Water Resources Data
Oklahoma
Water Year 2003

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

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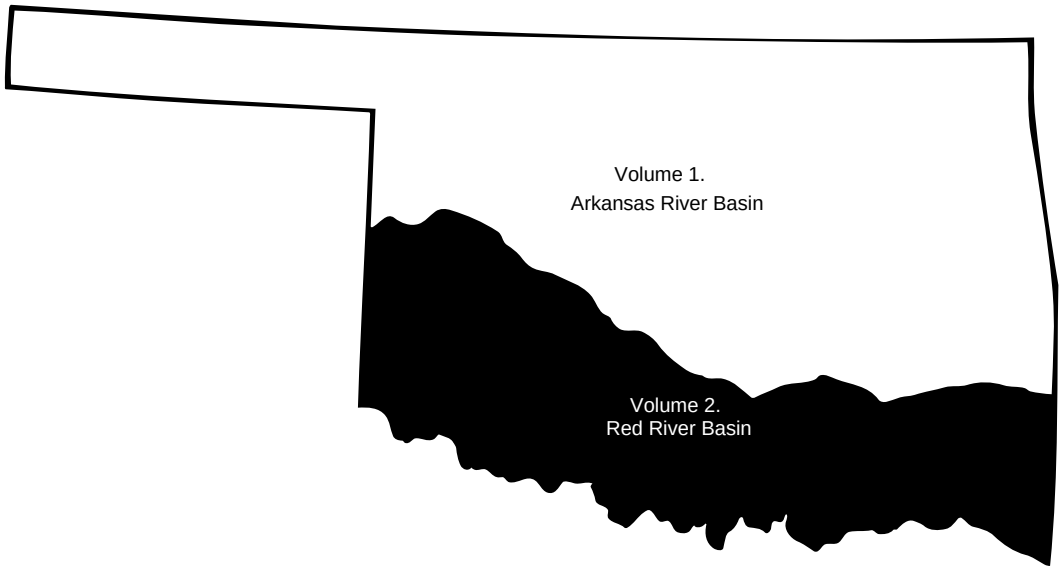

Prepared in cooperations with the State of Oklahoma and with other agencies.

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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.

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Data for Oklahoma are in two volumes as follows:
Volume 1. Arkansas River Basin
Volume 2. Red River Basin and Ground-Water Records

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13. ABSTRACT *(Maximum 200 words)*

Volumes 1 and 2 of the water resources data for the 2003 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 139 gaging stations; stage and contents for 17 lakes or reservoirs and 2 gage height stations; water quality for 46 gaging stations; 32 partial-record or miscellaneous streamflow stations and 5 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
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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]

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]

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

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 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 9 near Elk City, OK	07322000	3.50	1952-70
East Branch Sandstone Creek near Elk City, OK	07322500	23.0	1951-72
Sandstone Creek near Cheyenne, OK	07323000	87.1	1952-74
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

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
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
Wildhorse Creek near Hoover, OK	07329700	604	1969-93
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
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

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

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 2000-01
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

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

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

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 neqr Gene Autry, OK	07330700	326	1996-98
Caddo Creek Site 8CMP near Gene Autry, OK	07330720		1996-97
Caddo Creek Site 9A nesr 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

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Butcher Pen Creek near Tishomingo, OK	07331450		1960-61
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

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Red River at Arthur City, TX	07335500	44,531	1938-80, 1982
Kiamichi River near Big Cedar, OK	07335700	40.1	1966-96
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 Cerrogordo, Ar	07339100		1976, 1978
Blue R at Pexton Ranch near Milburn, OK	341835096342901		1976, 1978

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
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

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 139 streamflow-gaging stations, and 32 partial-record or miscellaneous streamflow stations, (2) stage and content records for 17 lakes , reservoirs and gage height records for 2 stations; (3) water-quality records for 46 streamflow-gaging stations; (4) water-level records for 5 observation wells.

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-03-2" 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; Chickasaw Nation; Choctaw Nation; the cities of Ada, Henryetta, and Lawton**.

Organizations that supplied data are acknowledged in the station descriptions.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from *http://water.usgs.gov/hbn/*.

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

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) is a network of monitoring sites that provide continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from *http://bqs.usgs.gov/acidrain/*.

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

Assessment activities are being conducted in 42 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 is 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 water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

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

The USGS National Streamflow Information Program (NSIP) is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from *http://water.usgs.gov/nsip/*.

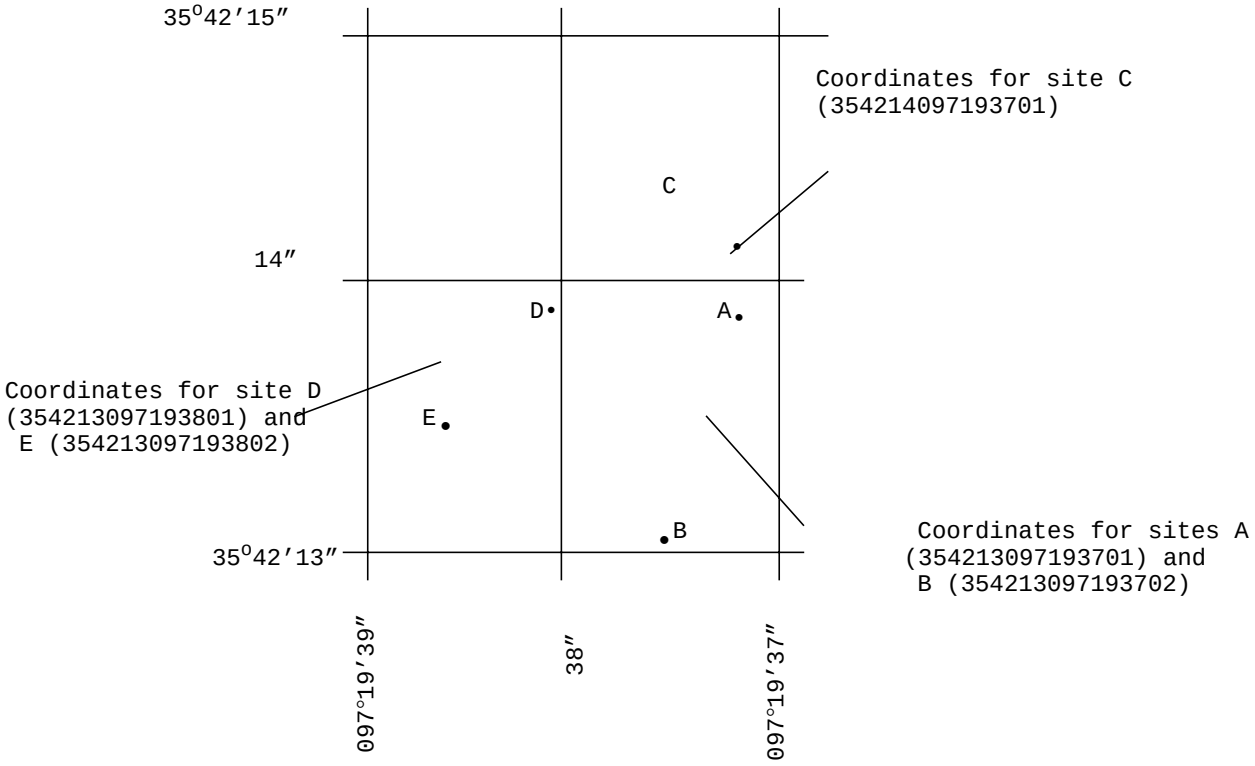


Fig.1: System for numbering miscellaneous and ground-water sites (latitude and longitude)

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 2003 water year that began Oct. 1, 2002 and ended Sept. 30, 2003. 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 2-4. 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.

