	9.6	14.5	9.0	11.4
13	26.2	21.2	23.7	21.5	17.2	19.3	10.2	6.9	8.4	12.5	9.8	11.1
14	25.6	20.6	23.1	21.6	16.9	19.2	8.7	7.0	7.8	10.7	7.7	9.2
15	25.2	21.0	22.9	21.0	17.0	18.9	7.6	5.8	6.7	12.4	7.3	9.9
16	24.3	20.8	22.4	19.7	15.8	17.8	6.9	4.8	5.9	14.1	11.0	12.4
17	21.5	15.8	17.7	19.2	15.5	17.3	7.5	5.5	6.5	16.5	12.2	14.2
18	17.3	14.8	15.9	19.3	15.2	17.2	9.0	7.0	7.8	15.2	12.9	14.1
19	18.8	14.2	16.4	18.1	15.0	16.8	9.6	6.7	8.1	15.2	11.8	13.3
20	19.5	14.0	16.6	16.8	12.7	14.7	8.6	5.9	7.2	13.0	8.8	10.4
21	20.1	14.6	17.2	18.0	12.8	15.4	6.7	4.6	5.5	9.7	7.2	8.5
22	20.4	15.3	17.8	18.9	16.1	17.4	6.7	3.5	5.1	12.0	8.5	10.0
23	19.4	15.5	17.4	17.7	13.4	15.5	7.2	3.7	5.4	12.9	9.0	10.8
24	18.7	13.8	16.2	13.9	11.2	12.6	8.3	4.8	6.4	10.5	7.0	8.9
25	18.8	14.0	16.4	13.9	10.4	12.0	8.3	4.9	6.6	9.3	6.7	7.9
26	20.5	15.1	17.6	13.3	8.9	11.0	10.1	6.2	7.9	7.4	4.7	6.0
27	20.2	15.7	17.9	14.3	9.5	11.8	9.8	6.4	8.0	4.7	2.5	3.4
28	21.5	16.7	18.8	15.4	11.0	13.0	9.8	5.6	7.7	2.5	1.6	2.0
29	20.4	17.9	19.1	15.2	11.5	13.2	10.7	6.5	8.6	3.8	1.2	2.3
30	19.1	15.6	17.1	13.2	10.0	11.6	11.4	8.1	9.7	5.4	.8	3.2
31	17.4	15.0	15.9	---	---	---	11.5	7.7	9.5	7.1	2.8	5.0
MONTH	26.7	13.8	19.6	21.8	8.9	15.8	18.3	3.5	8.9	16.5	.8	8.8

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, on left bank on downstream side of bridge on U.S. Highway 283, 0.5 mi downstream from Sergeant Major Creek, 1.0 mi north of Cheyenne, 5.2 mi upstream from Dead Indian Creek, and at mile 543.9.

DRAINAGE AREA.--794 mi².

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 above sea level. May 1, 1938, to Nov. 16, 1946, and Oct. 1, 1947, to Jan. 11, 1948, nonrecording gage at site 50 ft upstream and datum 5.00 ft higher. Jan. 12, 1948 to Dec. 31, 1976, at site 50 ft upstream and datum 5.00 ft higher. Jan. 1, 1977, to Dec. 20, 1979, at site 50 ft upstream at same datum.

REMARKS.--Records good. Flow regulated since 1961 by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at site.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3, 1934, reached a stage of 1.0 ft lower than that in 1954, at site on upstream side of highway fill (at old bridge site).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	6.2	11	16	23	26	76	36	9.2	114	5.3	.00
2	6.2	6.4	11	15	e23	64	87	36	25	96	4.7	.00
3	6.1	6.8	11	16	23	56	88	36	33	83	4.0	.00
4	6.2	6.9	14	15	23	50	77	35	34	75	3.5	.00
5	6.1	6.5	18	16	23	44	66	35	31	58	2.9	.00
6	5.6	6.7	18	16	23	40	59	35	26	50	2.4	.00
7	5.3	6.9	17	17	23	42	54	33	22	41	2.0	.00
8	6.5	7.0	15	17	23	48	49	31	18	36	1.7	.00
9	5.2	7.2	16	17	23	43	46	30	17	32	1.6	.00
10	5.4	7.2	16	18	23	41	46	28	20	28	1.5	.00
11	5.0	7.4	16	17	24	37	44	26	49	24	1.4	.00
12	4.8	7.3	15	18	23	34	44	24	38	24	1.3	.00
13	4.1	7.4	14	17	23	32	44	22	39	25	1.1	.00
14	3.8	8.2	14	16	23	32	45	21	36	22	.88	.00
15	3.6	8.1	14	17	23	31	57	21	32	20	.86	.00
16	3.6	8.3	14	17	23	32	70	20	28	18	.66	.00
17	3.3	9.0	14	18	23	33	59	19	36	16	.60	.00
18	3.3	8.6	14	18	24	33	53	18	40	13	.59	.00
19	3.6	8.3	15	18	23	33	48	16	43	12	.56	.00
20	3.7	9.4	15	18	23	33	44	16	40	10	.40	.00
21	4.3	9.8	16	18	24	32	41	16	38	9.4	.28	.00
22	5.1	9.5	15	18	26	53	39	16	35	9.1	.24	.00
23	5.3	10	15	19	27	286	39	14	32	9.0	.21	.00
24	5.7	9.9	15	19	26	207	38	13	31	8.0	.19	.00
25	5.9	9.9	15	19	40	166	38	12	29	7.7	.14	.00
26	5.5	10	16	20	39	120	38	15	61	6.4	.08	.00
27	5.0	11	16	21	35	92	39	15	59	5.8	.02	.00
28	4.9	11	15	22	31	76	35	13	157	6.4	.00	.00
29	5.0	10	16	e22	30	66	35	12	155	6.1	.00	.00
30	5.3	10	16	e21	---	59	36	10	135	5.8	.00	.00
31	5.8	---	15	23	---	56	---	9.3	---	5.8	.00	---
TOTAL	155.9	250.9	462	559	740	1997	1534	683.3	1348.2	876.5	39.11	0.00
MEAN	5.03	8.36	14.9	18.0	25.5	64.4	51.1	22.0	44.9	28.3	1.26	.000
MAX	6.7	11	18	23	40	286	88	36	157	114	5.3	.00
MIN	3.3	6.2	11	15	23	26	35	9.3	9.2	5.8	.00	.00
AC-FT	309	498	916	1110	1470	3960	3040	1360	2670	1740	78	.00

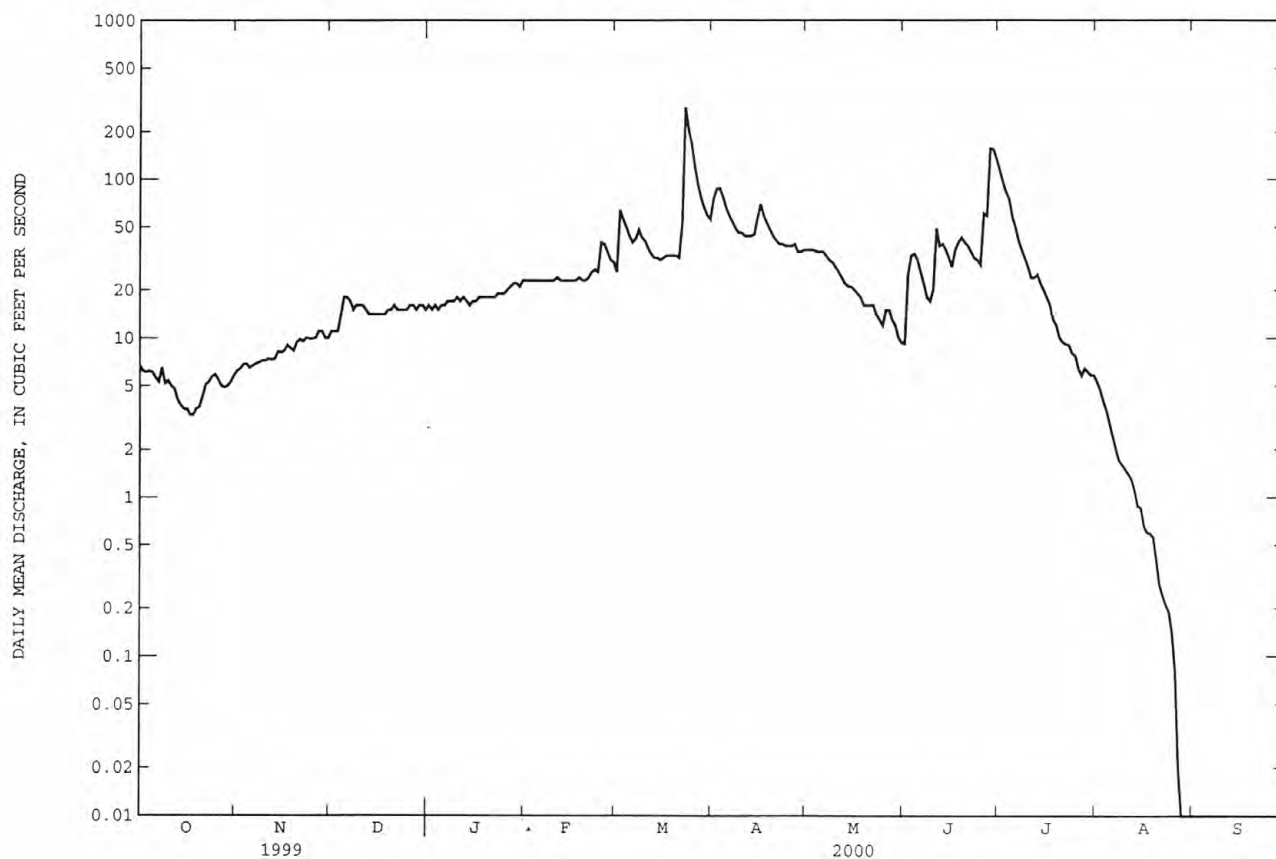
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

	MEAN	8.42	9.42	11.7	14.7	18.9	26.6	33.1	50.1	41.0	8.74	4.72	5.81
MAX	72.9	64.3	67.7	80.7	69.4	138	146	348	203	61.7	32.8	44.7	
(WY)	1987	1987	1998	1998	1998	1998	1997	1977	1982	1982	1995	1997	
MIN	.000	.000	.000	.026	1.50	2.22	1.08	.000	.005	.000	.000	.000	.000
(WY)	1964	1964	1964	1973	1973	1967	1971	1971	1970	1964	1963	1964	

e Estimated

07316500 WASHITA RIVER NEAR CHEYENNE, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1962 - 2000
ANNUAL TOTAL	11146.12	8645.91	^a 19.4
ANNUAL MEAN	30.5	23.6	64.0
HIGHEST ANNUAL MEAN			2.60
LOWEST ANNUAL MEAN			1560
HIGHEST DAILY MEAN	245 Apr 25	286 Mar 23	1997
LOWEST DAILY MEAN	.62 Sep 1	.00 Aug 28-Sep 30	1972
ANNUAL SEVEN-DAY MINIMUM	.81 Aug 28	.00 Aug 28	Apr 23 1990
INSTANTANEOUS PEAK FLOW		392 Mar 23	most years
INSTANTANEOUS PEAK STAGE		10.96 Mar 23	Oct 1 1961
ANNUAL RUNOFF (AC-FT)	22110	17150	^b 7250
10 PERCENT EXCEEDS	61	49	^c 16.60
50 PERCENT EXCEEDS	21	16	14060
90 PERCENT EXCEEDS	3.3	.12	42
			7.4
			.00

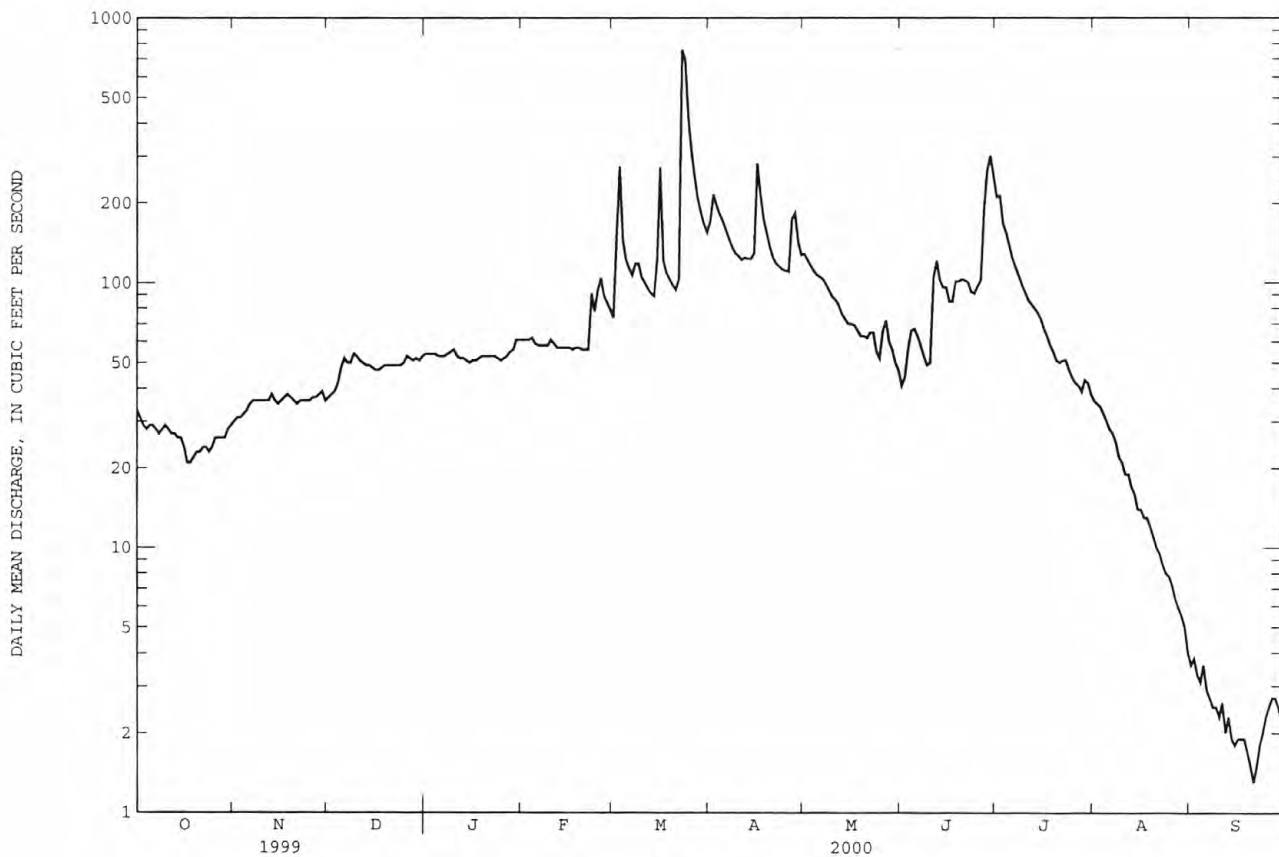
^aPrior to regulation, water years 1938-60, 41.7 ft³/s.^bMaximum discharge for period of record 69,800 ft³/s, Apr. 29, 1954, from rating curve extended above 27,000 ft³/s on basis of contracted opening.^cMaximum gage-height for period of record, 20.24 ft, Apr. 29, 1954.

RED RIVER BASIN

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07324200 WASHITA RIVER NEAR HAMMON, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1970 - 2000	
ANNUAL TOTAL	43480.1		26112.2		64.2	
ANNUAL MEAN	119		71.3		262	
HIGHEST ANNUAL MEAN					.49	
LOWEST ANNUAL MEAN					1997	
HIGHEST DAILY MEAN	1100	Apr 25	759	Mar 23	4340	May 17 1982
LOWEST DAILY MEAN	8.8	Sep 3	1.3	Sep 21	.00	at times
ANNUAL SEVEN-DAY MINIMUM	11	Aug 29	1.7	Sep 17	.00	Jul 13 1970
INSTANTANEOUS PEAK FLOW			1260	Mar 23	^a 6000	May 17 1982
INSTANTANEOUS PEAK STAGE			16.28	Mar 23	23.44	May 17 1982
ANNUAL RUNOFF (AC-FT)	86240		51790		46520	
10 PERCENT EXCEEDS	237		136		150	
50 PERCENT EXCEEDS	102		53		21	
90 PERCENT EXCEEDS	24		7.6		.08	

^aFrom rating curve extended above 2,500 ft³/s on basis of slope-area measurement.

RED RIVER BASIN
07324300 FOSS RESERVOIR NEAR FOSS, OK

LOCATION.--Lat 35°32'20", long 99°11'09", in S 1/2 sec.2, T.12 N., R.19 W., Custer County, Hydrologic Unit 11130301, near right end of dam on Washita River, 0.5 mi upstream from Oak Creek, 3.5 mi west of Stafford, 6.0 mi north of Foss, and at mile 474.4.

DRAINAGE AREA.--1,496 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to October, 1961, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam. Outlet consists of four 6- by 7-foot, 6-inch high pressure gates and one uncontrolled spillway. Storage began Feb. 13, 1961. Capacity, 436,500 acre-ft, at elevation 1,668.6 ft, crest of drop inlet and 177,900 acre-ft, at elevation 1,642.0 ft, conservation pool. Dead storage, 12,420 acre-ft below elevation 1,597.2 ft, sill of gated outlet. Figures given herein represent total contents. Reservoir is designed for flood control, municipal water supply, and irrigation release. Revised capacity table used after Sept. 30, 1964. U.S. Army Corps of Engineers' telemeter at station.

COOPERATION.--Elevations and data on diversions provided by Foss Reservoir Master Conservancy District.

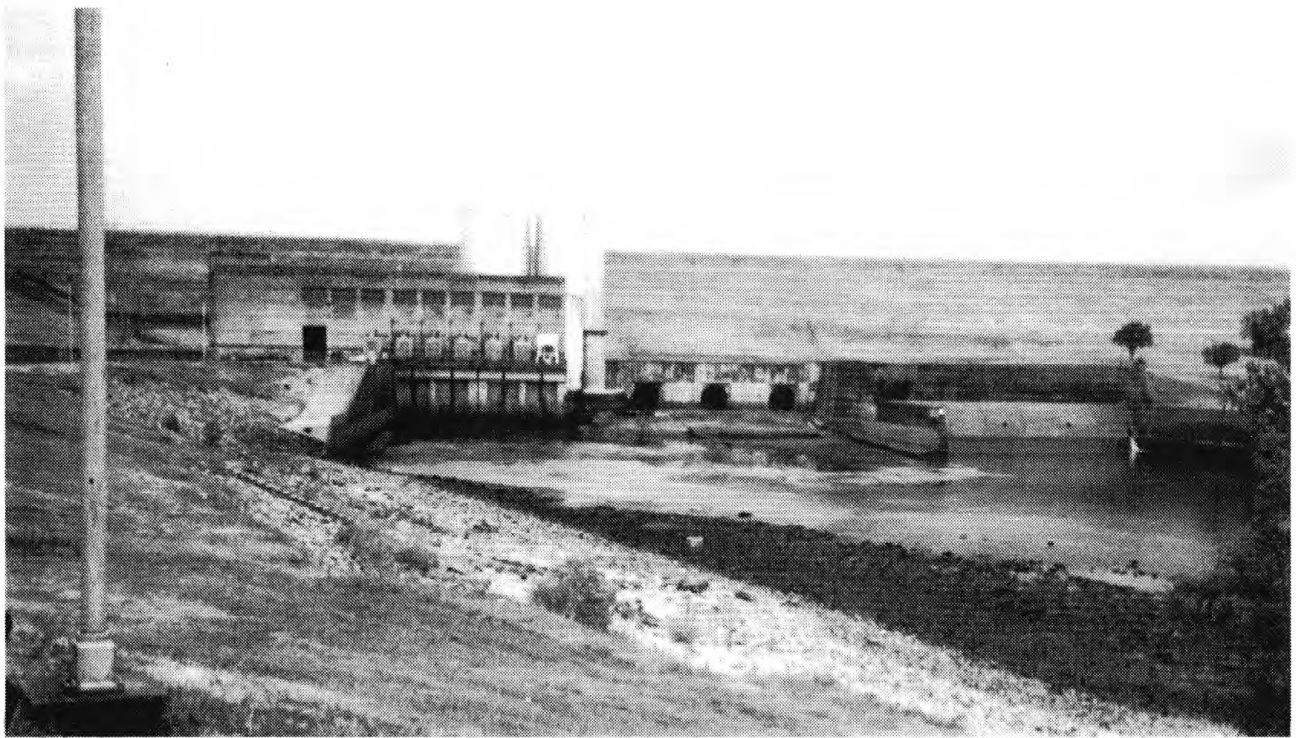
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 226,200 acre-ft, June 16, 1997, elevation, 1,648.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 183,900 acre-ft, Nov. 3, elevation, 1,642.87 ft; minimum, 169,500 acre-ft, Sept. 30, elevation, 1,640.73 ft.

> MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

Date	*Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30.....	1640.73	169,500	-	-
Oct. 31.....	1640.51	168,000	-1,500	299
Nov. 30.....	1640.45	167,700	-300	160
Dec. 31.....	1640.81	170,000	+2,300	160
CAL YR 1999	-	-	300	2,616
Jan. 31.....	1641.14	172,200	+2,200	246
Feb. 29.....	1641.73	176,100	+3,900	265
Mar. 31.....	1642.19	179,200	+3,100	212
Apr. 30.....	1641.30	173,200	-6,000	185
May 31.....	1641.71	176,000	+2,800	212
June 30.....	1642.49	181,300	+5,300	209
July 31.....	1641.87	177,000	-4,300	251
Aug. 31.....	1641.07	171,700	-5,300	327
Sept. 30.....	1640.19	166,000	-5,700	278
WTR YR 2000	-	-	-3,500	2,819

*Elevation at 0800 on the following day.



Denison Dam near Denison, Tx

07324400 WASHITA RIVER NEAR FOSS, OK

LOCATION.--Lat 35°32'20", long 99°10'10", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.1, T.12 N., R.19 W., Custer County, Hydrologic Unit 11130302, on right bank at downstream side county road bridge, 0.4 mi downstream from Oak Creek, 0.9 mi downstream from Foss Dam, 2.5 mi west of Stafford, 6.0 mi north of Foss, and at mile 473.5.

DRAINAGE AREA.--1,551 mi².

PERIOD OF RECORD.--March 1956 to April 1957, February to December 1958, July 1961 to September 1987, October 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,560 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharge. Records good. Flow completely regulated since 1961 by Foss Reservoir (station 07324300), except for 55 mi² intervening area. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1959 reached a stage of 23.4 ft, from floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	5.2	5.6	6.7	6.3	6.4	192	13	7.6	383	5.6	4.7
2	4.6	5.2	5.7	6.9	6.1	11	94	12	13	379	5.7	4.5
3	4.6	5.2	5.9	6.5	5.8	11	381	12	13	375	5.7	4.5
4	4.6	5.3	6.4	6.3	5.6	7.5	598	11	10	384	5.7	4.6
5	4.7	5.3	6.4	6.4	5.7	7.0	593	10	9.5	372	5.5	4.9
6	4.7	5.2	6.0	6.5	5.7	6.6	590	10	9.2	368	5.4	4.8
7	4.5	5.3	6.0	6.5	5.8	7.4	596	9.8	9.2	248	5.4	4.8
8	4.4	5.3	5.9	6.6	5.8	9.0	595	9.5	9.1	139	5.6	4.4
9	4.4	5.6	6.1	6.6	5.8	6.7	590	9.2	9.0	137	5.7	3.9
10	4.4	5.5	6.1	6.3	5.8	54	589	8.9	9.5	135	5.7	4.1
11	4.4	5.6	6.1	6.5	6.0	321	587	9.0	13	135	5.5	4.2
12	4.4	5.3	6.1	6.1	5.9	385	583	9.0	15	77	5.1	4.2
13	4.1	5.3	6.1	6.3	5.8	380	415	8.6	13	12	5.1	4.3
14	4.3	5.4	6.2	6.7	5.8	377	325	8.7	12	11	5.0	4.2
15	4.6	5.2	6.4	6.7	5.8	383	326	8.8	9.9	8.5	5.2	4.2
16	4.5	5.4	6.0	6.6	5.8	424	334	8.8	9.2	7.9	4.7	4.0
17	4.5	5.6	6.1	6.6	6.0	371	259	8.8	17	7.3	4.9	3.7
18	4.4	5.9	6.3	6.8	6.1	367	199	8.8	22	7.0	5.0	3.9
19	4.4	5.8	6.3	7.1	6.1	366	198	8.6	16	7.2	5.1	3.5
20	4.5	5.9	6.3	7.1	6.1	363	197	8.5	14	7.3	5.1	4.0
21	4.6	5.9	6.2	6.9	6.1	362	196	8.8	17	7.4	4.7	4.2
22	4.8	5.8	6.2	6.6	6.3	367	195	8.7	105	7.5	4.5	4.3
23	4.6	5.8	6.3	6.6	6.5	620	196	8.5	170	7.1	4.6	4.2
24	4.6	5.7	6.3	6.4	6.2	313	194	8.5	169	6.9	4.5	4.1
25	4.6	5.6	6.4	6.5	8.9	455	193	8.6	129	6.5	4.3	4.0
26	4.6	5.8	6.5	6.5	7.0	411	192	9.5	100	6.1	4.3	4.0
27	4.7	5.9	6.4	6.5	6.4	529	195	9.0	120	5.9	4.4	3.9
28	4.7	5.8	6.4	6.5	6.3	626	127	8.3	85	6.0	4.7	4.4
29	4.6	5.7	6.3	7.0	6.4	614	15	8.3	210	7.7	4.5	4.4
30	5.0	5.6	6.5	6.9	---	602	14	8.7	322	6.3	4.5	4.4
31	5.0	---	6.6	6.5	---	437	---	8.0	---	5.9	4.5	---
TOTAL	141.6	166.1	192.1	204.7	177.9	9199.6	9758	287.9	1667.2	3273.5	156.2	127.3
MEAN	4.57	5.54	6.20	6.60	6.13	297	325	9.29	55.6	106	5.04	4.24
MAX	5.0	5.9	6.6	7.1	8.9	626	598	13	322	384	5.7	4.9
MIN	4.1	5.2	5.6	6.1	5.6	6.4	14	8.0	7.6	5.9	4.3	3.5
AC-FT	281	329	381	406	353	18250	19350	571	3310	6490	310	255

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

MEAN	54.8	28.4	28.0	40.4	41.3	49.2	70.8	96.1	135	58.7	54.2	32.0
MAX	598	278	298	633	342	297	607	622	763	385	579	444
(WY)	1998	1999	1997	1998	1998	2000	1998	1997	1982	1997	1997	1996
MIN	.15	.28	.36	.56	.60	.57	1.62	1.08	1.28	2.27	3.12	.46
(WY)	1968	1968	1968	1968	1968	1968	1967	1967	1966	1967	1973	1966

RED RIVER BASIN

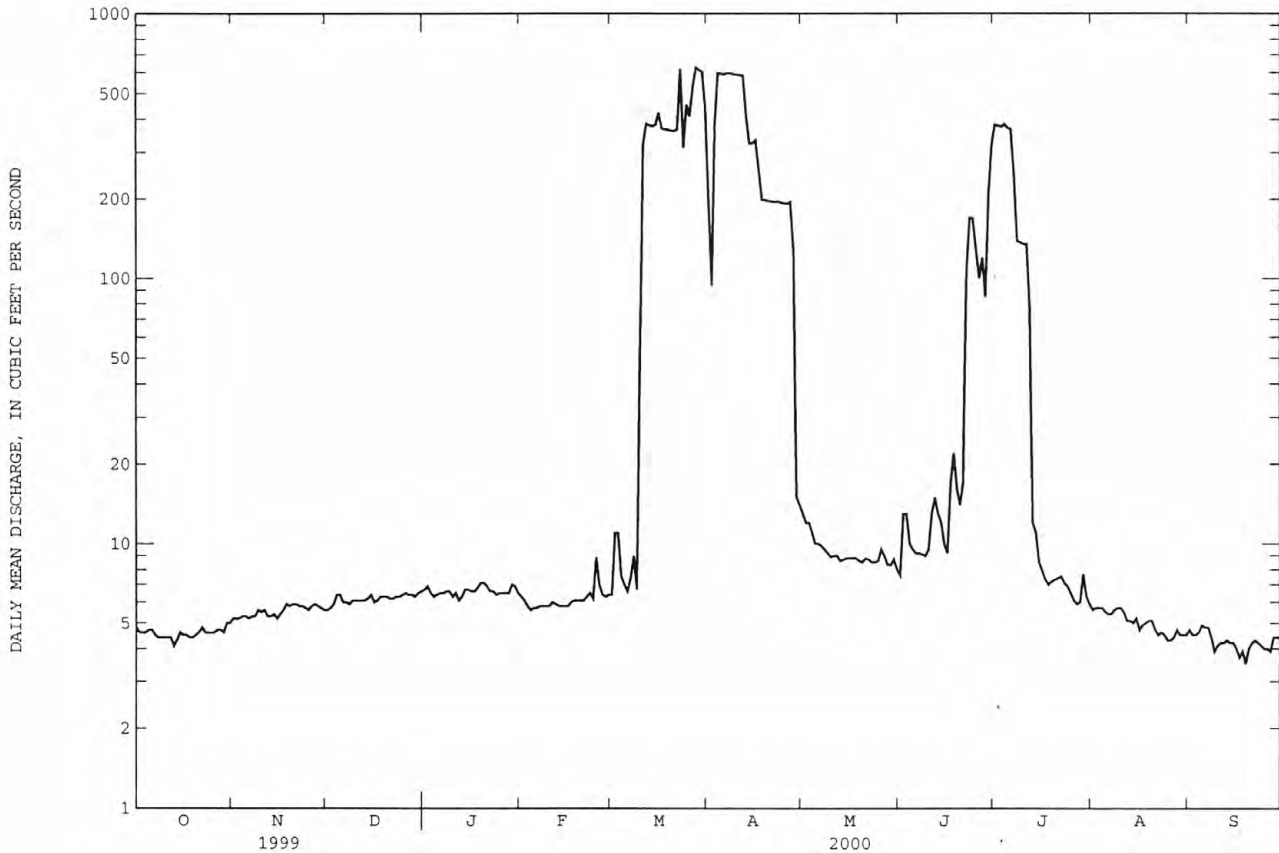
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07324400 WASHITA RIVER NEAR FOSS, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	43784.1		25352.1		57.4	
ANNUAL MEAN	120		69.3		373	
HIGHEST ANNUAL MEAN					3.87	
LOWEST ANNUAL MEAN					1370	
HIGHEST DAILY MEAN	605	Apr 29	626	Mar 28	1997	
LOWEST DAILY MEAN	4.1	Oct 13	3.5	Sep 19	1963	
ANNUAL SEVEN-DAY MINIMUM	4.3	Oct 8	3.9	Sep 14	a.06	
INSTANTANEOUS PEAK FLOW			1070	Mar 23	.08	
INSTANTANEOUS PEAK STAGE			16.69	Mar 23	b3010	
ANNUAL RUNOFF (AC-FT)	86850		50290		21.56	
10 PERCENT EXCEEDS	403		342		41580	
50 PERCENT EXCEEDS	7.6		6.4		195	
90 PERCENT EXCEEDS	4.8		4.5		7.1	
					2.0	

^aMinimum daily discharge for period of record, no flow at times in 1956.

^bMaximum discharge for period of record 14,000 ft³/s, Apr. 19, 1957, from rating curve extended above 3,600 ft³/s, on basis of velocity-area study.



LOCATION.--Lat 35°31'51", long 98°58'00", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ 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 north of Clinton, 0.8 mi upstream from Beaver Creek, 4.8 mi downstream from Barnitz Creek, and at mile 447.4.

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

GAGE.--Water-stage recorder. Datum of gage is 1,467.44 ft above sea level. See WSP 1920 for history of changes prior to Mar. 19, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3-4, 1934, reached a stage of 33.9 ft. from floodmarks.

MEAN	119	80.8	66.8	76.4	89.5	112	141	226	257	115	115	125
MAX	1477	494	504	742	574	654	1112	1256	1190	705	1061	1519
(WY)	1987	1987	1997	1998	1997	1998	1997	1997	1997	1989	1995	1996
MIN	3.30	4.23	5.68	4.78	7.00	6.24	9.64	4.10	4.44	6.42	6.01	5.87
(WY)	1967	1964	1964	1971	1967	1968	1971	1967	1966	1966	1965	1964

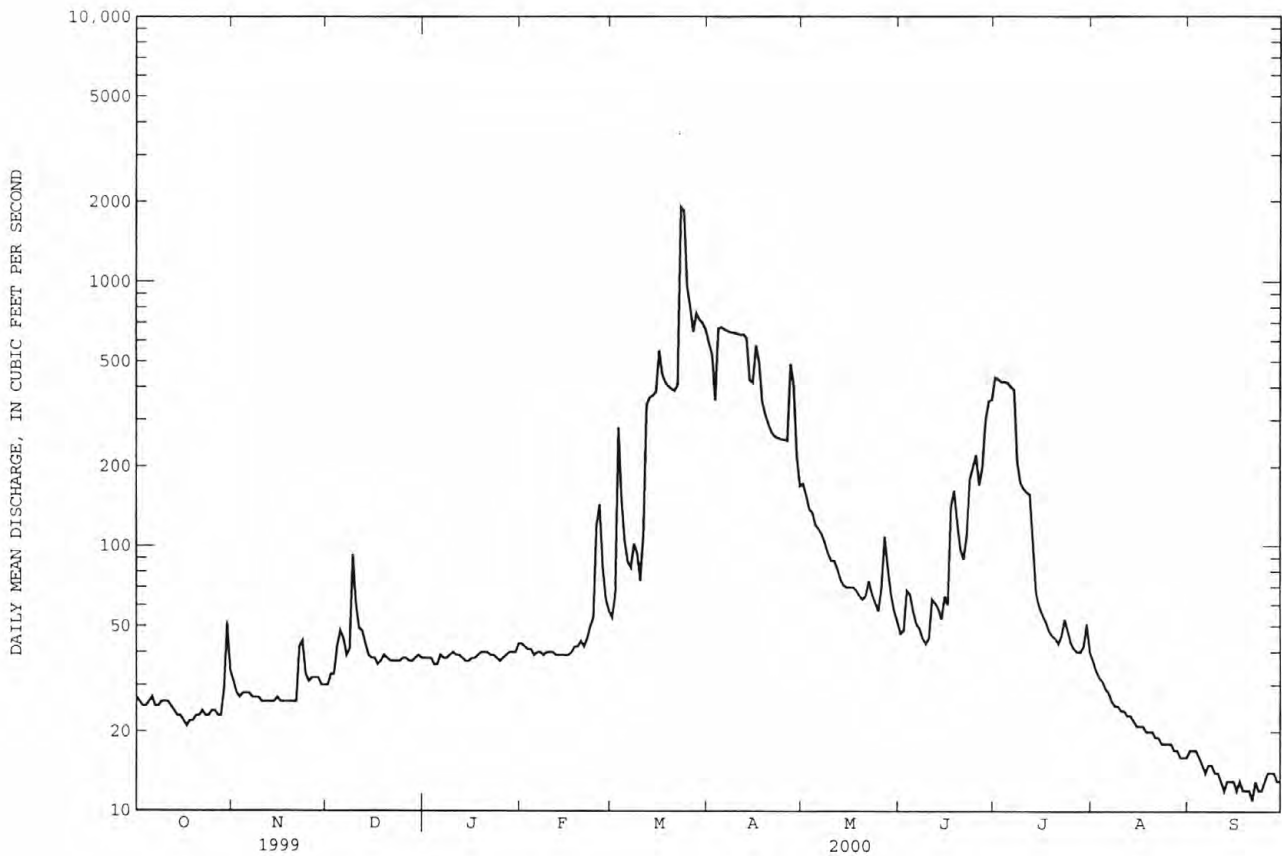
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RED RIVER BASIN

95

07325000 WASHITA RIVER NEAR CLINTON, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	69413		46050		^a 127	
ANNUAL MEAN	190		126		696	1997
HIGHEST ANNUAL MEAN					13.8	1967
LOWEST ANNUAL MEAN					7710	Oct 3 1986
HIGHEST DAILY MEAN	1240	Apr 25	1910	Mar 23	^b .00	Jul 26 1964
LOWEST DAILY MEAN	21	Oct 17	11	Sep 21	.04	Jul 23 1964
ANNUAL SEVEN-DAY MINIMUM	22	Oct 14	12	Sep 18	^c 10800	Sep 15 1996
INSTANTANEOUS PEAK FLOW			2830	Mar 24	^d 26.24	Sep 15 1996
INSTANTANEOUS PEAK STAGE			21.54	Mar 24	92000	
ANNUAL RUNOFF (AC-FT)	137700		91340		374	
10 PERCENT EXCEEDS	490		404		31	
50 PERCENT EXCEEDS	90		40		8.0	
90 PERCENT EXCEEDS	25		18			

^aPrior to regulation, water years 1936-60, 146 ft³/s.^bAlso occurred at times in 1952-56, 1964, 1966.^cMaximum discharge for period of record, 66,800 ft³/s, May 16, 1951, from rating curve extended above 22,800 ft³/s, by contracted opening measurement of peak flow.^dMaximum gage height for period of record, 31.09 ft, May 16, 1951.

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 left abutment of bridge on State Highway 9, 1,300 ft upstream from Running Creek, 2.7 mi east of Carnegie, and at mile 353.9. Records include flow of Running Creek.

DRAINAGE AREA.--3,129 mi², includes that of Running Creek.

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 1,244.23 ft above sea level. Prior to October 1942, water-stage recorder at site 8.0 mi upstream at datum 24.57 ft higher. Prior to Aug. 7, 1985, datum 5.00 ft higher.

REMARKS.--Records fair. Some diversion for irrigation upstream from station. October 1942 to May 1949, occasional fluctuation caused by powerplant at Carnegie, 7.5 mi upstream from station. Flow regulated by Foss Reservoir since February 1961 (station 07324300), and by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at site.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 23, 1903, reached a stage of about 29 ft, at former site and datum, from information provided by local resident; flood of May 18, 1949, reached a stage of 20.9 ft, from floodmark, at that site and datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	308	100	141	132	207	1630	7090	207	e1170	147	e60
2	77	182	101	139	133	191	3070	6140	193	e800	148	e59
3	77	122	112	137	134	273	2560	3230	201	e700	133	e58
4	74	101	565	133	134	341	1520	e1700	204	e600	126	e57
5	74	93	808	130	132	425	1210	e1300	213	e540	120	e56
6	72	89	406	126	128	368	1310	e1000	222	e470	111	e55
7	73	88	230	126	127	290	1220	e870	203	e430	105	e55
8	75	88	191	128	127	296	1130	e800	187	e380	93	e54
9	76	86	1560	130	127	353	1060	e730	177	e330	90	e53
10	78	85	3280	131	126	307	1020	e630	172	e293	87	e52
11	78	85	2190	130	126	272	992	e560	202	e280	86	51
12	77	84	964	129	125	230	986	e470	e200	e265	88	e51
13	74	84	712	129	124	212	977	e415	e210	e250	87	e51
14	73	85	555	128	124	379	961	e360	206	e240	86	e50
15	69	87	430	125	124	454	900	e330	189	e235	86	e51
16	64	87	330	124	122	464	780	e305	178	e223	84	e51
17	62	86	271	127	124	503	840	e280	420	e220	80	e51
18	63	88	238	127	128	700	926	e275	2500	213	80	e50
19	63	87	219	128	127	615	784	e268	1550	199	75	e45
20	64	88	200	127	128	558	654	e255	920	186	e72	e42
21	66	88	180	126	139	533	597	e260	e700	177	e71	e39
22	69	89	169	125	144	523	561	e260	e530	172	e70	e39
23	72	91	163	126	172	2750	541	e249	e425	168	e69	e45
24	72	129	161	127	230	7210	528	e250	e440	170	e68	e69
25	72	213	157	124	250	8120	521	e280	e350	178	e67	e56
26	74	151	152	122	245	6740	509	e250	e370	171	e66	e53
27	74	116	149	124	445	3360	570	e273	e500	160	e65	e52
28	75	109	145	127	363	2500	968	e268	900	148	e64	e52
29	78	105	144	132	259	2060	857	e270	3970	153	e63	e51
30	119	103	143	132	---	1840	1490	e282	2380	154	e62	e50
31	191	---	142	133	---	1560	---	e235	---	148	e61	---
TOTAL	2404	3297	15167	3993	4799	44634	31672	29885	19119	9823	2710	1558
MEAN	77.5	110	489	129	165	1440	1056	964	637	317	87.4	51.9
MAX	191	308	3280	141	445	8120	3070	7090	3970	1170	148	69
MIN	62	84	100	122	122	191	509	235	172	148	61	39
AC-FT	4770	6540	30080	7920	9520	88530	62820	59280	37920	19480	5380	3090

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

	MEAN	431	297	233	215	239	396	410	845	844	288	261	375
MAX	5311	1471	1032	1100	1127	2255	2832	5356	4994	1150	1760	2468	
(WY)	1987	1987	1993	1998	1997	1998	1997	1993	1995	1975	1995	1996	
MIN	21.8	27.3	33.6	36.0	36.6	34.2	11.1	10.0	94.0	7.10	14.6	15.6	
(WY)	1973	1971	1964	1971	1971	1971	1971	1971	1984	1964	1972	1984	

e Estimated

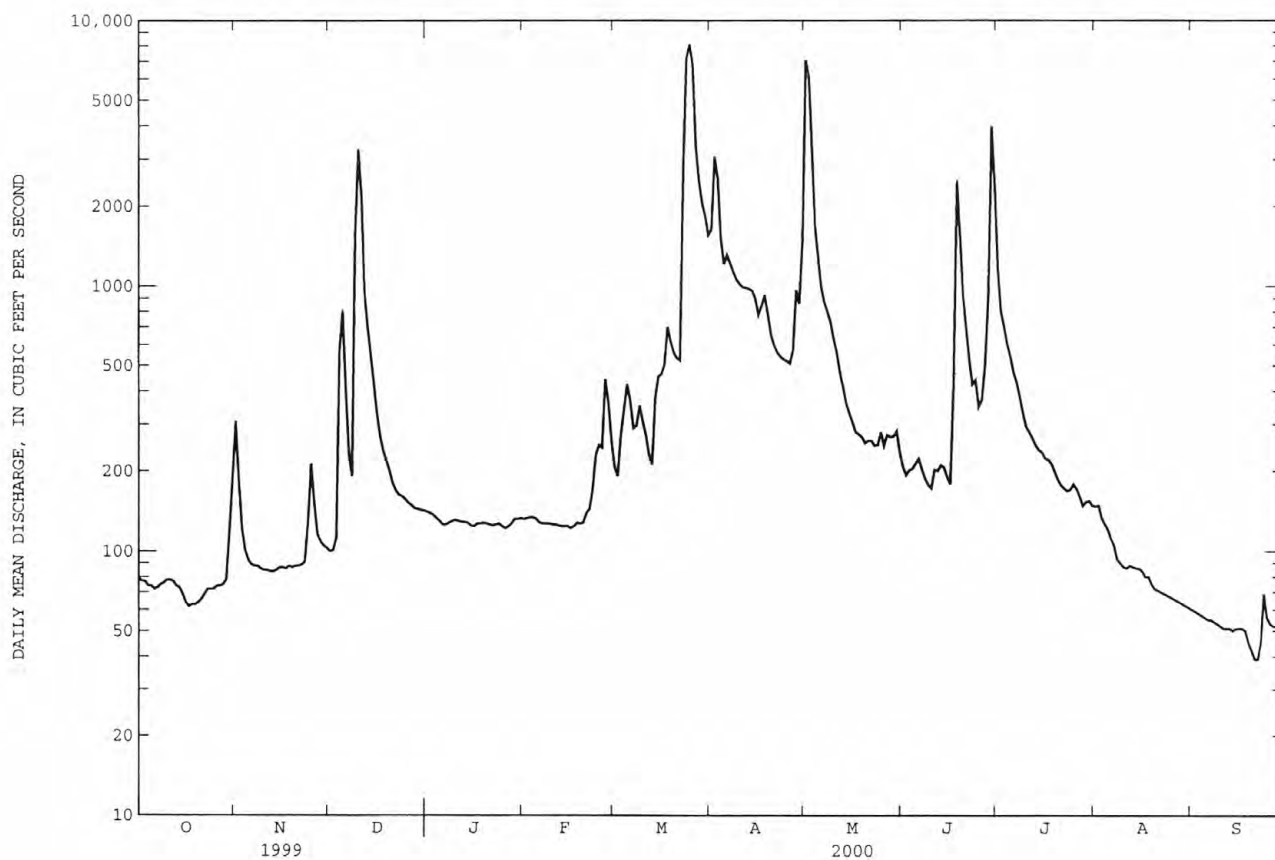
07325500 WASHITA RIVER AT CARNEGIE, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	156860		169061		^a 403	
ANNUAL MEAN	430		462		1432	1987
HIGHEST ANNUAL MEAN					72.8	1967
LOWEST ANNUAL MEAN						
HIGHEST DAILY MEAN	4320	May 29	8120	Mar 25	28500	Jun 5 1995
LOWEST DAILY MEAN	62	Oct 17	39	Sep 21, 22	^b .00	Jul 20 1964
ANNUAL SEVEN-DAY MINIMUM	64	Oct 15	44	Sep 17	.00	Jul 20 1964
INSTANTANEOUS PEAK FLOW			8400	Mar 25	^c 40600	Oct 20 1983
INSTANTANEOUS PEAK STAGE			21.06	Mar 25	31.70	Oct 20 1983
ANNUAL RUNOFF (AC-FT)	311100		335300		292200	
10 PERCENT EXCEEDS	879		980		899	
50 PERCENT EXCEEDS	314		154		138	
90 PERCENT EXCEEDS	74		64		37	

^aPrior to regulation, water years 1938-60, 314 ft³/s.

^bAlso occurred at times 1956 and 1964.

^cMaximum discharge for period of record, 50,000 ft³/s, May 18, 1949, from rating curve extended above 35,000 ft³/s on basis of contracted-opening measurement.



RED RIVER BASIN

07325800 COBB CREEK NEAR EAKLY, OK

LOCATION.--Lat 35°17'26", long 98°35'38", 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, 0.5 mi downstream from Fivemile Creek, 2.4 mi southwest of Eakly, 3.0 mi upstream from Fort Cobb Reservoir, and at mile 22.9.

DRAINAGE AREA.--132 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,369.70 ft above sea level. Oct. 29, 1980, to Aug. 11, 1982, gage at site 0.5 mi down- stream at same datum.

REMARKS.--Records fair. Flow regulated since 1957 by numerous floodwater-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e8.7	21	16	18	21	22	136	303	23	85	13	6.7
2	e8.7	17	17	19	21	26	107	69	23	59	13	6.7
3	e8.8	15	21	19	21	28	58	53	25	40	12	6.7
4	e8.7	14	193	20	21	25	43	41	25	32	11	6.7
5	e8.9	14	61	19	21	23	36	37	24	27	11	6.9
6	e8.9	14	37	19	21	23	33	35	23	25	9.8	6.7
7	e8.8	14	28	19	21	33	31	33	22	23	9.9	6.6
8	e9.0	14	25	20	21	70	29	30	21	21	9.4	6.8
9	e10	13	951	21	21	29	27	30	22	20	9.2	6.8
10	e11	14	150	20	21	26	27	28	24	19	9.6	6.7
11	e10	14	59	20	21	24	27	27	28	17	9.5	6.4
12	e9.0	14	39	20	21	23	28	25	26	17	9.6	6.2
13	e10	14	30	19	21	22	28	25	24	16	9.5	6.2
14	e12	14	25	19	21	23	27	24	23	15	8.9	6.0
15	e11	14	23	19	21	23	27	23	22	15	8.6	5.7
16	e10	14	21	20	21	25	35	23	22	15	8.5	5.7
17	e9.0	14	20	19	22	28	30	23	645	14	8.4	5.9
18	e10	14	20	19	22	26	27	22	121	12	8.8	6.2
19	e12	14	20	19	21	25	25	21	64	11	9.5	5.8
20	11	14	20	19	20	23	24	21	48	11	8.8	5.8
21	e11	14	19	19	21	23	23	22	41	11	8.4	6.2
22	e10	15	19	19	23	24	22	21	41	14	8.3	6.8
23	e10	19	19	19	29	1190	22	21	65	15	8.0	7.0
24	e9.0	18	19	19	25	323	22	20	44	14	7.9	8.2
25	e9.0	17	19	19	35	224	22	24	39	13	7.7	8.3
26	e10	17	19	19	29	131	21	49	47	13	7.4	8.5
27	e9.0	17	18	20	25	64	34	570	45	12	7.4	8.5
28	e9.0	16	18	21	23	46	26	65	1110	12	7.4	8.6
29	16	16	18	21	22	39	24	41	296	15	7.3	8.5
30	40	16	18	21	---	35	891	31	147	14	7.1	8.4
31	29	---	18	21	---	32	---	26	---	13	7.0	---
TOTAL	357.5	455	1980	605	653	2678	1912	1783	3130	640	281.9	206.2
MEAN	11.5	15.2	63.9	19.5	22.5	86.4	63.7	57.5	104	20.6	9.09	6.87
MAX	40	21	951	21	35	1190	891	570	1110	85	13	8.6
MIN	8.7	13	16	18	20	22	21	20	21	11	7.0	5.7
AC-FT	709	902	3930	1200	1300	5310	3790	3540	6210	1270	559	409

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2000, BY WATER YEAR (WY)

MEAN	28.8	27.7	25.1	20.3	20.6	32.9	29.5	61.2	52.4	16.1	18.3	21.1
MAX	317	104	84.9	50.2	55.1	138	140	303	291	85.1	86.0	161
(WY)	1987	1993	1993	1993	1997	1998	1997	1993	1995	1975	1974	1986
MIN	4.34	6.11	4.88	8.78	8.99	8.38	5.27	2.79	7.84	1.01	.90	2.15
(WY)	1973	1979	1979	1981	1981	1971	1971	1971	1984	1974	1972	1972

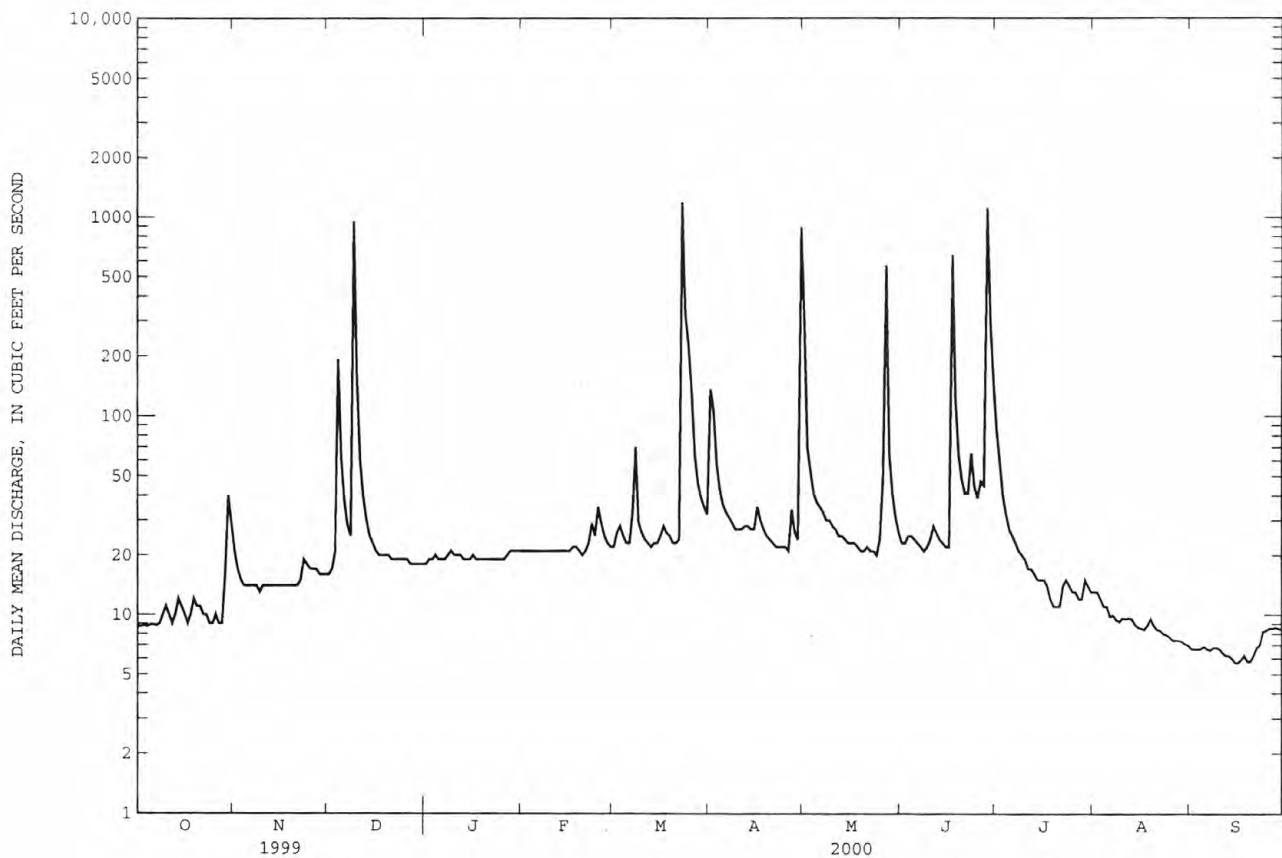
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RED RIVER BASIN

99

07325800 COBB CREEK NEAR EAKLY, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1969 - 2000
ANNUAL TOTAL	11097.8	14681.6	29.5
ANNUAL MEAN	30.4	40.1	91.0
HIGHEST ANNUAL MEAN			10.1
LOWEST ANNUAL MEAN			1987
HIGHEST DAILY MEAN	951 Dec 9	1190 Mar 23	3750 Sep 29 1986
LOWEST DAILY MEAN	7.6 Sep 4	5.7 Sep 15,16	^a .00 Aug 18 1970
ANNUAL SEVEN-DAY MINIMUM	7.6 Sep 4	5.9 Sep 14	.04 May 24 1971
INSTANTANEOUS PEAK FLOW		3050 Apr 30	12000 Jun 4 1995
INSTANTANEOUS PEAK STAGE		18.00 Apr 30	24.38 Sep 29 1986
ANNUAL RUNOFF (AC-FT)	22010	29120	21400
10 PERCENT EXCEEDS	47	42	39
50 PERCENT EXCEEDS	21	20	14
90 PERCENT EXCEEDS	8.9	8.4	4.7

^aNo flow Aug. 18-19, 1970, and May 26-30, 1971.

RED RIVER BASIN

07325900 FORT COBB RESERVOIR NEAR FORT COBB, OK

LOCATION.--Lat 35°09'58", long 98°27'23", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.22, 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 northwest of Fort Cobb, and at mile 7.5.

DRAINAGE AREA.--304 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level (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- by 5-foot steel gates and an uncontrolled concrete spillway. Storage began Mar. 30, 1959. Conservation pool was first filled in June 1962. Capacity, 143,700 acre-ft at elevation 1,354.8 ft, crest of drop inlet, 80,010 acre-ft at elevation 1,342.0 ft, conservation pool, and 1,664 acre-ft at elevation 1,300.0 ft, 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 1993. U.S. Army Corps of Engineers' satellite telemeter at station.

COOPERATION.--Elevations and data on diversions provided by Fort Cobb Reservoir Master Conservancy District.

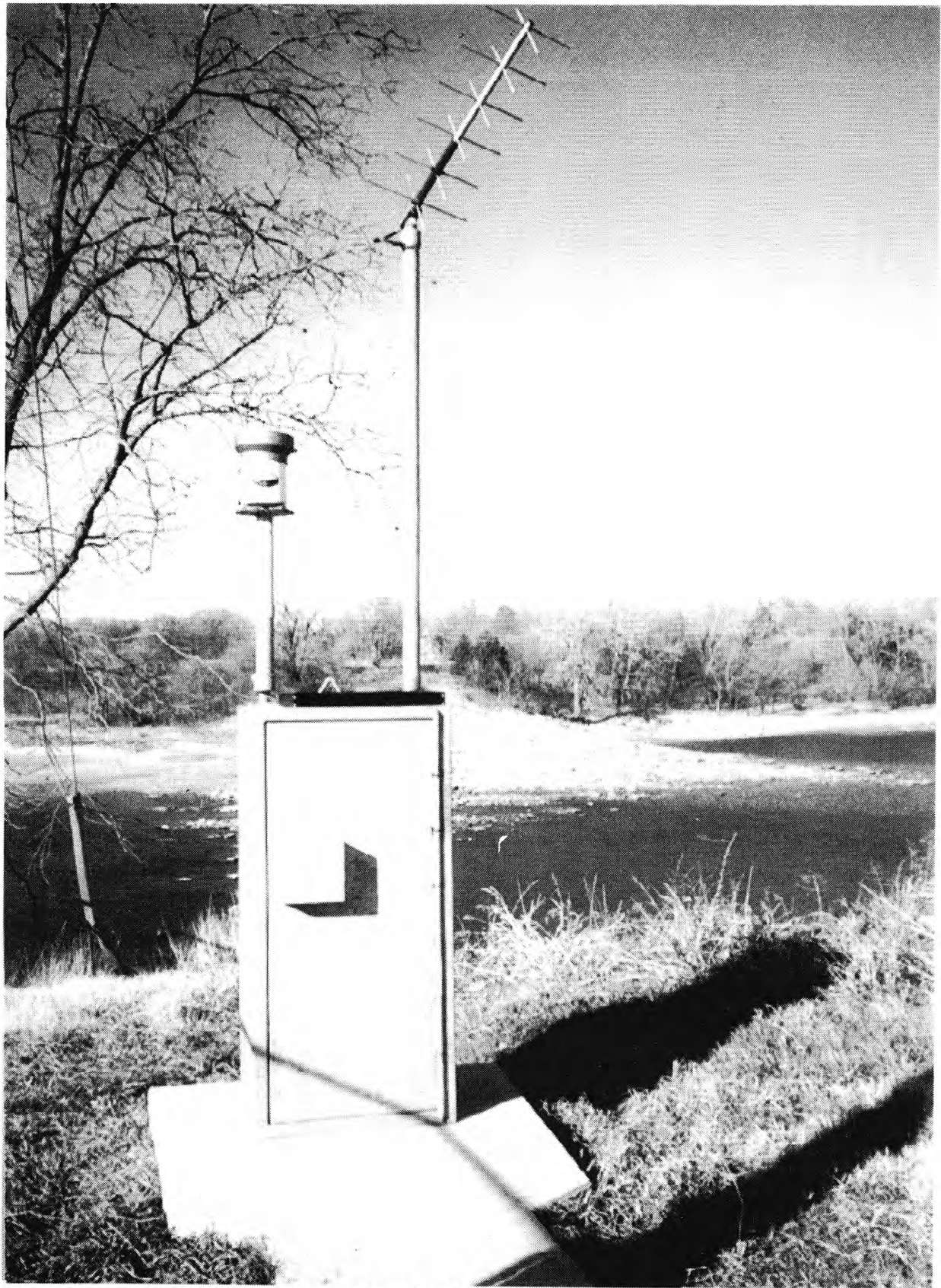
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 121,400 acre-ft, June 13, 1995, elevation, 1,352.25 ft; minimum since conservation pool was first filled, 54,650 acre-ft, Oct. 19, 1972, elevation 1,335.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 84,340 acre-ft, May 4, elevation, 1,344.60 ft; minimum, 67,130 acre-ft, Oct. 29, elevation 1,340.16 ft.

> MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

Date	*Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30.....	1340.63	68,800	-	-
Oct. 31.....	1340.46	68,200	-600	1,106
Nov. 30.....	1340.30	67,630	-570	1,041
Dec. 31.....	1342.22	74,690	-7,060	1,081
CAL YR 99	-	-	+3,910	12,995
Jan. 31.....	1342.42	75,470	+780	813
Feb. 29.....	1342.05	74,030	-1,440	1,170
Mar. 31.....	1343.12	78,210	+4,180	900
Apr. 30.....	1343.57	80,040	+1,830	1,098
May 31.....	1343.54	79,920	-120	1,037
June 30.....	1344.00	81,790	+1,870	1,127
July 31.....	1342.24	74,770	-7,020	1,316
Aug. 31.....	1341.32	71,300	-3,470	1,201
Sept. 30.....	1340.45	68,160	-3,140	926
WTR YR 2000	-	-	-640	12,816

*Elevation at 2400



Gage house at Red River blw Denison Dam near Denison, TX 07331600

RED RIVER BASIN

07326000 COBB CREEK NEAR FORT COBB, OK

LOCATION.--Lat 35°08'37", long 98°26'33", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.27, T.8 N., R.12 W., Caddo County, Hydrologic Unit 11130302, on left bank 10 ft upstream from county road bridge, 0.3 mi upstream from Punjo Creek, 1.2 mi downstream from Fort Cobb Dam, 3.0 mi north of Fort Cobb, and at mile 5.8.

DRAINAGE AREA.--307 mi². Area at site used prior to Oct. 1, 1969, 319 mi².

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. WDR OK-94-2: 1993 (M) drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,254.49 ft above sea level (levels by U.S. Bureau of Reclamation). 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 downstream at datum 1.92 ft lower. Oct. 16, 1969, to Sept. 30, 1982, gage at same site and datum 5.00 ft higher.

REMARKS.--Records poor. Flow regulated since March 1959, by Fort Cobb Reservoir (station 07325900). U.S. Geological Survey satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1937, reached a stage of 19.3 ft, site and datum used in 1939, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	2.8	2.9	2.9	1.9	1.7	245	e2.1	410	189	2.8	e2.7
2	2.3	2.8	3.2	3.0	1.9	1.9	285	e2.1	409	189	2.7	e2.6
3	2.3	2.8	3.2	3.1	1.9	1.7	383	e2.3	371	190	2.5	e2.7
4	2.4	2.9	3.4	3.0	1.8	1.6	386	103	218	188	2.7	e2.5
5	2.4	2.9	2.9	3.1	1.8	1.6	383	307	217	189	2.7	e2.6
6	2.3	2.9	2.9	2.9	1.8	68	381	406	217	190	3.2	e2.5
7	2.4	3.1	2.7	2.8	69	150	379	397	170	190	3.4	e2.6
8	2.4	3.2	2.7	2.8	155	150	378	482	7.4	191	3.5	e2.7
9	2.4	3.1	e3.0	2.9	155	131	259	553	2.2	190	3.1	e2.7
10	2.5	3.2	e3.0	2.9	154	2.3	76	558	2.0	191	3.0	e2.5
11	2.5	3.2	3.0	3.1	153	1.7	3.5	556	2.0	190	2.6	e2.4
12	2.6	3.3	2.9	3.1	153	1.6	3.1	470	1.8	190	2.8	e2.3
13	2.5	3.3	2.7	3.0	74	1.5	2.8	398	1.7	191	2.8	e2.4
14	2.5	3.3	2.7	2.9	2.0	1.5	2.2	398	1.7	190	3.2	e2.3
15	2.6	3.3	2.8	3.1	1.8	1.6	2.2	296	1.7	190	3.3	e2.3
16	2.6	3.3	2.8	3.2	1.7	1.5	2.1	98	1.7	19	3.3	e2.2
17	2.7	3.2	2.8	3.3	1.8	1.6	1.9	4.4	2.3	3.4	3.2	e2.3
18	2.8	3.0	2.8	3.3	1.7	1.6	2.0	3.5	1.8	3.2	3.1	e2.3
19	2.8	2.9	2.8	3.3	1.7	1.5	2.2	3.0	102	3.0	2.9	e2.5
20	2.8	3.1	2.9	3.2	1.7	1.6	2.0	2.9	194	2.8	3.0	3.4
21	2.8	3.3	2.8	3.0	1.7	1.5	2.0	2.6	194	2.7	3.2	3.3
22	2.8	3.3	2.8	3.1	1.8	e1.6	2.0	2.5	193	3.8	3.0	3.2
23	2.8	3.2	2.8	2.9	1.7	e1.7	2.0	2.4	193	3.0	2.9	3.2
24	2.9	3.1	2.8	2.7	1.6	e1.6	2.0	2.7	193	2.9	e2.9	3.7
25	2.9	3.1	2.8	2.6	69	e1.4	1.9	3.8	192	2.9	e2.8	3.2
26	2.9	3.0	2.9	2.5	149	e1.6	2.0	2.5	194	2.9	e2.9	3.2
27	2.8	2.9	2.9	2.5	151	e76	2.2	2.3	193	3.1	e2.7	3.0
28	2.9	2.8	2.9	2.3	124	e309	e2.1	2.3	122	3.2	e2.8	3.0
29	3.0	2.9	2.8	2.1	2.0	400	e2.3	2.3	95	3.2	e2.9	2.9
30	3.6	3.0	2.8	2.1	---	391	e2.2	148	189	2.8	e2.8	2.9
31	3.2	---	2.8	2.0	---	388	---	412	---	3.0	e2.7	---
TOTAL	82.6	92.2	89.2	88.7	1438.3	2098.9	3199.7	5625.7	4092.3	2912.9	91.4	82.1
MEAN	2.66	3.07	2.88	2.86	49.6	67.7	107	181	136	94.0	2.95	2.74
MAX	3.6	3.3	3.4	3.3	155	400	386	558	410	191	3.5	3.7
MIN	2.2	2.8	2.7	2.0	1.6	1.4	1.9	2.1	1.7	2.7	2.5	2.2
AC-FT	164	183	177	176	2850	4160	6350	11160	8120	5780	181	163

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2000, BY WATER YEAR (WY)

	MEAN	26.4	27.1	24.3	27.4	29.0	38.0	47.7	72.7	112	37.8	19.4	19.8
MAX	345	538	194	139	131	312	240	676	779	262	211	157	
(WY)	1987	1987	1993	1969	1975	1990	1945	1949	1987	1995	1975	1965	
MIN	1.41	1.62	1.57	1.99	2.14	2.12	1.97	1.50	1.49	.78	1.18	.52	
(WY)	1985	1973	1973	1977	1981	1977	1959	1985	1959	1985	1956	1956	

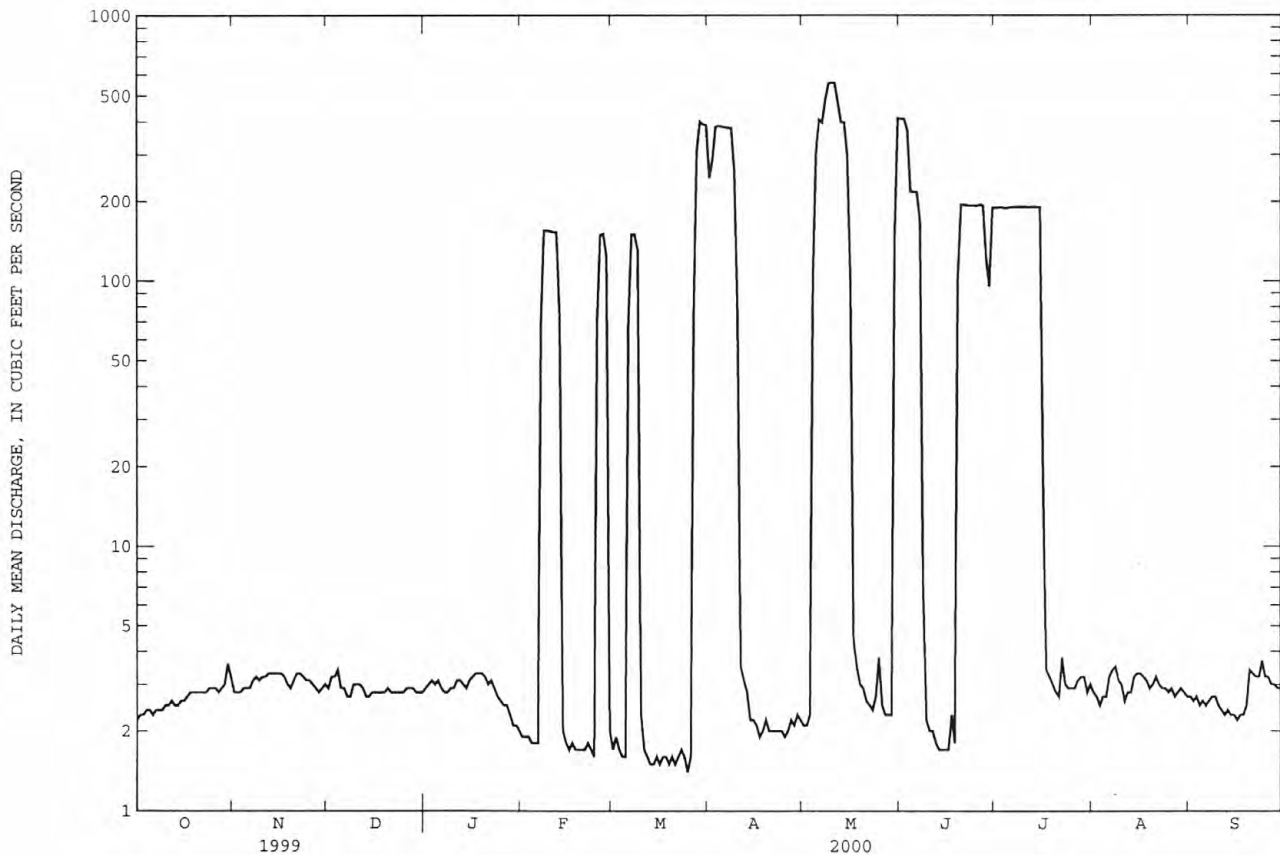
e Estimated

RED RIVER BASIN

103

07326000 COBB CREEK NEAR FORT COBB, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1940 - 2000	
ANNUAL TOTAL	8786.9		19894.0		^a 40.1	
ANNUAL MEAN	24.1		54.4		176	
HIGHEST ANNUAL MEAN					2.34	
LOWEST ANNUAL MEAN					9840	
HIGHEST DAILY MEAN	425	Jun 26	558	May 10	^b .20	
LOWEST DAILY MEAN	2.2	Oct 1	1.4	Mar 25	May 18 1949	
ANNUAL SEVEN-DAY MINIMUM	2.3	Oct 1	1.5	Mar 13	^c 1280	
INSTANTANEOUS PEAK FLOW			566	May 10	Jul 20 1981	
INSTANTANEOUS PEAK STAGE			^d 14.76	Apr 30	^d 20.50	
ANNUAL RUNOFF (AC-FT)	17430		39460		Jun 23 1987	
10 PERCENT EXCEEDS	94		193		29030	
50 PERCENT EXCEEDS	3.0		2.9		64	
90 PERCENT EXCEEDS	2.6		1.8		4.2	
					2.1	

^aPrior to regulation by Fort Cobb Reservoir, water years 1940-58, 50.2 ft³/s.^bAlso occurred Sept. 20, 24-28, 1956, July 20-27, 1981.^cMaximum discharge for period of record, 35,000 ft³/s, May 17, 1949, from rating curve extended above 4,300 ft³/s on basis of contracted opening measurement.^dOccurred during backwater from Punjo Creek.

RED RIVER BASIN

07326500 WASHITA RIVER AT ANADARKO, OK

LOCATION.--Lat 35°05'03", long 98°14'35", in NW 1/4 sec.15, T.7 N., R.10 W., Caddo County, Hydrologic Unit 11130302 on right downstream bank at bridge on U.S. Highway 281 at north edge of Anadarko, 8.1 mi upstream from Sugar Creek, and at mile 305.2.

DRAINAGE AREA.--3,656 mi².

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 above sea level. October 26, 1902, to June 30, 1908, nonrecording gage at former bridge 125 ft downstream at datum estimated to be 2.8 ft higher. May 25, 1924, to June 30, 1925, nonrecording gage at county road bridge 14 mi 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 higher. October 1963 to March 1989 gage located 100 ft upstream at same datum.

REMARKS.--Records fair. Flow regulated 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. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1949, reached an elevation of 1,176.7 ft, from floodmark, at right bank on downstream side of bridge on U.S. Highway 281.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	136	129	179	e184	262	1890	6140	704	2160	187	80
2	105	198	129	178	e183	235	2200	7030	677	1470	181	78
3	104	176	132	178	e181	257	3530	5160	683	1310	175	77
4	106	143	144	178	e177	261	2470	2870	629	1260	169	75
5	107	127	383	175	e177	278	1690	2170	472	1200	162	75
6	107	121	668	173	e178	316	1540	2050	465	1050	157	e73
7	105	118	345	172	e176	360	1600	1830	475	975	151	e73
8	104	117	214	e170	197	398	1510	1630	425	926	145	e72
9	105	115	502	e168	255	379	1430	1630	259	876	140	e70
10	107	115	2400	e168	259	402	1270	1540	233	828	138	e69
11	107	115	2710	e168	260	277	1130	1440	230	714	134	e68
12	107	115	1600	e167	260	252	1080	1320	240	638	130	e66
13	108	115	896	e166	260	231	1070	1120	252	611	127	e66
14	106	115	645	e165	235	219	1040	999	283	585	124	e65
15	107	116	508	e165	188	271	1020	937	242	571	118	e65
16	104	117	410	e164	184	350	953	766	230	540	117	e64
17	102	119	329	e164	184	362	801	533	269	333	114	e64
18	102	117	278	e164	184	388	873	409	827	273	110	e63
19	99	115	249	e163	184	579	962	e395	2420	250	107	e58
20	98	115	235	e163	184	506	788	e394	1660	234	104	e51
21	98	118	222	e163	184	445	645	e393	1210	222	102	e48
22	98	120	209	e162	188	435	581	e391	1010	236	100	e51
23	98	121	202	e162	212	924	544	e385	871	227	99	e55
24	100	122	197	e162	219	4370	532	e380	781	213	98	97
25	102	122	194	161	222	6150	528	e415	715	214	95	81
26	103	159	191	e158	269	6870	523	e430	687	207	93	76
27	103	166	187	e157	318	5120	528	e350	711	203	91	74
28	104	143	186	e168	463	3300	625	e335	1120	199	89	73
29	106	133	183	e178	404	2750	1050	e375	2360	198	87	73
30	115	130	181	e181	---	2440	1030	e350	3720	194	85	73
31	129	---	180	e184	---	2140	---	398	---	191	82	---
TOTAL	3254	3859	15038	5224	6569	41527	35433	44565	24860	19108	3811	2073
MEAN	105	129	485	169	227	1340	1181	1438	829	616	123	69.1
MAX	129	198	2710	184	463	6870	3530	7030	3720	2160	187	97
MIN	98	115	129	157	176	219	523	335	230	191	82	48
AC-FT	6450	7650	29830	10360	13030	82370	70280	88390	49310	37900	7560	4110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2000, BY WATER YEAR (WY)

	MEAN	500	366	298	283	308	495	508	965	1088	399	328	417
MAX	5480	2205	1352	1213	1269	2981	3003	5601	5843	1459	2223	2654	
(WY)	1987	1987	1993	1998	1997	1998	1997	1993	1995	1989	1995	1996	
MIN	21.2	37.0	41.6	52.0	55.4	50.6	16.7	9.57	85.7	12.6	19.7	32.2	
(WY)	1973	1971	1971	1971	1971	1971	1971	1971	1967	1964	1972	1984	

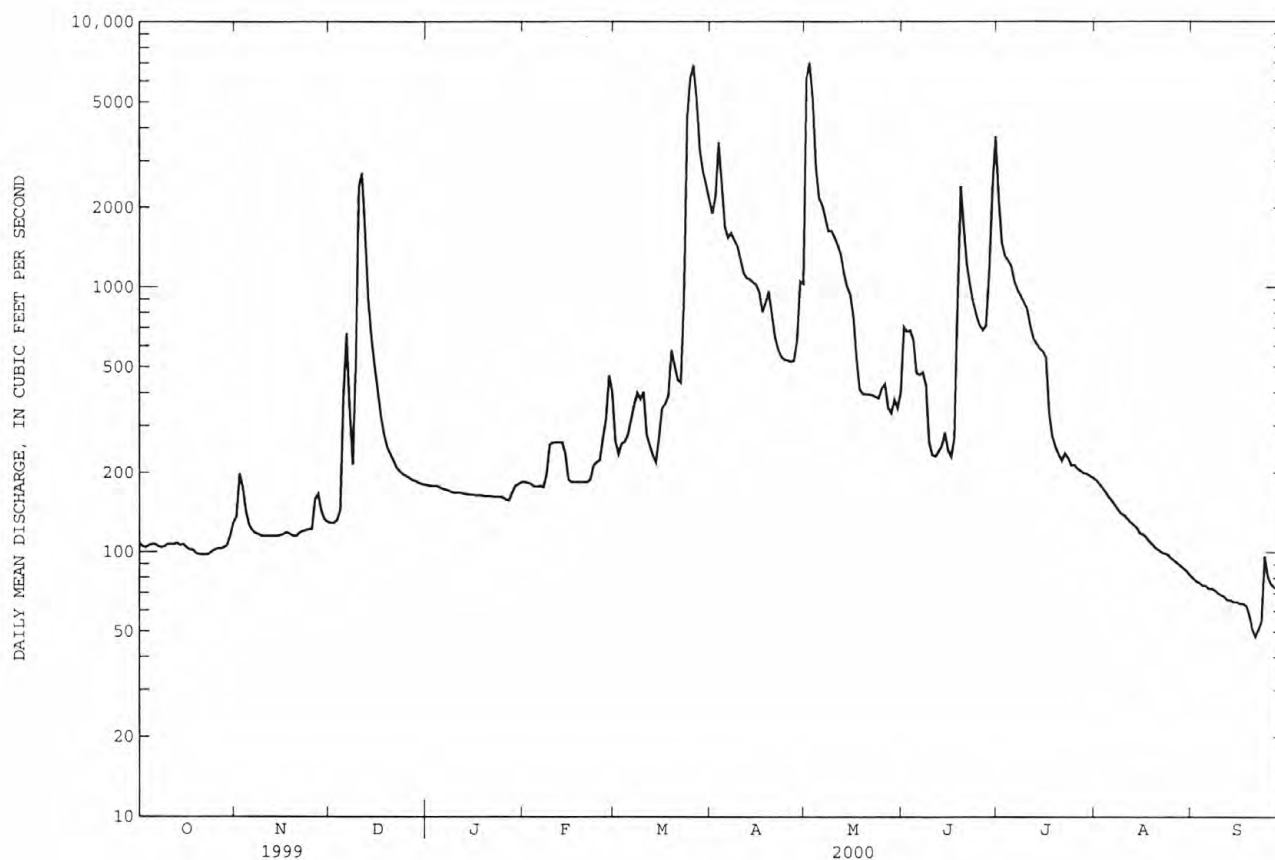
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RED RIVER BASIN

105

07326500 WASHITA RIVER AT ANADARKO, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1964 - 2000	
ANNUAL TOTAL	179929		205321		^a 496	
ANNUAL MEAN	493		561		1788	
HIGHEST ANNUAL MEAN					72.7	
LOWEST ANNUAL MEAN					1987	
HIGHEST DAILY MEAN	4360	May 30	7030	May 2	37700	Oct 21 1983
LOWEST DAILY MEAN	98	Oct 20	48	Sep 21	.00	Aug 1 1964
ANNUAL SEVEN-DAY MINIMUM	99	Oct 18	56	Sep 17	.77	Jul 19 1964
INSTANTANEOUS PEAK FLOW			7600	May 1	52800	Jun 6 1995
INSTANTANEOUS PEAK STAGE			18.20	May 1	25.37	Jun 6 1995
ANNUAL RUNOFF (AC-FT)	356900		407300		359700	
10 PERCENT EXCEEDS	1050		1430		1160	
50 PERCENT EXCEEDS	336		198		186	
90 PERCENT EXCEEDS	107		96		51	

^aPrior to regulations, water years 1903-08, 1936-37, 595 ft³/s.

RED RIVER BASIN

073274406 LITTLE WASHITA RIVER ABOVE SCS POND NO. 26 NEAR CYRIL, OK

LOCATION.-- Lat 34°54'53", long 98°15'02", in SW 1/4 SW 1/4 sec. 10, T.5N., R.10W., Caddo County, Hydrologic Unit 11130302, on right downstream bank of county road, 3 mi west of Cyril, and at mile 29.6.

DRAINAGE AREA.--3.44 mi².

PERIOD OF RECORD.-- February 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,329.98 ft above sea level.

REMARKS.--Records poor. U.S. Geological Survey's satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.35	e.28	e.25	.44	.40	.60	1.1	9.1	.29	.64	.16	e.05
2	e.29	e.28	.42	.44	.41	1.5	1.0	1.4	.29	.62	.14	e.05
3	e.26	e.27	.28	.47	.41	.65	.97	1.1	.44	.58	.12	e.05
4	.24	e.27	e.28	.41	.39	.59	.95	.95	.35	.55	.09	e.05
5	e.24	e.27	e.28	.43	.41	.56	.93	.90	.33	.53	.12	e.05
6	.23	e.27	e.28	.42	.41	.56	.87	.86	.27	.51	.12	e.05
7	e.23	e.27	e.28	.43	.41	.74	.85	.81	.25	.49	.11	e.05
8	e.23	e.27	e.27	.45	.42	.63	.83	.78	.23	.46	.10	e.05
9	e.22	e.27	7.8	.42	.42	.56	.85	.75	.23	.43	.11	e.05
10	e.22	e.27	1.5	.42	.42	.56	.87	.74	.23	.42	.10	e.05
11	e.22	e.27	.62	.41	.42	.54	.93	.71	.42	.40	.09	e.05
12	e.22	e.27	.52	.41	.43	.54	.92	.66	.24	.38	.09	e.05
13	e.22	e.26	.47	.40	.43	.54	.86	.65	.21	.36	.09	e.05
14	e.22	e.26	.47	.42	.44	.55	.83	.64	.20	.35	.08	e.05
15	e.22	e.26	.55	.42	.45	.56	.86	.65	.19	.34	.09	e.05
16	e.22	e.26	.54	.42	.46	.56	.84	.65	.20	.32	.08	e.05
17	e.22	e.26	.53	.43	.50	.55	.78	.63	.57	.28	.08	e.05
18	e.21	e.26	.52	.43	.48	.55	.79	.59	.28	.26	.08	e.05
19	e.21	e.26	.52	.40	.48	.53	.78	.58	1.6	.25	.07	e.05
20	e.21	e.25	.51	.39	.50	.53	.72	.60	1.9	.23	.05	e.05
21	e.21	e.25	.50	.40	.52	.59	.70	.58	.65	.23	.05	.05
22	e.21	e.25	.50	.39	.70	.63	.70	.57	.57	.31	.05	.05
23	e.21	e.25	.49	.40	.64	63	.69	.53	.50	.30	.05	.12
24	e.21	e.25	.48	.40	.59	2.3	.67	.51	.43	.29	.05	.77
25	e.21	e.25	.48	.39	.84	1.6	.67	.49	.40	.40	e.05	.11
26	e.21	e.25	.46	.39	.61	1.3	.64	.48	.41	.22	e.05	.09
27	e.21	e.25	.47	.41	.61	1.2	.70	.45	.44	.21	e.05	.08
28	e.21	e.25	.46	.41	.61	1.1	.59	.41	3.3	.23	e.05	.08
29	e.21	e.25	.46	.41	.61	1.1	.63	.39	1.1	.24	e.05	.07
30	e.29	e.25	.45	.41	---	1.0	15	.35	.74	.21	e.05	.08
31	e.29	---	.44	.41	---	1.0	---	.31	---	.19	e.05	---
TOTAL	7.15	7.83	22.08	12.88	14.42	87.22	38.52	28.82	17.26	11.23	2.52	2.50
MEAN	.23	.26	.71	.42	.50	2.81	1.28	.93	.58	.36	.081	.083
MAX	.35	.28	7.8	.47	.84	63	15	9.1	3.3	.64	.16	.77
MIN	.21	.25	.25	.39	.39	.53	.59	.31	.19	.19	.05	.05
AC-FT	14	16	44	26	29	173	76	57	34	22	5.0	5.0

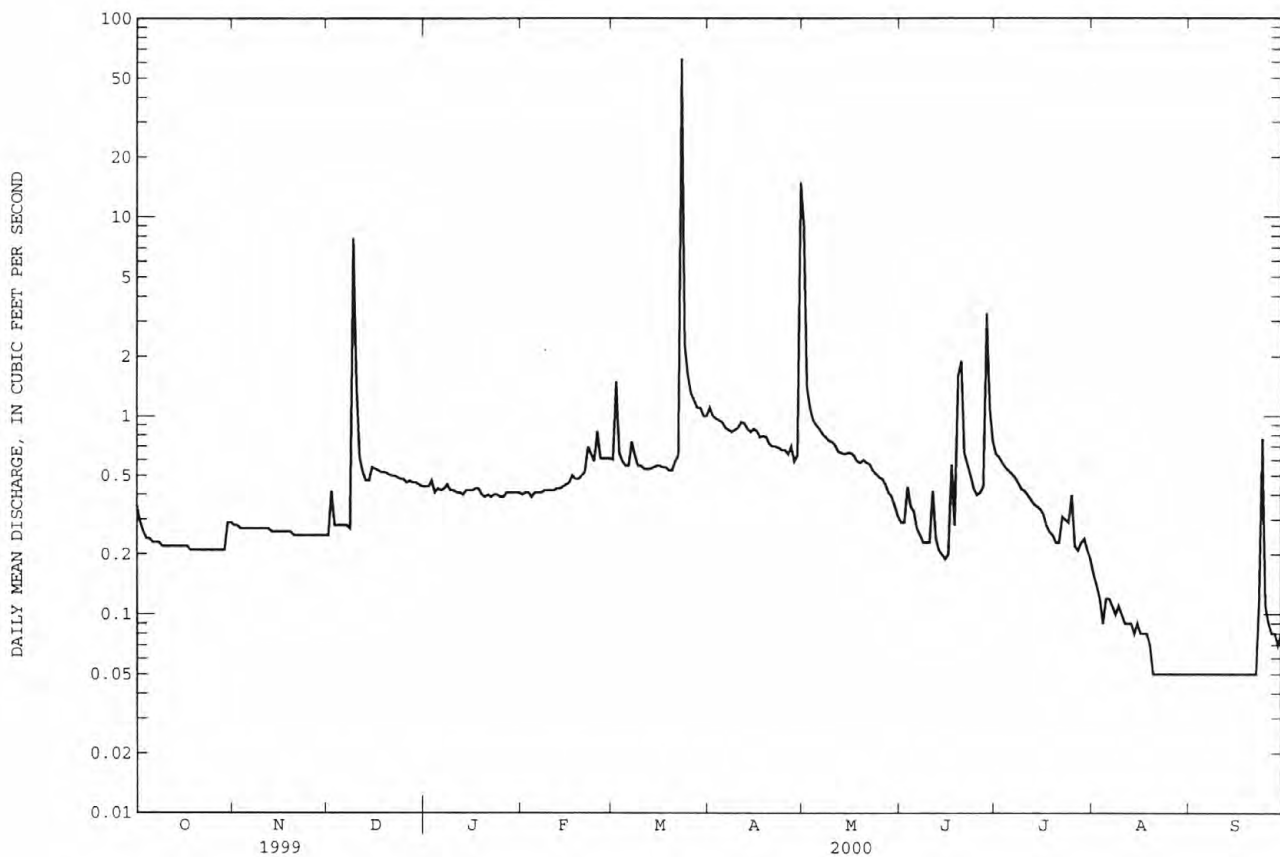
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2000, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	2000
MEAN	1.60	1.49	1.24	2.01	2.26	3.89
MAX	3.82	3.34	2.45	7.18	4.39	11.9
(WY)	1998	1999	1998	1998	1998	1998
MIN	.23	.26	.71	.42	.50	.63
(WY)	2000	2000	2000	2000	2000	1996

e Estimated

073274406 LITTLE WASHITA RIVER ABOVE SCS POND NO. 26 NEAR CYRIL, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1995 - 2000	
ANNUAL TOTAL	465.40		252.43			
ANNUAL MEAN	1.28		.69		1.82	
HIGHEST ANNUAL MEAN					3.39	
LOWEST ANNUAL MEAN					.69	
HIGHEST DAILY MEAN	35	Mar 12	63	Mar 23	351	Jun 4 1995
LOWEST DAILY MEAN	.21	Oct 18	^a .05	Aug 20	^a .05	Aug 20 2000
ANNUAL SEVEN-DAY MINIMUM	.21	Oct 18	.05	Aug 20	.05	Aug 20 2000
INSTANTANEOUS PEAK FLOW			277	Mar 23	1300	Jun 4 1995
INSTANTANEOUS PEAK STAGE			7.68	Mar 23	11.73	Jun 4 1995
ANNUAL RUNOFF (AC-FT)	923		501		1320	
10 PERCENT EXCEEDS	1.8		.84		2.6	
50 PERCENT EXCEEDS	.90		.41		1.0	
90 PERCENT EXCEEDS	.25		.08		.27	

^aOccurred on many days in 2000 water year.

RED RIVER BASIN

073274408 LITTLE WASHITA RIVER TRIBUTARY NEAR CYRIL, OK

LOCATION.-- Lat 34°55'33", long 98°14'00", in SE 1/4 NE 1/4 NE 1/4 sec. 10, T.5N., R.10W., Caddo County, Hydrologic Unit 11130302, on right bank of county road, 1.7 mi west of Cyril, 6.8 mi east of Apache, and at mile 1.6.

DRAINAGE AREA.--1.10 mi².

PERIOD OF RECORD.-- February 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,372.05 ft above sea level.

REMARKS.--Records poor. U.S. Geological Survey's satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	2.0	e.00	.00	.00	.00
2	.00	.00	.20	.00	.00	3.3	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.52	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	22	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	26	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.23	.00	.00	.00	.00	.00	.03
25	.00	.00	.00	.00	1.4	.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	.09	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	12	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	e.00	---	.00	.00	---
TOTAL	0.00	0.00	22.31	0.00	1.50	30.05	12.11	2.00	0.21	0.00	0.00	0.03
MEAN	.000	.000	.72	.000	.052	.97	.40	.065	.007	.000	.000	.001
MAX	.00	.00	22	.00	1.4	26	12	2.0	.10	.00	.00	.03
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	44	.00	3.0	60	24	4.0	.4	.00	.00	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2000, BY WATER YEAR (WY)

	MEAN	.28	.37	.36	.40	.45	.83	.62	.34	.63	.38	.15	.12
MAX	.49	.74	.72	1.54	.96	2.84	1.04	.70	2.59	1.47	.42	.27	
(WY)	1998	1997	2000	1998	1998	1998	1999	1995	1995	1997	1995	1995	
MIN	.000	.000	.022	.000	.052	.26	.27	.040	.007	.000	.000	.000	
(WY)	2000	2000	1999	2000	2000	1997	1996	1996	2000	1998	1999	1998	

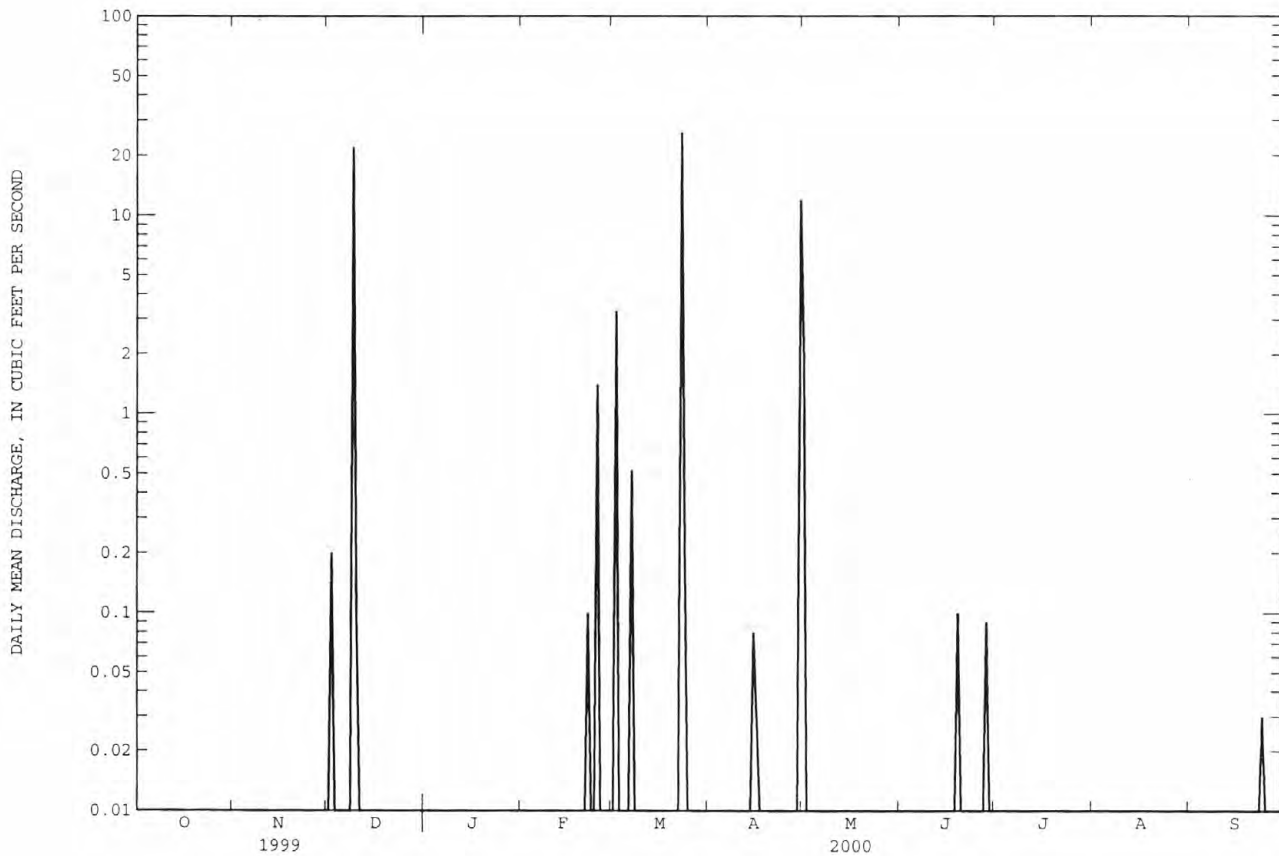
e Estimated

RED RIVER BASIN

109

073274408 LITTLE WASHITA RIVER TRIBUTARY NEAR CYRIL, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1995 - 2000
ANNUAL TOTAL	104.53	68.21	
ANNUAL MEAN	.29	.19	.38
HIGHEST ANNUAL MEAN			.64 1998
LOWEST ANNUAL MEAN			.19 2000
HIGHEST DAILY MEAN	30 Apr 25	26 Mar 23	57 Jun 4 1995
LOWEST DAILY MEAN	.00 at times	.00 at times	.00 at times
ANNUAL SEVEN-DAY MINIMUM	.00 Jan 1	.00 Oct 1	.00 May 19 1996
INSTANTANEOUS PEAK FLOW		117 Apr 30	^a 555 Jun 4 1995
INSTANTANEOUS PEAK STAGE		8.00 Apr 30	11.18 Jun 4 1995
ANNUAL RUNOFF (AC-FT)	207	135	273
10 PERCENT EXCEEDS	.02	.00	.64
50 PERCENT EXCEEDS	.00	.00	.10
90 PERCENT EXCEEDS	.00	.00	.00

^aFrom theoretical rating.

RED RIVER BASIN

07327441 SCS POND NO. 26 NEAR CYRIL, OK

LOCATION.--Lat 34°54'09", long 98°14'22", in SW 1/4 SE 1/4 sec.15, T.5 N., R.10 W., Caddo County, Hydrologic Unit 11130302, on north face of dam, on Little Washita River, 2.2 mi west of Cyril, and at mile 28.4.

DRAINAGE AREA.--6.64 mi² (Agricultural Research Service).

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

REVISED RECORDS.--WDR OK-96-2: 1994, 1995.

GAGE.--Water-stage recorder. Datum of gage is 1305.631 ft.

REMARKS.--Reservoir is formed by earthen dam, construction completed November 1976. Emergency spillway elevation is 1,352.55 ft, contents 1,520 acre-ft; principal spillway elevation is 1,328.95 ft, contents 142 acre-ft; drain value elevation 1,295.25 ft. Figures herein represent total contents. Reservoir is used for flood control. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 781 acre-ft, June 4, 1995, elevation 1,341.92 ft; minimum after initial storage, 166 acre-ft, at times, elevation 1,320.48 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 229 acre-ft, Mar. 23, elevation 1,324.98 ft; minimum, 166 acre-ft, at times, elevation 1,320.48 ft.

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

1320	159.0	1323	200.0
1321	174.0	1324	214.0
1322	188.0	1325	229.0

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

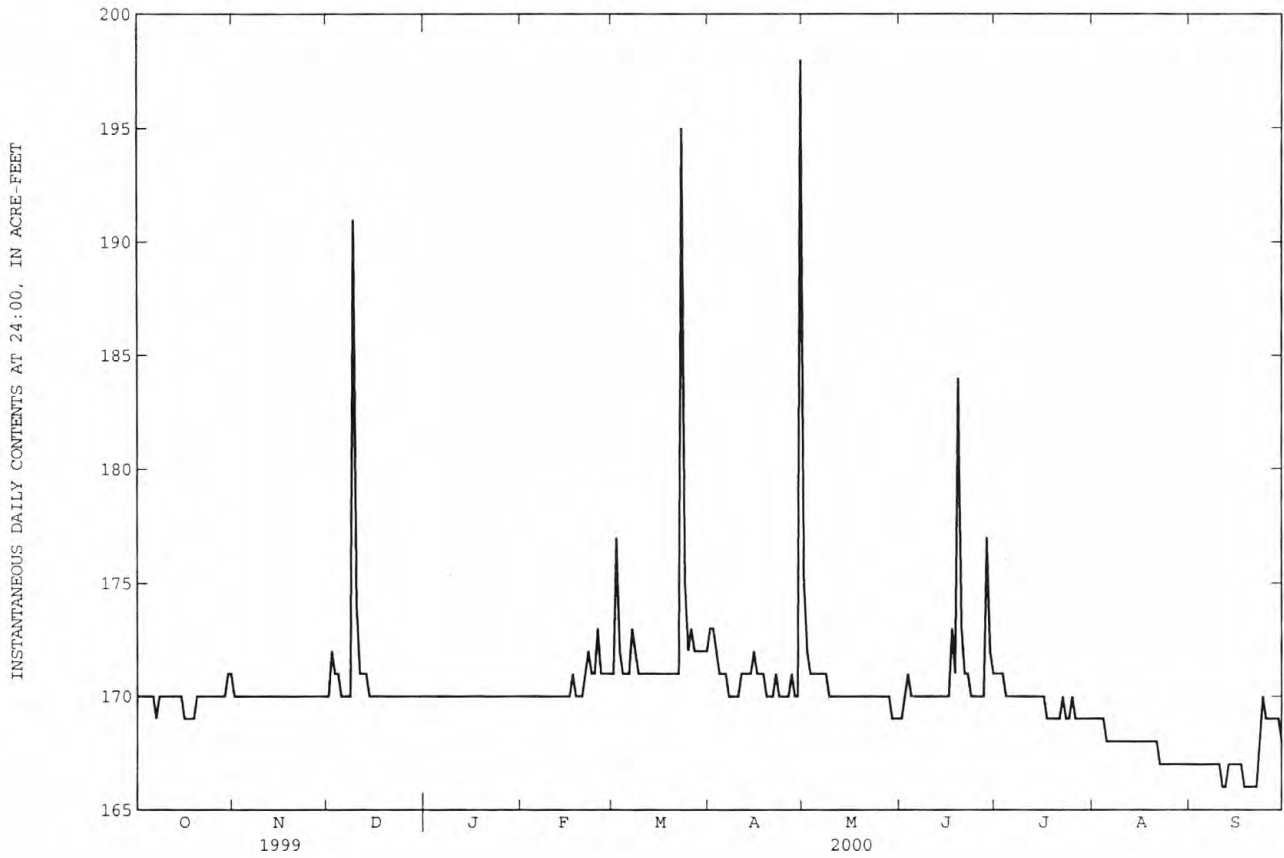
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	170	170	170	170	170	171	173	175	169	171	169	167
2	170	170	172	170	170	177	173	172	170	171	169	167
3	170	170	171	170	170	172	172	171	171	171	169	167
4	170	170	171	170	170	171	171	171	170	170	169	167
5	170	170	170	170	170	171	171	171	170	170	168	167
6	170	170	170	170	170	171	171	171	170	170	168	167
7	169	170	170	170	170	173	170	171	170	170	168	167
8	170	170	170	170	170	172	170	171	170	170	168	167
9	170	170	191	170	170	171	170	170	170	170	168	167
10	170	170	174	170	170	171	170	170	170	170	168	167
11	170	170	171	170	170	171	171	170	170	170	168	166
12	170	170	171	170	170	171	171	170	170	170	168	166
13	170	170	171	170	170	171	171	170	170	170	168	167
14	170	170	170	170	170	171	171	170	170	170	168	167
15	170	170	170	170	170	171	172	170	170	170	168	167
16	169	170	170	170	170	171	171	170	170	170	168	167
17	169	170	170	170	171	171	171	170	173	169	168	167
18	169	170	170	170	170	171	171	170	171	169	168	166
19	169	170	170	170	170	171	170	170	184	169	168	166
20	170	170	170	170	170	171	170	170	173	169	168	166
21	170	170	170	170	171	171	170	170	171	169	168	166
22	170	170	170	170	172	171	171	170	171	170	167	166
23	170	170	170	170	171	195	170	170	170	169	167	168
24	170	170	170	170	171	175	170	170	170	169	167	170
25	170	170	170	170	173	172	170	170	170	170	167	169
26	170	170	170	170	171	173	170	170	170	169	167	169
27	170	170	170	170	171	172	171	170	170	169	167	169
28	170	170	170	170	171	172	170	170	177	169	167	169
29	170	170	170	170	171	172	170	169	172	169	167	169
30	171	170	170	e170	---	172	198	169	171	169	167	168
31	171	---	170	170	---	172	---	169	---	169	167	---
MAX	171	170	191	170	173	195	198	175	184	171	169	170
MIN	169	170	170	170	170	171	170	169	169	169	167	166
(+)	1320.78	1320.73	1320.72	1320.76	1320.80	1320.90	1322.78	1320.68	1320.82	1320.68	1320.52	1320.64
(++)	+1	-1	0	0	+1	+1	+26	-29	+2	-2	-2	+1
CAL YR 1999	MAX 306	MIN 169	(++) 0									
WTR YR 2000	MAX 198	MIN 166	(++) -2									

e Estimated

(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-FEET

07327441 SCS POND NO. 26 NEAR CYRIL, OK--Continued



RED RIVER BASIN

07327442 LITTLE WASHITA RIVER NEAR CYRIL, OK

LOCATION.-- Lat 34°53'32", long 98°13'58", in SW 1/4 NW 1/4 sec. 23, T.5N., R.10W., Caddo County, Hydrologic Unit 11130302, on left bank 300 ft downstream from county road, 1.7 mi west of Cyril, 6.8 mi east of Apache, and at mile 28.0.

DRAINAGE AREA.--11.6 mi².

PERIOD OF RECORD.-- October 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,259.29 ft above sea level.

REMARKS.--Records fair. Flow affected by numerous flood retention reservoirs. U.S. Geological Survey's satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.78	1.2	.86	1.5	1.4	1.6	4.0	12	.74	.98	.38	.06
2	.76	.99	1.3	1.5	1.3	2.6	4.0	3.1	.74	.95	.37	.06
3	.78	.92	1.8	1.7	1.4	2.9	4.0	2.3	1.2	.87	.35	.06
4	.75	.92	1.7	1.5	1.3	e2.0	3.8	2.0	1.1	.80	.30	.06
5	.75	.92	1.3	1.4	1.3	e1.8	3.7	1.9	1.0	.73	.28	.06
6	.77	.92	1.1	1.4	1.3	e1.7	3.6	1.8	.86	.69	.26	.06
7	.74	.92	1.1	1.4	1.3	e1.8	3.8	1.8	.79	.66	.24	.07
8	.77	.92	1.1	1.5	1.2	e2.0	3.6	1.7	.76	.62	.22	.07
9	.80	.92	1.1	1.5	1.2	e1.8	3.7	1.6	.73	.59	.20	.07
10	.76	.93	7.4	1.4	1.3	e1.6	3.9	1.5	.78	.57	.21	.07
11	.75	.90	e3.5	1.4	1.3	e1.5	4.5	1.4	1.2	.55	.21	.06
12	.76	.92	e2.5	1.4	1.2	e1.7	4.7	1.4	.96	.54	.21	.04
13	.78	.93	e2.4	1.3	1.3	e1.5	4.4	1.3	.81	.54	.21	.05
14	.79	.93	e2.3	1.3	1.3	e1.4	4.2	1.2	.72	.52	.17	.07
15	.77	.92	2.2	1.4	1.4	e1.4	4.2	1.2	.69	.51	.16	.05
16	.79	.90	2.1	1.4	1.4	e1.4	4.6	1.2	.68	.48	.15	.05
17	.80	.92	2.1	1.4	1.5	e1.4	4.1	1.2	1.9	.43	.16	.07
18	.75	.93	2.0	1.4	1.6	e1.4	4.0	1.2	1.4	.42	.15	.04
19	.80	.93	2.0	1.4	1.5	e1.4	4.0	1.1	4.8	.42	.17	.06
20	.82	.88	1.8	1.3	1.5	e1.3	3.8	1.2	4.0	.41	.14	.03
21	.84	.85	1.8	1.3	1.5	e1.5	3.6	1.2	1.4	.41	.11	.08
22	.86	.90	1.8	1.4	1.8	e1.5	3.7	1.2	1.1	.55	.09	.08
23	.86	.92	1.7	1.4	2.1	48	3.8	1.1	.95	.53	.09	.09
24	.84	.88	1.7	1.3	1.8	11	3.6	1.1	.83	.46	.08	1.0
25	.79	.89	1.7	1.4	2.6	5.6	3.6	1.0	.73	.61	.08	.53
26	.80	.90	1.6	1.3	2.0	4.6	3.4	1.1	.75	.54	.08	.31
27	.81	.90	1.7	1.4	1.8	4.2	3.8	1.0	.78	.44	.07	.24
28	.82	.89	1.6	1.4	1.7	4.1	3.4	.96	3.1	.41	.06	.22
29	.85	.86	1.6	1.4	1.6	4.0	2.9	.89	2.0	.45	.06	.20
30	1.3	.86	1.6	1.3	---	3.7	6.0	.85	1.2	.43	.07	.18
31	1.4	---	1.5	1.4	---	3.7	---	.80	---	.40	.06	---
TOTAL	25.64	27.57	69.86	43.5	43.9	126.1	118.4	53.30	38.70	17.51	5.39	4.09
MEAN	.83	.92	2.25	1.40	1.51	4.07	3.95	1.72	1.29	.56	.17	.14
MAX	1.4	1.2	11	1.7	2.6	48	6.0	12	4.8	.98	.38	1.0
MIN	.74	.85	.86	1.3	1.2	1.3	2.9	.80	.68	.40	.06	.03
AC-FT	51	55	139	86	87	250	235	106	77	35	11	8.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2000, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
MEAN	3.81	4.79	6.19	6.15	6.49	8.69	8.32	8.16	9.55	4.23	2.82	2.48
MAX	7.34	11.6	19.5	16.7	15.4	22.8	17.3	26.2	35.8	9.55	7.34	7.13
(WY)	1996	1993	1993	1998	1993	1998	1993	1993	1995	1997	1995	1996
MIN	.71	.92	2.25	1.40	1.51	3.11	2.51	1.72	1.29	.56	.17	.14
(WY)	1999	2000	2000	2000	2000	1996	1996	2000	2000	2000	2000	2000

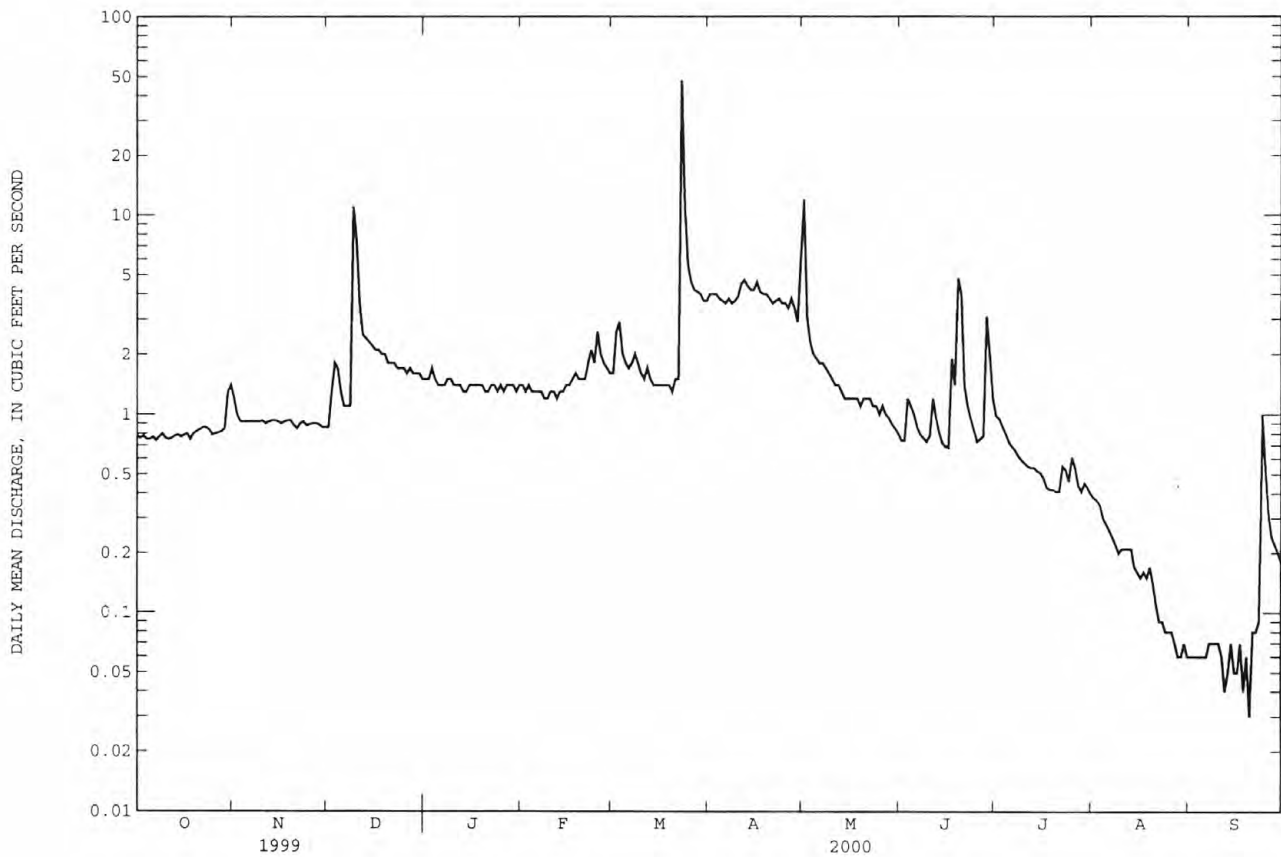
e Estimated

RED RIVER BASIN

113

07327442 LITTLE WASHITA RIVER NEAR CYRIL, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1993 - 2000
ANNUAL TOTAL	1387.24	573.96	
ANNUAL MEAN	3.80	1.57	5.97
HIGHEST ANNUAL MEAN			13.2 1993
LOWEST ANNUAL MEAN			1.57 2000
HIGHEST DAILY MEAN	153 Apr 25	48 Mar 23	364 Jun 4 1995
LOWEST DAILY MEAN	.68 Sep 24	.03 Sep 20	.03 Sep 20 2000
ANNUAL SEVEN-DAY MINIMUM	.73 Sep 18	.05 Sep 12	.05 Sep 12 2000
INSTANTANEOUS PEAK FLOW		141 Mar 23	1530 Jun 4 1995
INSTANTANEOUS PEAK STAGE		9.77 Mar 23	16.67 Jun 4 1995
ANNUAL RUNOFF (AC-FT)	2750	1140	4320
10 PERCENT EXCEEDS	7.2	3.6	13
50 PERCENT EXCEEDS	2.7	1.1	3.6
90 PERCENT EXCEEDS	.80	.15	.84



RED RIVER BASIN

073274458 LITTLE WASHITA RIVER TRIBUTARY NEAR CEMENT, OK

LOCATION.-- Lat 34°51'58", long 98°08'30", in NW 1/4 NW 1/4 sec. 34, T.5N., R.9W., Caddo County, Hydrologic Unit 11130302, on left bank 30 ft downstream from I-44 bridge near mile marker 64, 4 mi south of Cement, and at mile 2.1.

DRAINAGE AREA.--6.5 mi².

PERIOD OF RECORD.-- June 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,237.18 ft above sea level.