DOWNSTREAM ORDER AND STATION NUMBER

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

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In assigning a station number, 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 composed of both types of stations. Gaps are consecutive. The complete 8-digit (or 10-digit) number for each station such as 07152500, which appears just to the left of the station name, includes a 2-digit part number “07” plus the 6-digit (or 8-digit) downstream order number “152500.” In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as "01," "02," and so forth, would be assigned as one would for wells (see fig. 1). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

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 2.

Data Collection and Computation

The base data collected at gaging stations (fig. 2) consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters 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).

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

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence 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 at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in the northern United States, the stage-discharge relation is affected by ice in the winter; therefore, computation of the discharge in the usual

manner is impossible. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter-discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge from other stations in the same or nearby basins.

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

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

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

Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts: (1) the station manuscript or description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) 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 (5) a hydrograph of discharge.

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 follow that clarify information presented under the various headings of the station description.

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

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

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

REVISED RECORDS.—If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

GAGE.—The type of gage in current use, the datum of the current gage referred to a standard datum, 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 either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented 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, the outlet works and spillway, and the purpose and use of the reservoir.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.—Information here documents 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 USGS.

REVISIONS.—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (http://water.usgs.gov/nwis/nwis). Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations to document the revision in a REVISED RECORDS entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. 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 stage-capacity table when daily volumes are given.

Peak Discharge Greater than Base Discharge

Tables of peak discharge above base discharge are included for some stations where secondary instantaneous peak discharge data are used in flood-frequency studies of highway and bridge design, flood-control structures, and other flood-related projects. The base discharge value is selected so an average of three peaks a year will be reported. This base discharge value has a recurrence interval of approximately 1.1 years or a 91-percent chance of exceedence in any 1 year.

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 arithmetic 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 is 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). Values for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if extensive regulation or diversion is in effect 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 volumes are given. These values are identified by a symbol and a corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (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 values. 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. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled SUMMARY STATISTICS follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, WATER YEARS __-__, will consist of all of the station records within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are 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 the dates of occurrence do not fall within the selected water years listed in the heading, 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 extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that 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.

ANNUAL MEAN.—The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

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

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

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

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

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

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

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

INSTANTANEOUS LOW FLOW.—The 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 equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

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

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

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

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

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

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

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified. This identification is shown either by flagging individual daily values with the letter “e” and noting in a table footnote, “e–Estimated,” or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of Field Data and Computed Results

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

of discharge, and interpretations of records.

The degree of accuracy of the records is stated in the REMARKS in the station description. "Excellent" indicates that about 95 percent of the daily discharges are within 5 percent of the true value; "good" within 10 percent; and "fair," within 15 percent. "Poor" indicates that daily discharges have less than "fair" accuracy. Different accuracies may be attributed to different parts of a given record.

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

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values 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 Data Records Available

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

Information on the availability of unpublished data or statistical analyses may be obtained from the District office (see address that is shown on the back of the title page of this report).

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

Surface-water samples for analysis usually are collected at or near stream-gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

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

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs. A list of TWRIs is provided in this report.

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 at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

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

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

SURFACE-WATER-QUALITY RECORDS

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data is useful in the interpretation of surface-water quality. Records of surface-water quality in this report 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 *continuous-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 continuous- or partial-record station, where 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 *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. 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 3.

Rating classifications for continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit

Accuracy of the Records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Rating classifications for continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	Good	Fair	Poor
Water temperature	≤ 0.2°C	> 0.2 to 0.5°C	> 0.5 to 0.8°C	> 0.8°C
Specific conductance	≤ 3%	> 3 to 10%	> 10 to 15%	> 15%
Dissolved oxygen	≤ 0.3 mg/L	> 0.3 to 0.5 mg/L	> 0.5 to 0.8 mg/L	> 0.8 mg/L
pH	≤ 0.2 unit	> 0.2 to 0.5 unit	> 0.5 to 0.8 unit	> 0.8 unit
Turbidity	≤ 5%	> 5 to 10%	> 10 to 15%	> 15%

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 is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must 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 given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. These TWRIs are listed in this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS District office (see address that is shown on the back of title page in this report).

Water Temperature

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

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

Sediment

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

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

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

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

Laboratory Measurements

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRIs, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

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

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

LOCATION.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

DRAINAGE AREA.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

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

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

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

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES.—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of

record and for the current water year.

REVISIONS.—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (http://waterdata.usgs.gov/nwis). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

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

Remark Codes

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

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

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte was either not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of "E." These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District office 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. These data are not presented in this report but are available from the District office.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in 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. Many types of blank samples are possible; each is 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. The reference material 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. Many types of replicate samples are 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:

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

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

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample 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.

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

Site Identification Numbers

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude.Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRIs referred to in the On-site Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

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 above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in 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 only to a tenth of a foot or a larger unit.

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figure 4*;* each well is identified on the map by its local well or county well number.

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

LOCATION.—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are reported as North American Datum of 1927 unless otherwise specified.

AQUIFER.—This entry designates by name and geologic age the aquifer that the well taps.

WELL CHARACTERISTICS.—This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and changes since construction.

INSTRUMENTATION.—This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

DATUM.—This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), 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 National Geodetic Vertical Datum of 1929 (NGVD 29); it is reported with a precision depending on the method of determination.

REMARKS.—This entry describes factors that may influence the water level in a well or the measurement of the water level, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

PERIOD OF RECORD.—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words “to current year” if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

EXTREMES FOR PERIOD OF RECORD.—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

Water-Level Tables

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display periodic water-level measurements show points that may be connected with a dashed line from one measurement to the next. Hydrographs that display recorder data show a solid line representing the mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery

failures, or mechanical problems related to the response of the recorder's float mechanism to water-level fluctuations in a well.

GROUND-WATER-QUALITY DATA

Data Collection and Computation

The ground-water-quality data in this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide.

Most methods for collecting and analyzing water samples are described in the TWRIs. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS District office (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed on site. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4.

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 from *http://water.usgs.gov*.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each Water Discipline District Office (See address that is shown on the back of the title page of this report.)

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Definitions of common terms such as algae, water level, and precipitation are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting inch/pound units to International System (SI) units on the inside of the back cover.

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

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also "Annual runoff")

Adenosine triphosphate (ATP) is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample. (See also "Biomass" and "Dry weight")

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

Annual runoff is the total quantity of water that is discharged ("runs off") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. 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.)

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-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 percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that 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 collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also "Substrate")

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. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also "Biomass" and "Dry mass")

Aspect is the direction toward which a slope faces with respect to the compass.

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

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bedload is material in transport that is supported primarily by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to an elevation equal to the top of the bedload sampler nozzle (ranging from 0.25 to 0.5 foot) that are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

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 mass per unit area or volume of habitat.

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This is also called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) 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. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also "Phytoplankton")

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of

the material including the dissolved solids content of the pore water and lithology and porosity of the rock.

Cells/volume refers to the number of cells of any organism that 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 volume, and are generally reported as cells or units per milliliter (mL) or liter (L).

Cells volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

sphere $4/3\ \pi r^3$ cone $1/3\ \pi r^2 h$ cylinder $\pi r^2 h$.

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159….

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cfs-day (See "Cubic foot per second-day")

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

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

Clostridium perfringens *(C. perfringens)* is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and presence of microorganisms that are resistant to disinfection and environmental stresses. (See also "Bacteria")

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

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

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

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

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term "second-foot" sometimes is used synonymously with "cubic foot per second" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, [(ft^3/s)/d]) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables are numerically equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

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

Daily mean suspended-sediment concentration is the time-weighted concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also "Sediment" and "Suspended-sediment concentration")

Daily-record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to periodic sample or data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data are usually downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988")

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. (See also "Phytoplankton")

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, etc., within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of "dissolved" constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It 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, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

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

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

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface

runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

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

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, 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. (See also "Ash mass," "Biomass," and "Wet mass")

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 ˚C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also "Wet weight")

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also "Substrate embeddedness class")

Enterococcus bacteria are commonly found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococcus feacium, Streptococcus avium,* and their variants. (See also "Bacteria")

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that are generally considered pollution sensitive; the index usually decreases with pollution.

Escherichia coli *(E. coli)* are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 ˚C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Estimated (E) concentration value is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an 'E' code will be reported with the value. If the analyte is qualitatively identified as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an 'E' code even though the measured value is greater than the MDL. A value reported with an 'E' code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<).

Euglenoids (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also "Phytoplankton")

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

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

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Fire algae (*Pyrrhophyta*) are free-swimming unicells characterized by a red pigment spot. (See also "Phytoplankton")

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

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

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term "stage," although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

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

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

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. (See also "Phytoplankton")

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat are typically made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. *See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N},$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See "Datum")

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

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

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

Instantaneous discharge is the discharge at a particular instant of time. (See also "Discharge")

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) is generally equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a "less than" (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. [Note: In several previous NWQL documents (NWQL Technical Memorandum 98.07, 1998), the LRL was called the nondetection value or NDV—a term that is no longer used.]

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

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L} ,$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e \frac{I}{I_o} .$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also "Daily mean suspended-sediment concentration" and "Suspended-sediment concentration")

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

Mean high or **low tide** is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also "Datum")

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

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

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

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

Micrograms per kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

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

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

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

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations**,** it does not necessarily represent local mean sea level at any particular place. *See NOAA web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See "North American Vertical Datum of 1988")

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate")

Nekton are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

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

North American Vertical Datum of 1988 (NAVD 1988) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian**,** Mexican, and United States first-order terrestrial leveling networks.

Open or **screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

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

Organic mass or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also "Ash mass," "Biomass," and "Dry mass")

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

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

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

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

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

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

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

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, 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.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

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

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

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

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

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

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 commonly are known as algae. (See also "Plankton")

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 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. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

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 released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/time)] for phytoplankton. The carbon method defines 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 with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/time)] for phytoplankton. The oxygen method defines 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. (See also "Primary productivity")

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of

about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

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

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

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See "Recurrence interval")

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also "Annual runoff")

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "fluvial sediment." Sediment 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 affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also "Annual 7-day minimum" and "Recurrence interval")

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

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. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See "Gage height")

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

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

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (0.1 to 0.2 foot) 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 defined operationally as the material retained on a 0.45-micrometer filter.

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

ence, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also "Suspended")

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also "Sediment")

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 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also "Sediment" and "Suspended sediment")

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027. (See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also "Sediment")

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also "Suspended")

Suspended solids, total residue at 105 ˚C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial 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:	*Hexagenia*
Species:	*Hexagenia limbata*

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

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

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in

solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

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

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

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

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

Total length (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

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

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also "Organism count/volume")

Total recoverable is the amount of a given constituent in a whole-water sample after a 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 for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also "Bedload," "Bedload discharge," "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also "Sediment," "Suspended-sediment load," and "Total load")

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is the reduction in the transparency of a solution due to the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved

methods for the measurement of turbidity in the USGS include those that conform to U.S. EPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of pathlength of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See "Water-table aquifer")

Vertical datum (See "Datum")

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens.

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2002, is called the "2002 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.

Wet mass is the mass of living matter plus contained water. (See also "Biomass" and "Dry mass")

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also "Dry weight")

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

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are 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. (See also "Plankton")

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

The U.S.G.S. 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.G.S., 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 made in the form of a 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 mention the "U.S. Geological Survey Techniques of Water-Resources Investigations."

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

1–D1. *Water temperature—influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS–TWRI book 1, chap. D1. 1975. 65 p.

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

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

2–D1. *Application of surface geophysics to ground-water investigations,* by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI book 2, chap. D1. 1974. 116 p.

2–D2. *Application of seismic-refraction techniques to hydrologic studies,* by F.P. Haeni: USGS–TWRI book 2, chap. D2. 1988. 86 p.

Section E. Subsurface Geophysical Methods

2–E1. *Application of borehole geophysics to water-resources investigations,* by W.S. Keys and L.M. MacCary: USGS–TWRI book 2, chap. E1. 1971. 126 p.

2–E2. *Borehole geophysics applied to ground-water investigations,* by W.S. Keys: USGS–TWRI book 2, chap. E2. 1990. 150 p.

Section F. Drilling and Sampling Methods

2–F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS–TWRI book 2, chap. F1. 1989. 97 p.

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

3–A1. *General field and office procedures for indirect discharge measurements,* by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 p.

3–A2. *Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M.A. Benson: USGS–TWRI book 3, chap. A2. 1967. 12 p.

3–A3. *Measurement of peak discharge at culverts by indirect methods,* by G.L. Bodhaine: USGS–TWRI book 3, chap. A3. 1968. 60 p.

3–A4. *Measurement of peak discharge at width contractions by indirect methods,* by H.F. Matthai: USGS-TWRI book 3, chap. A4. 1967. 44 p.

3–A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS–TWRI book 3. chap. A5. 1967. 29 p.

3–A6. *General procedure for gaging streams,* by R.W. Carter and Jacob Davidian: USGS–TWRI book 3, chap. A6. 1968. 13 p.

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

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

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

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

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

3–A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and

F.A. Kilpatrick: USGS–TWRI book 3, chap. A12. 1986. 34 p.