REMARKS.--Records fair. U.S. Geological Survey's satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	4.0	1.9	1.4	1.8	1.7	2.1	5.2	1.0	1.2	.80	.72
2	1.1	1.9	4.9	1.4	1.7	2.3	1.9	2.4	1.1	1.5	.78	.73
3	1.1	1.8	2.3	1.6	1.7	1.8	1.8	2.0	1.6	1.2	.78	.73
4	1.1	1.8	2.6	1.4	1.6	1.6	1.7	1.8	1.5	1.1	.77	.74
5	1.1	1.7	2.1	1.4	1.6	1.6	1.7	1.7	1.4	1.0	.75	.81
6	1.2	1.7	2.0	1.4	1.6	1.6	1.7	1.6	1.3	.95	.74	.83
7	1.1	1.6	2.0	1.4	1.6	3.1	1.6	1.5	1.2	.90	.74	.91
8	1.1	1.7	1.9	1.5	1.6	2.5	1.5	1.4	1.2	.88	.72	.91
9	1.2	1.7	1.5	1.5	1.6	1.8	1.6	1.4	1.2	.84	.72	.94
10	1.2	1.7	e3.0	1.5	1.6	1.7	1.6	1.4	1.3	.82	.71	.89
11	1.2	1.7	e2.8	1.5	1.5	1.6	2.7	1.4	1.5	.81	.71	.87
12	1.2	1.7	e2.5	1.4	1.6	1.5	2.3	1.3	1.3	.79	.72	.84
13	1.2	1.9	e2.1	1.4	1.7	1.4	2.0	1.2	1.2	.79	.72	.84
14	1.3	1.8	2.0	1.4	1.6	1.4	1.9	1.2	1.1	.76	.71	.86
15	1.3	1.8	1.8	1.4	1.6	1.4	2.2	1.2	1.1	.76	.71	.91
16	1.3	1.8	1.8	1.4	1.6	1.4	2.4	1.3	1.1	.75	.71	.89
17	1.3	1.8	1.7	2.3	1.8	1.4	2.0	1.3	1.7	.75	.72	.89
18	1.4	1.8	1.7	1.6	1.6	1.4	1.9	1.2	1.4	.78	.72	.98
19	1.4	1.8	1.7	1.3	1.5	1.4	2.0	1.2	2.5	.78	.73	1.0
20	1.4	1.9	1.6	1.3	1.5	1.3	1.9	1.3	2.0	.75	.73	.95
21	1.4	1.9	1.6	1.3	1.5	1.7	2.1	1.4	1.8	.76	.71	.97
22	1.4	1.9	1.7	1.3	1.9	1.7	2.1	1.2	1.5	1.1	.71	1.0
23	1.4	1.9	1.5	1.3	1.9	1.3	2.2	1.2	1.3	.96	.71	1.1
24	1.4	1.9	1.3	3.2	1.7	3.2	2.1	1.2	1.2	.91	.72	2.0
25	1.4	1.9	1.3	1.9	3.0	2.7	2.1	1.2	1.1	.90	.73	.89
26	1.4	1.9	1.4	1.8	1.9	2.5	2.1	1.2	1.2	.86	.72	.81
27	1.4	1.9	1.4	1.9	1.8	2.3	2.3	1.2	1.3	.84	.73	.77
28	1.5	1.9	1.4	1.8	1.8	2.3	2.0	1.1	4.9	.82	.71	.76
29	1.5	1.9	1.5	1.8	1.8	2.3	2.0	1.1	1.4	.88	.71	.73
30	2.4	1.9	1.4	1.8	---	2.0	9.9	1.1	1.2	.84	.71	.77
31	2.4	---	1.4	1.8	---	1.9	---	1.1	---	.82	.72	---
TOTAL	42.0	56.6	73.3	49.4	49.7	69.5	67.4	46.0	44.6	27.80	22.57	27.04
MEAN	1.35	1.89	2.36	1.59	1.71	2.24	2.25	1.48	1.49	.90	.73	.90
MAX	2.4	4.0	15	3.2	3.0	13	9.9	5.2	4.9	1.5	.80	2.0
MIN	1.1	1.6	1.3	1.3	1.5	1.3	1.5	1.1	1.0	.75	.71	.72
AC-FT	83	112	145	98	99	138	134	91	88	55	45	54

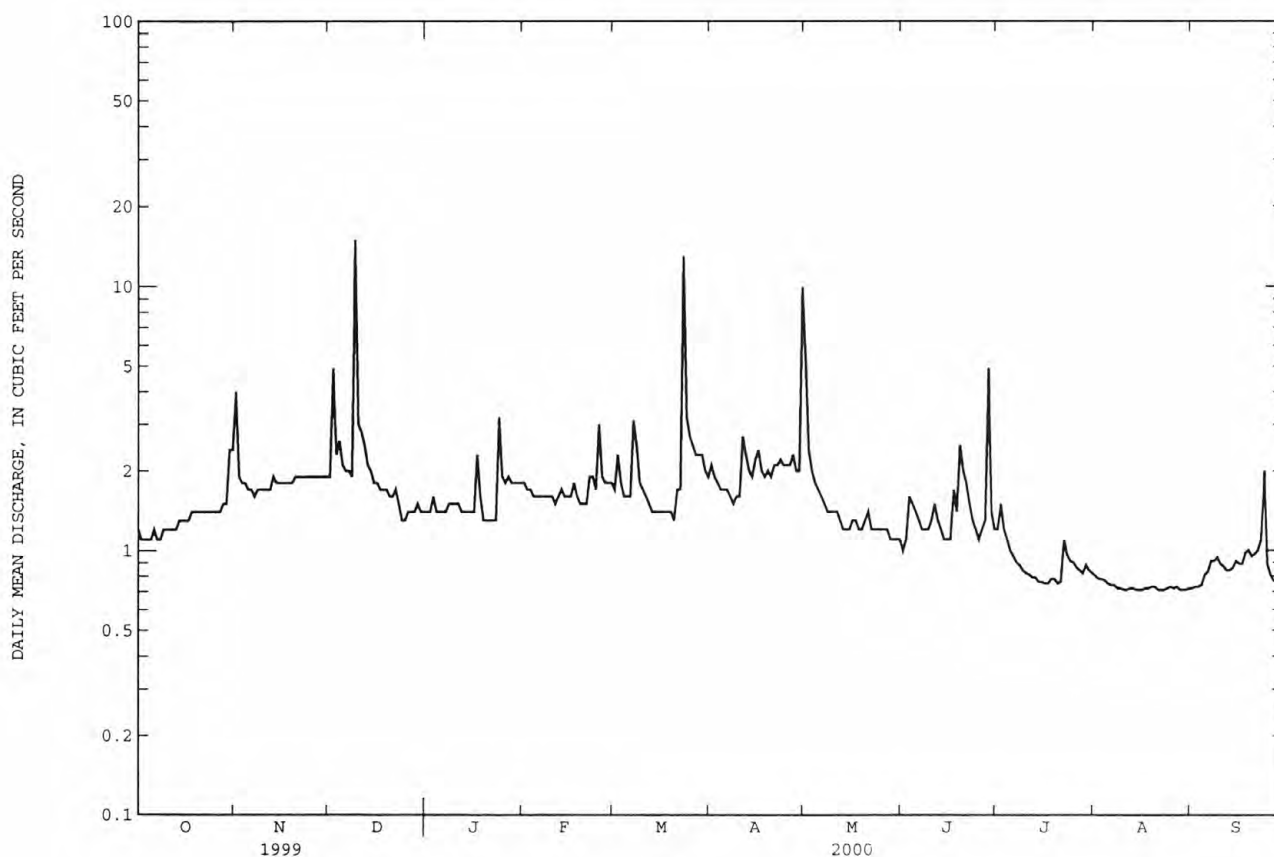
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2000, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	2000
MEAN	2.12	2.32	2.35	3.02	2.44	3.17
MAX	3.10	4.01	2.82	7.55	3.08	6.90
(WY)	1998	1999	1999	1998	1997	1998
MIN	1.35	1.83	1.77	1.59	1.71	1.30
(WY)	2000	1997	1996	2000	2000	1996

e Estimated

073274458 LITTLE WASHITA RIVER TRIBUTARY NEAR CEMENT, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1995 - 2000
ANNUAL TOTAL	878.08	575.91	
ANNUAL MEAN	2.41	1.57	2.28
HIGHEST ANNUAL MEAN			3.20
LOWEST ANNUAL MEAN			1.57
HIGHEST DAILY MEAN	96 Apr 25	15 Dec 9	138 Jan 4 1998
LOWEST DAILY MEAN	.96 Jul 26	.71 at times	.55 Jul 6 1996
ANNUAL SEVEN-DAY MINIMUM	.98 Jul 22	.71 Aug 10	.61 Jul 3 1996
INSTANTANEOUS PEAK FLOW		103 Apr 30	361 Jan 4 1998
INSTANTANEOUS PEAK STAGE		7.39 Apr 30	9.16 Jan 4 1998
ANNUAL RUNOFF (AC-FT)	1740	1140	1650
10 PERCENT EXCEEDS	3.0	2.1	3.1
50 PERCENT EXCEEDS	1.9	1.4	1.7
90 PERCENT EXCEEDS	1.1	.76	.90



RED RIVER BASIN

07327446 SCS POND NO. 31 NEAR CEMENT, OK

LOCATION.--Lat 34°51'07", long 98°08'27", in NW 1/4 NW 1/4 sec.3, T.4 N., R.9 W., Comanche County, Hydrologic Unit 11130302, on north edge of pond, on Little Washita River Tributary, 4.6 mi south of Cement, and at mile 2.1.

DRAINAGE AREA.--7.62 mi² (Agricultural Research Service).

PERIOD OF RECORD.--April 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthen dam. Emergency spillway elevation is 1,253.2 ft, contents 1,680 acre-ft; principal spillway elevation is 1,237.3 ft, contents 347 acre-ft; drain value elevation 1,220.8 ft. Figures herein represent total contents. Reservoir is used for flood control. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 480 acre-ft, June 4, 1995, elevation 1,240.08 ft; minimum after initial storage, 313 acre-ft, at times, elevation 1,236.46 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 379 acre-ft, Mar. 23, elevation 1,238.08 ft; minimum, 349 acre-ft, Sept. 20, 21, elevation 1,237.36 ft.

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

1234	225.0	1240	475.0
1236	295.0	1245	792.5
1238	375.0	1250	1260.0

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

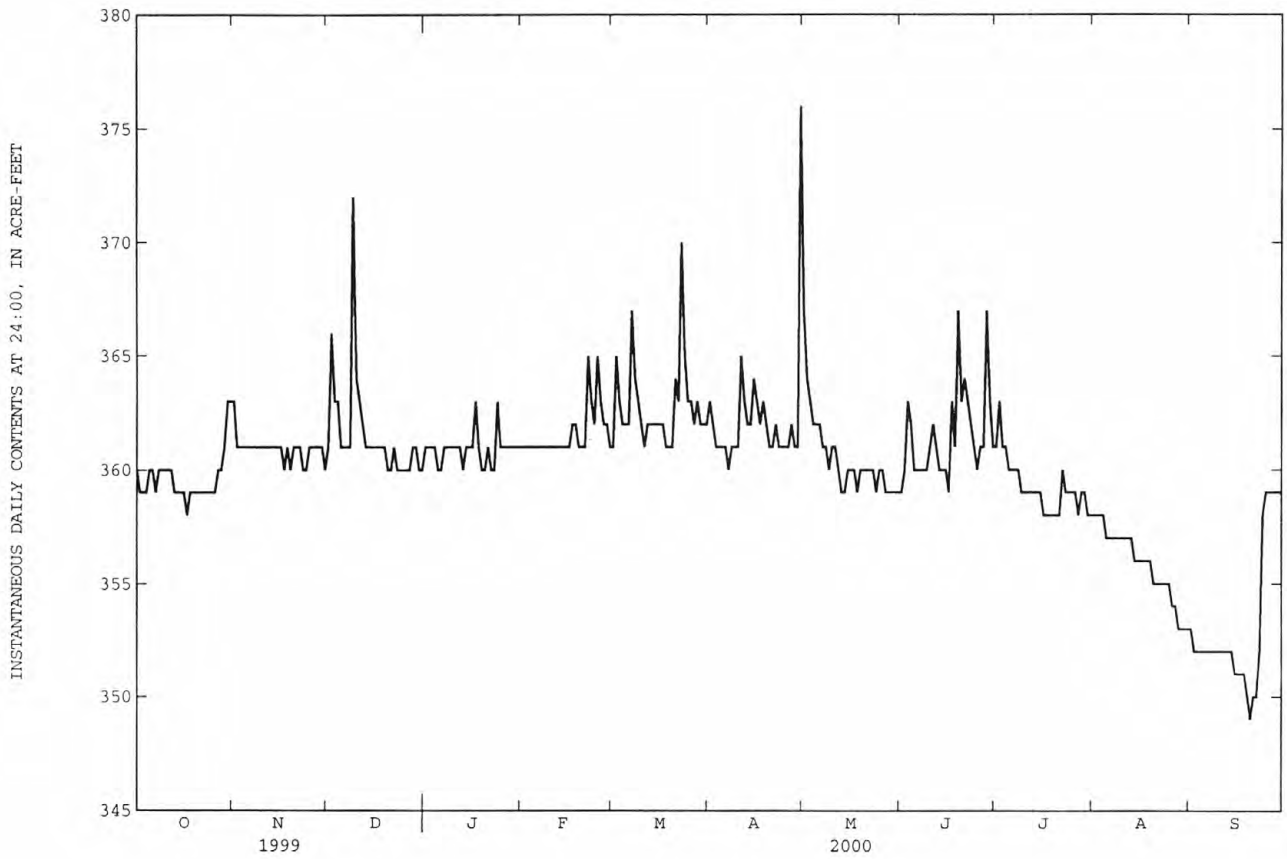
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	360	363	361	361	361	361	363	367	359	361	358	353
2	359	361	366	361	361	365	362	364	360	363	358	352
3	359	361	363	361	361	363	361	363	363	361	358	352
4	359	361	363	361	361	362	361	362	362	361	358	352
5	360	361	361	360	361	362	361	362	360	360	357	352
6	360	361	361	360	361	362	361	362	360	360	357	352
7	359	361	361	361	361	367	360	361	360	360	357	352
8	360	361	361	361	361	364	361	361	360	360	357	352
9	360	361	372	361	361	363	361	360	360	359	357	352
10	360	361	364	361	361	362	361	361	361	359	357	352
11	360	361	363	361	361	361	365	361	362	359	357	352
12	360	361	362	361	361	362	363	360	361	359	357	352
13	359	361	361	360	361	362	362	359	360	359	357	352
14	359	361	361	361	361	362	362	359	360	359	356	352
15	359	361	361	361	361	362	364	360	360	359	356	351
16	359	361	361	361	361	362	363	360	359	358	356	351
17	358	360	361	363	362	362	362	360	363	358	356	351
18	359	361	361	361	362	361	363	359	361	358	356	351
19	359	360	361	360	361	361	362	360	367	358	356	350
20	359	361	360	360	361	361	361	360	363	358	355	349
21	359	361	360	361	361	364	361	360	364	358	355	350
22	359	361	361	360	365	363	362	360	363	360	355	350
23	359	360	360	360	363	370	361	360	362	359	355	352
24	359	360	360	363	362	365	361	359	361	359	355	352
25	359	361	360	361	365	363	361	360	360	359	355	359
26	359	361	360	361	363	363	361	360	361	359	354	359
27	360	361	360	361	362	362	362	359	361	358	354	359
28	360	361	361	361	362	363	361	359	367	359	353	359
29	361	361	361	361	361	362	361	359	363	359	353	359
30	363	360	360	361	---	362	376	359	361	358	353	359
31	363	---	360	361	---	362	---	359	---	358	353	---
MAX	363	363	372	363	365	370	376	367	367	363	358	359
MIN	358	360	360	360	361	361	360	359	359	358	353	349
(+)	1237.70	1237.63	1237.63	1237.65	1237.66	1237.67	1238.02	1237.59	1237.66	1237.58	1237.44	1237.60
(++)	+4	-3	0	+1	0	+1	+14	-17	+2	-3	-5	+6
CAL YR 1999	MAX 390	MIN 357	(++) -2									
WTR YR 2000	MAX 376	MIN 349	(++) 0									

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-FEET

RED RIVER BASIN

117

07327446 SCS POND NO. 31 NEAR CEMENT, OK--Continued



RED RIVER BASIN

07327447 LITTLE WASHITA RIVER NEAR CEMENT, OK

LOCATION.--Lat 34°50'16", long 98°07'27", in NW ¹/₄ NW ¹/₄ sec.11, T.4 N., R.9 W., Comanche County, Hydrologic Unit 11130302, on left bank near downstream side of county road bridge, 5 mi south of Cement, 7 mi east northeast of Fletcher, 8 mi northeast of Sterling, and at mile 23.7

DRAINAGE AREA.--61.9 mi².

PERIOD OF RECORD.--February 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,183.72 ft above sea level.

REMARKS.--Records fair. Flow affected by numerous flood retention reservoirs. U.S. Geological Survey's satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

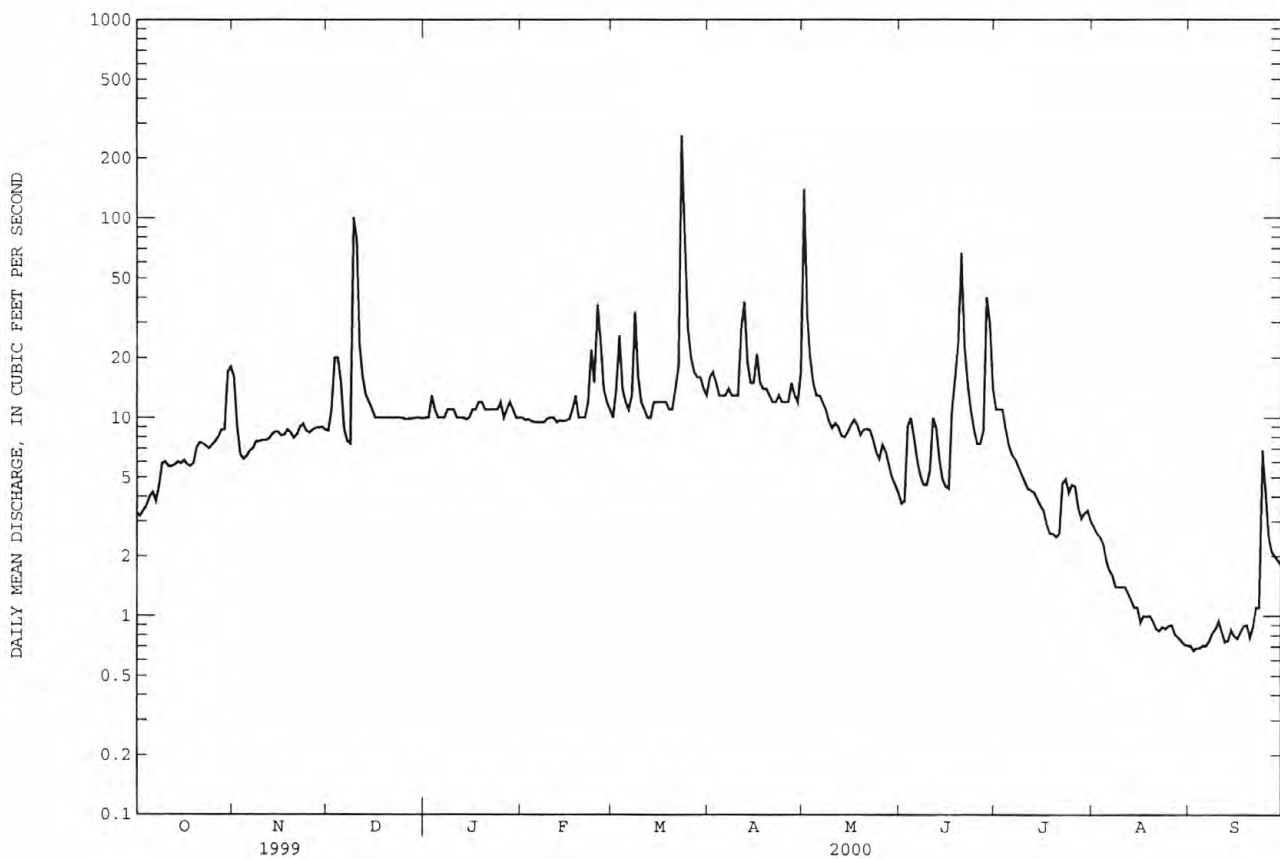
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	16	8.6	10	10	10	16	140	3.7	11	2.8	.71
2	3.2	9.1	11	10	9.7	14	17	33	3.8	11	2.6	.67
3	3.4	6.5	20	13	9.8	26	15	20	9.1	11	2.5	.69
4	3.6	6.2	20	11	9.6	14	13	15	10	8.8	2.3	.69
5	4.0	6.4	15	10	9.5	12	13	13	7.9	7.3	1.9	.71
6	4.2	6.8	8.8	10	9.5	11	13	13	6.1	6.5	1.7	.71
7	3.8	7.0	7.6	10	9.5	13	14	12	5.1	6.2	1.6	.75
8	4.5	7.6	7.4	11	9.5	34	13	11	4.6	5.7	1.4	.82
9	5.9	7.6	101	11	9.9	16	13	9.6	4.6	5.2	1.4	.86
10	6.0	7.7	79	11	10	12	13	8.9	5.4	4.8	1.4	.94
11	5.7	7.7	23	10	10	11	28	9.4	10	4.4	1.4	.83
12	5.7	7.8	16	10	9.5	10	38	9.0	8.9	4.3	1.3	.74
13	5.8	8.2	13	10	9.7	10	19	8.1	6.2	4.2	1.2	.75
14	6.0	8.5	12	9.8	9.6	12	15	8.0	4.9	3.9	1.1	.85
15	5.9	8.5	11	10	9.7	12	15	8.5	4.5	3.6	1.1	.79
16	6.1	8.1	10	11	9.8	12	21	9.2	4.4	3.4	.93	.77
17	5.8	8.2	10	11	11	12	15	9.8	11	2.9	1.0	.83
18	5.7	8.7	10	12	13	12	14	9.2	16	2.6	.99	.89
19	5.9	8.4	10	12	10	11	14	8.2	24	2.6	1.0	.90
20	7.1	7.9	10	11	10	11	13	8.7	67	2.5	.94	.78
21	7.5	8.2	10	11	10	14	12	8.8	23	2.6	.86	.88
22	7.4	9.0	10	11	12	18	12	8.7	15	4.7	.84	1.1
23	7.2	9.3	10	11	22	260	13	7.8	11	4.9	.98	1.1
24	7.0	8.6	10	11	15	79	12	6.7	8.8	4.2	.86	6.9
25	7.3	8.4	9.9	12	37	28	12	6.2	7.4	4.6	.89	4.2
26	7.6	8.7	9.8	10	24	20	12	7.3	7.4	4.5	.90	2.5
27	8.0	8.9	9.9	11	14	17	15	6.8	8.6	3.5	.81	2.1
28	8.7	8.9	9.9	12	12	16	13	5.8	40	3.1	.78	2.7
29	8.7	9.0	10	11	11	16	12	5.0	30	3.3	.75	1.9
30	17	8.7	10	10	---	14	17	4.6	14	3.4	.72	1.8
31	18	---	9.9	10	---	13	---	4.2	---	3.0	.71	---
TOTAL	206.0	250.6	512.8	333.8	356.3	770	462	435.5	382.4	153.7	39.56	40.16
MEAN	6.65	8.35	16.5	10.8	12.3	24.8	15.4	14.0	12.7	4.96	1.28	1.34
MAX	18	16	101	13	37	260	38	140	67	11	2.8	6.9
MIN	3.2	6.2	7.4	9.8	9.5	10	12	4.2	3.7	2.5	.71	.67
AC-FT	409	497	1020	662	707	1530	916	864	758	305	78	80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2000, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	17.0	18.7	25.7	26.3	29.0	38.0	42.7	44.1	42.9
MAX	31.4	37.4	77.1	73.3	62.2	97.6	69.9	124	90.8
(WY)	1998	1993	1993	1998	1993	1998	1998	1993	1995
MIN	4.69	8.35	13.0	10.8	12.3	14.7	13.3	8.24	11.8
(WY)	1999	2000	1999	2000	2000	1997	1996	1996	1994

07327447 LITTLE WASHITA RIVER NEAR CEMENT, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1992 - 2000	
ANNUAL TOTAL	8020.4		3942.82		26.5	
ANNUAL MEAN	22.0		10.8		51.6	
HIGHEST ANNUAL MEAN					10.8	
LOWEST ANNUAL MEAN					802	
HIGHEST DAILY MEAN	741	Apr 25	260	Mar 23	.67	May 9 1993
LOWEST DAILY MEAN	2.6	Sep 1	.67	Sep 2	.70	Sep 2 2000
ANNUAL SEVEN-DAY MINIMUM	2.8	Aug 29	.70	Aug 31	.70	Aug 31 2000
INSTANTANEOUS PEAK FLOW			545	Mar 23	1860	Jun 4 1995
INSTANTANEOUS PEAK STAGE			7.71	Mar 23	16.59	Jun 4 1995
ANNUAL RUNOFF (AC-FT)	15910		7820		19160	
10 PERCENT EXCEEDS	32		16		50	
50 PERCENT EXCEEDS	11		9.0		17	
90 PERCENT EXCEEDS	3.7		1.0		5.9	



RED RIVER BASIN

07327483 BOGGY CREEK NEAR NINNEKAH, OK

LOCATION.--Lat 34°53'03", long 97°59'43", in SE 1/4 SW 1/4 sec.24, T.5 N., R.8 W., Grady County, Hydrologic Unit 11130302, on the right side of culvert, 7.5 mi north and 2.6 mi west of Rush Springs, 3.3 mi south and 4.1 mi west of Ninneka and at mile 1.2.

DRAINAGE AREA.--1.66 mi².

PERIOD OF RECORD.--April 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1142.357 ft above sea level.

REMARKS.--Records poor. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	e.52	e.29	e.33	.49	.16	.78	.73	.05	e.16	.01	e.00
2	.07	e.47	e.28	e.31	.43	.22	.83	.13	.05	e.15	.01	e.00
3	.07	e.38	e.29	.52	.40	.23	.62	.11	.06	e.14	.01	e.00
4	.08	e.32	e.74	.37	.44	.22	.55	.09	.07	e.13	e.01	e.00
5	.08	e.30	e.59	.39	.38	.25	.47	.09	.07	e.12	e.01	e.00
6	.10	e.31	e.56	.35	.41	.24	.50	.09	.06	.11	e.01	e.00
7	.09	e.32	e.70	.44	.41	.31	.47	.08	.06	.11	e.01	e.00
8	.10	e.32	e.98	.58	.30	.42	.33	.08	.06	.11	e.01	e.00
9	.11	e.32	2.8	.52	.36	.31	.39	.07	.06	.11	e.01	e.00
10	.11	e.33	.40	.48	.36	.28	.43	.07	.06	.10	e.01	e.00
11	.11	e.34	.27	.48	.27	.19	.69	.07	.08	.10	e.00	e.00
12	.11	e.33	.27	.51	.27	.25	1.1	.07	.07	.10	e.00	e.00
13	.11	e.33	.26	.49	.26	.25	.84	.07	.07	.11	e.00	e.00
14	e.11	e.33	.33	.55	.25	.27	.69	.06	.06	.10	e.00	e.00
15	e.11	e.34	.37	.65	.26	.26	.68	.06	.06	.09	e.00	e.00
16	e.11	e.33	.33	.68	.20	.25	.96	.06	.06	.09	e.00	e.00
17	e.11	e.31	e.32	.65	.35	.20	.49	.06	.08	.08	e.00	e.00
18	e.10	e.33	e.31	.61	.29	.21	.32	.06	.08	.08	e.00	e.00
19	e.10	e.32	e.31	.60	.29	.22	.29	.06	.15	.08	e.00	e.00
20	e.11	e.30	e.31	.60	.25	.24	.37	.06	.10	.08	e.00	e.00
21	e.13	e.33	e.31	.61	.24	.53	.22	.06	.08	.08	e.00	e.00
22	e.12	e.36	e.31	.59	.33	.34	.16	.06	.07	.11	e.00	e.00
23	e.12	e.33	e.30	.49	.42	3.3	.15	.06	.07	.08	e.00	e.00
24	e.12	e.31	e.30	.41	.25	1.5	.14	.06	.06	.07	e.00	e.00
25	e.12	e.30	e.30	.42	.51	1.1	.13	.05	.06	.06	e.00	e.00
26	e.12	e.32	e.30	.47	.28	.94	.14	.10	.06	.06	e.00	e.00
27	e.12	e.32	e.30	.57	.25	.66	.18	.08	.06	.05	e.00	e.00
28	e.12	e.32	e.30	.50	.24	.69	.18	.07	1.6	.04	e.00	e.00
29	e.13	e.31	e.30	.47	.21	.83	.15	.06	e.45	.03	e.00	e.00
30	e.52	e.30	e.43	.49	---	.79	1.0	.05	e.18	.02	e.00	e.00
31	e.56	---	e.36	.55	---	.69	---	.05	---	.02	e.00	---
TOTAL	4.14	10.05	14.22	15.68	9.40	16.35	14.25	2.87	4.10	2.77	0.10	0.00
MEAN	.13	.34	.46	.51	.32	.53	.47	.093	.14	.089	.003	.000
MAX	.56	.52	2.8	.68	.51	3.3	1.1	.73	1.6	.16	.01	.00
MIN	.07	.30	.26	.31	.20	.16	.13	.05	.05	.02	.00	.00
AC-FT	8.2	20	28	31	19	32	28	5.7	8.1	5.5	.2	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2000, BY WATER YEAR (WY)

	1996	1997	1998	1999	2000
MEAN	.48	.55	.76	.87	.77
MAX	1.06	.95	.99	1.44	1.28
(WY)	1997	1997	1997	1998	1997
MIN	.13	.14	.46	.51	.32
(WY)	2000	1999	2000	2000	2000

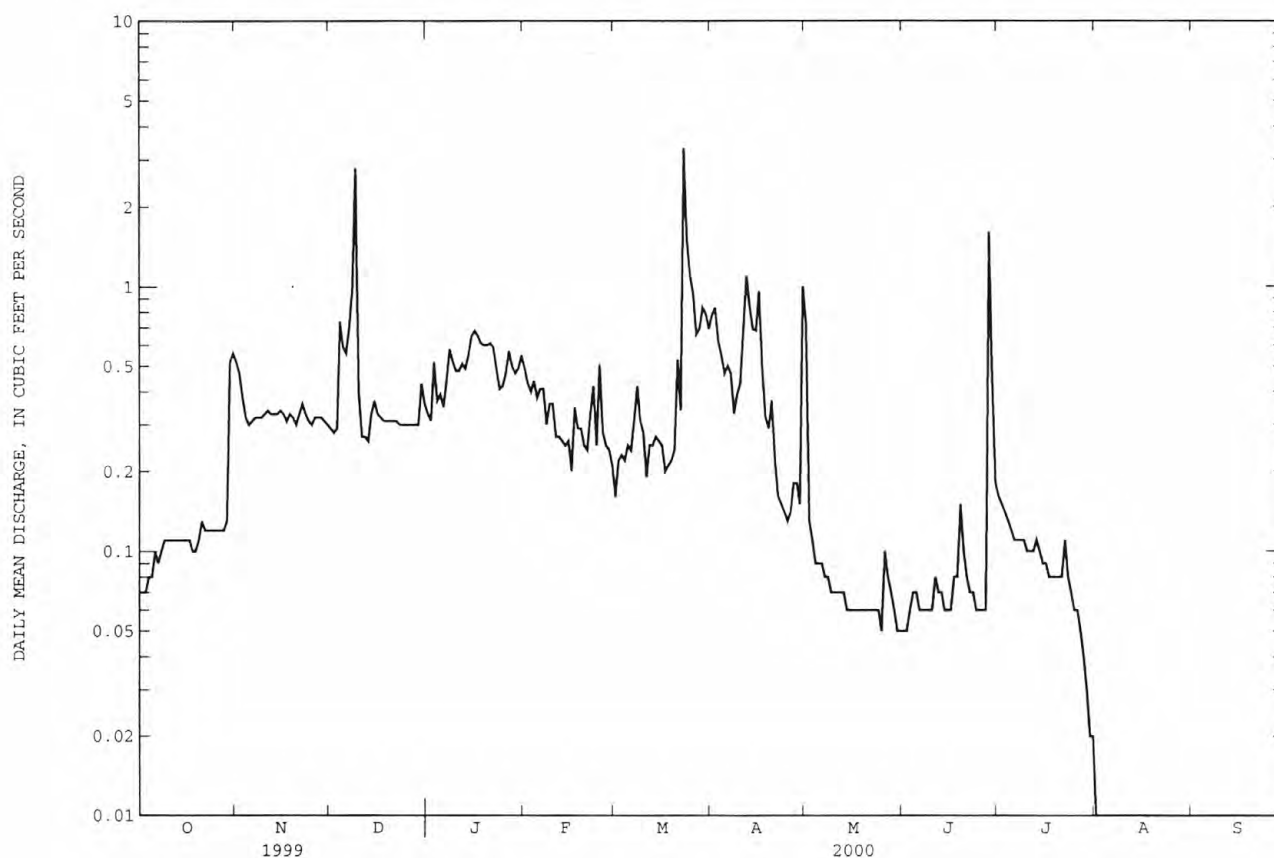
e Estimated

RED RIVER BASIN

121

07327483 BOGGY CREEK NEAR NINNEKAH, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1996 - 2000
ANNUAL TOTAL	125.50	93.93	
ANNUAL MEAN	.34	.26	.58
HIGHEST ANNUAL MEAN			1.02
LOWEST ANNUAL MEAN			.26
HIGHEST DAILY MEAN	4.0 Apr 25	3.3 Mar 23	17 May 30 1997
LOWEST DAILY MEAN	.03 Aug 16	.00 Aug 11	.00 Aug 11 2000
ANNUAL SEVEN-DAY MINIMUM	.03 Aug 24	.00 Aug 11	.00 Aug 11 2000
INSTANTANEOUS PEAK FLOW		11 Mar 23	^a 64 May 30 1997
INSTANTANEOUS PEAK STAGE		10.07 Mar 23	11.94 May 30 1997
ANNUAL RUNOFF (AC-FT)	249	186	420
10 PERCENT EXCEEDS	.72	.56	1.1
50 PERCENT EXCEEDS	.29	.16	.34
90 PERCENT EXCEEDS	.04	.00	.04

^aFrom rating based on step-backwater analysis.

RED RIVER BASIN

07327484 SCS POND NO. 11 NEAR NINNEKAH, OK

LOCATION.--Lat 34°53'41", long 98°59'48", in SW 1/4 NE 1/4 sec.24, T.5 N., R.8 W., Grady County, Hydrologic Unit 11130302, near west end of pond, on Boggy Creek, 4.5 mi southwest of Ninneka.

DRAINAGE AREA.--2.07 mi² (Agricultural Research Service).

PERIOD OF RECORD.--April 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthen dam. Emergency spillway elevation is 1,163.3 ft, contents 492 acre-ft; principal spillway elevation is 1,147.6 ft, contents 80 acre-ft; drain value elevation 1,136.4 ft. Figures herein represent total contents. Reservoir is used for flood control.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 128 acre-ft, May 30, 1997, elevation 1,151.16 ft; minimum daily, 58 acre-ft, Sept. 30, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 99 acre-ft, Mar. 23, elevation, 1,149.14 ft; minimum daily, 58 acre-ft, Sept. 30.

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

1144	46.0	1150	110.0
1146	64.0	1152	141.0
1148	84.0	1154	179.0

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e71	74	79	90	90	90	91	93	87	90	81	67
2	e71	74	80	90	90	90	91	92	87	90	81	67
3	e71	75	81	90	90	90	91	91	88	90	80	66
4	e71	75	82	90	90	90	91	91	88	90	80	66
5	e71	75	82	90	90	90	90	90	88	89	79	66
6	e71	75	82	89	90	90	90	90	88	89	79	e65
7	e71	75	83	90	90	90	90	90	88	88	78	e65
8	e71	75	83	90	90	90	90	90	87	88	78	e65
9	e71	75	94	90	90	90	90	89	88	88	77	e65
10	e71	76	92	90	90	90	90	89	88	87	77	e64
11	e71	76	91	90	89	90	91	89	89	87	77	e64
12	e71	76	91	90	90	90	91	89	89	86	76	e64
13	71	76	91	89	89	90	91	88	88	86	76	e64
14	71	76	90	90	90	90	91	88	88	86	75	e63
15	71	77	90	90	89	90	91	88	88	86	75	e63
16	71	77	90	90	89	90	91	88	88	85	75	e63
17	70	77	90	90	90	90	91	88	89	85	74	e62
18	70	77	90	90	90	90	91	88	89	84	74	e62
19	70	77	90	90	90	90	91	88	92	84	73	e62
20	70	77	89	90	90	90	90	88	91	83	72	e61
21	70	77	90	90	90	92	90	88	91	83	72	e61
22	70	78	90	90	91	92	90	88	91	83	72	e61
23	70	78	90	90	91	95	90	87	90	83	71	e60
24	70	78	90	89	90	93	89	87	90	83	71	e60
25	70	78	90	89	91	92	89	87	89	83	70	e60
26	70	78	90	89	91	91	89	88	89	83	70	e59
27	70	78	89	90	90	91	90	89	89	82	69	e59
28	70	79	90	90	90	91	90	88	94	82	69	e59
29	71	79	90	90	90	90	90	88	92	82	68	e59
30	73	79	90	90	---	90	94	88	91	82	68	e58
31	74	---	90	90	---	90	---	87	---	81	67	---
MAX	74	79	94	90	91	95	94	93	94	90	81	67
MIN	70	74	79	89	89	90	89	87	87	81	67	58
(+)	1146.99	1147.50	1148.43	1148.46	1148.43	1148.47	1148.76	1148.25	1148.54	1147.23	1146.35	--
(++)	+3	+5	+11	0	0	0	+4	-7	+4	-10	-14	-9
CAL YR 1999	MAX 98	MIN 70	(++) 0									
WTR YR 2000	MAX 95	MIN 58	(++) -13									

e Estimated

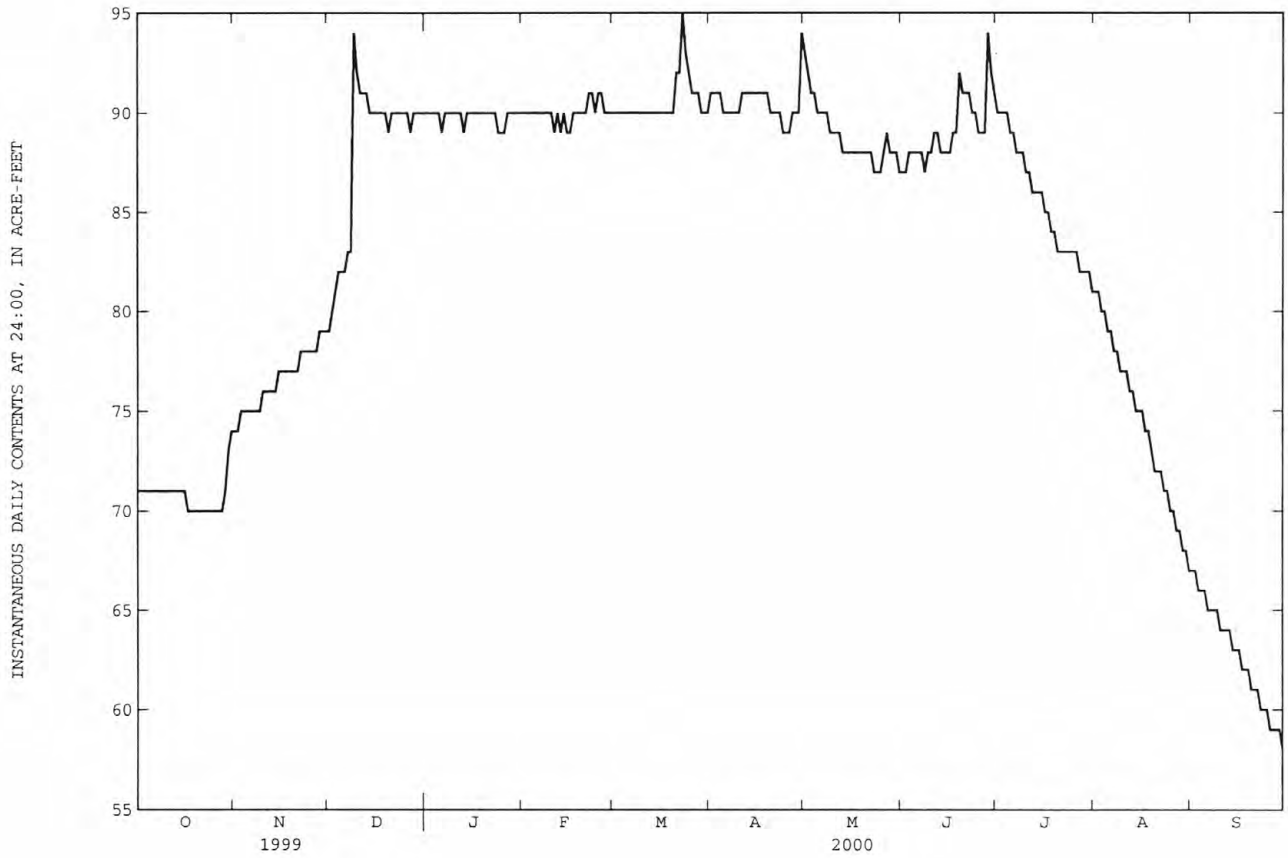
(+) ELEVATION, IN FEET, AT END OF MONTH

(++) CHANGE IN CONTENTS, IN ACRE-FEET

RED RIVER BASIN

123

07327484 SCS POND NO. 11 NEAR NINNEKAH, OK--Continued



RED RIVER BASIN

07327550 LITTLE WASHITA RIVER EAST OF NINNEKAH, OK

LOCATION.--Lat 34°57'48", long 97°53'57", in NW 1/4 SW 1/4 sec.25, T.6 N., R.7 W., Grady County, Hydrologic Unit 11130302, on downstream right bank at bridge on county road 1.5 mi northeast of Ninneka.

DRAINAGE AREA.--236 mi².

PERIOD OF RECORD.--February 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,041.16 ft.

REMARKS.--Records fair. Flow regulated by numerous flood retarding structures. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	28	17	30	26	23	42	189	8.1	55	11	e1.7
2	9.4	21	18	30	25	25	55	112	7.7	53	7.9	e1.5
3	9.2	17	31	37	24	48	43	95	15	55	5.2	e1.7
4	9.4	15	42	38	23	40	37	85	31	42	4.6	e2.0
5	9.1	14	40	31	22	31	34	57	32	32	3.5	e2.4
6	8.7	14	28	29	23	28	31	49	22	27	3.0	3.0
7	7.8	14	23	28	23	28	30	44	16	24	2.6	e3.1
8	8.5	15	21	31	23	55	28	38	13	21	2.1	e3.6
9	9.4	14	202	35	23	46	26	32	11	18	2.2	e3.8
10	11	14	194	32	23	32	26	30	13	16	e2.0	e4.0
11	11	15	90	29	22	30	29	28	22	14	e2.0	e3.4
12	10	15	61	28	22	26	82	27	27	12	e1.9	e2.9
13	10	15	48	27	21	26	56	24	19	12	e1.8	e2.8
14	8.4	15	41	26	22	28	44	22	14	11	e1.7	e3.3
15	7.6	15	36	27	22	30	39	21	12	11	e1.7	e3.7
16	7.6	16	33	28	21	28	59	22	11	10	e1.6	e3.3
17	7.4	16	32	29	27	30	46	23	37	9.3	e1.8	e3.1
18	7.4	15	32	30	35	30	38	22	57	8.1	e1.9	e3.2
19	7.4	15	33	29	28	30	34	19	54	7.2	e2.0	e3.6
20	7.4	15	31	26	25	27	36	21	111	6.7	e2.1	e4.0
21	7.6	16	30	24	33	35	28	21	74	6.4	e1.9	e4.0
22	8.5	16	29	25	34	68	26	21	59	15	e1.8	e3.6
23	8.3	16	29	23	54	289	31	19	45	16	e2.0	e3.5
24	8.4	16	30	22	42	192	29	17	33	13	e1.9	11
25	8.7	16	30	23	55	84	29	16	25	11	e2.3	18
26	8.6	16	30	23	63	60	28	52	23	11	e2.5	14
27	9.1	16	29	25	37	49	36	27	26	9.2	e2.6	9.9
28	8.7	16	30	29	29	43	38	18	135	8.0	e2.3	8.7
29	9.2	17	30	27	25	42	31	15	121	7.9	e2.1	8.1
30	21	17	30	27	---	39	35	12	72	9.6	e2.0	7.3
31	32	---	30	28	---	35	---	9.5	---	14	e1.8	---
TOTAL	306.7	480	1380	876	852	1577	1126	1187.5	1145.8	565.4	85.8	148.2
MEAN	9.89	16.0	44.5	28.3	29.4	50.9	37.5	38.3	38.2	18.2	2.77	4.94
MAX	32	28	202	38	63	289	82	189	135	55	11	18
MIN	7.4	14	17	22	21	23	26	9.5	7.7	6.4	1.6	1.5
AC-FT	608	952	2740	1740	1690	3130	2230	2360	2270	1120	170	294

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2000, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	39.5	55.7	72.9	80.4	87.9	105	112	136	126
MAX	83.2	105	185	264	196	320	181	325	352
(WY)	1998	1993	1993	1998	1993	1998	1998	1993	1995
MIN	9.75	16.0	32.2	25.2	29.4	50.5	37.5	18.1	36.6
(WY)	1999	2000	1999	1999	2000	1997	2000	1996	1994

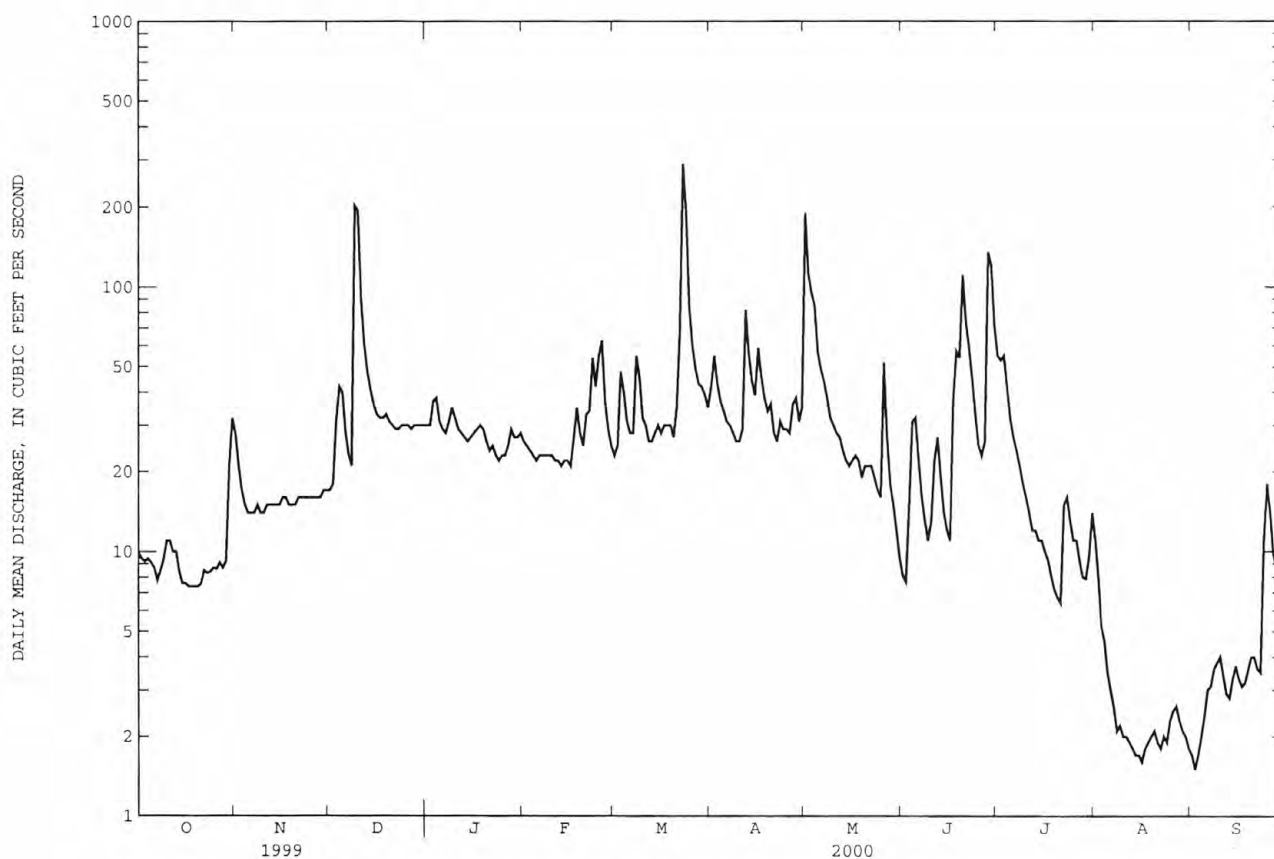
e Estimated

RED RIVER BASIN

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07327550 LITTLE WASHITA RIVER EAST OF NINNEKAH, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1992 - 2000	
ANNUAL TOTAL	15860.0		9730.4		75.4	
ANNUAL MEAN	43.5		26.6		137	
HIGHEST ANNUAL MEAN					26.6	
LOWEST ANNUAL MEAN					3570	
HIGHEST DAILY MEAN	1160	Apr 25	289	Mar 23	1.5	May 30 1997
LOWEST DAILY MEAN	7.4	Oct 17	1.5	Sep 2	1.5	Sep 2 2000
ANNUAL SEVEN-DAY MINIMUM	7.5	Oct 15	1.8	Aug 12	1.8	Aug 12 2000
INSTANTANEOUS PEAK FLOW			436	Mar 23	^a 9920	May 9 1993
INSTANTANEOUS PEAK STAGE			9.96	Mar 23	^b 20.70	May 9 1993
ANNUAL RUNOFF (AC-FT)	31460		19300		54650	
10 PERCENT EXCEEDS	78		48		147	
50 PERCENT EXCEEDS	30		22		48	
90 PERCENT EXCEEDS	9.4		3.2		12	

^aFrom rating extended above 1,500 ft³/s.^bFrom high-water mark on crest-stage gage.

RED RIVER BASIN

07328100 WASHITA RIVER AT ALEX, OK

LOCATION.--Lat 34°55'33", long 97°46'25", in NW $\frac{1}{4}$ sec.7, T.5 N., R.5 W., Grady County, Hydrologic Unit 11130303, near right bank on downstream side of county road bridge, 1.0 mi north of Alex, 3.8 mi downstream from Winter Creek, and at mile 226.5.

DRAINAGE AREA.--4,787 mi².

PERIOD OF RECORD.--October 1964 to September 1986, October 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 995.00 ft above sea level. Prior to Oct. 1, 1988, datum 5.00 ft higher.

REMARKS.--No estimated daily discharge. Records good. Some regulation since March 1959 by Fort Cobb Reservoir (station 07325900), since February 1961 by Foss Reservoir (07324300), and by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at station.

COOPERATION.--Records furnished by Agricultural Research Service prior to January 1978.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	151	317	250	291	262	787	2240	4650	553	3590	254	80
2	146	304	250	284	265	665	2170	6490	722	2490	244	76
3	137	292	297	287	259	536	2440	6910	869	1960	231	75
4	131	369	387	283	251	571	3180	6080	891	1760	213	78
5	132	332	399	285	249	587	2540	3470	934	1630	201	74
6	134	278	509	270	249	562	2020	2690	766	1530	192	68
7	134	248	948	260	246	588	1830	2440	638	1370	183	71
8	137	232	877	267	245	721	1840	2180	609	1260	171	69
9	140	219	1270	267	245	857	1760	1930	605	1180	165	69
10	137	213	1860	264	297	835	1700	1870	505	1120	156	69
11	145	215	2640	256	407	787	1570	1800	409	1070	148	69
12	140	211	2830	254	426	710	1490	1650	376	1010	144	63
13	134	207	2080	248	431	553	1370	1510	350	911	139	64
14	132	205	1520	246	438	503	1310	1360	336	854	134	66
15	130	207	1240	246	444	451	1280	1210	335	804	127	60
16	124	204	1040	243	364	428	1280	1160	344	771	127	62
17	116	206	852	245	318	580	1230	1060	394	751	120	59
18	117	210	703	246	311	688	1100	860	459	665	115	64
19	119	205	599	245	304	728	1080	656	839	484	111	61
20	117	204	524	242	291	840	1160	569	2270	416	107	58
21	119	204	473	243	288	997	1070	525	1940	384	107	49
22	120	209	436	240	294	1000	923	487	1560	403	102	53
23	121	209	405	237	348	1380	839	455	1390	401	100	54
24	119	213	380	236	382	2270	793	423	1270	389	97	193
25	120	213	360	231	468	4240	758	436	1120	343	96	275
26	125	217	346	234	562	5480	731	519	1040	317	96	181
27	130	220	332	248	530	6140	745	637	1040	307	91	133
28	131	283	323	254	569	5310	752	1030	2590	289	90	114
29	128	298	313	259	664	3410	771	892	3780	285	84	103
30	195	269	304	261	---	2800	1170	785	3260	273	81	97
31	241	---	296	264	---	2460	---	668	---	267	82	---
TOTAL	4202	7213	25043	7936	10407	48464	43142	57402	32194	29284	4308	2607
MEAN	136	240	808	256	359	1563	1438	1852	1073	945	139	86.9
MAX	241	369	2830	291	664	6140	3180	6910	3780	3590	254	275
MIN	116	204	250	231	245	428	731	423	335	267	81	49
AC-FT	8330	14310	49670	15740	20640	96130	85570	113900	63860	58080	8540	5170

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2000, BY WATER YEAR (WY)

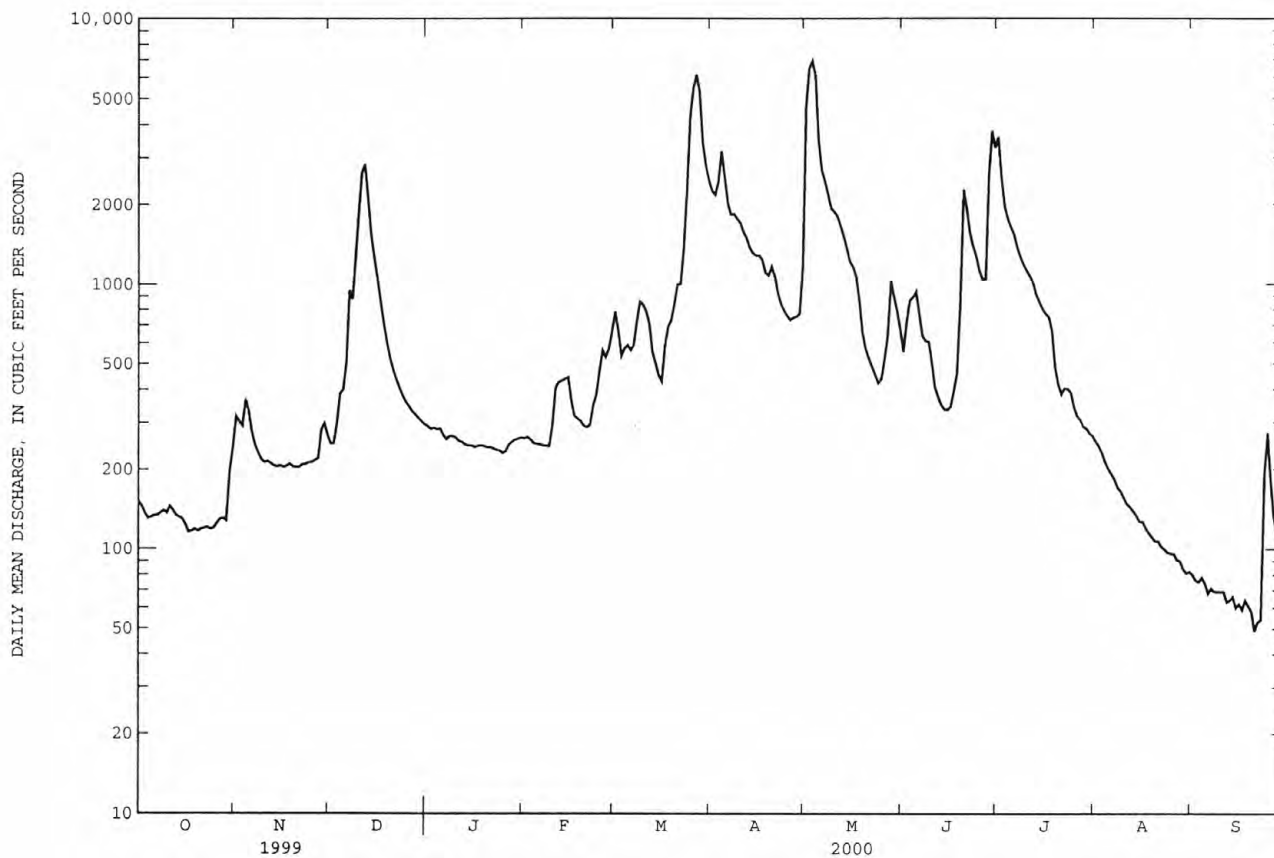
	MEAN	553	487	479	421	465	737	789	1361	1466	535	409	543
MAX	4441	1672	2615	2057	1829	4446	3598	6916	6865	1678	2325	3345	
(WY)	1984	1993	1993	1998	1998	1998	1997	1993	1995	1975	1995	1996	
MIN	61.1	52.9	64.5	77.3	86.1	73.8	23.9	22.9	96.9	13.9	3.88	40.0	
(WY)	1979	1971	1968	1971	1967	1971	1971	1971	1967	1970	1972	1972	

RED RIVER BASIN

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07328100 WASHITA RIVER AT ALEX, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1965 - 2000	
ANNUAL TOTAL	254170		272202		686	
ANNUAL MEAN	696		744		1902	
HIGHEST ANNUAL MEAN					120	
LOWEST ANNUAL MEAN					22500	
HIGHEST DAILY MEAN	10200	Apr 26	6910	May 3	Oct 21 1983	
LOWEST DAILY MEAN	99	Sep 4	49	Sep 21	.00	
ANNUAL SEVEN-DAY MINIMUM	114	Aug 30	57	Sep 17	.01	
INSTANTANEOUS PEAK FLOW			7050	May 3	25000	
INSTANTANEOUS PEAK STAGE			8.17	May 3	b28.70	
ANNUAL RUNOFF (AC-FT)	504100		539900		497100	
10 PERCENT EXCEEDS	1450		1850		1610	
50 PERCENT EXCEEDS	435		336		307	
90 PERCENT EXCEEDS	138		107		74	

^aNo flow Aug. 13, 18, 1970, Aug. 30 to Sept. 1, 1971.^bPresent datum.