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

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

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

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

3–A17. *Acoustic velocity meter systems,* by Antonius Laenen: USGS–TWRI book 3, chap. A17. 1985. 38 p.

3–A18. *Determination of stream reaeration coefficients by use of tracers,* by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI book 3, chap. A18. 1989. 52 p.

3–A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A19. 1990. 31 p.

3–A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI book 3, chap. A20. 1993. 38 p.

3–A21 *Stream-gaging cableways,* by C. Russell Wagner: USGS–TWRI book 3, chap. A21. 1995. 56 p.

Section B. Ground-Water Techniques

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

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

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

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

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, chap. B4. 1993. 8 p.

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

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

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

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

Section C. Sedimentation and Erosion Techniques

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

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

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

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

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

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

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

Section B. Surface Water

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

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

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

Section D. Interrelated Phases of the Hydrologic Cycle

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

Book 5. Laboratory Analysis

Section A. Water Analysis

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

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

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

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

5–A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI book 5, chap. A5. 1977. 95 p.

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

Section C. Sediment Analysis

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

Book 6. Modeling Techniques

Section A. Ground Water

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

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

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

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

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

6–A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI book 6, chap. A5,1996. 125 p.

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

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

7–C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI book 7, chap. C1. 1976. 116 p.

7–C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI book 7, chap. C2. 1978. 90 p.

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

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

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

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

Section B. Instruments for Measurement of Discharge

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

Book 9. Handbooks for Water-Resources Investigations

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

9–A1. *National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.

9–A2. *National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.

9–A3. *National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.

9–A4. *National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.

9–A5. *National field manual for the collection of water-quality data: Processing of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.

9–A6. *National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.

9–A7. *National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.

9–A8. *National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.

9–A9. *National field manual for the collection of water-quality data: Safety in field activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.

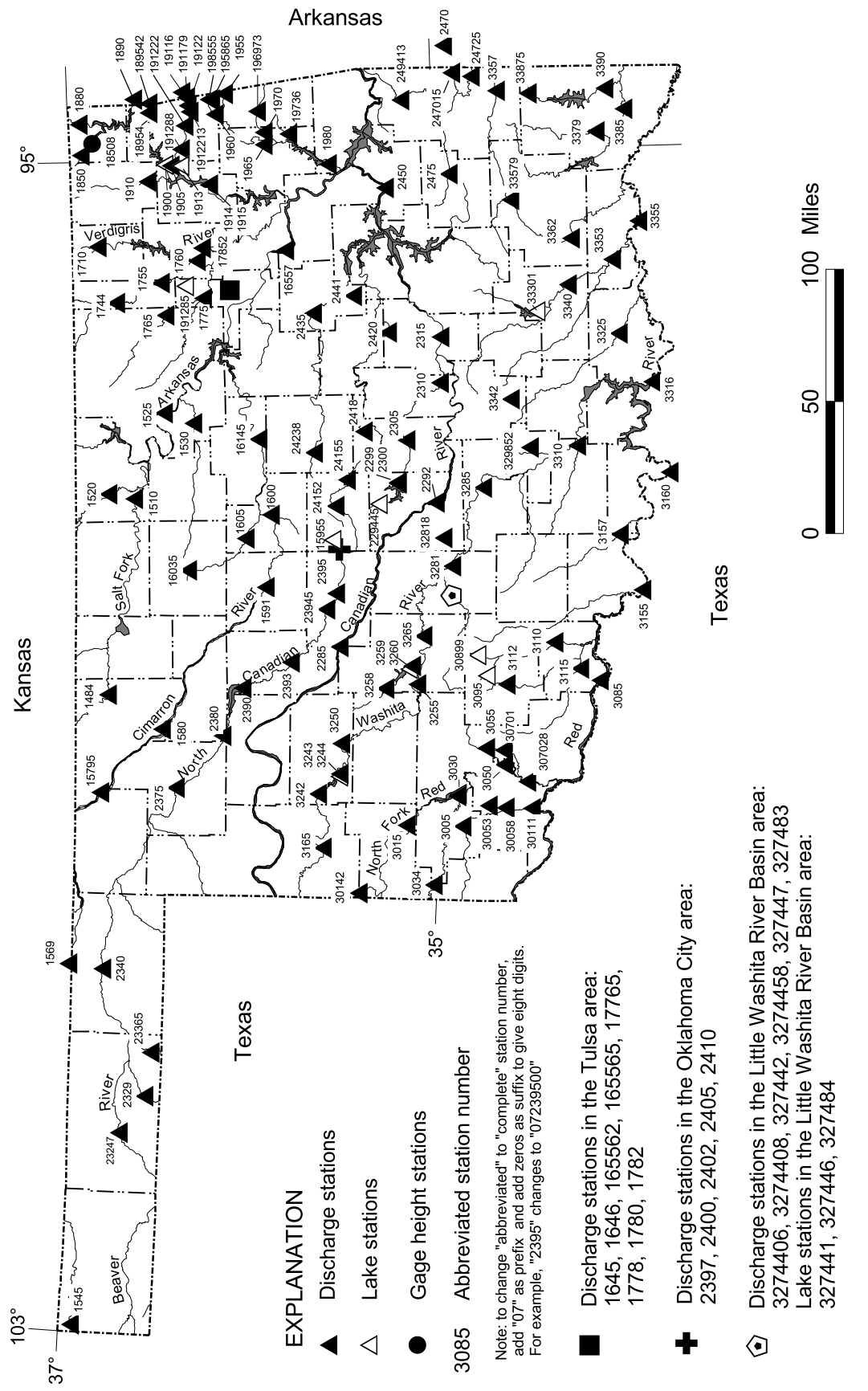


Figure 2.--Locations of continuous surface-water stations for water-year 2003.

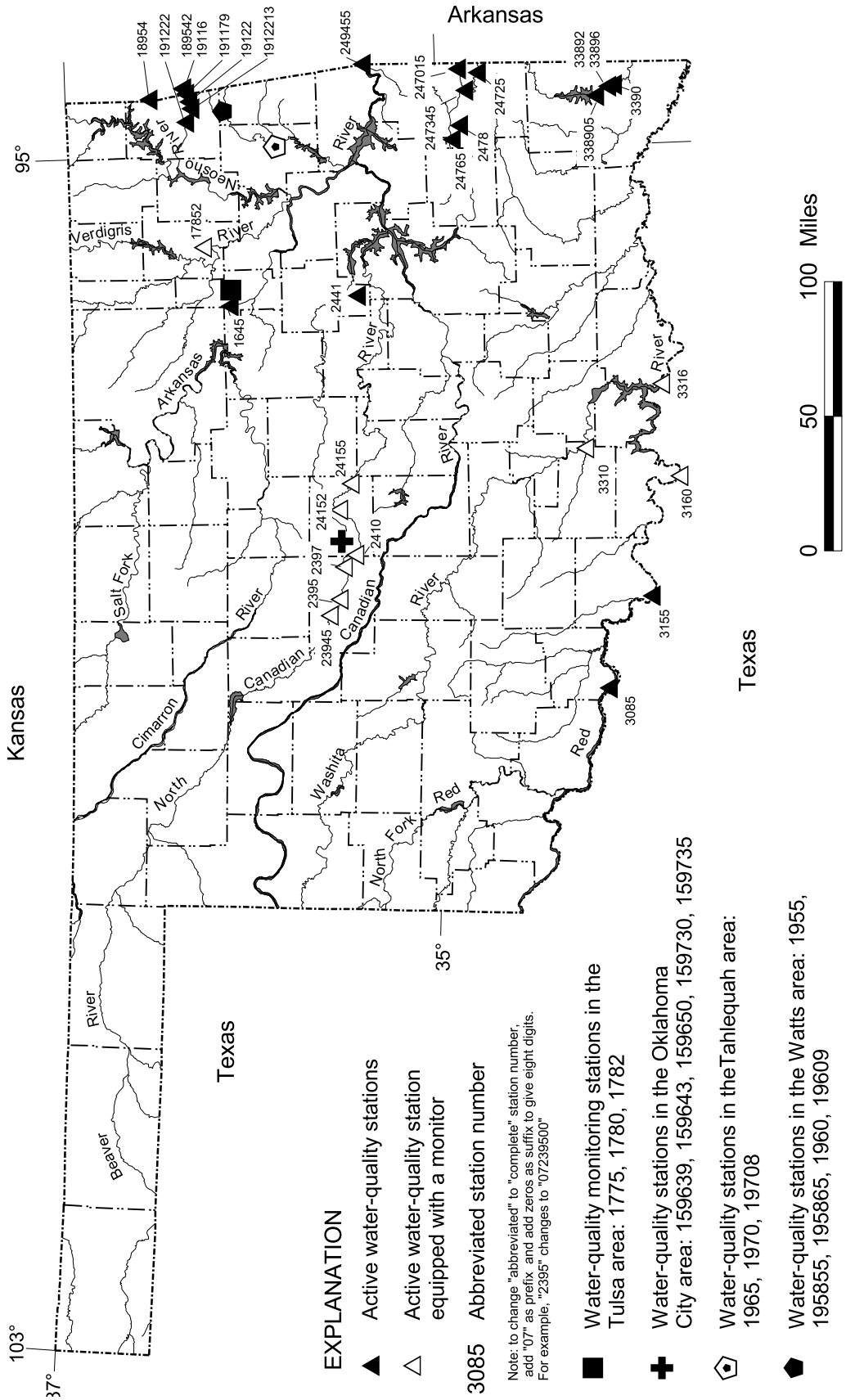


Figure 3.--Locations of water-quality stations for water-year 2003.

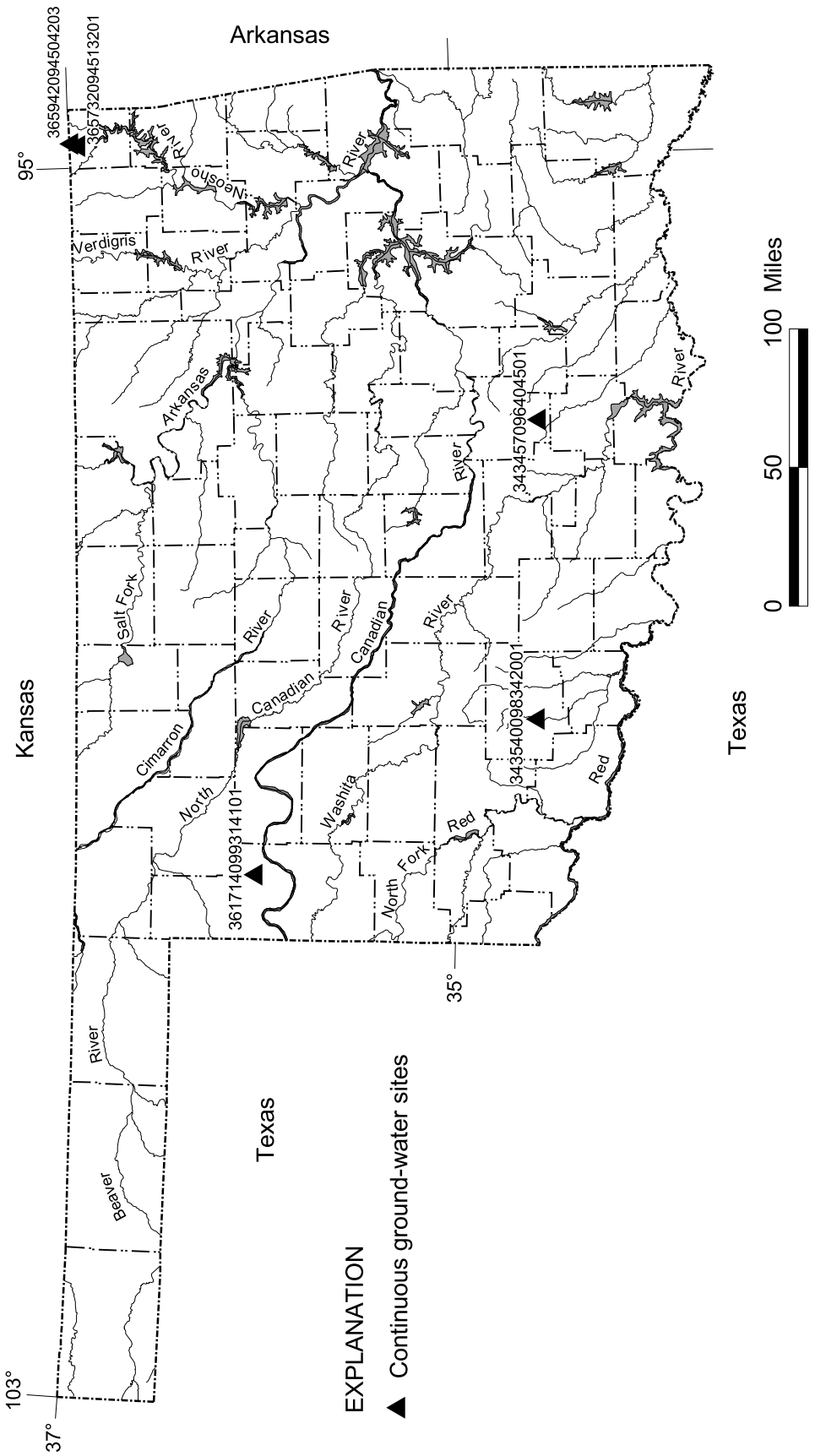


Figure 4.--Locations of ground-water wells for water-year 2003.