RED RIVER BASIN

07328180 NORTH CRINER CREEK NEAR CRINER, OK

LOCATION.--Lat 34°58'17", long 97°35'04", in SE 1/4 SE 1/4 sec.23, T.6 N., R.4 W., McClain County, Hydrologic Unit 11130303, near left bank on downstream side of county road bridge, 1.2 mi west of Criner, and at mile .83.

DRAINAGE AREA.--7.33 mi²

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1023.66 ft above sea level.

REMARKS.--Records poor. U.S. Geological Survey's satellite telemeter at station. Flow partially regulated by retention ponds 1.5 mi northwest of gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	.50	.52	.10	.40	.75	e.75	5.2	.07	3.6	.12	.00
2	.07	.35	1.5	.10	.45	.85	e.59	3.9	.26	11	.06	.00
3	.06	.37	1.9	.16	.48	1.0	e.59	3.0	.46	6.1	.02	.00
4	.08	.38	3.8	.08	.52	.85	.59	2.5	.36	4.4	.04	.00
5	.11	.38	1.4	.09	.33	.75	.47	2.3	.11	3.2	.01	.00
6	.07	.41	1.3	.09	.36	.74	.39	2.1	.03	2.3	e.01	.00
7	.02	.45	1.3	.10	.39	.89	.46	2.0	.01	1.6	e.01	.00
8	.06	.44	1.3	.21	.38	1.2	.25	1.8	.00	1.2	e.01	.00
9	.04	.43	6.5	.10	.36	1.2	.10	1.7	.00	.90	e.01	.00
10	.01	.46	.31	.10	.43	1.1	.08	1.5	.05	.67	.00	.00
11	.00	.46	.17	.10	.50	1.0	.15	1.4	.28	.55	.00	.00
12	.00	.44	.17	.10	.43	.77	.46	1.2	.06	.50	.00	.00
13	.00	.45	.16	.09	.49	.73	.70	1.1	.00	.50	.00	.00
14	.00	.46	.14	.10	.44	1.0	.67	.99	.00	.49	.00	.00
15	.00	.44	.11	.10	.44	1.1	.66	.91	.00	.42	.00	.00
16	.00	.47	.11	.10	.52	1.2	1.3	.92	.00	.30	.00	.00
17	.00	.48	.10	.10	1.4	1.2	1.1	.86	4.3	.24	.00	.00
18	.03	.49	.10	.10	1.9	1.3	.70	.75	4.8	.15	.00	.00
19	.10	.45	.10	.10	1.3	1.3	.63	.74	5.1	.10	.00	.00
20	.11	.48	.10	.08	.85	1.1	.78	.76	5.1	.07	.00	.00
21	.11	.51	.10	.10	.71	1.2	.45	.65	3.7	.05	.00	.00
22	.09	.51	.10	.10	.88	3.1	.29	.55	2.7	.00	.00	.00
23	.08	.47	.10	.09	1.5	3.4	.27	.41	2.1	e.60	.00	.00
24	.10	.50	.10	.08	1.3	2.1	.28	.34	1.7	.58	.00	.49
25	.11	.51	.10	.09	1.4	1.1	.18	.60	1.3	.38	.00	.00
26	.11	.51	.10	.13	1.4	.58	.11	1.2	1.6	.27	.00	.00
27	.08	.52	.10	.18	1.1	.40	.24	.56	1.4	.29	.00	.00
28	.07	.52	.10	.16	.89	.27	.34	.46	8.7	.37	.00	.00
29	.11	.51	.10	.12	.82	e.27	.23	.34	7.4	.41	.00	.00
30	1.1	.51	.10	1.8	---	e.26	1.1	.23	5.3	.23	.00	.00
31	.75	---	.10	.12	---	e.24	---	.13	---	.16	.00	---
TOTAL	3.63	13.86	22.19	5.07	22.37	32.95	14.91	41.10	56.89	41.63	0.29	0.49
MEAN	.12	.46	.72	.16	.77	1.06	.50	1.33	1.90	1.34	.009	.016
MAX	1.1	.52	6.5	1.8	1.9	3.4	1.3	5.2	8.7	11	.12	.49
MIN	.00	.35	.10	.08	.33	.24	.08	.13	.00	.00	.00	.00
AC-FT	7.2	27	44	10	44	65	30	82	113	83	.6	1.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2000, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	1.28	2.13	2.74	2.49	3.22	4.35	5.00	6.65	3.64	1.82	1.97
MAX	3.68	7.23	9.59	7.37	9.67	12.5	14.7	23.1	9.93	5.98	11.1
(WY)	1997	1997	1993	1993	1993	1998	1990	1993	1992	1992	1996
MIN	.12	.46	.33	.16	.77	.86	.50	.78	.42	.22	.009
(WY)	2000	2000	1991	2000	2000	1991	2000	1996	1994	1998	2000

e Estimated

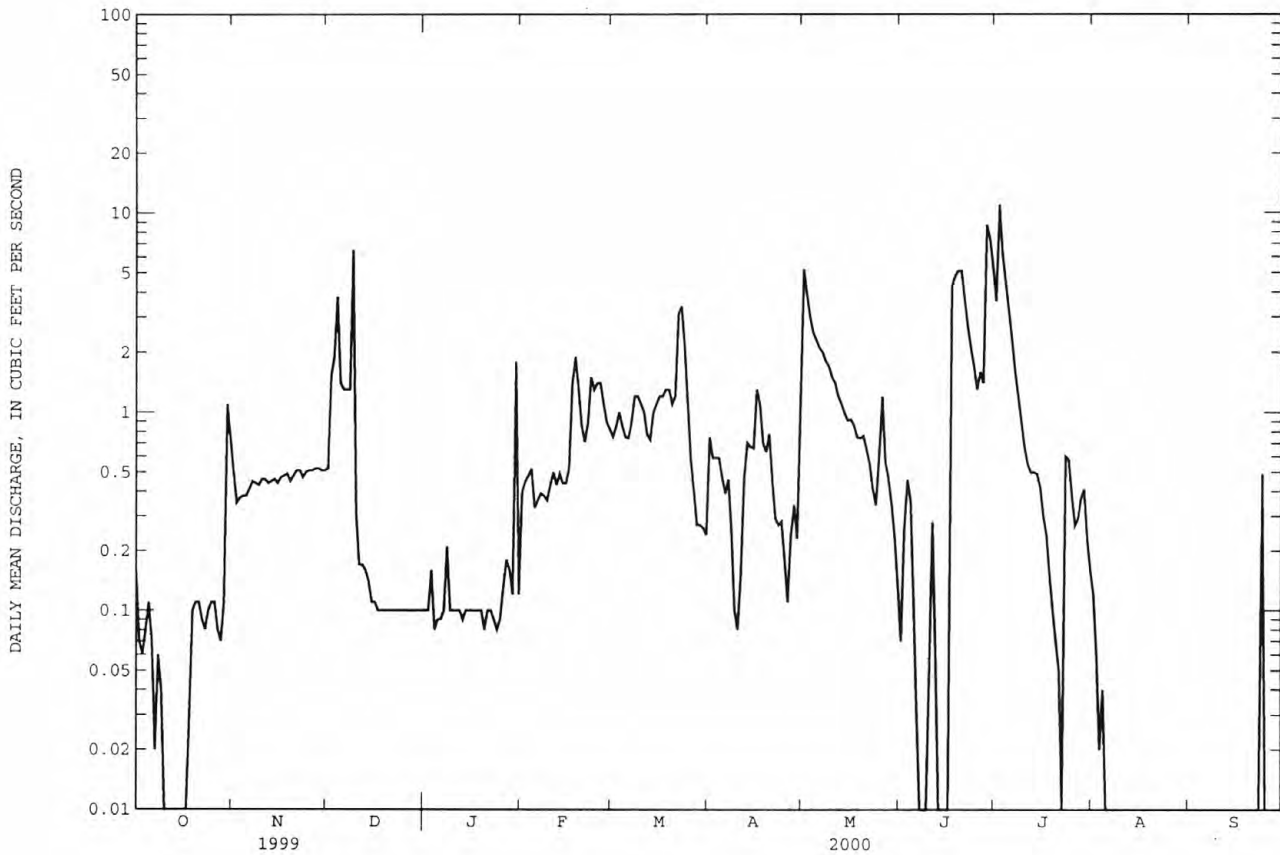
RED RIVER BASIN

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07328180 NORTH CRINER CREEK NEAR CRINER, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1990 - 2000
ANNUAL TOTAL	637.54	255.38	
ANNUAL MEAN	1.75	.70	3.07
HIGHEST ANNUAL MEAN			6.65
LOWEST ANNUAL MEAN			.70
HIGHEST DAILY MEAN	25 Apr 26	11 Jul 2	151 May 2 1990
LOWEST DAILY MEAN	.00 Aug 18	.00 at times	a.00 Jun 18 1994
ANNUAL SEVEN-DAY MINIMUM	.00 Aug 18	.00 Oct 11	.00 Jun 21 1994
INSTANTANEOUS PEAK FLOW		79 Jan 30	605 May 23 1993
INSTANTANEOUS PEAK STAGE		5.50 Jan 30	11.24 May 23 1993
ANNUAL RUNOFF (AC-FT)	1260	507	2220
10 PERCENT EXCEEDS	4.1	1.5	6.7
50 PERCENT EXCEEDS	.61	.32	1.3
90 PERCENT EXCEEDS	.04	.00	.19

^aSeveral days in 1994, 1995, 1999.



RED RIVER BASIN

07328500 WASHITA RIVER NEAR PAULS VALLEY, OK

LOCATION.--Lat 34°45'17", long 97°15'04", in NE 1/4, SE 1/4 sec.1, T.3 N., R.1 W., Garvin County, Hydrologic Unit 11130303, on downstream right bank near end of bridge on U.S. Highway 77, 2.0 mi northwest of Pauls Valley, 6.0 mi downstream from Owl Creek, 7.0 mi upstream from Washington Creek, and at mile 146.5.

DRAINAGE AREA.--5,330 mi².

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 above sea level. During 1899, nonrecording gage at site 9 mi 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 upstream, at datum 1.53 ft higher. Mar. 11, 1975, to Jan. 26, 1981, water-stage recorder at site 200 ft upstream, and at same datum.

REMARKS.--Records fair. Some diversion for irrigation upstream from station. 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. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Stream is reported to have receded to no flow in 1882 and in 1897 (information provided by local resident).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e186	e322	282	351	376	595	2710	4010	688	4020	289	e79
2	e167	e312	266	340	375	712	2530	6180	609	3980	282	e77
3	e160	240	278	544	374	704	2360	6940	783	3660	273	e76
4	e155	306	416	505	372	587	2900	7180	972	2620	261	e76
5	e153	311	452	430	362	559	3150	5380	940	2260	239	e75
6	e156	354	420	415	354	574	2460	3660	940	2060	217	e73
7	e155	310	422	407	350	571	2040	3160	809	1850	205	e72
8	e157	281	778	413	346	643	1890	2870	668	1610	192	72
9	e159	262	1090	402	342	674	1870	2570	644	1470	184	e72
10	e157	248	1790	401	339	780	1770	2270	626	1370	172	e72
11	e159	237	1750	396	343	781	1730	2170	607	1310	e161	e72
12	e153	e229	2640	388	435	735	1650	2060	495	1230	e154	e68
13	e142	e226	2370	386	476	703	1480	1920	436	1160	e149	e68
14	e142	e222	e1570	381	481	590	1330	1770	406	1030	e144	e68
15	e140	e218	e1280	377	480	526	1290	1540	376	952	e136	e66
16	e137	e217	e1100	376	483	478	1320	1410	359	902	e134	e67
17	e135	e216	e948	376	485	454	1310	1320	447	847	e130	e67
18	134	e215	e811	376	440	494	1250	1190	968	814	e124	e67
19	e126	e215	e700	376	406	621	1120	975	630	750	e122	e67
20	e126	e214	e650	376	379	665	1350	777	1450	574	e118	e66
21	e127	e214	600	371	362	734	1190	671	3170	479	e116	e55
22	e125	e214	539	369	359	1160	979	608	2670	476	e111	e58
23	e126	e215	504	364	496	1060	864	564	1940	486	e108	e62
24	e128	e214	469	356	456	1420	839	522	1610	462	e107	e82
25	e129	e213	438	354	458	2480	826	490	1400	425	e101	e84
26	e134	e212	418	360	508	4580	780	521	1360	396	e99	225
27	e140	e211	404	369	564	5620	755	685	1290	370	e93	272
28	e144	e212	387	376	574	6140	736	697	1640	358	e90	224
29	e157	230	379	377	540	4720	723	1140	4260	357	e88	218
30	e210	284	367	376	---	3470	733	870	3620	322	e85	218
31	e263	---	356	376	---	2980	---	777	---	304	e83	---
TOTAL	4682	7374	24874	12064	12315	46810	45935	66897	36813	38904	4767	2918
MEAN	151	246	802	389	425	1510	1531	2158	1227	1255	154	97.3
MAX	263	354	2640	544	574	6140	3150	7180	4260	4020	289	272
MIN	125	211	266	340	339	454	723	490	359	304	83	55
AC-FT	9290	14630	49340	23930	24430	92850	91110	132700	73020	77170	9460	5790

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

	MEAN	888	743	649	613	719	1073	1087	1920	2004	700	473	646
MAX	7934	3608	3347	2868	3149	5573	4311	10690	9788	3174	2961	4086	
(WY)	1987	1987	1992	1998	1987	1998	1997	1993	1995	1987	1995	1996	
MIN	35.2	61.7	69.6	91.3	87.8	78.9	58.9	38.1	151	16.3	.28	23.6	
(WY)	1964	1968	1968	1967	1967	1967	1982	1971	1966	1964	1972	1972	

e Estimated

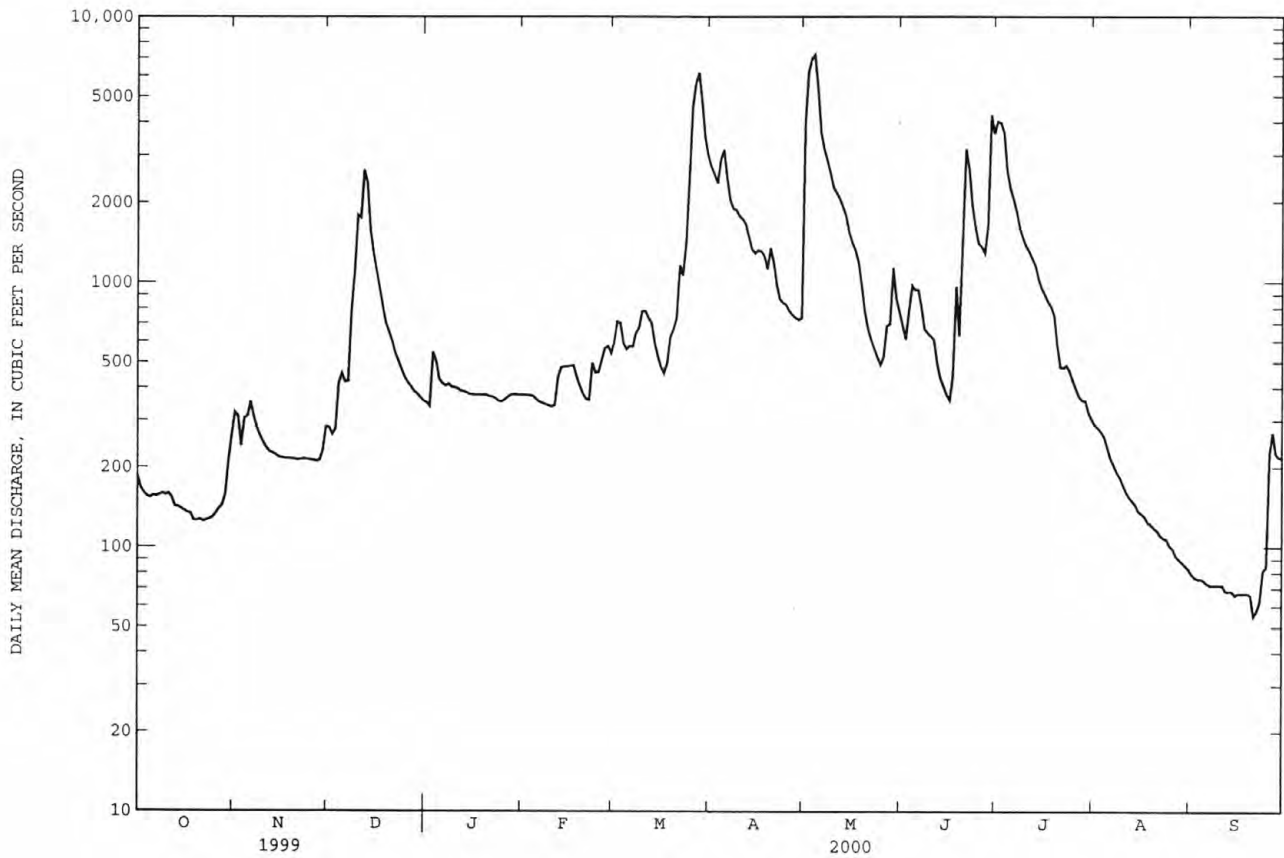
07328500 WASHITA RIVER NEAR PAULS VALLEY, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	319126		304353		^a 960	
ANNUAL MEAN	874		832		3661	
HIGHEST ANNUAL MEAN					181	
LOWEST ANNUAL MEAN					1987	
HIGHEST DAILY MEAN	11600	Apr 26	7180	May 4	41700	May 29 1987
LOWEST DAILY MEAN	123	Sep 4	55	Sep 21	^b .00	Jul 21 1964
ANNUAL SEVEN-DAY MINIMUM	126	Aug 31	63	Sep 17	.00	Jul 21 1964
INSTANTANEOUS PEAK FLOW			7390	May 4	43600	May 29 1987
INSTANTANEOUS PEAK STAGE			9.98	May 4	^c 28.72	May 29 1987
INSTANTANEOUS LOW FLOW			55	Sep 21		
ANNUAL RUNOFF (AC-FT)	633000		603700		695200	
10 PERCENT EXCEEDS	1890		2060		2170	
50 PERCENT EXCEEDS	542		417		421	
90 PERCENT EXCEEDS	155		117		90	

^aPrior to regulation, water years 1938-50, 829 ft³/s.

^bNo flow in 1956, 1964, 1966, 1967, 1970, 1972.

^cMaximum gage height for period of record, 29.08 ft, May 11, 1950.



RED RIVER BASIN

07329700 WILDHORSE CREEK NEAR HOOVER, OK

LOCATION.--Lat 34°32'29", long 97°14'49", on west line of SW $\frac{1}{4}$ sec. 19, T.1 N., R.1 E., Garvin County, Hydrologic Unit 11130303, on downstream left bank at bridge on State Highway 19A, 1.0 mi north of Hoover, 1.8 mi downstream from Sandy Creek and at mile 7.9.

DRAINAGE AREA.--604 mi².

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1944, 1951-69, October 1969 to September 1993, July 1 to September 30, 2000.

GAGE.--Water-stage recorder. Datum of gage is 798.3 ft above sea level. Prior to July 1, 2000, datum 5.0 ft higher.

REMARKS.--Records poor. Flow regulated by Duncan, Clear Creek, Humphries and Fuqua Lakes, combined surface-area, 3,340 acres, and capacity, 44,800 acre-ft, and numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 40,600 ft³/s, May 3, 1990, gage height 26.13 ft; minimum daily discharge, no flow at times.

EXTREMES FOR CURRENT PERIOD.-- July to September 2000: maximum discharge 307 ft³/s, July 3, gage height 6.62 ft; minimum discharge 1.4 ft³/s, Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

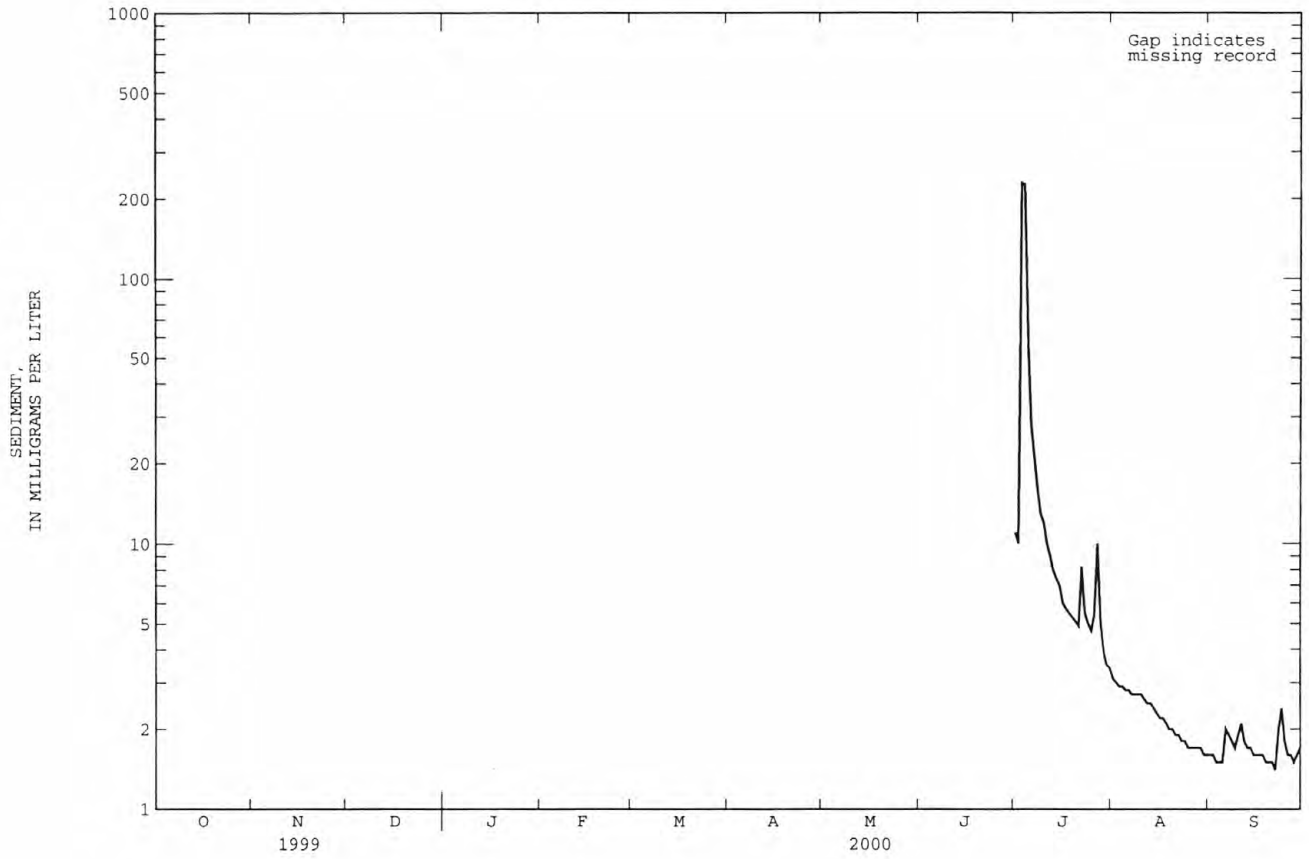
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	e11	e3.1	e1.6
2	---	---	---	---	---	---	---	---	---	e10	e3.0	e1.6
3	---	---	---	---	---	---	---	---	---	229	e2.9	e1.5
4	---	---	---	---	---	---	---	---	---	226	e2.9	e1.5
5	---	---	---	---	---	---	---	---	---	e56	e2.8	e1.5
6	---	---	---	---	---	---	---	---	---	e28	e2.8	e2.0
7	---	---	---	---	---	---	---	---	---	e21	e2.7	e1.9
8	---	---	---	---	---	---	---	---	---	e16	2.7	e1.8
9	---	---	---	---	---	---	---	---	---	e13	e2.7	e1.7
10	---	---	---	---	---	---	---	---	---	e12	e2.7	e1.9
11	---	---	---	---	---	---	---	---	---	e10	e2.6	e2.1
12	---	---	---	---	---	---	---	---	---	e9.0	e2.5	e1.8
13	---	---	---	---	---	---	---	---	---	e8.0	e2.5	e1.7
14	---	---	---	---	---	---	---	---	---	e7.4	e2.4	e1.7
15	---	---	---	---	---	---	---	---	---	e7.0	e2.3	e1.6
16	---	---	---	---	---	---	---	---	---	e6.0	e2.2	e1.6
17	---	---	---	---	---	---	---	---	---	e5.7	e2.2	e1.6
18	---	---	---	---	---	---	---	---	---	e5.5	e2.1	e1.6
19	---	---	---	---	---	---	---	---	---	e5.3	e2.0	e1.5
20	---	---	---	---	---	---	---	---	---	e5.1	e2.0	e1.5
21	---	---	---	---	---	---	---	---	---	e4.9	e1.9	e1.5
22	---	---	---	---	---	---	---	---	---	e8.2	e1.9	e1.4
23	---	---	---	---	---	---	---	---	---	e5.5	e1.8	e2.0
24	---	---	---	---	---	---	---	---	---	e5.0	e1.8	e2.4
25	---	---	---	---	---	---	---	---	---	e4.7	e1.7	e1.8
26	---	---	---	---	---	---	---	---	---	e5.4	e1.7	e1.6
27	---	---	---	---	---	---	---	---	---	e10	e1.7	e1.6
28	---	---	---	---	---	---	---	---	---	e5.0	e1.7	e1.5
29	---	---	---	---	---	---	---	---	---	e3.9	e1.7	e1.6
30	---	---	---	---	---	---	---	---	---	e3.5	e1.6	e1.7
31	---	---	---	---	---	---	---	---	---	e3.4	e1.6	---
TOTAL	---	---	---	---	---	---	---	---	---	750.5	70.2	50.8
MEAN	---	---	---	---	---	---	---	---	---	24.2	2.26	1.69
MAX	---	---	---	---	---	---	---	---	---	229	3.1	2.4
MIN	---	---	---	---	---	---	---	---	---	3.4	1.6	1.4
AC-FT	---	---	---	---	---	---	---	---	---	1490	139	101

e Estimated

RED RIVER BASIN

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07329700 WILDHORSE CREEK NEAR HOOVER, OK--Continued



RED RIVER BASIN

07329852 ROCK CREEK AT SULPHUR, OK

LOCATION.--Lat 34°29'43", long 96°59'18", in SE 1/4 SE 1/4 sec.4, T.1 S., R.3 E., Murray County, Hydrologic Unit 11130303, 80 ft west of campsite 69 in Rock Creek Campground, in the Chickasaw National Park at Sulphur, OK, and at mile 11.0.

DRAINAGE AREA.--44.1 mi².

PERIOD OF RECORD.--Oct. 1, 1989 to current year.

REVISED RECORDS.--WDR OK-94-2: 1993.

GAGE.--Water-stage recorder. Datum of gage is 896.97 ft above sea level.

REMARKS.--Records poor. Flow regulated by numerous flood-retarding structures. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	14	10	6.9	6.9	7.7	e13	25	6.2	6.6	4.8	2.3
2	10	11	8.9	6.8	6.9	8.5	e16	17	6.3	7.7	4.7	2.3
3	9.2	10	9.0	22	6.9	8.4	e14	14	11	6.7	4.5	2.3
4	9.0	10	15	9.4	6.9	8.1	e12	13	9.1	6.3	4.4	2.3
5	9.0	10	10	7.7	6.9	7.8	e11	13	7.9	6.0	4.1	2.1
6	9.0	10	10	7.7	6.9	7.3	e10	13	7.0	5.7	4.0	2.2
7	9.0	9.5	10	6.8	6.9	e10	e17	13	6.5	5.3	3.9	2.4
8	9.0	9.5	10	11	6.9	e35	e11	12	6.4	5.3	3.9	2.2
9	9.0	9.5	15	9.3	6.9	e14	e9.2	13	6.5	5.1	4.0	2.2
10	9.0	9.5	8.5	7.8	6.9	e10	e8.4	11	18	4.9	4.0	2.2
11	9.0	9.5	8.6	7.7	6.9	e8.8	e20	11	11	5.0	4.0	2.1
12	9.2	9.5	8.7	7.7	6.9	e8.0	e128	10	7.6	4.7	3.8	2.6
13	9.5	9.5	7.3	6.5	6.9	e6.7	e59	9.4	7.0	4.7	3.8	2.3
14	9.5	9.5	7.3	6.5	6.8	e27	e33	8.8	7.1	4.6	3.7	2.2
15	9.5	9.5	7.3	6.5	6.5	e14	e23	8.7	7.2	4.5	3.6	2.2
16	9.5	9.5	7.3	6.5	6.5	e9.2	e72	8.5	6.8	4.4	3.6	2.1
17	9.5	9.5	7.3	6.5	7.5	e48	e36	8.8	7.5	4.4	3.5	2.1
18	9.5	9.5	7.3	6.5	6.9	e24	e23	8.7	6.7	4.3	3.3	2.1
19	9.5	9.5	7.3	6.5	6.5	e10	e20	8.2	6.5	4.3	3.3	2.0
20	9.5	9.5	7.3	6.5	6.5	e8.0	e17	8.2	6.4	4.2	3.1	2.0
21	9.5	9.7	7.3	6.5	6.5	e75	e16	8.0	12	4.4	3.0	1.9
22	9.5	12	7.0	6.5	7.9	e192	e15	7.8	9.4	14	3.0	2.1
23	9.4	13	6.9	6.5	13	e85	e13	7.6	7.2	5.8	3.0	2.1
24	9.0	10	6.9	6.5	9.0	e50	e14	7.4	6.8	5.4	2.9	5.1
25	9.0	10	6.9	6.5	13	e36	e13	7.2	6.5	5.2	2.8	2.6
26	9.0	10	6.9	6.5	11	e30	12	7.8	21	5.0	2.8	2.6
27	9.0	10	6.9	7.5	8.5	e22	15	7.7	9.0	21	2.7	2.5
28	9.0	10	6.9	8.1	8.2	19	25	7.4	9.5	7.2	2.5	2.5
29	9.0	10	6.9	7.1	8.1	e17	14	7.1	7.6	5.8	2.4	2.2
30	18	10	6.9	6.9	---	e15	13	6.8	7.1	5.3	2.4	2.3
31	30	---	6.9	6.9	---	e14	---	6.7	---	4.9	2.4	---
TOTAL	316.8	302.7	258.5	238.3	222.1	835.5	702.6	315.8	254.8	188.7	107.9	70.1
MEAN	10.2	10.1	8.34	7.69	7.66	27.0	23.4	10.2	8.49	6.09	3.48	2.34
MAX	30	14	15	22	13	192	128	25	21	21	4.8	5.1
MIN	9.0	9.5	6.9	6.5	6.5	6.7	8.4	6.7	6.2	4.2	2.4	1.9
AC-FT	628	600	513	473	441	1660	1390	626	505	374	214	139

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2000, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	26.9	45.8	57.8	60.7	50.2	111	101	106	71.6	26.4	19.3
MAX	77.3	170	210	281	151	261	390	406	211	121	53.1
(WY)	1997	1997	1992	1998	1993	1990	1990	1990	1991	1992	1993
MIN	6.33	9.65	8.34	7.69	7.66	27.0	23.4	10.2	8.49	6.09	3.48
(WY)	1995	1998	2000	2000	2000	2000	2000	2000	2000	2000	2000

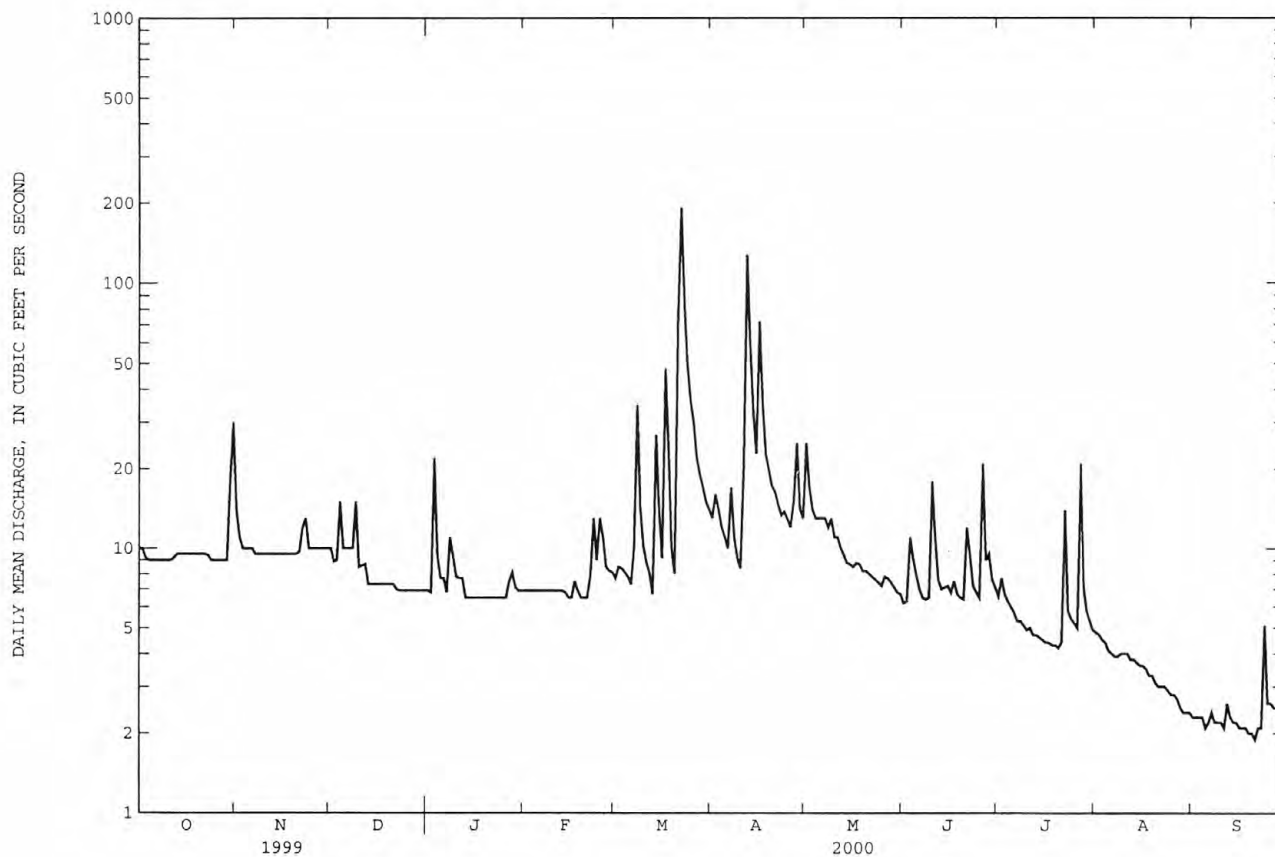
e Estimated

RED RIVER BASIN

135

07329852 ROCK CREEK AT SULPHUR, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1990 - 2000
ANNUAL TOTAL	12043.1	3813.8	
ANNUAL MEAN	33.0	10.4	60.6
HIGHEST ANNUAL MEAN			129
LOWEST ANNUAL MEAN			10.4
HIGHEST DAILY MEAN	958 Apr 26	192 Mar 22	3450 May 2 1990
LOWEST DAILY MEAN	6.9 Aug 2	1.9 Sep 21	1.9 Sep 21 2000
ANNUAL SEVEN-DAY MINIMUM	6.9 Dec 23	2.0 Sep 16	2.0 Sep 16 2000
INSTANTANEOUS PEAK FLOW		269 Mar 22	^a 10400 Apr 26 1990
INSTANTANEOUS PEAK STAGE		^b 6.95 Mar 22	19.65 Apr 26 1990
ANNUAL RUNOFF (AC-FT)	23890	7560	43900
10 PERCENT EXCEEDS	50	15	102
50 PERCENT EXCEEDS	11	7.7	21
90 PERCENT EXCEEDS	7.7	2.9	8.1

^aFrom indirect measurement.^bFrom high-water mark.

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK

LOCATION.--Lat 34°14'00", long 96°58'32", in SW 1/4 SE 1/4 sec.3, T.4 S., R.3 E., Carter County, Hydrologic Unit 11130303, on right bank on downstream side of bridge on U.S. Highway 177, 1.3 mi downstream from Caddo Creek, 3.2 mi north of Dickson, 12.0 mi northeast of Ardmore, and at mile 63.4.

DRAINAGE AREA.--7,202 mi².

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 above sea level (levels by U.S. Army Corps of Engineers). Prior to Feb. 16, 1939, nonrecording gage, at same site and datum. Dec. 15, 1950, to Feb. 19, 1952, nonrecording gage, at site 500 ft upstream, at same datum. Apr. 24, 1975, to May 8, 1986, water-stage recorder, at site 500 ft upstream, at same datum.

REMARKS.--Records poor. Some diversions for irrigation upstream from station. Flow regulated by Fort Cobb Reservoir (station 07325900) since March 1959; by Foss Reservoir (station 07324300) since February 1961; and by numerous flood-retarding structures. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	243	641	e230	491	420	654	4030	3440	744	5190	342	e85
2	e228	734	237	481	416	654	3780	7370	662	5680	316	e84
3	e218	478	250	670	418	756	3370	8190	695	5900	304	e84
4	e211	368	260	619	412	827	3140	8330	3230	4890	291	e86
5	e196	346	308	749	394	752	4070	8030	5740	3690	e283	e85
6	e187	318	436	569	391	645	3830	5940	2870	3050	e255	82
7	e189	327	411	513	384	636	2920	4780	2510	2740	e238	e81
8	e193	342	364	582	376	685	2480	4020	2130	2570	e220	e80
9	e191	300	566	565	368	675	e2370	3540	1720	2350	e203	e80
10	e192	268	1220	533	364	749	e2200	3070	1660	2180	e193	e79
11	e194	251	1660	509	357	798	2300	2770	1540	1950	e185	e81
12	e198	e235	1700	488	343	868	2770	2740	1640	1810	e177	85
13	e194	e232	2200	469	358	838	2720	2570	1290	1710	e170	e82
14	188	e227	2000	444	459	868	2330	2330	1090	1540	e165	e79
15	e180	221	1960	428	489	900	2150	2070	1030	1310	e159	e76
16	e177	e220	1680	428	497	752	2230	1790	860	1160	156	e76
17	e169	e220	1420	423	499	704	2430	1720	840	1070	146	e74
18	e163	e220	1220	420	501	674	e2230	1590	802	986	e141	e72
19	e159	e220	1050	412	491	647	e2030	1440	1750	919	e134	e70
20	e155	e220	941	403	452	703	1920	1150	1290	859	e129	68
21	e151	e221	834	393	414	878	2030	878	2650	701	e123	62
22	e149	e220	758	391	395	1930	1990	710	6180	681	e121	60
23	e147	e219	705	392	518	e2500	1760	598	4280	649	e117	63
24	e145	e219	661	383	571	e2100	1540	532	3110	564	e112	82
25	e150	e219	625	376	757	e2200	1370	485	2600	536	e108	85
26	e160	e219	598	371	754	3030	1170	474	2520	473	e104	82
27	166	e219	572	406	719	4470	1130	467	3720	474	e102	76
28	e180	e219	549	434	686	5180	1140	562	2380	558	98	155
29	e202	e219	529	428	680	5470	1140	659	4000	447	e94	227
30	235	e220	516	420	---	4680	1130	1070	6170	416	e91	190
31	355	---	506	418	---	4650	---	983	---	381	e86	---
TOTAL	5865	8582	26966	14608	13883	51873	69700	84298	71703	57434	5363	2671
MEAN	189	286	870	471	479	1673	2323	2719	2390	1853	173	89.0
MAX	355	734	2200	749	757	5470	4070	8330	6180	5900	342	227
MIN	145	219	230	371	343	636	1130	467	662	381	86	60
AC-FT	11630	17020	53490	28970	27540	102900	138200	167200	142200	113900	10640	5300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
MEAN	1486	1586	1396	1190	1455	2443	2461	4139	3564	1033	610	1130
MAX	8274	5879	9324	6061	5980	10890	15940	18720	14090	4042	3048	5236
(WY)	1987	1987	1992	1998	1993	1990	1990	1993	1995	1987	1995	1991
MIN	30.4	73.5	103	103	93.6	78.4	210	249	158	31.4	12.8	42.1
(WY)	1964	1964	1967	1967	1967	1967	1971	1971	1966	1964	1972	1972

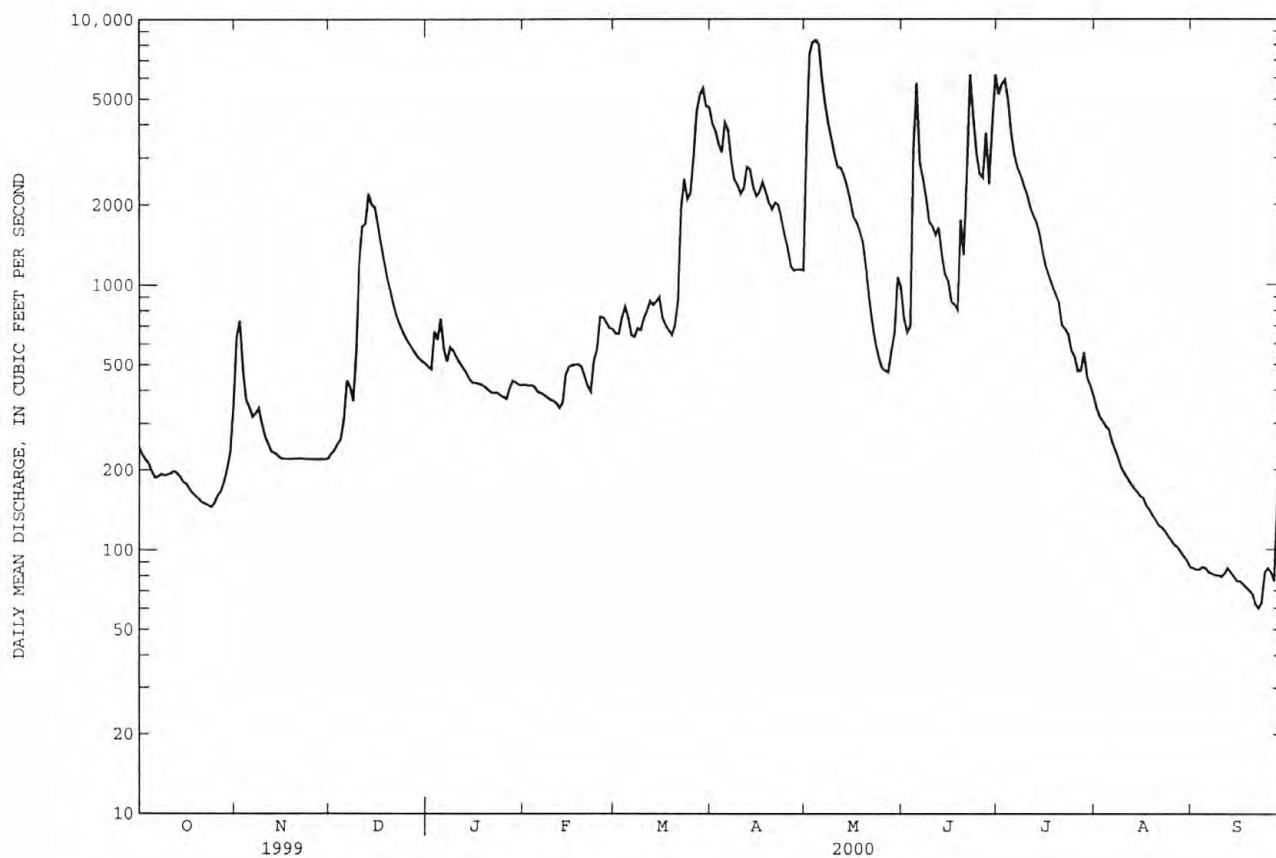
e Estimated

RED RIVER BASIN

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07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	510253		412946		^a 1874	
ANNUAL MEAN	1398		1128		5644	
HIGHEST ANNUAL MEAN					340	
LOWEST ANNUAL MEAN					94400	
HIGHEST DAILY MEAN	23300	Apr 27	8330	May 4	May 3 1990	
LOWEST DAILY MEAN	140	Sep 2	60	Sep 22	Aug 11 1964	
ANNUAL SEVEN-DAY MINIMUM	143	Aug 29	67	Sep 17	Aug 8 1964	
INSTANTANEOUS PEAK FLOW			10500	Jun 4	^c 118000	
INSTANTANEOUS PEAK STAGE			17.92	Jun 4	45.24	
ANNUAL RUNOFF (AC-FT)	1012000		819100		1358000	
10 PERCENT EXCEEDS	2930		2950		4250	
50 PERCENT EXCEEDS	767		514		714	
90 PERCENT EXCEEDS	191		120		140	

^aPrior to regulation, water years 1929-58, 1,573 ft³/s.^bNo flow Aug. 28, Sept. 14 to Oct. 1, 7-12, 1956.^cGage height 44.26 ft.

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1944 to September 1995; October 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1944 to January 1982, February 1984 to April 1990; December 1996 to current year.

WATER TEMPERATURE: April 1947 to January 1982, February 1984 to April 1990; December 1996 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,180 microsiemens, Sept. 29, 2000; minimum daily, 95 microsiemens, Nov. 2, 1951.

WATER TEMPERATURE: Maximum daily, 38.0°C, July 16, 1985; minimum daily, -0.5°C, Dec. 20, 1996, Jan. 12-18, 1997, Jan. 4, 5, 10, 1999.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 2,180 microsiemens, Sept. 29; minimum, 338 microsiemens, June 5.

WATER TEMPERATURE: Maximum, 35.5°C, Sept. 4; minimum, 0.5°C, Jan. 28.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)
JUL											
19...	1133	1028	1028	11.87	927	747	7.7	8.3	1400	30.2	20
19...	1136	1028	1028	11.87	927	747	7.8	8.3	1400	30.0	40
19...	1139	1028	1028	11.87	927	747	7.7	8.3	1400	30.0	60
19...	1142	1028	1028	11.87	927	747	7.8	8.3	1400	30.0	80
19...	1145	1028	1028	11.87	927	747	7.7	8.3	1400	30.0	100
19...	1148	1028	1028	11.87	927	747	7.7	8.3	1400	30.0	120
19...	1151	1028	1028	11.87	927	747	7.7	8.3	1400	30.0	140
19...	1154	1028	1028	11.87	927	747	7.6	8.3	1400	30.0	160
19...	1157	1028	1028	11.87	927	747	7.6	8.3	1390	30.0	180
DATE	TIME	AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (MG/L) (00301)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)
OCT											
27...	1400	80020	1028	10.65	166	749	122	11.5	8.4	1710	17.1
NOV											
15...	1630	80020	1028	10.85	221	754	121	11.0	8.2	1390	19.3
DEC											
29...	1650	80020	1028	11.35	543	748	107	12.1	8.3	1380	8.9
JAN											
26...	1130	80020	1028	11.01	375	754	94	11.9	8.2	1600	4.8
FEB											
29...	1630	80020	1028	11.57	672	748	107	10.0	8.3	1420	17.6
MAR											
21...	1245	80020	1028	11.75	790	747	98	9.8	8.3	1540	14.0
APR											
27...	1150	80020	1028	12.08	1140	748	88	7.7	8.4	1560	20.7
MAY											
30...	1430	80020	1028	12.15	1180	744	95	7.0	8.3	1460	29.5
JUN											
07...	1900	80020	1028	13.02	2450	749	108	8.4	8.4	891	27.1
JUL											
17...	1500	80020	1028	12.00	1060	747	105	7.7	8.4	1430	30.5
AUG											
03...	1000	80020	1028	10.98	308	746	99	7.5	8.2	1600	28.3
SEP											
12...	1405	80020	1028	9.89	85	745	114	8.6	8.3	1990	28.4

RED RIVER BASIN

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07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 27...	750	550	167	80.5	4.2	2	102	23	199	222	10	107
NOV 15...	570	420	128	61.5	4.6	1	80.5	23	156	190	0	80.9
DEC 29...	680	450	178	57.4	4.6	1	68.6	18	235	287	0	67.9
JAN 26...	680	520	158	69.4	3.3	1	88.0	22	161	196	0	88.4
FEB 29...	640	470	155	60.5	3.4	1	69.0	19	164	200	0	67.1
MAR 21...	750	590	185	69.4	4.4	1	70.7	17	161	196	0	69.2
APR 27...	820	620	201	76.4	4.9	.9	60.7	14	198	242	0	52.5
MAY 30...	670	520	164	63.4	5.0	1	72.4	19	146	178	0	62.7
JUN 07...	400	260	103	34.7	5.0	.8	38.2	17	143	164	5	33.9
JUL 17...	710	560	172	68.2	5.7	.9	56.0	14	156	177	6	47.6
AUG 03...	710	590	162	75.0	5.2	1	83.2	20	127	155	0	86.1
SEP 12...	830	700	176	94.8	6.0	2	136	26	129	144	6	130

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
OCT 27...	.5	9.7	619	.82	<.020	.127	.97	--	.562	.145	.059	.018
NOV 15...	.4	4.4	486	.82	<.020	--	--	--	--	<.050	.033	.010
DEC 29...	.4	13.8	458	.97	.192	1.03	2.0	.25	4.56	1.06	.085	.026
JAN 26...	.4	3.2	594	1.2	.020	.070	1.3	.03	.310	.080	.033	.010
FEB 29...	.4	3.9	522	1.2	<.020	--	--	--	--	<.050	--	<.010
MAR 21...	.4	5.5	605	1.3	<.020	--	--	--	--	<.050	--	<.010
APR 27...	.4	10.8	638	1.1	.021	.814	1.9	.03	3.60	.829	.049	.015
MAY 30...	.4	7.9	545	1.6	.023	--	--	.03	--	<.050	--	<.010
JUN 07...	.4	8.2	275	1.4	<.020	.290	1.7	--	1.28	.300	.033	.010
JUL 17...	.6	11.6	579	1.2	<.020	--	--	--	--	<.050	--	<.010
AUG 03...	.5	14.0	616	1.4	<.020	--	--	--	--	<.050	--	<.010
SEP 12...	.7	15.1	777	.84	<.020	--	1.0	--	--	.174	--	<.010

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)
OCT 27...	--	--	<.050	<.010	.139	31	1.65	543	1210	2.6	3
NOV 15...	--	--	<.050	<.010	.097	28	1.28	561	941	2.2	3
DEC 29...	.78	.230	.074	.075	.243	138	1.35	1460	995	3.7	5
JAN 26...	1.2	--	<.050	<.010	.151	62	1.50	1120	1100	E1.9	3
FEB 29...	--	--	<.050	<.010	.175	121	1.33	1780	980	E1.4	3
MAR 21...	--	--	<.050	<.010	.226	149	1.50	2360	1110	2.1	3
APR 27...	1.1	.205	.069	.067	.399	314	1.59	3590	1170	4.8	6
MAY 30...	1.5	.071	<.050	.023	.597	374	1.37	3210	1010	3.4	7
JUN 07...	--	.126	.060	.041	.472	472	.80	3870	586	3.3	5
JUL 17...	--	.169	.070	.055	.356	258	1.41	2960	1030	4.9	7
AUG 03...	--	--	<.050	<.010	.166	49	1.52	930	1120	3.6	4
SEP 12...	--	.083	E.045	.027	.162	22	1.92	324	1410	5.2	6

DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
OCT 27...	136	145	<8.0	<.1	1.1	E1	<10	3	30	230	<100
NOV 15...	132	137	<8.0	<.1	<.8	E1	<10	2	<10	350	<100
DEC 29...	170	206	E5.9	<.1	<.8	2	<10	5	<10	2470	<100
JAN 26...	120	137	<8.0	<.1	<.8	1	<10	3	<10	630	<100
FEB 29...	148	186	<8.0	<.1	<.8	2	<10	3	<10	1600	<100
MAR 21...	147	178	<8.0	<.1	<.8	<1	<10	4	<10	1510	<100
APR 27...	182	268	<8.0	E.1	<.8	5	<10	8	<10	4630	<100
MAY 30...	201	340	<8.0	<.1	<.8	8	<10	9	<10	6550	<100
JUN 07...	172	285	<8.0	E.1	<.8	6	<10	10	<10	5910	<100
JUL 17...	213	285	<8.0	<.1	<.8	4	<10	6	<10	2700	<100
AUG 03...	190	199	<8.0	<.1	1.0	2	<10	1	<10	560	<100
SEP 12...	138	152	<8.0	<.1	<.8	<1	<10	2	<10	360	<100

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

DATE	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB) (01051)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN) (01055)	MERCURY DIS- SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG) (71900)	NICKEL, DIS- SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI) (01067)	SELE- NIUM, DIS- SOLVED (UG/L AS SE) (01145)	SELE- NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS- SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG) (01077)
OCT 27...	13	6	62	<.2	<.3	<40	<39	<2.4	<3	<1	<1
NOV 15...	E1	6	77	<.2	<.3	<40	<39	E1.9	<3	<1	<1
DEC 29...	3	10	146	<.2	<.3	E23	<39	E1.3	<3	<1	<1
JAN 26...	2	8	78	<.2	<.3	<40	<39	E1.6	E2	<1	<1
FEB 29...	18	3	200	<.2	<.3	<40	<39	E1.5	<3	<1	<1
MAR 21...	16	6	167	<.2	<.3	<40	<39	E1.3	E1	<1	<1
APR 27...	5	<2	404	--	<.3	<40	E22	<2.4	E2	<1	<1
MAY 30...	5	E2	554	<.2	<.3	<40	<39	<2.4	<3	<1	<1
JUN 07...	7	3	581	<.2	<.3	<40	<39	<2.4	<3	<1	<1
JUL 17...	20	<2	283	<.2	<.3	<40	<39	<2.4	<3	<1	<1
AUG 03...	22	E2	128	E.1	--	<40	<39	<2.4	<3	<1	<1
SEP 12...	4	<2	127	<.2	<.3	<40	E31	E1.9	E2	<1	<1

[illegible]