07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51'30", long 99°30'30", in SW $\frac{1}{4}$ SE $\frac{1}{4}$ 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 mi^2, of which 209 mi^2 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.--Records fair. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s and maximum (*):

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	147	37	84	38	46	33	13	2.1	310	0.00	0.00
2	0.00	134	40	78	37	56	29	10	1.3	142	0.00	0.00
3	0.00	123	44	72	35	61	26	11	3.0	79	0.00	0.00
4	0.00	117	62	65	32	57	24	32	6.0	43	0.00	0.00
5	0.00	111	90	60	31	51	21	17	4.2	24	0.00	0.00
6	18	99	104	58	34	46	21	9.2	3.5	14	0.00	0.00
7	23	91	90	56	34	42	19	7.6	2.4	8.2	0.00	0.00
8	27	79	78	55	36	37	17	6.8	2.3	5.3	0.00	0.00
9	44	72	75	51	43	34	16	5.6	1.3	3.2	0.00	0.00
10	29	65	73	48	44	35	15	4.4	0.79	1.2	0.00	0.00
11	46	61	70	46	48	37	15	3.2	0.76	0.35	0.00	1,320
12	51	57	68	43	53	37	14	2.8	0.57	0.09	0.00	942
13	38	54	64	41	46	35	14	2.2	8.9	0.00	0.00	244
14	28	58	63	41	45	33	14	2.1	11	0.00	0.00	130
15	18	61	60	41	44	33	14	2.0	41	0.00	0.00	89
16	13	57	57	40	44	33	16	9.4	18	0.00	0.00	61
17	11	52	54	40	45	33	19	12	7.8	0.00	0.00	e45
18	9.4	49	53	40	41	31	26	5.6	3.9	0.00	0.00	e35
19	9.8	47	50	40	39	31	56	3.3	2.3	0.00	0.00	29
20	9.2	46	47	39	39	33	54	2.4	6.1	0.00	0.00	24
21	8.4	44	45	40	41	34	37	3.3	98	0.00	0.00	21
22	40	43	44	41	42	38	32	3.8	435	0.00	0.00	18
23	41	41	63	e35	42	46	33	4.3	316	0.00	0.00	17
24	62	40	78	e30	41	45	36	4.2	182	0.00	0.00	16
25	241	38	74	e32	39	43	38	19	105	0.00	0.00	12
26	208	38	93	e34	36	39	32	10	71	0.00	0.00	9.3
27	208	37	93	e38	e35	35	27	5.0	61	0.00	0.00	7.0
28	e270	37	85	e46	e44	37	23	2.9	94	0.00	0.00	6.0
29	e260	39	77	51	---	34	20	4.8	66	0.00	0.00	6.1
30	e217	38	75	46	---	32	16	8.4	239	0.00	0.00	4.9
31	176	---	83	41	---	34	---	4.4	---	0.00	0.00	---
TOTAL	2,105.80	1,975	2,089	1,472	1,128	1,218	757	231.7	1,794.22	630.34	0.00	3,036.30
MEAN	67.9	65.8	67.4	47.5	40.3	39.3	25.2	7.47	59.8	20.3	0.000	101
MAX	270	147	104	84	53	61	56	32	435	310	0.00	1,320
MIN	0.00	37	37	30	31	31	14	2.0	0.57	0.00	0.00	0.00
AC-FT	4,180	3,920	4,140	2,920	2,240	2,420	1,500	460	3,560	1,250	0.00	6,020

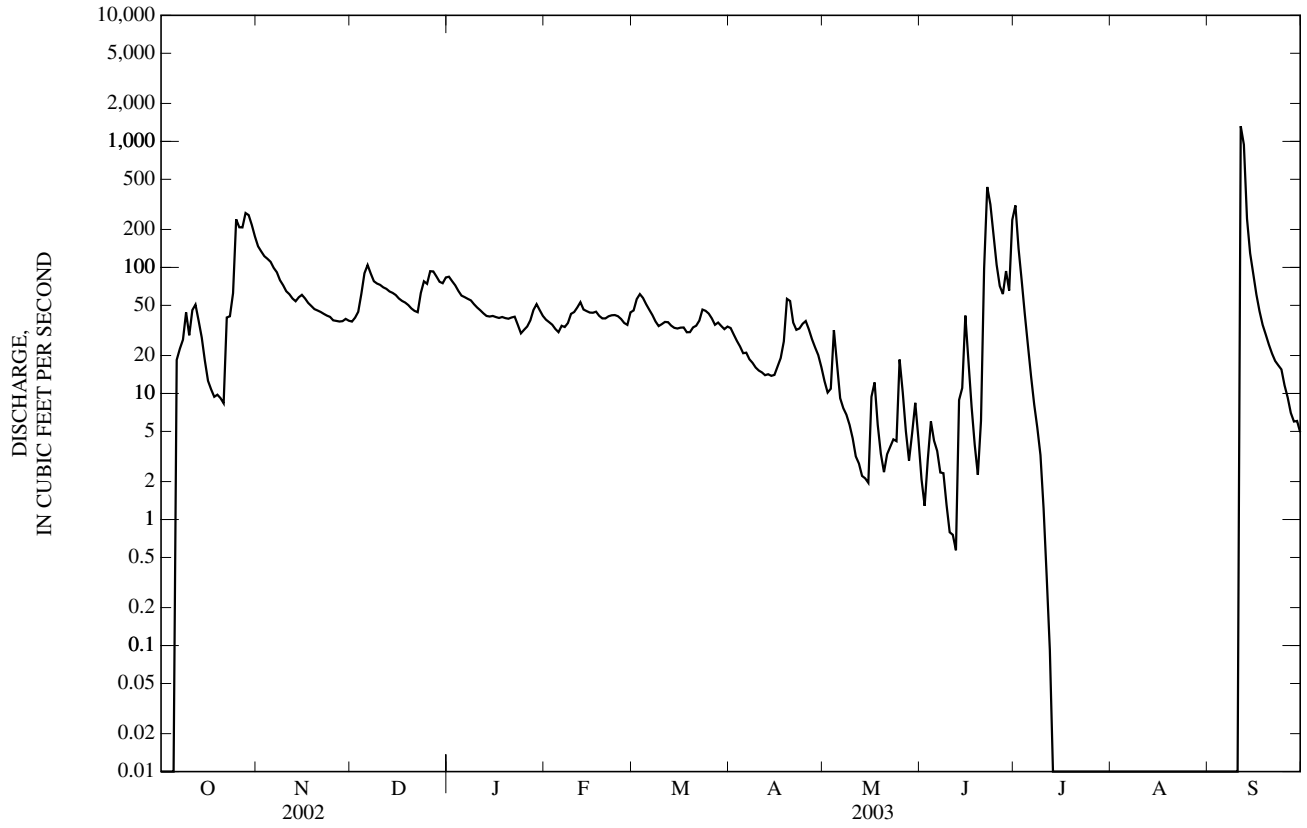
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