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	AROC		BETA	CHLOR-	CHLOR-	CHLOR-	DELTA		ENDO-		ENDO-
	CLOR	CLOR	BENZENE	DANE	DANE	DANE	BENZENE		SULFAN-		SULFAN
	1254	1260	HEXA-	CIS	TECH-	TRANS	HEXA-	DI-	I	ENDO-	
	PCB	PCB	CHLOR-	WATER	NICAL	WATER	CHLOR-	ELDRIN	WATER	SULFAN	ENDO-
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	REC	TOTAL	TOTAL
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)	(UG/L)
	(39504)	(39508)	(39338)	(39062)	(39350)	(39065)	(34259)	(39380)	(34361)	(34356)	(34351)
OCT											
27...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	--	--	--	--	--	--	--	--	--	--	--
DEC											
29...	--	--	--	--	--	--	--	--	--	--	--
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
FEB											
29...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.020	<.1	<.04	<.6
APR											
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
03...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.020	<.1	<.04	<.6
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--
DATE	ENDRIN		HEPTA-	HEPTA-	ISODRIN		PCB				
	ALDE-	WATER	CHLOR-	CHLOR-	SUR SCD		207				
	HYDE	UNFLTRD	EPOXIDE	CHLOR,	1608	LINDANE	1608	P,P'	P,P'	P,P'	TOX-
	TOTAL	REC	TOTAL	TOTAL	WTR,	TOTAL	WATER	DDD,	DDE,	DDT,	APHENE,
	(UG/L)	(UG/L)	(UG/L)	(UG/L)	UNFLTRD	(UG/L)	UNFLTRD	TOTAL	TOTAL	TOTAL	TOTAL
	(34366)	(39390)	(39420)	(39410)	PERCENT	(39340)	PERCENT	(39310)	(39320)	(39300)	(39400)
OCT											
27...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	--	--	--	--	--	--	--	--	--	--	--
DEC											
29...	--	--	--	--	--	--	--	--	--	--	--
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
FEB											
29...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	<.2	<.060	<.800	<.030	82	<.030	122	<.1	<.04	<.1	<2
APR											
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	--	--	--	--	--	--	--	--	--	--	--
AUG											
03...	<.2	<.060	<.800	<.030	92	<.030	164	<.1	<.04	<.1	<2
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

RED RIVER BASIN

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07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	1090	869	941	1330	1060	1170	1660	1640	1650	1550	1500	1520
2	1320	1090	1250	1160	952	1020	1690	1660	1670	---	---	e1580
3	1420	1320	1380	1120	968	1050	1700	1670	1680	1510	1150	1300
4	1510	1420	1470	1110	1000	1040	1670	1630	1650	1470	1270	1400
5	1580	1510	1540	1350	1070	1230	1650	1510	1600	1480	1420	1450
6	1640	1570	1600	1440	1280	1350	1570	1480	1530	1420	1070	1240
7	1650	1600	1640	1540	1440	1470	1510	1020	1220	1410	1130	1290
8	1640	1620	1630	1550	1350	1420	1380	1310	1370	1440	1380	1400
9	1640	1620	1630	1490	1370	1440	1340	1130	1240	1450	1400	1440
10	1670	1630	1650	1480	1450	1470	1520	1180	1370	1450	1440	1440
11	1690	1660	1670	1600	1470	1540	1180	729	866	1480	1450	1470
12	1680	1630	1660	1650	1550	1600	835	649	720	---	---	e1480
13	1670	1640	1650	1720	1650	1690	903	754	822	---	---	e1480
14	1680	1640	1680	1670	1540	1590	903	625	727	---	---	e1490
15	1690	1670	1680	1540	1360	1480	626	611	617	---	---	e1500
16	1680	1660	1670	1370	1360	1360	616	607	612	---	---	e1500
17	1680	1630	1650	1370	1350	1360	623	602	608	---	---	e1500
18	1690	1650	1670	1410	1360	1380	688	623	654	---	---	e1510
19	1700	1630	1660	1450	1410	1440	812	688	746	---	---	e1510
20	1700	1670	1690	1480	1450	1460	840	812	831	---	---	e1520
21	1720	1690	1710	1540	1460	1510	882	830	853	---	---	e1520
22	1750	1690	1730	1580	1520	1560	930	882	909	---	---	e1530
23	1760	1730	1750	1610	1550	1580	1000	930	965	---	---	e1540
24	1740	1720	1730	1610	1560	1580	1060	1000	1040	---	---	e1540
25	1760	1720	1740	1600	1540	1570	1140	1060	1100	---	---	e1540
26	1780	1720	1740	1590	1540	1570	1220	1140	1180	---	---	e1550
27	1730	1700	1720	1620	1580	1610	1280	1220	1250	1550	1490	1520
28	1730	1700	1720	1640	1610	1620	1350	1280	1320	1510	1490	1500
29	1740	1710	1720	1650	1620	1630	1420	1330	1400	1530	1480	1500
30	1710	1520	1640	1650	1620	1640	1460	1420	1440	1550	1510	1520
31	1520	1330	1420	---	---	---	1520	1460	1480	1560	1540	1550
MONTH	1780	869	1610	1720	952	1450	1700	602	1130	---	---	1480
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	1580	1550	1560	1450	1400	1430	1010	880	961	1610	720	1220
2	1570	1540	1550	1430	1380	1400	990	939	971	1250	581	752
3	1570	1540	1550	1500	1380	1430	1030	936	980	1270	724	868
4	1570	1540	1550	1610	1500	1560	1150	1030	1090	882	524	634
5	1570	1540	1560	1530	1400	1420	1300	1120	1230	587	526	548
6	1590	1560	1570	1410	1370	1390	1350	1170	1270	613	561	582
7	1600	1570	1590	1420	1360	1390	1200	1030	1130	677	613	644
8	1600	1580	1590	1360	1200	1270	1090	999	1040	775	677	721
9	1600	1580	1590	1350	1230	1310	1160	1090	1130	859	775	828
10	1610	1570	1590	1430	1330	1380	1130	1040	1090	887	858	875
11	1600	1580	1590	1340	1250	1270	1160	1020	1090	911	884	900
12	1600	1580	1590	1550	1320	1460	1270	1090	1200	950	907	926
13	1600	1570	1580	1600	1420	1510	1260	1160	1220	970	949	962
14	1610	1570	1590	1630	1340	1530	1280	1200	1250	977	955	964
15	1640	1560	1610	1380	1140	1240	1410	1280	1350	999	977	988
16	1730	1640	1690	1220	1150	1190	1510	1380	1420	1000	997	1000
17	1680	1330	1420	1270	1190	1230	1520	1490	1500	1010	997	1000
18	1330	1300	1310	1340	1270	1290	1580	1500	1550	1050	1010	1030
19	1310	1240	1280	1400	1340	1390	1580	1540	1560	1100	1050	1080
20	1250	1220	1240	1500	1400	1450	1580	1560	1570	1100	1090	1100
21	1250	1220	1240	1550	773	1450	1660	1570	1610	1100	1090	1090
22	1240	1130	1210	1180	770	949	1630	1290	1460	1110	1100	1100
23	1180	1060	1120	1170	900	1140	1560	1290	1440	1200	1110	1140
24	1380	1180	1290	1180	985	1130	1610	1540	1570	1250	1200	1220
25	1380	967	1160	1420	1180	1300	1610	1570	1600	1420	1250	1320
26	1230	1000	1130	1440	1180	1310	1680	1570	1640	1520	1420	1470
27	1230	1160	1210	---	---	e1020	1620	1560	1570	1580	1500	1540
28	1320	1160	1250	888	609	716	1610	1560	1590	1590	1550	1570
29	1440	1320	1390	691	609	640	1610	1590	1600	1600	1480	1560
30	---	---	---	773	691	735	1600	1470	1590	1580	1440	1490
31	---	---	---	888	769	843	---	---	---	1630	1560	1590
MONTH	1730	967	1430	---	---	1250	1680	880	1340	1630	524	1060

RED RIVER BASIN

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	1650	1230	1500	710	463	559	1530	1460	1500	1960	1870	1920
2	1230	1140	1180	880	684	758	1560	1490	1520	1900	1870	1890
3	1140	1070	1110	878	465	722	1620	1560	1590	1900	1870	1880
4	1170	445	1020	516	420	457	1670	1620	1650	1930	1890	1910
5	576	338	419	646	516	586	1740	1670	1710	1940	1900	1920
6	943	576	796	780	646	706	1760	1700	1740	1960	1920	1940
7	932	890	900	833	780	820	1760	1660	1710	1960	1930	1950
8	959	910	940	886	830	863	1670	1590	1630	2000	1930	1970
9	970	948	959	---	---	e950	1620	1580	1600	1990	1940	1970
10	980	900	952	---	---	e1010	1600	1580	1590	1980	1930	1950
11	1010	897	951	---	---	e1070	1650	1590	1620	1970	1940	1960
12	1160	1010	1110	---	---	e1130	1710	1650	1670	1990	1940	1970
13	1120	784	930	---	---	e1190	1770	1700	1730	2000	1940	1990
14	1090	956	1050	---	---	e1250	1800	1760	1780	2000	1800	1900
15	1130	950	1080	---	---	e1310	1870	1770	1830	2000	1800	1910
16	1130	1100	1110	---	---	e1350	1870	1840	1860	2020	1970	1990
17	1190	1050	1110	---	---	e1400	1870	1830	1850	2010	1970	1990
18	1390	1190	1340	1420	1410	1410	1870	1820	1850	1980	1960	1970
19	1470	1300	1440	1410	1380	1400	1870	1820	1840	1980	1930	1940
20	1300	1110	1180	1410	1390	1400	1840	1820	1830	1940	1910	1920
21	1300	965	1100	1420	1410	1410	1840	1800	1830	2030	1940	1960
22	1300	551	918	1420	1240	1330	1880	1820	1840	2020	1970	1990
23	630	502	559	1310	1280	1300	1890	1860	1870	1980	1920	1960
24	699	630	677	1330	1300	1310	1900	1850	1870	1980	1840	1880
25	715	674	688	1390	1310	1320	1890	1860	1870	1960	1890	1930
26	830	715	765	1510	1390	1470	1900	1860	1880	1980	1860	1940
27	834	417	564	1510	1440	1490	1930	1880	1910	1960	1850	1900
28	680	527	631	1440	1380	1410	1960	1910	1940	2050	1860	1940
29	776	624	710	1500	1430	1460	1990	1940	1970	2180	2050	2140
30	743	477	594	1540	1500	1530	2030	1970	1990	2110	1640	1910
31	---	---	---	1540	1530	1540	2060	1950	1970	---	---	---
MONTH	1650	338	943	---	---	1160	2060	1460	1780	2180	1640	1950

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	22.2	17.2	19.7	17.6	15.0	16.2	11.8	8.7	10.5	9.3	6.0	7.8
2	23.8	18.4	21.0	15.7	12.5	13.7	14.2	10.7	12.3	---	---	---
3	24.0	19.9	21.8	13.2	10.0	11.7	16.2	12.7	14.4	12.2	10.8	11.2
4	21.6	17.6	19.7	14.3	9.9	12.2	15.8	13.4	15.2	10.0	6.5	7.9
5	22.2	17.9	19.8	17.5	12.4	14.8	13.4	9.1	11.0	6.7	4.3	5.5
6	22.9	18.8	20.8	19.7	15.3	17.4	9.1	6.4	7.8	6.0	4.0	5.0
7	22.2	18.3	20.4	19.9	16.0	18.0	9.2	6.0	7.6	7.1	4.1	5.6
8	22.4	20.5	21.2	19.8	17.1	18.4	11.4	8.1	9.6	8.3	6.9	7.6
9	24.5	20.4	22.2	19.2	16.0	17.7	11.9	10.4	11.5	9.8	6.9	8.3
10	25.5	20.6	22.9	20.0	16.0	17.9	10.4	8.6	9.4	9.7	6.6	8.1
11	26.0	21.2	23.6	20.4	16.1	18.3	9.0	8.1	8.4	10.1	6.8	8.4
12	26.0	21.5	23.8	20.4	16.4	18.5	8.4	7.9	8.2	12.1	7.4	9.7
13	26.0	21.4	23.7	20.2	16.1	18.3	8.0	6.6	7.4	10.9	8.6	9.7
14	25.2	21.5	23.5	20.2	16.0	18.2	7.7	6.3	7.0	9.5	6.7	8.2
15	24.7	21.0	22.8	19.3	16.2	18.0	6.8	5.3	6.1	11.1	6.7	8.9
16	24.1	21.6	22.8	18.5	14.5	16.7	6.0	4.3	5.2	12.0	9.7	10.9
17	21.7	15.8	17.8	18.2	14.5	16.5	6.5	4.9	5.6	15.1	11.5	13.1
18	17.0	14.6	15.7	18.7	15.0	17.0	7.7	6.3	6.8	13.9	11.7	12.8
19	18.5	14.4	16.3	17.9	15.6	16.9	7.5	5.5	6.5	14.1	11.5	12.6
20	18.3	13.9	16.0	16.0	12.6	14.5	6.8	4.9	5.7	12.6	8.6	10.1
21	19.0	14.5	16.6	16.5	12.3	14.5	5.8	3.7	4.6	9.1	6.8	8.1
22	19.5	15.2	17.3	17.5	15.1	16.3	5.6	2.9	4.2	10.7	7.4	9.0
23	18.7	15.4	17.1	17.2	13.8	15.4	6.0	3.0	4.4	11.6	8.2	9.8
24	17.8	13.9	15.8	13.8	11.1	12.3	6.9	3.8	5.2	9.7	6.3	7.7
25	17.9	13.7	15.8	12.7	9.6	11.2	6.9	4.1	5.5	7.5	5.4	6.5
26	19.5	14.7	16.9	12.1	8.4	10.3	8.1	4.8	6.3	6.4	3.4	4.8
27	19.0	15.9	17.6	13.0	9.0	11.1	8.4	5.5	6.8	3.4	.9	1.8
28	20.4	16.9	18.4	14.0	9.9	12.0	8.0	4.8	6.4	2.0	.5	1.3
29	20.0	17.9	19.0	13.8	10.8	12.3	8.8	5.3	7.0	4.3	.7	2.4
30	19.2	15.7	17.5	12.1	9.3	10.9	10.0	6.9	8.4	4.9	1.1	3.1
31	17.1	15.3	15.9	---	---	---	9.0	6.7	8.1	6.3	2.3	4.3
MONTH	26.0	13.7	19.5	20.4	8.4	15.2	16.2	2.9	7.8	---	---	---

RED RIVER BASIN

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07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	8.3	4.9	6.4	17.4	13.6	15.3	15.6	14.3	14.8	20.5	18.5	19.3
2	7.5	4.1	5.9	15.3	12.5	13.7	14.9	13.7	14.2	18.9	17.4	18.3
3	9.3	4.5	6.8	12.5	10.6	11.5	14.6	13.7	14.1	18.7	17.2	17.8
4	9.3	6.0	7.6	13.6	8.9	11.1	15.2	12.0	13.6	19.9	17.4	18.4
5	8.4	4.8	6.7	15.0	10.3	12.5	16.7	13.5	15.1	19.4	18.6	18.9
6	9.1	4.7	7.0	18.0	13.1	15.3	19.0	15.5	17.1	21.6	19.2	20.2
7	11.3	6.7	8.8	18.1	16.1	17.0	20.6	17.9	19.0	24.7	21.4	22.8
8	12.0	7.4	9.7	18.6	15.3	16.9	18.3	14.5	16.3	26.2	23.3	24.7
9	13.3	8.3	10.8	18.4	14.3	16.2	16.2	14.3	15.3	25.6	23.6	24.4
10	15.7	11.4	13.4	16.1	11.4	13.9	15.7	14.6	15.2	24.4	22.1	23.5
11	14.5	10.4	12.1	13.3	9.2	11.1	17.4	15.7	16.7	26.3	23.4	24.7
12	12.1	8.8	10.4	13.8	9.2	11.3	16.5	14.6	15.3	27.2	25.0	25.9
13	13.6	10.2	11.7	15.6	10.5	12.9	16.1	13.8	14.8	25.6	23.0	24.2
14	12.5	9.1	10.7	14.3	13.2	13.6	15.7	14.5	15.1	24.1	21.3	22.8
15	13.9	8.7	11.1	16.7	12.5	14.4	17.1	15.0	15.9	23.7	21.0	22.4
16	12.6	11.3	11.7	16.0	13.0	15.2	18.6	16.0	17.0	24.0	21.9	22.8
17	12.8	10.9	11.6	13.0	10.8	11.6	18.3	16.0	17.2	24.5	22.4	23.4
18	14.0	11.2	12.9	11.4	9.6	10.4	22.4	17.2	19.4	26.4	22.6	24.2
19	12.6	9.0	10.7	13.8	9.3	11.3	23.6	21.4	22.3	25.0	22.2	23.2
20	12.8	8.4	10.6	16.1	10.4	13.1	22.9	20.3	21.6	25.9	20.8	23.2
21	13.7	10.8	12.1	14.3	12.4	13.8	22.1	19.0	20.6	28.1	22.9	25.3
22	15.1	12.7	14.0	13.8	12.4	13.0	20.9	18.6	19.6	29.9	24.8	27.2
23	17.1	13.3	15.0	15.0	13.6	14.1	21.5	17.3	19.2	30.6	25.7	28.0
24	---	---	---	17.9	13.8	15.7	23.0	18.8	20.7	32.0	26.6	29.1
25	---	---	---	19.7	16.6	18.1	24.5	20.2	22.1	30.0	27.9	28.8
26	---	---	---	19.9	17.7	19.0	24.7	20.7	22.7	28.5	25.8	27.6
27	---	---	---	---	---	---	23.9	20.7	22.2	29.1	26.3	27.4
28	---	---	---	---	---	---	24.1	19.6	21.7	30.8	25.2	27.8
29	---	---	---	18.9	17.4	18.1	22.2	20.4	21.0	31.1	26.1	28.5
30	---	---	---	17.4	15.3	15.8	20.6	19.4	20.4	31.0	27.3	29.0
31	---	---	---	15.7	13.9	15.0	---	---	---	31.5	27.6	29.4
MONTH	---	---	---	---	---	---	24.7	12.0	18.0	32.0	17.2	24.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	31.2	27.3	29.2	27.7	25.8	26.8	33.5	27.0	30.2	34.0	27.4	30.2
2	30.3	27.3	28.9	27.4	26.5	26.8	33.9	27.4	30.6	34.3	27.5	30.5
3	28.5	26.4	27.3	28.0	25.7	26.6	34.1	28.1	31.0	34.9	27.7	30.9
4	---	---	---	29.2	26.4	27.7	33.0	28.7	31.0	35.5	27.6	31.1
5	---	---	---	30.3	27.3	28.7	33.3	28.0	30.5	32.4	28.1	30.0
6	---	---	---	31.2	28.0	29.6	33.8	27.7	30.6	32.2	25.2	28.4
7	27.0	23.6	25.2	31.7	28.7	30.3	33.9	28.4	30.9	32.4	25.3	28.4
8	27.2	23.7	25.4	32.4	29.1	30.8	33.9	28.0	30.7	31.9	25.4	28.2
9	27.6	25.1	26.2	32.7	29.6	31.1	32.9	28.3	30.4	30.9	26.1	28.0
10	26.3	24.4	25.0	32.4	29.1	30.8	34.8	28.2	31.3	32.9	26.0	29.0
11	25.9	23.9	24.8	33.0	29.3	31.1	35.5	28.8	32.0	32.7	27.2	29.4
12	28.1	24.6	26.0	34.2	29.7	31.7	35.2	29.4	32.3	29.9	26.9	28.1
13	28.6	25.9	27.1	34.5	30.8	32.2	34.0	29.2	31.6	31.1	24.6	27.5
14	26.9	24.0	25.5	34.8	30.0	32.1	32.9	27.1	30.1	33.1	24.9	28.5
15	28.3	22.6	25.1	35.4	31.0	33.1	34.0	27.3	30.4	30.0	24.3	27.0
16	28.3	25.8	27.2	33.6	31.1	32.4	34.5	28.4	31.2	28.6	21.2	24.5
17	27.7	24.6	25.6	31.9	29.3	30.3	34.4	28.6	31.4	28.2	20.3	23.9
18	26.5	23.6	25.0	32.4	27.9	29.9	35.1	28.4	31.5	27.6	19.3	23.2
19	27.2	24.8	25.8	34.1	28.3	30.9	33.3	28.5	30.8	27.1	19.8	23.1
20	29.1	25.3	27.0	34.1	29.6	31.7	32.5	26.5	29.4	28.1	21.1	23.7
21	27.7	24.1	26.1	31.2	27.6	29.3	32.6	26.6	29.3	26.5	20.1	22.8
22	25.0	23.1	23.9	29.3	25.7	27.6	32.8	27.2	29.7	29.6	22.4	25.3
23	27.9	24.6	26.0	30.2	25.7	27.7	34.0	27.7	30.6	30.6	25.0	27.0
24	29.1	25.6	27.4	31.5	25.5	28.3	34.8	28.0	31.0	25.3	17.8	21.3
25	29.2	27.2	28.2	29.9	26.0	27.9	34.4	28.2	31.0	20.8	13.9	17.1
26	28.3	26.5	27.2	32.1	25.5	28.6	34.7	28.2	31.0	23.2	14.6	18.4
27	27.6	25.2	26.5	30.3	24.7	27.1	34.1	28.1	30.6	24.6	15.6	19.6
28	27.9	26.2	27.0	29.2	23.2	25.9	33.4	27.5	30.0	23.9	17.2	20.4
29	27.1	25.8	26.5	31.8	26.0	28.6	33.8	26.9	30.0	24.2	18.1	21.1
30	26.5	25.2	25.7	31.7	26.7	29.2	33.2	26.8	29.7	23.8	18.2	21.0
31	---	---	---	32.1	26.4	29.2	33.0	26.8	29.8	---	---	---
MONTH	---	---	---	35.4	23.2	29.5	35.5	26.5	30.7	35.5	13.9	25.6

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 downstream from Denison Dam powerhouse, 0.4 mi upstream from Shawnee Creek (spillway flow return), 4.5 mi north of Denison, and at mile 725.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--39,720 mi², of which 5,936 mi² is probably noncontributing. At site used prior to October 1961 drainage area was 39,777 mi², of which 5,936 mi² probably was noncontributing.

PERIOD OF RECORD.--October 1923 to September 1989; December 1996 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1934, published as "near Denison, TX", and October 1934 to September 1961, published as "near Colbert, OK". Gage-height records collected at various sites in this vicinity 1892-93, 1906-28, 1931-49 are contained in reports of the National Weather Service.

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 495.00 ft above 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 downstream. Prior to Oct. 1, 1931, at datum 11.85 ft higher; Oct. 1, 1931, to Sept 24, 1934, at datum 12.07 ft higher; and July 29, 1942, to Sept. 30, 1961, at datum 2.36 ft higher; Sept. 25, 1934, to July 28, 1942, water-stage recorder at railway bridge 1.9 mi downstream at datum 12.36 ft higher. July 29, 1942 to Sept. 30, 1989, at same site and datum 5.00 ft higher.

REMARKS.--No estimated daily discharge. Records fair except for discharges less than 80 ft³/s which are poor. Flow regulated since October 1943 by Lake Texoma (station 07331500). U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 26, 1908, reached a stage of 45.5 ft (at site and datum used July 29, 1942, to Sept. 30, 1961); from record of National Weather Service.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	968	1330	1740	213	2280	2120	5830	3290	2590	259	5730	3070
2	91	1620	2810	32	2240	2170	5860	6560	2800	38	5760	391
3	34	1650	2840	2570	2230	2130	6190	6600	169	4070	5780	230
4	882	1670	254	2760	2210	138	7130	6570	56	355	5880	2740
5	976	1670	32	2840	156	22	11100	7640	2470	4070	507	2950
6	978	375	2590	2820	24	2000	6410	8900	2700	5950	181	4280
7	987	45	2820	2820	2050	159	103	8740	2720	7420	4330	3000
8	1010	1330	2820	224	2190	23	62	4700	2680	512	4670	2980
9	126	1660	2790	31	2200	23	68	7980	2730	33	4670	439
10	48	1650	2740	2610	2200	25	5020	7350	303	6750	4680	278
11	939	1670	237	2810	2170	23	9050	5970	51	4410	4670	2820
12	1030	1680	77	2800	138	26	9090	3060	2410	4400	536	3010
13	1790	353	2570	2780	20	27	8620	227	2660	4380	193	2980
14	1790	42	2730	2810	2030	28	8680	52	2690	4420	4350	2980
15	2870	43	2720	200	2170	29	653	2980	2650	346	4700	2980
16	235	1310	2740	29	2170	28	72	3170	2660	29	4680	449
17	52	1640	2790	2630	2210	30	1460	3170	266	5400	4720	271
18	1560	1650	217	2780	2130	30	1840	3180	40	5760	4680	1770
19	1670	1650	35	2780	134	29	1850	3150	2450	3750	532	1840
20	1650	337	2610	2770	19	34	1810	227	2670	2970	195	1850
21	1690	41	2790	2790	2030	38	1820	47	2670	5750	3860	1860
22	1650	1440	2800	205	2190	39	424	2950	2680	317	4700	1870
23	165	1630	2760	26	2180	41	58	3140	2640	27	4500	352
24	50	1620	2760	2580	2190	37	1460	3150	271	5460	4710	270
25	1620	240	217	3380	2170	36	1820	3170	42	5750	4720	1630
26	1650	1460	32	2780	129	38	2600	3210	2410	5760	546	1600
27	1620	249	2590	2770	18	1440	2510	199	2620	5740	222	1620
28	1620	37	2770	2770	1880	1660	2490	52	2610	5760	4400	2730
29	1670	1360	2800	186	2100	1650	304	2570	2620	305	4720	2730
30	182	1650	2800	28	---	5540	60	2690	2630	23	4730	199
31	49	---	2780	2550	---	6490	---	2680	---	5480	4730	---
TOTAL	31652	33102	63261	59374	45858	26103	104444	117374	58958	105694	113282	56169
MEAN	1021	1103	2041	1915	1581	842	3481	3786	1965	3409	3654	1872
MAX	2870	1680	2840	3380	2280	6490	11100	8900	2800	7420	5880	4280
MIN	34	37	32	26	18	22	58	47	40	23	181	199
AC-FT	62780	65660	125500	117800	90960	51780	207200	232800	116900	209600	224700	111400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000, BY WATER YEAR (WY)

	MEAN	MAX	MIN	(WY)
1945	4921	27860	1987	66.7
1946	3557	18880	1975	79.6
1947	3324	13320	1997	569
1948	3540	20630	1998	271
1949	3440	13800	1987	678
1950	4388	24760	1987	614
1951	4801	20400	1945	789
1952	7591	34710	1957	712
1953	11440	66960	1957	1449
1954	5451	21820	1982	1580
1955	3515	25570	1950	953
1956	2646	10330	1950	325
1957			1957	1984

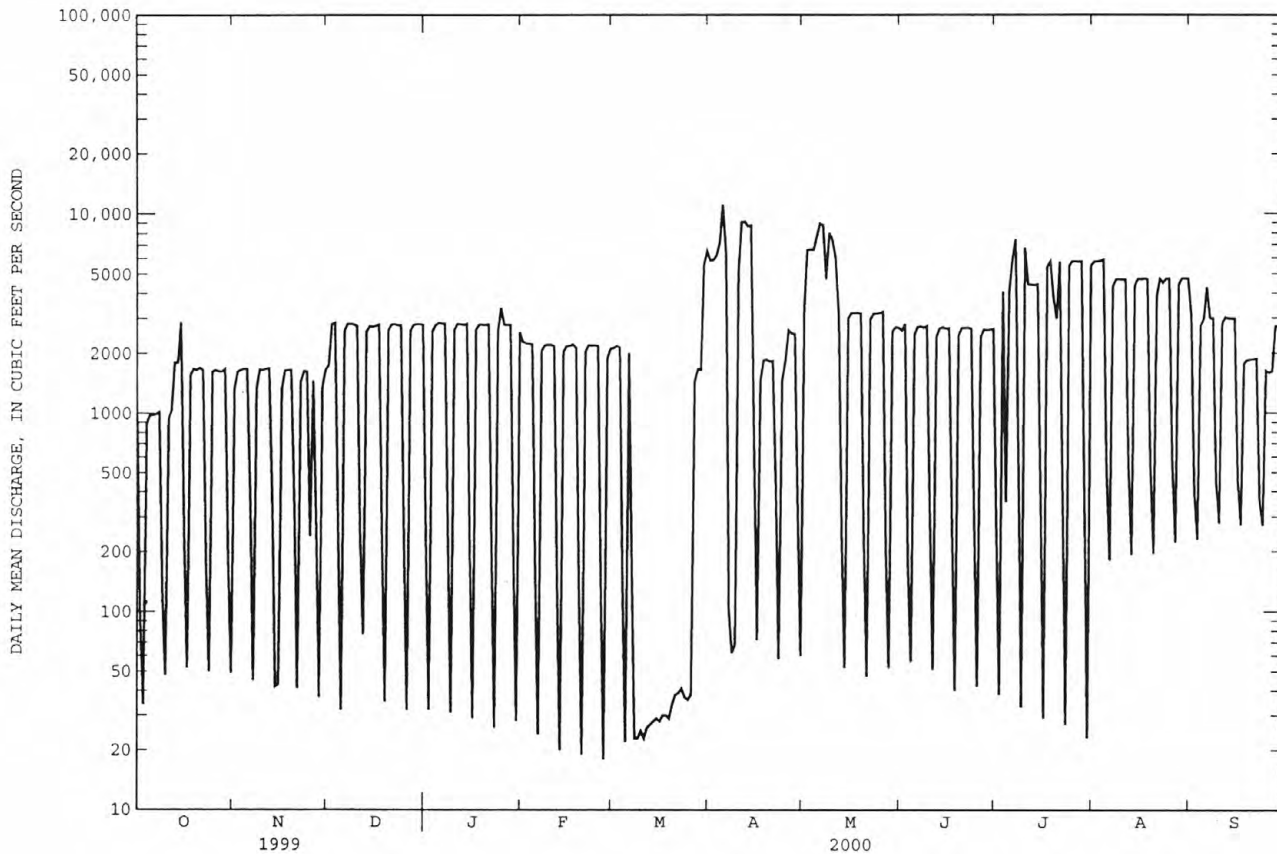
07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000	
ANNUAL TOTAL	1242309		815271		^a 4829	
ANNUAL MEAN	3404		2228		16030	
HIGHEST ANNUAL MEAN					1510	
LOWEST ANNUAL MEAN					96200	
HIGHEST DAILY MEAN	14000	Jun 3	11100	Apr 5	18	Jun 5 1957
LOWEST DAILY MEAN	25	Sep 26	18	Feb 27	25	Feb 27 2000
ANNUAL SEVEN-DAY MINIMUM	702	Oct 1	25	Mar 8	25	Mar 8 2000
INSTANTANEOUS PEAK FLOW			11300	Sep 6	^b 102000	Jun 5 1957
INSTANTANEOUS PEAK STAGE			11.04	Sep 6	^c 26.26	Jun 5 1957
ANNUAL RUNOFF (AC-FT)	2464000		1617000		3498000	
10 PERCENT EXCEEDS	8040		5420		10600	
50 PERCENT EXCEEDS	2110		2080		2790	
90 PERCENT EXCEEDS	67		38		190	

^aPrior to regulation, water years 1924-43, 5,684 ft³/s.

^bMaximum discharge for period of record, 201,000 ft³/s May 21, 1935.

^cMaximum gage height for period of record, 32.00 ft Apr. 25, 1942, site and datum then in use.



RED RIVER BASIN

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1944 to August 1989; October 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,520 microsiemens Aug. 14, 1944; minimum daily, 656 microsiemens Oct. 16, 1945.

WATER TEMPERATURE: October 1945 to September 1989; February 1997 to current year.

INSTRUMENTATION.--Water-quality monitor February 1997 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 3,520 microsiemens Aug. 14, 1944; minimum daily, 656 microsiemens Oct. 16, 1945.

WATER TEMPERATURE: Maximum daily, 31.0°C July 17, 1969; minimum daily, 3.0°C Feb. 2-4, 7, 1966.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 2,380 microsiemens Aug. 17; minimum, 1,560 microsiemens Dec. 11.

WATER TEMPERATURE: Maximum, 27.2°C Sept. 15; minimum, 6.7°C Feb. 6.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

		AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE WATER (DEG C) (00010)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	
JUL												
18...	1243	1028	1028	10.72	10500	749	4.0	7.4	2060	24.5	40	
18...	1246	1028	1028	10.72	10500	749	3.8	7.4	2030	24.0	80	
18...	1249	1028	1028	10.72	10500	749	3.7	7.4	2060	24.0	120	
18...	1252	1028	1028	10.72	10500	749	3.6	7.4	2060	24.0	160	
18...	1255	1028	1028	10.72	10500	749	3.6	7.4	2060	24.5	200	
18...	1258	1028	1028	10.72	10500	749	3.6	7.4	2050	24.5	240	
18...	1301	1028	1028	10.72	10500	749	3.5	7.4	2060	24.5	280	
18...	1304	1028	1028	10.72	10500	749	3.6	7.4	2070	24.5	320	
18...	1307	1028	1028	10.72	10500	749	3.7	7.4	2070	25.0	360	
18...	1310	1028	1028	10.72	10500	749	3.9	7.5	2080	25.0	400	
		AGENCY ANA- LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL- LECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DIS- CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	
OCT												
27...	0930	80020	1028	5.08	83	750	101	9.1	8.3	1960	24.0	19.5
NOV												
16...	0800	80020	1028	4.95	43	758	69	6.7	8.0	1940	13.5	16.5
DEC												
30...	1100	80020	1028	6.93	2640	750	98	10.6	8.2	1940	18.0	11.0
JAN												
25...	1630	80020	1028	5.42	228	762	128	14.0	8.7	1960	14.0	11.0
FEB												
28...	1745	80020	1028	5.41	129	755	136	14.3	8.4	2000	22.0	12.5
MAR												
21...	0900	80020	1028	4.95	35	752	76	8.0	8.3	2000	14.5	12.0
APR												
27...	0750	80020	1028	5.24	239	755	66	6.4	8.0	1960	15.0	16.0
MAY												
24...	1400	80020	1028	5.05	66	742	99	8.4	8.1	2000	36.5	22.0
JUN												
08...	1800	80020	1028	8.74	6430	751	51	4.4	7.9	2020	33.0	22.0
JUL												
18...	1300	80020	1028	10.72	10500	749	44	3.6	7.8	2030	39.0	24.5
AUG												
02...	1045	80020	1028	5.18	75	751	48	4.0	7.8	2190	35.0	23.5
SEP												
13...	1020	80020	1028	5.41	342	752	37	3.1	7.5	2280	27.0	23.5

RED RIVER BASIN

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07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	HARD- NESS TOTAL (MG/L AS CACO3) (00900)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	SODIUM AD- SORP- TION RATIO (00931)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ALKA- LILITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
OCT 27...	480	370	122	43.8	5.8	4	212	48	113	138	0	345
NOV 16...	450	350	109	44.4	6.3	5	221	51	103	126	0	332
DEC 30...	460	350	112	43.1	6.3	5	228	52	107	131	0	352
JAN 25...	450	340	106	43.9	5.7	5	238	53	102	119	3	354
FEB 28...	460	360	114	43.6	.3	5	225	51	106	120	4	349
MAR 21...	490	380	121	45.3	6.2	4	227	50	114	139	0	343
APR 27...	470	340	114	44.3	6.0	5	229	51	123	151	0	344
MAY 24...	490	370	120	45.4	5.6	5	231	50	112	137	0	348
JUN 08...	510	400	127	47.9	5.7	5	238	50	115	140	0	353
JUL 18...	480	370	116	47.4	5.6	5	253	53	114	139	0	361
AUG 02...	510	390	128	45.2	6.1	5	239	50	111	135	0	391
SEP 13...	520	390	130	46.5	5.9	6	289	55	130	158	0	435
DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4) (71846)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS NO3) (71851)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS NO2) (71856)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)
OCT 27...	.3	.8	366	.42	.034	--	.53	.04	--	.112	--	<.010
NOV 16...	.3	.7	355	.39	.077	.098	.52	.10	.434	.133	.115	.035
DEC 30...	.3	.1	367	.61	.030	--	.75	.04	--	.136	--	<.010
JAN 25...	.4	.8	370	.40	.036	--	.52	.05	--	.119	--	<.010
FEB 28...	.4	1.2	372	.37	.036	--	.47	.05	--	.099	--	<.010
MAR 21...	.3	.8	367	.44	<.020	--	.52	--	--	.080	--	<.010
APR 27...	.3	2.3	377	.39	.077	--	.52	.10	--	.133	--	<.010
MAY 24...	.3	4.3	374	.43	.035	.209	.65	.05	.925	.219	.033	.010
JUN 08...	.3	4.7	378	.45	.035	--	.69	.05	--	.237	--	<.010
JUL 18...	.4	5.4	363	.45	.085	--	.53	.11	--	.079	--	<.010
AUG 02...	.3	6.0	381	.61	.197	--	--	.25	--	<.050	--	<.010
SEP 13...	.3	8.9	380	1.4	.923	--	--	1.19	--	<.050	--	<.010

RED RIVER BASIN

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDE (MG/L) (00530)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	ARSENIC DIS- SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)
OCT											
27...	.39	.086	<.050	.028	E.033	12	1.58	261	1160	E1.7	E2
NOV											
16...	.31	--	<.050	<.010	<.050	7	1.54	131	1130	2.5	E2
DEC											
30...	.58	.061	<.050	.020	<.050	7	1.60	8360	1170	E1.6	E2
JAN											
25...	.37	.031	E.031	.010	<.050	1	1.61	727	1180	E1.5	E1
FEB											
28...	.33	--	<.050	<.010	E.036	<1	1.59	407	1170	E1.6	<3
MAR											
21...	--	--	E.039	<.010	<.050	4	1.61	112	1180	E1.4	<3
APR											
27...	.31	--	<.050	<.010	<.050	2	1.62	769	1190	<2.0	<3
MAY											
24...	.39	.046	E.030	.015	E.034	<10	1.63	213	1200	E1.4	E1
JUN											
08...	.42	.043	<.050	.014	.055	75	1.66	21200	1220	E1.9	E2
JUL											
18...	.37	.251	.093	.082	.114	<10	1.66	34600	1220	E2.0	3
AUG											
02...	.41	.159	.055	.052	.086	<10	1.72	256	1260	2.6	3
SEP											
13...	.50	.592	.219	.193	.250	<10	1.87	1270	1380	4.2	4

DATE	BARIUM, DIS- SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA) (01007)	CADMIUM DIS- SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR) (01030)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR) (01034)	COPPER, DIS- SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU) (01042)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE) (01045)	LEAD, DIS- SOLVED (UG/L AS PB) (01049)
OCT											
27...	134	142	<8.0	<.1	E.5	E1	<10	5	<10	90	<100
NOV											
16...	141	144	<8.0	<.1	<1.0	<1	<10	E1	<10	100	<100
DEC											
30...	144	144	<8.0	<.1	<.8	<1	<10	E1	E10	70	<100
JAN											
25...	145	144	<8.0	<.1	<2.0	<2	<10	E1	<10	50	<100
FEB											
28...	143	141	<24.0	<.1	<.8	<1	<30	E1	<300	40	<300
MAR											
21...	147	137	E2.0	<.1	E.6	E1	<30	2	<30	90	<100
APR											
27...	146	148	<24.0	<.1	<.8	<1	<30	<1	<30	60	<300
MAY											
24...	154	149	<8.0	E.1	<.8	<1	<30	2	<30	70	<300
JUN											
08...	153	159	<24.0	<.1	E.4	2	<30	2	<30	770	<300
JUL											
18...	135	142	<8.0	<.1	<.8	<1	<10	E1	<10	<20	<100
AUG											
02...	146	143	<24.0	<.1	3.5	1	<30	<1	<30	<20	<300
SEP											
13...	155	157	<24.0	<.1	<.8	<1	<30	1	<30	60	<300

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

[illegible]

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

[illegible][illegible]

RED RIVER BASIN

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07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	e2040	1960	1940	1950	1960	1950	1960	1970	1950	1960
2	---	---	e2020	1960	1940	1950	1960	1940	1950	1960	1950	1960
3	---	---	e2000	1960	1940	1950	1950	1840	1930	1960	1920	1960
4	---	---	e1990	1950	1940	1950	1950	1910	1940	1970	1950	1960
5	---	---	e1990	1950	1940	1950	1950	1940	1940	1970	1950	1960
6	---	---	e1980	1950	1920	1940	1950	1940	1950	1960	1950	1960
7	---	---	e1970	1940	1930	1930	1950	1940	1940	1960	1920	1960
8	---	---	e1960	1940	1930	1940	1950	1930	1940	1950	1900	1930
9	---	---	e1960	1940	1930	1940	1940	1900	1930	1960	1940	1950
10	---	---	e1950	1940	1920	1930	1940	1930	1940	1960	1950	1960
11	---	---	e1950	1940	1920	1930	1940	1560	1860	1960	1950	1950
12	---	---	e1940	1940	1930	1930	1910	1660	1790	1960	1940	1950
13	---	---	1940	1940	1930	1930	1930	1910	1920	1960	1940	1960
14	1940	1920	1930	1940	1930	1940	1930	1920	1930	1960	1940	1960
15	1960	1930	1950	1950	1940	1940	1940	1930	1930	1960	1940	1950
16	1960	1930	1940	1960	1940	1950	1940	1920	1930	1950	1940	1950
17	1940	1910	1930	1980	1960	1960	1970	1930	1940	1960	1950	1960
18	1920	1890	1910	2040	1960	2000	1970	1940	1960	1960	1950	1960
19	1910	1830	1890	2060	2010	2040	1960	1950	1950	1970	1950	1960
20	1920	1900	1910	2010	1990	2000	1970	1950	1960	1970	1950	1960
21	1920	1900	1920	2000	1980	1990	1970	1960	1960	1970	1950	1960
22	1920	1910	1920	1990	1960	1980	1960	1950	1960	1970	1950	1960
23	1930	1910	1920	1980	1960	1980	1960	1950	1960	1960	1950	1950
24	1940	1910	1920	1980	1970	1980	1960	1940	1950	1970	1960	1960
25	1940	1920	1930	1980	1960	1970	1950	1930	1940	1970	1960	1970
26	1960	1940	1950	1980	1970	1970	1940	1930	1940	1980	1960	1970
27	1960	1950	1960	1980	1960	1970	1940	1930	1940	---	---	e1970
28	1960	1950	1960	1970	1960	1970	1940	1930	1940	---	---	e1960
29	1970	1950	1960	1980	1950	1970	1940	1920	1930	1970	1940	1960
30	1960	1810	1910	1970	1950	1960	1970	1930	1940	1980	1950	1960
31	1940	1900	1930	---	---	---	1970	1950	1960	1980	1960	1970
MONTH	---	---	1950	2060	1920	1960	1970	1560	1940	---	---	1960
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	1980	1960	1970	2000	1980	2000	2000	1980	2000	2040	1810	1970
2	1970	1970	1970	2000	1880	1980	2000	1970	1980	2020	2000	2020
3	1970	1960	1960	2000	1980	1990	1980	1960	1960	2030	1980	2020
4	1970	1960	1960	2000	1970	1990	1970	1950	1960	2020	2010	2020
5	1970	1940	1950	2000	1970	1980	1960	1960	1960	2020	2010	2010
6	1960	1940	1950	1990	1980	1980	1970	1950	1960	2030	2010	2030
7	1970	1950	1960	1990	1960	1980	1960	1930	1950	2060	2020	2040
8	1970	1940	1960	1980	1960	1980	1970	1950	1960	2060	2020	2030
9	1970	1950	1960	2010	1980	1990	1960	1940	1940	2020	1970	1990
10	1970	1950	1960	1990	1860	1950	1950	1940	1950	2020	1970	1990
11	1980	1960	1960	1990	1960	1980	1950	1940	1940	2020	1990	2000
12	1980	1940	1960	2000	1980	1990	1950	1910	1940	2020	1990	2010
13	1970	1950	1960	2000	1980	1990	1950	1950	1950	2010	1970	1990
14	1980	1960	1970	1990	1960	1980	1960	1950	1950	2030	1990	2010
15	1980	1960	1970	2000	1980	1990	1950	1910	1930	2030	1990	2010
16	1980	1970	1970	2000	1980	1990	1930	1810	1900	2020	2000	2010
17	1980	1960	1970	1990	1960	1980	1950	1920	1930	2020	1990	2010
18	1970	1950	1970	2000	1980	1990	1950	1910	1930	2010	1980	2000
19	1970	1940	1960	2000	1980	1990	1940	1920	1930	2000	1970	1990
20	1960	1950	1960	2010	1990	2000	1950	1910	1930	2010	1960	1980
21	1970	1960	1970	2010	1990	2000	1950	1910	1940	2020	2000	2010
22	1980	1960	1970	1990	1950	1970	1940	1920	1930	2030	1970	2000
23	2000	1920	1970	1990	1980	1990	1940	1920	1930	2020	1980	1990
24	2000	1970	1990	1990	1990	1990	1950	1940	1950	2050	1990	2010
25	2000	1980	1990	1990	1990	1990	1960	1940	1950	2050	2020	2040
26	2000	1970	1980	1990	1980	1990	1960	1930	1940	2050	2010	2020
27	1980	1970	1970	2000	1980	1990	1960	1930	1950	2040	1910	2000
28	2000	1970	1990	2000	1980	1990	1980	1950	1960	2030	1960	2010
29	2010	1990	2000	2000	1960	1990	1980	1900	1950	2040	1990	2020
30	---	---	---	2000	1980	2000	1980	1910	1960	2030	1940	2010
31	---	---	---	2000	1990	2000	---	---	---	2020	1990	2010
MONTH	2010	1920	1970	2010	1860	1990	2000	1810	1950	2060	1810	2010

RED RIVER BASIN

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	2020	1980	2000	1990	1960	1980	2170	2130	2150	2280	2210	2250
2	2010	1990	2000	1990	1970	1980	2210	2150	2180	2280	2260	2270
3	2010	1920	1990	2080	1980	2020	2230	2180	2210	2280	2260	2270
4	2010	1810	1930	2080	1980	2010	2250	2190	2220	2270	2200	2250
5	2010	1940	1990	2050	1980	2010	2240	2180	2200	2270	2200	2240
6	1980	1960	1980	2030	1990	2020	2200	2170	2190	2270	2220	2250
7	2000	1970	1980	2020	2010	2020	2230	2160	2200	2280	2200	2250
8	2040	1970	1990	2010	1950	1990	2220	2170	2200	2290	2230	2260
9	2050	1970	2010	2000	1980	1990	2220	2160	2190	2290	2270	2290
10	2020	1900	1960	2030	2000	2020	2200	2120	2160	2310	2290	2300
11	1960	1900	1950	2040	2000	2020	2160	2120	2140	2300	2270	2290
12	1990	1960	1980	2040	1990	2020	2160	2120	2150	2320	2290	2300
13	1990	1970	1980	2050	1970	2020	2200	2160	2170	2340	2290	2310
14	1980	1900	1970	2040	1980	2030	2210	2150	2180	2360	2310	2340
15	1980	1950	1970	2040	1980	2000	2210	2150	2170	2360	2300	2340
16	1980	1960	1970	2000	1990	2000	2200	2140	2170	2350	2320	2340
17	1990	1930	1960	2050	2000	2020	2380	2190	2270	2360	2350	2350
18	1970	1950	1960	2070	2010	2040	2360	2290	2330	2360	2330	2350
19	1980	1950	1970	2080	2010	2060	2340	2300	2330	2360	2330	2340
20	2010	1970	1990	2090	2000	2050	2350	2300	2320	2360	2320	2340
21	2010	1970	1990	2100	2040	2080	2340	2270	2310	2350	2310	2330
22	1990	1950	1970	2100	2020	2040	2300	2240	2280	2350	2300	2330
23	1990	1960	1980	2040	2020	2030	2290	2220	2260	2340	2310	2340
24	1990	1970	1980	2140	2040	2090	2280	2220	2250	2330	1630	2160
25	1990	1970	1990	2160	2110	2140	2270	2210	2240	2270	2200	2240
26	1990	1880	1970	2190	2100	2150	2260	2230	2240	---	---	e2200
27	1980	1940	1970	2160	2110	2140	2260	2230	2250	---	---	e2220
28	1990	1960	1970	2170	2110	2150	2260	2210	2250	---	---	e2220
29	1990	1960	1970	2160	2100	2120	2280	2210	2250	---	---	e2220
30	1990	1940	1970	2120	2100	2100	2280	2220	2250	---	---	e2230
31	---	---	---	2160	2110	2130	2270	2210	2250	---	---	---
MONTH	2050	1810	1980	2190	1950	2050	2380	2120	2220	---	---	2280

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	25.2	20.9	22.8	20.8	17.8	19.2	17.0	14.6	15.9	12.5	9.9	11.1
2	25.8	21.3	23.3	19.3	16.8	18.1	16.9	15.6	16.1	12.2	11.5	11.8
3	26.1	21.9	23.5	19.4	16.6	18.0	17.5	15.7	16.3	12.2	10.6	11.4
4	24.5	21.0	22.4	19.6	17.0	18.3	16.9	13.8	16.0	11.3	9.4	10.5
5	25.3	21.1	22.5	20.2	17.8	18.7	14.3	12.8	13.4	11.3	9.6	10.5
6	24.7	21.0	22.4	20.3	17.9	18.8	15.8	12.6	14.6	11.9	9.7	10.6
7	24.4	20.1	21.9	20.0	17.2	18.4	15.5	13.7	14.8	11.1	10.1	10.6
8	23.5	21.6	22.4	19.4	17.2	18.2	15.5	14.4	14.9	11.0	10.4	10.7
9	25.5	21.8	23.1	19.6	17.2	18.3	15.0	13.5	14.5	12.2	9.7	10.6
10	25.4	21.2	23.0	20.0	17.5	18.5	15.6	13.2	14.4	12.1	9.2	10.4
11	25.3	21.1	22.5	20.9	17.4	18.7	14.3	13.0	13.6	12.3	9.8	10.6
12	25.6	21.0	22.5	20.6	17.3	18.6	13.8	12.8	13.4	12.2	9.8	10.7
13	25.5	20.9	22.3	20.0	17.3	18.5	14.8	12.3	13.7	11.5	9.5	10.3
14	24.8	20.8	22.1	20.5	17.0	18.4	14.5	12.8	13.6	11.0	9.2	10.0
15	23.5	21.0	21.9	20.2	16.8	18.1	14.0	11.6	13.1	11.7	9.3	10.3
16	24.3	21.3	22.4	19.2	16.3	17.6	13.7	11.7	12.9	11.4	10.2	10.8
17	21.4	19.9	20.3	19.1	16.7	17.8	13.3	12.1	12.7	12.0	10.0	10.7
18	21.8	19.6	20.6	19.2	16.9	17.9	13.2	11.3	12.2	12.1	10.1	10.6
19	23.0	19.3	20.8	19.0	17.3	17.9	13.3	10.8	12.0	12.2	9.8	10.7
20	23.3	18.9	20.7	19.0	16.1	17.3	12.1	11.0	11.8	11.3	9.0	10.4
21	22.8	19.0	20.7	18.8	15.6	17.0	12.4	10.8	11.7	11.0	9.4	10.2
22	23.8	18.9	20.8	18.6	16.9	17.6	12.8	10.4	11.6	12.2	10.0	10.8
23	22.3	19.3	20.6	17.6	16.0	17.0	12.6	10.3	11.4	12.7	9.3	10.6
24	22.3	18.5	20.0	17.4	15.6	16.6	12.7	10.5	11.4	11.3	8.4	10.1
25	22.1	18.1	19.8	17.6	15.0	16.4	12.5	9.8	11.0	10.7	9.3	10.0
26	22.7	19.1	20.5	17.6	14.4	15.8	12.9	9.8	11.1	9.8	8.5	9.3
27	21.7	19.2	20.0	17.9	15.2	16.4	12.7	10.0	11.3	---	---	---
28	21.4	18.8	19.7	18.0	14.8	16.1	12.7	10.2	11.3	---	---	---
29	21.1	18.9	19.6	17.7	15.0	16.2	12.6	10.5	11.3	9.4	7.7	8.5
30	19.6	18.6	19.1	16.9	14.9	16.0	12.5	10.8	11.3	10.1	6.8	8.3
31	20.2	18.4	19.0	---	---	---	12.6	10.4	11.2	9.7	7.4	8.5
MONTH	26.1	18.1	21.4	20.9	14.4	17.7	17.5	9.8	13.0	---	---	---

RED RIVER BASIN

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07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	9.9	8.1	8.7	13.8	10.4	11.7	14.0	13.1	13.7	17.0	15.7	16.4
2	10.4	7.5	8.6	11.9	10.8	11.2	14.3	13.1	14.0	17.2	16.6	16.9
3	10.9	7.7	8.9	11.1	10.6	10.9	14.4	13.1	14.1	17.0	16.6	16.7
4	10.3	7.9	8.9	14.0	10.0	11.5	14.7	12.5	13.9	17.3	16.7	17.0
5	10.1	7.3	8.5	14.0	9.6	11.7	14.4	14.0	14.2	17.1	16.8	17.0
6	10.0	6.7	8.4	13.7	11.0	11.9	16.4	14.0	14.9	17.0	16.4	16.7
7	10.4	8.3	9.0	13.2	11.2	12.1	20.4	14.2	16.1	17.6	16.5	17.1
8	10.7	8.0	9.1	14.0	11.5	12.6	17.8	12.2	14.6	20.9	17.1	17.9
9	10.4	8.0	8.9	15.0	11.1	12.6	16.7	12.6	14.5	19.0	17.3	18.2
10	11.0	8.6	9.4	12.0	10.2	11.2	14.8	13.6	14.3	18.7	17.9	18.4
11	9.5	8.5	9.0	15.2	10.1	12.1	14.7	14.3	14.5	19.1	17.9	18.3
12	11.0	8.3	9.5	14.9	10.2	12.2	14.6	14.4	14.5	21.0	18.1	19.1
13	12.6	9.2	10.4	15.0	10.5	12.6	14.9	14.2	14.6	21.4	17.2	19.1
14	11.2	8.4	9.5	12.8	11.9	12.3	14.7	14.3	14.6	21.1	15.7	18.3
15	11.1	8.4	9.5	14.5	11.6	12.7	17.0	14.4	15.4	20.1	16.4	18.5
16	9.4	9.0	9.2	14.1	11.8	13.0	17.9	14.6	15.7	19.7	18.0	19.0
17	10.3	8.9	9.3	12.2	10.8	11.5	17.5	13.7	15.3	20.3	18.1	19.2
18	11.8	9.1	10.0	13.9	10.6	11.8	19.1	14.6	16.0	20.8	18.5	19.7
19	11.7	8.3	9.8	15.4	10.5	12.3	18.6	14.8	16.0	21.3	18.0	19.7
20	12.1	7.9	9.9	15.3	10.6	12.8	19.6	13.9	16.1	22.5	18.4	20.3
21	10.4	9.3	9.7	13.5	12.1	12.8	19.2	14.6	16.4	22.5	18.0	19.9
22	10.7	9.3	9.8	14.2	12.3	13.1	17.4	14.8	16.1	21.9	18.4	20.2
23	12.0	9.4	10.3	14.7	12.7	13.5	19.4	14.9	16.8	22.1	18.8	20.4
24	11.5	9.7	10.3	16.0	11.8	13.6	19.9	14.9	16.6	21.5	19.3	20.3
25	13.1	9.8	10.9	16.9	12.7	14.3	19.6	15.5	17.0	21.6	18.8	20.0
26	13.6	10.1	11.3	15.9	12.9	14.2	19.7	15.2	16.7	20.8	18.7	19.9
27	13.6	9.3	11.3	16.3	12.4	13.9	17.0	15.5	16.2	20.2	18.6	19.3
28	13.1	9.8	11.1	16.1	12.6	13.7	20.2	15.0	16.9	23.0	17.8	20.0
29	13.6	10.6	11.5	17.4	12.9	14.2	17.3	15.5	16.4	22.1	17.8	19.9
30	---	---	---	14.9	12.7	14.0	17.4	15.7	16.5	22.5	18.7	20.4
31	---	---	---	14.4	13.1	14.0	---	---	---	21.9	18.9	20.5
MONTH	13.6	6.7	9.7	17.4	9.6	12.6	20.4	12.2	15.4	23.0	15.7	18.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	22.9	19.1	20.6	23.3	21.2	21.9	25.7	22.6	24.7	26.6	23.1	24.7
2	21.9	19.2	20.8	23.2	20.5	21.6	25.5	22.5	24.5	25.9	22.7	23.8
3	21.3	19.2	20.1	23.8	20.6	22.3	25.4	22.6	24.5	25.7	22.5	23.6
4	20.8	19.1	19.8	24.3	21.2	22.7	25.6	22.8	24.6	26.8	22.5	24.4
5	23.9	18.5	21.1	24.1	20.4	22.4	24.5	22.1	23.2	26.7	22.9	24.5
6	23.2	19.2	21.4	24.3	21.1	23.4	24.4	21.8	22.8	26.3	22.5	24.5
7	23.1	19.0	21.1	24.4	21.8	23.9	25.5	22.1	23.7	26.6	22.7	24.7
8	22.6	19.1	20.8	25.4	21.6	23.4	25.5	22.4	24.2	26.4	23.0	24.4
9	22.4	19.7	21.0	24.6	20.3	22.2	25.6	22.5	24.2	25.0	23.2	23.8
10	21.8	19.8	20.6	24.2	20.7	23.1	26.1	22.6	24.6	25.6	23.2	24.0
11	20.7	19.2	19.8	24.1	21.2	23.0	26.2	22.5	24.6	26.6	23.2	24.6
12	22.8	19.3	20.7	24.5	21.5	23.2	25.2	22.4	23.8	26.3	23.6	24.7
13	23.1	19.9	21.3	24.8	21.5	23.5	24.8	22.0	23.1	26.6	23.4	24.9
14	22.6	20.0	21.3	24.8	21.6	23.6	26.1	21.7	23.9	26.7	23.2	24.9
15	22.7	20.1	21.6	26.1	21.6	23.4	25.9	22.4	24.4	27.2	23.0	25.0
16	23.7	20.5	21.9	25.1	20.6	22.4	26.1	22.6	24.6	25.3	22.9	24.0
17	22.2	20.4	21.1	24.9	20.5	23.0	26.2	22.6	24.6	25.4	22.4	23.6
18	22.2	19.4	20.6	24.7	21.9	23.7	26.5	22.6	24.8	25.8	22.3	24.1
19	22.9	19.6	21.0	24.9	21.6	23.6	25.2	22.4	23.6	25.4	22.8	24.2
20	23.7	20.6	21.9	25.0	21.3	23.1	24.6	21.9	22.9	26.1	23.3	24.6
21	22.4	20.3	21.6	26.2	22.1	24.2	26.0	22.0	23.9	25.6	23.4	24.5
22	23.2	20.5	21.9	24.4	21.6	22.8	26.3	22.7	24.6	26.0	23.8	24.8
23	23.9	20.6	22.1	24.8	20.8	22.5	26.3	22.7	24.6	26.0	24.0	24.8
24	24.0	20.5	22.0	24.9	20.6	23.3	26.3	22.7	24.8	24.1	22.8	23.7
25	23.7	20.1	21.7	24.6	21.9	23.8	26.3	22.7	24.7	24.6	22.5	23.5
26	24.0	20.1	21.8	25.1	22.3	24.1	25.0	22.6	23.6	26.0	21.4	23.3
27	24.3	20.8	22.7	25.7	22.3	24.3	24.8	22.3	23.2	26.3	21.3	23.3
28	24.1	20.8	22.5	25.6	22.5	24.4	26.2	22.4	24.2	26.2	21.6	23.6
29	24.4	20.8	22.8	26.4	22.6	24.2	26.5	22.9	24.8	26.0	22.1	23.7
30	24.0	20.8	22.3	26.3	21.5	23.5	26.2	22.8	24.8	26.3	21.9	23.8
31	---	---	---	25.7	21.3	24.0	26.6	23.0	25.0	---	---	---
MONTH	24.4	18.5	21.3	26.4	20.3	23.2	26.6	21.7	24.2	27.2	21.3	24.2

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, on left bank on downstream side near end of bridge on U.S. Highway 70, 1.0 mi west of Blue, 7.0 mi east of Durant, 7.7 mi upstream from Caddo Creek, and at mile 38.8.

DRAINAGE AREA.--476 mi².

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 503.60 ft above sea level. Prior to Mar. 13, 1945, nonrecording gage and Mar. 13, 1945, to Feb. 2, 1960, water-stage recorder at site 1.2 mi downstream at datum 5.00 ft lower.

REMARKS.--Records fair. Some regulation at low flow by a State fish hatchery, 16.0 mi upstream from station. Small diversion for municipal water supply for city of Durant upstream from station. U.S. Army Corps of Engineers' satellite telemeter at station. No flow also occurred Aug. 4, 1936, result of regulation at fish hatchery, and no flow Sept. 19 to Oct. 16, 1956.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
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No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	74	36	38	57	70	79	202	47	48	15	2.9
2	32	62	34	38	68	67	157	736	45	44	12	2.8
3	33	44	47	41	79	100	154	383	43	42	8.6	2.7
4	32	34	74	53	70	124	110	233	51	36	7.6	2.5
5	33	32	57	72	60	90	87	154	59	30	e6.6	2.3
6	36	34	43	62	57	72	77	127	53	27	e6.4	2.2
7	39	36	40	51	54	67	72	112	51	25	e6.5	2.2
8	41	36	37	60	53	68	67	102	43	24	e6.6	1.9
9	41	37	39	68	52	75	63	93	44	22	6.7	2.0
10	45	37	53	93	50	73	61	86	71	20	6.4	2.0
11	46	38	87	71	48	64	66	81	143	23	6.0	2.0
12	42	37	564	57	46	54	178	70	96	24	5.7	2.0
13	40	37	292	51	45	49	247	64	76	23	5.3	2.0
14	39	37	142	46	42	55	215	58	68	23	4.9	2.1
15	39	37	86	45	42	177	142	54	81	24	4.7	2.1
16	41	37	66	44	40	122	173	53	66	22	4.5	2.0
17	41	40	57	44	39	93	153	60	50	21	4.4	1.9
18	49	38	53	45	42	88	141	63	47	22	4.2	1.9
19	46	38	51	45	40	121	107	62	50	19	4.2	1.9
20	47	37	49	43	40	108	93	61	49	13	4.1	1.9
21	43	38	46	41	38	89	84	58	43	7.5	4.0	2.0
22	42	39	44	40	39	112	76	49	113	8.3	3.8	2.2
23	40	57	43	39	225	241	74	44	112	26	3.8	3.0
24	39	73	41	39	325	353	73	43	68	33	3.7	4.2
25	39	56	41	39	153	194	70	40	51	28	3.7	8.7
26	39	45	41	39	102	153	65	40	46	19	3.5	6.1
27	39	40	40	47	150	122	64	54	73	17	3.4	5.4
28	34	38	39	59	97	102	65	68	92	16	3.3	4.8
29	29	38	39	64	78	93	64	64	61	21	3.2	4.5
30	38	37	38	57	---	86	65	58	53	23	3.1	4.5
31	154	---	37	51	---	81	---	46	---	19	3.0	---
TOTAL	1331	1263	2356	1582	2231	3363	3142	3418	1945	749.8	168.9	88.7
MEAN	42.9	42.1	76.0	51.0	76.9	108	105	110	64.8	24.2	5.45	2.96
MAX	154	74	564	93	325	353	247	736	143	48	15	8.7
MIN	29	32	34	38	38	49	61	40	43	7.5	3.0	1.9
AC-FT	2640	2510	4670	3140	4430	6670	6230	6780	3860	1490	335	176

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2000, BY WATER YEAR (WY)

MEAN	243	270	258	233	371	459	573	635	429	148	77.3	158
MAX	3613	1813	1384	1291	2156	3089	3846	2953	2510	780	755	1501
(WY)	1982	1997	1972	1998	1938	1945	1990	1990	1945	1950	1950	1957
MIN	4.37	11.3	17.8	18.1	27.0	22.8	51.5	33.2	24.2	5.23	.94	.42
(WY)	1940	1940	1940	1940	1967	1940	1956	1939	1939	1956	1956	1956

e Estimated

RED RIVER BASIN

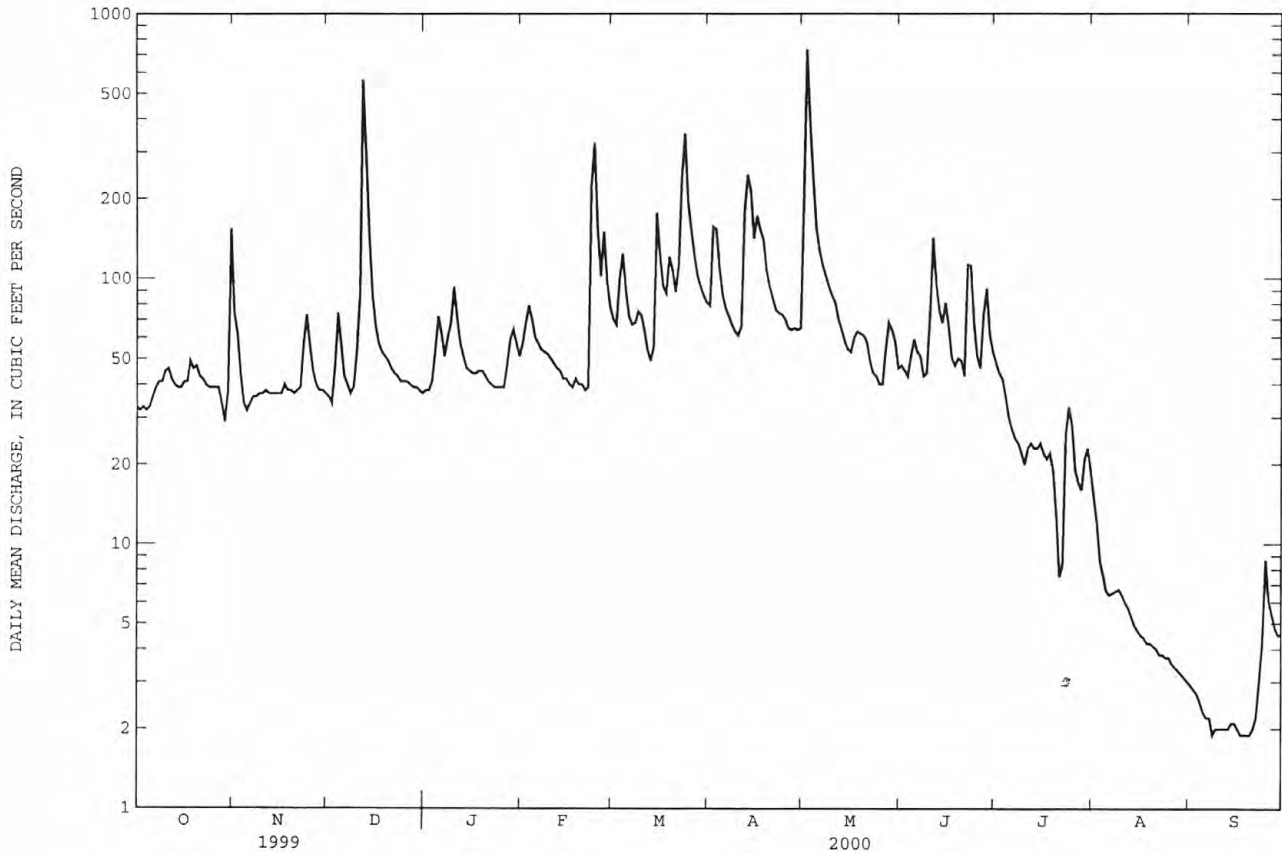
157

07332500 BLUE RIVER NEAR BLUE, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1936 - 2000	
ANNUAL TOTAL	50744		21638.4		321	
ANNUAL MEAN	139		59.1		972	1945
HIGHEST ANNUAL MEAN					30.8	1956
LOWEST ANNUAL MEAN					45500	Oct 14 1981
HIGHEST DAILY MEAN	3040	Apr 4	736	May 2	^a .00	Aug 3 1936
LOWEST DAILY MEAN	29	Oct 29	1.9	Sep 8	.00	Sep 19 1956
ANNUAL SEVEN-DAY MINIMUM	34	Sep 30	2.0	Sep 15	65200	Oct 14 1981
INSTANTANEOUS PEAK FLOW			928		^b 44.20	Oct 14 1981
INSTANTANEOUS PEAK STAGE			10.05		232600	
ANNUAL RUNOFF (AC-FT)	100700		42920		537	
10 PERCENT EXCEEDS	262		112		87	
50 PERCENT EXCEEDS	62		44		28	
90 PERCENT EXCEEDS	38		4.2			

^aResult of regulation at fish hatchery and no flow Sept. 19 to Oct. 16, 1956.

^bFrom high-water mark.



RED RIVER BASIN

07333010 ATOKA RESERVOIR NEAR STRINGTOWN, OK.

LOCATION.--Lat 34°26'43", long 96°05'00", in NW 1/4 NE 1/4 sec.30, T.1 S., R.12 E., Atoka County, Hydrologic Unit 11140103, in intake tower on north side of dam on North Boggy Creek, 2.2 mi southwest of Stringtown and at mile 7.4.

DRAINAGE AREA.--172 mi² (City of Oklahoma City).

PERIOD OF RECORD.--October 1999 to September 2000.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earthen dam, construction completed 1960. Top of dam 602.5 ft, contents 225,000 acre-ft, emergency spillway elevation is 590.00 ft, contents 123,500 acre-ft, normal pool. Figures herein represent total contents. Reservoir is used for water supply. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 108,000 acre-ft, Oct. 1, elevation 587.26 ft; minimum, 83,600 acre-ft, Apr. 10, elevation 582.41 ft.

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

580	72,780	586	101,300
582	81,670	588	112,000
584	91,160	590	123,500

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e108000	101000	96900	93400	89400	87100	84900	87600	89500	104000	103000	94100
2	e107000	101000	96600	93200	89300	86900	85100	91100	89300	104000	102000	93800
3	e107000	101000	96700	93500	89300	87300	85200	91500	89400	105000	102000	93500
4	e107000	100000	96700	93600	89200	87500	85100	91600	90000	104000	102000	93300
5	e106000	100000	96900	93300	89100	87400	84800	91600	90400	104000	102000	93000
6	e106000	99800	96600	93100	88900	87300	84700	91400	90200	105000	102000	92700
7	e106000	99600	96300	93000	88800	87200	84400	91500	90100	105000	101000	92400
8	106000	99400	96100	93000	88700	87300	84400	91400	90000	105000	101000	92100
9	106000	99300	96200	92800	88300	87300	84100	91900	89900	104000	101000	91800
10	105000	99000	96000	92700	88400	87100	83800	91600	89800	104000	100000	91500
11	105000	98900	95800	92600	88000	86900	83600	91400	92200	104000	100000	91200
12	105000	98600	96800	92400	88000	86700	84600	91500	93700	104000	99900	91000
13	105000	98400	97100	92400	87800	86400	85600	91600	94200	104000	99600	90800
14	105000	98300	96900	92000	87600	86200	86100	91300	94300	104000	99300	90500
15	104000	98100	96800	91700	87400	86200	86100	91000	94400	104000	99000	90200
16	104000	98100	96600	91700	87200	86200	86300	90800	94600	103000	98700	89800
17	104000	98000	96400	91500	86900	85900	86200	90700	94600	103000	98500	89500
18	104000	97900	96300	91400	86900	85900	86100	90800	94800	103000	98300	89200
19	103000	98000	96000	91100	86700	85800	85900	90800	94800	103000	97900	88900
20	103000	97800	96000	91000	86500	85500	85900	90700	94700	103000	97500	88500
21	103000	97700	95700	90700	86200	85300	85600	90400	94800	103000	97200	88300
22	103000	97700	95400	90500	86000	85200	85500	90200	98700	103000	96900	87900
23	102000	98800	95200	90300	86600	85000	85200	90200	103000	103000	96700	87700
24	102000	98700	95000	90100	87400	85100	85300	90100	104000	103000	96400	87700
25	102000	98400	94800	90100	87400	85000	85100	90100	104000	103000	96100	87300
26	102000	98100	94600	89900	87600	85100	84800	89800	104000	103000	95800	87100
27	101000	97900	94500	90100	87600	85200	84800	90000	104000	103000	95400	86800
28	101000	97700	94200	90100	87400	85100	84800	90300	104000	103000	95200	86600
29	101000	97500	94000	89900	87200	85200	84600	90000	104000	103000	94900	86300
30	101000	97200	93800	89700	---	85100	84400	89700	104000	103000	94700	86100
31	101000	---	93600	89500	---	85000	---	89600	---	103000	94400	---
MAX	108000	101000	97100	93600	89400	87500	86300	91900	104000	105000	103000	94100
MIN	101000	97200	93600	89500	86000	85000	83600	87600	89300	103000	94400	86100
(+)	586.00	585.21	584.50	583.66	583.17	582.71	582.59	583.67	586.59	586.28	584.65	582.94
(++)	-7000	-3800	-3600	-4100	-2300	-2200	-600	+5200	+14400	-1000	-8600	-8300

WTR YR 2000 MAX 108000 MIN 83600 (++) -21900

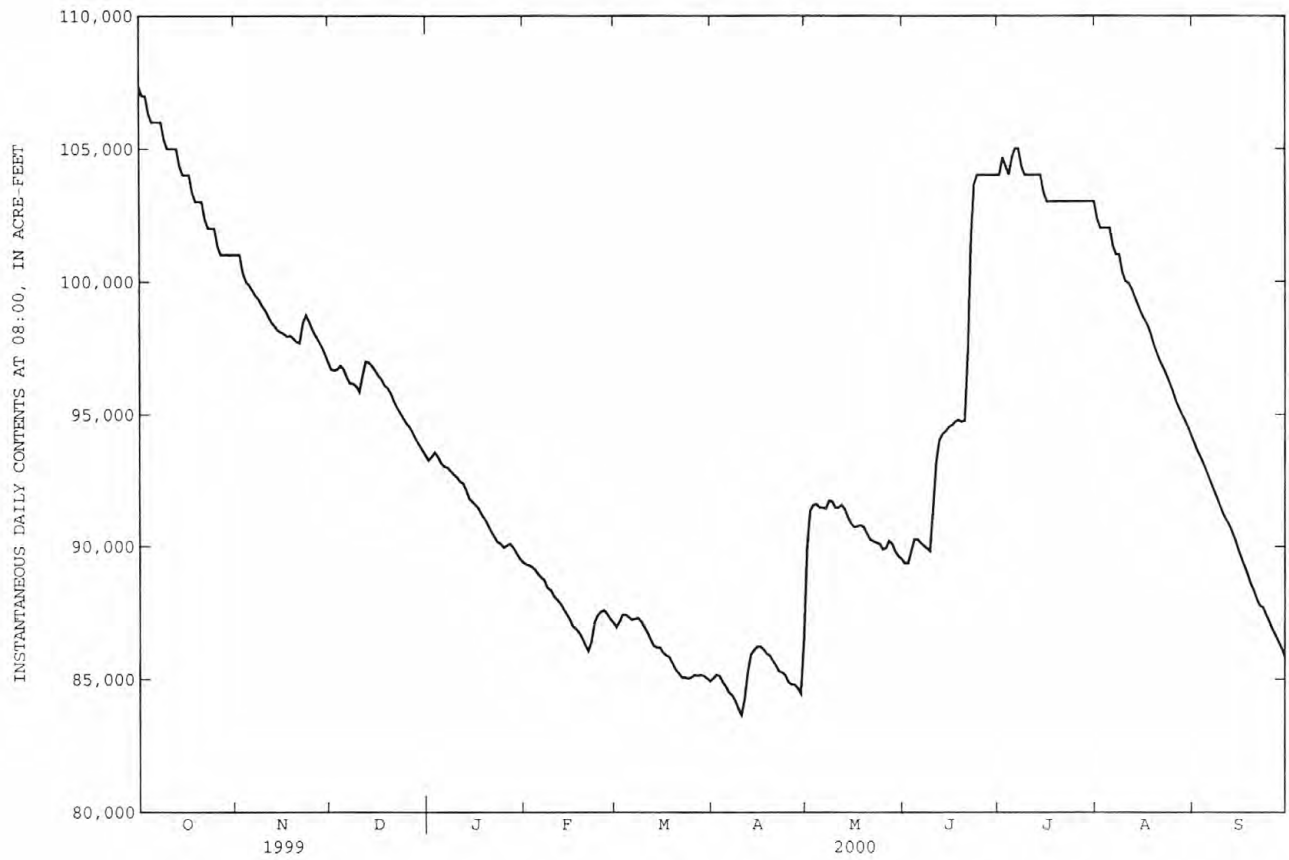
(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-FEET

e Estimated

RED RIVER BASIN

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07333010 ATOKA RESERVOIR NEAR STRINGTOWN, OK.--Continued



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 left bank of bridge on State Highway 3, 1.3 mi downstream from McGee Creek, 2.8 mi northwest of Farris, and at mile 57.7.

DRAINAGE AREA.--1,087 mi².

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 439.58 ft above sea level. Prior to Mar. 13, 1945, nonrecording gage, and Mar. 13, 1945, to Sept. 30, 1961, water-stage recorder at same site at datum 7 ft higher. Prior to Oct. 1, 1989, water-stage recorder at same site and datum 5 ft higher.

REMARKS.--No estimated daily discharge. Records poor Oct. 1 to June 30 due to lack of measurements and funding; records good July 1 to Sept.30. Some regulation since June 1959 by Atoka Reservoir, drainage area, 176 mi²; pipeline diversions to Oklahoma City since November 1963, and since April 1987 by McGee Creek Lake, drainage area 178 mi². U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	19	26	25	116	650	94	3420	22	501	18	14
2	13	21	28	24	294	615	163	3670	21	228	18	14
3	12	21	36	46	255	567	322	2560	20	146	26	15
4	12	20	156	47	171	491	401	1560	39	106	26	14
5	12	19	342	122	136	144	335	1080	77	83	23	13
6	14	18	104	197	110	104	304	715	78	69	21	13
7	15	18	58	106	146	87	288	525	49	58	20	14
8	15	18	42	130	301	76	194	387	43	50	19	14
9	15	17	46	154	285	90	51	138	40	44	18	15
10	14	18	80	168	222	95	42	107	39	38	18	15
11	13	17	90	318	53	100	60	93	1800	32	17	15
12	13	18	2360	302	56	83	153	89	1770	29	17	18
13	12	19	1070	186	52	69	800	108	1890	28	16	16
14	12	20	384	52	48	94	951	84	688	26	16	15
15	12	19	385	46	46	153	860	65	395	24	16	14
16	12	19	527	42	43	119	777	54	309	23	16	14
17	14	19	836	39	42	99	763	47	265	21	15	14
18	14	19	647	40	41	154	527	47	266	20	15	14
19	14	18	631	38	40	150	259	54	450	20	15	14
20	14	19	614	37	39	112	101	37	279	19	15	14
21	13	19	512	35	38	84	78	33	190	19	15	15
22	13	23	248	33	37	145	61	30	630	22	15	15
23	12	153	43	32	619	310	51	28	3780	22	15	15
24	12	36	35	31	1480	527	48	26	3930	20	15	22
25	12	47	33	30	777	372	66	25	1230	20	15	15
26	12	37	31	31	502	271	50	24	327	19	14	7.5
27	13	30	29	35	809	235	42	24	195	19	14	15
28	15	25	28	29	504	214	47	24	449	19	14	16
29	15	25	27	43	722	523	60	22	435	20	14	16
30	19	28	26	50	---	867	52	22	1160	20	14	16
31	19	---	26	62	---	620	---	22	---	20	14	---
TOTAL	420	799	9500	2530	7984	8220	8000	15120	20866	1785	524	441.5
MEAN	13.5	26.6	306	81.6	275	265	267	488	696	57.6	16.9	14.7
MAX	19	153	2360	318	1480	867	951	3670	3930	501	26	22
MIN	12	17	26	24	37	69	42	22	20	19	14	7.5
AC-FT	833	1580	18840	5020	15840	16300	15870	29990	41390	3540	1040	876

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2000, BY WATER YEAR (WY)

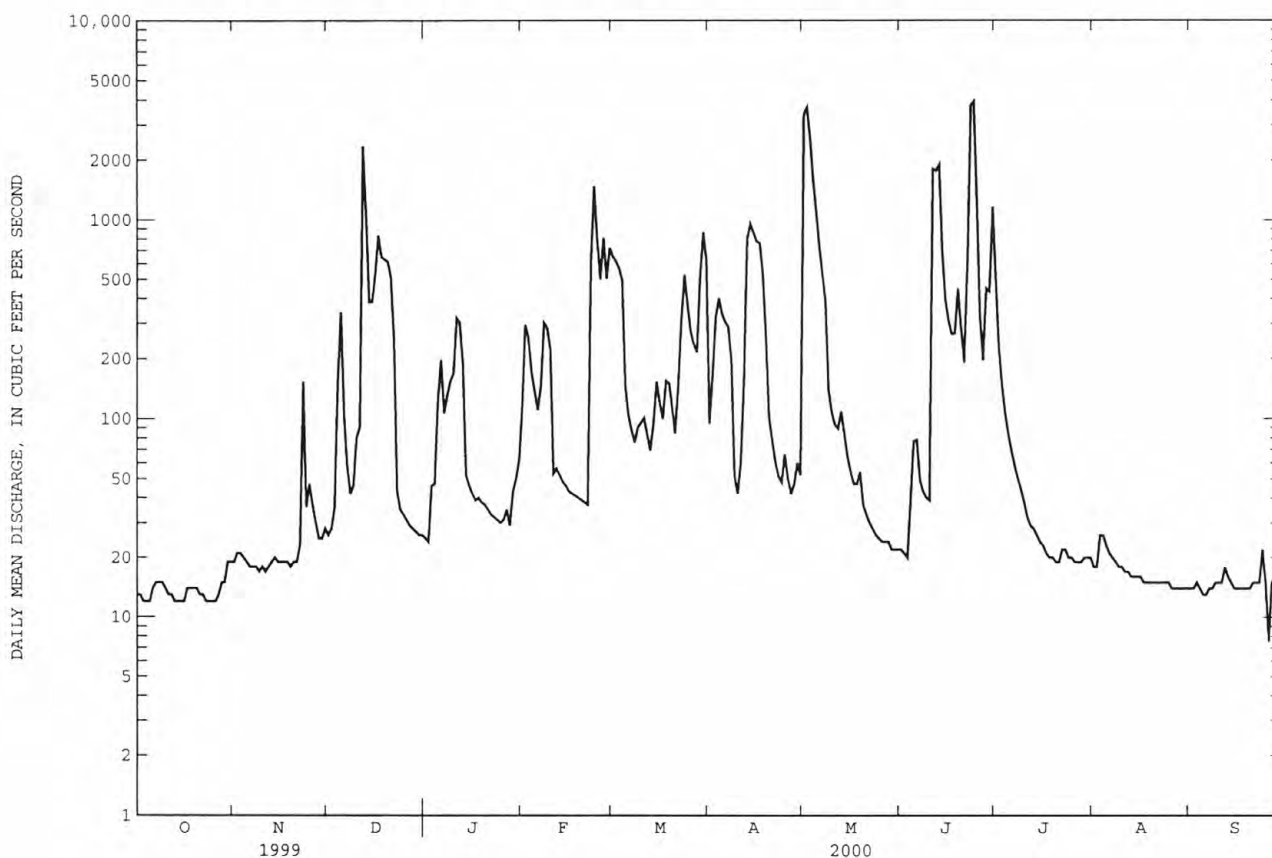
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	266	957	1496	1115	1070	1952	1761	2193	1107	341	236	407	
MAX	1489	4184	4223	5313	2830	4541	6622	8384	2764	1854	1525	1026	
(WY)	1992	1997	1992	1998	1993	1990	1990	1990	1991	1992	1992	1992	
MIN	13.5	26.6	25.5	81.6	41.5	265	267	34.7	25.0	15.5	13.7	13.8	
(WY)	2000	2000	1990	2000	1996	2000	2000	1988	1988	1998	1998	1988	

RED RIVER BASIN

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07334000 MUDDY BOGGY CREEK NEAR FARRIS, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1988 - 2000	
ANNUAL TOTAL	277526		76189.5		^a 1075	
ANNUAL MEAN	760		208		2145	
HIGHEST ANNUAL MEAN					208	
LOWEST ANNUAL MEAN					2000	
HIGHEST DAILY MEAN	11200	May 12	3930	Jun 24	45700	May 5 1990
LOWEST DAILY MEAN	12	Oct 3	7.5	Sep 26	^b 7.5	Sep 26 2000
ANNUAL SEVEN-DAY MINIMUM	12	Oct 21	12	Oct 21	11	Oct 18 1991
INSTANTANEOUS PEAK FLOW			5330	May 1	^c 49800	May 5 1990
INSTANTANEOUS PEAK STAGE			23.83	May 1	^d 48.73	May 5 1990
ANNUAL RUNOFF (AC-FT)	550500		151100		779100	
10 PERCENT EXCEEDS	2090		539		2610	
50 PERCENT EXCEEDS	57		39		152	
90 PERCENT EXCEEDS	16		14		19	

^aPrior to regulation, water years 1938-86, 880 ft³/s.^bNo flow at times in many years prior to regulation.^cMaximum discharge for period of record 61,900 ft³/s, June 17, 1945, from rating curve above 37,000 ft³/s.^dMaximum gage height for period of record 51.94 ft, June 17, 1945, present datum.

RED RIVER BASIN

07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK

LOCATION.--Lat 34°35'40", long 96°39'55", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.34, T.2 N., R.6 E., Pontotoc County, Hydrologic Unit 11140104, upstream from weir outlet of spring, 0.5 mi upstream from Big Spring Creek, 2.0 mi west of Fittstown, and 12.0 mi south of Ada.

PERIOD OF RECORD.--Creek only, April 1959 to current year. Combined flow from December 1989 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 1,021.17 ft above sea level. Flow meters on diversion pipe and wells, to City of Ada.

REMARKS.--Records fair. Prior to December 1989 records do not include diversion of about 6 to 15 ft³/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. Satellite telemeter at station.

AVERAGE DISCHARGE.--Creek only: 41 years, 9.06 ft³/s. Combined spring flow: 10 years, 20.0 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Combined flow: maximum daily discharge, 43 ft³/s, May 4, 5, 1990; minimum daily discharge, 7.0 ft³/s, Sept. 15, 2000.

EXTREMES FOR CURRENT YEAR.--Combined flow: maximum daily discharge, 21.0 ft³/s, at times; minimum daily discharge, 7.0 ft³/s, Sept. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	9.4	7.2	6.4	6.4	6.7	7.1	7.1	5.7	5.0	4.0	3.2
2	13	9.3	7.0	6.3	6.4	6.8	7.1	7.1	6.0	5.0	5.2	5.3
3	13	9.0	5.5	6.6	6.5	6.7	7.1	7.1	6.3	4.9	5.4	4.5
4	13	8.9	5.5	6.6	6.6	6.8	7.1	7.1	6.2	4.8	6.0	3.7
5	13	8.7	5.4	6.7	6.6	6.8	7.1	7.1	6.1	4.8	5.8	3.9
6	13	8.6	6.3	6.6	6.5	6.8	7.1	7.1	6.1	4.7	5.8	5.8
7	13	8.6	7.4	7.1	6.5	6.8	7.1	7.1	6.1	4.7	5.7	6.3
8	13	8.6	7.3	6.6	6.5	6.8	7.1	7.1	6.0	4.6	5.6	5.9
9	13	8.6	7.1	6.5	6.6	3.4	7.1	7.1	6.0	4.5	4.6	4.5
10	12	8.4	7.1	6.4	6.5	4.7	7.1	7.1	6.0	4.4	3.9	4.7
11	13	7.9	7.1	6.4	6.4	3.8	7.1	7.1	5.9	4.5	3.7	4.8
12	14	8.1	7.0	6.4	6.4	3.8	7.1	7.1	5.7	4.5	4.1	5.8
13	14	8.1	7.1	6.4	6.4	3.8	7.1	7.1	5.7	4.2	3.8	e5.0
14	14	7.9	6.9	6.4	6.4	5.2	7.1	7.1	5.8	4.1	4.2	e6.0
15	14	7.8	6.8	6.4	6.3	6.0	7.1	7.1	5.8	3.9	4.7	e4.9
16	13	7.8	6.8	6.4	6.1	5.9	7.1	7.1	5.7	3.8	4.5	e5.3
17	13	7.8	6.8	6.4	6.3	6.1	7.1	7.1	5.7	3.8	4.4	e6.0
18	13	7.8	6.7	6.4	6.2	6.1	7.1	7.1	5.6	3.7	4.4	e6.3
19	12	7.8	6.7	6.4	6.3	6.1	7.1	7.1	5.6	3.0	4.2	7.4
20	12	7.7	6.7	6.4	6.3	6.2	7.1	7.1	5.5	1.9	4.2	5.8
21	12	7.7	6.6	6.4	6.4	6.4	7.1	7.0	5.5	3.5	2.6	4.5
22	12	7.7	6.6	6.4	6.4	6.4	7.1	6.7	5.4	3.9	3.0	3.7
23	11	7.5	6.5	6.4	6.4	6.4	7.1	6.7	5.4	3.6	5.1	3.4
24	11	7.5	6.4	6.4	6.4	6.4	7.1	6.5	5.3	3.6	4.7	3.2
25	11	7.4	6.4	6.3	6.4	6.4	7.1	6.1	5.3	3.5	3.7	4.9
26	10	7.4	6.4	6.2	6.5	6.5	7.1	6.1	5.2	3.4	1.8	4.9
27	10	7.4	6.4	6.4	6.6	6.7	7.1	6.1	5.2	3.3	3.6	4.7
28	9.8	7.4	6.4	6.4	6.7	6.7	7.1	6.0	5.2	3.2	4.7	4.9
29	9.4	7.3	6.4	6.4	6.7	6.7	7.1	5.9	5.2	4.6	3.3	3.8
30	9.4	7.3	6.4	6.3	---	6.7	7.1	5.8	5.1	5.7	3.3	2.2
31	9.3	---	6.3	6.4	---	6.9	---	5.8	---	6.4	4.6	---
TOTAL	375.9	241.4	205.2	199.8	186.7	187.5	213.0	210.7	170.3	129.5	134.6	145.3
MEAN	12.1	8.05	6.62	6.45	6.44	6.05	7.10	6.80	5.68	4.18	4.34	4.84
MAX	14	9.4	7.4	7.1	6.7	6.9	7.1	7.1	6.3	6.4	6.0	7.4
MIN	9.3	7.3	5.4	6.2	6.1	3.4	7.1	5.8	5.1	1.9	1.8	2.2
AC-FT	746	479	407	396	370	372	422	418	338	257	267	288
CAL YR 1999	TOTAL 4509.5		MEAN 12.4		MAX 19		MIN 5.4		AC-FT 8940			
CAL YR 2000	TOTAL 2399.9		MEAN 6.56		MAX 14		MIN 1.8		AC-FT 4760			

e Estimated

RED RIVER BASIN

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07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK--Continued

DISCHARGE, CUBIC FEET PER SECOND, COMBINED FLOW, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	17	15	14	14	14	14	14	16	15	13	11
2	21	17	15	14	14	14	14	14	16	15	13	9.6
3	21	16	14	14	14	14	14	14	16	15	14	11
4	21	16	14	14	14	14	14	14	16	15	14	11
5	21	16	14	14	14	14	14	14	16	15	14	10
6	21	16	14	14	14	14	14	14	16	14	14	8.7
7	21	16	14	14	14	14	14	14	16	15	14	8.7
8	21	16	14	14	14	14	14	14	16	15	13	9.5
9	21	16	14	14	14	13	15	14	16	14	13	10
10	20	16	14	14	14	13	14	14	16	14	13	10
11	20	16	14	14	14	13	15	14	16	14	13	9.5
12	20	16	14	14	14	13	14	15	16	14	13	8.5
13	20	16	14	14	14	13	14	15	16	14	13	7.7
14	20	15	14	14	14	13	14	14	16	14	13	8.3
15	21	15	14	14	14	14	14	15	16	14	13	7.0
16	20	15	14	14	14	14	14	15	16	14	13	7.3
17	20	15	14	14	14	13	15	14	16	14	13	8.7
18	20	15	14	14	14	13	14	14	15	14	13	8.4
19	20	15	14	14	14	14	14	14	15	13	13	9.7
20	19	15	14	14	14	14	14	15	15	13	13	10
21	20	15	14	14	14	14	15	15	15	13	12	10
22	19	15	14	14	14	14	14	15	15	13	12	9.7
23	18	15	14	14	14	14	14	16	15	13	11	9.7
24	18	15	14	14	14	14	14	16	15	13	11	9.7
25	18	15	14	14	14	14	15	16	15	13	11	9.9
26	18	15	14	14	14	14	15	16	15	13	11	9.9
27	18	15	14	14	14	14	14	16	15	13	11	9.7
28	17	15	14	14	14	14	14	16	15	13	11	9.8
29	17	15	14	14	14	14	14	16	15	13	11	9.8
30	17	15	14	14	---	14	14	16	15	13	11	9.8
31	17	---	14	14	---	14	---	16	---	13	9.9	---
TOTAL	606	465	436	434	406	426	426	459	467	428	386.9	282.6
MEAN	19.5	15.5	14.1	14.0	14.0	13.7	14.2	14.8	15.6	13.8	12.5	9.42
MAX	21	17	15	14	14	14	15	16	16	15	14	11
MIN	17	15	14	14	14	13	14	14	15	13	9.9	7.0
AC-FT	1200	922	865	861	805	845	845	910	926	849	767	561
CAL YR 1999	TOTAL 7500		MEAN 20.5		MAX 27		MIN 14		AC-FT 14880			
CAL YR 2000	TOTAL 5222.5		MEAN 14.3		MAX 21		MIN 7.0		AC-FT 10360			

RED RIVER BASIN

07335300 MUDDY BOGGY CREEK NEAR UNGER, OK

LOCATION.--Lat 34°01'36", long 95°45'00", in SE 1/4 SE 1/4 sec.17, T.6 S., R.15 E., Choctaw County, Hydrologic Unit 11140103, at bridge on U.S. Highway 70, 3.5 mi west of Soper, 1.8 mi east of Unger and at mile 18.6.

DRAINAGE AREA.--2,273 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 392.72 ft above sea level. Prior to Sept. 19, 1985, gage 500 ft downstream at same datum.

REMARKS.--Records fair. Some regulation by Atoka and McGee Creek Reservoirs. U.S. Army Corp of Engineers' telemeter at site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	84	75	115	331	1120	957	1060	110	1420	59	e14
2	50	73	74	113	584	1010	644	4740	106	814	69	e14
3	51	70	104	126	716	961	802	5740	104	460	63	e14
4	52	67	261	200	671	906	890	5390	153	335	55	e14
5	48	65	694	201	558	853	850	3650	195	270	51	e13
6	48	64	548	247	465	566	725	2100	259	228	54	e13
7	45	63	274	470	399	432	652	1380	266	199	50	e14
8	43	62	181	428	371	366	593	1230	213	176	43	e15
9	46	60	150	450	541	327	481	930	169	155	39	e15
10	47	57	202	434	534	346	291	561	156	137	35	e15
11	46	56	202	404	478	444	438	444	233	123	32	e15
12	45	55	1920	563	294	419	809	383	2950	110	30	15
13	44	53	4440	558	229	348	1020	345	3470	97	28	15
14	42	52	2490	446	218	324	1880	325	2650	88	26	21
15	41	51	1070	257	203	528	1900	294	1080	83	24	27
16	41	52	819	203	191	638	1550	257	629	76	23	21
17	57	54	866	188	187	613	1390	229	502	70	21	17
18	54	54	1050	178	185	1130	1320	236	474	64	20	14
19	54	52	899	168	170	900	1050	1450	422	59	19	14
20	52	51	858	163	158	713	748	606	599	55	18	13
21	49	52	825	154	153	626	508	317	461	50	17	12
22	46	54	722	146	154	528	407	234	397	52	16	13
23	43	174	484	143	204	506	366	197	1400	54	16	13
24	40	437	249	135	1170	749	299	175	4450	57	16	15
25	38	189	173	128	2360	1210	267	156	4610	55	16	18
26	38	125	153	124	1760	1100	256	145	1890	48	16	35
27	37	114	143	140	1260	936	276	139	662	42	15	30
28	37	101	134	172	1410	829	308	139	484	40	e14	20
29	37	90	127	e190	1090	727	306	132	737	39	e14	16
30	47	82	123	227	---	1010	294	124	834	39	e14	15
31	69	---	120	e250	---	1210	---	114	---	41	e14	---
TOTAL	1440	2613	20430	7721	17044	22375	22277	33222	30665	5536	927	500
MEAN	46.5	87.1	659	249	588	722	743	1072	1022	179	29.9	16.7
MAX	69	437	4440	563	2360	1210	1900	5740	4610	1420	69	35
MIN	37	51	74	113	153	324	256	114	104	39	14	12
AC-FT	2860	5180	40520	15310	33810	44380	44190	65900	60820	10980	1840	992

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2000, BY WATER YEAR (WY)

MEAN	765	2024	2800	2073	2468	3797	3519	4715	2399	649	368	696
MAX	3713	9607	9832	9591	5911	10970	14270	21720	7293	4536	2517	2218
(WY)	1985	1997	1992	1998	1993	1990	1990	1990	1991	1992	1992	1996
MIN	34.0	84.0	76.3	177	195	677	480	92.3	49.8	57.8	28.7	16.7
(WY)	1989	1989	1990	1984	1996	1986	1987	1988	1988	1998	1988	2000

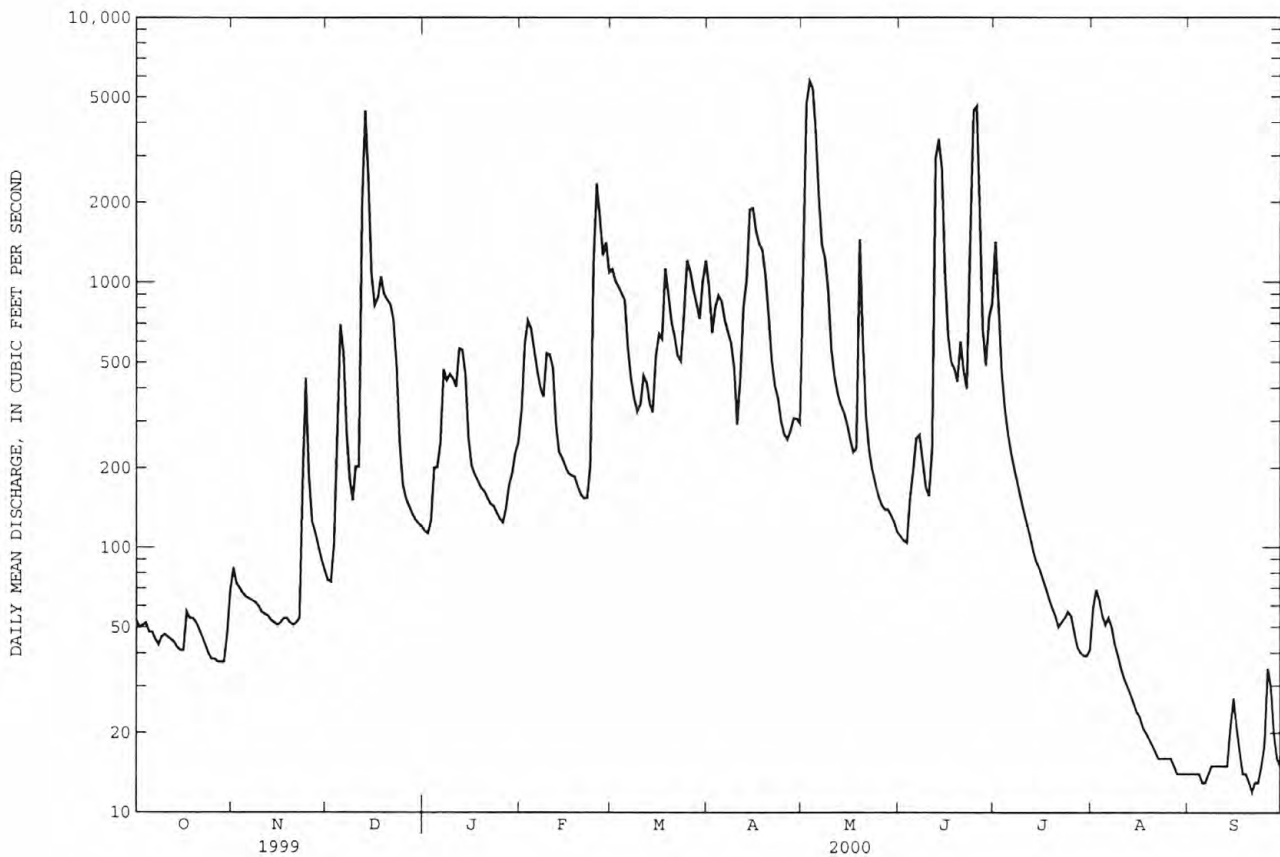
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RED RIVER BASIN

165

07335300 MUDDY BOGGY CREEK NEAR UNGER, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1983 - 2000	
ANNUAL TOTAL	478433		164750		2188	
ANNUAL MEAN	1311		450		4951	
HIGHEST ANNUAL MEAN					450	
LOWEST ANNUAL MEAN					76000	
HIGHEST DAILY MEAN	12000	May 14	5740	May 3	1.8	May 6 1990
LOWEST DAILY MEAN	27	Aug 25	12	Sep 21	2.6	Sep 8 1984
ANNUAL SEVEN-DAY MINIMUM	30	Aug 21	13	Sep 18	76700	Sep 3 1984
INSTANTANEOUS PEAK FLOW			5800	May 3	55.27	May 6 1990
INSTANTANEOUS PEAK STAGE			26.40	May 3	1585000	
ANNUAL RUNOFF (AC-FT)	949000		326800		6770	
10 PERCENT EXCEEDS	4210		1070		502	
50 PERCENT EXCEEDS	233		174		52	
90 PERCENT EXCEEDS	45		19			



RED RIVER BASIN

07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'30", long 95°30'06", in NW 1/4 sec.11, T.8 S., R.17 E., Choctaw County, OK, Hydrologic Unit 11140101, on right downstream bank of bridge on U.S. Highway 271 at Arthur City, 10.6 mi downstream from Muddy Boggy River, 26.0 mi upstream from Kiamichi River, and at mile 633.1.

DRAINAGE AREA.--44,531 mi², of which 5,936 mi² probably is 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 above sea level. From 1905-11 nonrecording gage at St. Louis-San Francisco Railway Co. bridge 200 ft upstream at same datum. July 1, 1936, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records poor Oct. 1 to June 30 due to lack of measurements and funding; records fair July 1 to Sept. 30. Flow regulated since October 1943 by Lake Texoma (station 07331500), 92.8 mi upstream from station. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1300	2030	e1200	2820	1300	2600	4880	3230	2910	5330	1370	4610
2	e1300	1200	1000	2820	1540	3310	7100	4940	3010	6480	2370	4700
3	e1200	e1100	1760	2260	3450	3740	7530	8630	2930	3830	5360	3920
4	e1100	1330	2250	1200	3330	5060	7980	12300	3980	2030	5540	2700
5	1060	1760	3620	1100	3090	5540	7360	11100	4400	2150	5590	e1380
6	e1000	1830	3690	2640	2920	3600	8490	9110	2550	3390	5660	1180
7	e900	1850	1940	2990	2350	2060	11000	8690	2440	2280	3440	2670
8	e850	1860	1470	3310	1200	1680	7090	9790	3320	5330	1370	3570
9	e1000	1200	2680	3300	1100	2170	2860	9480	3300	6840	1690	3570
10	e1200	e1000	3000	2730	2600	1300	1780	6110	3310	3910	4300	3110
11	e1300	1100	3200	1660	2740	1800	1350	7700	3420	1510	4490	2640
12	e1200	1690	6980	1400	2650	4280	7380	7420	5300	2920	4560	1380
13	e1000	1770	15000	3140	2510	3630	12200	6090	6380	4650	4590	1210
14	e900	1810	12300	3200	2010	2020	12800	4460	5610	4460	3270	2670
15	e850	1820	6900	3060	1200	1570	11700	3000	5200	4450	1280	3000
16	1710	1200	4710	2940	1100	1750	10400	1750	5170	4470	1680	3030
17	2200	e1000	4080	2340	2150	1800	5450	1800	4750	3370	4290	3060
18	2750	e940	4150	1200	2400	1970	3820	3530	4340	1180	4510	2640
19	1170	e880	4010	1100	2380	2480	3380	5840	4140	1730	4590	e1330
20	e1000	1610	3230	2550	2370	1930	3530	6330	3180	5280	4610	e1010
21	e1340	1700	2220	2750	1960	1590	3180	4960	2860	4670	3290	e892
22	1790	1770	2240	2800	1200	1200	2900	3450	4590	3020	1370	1730
23	1810	1490	3330	2790	1100	e1100	2760	1940	4420	4920	1490	1770
24	1820	1300	3190	2240	2580	e1000	2590	1890	7040	3480	4130	1890
25	1750	2270	3020	1200	5450	1850	1450	3510	8170	1230	4340	2080
26	e1200	2080	2950	1100	5820	2450	e1200	3620	6130	1930	4550	1480
27	e1100	1930	2330	2650	5970	2050	2010	3710	2790	5310	4630	e1210
28	1000	1300	1300	2980	4960	1740	2760	3910	2000	5500	3330	1460
29	1710	1400	1350	3050	3190	1400	3130	2960	3520	5600	1420	1730
30	1790	e1300	2620	3030	---	2140	3140	1550	3870	5610	1810	1930
31	1980	---	2800	2460	---	3260	---	1400	---	3450	4370	---
TOTAL	42280	45520	114520	74810	76620	74070	163200	164200	125030	120310	109290	69552
MEAN	1364	1517	3694	2413	2642	2389	5440	5297	4168	3881	3525	2318
MAX	2750	2270	15000	3310	5970	5540	12800	12300	8170	6840	5660	4700
MIN	850	880	1000	1100	1100	1000	1200	1400	2000	1180	1280	892
AC-FT	83860	90290	227200	148400	152000	146900	323700	325700	248000	238600	216800	138000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000, BY WATER YEAR (WY)

MEAN	6881	7339	7332	6925	8343	10690	11640	17010	18030	7810	4911	4807
MAX	40240	37170	32340	39930	24200	38610	55500	103900	83820	27700	34840	19010
(WY)	1982	1975	1992	1992	1946	1987	1990	1990	1957	1989	1950	1950
MIN	263	242	894	1126	1138	1118	1344	2837	2074	1586	1108	859
(WY)	1957	1957	1957	1964	1959	1967	1956	1980	1956	1956	1972	1988

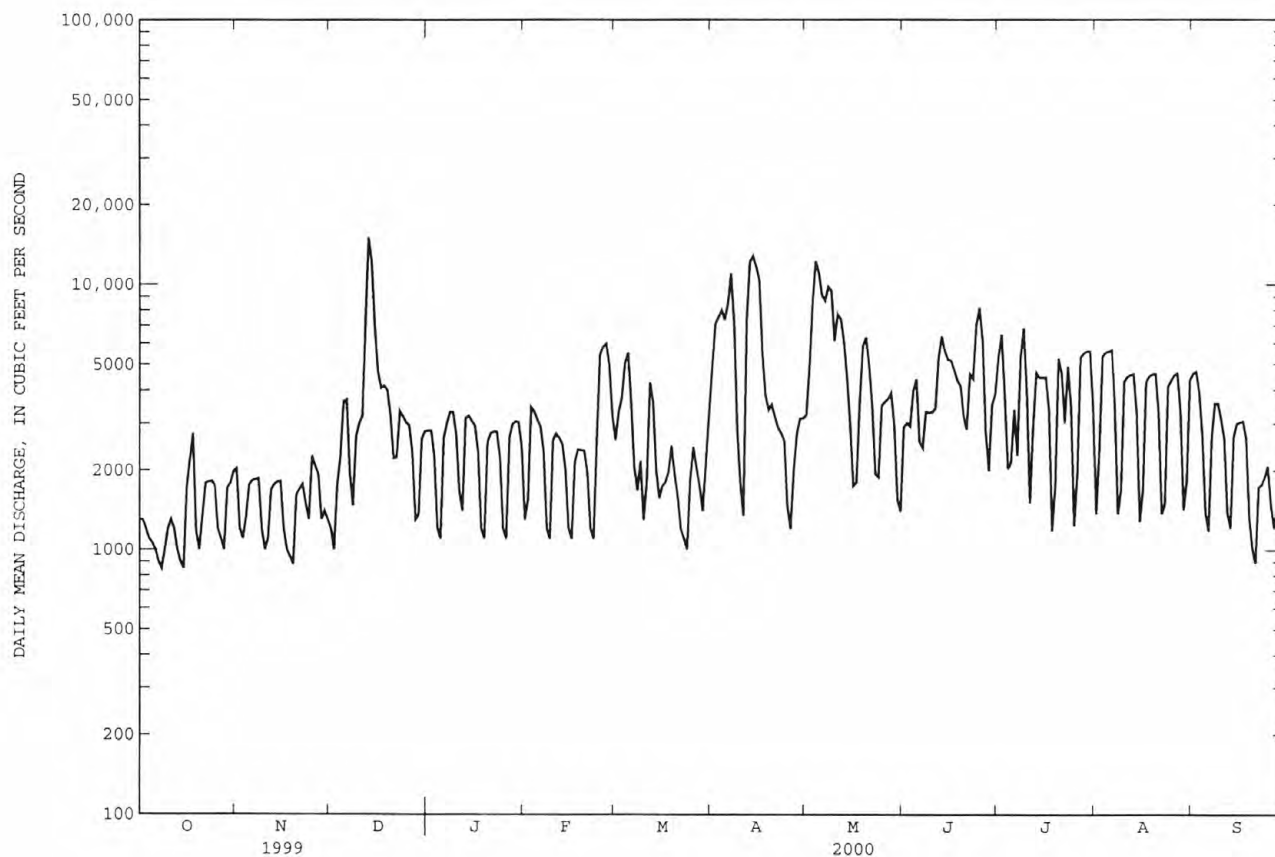
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RED RIVER BASIN

167

07335500 RED RIVER AT ARTHUR CITY, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000	
ANNUAL TOTAL	2060330		1179402		^a 9305	
ANNUAL MEAN	5645		3222		23290	
HIGHEST ANNUAL MEAN					2754	
LOWEST ANNUAL MEAN					269000	
HIGHEST DAILY MEAN	36500	May 12	15000	Dec 13	134	May 4 1990
LOWEST DAILY MEAN	850	Oct 8	850	Oct 8	134	^b Dec 11 1956
ANNUAL SEVEN-DAY MINIMUM	1020	Oct 3	1020	Oct 3	134	Dec 11 1956
INSTANTANEOUS PEAK FLOW			16800	Dec 13	^c 275000	May 4 1990
INSTANTANEOUS PEAK STAGE			9.42	Dec 13	^d 34.21	May 4 1990
ANNUAL RUNOFF (AC-FT)	4087000		2339000		6741000	
10 PERCENT EXCEEDS	12800		5830		24100	
50 PERCENT EXCEEDS	3380		2690		4280	
90 PERCENT EXCEEDS	1300		1200		1370	

^aPrior to regulation, water years 1906-11, 1937-43, 9,266 ft³/s.^bAlso occurred Dec. 12, 1956.^cMaximum discharge for period of record, 400,000 ft³/s, May 28, 1908.^dMaximum gage height for period of record, 43.2 ft, May 28, 1908.