MEAN	75.4	32.5	38.6	47.3	56.9	55.8	103	253	230	63.5	38.4	50.3
MAX	919	196	148	199	263	344	1,292	1,389	1,602	575	539	424
(WY)	(1961)	(1987)	(1992)	(1960)	(1998)	(1998)	(1997)	(1957)	(1941)	(1953)	(1995)	(1995)
MIN	0.000	0.000	0.000	0.000	0.000	0.12	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1941)	(1940)	(1940)	(1940)	(1953)	(1971)	(1955)	(1953)	(1952)	(1963)	(1943)	(1939)

e Estimated

07300500 SALT FORK RED RIVER AT MANGUM, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	13,694.68		16,437.36			
ANNUAL MEAN	37.5		45.0		87.1	
HIGHEST ANNUAL MEAN					277	1941
LOWEST ANNUAL MEAN					12.3	1940
HIGHEST DAILY MEAN	724	Apr 13	1,320	Sep 11	22,600	May 28, 1978
LOWEST DAILY MEAN	0.00	at times	0.00	at times	0.00	most years
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 7	0.00	Jul 13	0.00	Aug 14, 1938
MAXIMUM PEAK FLOW			3,120	Sep 11	72,000	May 16, 1957
MAXIMUM PEAK STAGE			8.61	Sep 11	14.70	Jun 16, 1938
ANNUAL RUNOFF (AC-FT)	27,160		32,600		63,080	
10 PERCENT EXCEEDS	78		81		127	
50 PERCENT EXCEEDS	24		33		19	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



07300530 BITTER CREEK NEAR MARTHA, OK

LOCATION.--Lat 34°43'00", long 99°22'09", in SW $^1/_4$ 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 mi^2.

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.--Records fair. Flow affected by irrigation from Lake Altus.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	4.3	4.5	5.7	3.7	3.6	2.6	1.9	0.95	e3.0	18	17
2	3.9	10	4.4	5.4	3.6	3.6	2.4	1.7	37	1.9	21	12
3	3.7	23	7.8	5.1	3.6	3.5	2.4	1.9	6.7	1.5	18	10
4	3.7	9.1	14	5.1	3.2	3.5	3.5	2.0	5.0	1.1	6.7	8.6
5	3.6	7.0	8.1	5.0	3.2	3.7	2.4	1.7	3.3	1.0	3.8	7.8
6	3.6	6.0	5.4	5.0	3.8	3.1	2.9	1.6	27	0.90	6.3	7.1
7	5.8	5.6	4.8	6.7	3.7	3.3	2.8	1.6	4.3	0.81	9.3	6.5
8	28	5.7	4.9	5.1	3.5	3.3	2.5	1.6	2.2	0.63	15	6.2
9	74	5.8	5.2	5.0	4.8	3.7	2.3	1.5	1.8	0.49	13	6.0
10	9.0	5.8	6.0	4.6	4.4	3.1	2.7	1.3	1.5	0.42	12	5.4
11	4.7	5.6	5.0	4.8	3.9	3.3	2.9	1.2	1.2	1.4	11	6.0
12	3.8	5.8	5.0	4.6	6.2	3.6	2.5	1.2	0.97	1.6	6.3	5.1
13	3.2	5.5	4.6	4.7	3.6	3.4	2.7	1.2	49	4.4	5.9	4.4
14	2.9	5.9	4.3	4.5	3.9	3.2	2.5	1.3	20	7.6	11	3.9
15	2.7	5.8	4.0	4.4	3.6	3.1	2.6	1.3	4.7	9.1	16	3.8
16	2.6	5.7	3.9	4.2	3.1	3.3	32	1.9	3.1	11	15	3.6
17	2.4	5.7	3.7	3.9	3.1	3.5	5.3	1.6	2.6	2.3	13	3.9
18	2.3	5.9	3.8	4.2	3.2	3.8	2.7	1.3	2.2	6.5	8.8	4.2
19	2.4	4.9	3.3	4.2	3.8	3.4	49	1.1	2.1	7.3	7.3	3.7
20	2.3	5.3	3.1	4.2	3.5	3.9	14	1.2	2.1	2.3	4.3	4.1
21	2.2	5.1	3.8	5.0	3.5	3.0	4.1	1.3	8.8	2.8	7.1	3.8
22	2.1	4.7	3.0	4.6	3.6	3.0	3.4	2.1	8.8	4.7	5.8	3.6
23	2.3	5.1	27	e2.6	3.3	3.0	3.5	1.3	3.0	8.4	7.0	3.4
24	3.3	5.2	41	e3.0	e2.5	2.9	3.3	1.1	2.0	5.2	8.2	3.9
25	5.8	4.8	12	e3.6	e2.4	3.3	2.9	53	1.7	9.1	7.2	3.9
26	3.7	4.9	8.2	3.9	e2.7	2.5	2.6	18	6.1	6.3	4.9	3.5
27	3.0	4.8	7.1	3.9	e3.2	2.6	2.6	3.5	3.7	6.6	5.3	3.6
28	8.3	4.8	6.8	4.0	3.5	2.9	2.3	2.5	2.6	10	6.1	3.2
29	25	5.0	6.7	4.0	---	2.8	2.3	1.4	4.6	12	40	3.1
30	8.5	4.9	6.3	3.7	---	2.7	2.2	1.2	4.8	14	316	3.1
31	4.5	---	5.7	3.8	---	2.7	---	0.94	---	19	39	---
TOTAL	237.4	187.7	233.4	138.5	100.1	100.3	171.9	116.44	223.82	163.35	668.3	164.4
MEAN	7.66	6.26	7.53	4.47	3.58	3.24	5.73	3.76	7.46	5.27	21.6	5.48
MAX	74	23	41	6.7	6.2	3.9	49	53	49	19	316	17
MIN	2.1	4.3	3.0	2.6	2.4	2.5	2.2	0.94	0.95	0.42	3.8	3.1
AC-FT	471	372	463	275	199	199	341	231	444	324	1,330	326