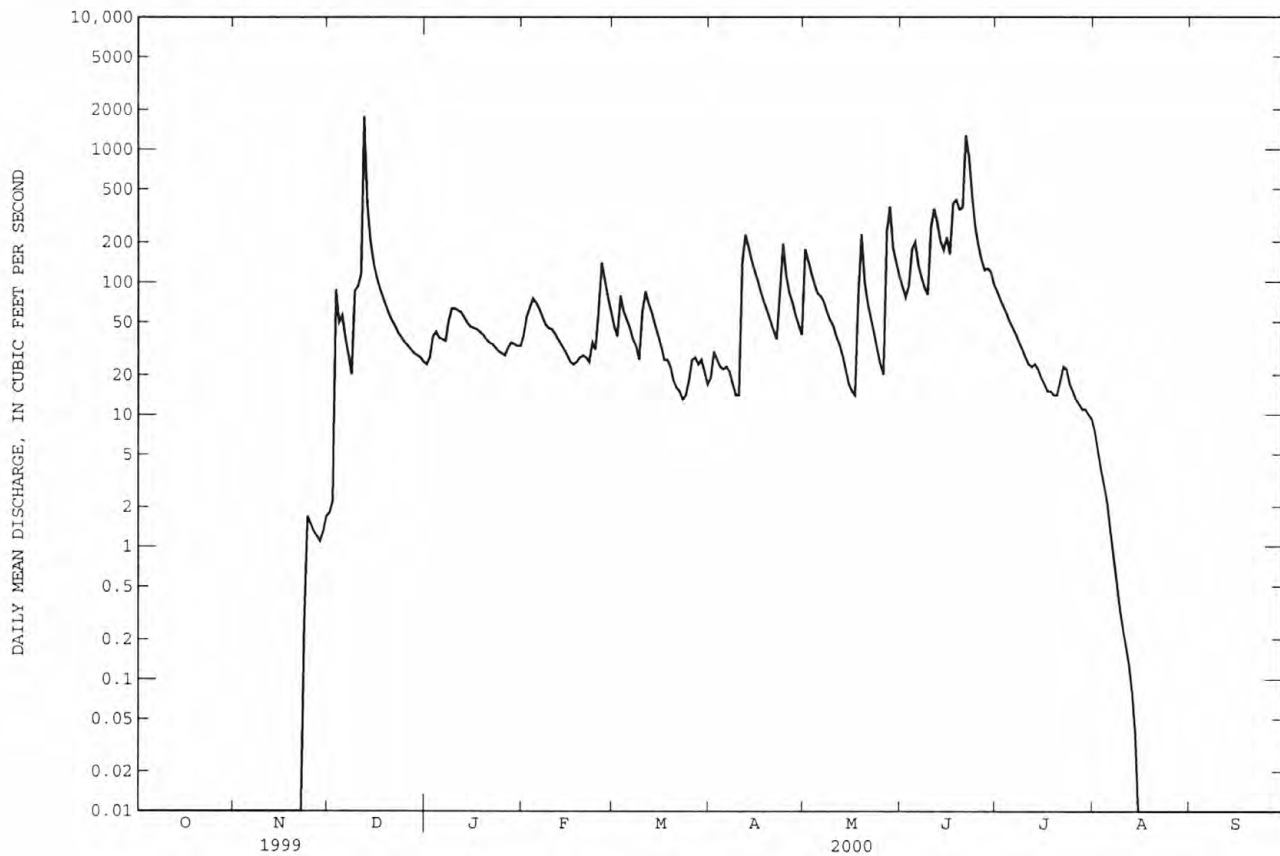
RED RIVER BASIN

169

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued
(Hydrologic benchmark station)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1966 - 2000	
ANNUAL TOTAL	30284.13		21339.65		85.9	
ANNUAL MEAN	83.0		58.3		152	
HIGHEST ANNUAL MEAN					33.9	
LOWEST ANNUAL MEAN					5960	
HIGHEST DAILY MEAN	1770	Dec 12	1770	Dec 12		May 13 1982
LOWEST DAILY MEAN	.00	Aug 14	.00	at times	.00	at times
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 14	.00	Oct 1	.00	Oct 16 1966
INSTANTANEOUS PEAK FLOW			4060	Jun 21	^a 27400	May 19 1990
INSTANTANEOUS PEAK STAGE			11.05	Jun 21	19.60	May 19 1990
ANNUAL RUNOFF (AC-FT)	60070		42330		62210	
ANNUAL RUNOFF (CFSM)	2.07		1.45		2.14	
ANNUAL RUNOFF (INCHES)	28.09		19.80		29.09	
10 PERCENT EXCEEDS	187		136		176	
50 PERCENT EXCEEDS	34		27		27	
90 PERCENT EXCEEDS	.00		.00		.11	

^aFrom rating curve extended above 9,000 ft³/s.



RED RIVER BASIN

07335790 KIAMICHI RIVER NEAR CLAYTON, OK

LOCATION.--Lat 34°34'29", 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 southeast of Clayton, and at mile 101.6.

DRAINAGE AREA.--708 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 520.00 ft above sea level.

REMARKS.--Records good. Some regulation since December 1982 by Sardis Lake (station 07335775), on Jackfork Creek 4.5 mi upstream. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.53	.05	9.3	40	101	403	319	4070	237	449	9.6	.00
2	.47	.07	7.5	38	258	338	701	3360	173	336	8.6	.00
3	.42	.05	16	72	309	382	917	2640	140	262	7.7	.00
4	.39	.06	23	345	302	449	1420	2090	733	208	6.7	e.00
5	.32	.08	309	215	279	373	1050	1190	4000	166	5.9	e.00
6	.28	.10	355	150	258	311	300	445	1280	134	5.5	e.00
7	.25	.14	179	117	233	273	259	511	670	109	4.9	e.00
8	.25	.19	114	131	208	264	217	447	392	91	4.3	e.00
9	.22	.22	91	289	186	240	182	317	267	78	3.7	e.00
10	.19	.26	91	261	171	227	159	257	243	66	3.5	e.00
11	.15	.29	269	222	154	509	482	216	676	57	3.7	.00
12	.11	.28	2930	189	140	515	2790	178	1030	49	3.9	.00
13	.09	.29	4570	164	130	398	1960	161	741	41	3.5	.00
14	.07	.31	1230	138	115	345	2220	131	578	38	2.6	.00
15	.06	.30	645	119	105	301	1940	100	1920	35	1.9	.00
16	.05	.28	415	108	95	268	1800	81	1090	30	1.3	.00
17	.04	.26	305	99	92	237	1340	69	829	26	.98	.00
18	.02	.24	253	92	292	214	411	83	3020	23	.80	.00
19	.03	.24	210	86	576	194	341	2380	2950	21	.56	.00
20	.02	.20	171	77	407	184	283	1450	4930	18	.42	.00
21	.00	.18	136	69	313	165	233	568	3910	20	.34	.00
22	.01	.20	110	65	263	144	192	899	10900	23	.26	.00
23	.00	1.8	95	60	254	134	237	1280	6180	24	.21	.00
24	.00	5.6	83	54	263	132	927	196	3080	25	.14	2.7
25	.00	6.3	73	50	264	e150	566	139	2440	25	.10	4.4
26	.00	4.6	67	47	1230	e396	378	112	2140	22	.05	2.2
27	.00	19	60	52	1150	e2440	484	142	1390	19	.02	.83
28	.00	19	54	56	678	1750	856	2160	680	16	.00	.42
29	.00	15	50	60	500	2040	1560	1250	1240	16	.00	.24
30	.00	11	47	63	---	1490	1500	576	710	13	.00	.13
31	.02	---	43	68	---	747	---	346	---	11	.00	---
TOTAL	3.99	86.59	13010.8	3596	9326	16013	26024	27844	58569	2451	81.18	10.92
MEAN	.13	2.89	420	116	322	517	867	898	1952	79.1	2.62	.36
MAX	.53	19	4570	345	1230	2440	2790	4070	10900	449	9.6	4.4
MIN	.00	.05	7.5	38	92	132	159	69	140	11	.00	.00
AC-FT	7.9	172	25810	7130	18500	31760	51620	55230	116200	4860	161	22

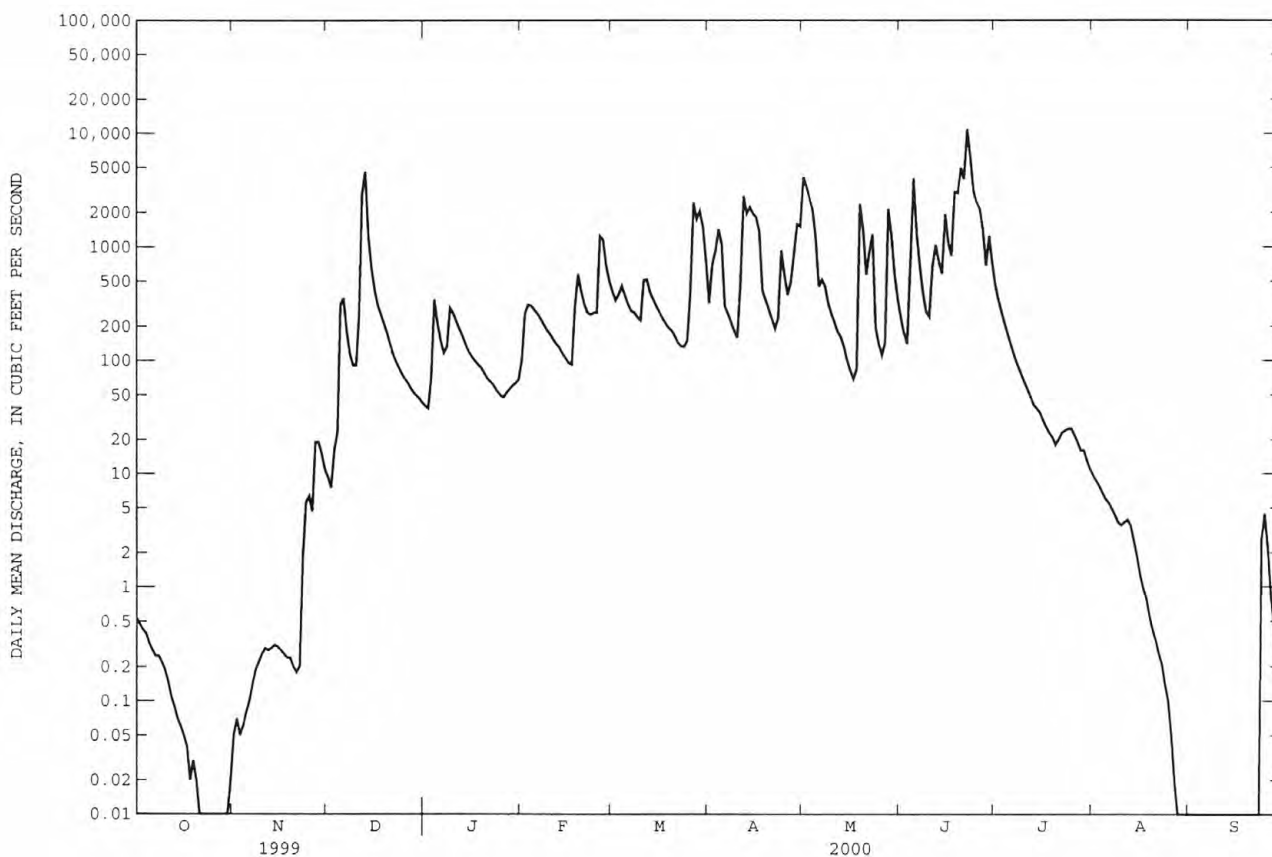
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2000, BY WATER YEAR (WY)

	MEAN	744	1378	1553	1254	1462	1502	1542	1977	980	247	188	289
MAX	4628	4837	3376	4569	4196	3184	2935	7658	2288	984	1268	2735	
(WY)	1985	1985	1988	1998	1990	1990	1991	1990	1986	1992	1992	1992	
MIN	.13	2.89	24.5	88.3	116	517	226	53.7	7.33	3.52	.29	.36	
(WY)	2000	2000	1990	1986	1996	2000	1982	1988	1988	1998	1998	2000	

e Estimated

07335790 KIAMICHI RIVER NEAR CLAYTON, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1982 - 2000
ANNUAL TOTAL	292146.73	157016.48	
ANNUAL MEAN	800	429	1091
HIGHEST ANNUAL MEAN			1967
LOWEST ANNUAL MEAN			429
HIGHEST DAILY MEAN	8070 Jul 1	10900 Jun 22	36800 May 4 1990
LOWEST DAILY MEAN	.00 Oct 21	.00 at times	.00 at times
ANNUAL SEVEN-DAY MINIMUM	.00 Oct 23	.00 Oct 23	.00 Oct 3 1983
INSTANTANEOUS PEAK FLOW		11800 Jun 22	40200 May 4 1990
INSTANTANEOUS PEAK STAGE		12.88 Jun 22	22.23 May 4 1990
ANNUAL RUNOFF (AC-FT)	579500	311400	790200
10 PERCENT EXCEEDS	2590	1260	3140
50 PERCENT EXCEEDS	182	97	264
90 PERCENT EXCEEDS	.24	.01	4.3



RED RIVER BASIN

07336200 KIAMICHI RIVER NEAR ANTLERS, OK

LOCATION.--Lat 34°14'55", long 95°36'18", in SW $\frac{1}{4}$ sec.35, T.3 S., R.16 E., Pushmataha County, Hydrologic Unit 11140105, on right bank, 50 ft downstream from bridge on U.S. Highway 271 and State Highway 2, 2.0 mi northeast of Antlers, 7.7 mi downstream from Tenmile Creek, 5.4 mi upstream from Cedar Creek and at mile 59.6.

DRAINAGE AREA.--1,138 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 419.82 ft above sea level.

REMARKS.--No estimated daily discharge. Records good. Some regulation since December 1982 by Sardis Lake (station 07335775), located on Jackfork Creek, 42.0 miles upstream from station. Small diversion for municipal water supply for city of Antlers upstream from station. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	3.0	15	86	309	707	1060	6570	443	643	18	.00
2	3.6	2.6	22	79	735	570	1570	7360	334	444	16	.00
3	3.3	2.7	32	118	834	518	2040	4360	272	340	14	.00
4	3.1	2.9	79	113	780	608	1800	3330	611	274	12	.00
5	2.9	3.1	759	370	653	650	2040	2430	2850	227	10	.00
6	2.7	3.2	521	338	539	538	1100	2180	3000	191	8.4	.00
7	2.5	3.1	512	246	460	446	572	1430	1120	159	7.2	.00
8	2.2	3.1	304	327	390	402	453	1080	717	134	6.2	.00
9	2.3	2.9	328	430	335	387	359	819	507	114	5.7	.00
10	2.3	2.7	545	576	296	405	301	662	427	97	5.0	.00
11	2.2	2.6	358	483	268	587	392	575	518	83	4.8	.00
12	2.1	2.5	4910	379	243	794	3310	480	1130	72	5.1	.00
13	2.0	2.4	8590	307	219	708	4290	402	1080	68	4.5	.00
14	1.8	2.2	3990	260	203	587	3570	359	795	56	3.8	.00
15	1.7	2.1	1580	225	186	616	2920	299	1250	48	3.0	.00
16	1.6	2.0	966	200	170	506	2490	245	1970	42	2.5	.00
17	2.9	1.8	671	183	162	431	2320	207	1050	37	2.1	.00
18	3.3	1.7	513	167	153	413	1410	208	1760	33	1.6	.00
19	3.7	1.6	425	155	237	418	709	863	2980	29	1.7	.00
20	3.0	1.4	347	142	605	363	565	3590	5720	25	1.7	.00
21	2.6	1.3	281	132	452	319	451	1240	4280	22	1.5	.00
22	2.2	1.4	236	121	351	283	359	732	8260	29	1.3	.00
23	1.8	226	203	113	347	256	301	1280	11000	36	1.0	.00
24	1.6	200	177	104	691	233	507	1120	4750	36	.83	.02
25	1.5	106	155	96	637	272	993	375	2870	33	.63	.32
26	1.5	63	138	91	1540	655	680	268	2240	28	.50	.62
27	1.4	41	125	102	2280	3340	523	232	1940	24	.28	.72
28	1.3	29	115	113	1390	2630	1160	483	989	23	.05	.81
29	1.3	21	106	119	930	3120	1500	2360	790	23	.00	1.0
30	2.0	17	100	129	---	2900	1800	1050	1060	22	.00	1.2
31	3.1	---	93	160	---	1780	---	633	---	20	.00	---
TOTAL	73.6	755.3	27196	6464	16395	26442	41545	47222	66713	3412	139.39	4.69
MEAN	2.37	25.2	877	209	565	853	1385	1523	2224	110	4.50	.16
MAX	4.1	226	8590	576	2280	3340	4290	7360	11000	643	18	1.2
MIN	1.3	1.3	15	79	153	233	301	207	272	20	.00	.00
AC-FT	146	1500	53940	12820	32520	52450	82400	93660	132300	6770	276	9.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2000, BY WATER YEAR (WY)

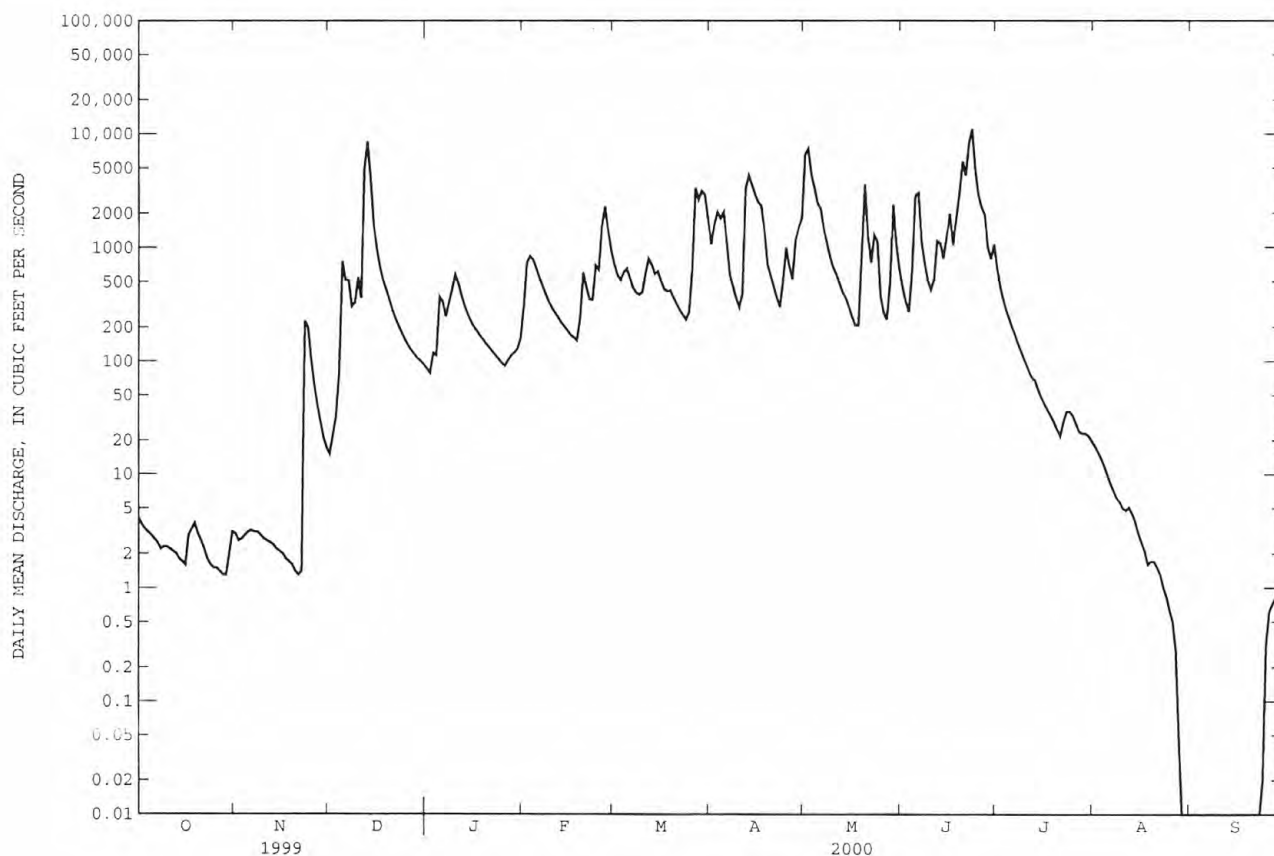
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
MEAN	1081	2301	2423	1931	2229	2647	2692	3063	1481	419	272	422
MAX	7763	8614	5288	7159	6316	5601	6400	12700	3784	1704	2017	2960
(WY)	1985	1997	1993	1998	1990	1990	1990	1990	1992	1992	1992	1992
MIN	2.37	5.19	7.84	154	154	853	456	77.9	21.5	10.1	.000	.16
(WY)	2000	1990	1990	1986	1996	2000	1987	1988	1988	1998	1998	2000

RED RIVER BASIN

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07336200 KIAMICHI RIVER NEAR ANTLERS, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR	FOR 2000 WATER YEAR	WATER YEARS 1984 - 2000
ANNUAL TOTAL	428124.81	236361.98	^a 1743
ANNUAL MEAN	1173	646	3184
HIGHEST ANNUAL MEAN			646
LOWEST ANNUAL MEAN			1990
HIGHEST DAILY MEAN	11900 May 12	11000 Jun 23	57000 May 4 1990
LOWEST DAILY MEAN	.35 Sep 7	.00 at times	^b .00 at times
ANNUAL SEVEN-DAY MINIMUM	.62 Sep 2	.00 Aug 29	.00 Jul 31 1998
INSTANTANEOUS PEAK FLOW		12500 Jun 23	62300 May 3 1990
INSTANTANEOUS PEAK STAGE		17.18 Jun 23	42.65 May 3 1990
ANNUAL RUNOFF (AC-FT)	849200	468800	1263000
10 PERCENT EXCEEDS	3870	1840	4790
50 PERCENT EXCEEDS	294	202	423
90 PERCENT EXCEEDS	2.2	.95	9.4

^aPrior to regulation by Sardis Lake, 1973-82, 1,484 ft³/s.^bPrior to regulation by Sardis Lake, no flow many years.

LOCATION.--Lat 34°05'51", long 94°54'07", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.28, T.5 S., R.23 E., McCurtain County, Hydrologic Unit 11140107, on right downstream end of bridge on State Highways 3 and 7, 2.0 mi north of Glover, 11.0 mi northwest of Broken Bow, and at mile 9.2.

PERIOD OF RECORD.--October 1961 to current year. Prior to October 1990, published as Glover Creek near Glover.

REMARKS.--Records good. U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 12	1230	10,100	10.20	Jun 21	2300	9,680	9.99
Jun 4	1900	9,940	10.12				

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	6.0	2.4	33	80	264	192	1740	181	130	e6.7	1.0
2	.87	6.3	2.6	34	228	214	186	1510	136	101	6.8	1.2
3	.61	4.5	3.3	35	381	423	236	788	174	82	6.1	1.4
4	.56	3.6	4.0	33	491	502	223	949	3520	68	5.6	1.2
5	.54	3.2	4.6	32	449	372	192	1590	3560	54	5.3	1.2
6	.42	2.8	4.1	35	363	294	170	2150	1210	44	4.6	1.0
7	.29	2.8	26	37	296	241	151	975	648	36	3.9	.78
8	.40	2.7	30	103	244	203	133	624	412	30	3.4	.64
9	.26	2.5	23	290	200	173	113	429	306	25	3.1	.80
10	.26	2.3	18	363	170	167	100	320	660	22	3.0	.79
11	.28	2.3	76	274	146	695	104	251	1930	19	2.8	.62
12	.16	2.2	4890	209	127	648	734	205	1180	17	3.0	.42
13	.23	2.4	2300	165	111	457	670	231	734	23	2.8	.14
14	.18	2.7	878	130	97	358	528	241	879	24	2.7	e.14
15	.07	3.2	523	107	85	285	412	164	4080	15	2.5	e.13
16	.02	3.1	352	92	75	238	338	127	1580	e13	2.4	e.12
17	.43	3.5	255	82	67	202	269	108	3260	e11	2.2	e.11
18	.65	3.4	197	75	120	176	217	98	2450	e10	2.1	e.10
19	1.4	3.5	159	69	289	163	181	1430	1170	8.8	2.1	e.09
20	1.7	3.7	131	61	218	148	155	757	2220	8.1	2.0	e.08
21	1.9	3.7	109	54	169	135	130	417	2700	9.1	1.9	e.07
22	1.9	3.6	90	49	138	121	109	272	4820	10	1.9	e.07
23	2.4	7.7	76	46	132	110	103	221	2350	11	1.7	e.06
24	2.3	5.8	68	41	143	107	103	165	1090	e10	1.6	.97
25	2.1	4.6	60	38	218	306	95	124	654	8.6	1.3	.87
26	2.1	3.5	54	36	1760	800	85	108	439	7.6	1.3	.85
27	2.1	2.8	50	43	837	624	93	93	327	7.0	1.2	.81
28	2.1	2.4	45	48	471	459	139	1290	247	6.9	1.2	1.6
29	2.1	2.3	42	50	342	351	171	743	191	e6.8	1.0	2.3
30	2.9	2.4	38	49	---	278	146	408	176	e6.9	1.1	2.1
31	5.0	---	35	51	---	226	---	259	---	e6.8	1.0	---
TOTAL	37.33	105.5	10546.0	2764	8447	9740	6478	18787	43284	831.6	88.3	21.66
MEAN	1.20	3.52	340	89.2	291	314	216	606	1443	26.8	2.85	.72
MAX	5.0	7.7	4890	363	1760	800	734	2150	4820	130	6.8	2.3
MIN	.02	2.2	2.4	32	67	107	85	93	136	6.8	1.0	.06
AC-FT	74	209	20920	5480	16750	19320	12850	37260	85850	1650	175	43
CFSM	.00	.01	1.08	.28	.92	1.00	.69	1.92	4.58	.09	.01	.00
IN.	.00	.01	1.25	.33	1.00	1.15	.77	2.22	5.11	.10	.01	.00

MEAN	396	570	730	504	668	826	704	851	363	92.5	70.0	215
MAX	2427	2615	3376	1556	1943	2506	2753	3503	1514	534	461	2690
(WY)	1985	1997	1972	1998	1997	1973	1991	1990	1973	1994	1992	1974
MIN	.000	.33	2.80	1.96	48.7	96.9	125	40.4	4.59	1.06	.000	.000
(WY)	1979	1964	1964	1964	1996	1980	1987	1988	1972	1966	1972	1972

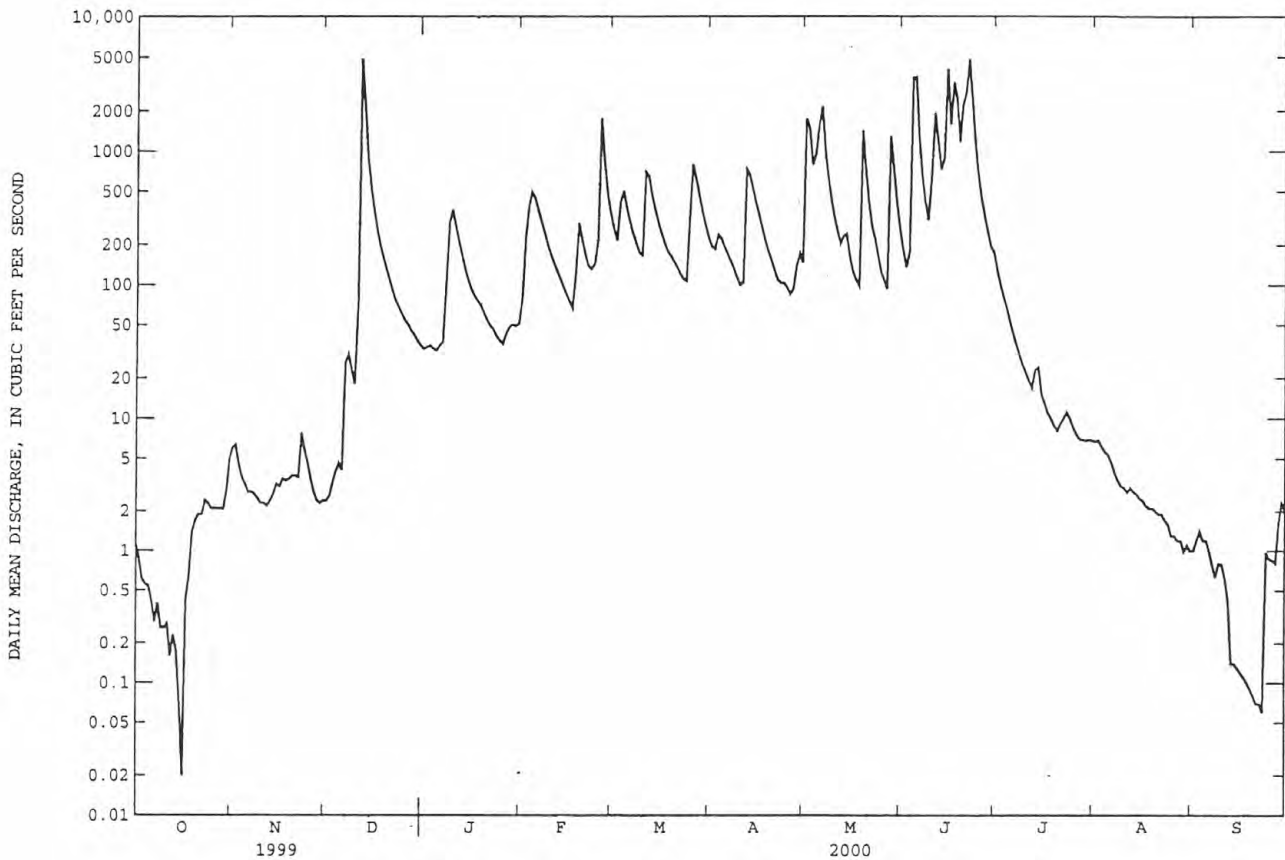
e Estimated

RED RIVER BASIN

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07337900 GLOVER RIVER NEAR GLOVER, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	142269.69		101130.39		498	
ANNUAL MEAN	390		276		979	
HIGHEST ANNUAL MEAN					169	
LOWEST ANNUAL MEAN					53100	
HIGHEST DAILY MEAN	12000	May 12	4890	Dec 12		Dec 10 1971
LOWEST DAILY MEAN	.02	Oct 16	.02	Oct 16	.00	Jul 19 1966
ANNUAL SEVEN-DAY MINIMUM	.17	Oct 10	.08	Sep 17	.00	Aug 4 1970
INSTANTANEOUS PEAK FLOW			10100	Dec 12	98600	Dec 10 1971
INSTANTANEOUS PEAK STAGE			10.20	Dec 12	29.72	Dec 10 1971
ANNUAL RUNOFF (AC-FT)	282200		200600		361000	
ANNUAL RUNOFF (CFSM)	1.24		.88		1.58	
ANNUAL RUNOFF (INCHES)	16.80		11.94		21.49	
10 PERCENT EXCEEDS	891		678		1060	
50 PERCENT EXCEEDS	101		57		125	
90 PERCENT EXCEEDS	1.9		.87		3.5	



LOCATION.--Lat 33°56'28", long 94°45'30", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ 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 northeast of Idabel, and at mile 103.4.

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 above sea level. Oct. 1, 1946, to Oct. 26, 1950, and for stages below 9.0 ft Oct. 26, 1950, to Oct. 10, 1951, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharge. Records poor Oct. 1 to June 30 due to lack of measurements and funding; records fair July 1 to Sept. 30. Flow regulated since June 1969 by Pine Creek Lake (station 07337300), 41.9 mi upstream. Small diversions for municipal use by City of Idabel at station and by Weyerhaeuser 41 miles above station. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD. --Flood in February 1938 reached a stage of 39.7 ft, from information provided by local resident, discharge, 86,000 ft³/s.

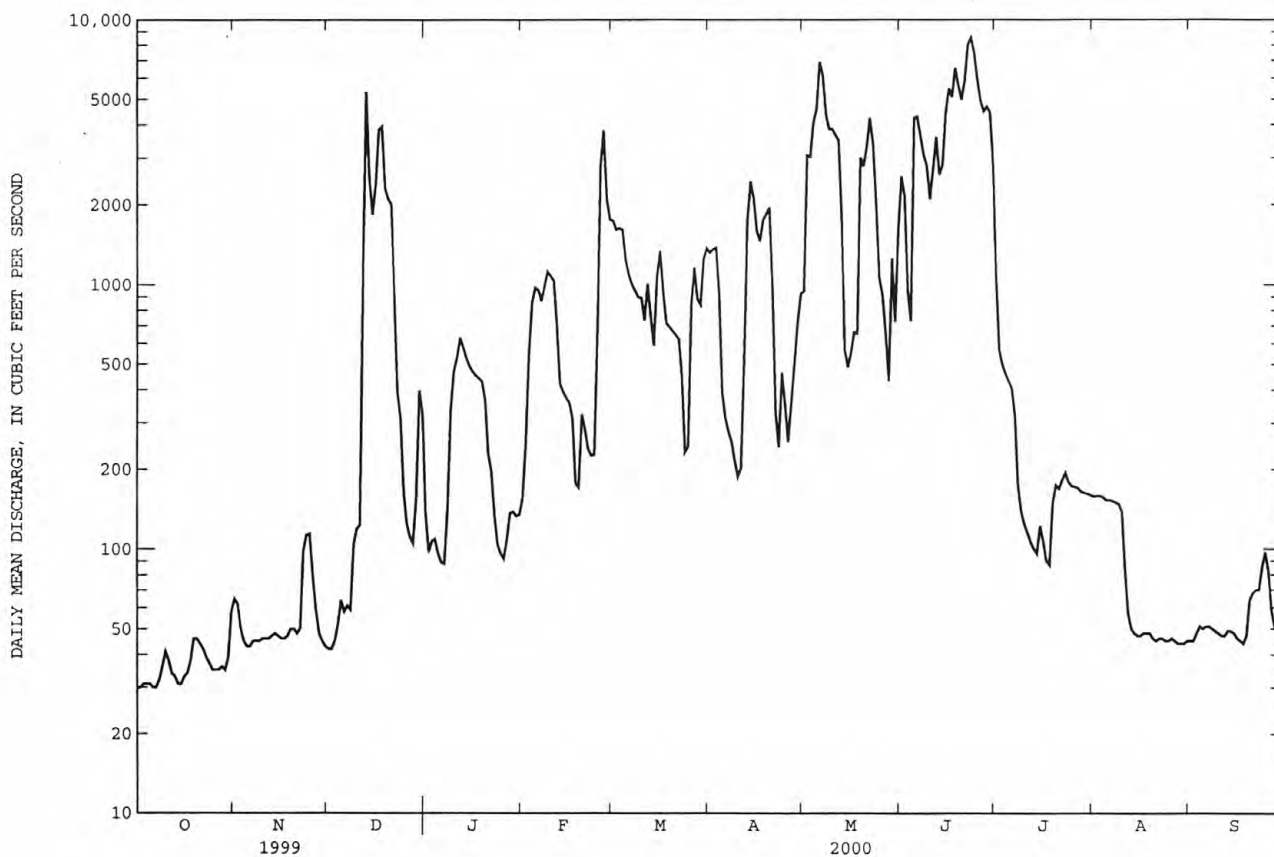
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	65	42	137	156	1740	1320	945	2560	1090	158	45
2	30	62	42	97	250	1610	1360	3060	2150	569	159	45
3	31	50	45	107	545	1630	1380	3030	946	499	159	48
4	31	45	52	109	859	1610	914	4070	729	461	157	51
5	31	43	64	96	974	1240	391	4580	4230	432	153	50
6	30	43	58	89	954	1090	314	6910	4290	406	153	51
7	30	45	61	88	868	1000	278	6150	3640	320	152	51
8	32	45	59	140	981	948	255	4380	3090	175	150	50
9	36	45	104	335	1120	897	216	3860	2800	139	148	49
10	41	46	119	470	1080	890	188	3850	2100	124	138	48
11	38	46	123	529	1040	734	202	3660	2720	115	84	47
12	34	46	1210	632	701	1010	534	3490	3590	106	57	47
13	33	47	5330	579	422	758	1760	1730	2600	100	50	49
14	31	48	2480	528	393	589	2450	570	2820	96	48	49
15	31	47	1840	492	373	1070	2110	488	4400	122	47	48
16	33	46	2380	470	357	1340	1590	553	5490	107	47	46
17	34	46	3840	454	311	934	1460	661	5090	90	48	45
18	38	47	3940	442	177	714	1750	655	6550	87	48	44
19	46	50	2300	431	171	693	1840	3010	5640	149	48	47
20	46	50	2100	367	323	669	1950	2790	4960	174	46	64
21	44	48	2010	230	284	646	950	3280	5840	169	45	68
22	42	50	884	197	239	624	325	4240	8060	183	46	70
23	39	98	394	135	226	447	243	3420	8550	194	46	70
24	37	113	311	104	227	233	467	1980	7450	179	45	85
25	35	114	168	96	684	244	352	1060	5950	173	45	97
26	35	80	125	92	2800	838	254	910	4930	172	46	83
27	35	59	111	108	3800	1160	356	651	4500	170	45	59
28	36	48	105	137	2090	883	503	432	4670	165	44	51
29	35	45	155	138	1760	842	721	1260	4460	163	44	46
30	39	43	398	133	---	1250	924	726	2810	162	44	44
31	58	---	325	135	---	1370	---	1600	---	160	45	---
TOTAL	1121	1660	31175	8097	24165	29703	27357	78001	127615	7251	2545	1647
MEAN	36.2	55.3	1006	261	833	958	912	2516	4254	234	82.1	54.9
MAX	58	114	5330	632	3800	1740	2450	6910	8550	1090	159	97
MIN	30	43	42	88	156	233	188	432	729	87	44	44
AC-FT	2220	3290	61840	16060	47930	58920	54260	154700	253100	14380	5050	3270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2000, BY WATER YEAR (WY)

MEAN	1172	2299	2876	2088	2479	2949	2343	3092	1933	443	304	700
MAX	4453	8381	10320	7746	5513	7730	6187	8976	6044	2058	2299	6992
(WY)	1985	1997	1972	1998	1997	1973	1973	1990	1973	1992	1992	1974
MIN	26.4	38.2	37.3	157	176	209	380	143	46.9	31.0	18.5	25.0
(WY)	1979	1990	1990	1981	1976	1996	1987	1988	1972	1977	1972	1972

07338500 LITTLE RIVER BELOW LUKFATA CREEK NEAR IDABEL, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1971 - 2000	
ANNUAL TOTAL	483949		340337		^a 1886	
ANNUAL MEAN	1326		930		3424	
HIGHEST ANNUAL MEAN					676	
LOWEST ANNUAL MEAN					66800	
HIGHEST DAILY MEAN	8780	May 13	8550	Jun 23	66800	Dec 11 1971
LOWEST DAILY MEAN	30	Sep 2	30	at times	^b 7.8	Aug 14 1976
ANNUAL SEVEN-DAY MINIMUM	30	Oct 1	30	Oct 1	11	Oct 15 1972
INSTANTANEOUS PEAK FLOW			8750	Jun 23	103000	Dec 10 1971
INSTANTANEOUS PEAK STAGE			21.76	Jun 23	39.39	Dec 10 1971
ANNUAL RUNOFF (AC-FT)	959900		675100		1367000	
10 PERCENT EXCEEDS	4350		3070		5960	
50 PERCENT EXCEEDS	509		196		594	
90 PERCENT EXCEEDS	34		44		46	

^aPrior to regulation, water years 1947-68, 1,622 ft³/s.^bMinimum daily discharge for period of record, 0.4 ft³/s, Sept. 15-16, 21 to Oct. 1, 1956.

RED RIVER BASIN

07338750 MOUNTAIN FORK AT SMITHVILLE, OK

LOCATION.--Lat 34°27'44", long 94°38'06", in SE 1/4 SW 1/4 sec.13, T.1 S., R.25 E., McCurtain County, Hydrologic Unit 11140108, on right downstream abutment of bridge on Highway 4, .5 mi east of Smithville, 0.6 mi downstream from Rock Creek, 3.5 mi upstream from Big Eagle Creek, and at mi 55.6.

DRAINAGE AREA.--320 mi².

PERIOD OF RECORD.--October 1991 to current year.

REVISED RECORDS.--WDR OK-99-2: 1994(M); 1995(M).

GAGE.--Water-stage recorder. Datum of gage is 664.70 ft above sea level.

REMARKS.--Records poor Oct. 1 to June 30 due to lack of measurements and funding; records good July 1 to Sept. 30. U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 12	1130	15,700	15.51	Jun 21	2130	26,300	20.38
May 27	2300	11,900	13.98				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	25	40	107	e147	633	416	181	e456	294	13	2.3
2	4.2	25	38	106	e3290	505	449	e253	e745	251	13	2.4
3	3.9	23	256	138	e2360	904	427	e224	1090	222	13	2.4
4	3.6	25	450	184	e1580	790	354	e224	1840	195	12	2.5
5	3.2	28	554	177	e1050	633	309	e166	2980	172	11	2.7
6	2.7	25	357	155	e780	530	284	e195	1230	150	11	2.8
7	2.4	23	243	147	599	444	262	e137	739	133	10	3.0
8	6.4	22	196	257	331	394	236	137	524	119	9.3	3.1
9	10	19	266	505	296	353	212	e166	412	105	6.8	3.1
10	10	17	971	452	273	424	198	e152	1220	110	6.4	3.1
11	10	16	584	377	254	883	386	e166	2140	96	6.2	3.1
12	7.9	15	10800	319	232	702	1490	e253	2140	79	5.9	3.1
13	6.2	14	3420	281	213	574	1030	e239	1220	68	6.0	3.1
14	5.8	13	1420	240	199	477	759	e369	800	60	6.1	3.1
15	6.0	14	845	213	184	408	609	e513	1380	53	5.2	3.0
16	6.4	15	580	203	173	360	500	e976	906	45	4.5	2.8
17	6.6	14	446	199	167	320	410	e2680	1320	39	3.9	2.8
18	6.5	15	365	193	168	335	340	4010	2100	33	3.3	2.8
19	6.6	22	308	181	188	339	295	3060	1470	29	3.3	2.8
20	6.1	28	267	169	180	298	260	1030	1720	24	3.1	2.8
21	5.6	31	232	157	167	269	227	571	9930	25	3.1	2.8
22	5.1	36	207	146	161	252	202	e398	9660	31	3.1	2.8
23	4.9	54	188	141	171	237	191	253	3500	32	3.0	2.8
24	8.2	56	174	134	200	242	410	e166	1680	30	2.9	4.7
25	11	62	163	126	248	3070	373	e499	1030	27	2.8	5.2
26	11	72	149	106	3510	2270	279	e991	703	25	2.8	6.9
27	11	61	140	e120	2230	1550	249	2570	519	26	2.6	31
28	11	53	132	e99	1220	1060	228	6060	434	20	2.6	22
29	11	47	125	e85	832	798	202	1610	499	17	2.4	15
30	14	42	119	e92	---	620	186	340	363	17	2.4	12
31	26	---	112	e92	---	489	---	239	---	15	2.2	---
TOTAL	238.3	912	24147	5901	21403	21163	11773	28828	54750	2542	182.9	162.0
MEAN	7.69	30.4	779	190	738	683	392	930	1825	82.0	5.90	5.40
MAX	26	72	10800	505	3510	3070	1490	6060	9930	294	13	31
MIN	2.4	13	38	85	147	237	186	137	363	15	2.2	2.3
AC-FT	473	1810	47900	11700	42450	41980	23350	57180	108600	5040	363	321

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2000, BY WATER YEAR (WY)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	632	867	1130	825	690	783	627	723	543
MAX	1936	1814	1866	1417	1122	1268	1128	1397	1825
(WY)	1999	1997	1992	1998	1997	1998	1999	1993	2000
MIN	7.69	8.97	115	190	129	271	235	97.1	96.2
(WY)	2000	1996	1996	2000	1996	1996	1992	1997	1994

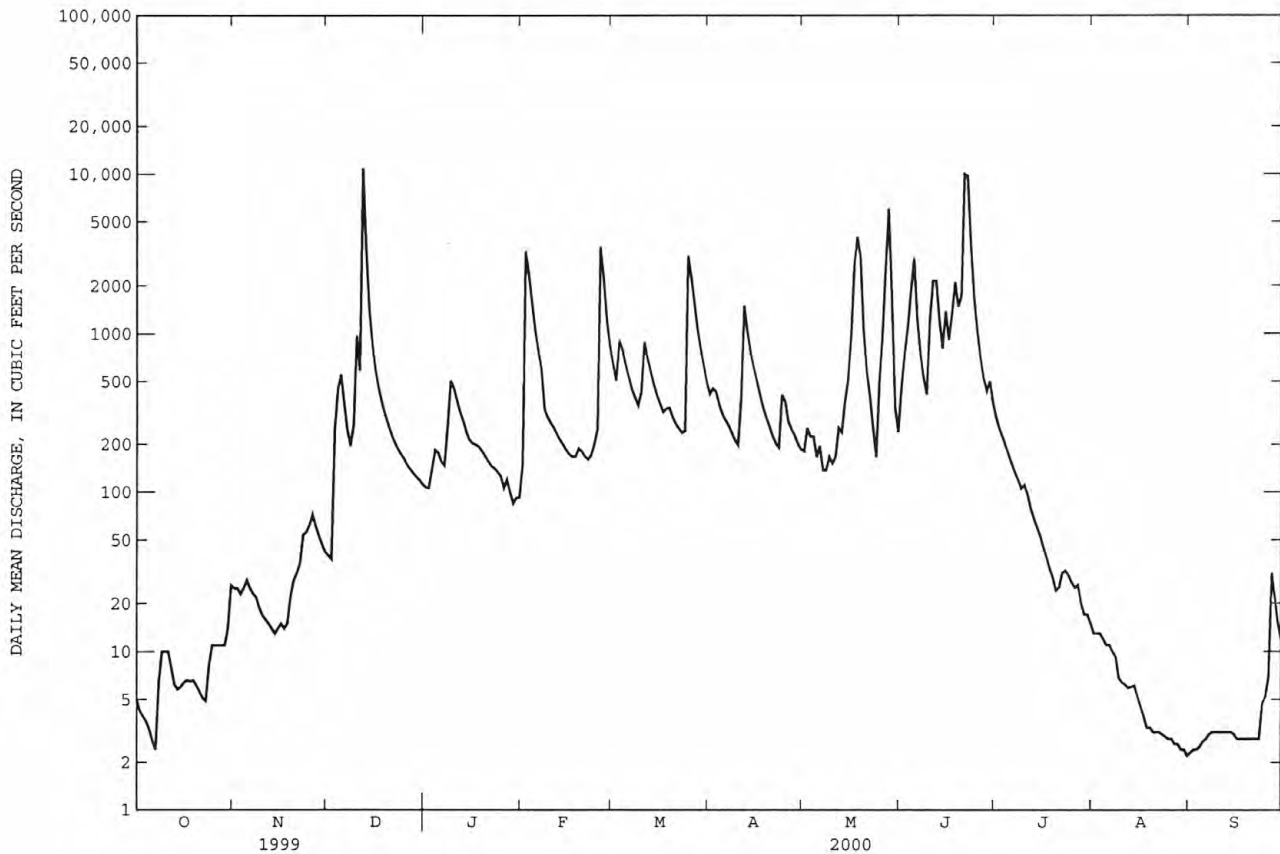
e Estimated

RED RIVER BASIN

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07338750 MOUNTAIN FORK AT SMITHVILLE, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1992 - 2000	
ANNUAL TOTAL	221072.2		172002.2		607	
ANNUAL MEAN	606		470		821	
HIGHEST ANNUAL MEAN					214	
LOWEST ANNUAL MEAN					1996	
HIGHEST DAILY MEAN	18600	Jun 26	10800	Dec 12	33700	Oct 6 1998
LOWEST DAILY MEAN	2.4	Oct 7	2.2	Aug 31	.12	Aug 31 1995
ANNUAL SEVEN-DAY MINIMUM	3.6	Oct 1	2.4	Aug 29	.70	Aug 29 1995
INSTANTANEOUS PEAK FLOW			26300	Jun 21	46500	Oct 6 1998
INSTANTANEOUS PEAK STAGE			20.38	Jun 21	30.40	Oct 6 1998
ANNUAL RUNOFF (AC-FT)	438500		341200		439400	
10 PERCENT EXCEEDS	1330		1070		1280	
50 PERCENT EXCEEDS	210		167		224	
90 PERCENT EXCEEDS	6.5		3.1		10	



RED RIVER BASIN

07338905 MOUNTAIN FORK AT HIGHWAY 259A NEAR BROKEN BOW, OK

LOCATION.--Lat 34°08'15", long 94°41'16", in SE 1/4 NE 1/4 sec.9, T.5 S., R.25 E., McCurtain County, Hydrologic Unit 11140108, on right upstream abutment of bridge on State Highway 259A, 1.0 mi below Broken Bow Dam, 8.0 mi northeast of Broken Bow, and at mile 17.5.

PERIOD OF RECORD.--June 1996 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 25.5°C Sept. 14, 1997; minimum, 0.3°C Jan. 27, 2000.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 24.4°C Sept. 21, 22; minimum, 0.3°C Jan. 27.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	22.3	19.7	20.9	18.6	16.7	17.5	11.8	8.9	10.1	10.8	8.0	9.2
2	21.9	19.6	20.8	17.7	15.1	16.3	12.9	9.9	11.4	11.6	10.0	10.9
3	22.3	20.1	21.1	15.4	13.5	14.4	16.0	12.7	14.4	13.3	10.9	11.8
4	21.9	20.5	21.2	15.4	13.2	14.3	16.6	14.9	16.0	10.9	7.8	9.2
5	21.3	19.7	20.5	15.3	14.4	14.8	14.9	10.7	12.5	8.6	6.1	7.1
6	21.1	19.4	20.3	16.6	14.7	15.5	11.6	8.8	10.0	7.6	5.1	6.3
7	20.8	19.3	20.1	17.3	15.9	16.5	10.4	7.9	8.8	7.9	6.6	7.3
8	22.4	20.7	21.3	17.3	16.3	16.8	10.7	8.6	9.6	9.2	7.7	8.4
9	23.4	22.1	22.6	17.4	15.8	16.6	12.7	10.7	11.4	11.2	8.7	9.5
10	23.2	21.9	22.5	17.7	15.9	16.9	12.9	10.3	11.3	10.9	7.7	9.1
11	23.2	21.8	22.5	17.5	16.4	17.0	10.9	10.1	10.6	10.1	7.7	8.5
12	23.1	21.8	22.5	17.6	16.3	16.9	12.3	10.7	11.5	11.6	7.9	9.5
13	23.5	21.8	22.6	17.7	16.1	16.9	12.3	10.0	11.1	11.3	9.1	9.9
14	23.3	21.9	22.6	17.6	16.1	16.9	11.7	8.1	10.0	10.2	7.6	8.7
15	23.3	21.7	22.4	17.5	16.2	16.8	9.5	7.4	8.2	9.1	6.7	7.9
16	23.3	21.8	22.5	16.9	15.3	16.2	9.2	6.4	7.5	9.9	8.4	9.2
17	22.9	20.2	21.4	16.5	14.9	15.7	8.2	6.4	7.2	13.1	9.9	11.5
18	20.2	18.8	19.3	16.3	14.7	15.4	9.9	7.3	8.2	13.8	11.5	12.5
19	19.3	18.2	18.6	16.3	13.8	15.3	10.1	7.6	8.5	12.7	10.8	11.9
20	18.5	17.0	17.8	15.8	12.4	13.8	9.4	7.6	8.5	10.8	7.8	9.2
21	18.7	16.6	17.6	15.6	12.0	13.8	8.5	6.5	7.3	9.1	7.1	7.8
22	18.4	16.5	17.5	16.9	14.8	15.8	7.6	5.1	6.1	8.9	7.5	7.9
23	18.4	16.6	17.4	16.8	14.0	16.1	7.3	4.4	5.6	10.7	7.0	8.4
24	17.5	15.7	16.5	15.0	12.7	13.5	7.6	5.0	6.0	9.0	6.3	7.4
25	17.1	15.4	16.3	14.1	10.7	12.6	7.9	4.9	6.1	7.7	5.7	6.5
26	17.8	15.6	16.6	12.9	9.9	11.0	8.5	5.4	6.6	6.1	4.2	5.1
27	17.9	15.9	17.0	13.0	9.3	10.8	8.6	5.4	6.7	4.4	.3	1.8
28	18.3	16.6	17.4	13.4	9.9	11.5	7.7	4.8	6.1	1.5	.6	1.0
29	18.6	17.2	17.9	13.6	11.3	12.2	8.8	5.6	6.9	2.9	1.1	1.8
30	18.4	18.0	18.3	12.9	10.1	11.0	9.4	6.9	7.9	4.3	1.8	2.8
31	18.1	17.4	17.8	---	---	---	10.1	7.2	8.3	5.4	2.8	3.9
MONTH	23.5	15.4	19.8	18.6	9.3	15.0	16.6	4.4	9.0	13.8	.3	7.8

RED RIVER BASIN

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07338905 MOUNTAIN FORK AT HIGHWAY 259A NEAR BROKEN BOW, OK--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.3	4.5	5.6	16.6	11.4	13.9	16.5	15.5	15.9	20.8	19.5	20.1
2	7.5	4.1	5.4	15.1	12.7	13.5	15.8	15.5	15.7	20.4	19.4	19.7
3	8.2	4.1	5.8	12.7	11.9	12.3	16.2	14.7	15.4	20.4	19.1	19.5
4	7.7	4.9	5.9	13.4	11.4	12.3	16.2	13.1	14.5	19.1	17.9	18.4
5	7.3	4.0	5.3	13.8	11.3	12.6	17.4	13.7	15.4	18.8	16.7	18.3
6	7.6	3.9	5.5	14.7	12.9	13.7	18.3	15.1	16.5	17.2	16.4	16.7
7	9.3	6.0	7.4	16.3	13.8	14.9	19.5	17.5	18.2	18.6	17.2	17.8
8	10.6	6.9	8.3	17.7	16.1	16.7	18.3	15.9	17.0	20.6	18.6	19.3
9	10.6	7.3	8.9	18.3	15.2	16.6	17.2	15.2	16.3	22.1	20.5	21.3
10	12.3	8.9	10.2	17.1	14.4	15.4	16.6	15.3	15.8	22.0	20.5	21.3
11	11.8	10.2	10.9	14.4	12.6	13.4	15.8	15.1	15.5	22.2	21.3	21.6
12	11.8	10.0	10.7	13.5	11.4	12.3	15.1	13.9	14.5	22.7	22.0	22.3
13	14.3	10.3	11.5	13.7	11.2	12.4	14.6	13.5	14.0	22.5	19.9	21.3
14	12.6	9.2	10.5	13.7	12.4	12.9	14.7	14.0	14.3	20.5	18.0	19.3
15	13.4	9.6	11.3	13.9	12.3	13.1	15.8	14.0	14.6	19.8	18.0	18.9
16	13.1	11.3	12.0	14.7	13.6	14.0	17.6	15.1	16.0	19.2	18.1	18.6
17	12.6	10.9	11.5	14.7	12.9	13.6	18.2	15.6	16.8	19.3	17.3	18.3
18	14.0	10.6	12.2	13.2	12.6	12.9	19.3	17.7	18.4	19.8	19.1	19.4
19	12.9	9.1	10.5	12.8	11.4	12.2	21.0	19.3	20.0	19.3	17.1	17.8
20	12.8	8.6	10.4	13.5	10.5	11.9	22.6	20.5	21.4	18.9	17.3	18.0
21	12.2	10.0	11.0	13.4	12.5	12.8	21.8	19.6	20.7	20.0	18.3	18.9
22	13.4	10.3	11.7	14.7	12.6	13.4	21.1	18.8	19.9	20.8	18.1	19.3
23	16.5	12.3	13.8	16.3	13.9	14.9	20.1	19.0	19.5	22.5	19.5	20.8
24	15.3	13.0	14.2	18.5	15.9	16.9	20.6	18.3	19.3	22.6	20.7	21.5
25	15.1	13.7	14.4	18.3	17.0	17.6	20.4	18.5	19.5	21.5	19.4	20.1
26	13.9	12.1	13.0	17.4	16.3	16.7	20.6	18.9	19.8	19.5	18.6	19.1
27	14.8	10.3	12.3	18.4	16.0	17.0	20.9	19.4	20.1	19.0	17.8	18.6
28	15.1	10.1	12.3	18.8	15.5	17.3	20.9	18.6	19.7	20.3	17.6	18.7
29	14.6	11.9	12.8	18.4	16.8	17.3	20.6	18.9	19.4	20.3	19.0	19.4
30	---	---	---	17.0	16.1	16.5	20.3	18.4	19.2	20.1	18.8	19.3
31	---	---	---	17.3	15.1	16.2	---	---	---	20.0	19.1	19.5
MONTH	16.5	3.9	10.2	18.8	10.5	14.4	22.6	13.1	17.4	22.7	16.4	19.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	19.9	19.1	19.5	21.7	20.3	20.8	22.8	21.3	22.1	23.1	21.6	22.4
2	19.8	18.8	19.4	21.7	21.1	21.4	23.1	21.1	22.3	22.9	21.8	22.5
3	19.0	16.9	18.3	21.8	21.1	21.4	23.3	21.4	22.5	23.1	21.7	22.6
4	17.2	16.6	16.9	22.5	20.4	21.4	23.3	21.4	22.4	23.6	22.0	22.9
5	19.3	16.4	17.5	22.7	21.1	22.0	23.3	21.4	22.5	23.6	21.5	22.4
6	19.4	18.1	18.8	23.0	21.1	22.1	23.3	21.3	22.6	22.9	21.1	22.0
7	19.1	18.0	18.4	22.9	21.4	22.2	23.5	21.4	22.8	23.0	21.8	22.4
8	19.2	17.9	18.5	23.0	21.3	22.3	23.5	21.6	22.8	22.6	21.3	21.9
9	19.2	17.8	18.6	23.3	21.6	22.6	23.4	21.6	22.7	22.2	21.6	21.9
10	18.0	17.6	17.8	23.3	21.7	22.7	23.4	21.6	22.7	22.7	21.7	22.2
11	17.9	17.1	17.5	23.4	21.7	22.8	23.4	22.0	22.9	23.5	21.9	22.8
12	19.7	17.5	18.5	23.4	21.6	22.4	23.4	21.8	22.7	23.5	21.7	22.5
13	20.6	19.1	19.6	22.8	21.4	22.1	23.1	21.6	22.5	23.2	21.4	22.4
14	20.0	18.0	19.1	23.3	21.2	22.2	23.1	21.4	22.4	23.3	22.1	22.9
15	19.6	17.7	18.4	23.5	21.7	22.8	23.2	21.4	22.5	23.3	21.6	22.8
16	20.3	19.0	19.5	23.5	21.8	22.6	23.3	21.6	22.6	23.3	21.9	22.5
17	20.2	18.4	19.5	23.0	21.4	22.3	23.3	21.7	22.8	22.3	20.8	21.5
18	19.5	18.2	18.8	23.1	21.6	22.5	23.3	21.7	22.7	22.4	20.5	21.4
19	19.4	18.6	19.0	23.8	21.6	22.8	23.7	21.9	23.0	22.5	20.9	21.8
20	20.3	18.6	19.4	23.6	22.1	22.9	23.7	22.0	22.9	22.3	20.9	21.7
21	20.2	17.6	19.0	23.3	21.5	22.3	23.2	21.5	22.5	24.4	20.9	22.3
22	19.6	18.4	19.0	22.7	20.1	21.2	23.2	21.6	22.6	24.4	23.3	24.0
23	20.4	19.2	19.6	22.9	20.8	21.6	23.2	21.7	22.6	24.3	23.3	24.0
24	20.7	19.6	20.2	22.7	20.9	21.9	23.2	21.8	22.7	---	---	---
25	21.2	20.3	20.8	22.5	20.5	21.4	23.5	22.0	22.9	---	---	---
26	21.0	19.5	20.3	22.9	20.6	21.7	23.6	22.0	23.0	23.0	20.1	21.3
27	20.3	19.5	19.8	22.9	20.5	21.7	23.4	21.8	22.9	23.1	20.7	21.8
28	20.4	19.6	20.0	22.4	20.9	21.7	23.3	21.7	22.8	23.0	20.8	21.8
29	21.6	19.7	20.5	22.4	20.5	21.4	23.3	21.6	22.7	23.4	21.2	22.1
30	21.4	20.6	21.1	22.4	20.8	21.6	23.3	21.6	22.7	23.6	21.2	22.1
31	---	---	---	22.8	20.9	22.0	23.3	21.7	22.6	---	---	---
MONTH	21.6	16.4	19.1	23.8	20.1	22.0	23.7	21.1	22.7	---	---	---

07338960 MOUNTAIN FORK AT PRESBYTERIAN FALLS NEAR EAGLETOWN, OK

LOCATION.--Lat 34°04'21", long 94°37'42", in NE 1/4 NW 1/4 sec.31, T.5 S., R.26 E., McCurtain County, Hydrologic Unit 11140103, on right downstream bank, 4.0 mi northwest of Eagletown, 9.7 mi downstream from Broken Bow Dam, and at mile 11.3.

PERIOD OF RECORD.--July 1996 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1996 to current year.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum 27.0°C July 25, 26, 27, 1998; minimum 3.7°C Jan. 27, 2000.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum 26.6°C Aug. 31; minimum 3.7°C Jan. 27.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	21.8	19.1	20.0	18.8	16.3	17.5	13.6	12.3	12.9	10.5	8.7	9.4
2	21.7	19.0	19.9	17.6	15.2	16.2	13.9	12.7	13.3	10.5	9.1	9.9
3	21.6	19.2	20.1	16.7	14.5	15.6	15.0	13.5	14.2	11.8	10.3	11.0
4	20.8	18.7	19.6	16.8	13.9	15.4	15.1	14.4	14.8	10.8	9.5	10.4
5	21.4	19.0	19.9	16.6	14.6	15.5	14.4	12.9	13.5	10.2	9.0	9.7
6	20.9	18.0	19.1	17.5	14.7	15.9	13.6	11.9	12.8	10.4	8.7	9.4
7	21.1	18.4	19.6	17.5	14.8	16.0	13.2	11.9	12.5	9.6	8.8	9.3
8	21.4	19.4	20.1	17.3	14.8	15.9	12.8	11.6	12.2	9.3	8.8	9.0
9	21.9	19.5	20.7	18.1	16.2	17.0	12.8	12.2	12.5	10.3	8.8	9.4
10	22.4	20.2	21.1	18.2	15.5	16.8	13.5	11.7	12.5	10.5	8.5	9.4
11	22.5	19.3	20.7	18.6	15.9	17.1	12.3	11.8	11.9	10.9	9.1	9.9
12	22.7	20.1	21.3	18.2	15.7	16.9	12.6	11.7	12.1	11.5	8.8	9.9
13	22.8	20.4	21.3	18.4	15.8	17.0	12.6	11.3	12.0	11.1	9.3	10.2
14	21.7	19.1	20.2	18.6	15.7	17.1	12.1	10.6	11.3	10.4	9.1	9.7
15	22.4	19.3	20.5	17.9	15.7	16.9	10.9	9.8	10.4	10.4	9.0	9.6
16	22.3	20.3	21.2	17.3	15.0	16.2	11.1	9.1	10.0	10.6	9.8	10.2
17	20.3	19.4	19.6	17.3	15.0	16.1	10.3	9.1	9.7	11.5	9.9	10.5
18	19.6	18.9	19.2	17.1	14.8	15.9	10.8	9.4	10.0	11.9	10.1	11.0
19	20.4	18.4	19.2	16.9	15.8	16.3	9.9	8.4	9.2	11.2	9.9	10.4
20	20.2	17.7	18.9	17.0	15.2	16.1	9.5	9.0	9.3	11.1	9.4	10.3
21	19.7	17.1	18.4	16.5	14.3	15.3	9.5	8.3	8.9	10.8	9.4	9.9
22	19.3	16.6	17.9	16.8	15.5	16.1	9.4	7.4	8.3	10.0	9.4	9.6
23	18.4	16.6	17.5	16.6	14.9	16.1	9.3	7.7	8.4	10.8	8.8	9.8
24	17.8	15.5	16.6	16.0	14.1	15.0	9.3	7.5	8.4	10.1	8.2	9.1
25	17.1	14.6	15.9	15.5	14.3	14.9	9.3	7.8	8.4	9.2	7.9	8.5
26	18.1	15.1	16.4	15.2	13.4	14.3	9.7	7.4	8.4	8.3	7.3	7.7
27	18.3	15.1	16.5	15.1	13.3	14.1	9.7	7.5	8.4	7.4	3.7	5.6
28	19.0	16.9	17.8	14.8	12.6	13.7	9.0	7.2	8.1	6.6	5.7	6.1
29	18.7	16.4	17.4	14.2	12.8	13.6	9.7	7.4	8.4	6.2	5.5	5.8
30	17.7	16.9	17.3	13.8	12.4	13.0	9.6	7.8	8.5	6.7	4.2	5.5
31	17.9	17.1	17.5	---	---	---	10.2	8.0	8.8	6.8	4.6	5.8
MONTH	22.8	14.6	19.1	18.8	12.4	15.8	15.1	7.2	10.6	11.9	3.7	9.1

RED RIVER BASIN

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07338960 MOUNTAIN FORK AT PRESBYTERIAN FALLS NEAR EAGLETOWN, OK--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.4	4.9	5.4	16.0	12.3	14.0	15.2	14.1	14.6	19.7	16.4	18.2
2	7.3	5.2	6.3	14.4	12.7	13.4	15.0	14.2	14.5	19.0	17.3	18.1
3	9.0	7.1	7.9	13.4	12.7	13.0	14.9	13.9	14.4	20.3	18.3	19.0
4	8.4	7.4	7.8	15.7	13.0	13.9	14.7	13.9	14.4	19.3	16.7	18.1
5	9.2	7.5	8.2	14.7	11.4	13.0	14.7	14.1	14.3	18.4	15.9	17.4
6	9.6	7.0	8.2	15.3	11.8	13.5	14.4	12.8	13.5	17.4	16.2	16.5
7	9.3	7.7	8.4	17.0	12.3	14.5	14.0	13.0	13.4	18.9	16.3	17.5
8	10.6	7.8	8.9	16.6	13.7	15.2	15.2	13.0	13.9	20.0	17.0	18.7
9	9.4	8.6	8.9	17.3	14.8	16.0	16.2	12.7	14.2	18.2	16.8	17.4
10	11.0	8.7	9.8	15.2	12.6	13.5	15.6	13.1	14.2	19.6	16.6	18.0
11	10.5	9.2	9.7	13.4	11.7	12.4	15.0	14.3	14.7	20.5	16.9	18.2
12	10.9	9.5	10.2	14.0	10.6	12.3	14.7	13.8	14.1	20.4	17.4	18.4
13	12.2	9.7	10.8	12.9	10.4	11.8	14.5	13.7	14.0	20.9	17.7	19.0
14	12.5	10.2	11.2	13.3	12.1	12.8	14.6	13.8	14.2	20.6	15.9	18.2
15	11.2	10.1	10.7	14.2	12.6	13.0	15.9	13.7	14.5	20.4	16.4	18.4
16	10.6	9.6	10.2	14.5	12.7	13.5	17.3	14.2	15.7	21.1	18.7	20.0
17	10.5	9.6	10.0	13.5	12.7	13.0	18.6	14.3	16.3	23.1	19.2	20.6
18	11.9	10.1	10.8	12.9	11.9	12.4	17.3	15.3	16.8	22.1	19.4	20.3
19	12.2	9.8	10.8	12.1	11.7	11.9	17.0	14.7	15.7	20.8	19.4	20.0
20	12.6	9.5	11.0	13.0	11.6	12.2	18.1	15.1	16.6	21.6	18.9	19.9
21	12.4	10.1	11.2	13.1	12.0	12.6	18.5	14.7	16.5	21.7	18.9	20.1
22	13.1	10.3	11.6	14.2	12.0	12.8	18.4	15.2	16.6	22.8	18.8	20.4
23	14.5	11.6	12.8	15.4	12.6	13.6	16.9	15.3	16.0	21.2	17.7	19.6
24	14.1	11.8	12.8	17.1	13.0	14.8	20.2	15.5	17.7	20.5	18.4	19.2
25	14.0	12.9	13.4	16.6	14.6	15.5	20.4	16.9	18.5	20.4	18.8	19.5
26	14.6	13.3	13.8	16.6	14.6	15.5	20.1	17.4	18.9	21.5	19.3	20.5
27	15.8	12.9	14.0	17.9	14.2	15.6	18.7	16.8	17.5	21.7	19.2	20.3
28	15.1	12.3	13.4	15.3	13.8	14.6	19.4	16.1	17.5	22.6	19.7	20.8
29	14.8	12.5	13.5	14.3	13.3	13.7	17.7	16.0	16.9	22.4	19.1	20.5
30	---	---	---	14.1	13.2	13.6	19.5	15.7	17.4	21.7	19.2	20.3
31	---	---	---	14.7	13.5	14.2	---	---	---	20.0	19.0	19.4
MONTH	15.8	4.9	10.4	17.9	10.4	13.6	20.4	12.7	15.6	23.1	15.9	19.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	20.0	18.8	19.3	21.3	20.3	20.5	23.0	20.7	21.7	25.5	23.7	24.8
2	19.7	18.6	19.0	21.0	19.7	20.4	23.2	20.4	21.9	25.3	23.7	24.4
3	19.9	18.7	19.1	21.6	20.1	20.9	23.0	19.6	21.7	24.2	22.2	23.3
4	20.4	18.8	19.5	21.5	20.7	21.0	23.2	20.2	21.9	23.3	21.6	22.3
5	23.4	19.1	20.7	21.7	19.1	20.9	23.9	20.1	22.1	23.3	21.2	22.1
6	20.9	18.6	19.5	22.8	21.0	21.8	23.8	20.2	22.3	23.8	21.6	22.7
7	20.4	18.7	19.4	23.3	21.4	22.0	23.9	20.4	22.6	24.0	22.1	23.1
8	20.6	18.8	19.7	23.9	21.3	22.2	23.8	21.1	22.5	23.6	22.2	22.9
9	20.3	19.1	19.7	24.1	21.1	22.5	23.7	21.6	22.5	23.0	21.9	22.4
10	20.0	19.1	19.4	24.1	21.3	22.5	24.9	22.2	23.0	22.8	21.4	21.9
11	20.5	19.0	19.7	23.2	21.4	22.0	24.7	22.0	23.1	23.2	21.6	22.1
12	21.7	19.6	20.3	23.4	21.6	22.3	23.9	21.2	22.8	23.1	22.1	22.6
13	20.1	18.4	19.4	23.9	21.7	22.4	23.9	20.7	22.5	24.6	22.6	23.3
14	19.7	18.0	19.1	23.8	21.4	22.4	23.9	20.4	22.3	24.8	22.9	23.7
15	20.8	18.9	19.9	24.5	21.9	22.8	23.8	20.4	22.5	23.7	22.0	22.8
16	20.4	19.2	19.9	24.9	22.3	23.5	24.0	21.7	22.6	23.0	21.0	21.9
17	20.3	19.3	19.8	24.6	21.7	22.9	24.5	22.5	23.1	22.4	20.3	21.1
18	20.0	18.3	19.1	23.0	21.6	22.2	24.6	22.1	23.1	21.9	19.9	20.6
19	19.7	18.0	18.4	24.4	21.7	22.8	23.8	21.9	22.9	22.1	19.7	20.5
20	19.8	18.4	19.2	25.9	23.2	24.3	24.5	21.2	23.1	21.6	19.7	20.5
21	20.2	18.4	19.3	23.9	21.6	22.6	24.7	21.7	23.1	21.2	19.7	20.4
22	21.2	20.2	20.6	22.0	20.3	21.0	24.7	21.4	22.9	21.5	20.1	20.7
23	21.2	19.2	20.6	22.1	20.7	21.3	24.3	20.7	22.7	22.1	20.2	20.8
24	20.2	18.9	19.7	22.2	19.7	21.2	24.4	21.5	22.7	22.1	20.5	21.2
25	20.5	18.6	19.7	22.3	19.6	21.1	24.7	21.8	23.3	20.5	18.5	19.1
26	20.5	18.2	19.7	23.1	19.9	21.4	25.1	21.6	23.4	20.3	18.0	18.8
27	20.3	19.1	19.8	23.3	21.0	21.8	25.2	22.0	23.4	20.5	18.1	19.0
28	20.9	19.9	20.3	23.5	20.5	21.9	25.0	21.4	23.5	21.2	18.4	19.3
29	21.6	20.5	20.9	22.9	21.0	21.7	25.2	22.6	23.5	20.9	18.5	19.3
30	21.1	20.0	20.5	23.3	20.4	21.6	25.9	23.9	24.6	21.0	18.6	19.5
31	---	---	---	23.5	20.5	21.8	26.6	23.9	25.1	---	---	---
MONTH	23.4	18.0	19.7	25.9	19.1	21.9	26.6	19.6	22.9	25.5	18.0	21.6

RED RIVER BASIN

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK

LOCATION.--Lat 34°02'30", long 94°37'11", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.7, T.6 S., R.26 E., McCurtain County, Hydrologic Unit 11140108, on right downstream bank on U.S. Highway 70, 2.0 mi west of Eagletown, 10.7 mi downstream from Broken Bow Dam, and at mile 8.9.

DRAINAGE AREA.--787 mi².

WATER-DISCHARGE RECORDS

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 above sea level. See WSP 1920 for history of changes prior to July 23, 1950.

REMARKS.--Records poor Oct. 1 to June 30 due to lack of measurements and funding; records fair July 1 to Sept. 30. Flow completely regulated except for 33 mi² intervening area, since October 1968 by Broken Bow Lake (station 07338900). U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 18-19, 1915, reached a stage of 26.4 ft, from information provided by local resident, discharge, 92,500 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	342	129	258	216	207	135	587	94	2820	2960	575	e1470
2	386	135	371	186	702	123	143	135	3350	3170	647	e869
3	333	135	358	146	632	129	1600	242	1030	6000	701	e1160
4	191	131	446	157	684	288	3770	720	276	4210	619	e1150
5	275	138	149	167	615	130	2820	1190	381	6310	608	e1300
6	173	134	205	173	161	114	3240	1200	1590	3040	575	e1530
7	232	129	488	172	334	110	2320	391	2090	2270	653	e1280
8	164	343	150	228	180	150	869	1020	2950	1730	803	e870
9	344	259	636	320	614	443	136	786	2630	1010	933	e870
10	302	136	163	166	194	712	123	281	1410	1770	914	e870
11	158	131	179	171	119	500	448	310	344	2440	678	e1650
12	292	128	541	122	213	144	1390	499	1930	2020	538	e1520
13	321	123	310	139	113	614	1070	146	4300	1960	526	1370
14	156	115	155	159	257	552	589	105	3390	1990	529	1100
15	155	114	133	173	939	593	143	107	4150	1420	756	681
16	216	130	135	119	936	470	97	167	4100	713	1090	547
17	155	129	127	115	712	963	96	201	2140	1180	1260	610
18	150	144	129	167	464	1210	808	380	4280	2620	949	682
19	145	272	125	141	317	1540	1190	1190	3540	1370	621	812
20	136	284	121	331	118	1320	771	329	5770	650	554	1110
21	128	133	125	215	104	1470	126	174	6570	826	524	775
22	135	129	129	199	111	644	173	699	5460	703	579	707
23	132	e120	194	116	126	468	142	1080	1550	802	693	808
24	126	e130	126	156	145	176	185	1380	3530	778	695	917
25	117	e120	194	132	176	326	143	1180	4770	620	593	372
26	135	e135	121	146	932	206	579	570	4410	600	572	373
27	139	e120	155	143	385	940	772	657	6150	589	590	561
28	270	e110	151	157	230	2670	484	804	7680	579	776	344
29	142	126	130	112	183	3500	139	613	7670	586	1340	386
30	140	171	133	109	---	3270	98	1730	7310	602	1430	494
31	139	---	168	106	---	1760	---	3000	---	577	1230	---
TOTAL	6229	4533	6805	5159	10903	25670	25051	21380	107571	56095	23551	27188
MEAN	201	151	220	166	376	828	835	690	3586	1810	760	906
MAX	386	343	636	331	939	3500	3770	3000	7680	6310	1430	1650
MIN	117	110	121	106	104	110	96	94	276	577	524	344
AC-FT	12360	8990	13500	10230	21630	50920	49690	42410	213400	111300	46710	53930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2000, BY WATER YEAR (WY)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MEAN	690	1268	2049	1744	1803	2154	2046	2105	1629	984	770	626																			
MAX	2638	6897	5286	5121	4159	5623	4976	7264	6061	3371	1515	2300																			
(WY)	1994	1985	1997	1988	1989	1997	1979	1991	1990	1999	1983	1992																			
MIN	136	110	154	166	292	348	306	357	219	155	238	155																			
(WY)	1989	1996	1990	2000	1981	1996	1980	1988	1988	1988	1985	1989																			

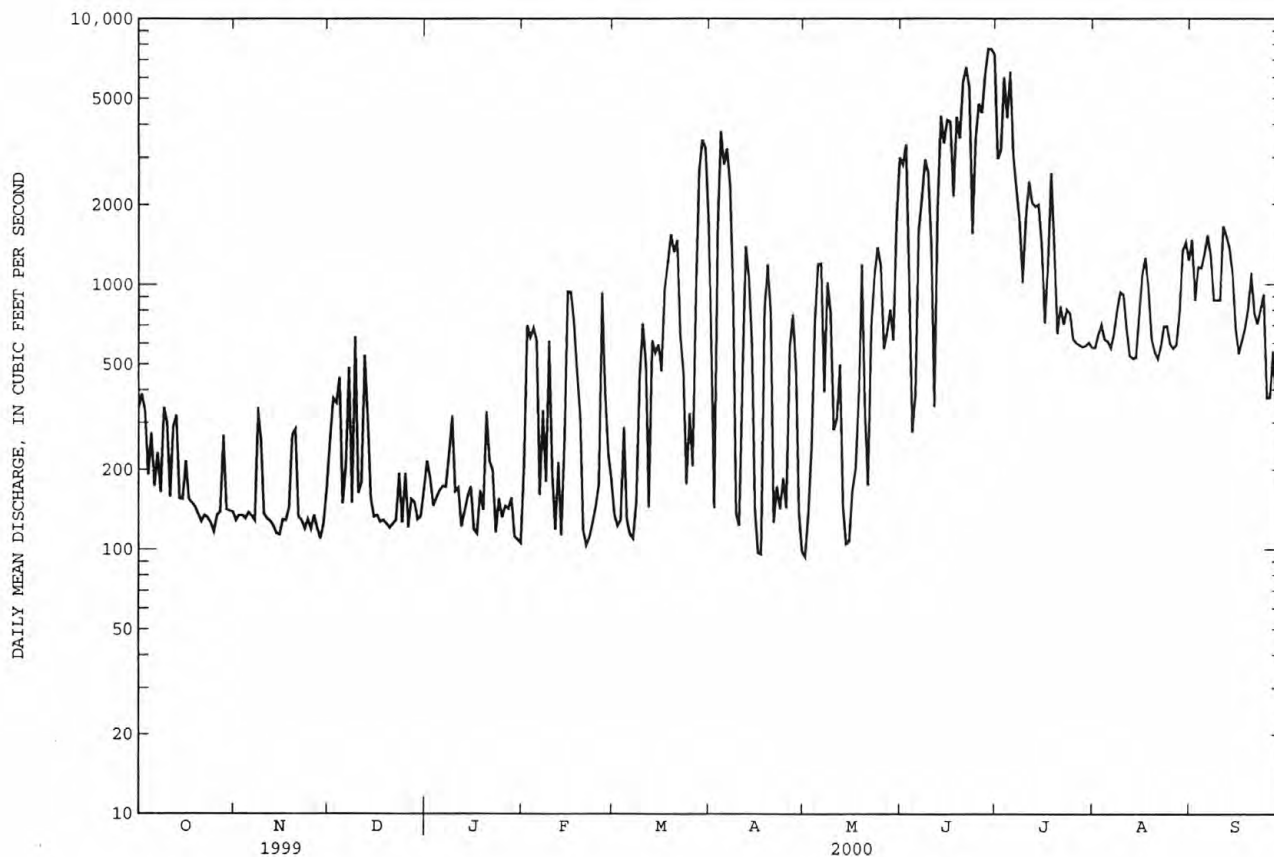
e Estimated

RED RIVER BASIN

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07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1970 - 2000	
ANNUAL TOTAL	507118		320135		^a 1488	
ANNUAL MEAN	1389		875		2468	
HIGHEST ANNUAL MEAN					450	
LOWEST ANNUAL MEAN					11500	
HIGHEST DAILY MEAN	7950	Jul 7	7680	Jun 28	11500	May 19 1991
LOWEST DAILY MEAN	98	Mar 5	94	May 1	^b 16	Dec 12 1971
ANNUAL SEVEN-DAY MINIMUM	104	Mar 1	123	Nov 23	68	Jan 12 1996
INSTANTANEOUS PEAK FLOW			10200	Jun 21	^c 18200	Jun 2 1990
INSTANTANEOUS PEAK STAGE			8.56	Jun 21	^d 11.58	Jun 2 1990
ANNUAL RUNOFF (AC-FT)	1006000		635000		1078000	
10 PERCENT EXCEEDS	4120		2280		4070	
50 PERCENT EXCEEDS	791		388		690	
90 PERCENT EXCEEDS	129		126		157	

^aPrior to regulation by Broken Bow Lake, 1925, 1930-68, 1,291 ft³/s.^bNo flow in several years prior to regulation by Broken Bow Lake.^cMaximum discharge for period of record, 101,000 ft³/s May 20, 1960, from rating curve extended above 65,000 ft³/s.^dMaximum gage-height for period of record, 26.73 ft May 20, 1960.

RED RIVER BASIN

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948, 1955, 1961-1963, October 1992 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to September 1948, November 1960 to September 1963.

WATER TEMPERATURE: October 1947 to September 1948, March to September 1955, November 1960 to September 1963, October 1992 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 128 microsiemens Nov. 19, 1947; minimum daily, 21 microsiemens Jan. 1, 1948.

WATER TEMPERATURE: Maximum daily, 34.5°C July 29, 1955; minimum daily, 0.0°C several days in winter months.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum 26.1°C July 20; minimum 3.0°C Jan. 27.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	20.8	18.1	19.6	18.2	15.8	16.9	13.0	11.2	12.0	10.4	8.4	9.3
2	20.9	18.2	19.6	17.0	14.0	15.6	13.9	12.0	12.9	10.4	9.7	10.0
3	20.9	18.4	19.8	15.9	13.0	14.1	15.7	13.6	14.4	12.6	10.0	11.2
4	20.8	19.3	20.1	16.6	13.2	14.5	15.3	14.2	14.7	11.0	8.6	10.1
5	20.3	17.9	19.2	16.7	14.2	15.2	14.4	11.6	13.1	9.9	7.9	8.7
6	20.7	18.2	19.2	17.5	15.1	16.1	12.6	10.3	11.4	9.7	7.7	8.6
7	19.9	17.5	18.9	17.9	15.5	16.4	12.6	11.5	12.0	9.7	8.9	9.5
8	21.7	19.6	20.6	17.5	15.1	16.1	12.3	11.5	11.9	9.6	8.8	9.2
9	21.6	19.4	20.7	17.8	15.3	16.4	12.9	11.8	12.3	10.7	8.8	9.6
10	22.1	19.8	21.0	17.9	15.8	16.7	13.1	11.1	11.9	10.2	8.4	9.2
11	22.3	20.3	21.2	18.5	15.9	16.9	11.8	10.9	11.4	10.5	8.1	9.2
12	22.4	19.5	21.0	18.3	15.7	16.7	12.1	10.9	11.4	12.3	8.9	10.2
13	22.2	19.6	21.0	18.3	15.6	16.7	12.3	10.9	11.7	11.8	9.6	10.6
14	22.2	20.4	21.2	18.3	15.5	16.8	12.0	9.9	10.8	10.3	8.7	9.3
15	22.4	19.7	20.6	18.2	15.6	16.7	11.0	8.9	9.9	9.9	8.1	9.0
16	22.3	19.8	21.1	17.3	15.0	15.9	10.5	8.0	9.1	11.2	9.4	10.3
17	21.7	18.6	20.3	17.1	14.6	15.6	9.7	8.2	8.9	13.1	10.5	11.4
18	18.8	17.3	18.1	17.5	14.5	15.7	11.0	8.8	9.7	11.7	10.8	11.3
19	19.5	17.1	18.0	16.6	15.6	16.0	10.2	8.6	9.4	11.9	10.2	11.3
20	19.3	16.7	17.8	16.4	14.6	15.5	9.5	8.5	9.0	10.6	8.8	9.8
21	19.4	16.5	17.7	16.6	14.4	15.2	9.4	7.8	8.4	10.3	8.8	9.6
22	19.3	16.4	17.6	---	---	---	8.8	6.7	7.7	9.8	9.1	9.5
23	18.6	16.0	17.2	---	---	---	8.7	6.6	7.6	11.0	8.5	9.6
24	17.3	15.1	16.0	---	---	---	9.3	7.0	7.9	10.3	8.2	9.1
25	17.6	14.3	15.6	---	---	---	8.7	7.0	7.8	9.4	7.1	8.3
26	17.5	14.5	15.8	---	---	---	9.5	7.0	8.0	7.5	6.4	7.0
27	18.1	15.2	16.4	---	---	---	9.5	6.9	8.0	6.7	3.0	4.7
28	18.6	15.8	17.1	---	---	---	8.8	7.0	7.8	5.3	3.0	4.2
29	19.4	17.0	17.9	---	---	---	9.9	6.8	8.0	6.5	4.8	5.4
30	18.1	16.8	17.6	13.3	11.6	12.3	9.8	8.0	8.7	6.4	3.8	5.1
31	17.8	16.4	17.0	---	---	---	9.9	7.8	8.8	7.3	4.1	5.6
MONTH	22.4	14.3	18.9	---	---	---	15.7	6.6	10.2	13.1	3.0	8.9

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.0	5.4	6.1	15.1	12.1	13.4	14.5	13.2	13.9	20.6	17.8	19.1
2	7.2	4.6	5.9	14.1	12.7	13.3	14.6	14.0	14.3	18.9	18.0	18.4
3	8.8	5.9	7.2	12.9	11.4	12.3	14.6	12.9	13.9	19.4	17.5	18.4
4	8.4	7.0	7.8	14.5	11.3	12.7	14.8	12.7	13.6	19.6	16.9	18.4
5	8.5	6.4	7.4	15.5	12.0	13.4	14.7	13.1	13.8	17.7	15.4	17.0
6	9.2	6.4	7.6	17.3	12.7	14.1	13.7	12.7	13.2	17.4	15.8	16.6
7	9.5	7.4	8.4	17.9	13.3	15.2	13.6	12.7	13.1	19.3	16.1	17.6
8	10.2	7.5	8.7	17.6	14.9	15.9	15.1	11.7	13.3	21.2	17.4	18.7
9	9.7	8.1	8.9	17.3	14.1	15.5	16.1	12.3	13.9	18.4	16.7	17.2
10	10.7	8.4	9.5	16.0	12.2	13.2	15.0	13.0	14.0	18.7	16.2	17.5
11	11.0	9.7	10.3	12.9	11.1	11.9	14.4	13.7	14.1	22.5	18.3	19.9
12	10.8	9.0	10.0	13.7	10.1	11.5	14.1	12.9	13.6	19.7	18.2	18.8
13	13.1	9.7	11.0	12.8	10.3	11.5	14.3	12.7	13.4	20.4	17.8	19.0
14	12.3	9.9	11.0	12.9	10.8	11.9	14.3	13.0	13.6	22.0	17.8	19.5
15	11.9	9.8	10.7	13.5	11.4	12.5	15.5	13.5	14.3	21.3	17.6	19.4
16	10.9	9.7	10.2	14.1	12.1	13.0	17.8	14.2	15.7	20.7	18.5	19.6
17	10.2	9.1	9.6	13.8	11.8	12.5	19.7	14.6	16.7	24.1	19.3	21.2
18	11.9	9.7	10.7	12.2	11.3	11.9	18.3	15.2	16.9	21.5	20.0	20.6
19	11.5	9.2	10.3	11.6	10.6	11.2	17.5	15.0	16.2	20.3	18.5	19.3
20	12.2	9.2	10.5	13.5	10.2	11.7	17.9	14.8	16.4	21.1	18.4	19.7
21	12.6	9.9	11.1	12.8	11.3	12.1	18.6	15.7	17.0	21.6	19.5	20.3
22	13.4	10.5	11.6	13.8	11.3	12.4	17.5	15.4	16.3	23.0	19.7	20.9
23	15.4	11.6	13.2	15.3	11.8	13.4	17.7	15.8	16.8	22.3	18.3	19.8
24	14.5	12.7	13.3	16.8	13.7	15.0	18.2	15.3	16.6	21.5	18.0	19.2
25	14.1	12.6	13.3	16.3	14.0	15.1	21.1	16.8	18.5	21.1	18.3	19.4
26	14.0	12.6	13.2	16.7	14.4	15.5	19.7	17.2	18.5	22.0	18.6	20.3
27	14.4	11.7	13.0	17.3	14.5	15.9	---	---	---	21.5	19.4	20.3
28	14.2	11.8	13.0	15.9	13.3	14.2	---	---	---	22.3	18.8	20.5
29	14.1	12.3	13.1	13.9	12.5	13.2	---	---	---	22.5	18.8	20.5
30	---	---	---	13.4	12.4	12.9	---	---	---	22.4	18.2	19.7
31	---	---	---	14.9	12.7	13.7	---	---	---	20.2	18.0	18.9
MONTH	15.4	4.6	10.2	17.9	10.1	13.3	---	---	---	24.1	15.4	19.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	20.7	17.9	18.8	21.7	19.7	20.4	24.0	21.1	22.5	24.8	22.2	23.4
2	20.0	17.9	18.6	21.1	19.3	20.2	24.3	20.9	22.5	24.9	22.1	23.4
3	19.7	18.2	19.0	21.3	19.6	20.4	24.6	20.7	22.3	24.3	21.8	23.0
4	20.0	18.5	19.2	21.6	20.1	20.7	23.9	20.2	22.2	23.6	20.8	21.9
5	22.3	19.1	20.5	21.6	18.7	20.6	24.9	20.7	22.7	22.0	20.5	21.3
6	20.8	17.9	19.5	23.4	20.4	21.4	25.1	20.7	22.9	23.6	20.1	21.6
7	20.9	17.4	18.6	23.9	20.8	21.9	25.4	21.1	22.9	23.7	21.1	22.2
8	20.8	17.9	19.0	24.1	20.7	22.0	25.0	21.3	22.8	22.9	21.1	21.8
9	20.4	18.6	19.1	24.8	21.3	22.9	25.0	21.5	22.9	23.1	21.3	22.1
10	20.0	18.3	19.0	24.6	20.8	22.5	25.4	21.6	23.1	22.6	20.7	21.5
11	20.4	18.9	19.7	23.9	20.7	21.7	24.4	21.9	23.1	23.7	20.8	21.8
12	21.9	19.2	20.2	24.2	20.9	22.1	25.3	22.2	23.5	22.9	21.1	21.9
13	20.2	18.2	19.1	24.3	21.1	22.2	24.9	21.4	22.9	24.3	21.3	22.5
14	19.5	17.1	18.6	24.6	20.5	22.1	24.6	21.0	22.6	24.9	21.9	23.2
15	20.2	17.5	19.1	25.1	21.2	22.8	24.9	20.9	22.4	24.4	22.5	23.4
16	20.5	18.8	19.4	25.8	22.0	23.7	24.8	21.1	22.6	23.5	21.2	22.4
17	20.0	18.8	19.4	24.8	21.6	22.7	25.2	21.8	23.1	22.9	20.2	21.5
18	19.9	17.7	18.8	23.7	21.1	21.9	24.9	21.6	23.1	22.9	19.8	21.1
19	19.0	17.5	18.0	25.1	21.1	22.8	24.7	22.4	23.5	22.7	19.4	20.8
20	19.4	17.9	18.9	26.1	22.2	24.1	25.1	21.5	23.2	22.9	19.8	21.2
21	19.6	17.8	18.8	24.6	21.9	23.3	24.8	21.1	22.9	22.6	20.4	21.4
22	20.9	19.3	20.0	22.2	20.4	21.4	24.7	21.4	22.8	23.4	20.8	21.9
23	22.1	19.4	20.7	23.0	20.3	21.6	24.8	21.1	22.5	23.3	21.2	22.1
24	20.0	18.7	19.5	23.5	20.1	21.5	24.8	21.4	22.8	22.7	21.2	21.9
25	20.1	18.3	19.4	23.0	19.6	21.1	25.3	21.1	23.1	21.5	18.5	19.9
26	20.0	18.2	19.5	23.7	19.7	21.4	25.1	21.6	23.1	21.0	17.8	19.2
27	20.2	18.6	19.5	23.6	20.2	21.8	24.9	21.3	23.0	21.1	18.2	19.6
28	20.4	19.3	19.9	24.0	21.0	22.3	24.8	21.4	22.7	21.4	18.4	20.0
29	21.1	19.8	20.5	23.2	20.6	21.8	24.6	21.1	22.5	21.3	18.4	20.0
30	20.9	19.4	20.1	23.5	20.7	22.0	25.5	22.1	23.5	21.6	18.8	20.2
31	---	---	---	23.6	20.7	22.1	25.6	22.2	23.8	---	---	---
MONTH	22.3	17.1	19.3	26.1	18.7	21.9	25.6	20.2	22.9	24.9	17.8	21.6
YEAR	26.1	3.0	16.5									

GROUND-WATER LEVELS

CADDO COUNTY

WELL-IDENTIFICATION NUMBER.--351452098290601. Local number 09N-11W-17 DDD 1.

LOCATION.--Lat 35°14'52", long 98°29'06", Hydrologic Unit 11130302, 4.25 mi west and 3.0 mi south of Three Way Corner (intersection of Highways 152 and 126).

GEOLOGIC UNIT.--Rush Springs Sandstone.

WELL CHARACTERISTICS.--Drilled well, diameter 2 in., casing depth 73 ft.

DATUM.--Altitude of land-surface datum is 1,460 ft. Measuring point: top of lockbox 2.8 ft above land-surface datum.

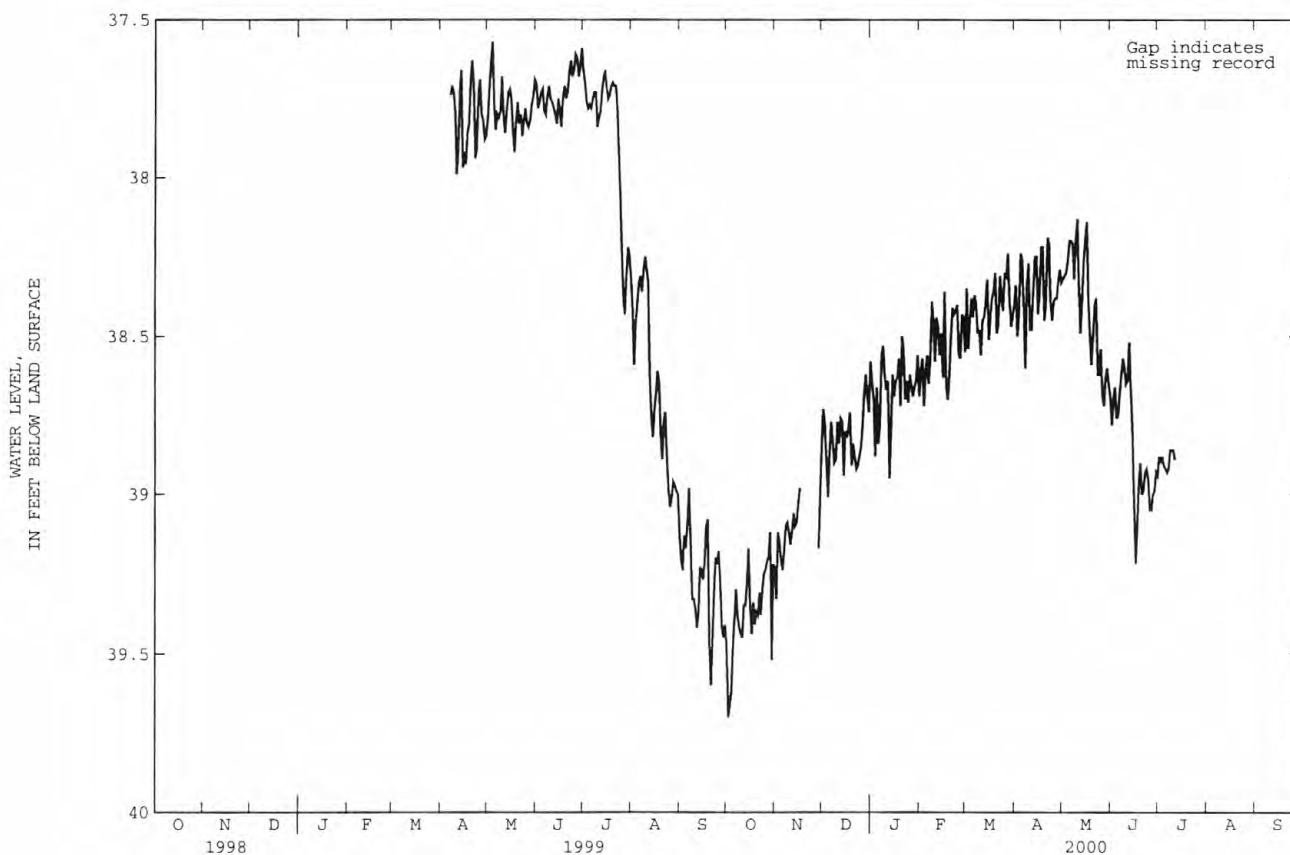
REMARKS.--Records good. Well drilled to 80 ft deep.

PERIOD OF RECORD.--April 7, 1999 to July 2000 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest observed water level, 37.50 ft below land-surface datum, May 4, 1999; lowest water level, 39.79 ft below land-surface datum, Oct. 2, 1999.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	39.48	39.21	39.01	38.66	38.61	38.38	38.24	38.26	38.76	38.91	---	---
10	39.44	39.12	38.89	38.62	38.45	38.48	38.27	38.19	38.60	38.86	---	---
15	39.17	39.09	38.94	38.62	38.49	38.32	38.25	38.27	38.79	---	---	---
20	39.37	---	38.91	38.72	38.63	38.30	38.45	38.59	38.90	---	---	---
25	39.25	---	38.88	38.71	38.40	38.42	38.45	38.62	38.95	---	---	---
EOM	39.22	39.00	38.74	38.56	38.44	38.44	38.29	38.65	38.93	---	---	---
MAX	39.70	---	39.01	38.95	38.72	38.56	38.60	38.72	39.22	---	---	---
MIN	39.12	---	38.62	38.50	38.36	38.24	38.19	38.13	38.52	---	---	---



GROUND-WATER LEVELS

189

COMANCHE COUNTY

WELL-IDENTIFICATION NUMBER.--343540098342001. Local number 01N-13W-04 BAA 1.

LOCATION.--Lat 34°35'36", long 098°34'22", Hydrologic Unit 11130203, 4.0 mi southeast of Cache.

GEOLOGIC UNIT.--Arbuckle Group.

WELL CHARACTERISTICS.--Test well, diameter 6 in., depth 997 ft.

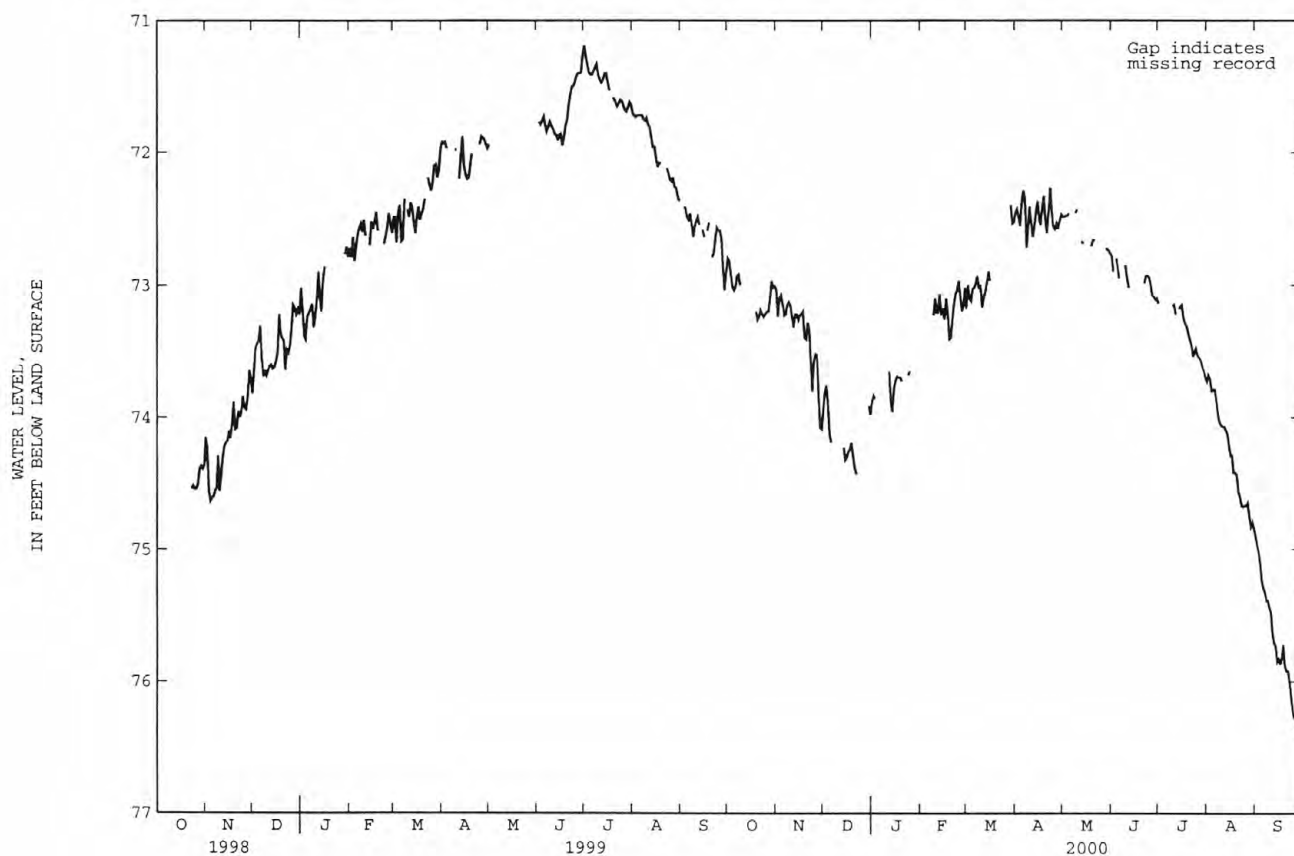
DATUM.--Altitude of land-surface datum is 1,200 ft. Measuring point: top of casing 1.8 ft above land-surface datum.

PERIOD OF RECORD.--1972 to September 1995, October 1998 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 69.33 ft below land-surface datum, June 1, 1993; lowest water level, 88.62 ft below land-surface datum, May 10, 1972.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	73.04	73.14	74.12	---	---	73.03	72.37	72.46	72.87	---	73.79	75.24
10	---	73.15	---	---	73.10	73.01	72.41	72.43	72.86	73.16	74.06	75.45
15	---	73.26	74.32	73.78	73.19	72.90	72.37	---	---	73.16	74.22	75.85
20	73.26	73.41	74.29	73.73	73.40	---	72.53	72.67	---	73.36	74.44	75.88
25	73.22	73.58	---	73.65	72.97	---	72.57	---	72.94	73.48	74.67	76.22
EOM	73.01	74.09	73.98	---	73.02	72.53	72.47	72.76	73.10	73.71	74.85	76.25
MAX	---	74.09	---	---	---	---	72.72	---	---	---	74.85	76.38
MIN	---	73.03	---	---	---	---	72.27	---	---	---	73.68	74.91



GROUND-WATER LEVELS

DELAWARE COUNTY

WELL-IDENTIFICATION NUMBER.--363334094395301. Local number 24N-25E-17 DAD 2.

LOCATION.--Lat 36°33'34", long 94°39'53", Hydrologic Unit 11070206, 6.0 mi southeast of Grove.

GEOLOGIC UNIT.--Reed Springs Formation.

WELL CHARACTERISTICS.--Drilled abandoned well, diameter 6 in., depth 38.1 ft.

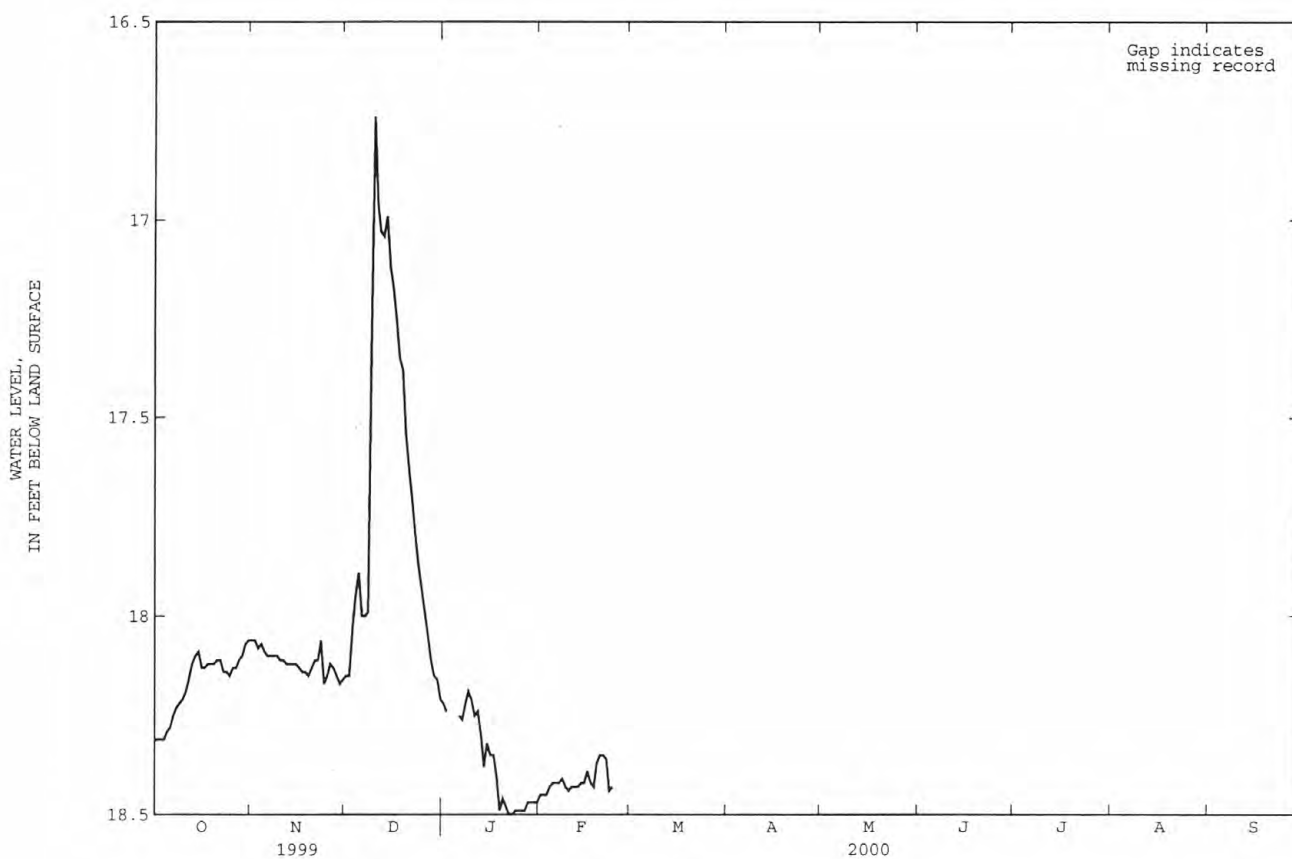
DATUM.--Altitude of land-surface datum is 884.1 ft. Measuring point: top edge of board in metal box .12 ft below land-surface datum.

PERIOD OF RECORD.--May 20, 1999 to February 24, 2000.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, unknown; lowest water level, 18.51 ft below land-surface datum, Jan. 22,23, 2000.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	18.29	18.09	17.89	---	18.42	---	---	---	---	---	---	---
10	18.21	18.11	16.74	18.21	18.44	---	---	---	---	---	---	---
15	18.09	18.12	17.12	18.32	18.42	---	---	---	---	---	---	---
20	18.12	18.13	17.54	18.46	18.35	---	---	---	---	---	---	---
25	18.15	18.15	17.93	18.49	---	---	---	---	---	---	---	---
ECM	18.06	18.16	18.21	18.47	---	---	---	---	---	---	---	---
MAX	18.31	18.17	18.21	---	---	---	---	---	---	---	---	---
MIN	18.06	18.06	18.74	---	---	---	---	---	---	---	---	---



GROUND-WATER LEVELS

191

PONTOTOC COUNTY

WELL-IDENTIFICATION NUMBER.--343457096404501. Local number 01N-06E-04 CAD 1.

LOCATION.--Lat 34°34'57", long 09°64'45", Hydrologic Unit 11140102, 3.3 mi southwest of Pittstown.

GEOLOGIC UNIT.--Arbuckle Group.

WELL CHARACTERISTICS.--Drilled oil test well, diameter 18 in., depth 396 ft.

DATUM.--Altitude of land-surface datum is 1,155 ft. Measuring point: base of recorder shelter 1.10 ft above land-surface datum.

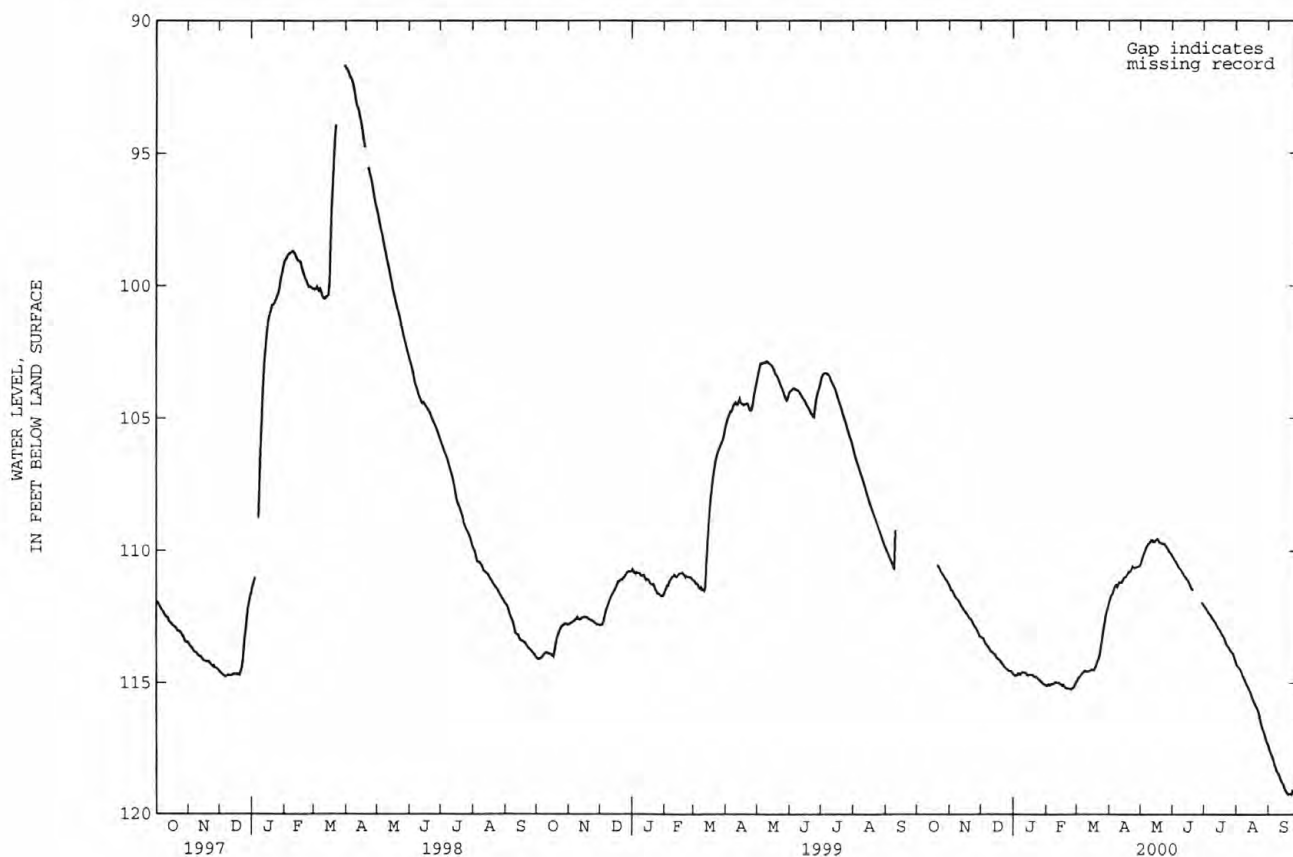
REMARKS.--Well originally 1,707 ft deep.

PERIOD OF RECORD.--December 1958 to August 1997, October 1998 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest observed water level, 70.19 ft below land-surface datum, May 17, 1990; lowest water level, 126.52 ft below land-surface datum, Aug. 31, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	111.67	113.53	114.65	115.08	114.68	111.43	110.00	110.54	112.35	114.55	117.93
10	---	111.96	113.82	114.61	114.98	114.57	111.19	109.67	110.83	112.64	115.02	118.44
15	---	112.29	114.05	114.69	115.07	114.50	111.01	109.62	111.12	112.97	115.48	118.84
20	110.55	112.58	114.25	114.78	115.22	114.21	110.82	109.70	111.49	113.32	115.94	119.24
25	110.89	112.91	114.49	114.91	115.22	113.25	110.66	109.83	---	113.71	116.64	119.18
EOB	111.29	113.27	114.67	115.09	114.97	112.01	110.58	110.19	112.05	114.23	117.35	119.16
MAX	---	113.27	114.67	115.09	115.25	114.93	111.85	110.48	---	114.23	117.35	119.36
MIN	---	111.37	113.28	114.60	114.97	112.01	110.58	109.56	---	112.10	114.35	117.48



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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
<i>Area</i>		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
<i>Volume</i>		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
second		
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
second		
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
second		
	4.381×10^{-2}	cubic meter per second
<i>Mass</i>		
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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