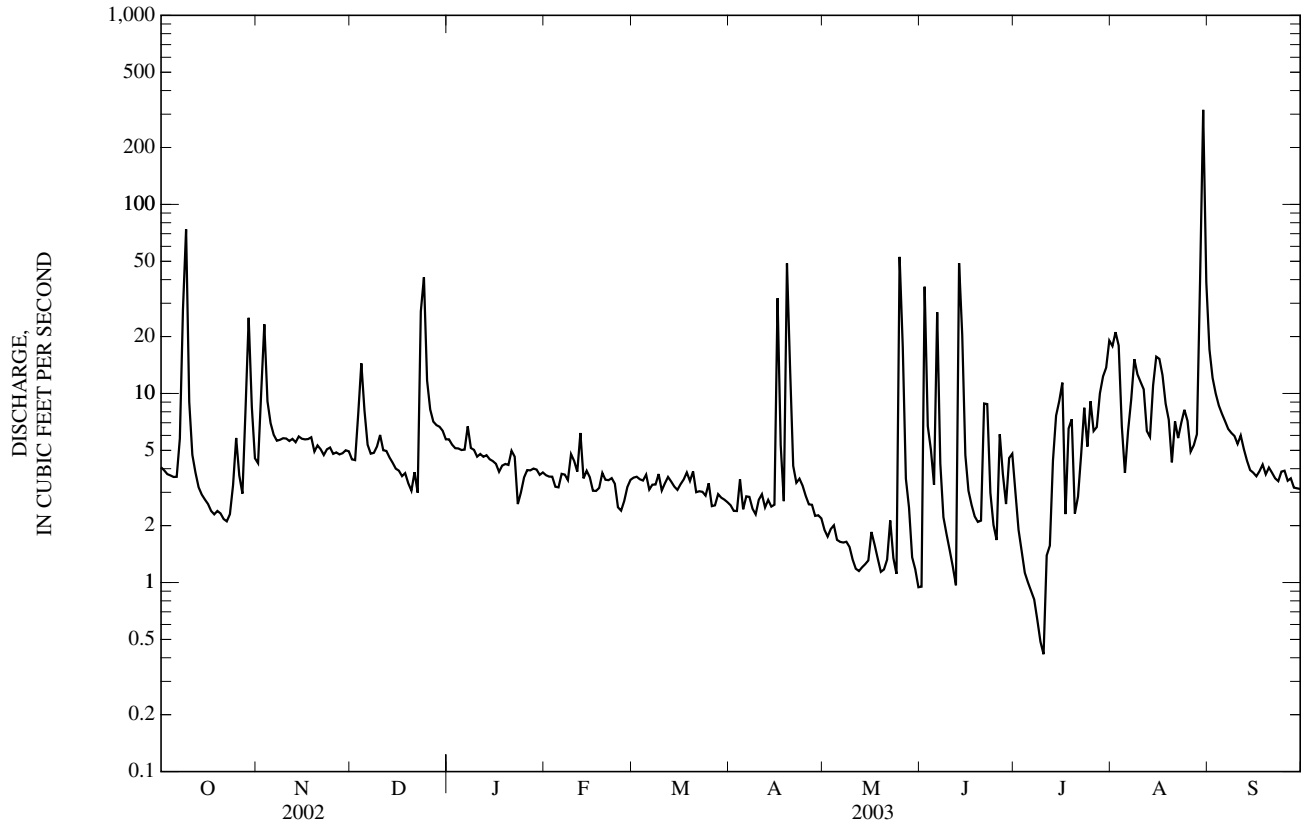
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

MEAN	5.23	5.90	5.24	5.46	8.98	15.8	19.4	35.6	23.9	16.2	21.3	9.23
MAX	7.66	10.6	7.53	9.89	23.4	55.5	46.3	78.2	82.6	22.8	27.5	12.2
(WY)	(2003)	(1999)	(2003)	(2002)	(2001)	(2000)	(2002)	(2001)	(1999)	(2001)	(2000)	(2001)
MIN	2.55	2.52	3.29	2.92	3.57	3.24	4.30	3.76	7.02	5.13	10.5	5.48
(WY)	(2002)	(2000)	(2002)	(2000)	(2003)	(2003)	(2001)	(2003)	(2002)	(2002)	(2002)	(2003)

e Estimated

07300530 BITTER CREEK NEAR MARTHA, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	4,048.28		2,505.61			
ANNUAL MEAN	11.1		6.86		14.4	
HIGHEST ANNUAL MEAN					19.8	1999
LOWEST ANNUAL MEAN					6.86	2003
HIGHEST DAILY MEAN	774	Apr 13	316	Aug 30	1,440	Jun 23, 1999
LOWEST DAILY MEAN	0.98	Jul 11	0.42	Jul 10	0.42	Jul 10, 2003
ANNUAL SEVEN-DAY MINIMUM	1.8	Jun 24	0.76	Jul 4	0.76	Jul 4, 2003
MAXIMUM PEAK FLOW			543	Aug 30	4,250	Jun 23, 1999
MAXIMUM PEAK STAGE			10.59	Aug 30	13.04	Jun 23, 1999
ANNUAL RUNOFF (AC-FT)	8,030		4,970		10,430	
10 PERCENT EXCEEDS	14		11		24	
50 PERCENT EXCEEDS	5.4		3.9		4.9	
90 PERCENT EXCEEDS	2.8		1.7		2.5	



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 mi^2.

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

REVISED RECORDS.--WDR OK-01-1: 1999 (M)

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

REMARKS.--Records fair except July, August irrigation period which is poor. Flow affected at times by irrigation from Lake Altus.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	8.7	6.1	9.0	7.9	6.3	2.6	2.9	3.8	7.3	9.0	62
2	6.9	9.3	8.4	8.8	6.9	6.2	5.6	2.7	274	e6.0	19	45
3	6.7	33	11	8.7	6.9	5.8	4.1	2.9	17	e5.5	25	39
4	6.7	19	17	8.9	6.6	5.1	4.3	3.0	11	e5.0	11	34
5	6.6	12	13	8.9	6.6	6.7	4.8	2.8	32	e4.5	3.9	20
6	6.6	10	9.6	8.8	6.9	5.9	4.2	2.7	380	e4.0	3.7	12
7	7.1	10	8.9	8.6	7.0	5.5	4.2	2.6	32	e3.7	3.5	11
8	12	10	8.6	9.6	6.8	5.5	4.1	2.4	12	e3.3	3.6	11
9	99	10	8.6	8.8	7.2	5.5	3.9	2.4	6.7	3.0	22	11
10	25	9.9	8.8	8.3	7.5	5.5	3.8	2.5	5.3	2.6	23	10
11	9.4	9.9	8.6	8.6	7.0	5.4	4.4	1.9	4.5	e2.3	6.0	10
12	7.6	9.7	8.5	8.5	6.9	5.6	4.3	2.0	4.4	e2.5	4.3	11
13	6.8	9.6	8.4	8.6	7.7	5.6	4.1	2.0	133	e2.9	3.9	9.3
14	6.5	9.6	8.2	8.5	6.8	5.2	4.3	2.1	67	e3.2	3.9	8.6
15	6.6	9.5	8.1	8.4	6.9	5.5	4.2	1.9	13	3.6	22	8.0
16	6.2	9.5	8.2	8.4	6.6	5.5	19	3.5	6.9	3.7	29	7.6
17	6.3	9.4	8.1	8.2	6.4	5.5	15	3.2	5.4	3.7	21	7.3
18	6.2	9.4	8.2	8.3	6.5	5.8	5.8	2.1	4.5	3.6	21	7.3
19	6.1	9.0	8.3	8.3	6.6	5.9	87	1.3	4.5	3.6	12	7.8
20	6.2	9.0	7.9	8.4	7.0	5.6	38	0.47	4.5	3.7	4.5	6.8
21	6.2	9.2	7.9	8.4	7.0	5.7	7.7	0.40	21	3.7	4.2	6.9
22	6.1	8.8	8.1	e8.2	7.0	5.2	5.0	0.35	13	3.6	3.8	6.9
23	6.2	8.8	32	e7.4	6.8	5.2	5.1	2.3	6.9	3.7	3.9	6.6
24	6.7	8.8	67	e7.1	e5.9	5.0	4.9	10	4.6	3.8	4.0	6.2
25	8.4	8.5	20	7.4	e6.0	4.9	4.2	28	4.0	3.3	4.1	6.3
26	9.2	8.4	12	7.5	6.2	4.8	3.8	42	111	3.6	4.0	6.3
27	7.3	8.5	10	7.4	6.3	4.5	3.5	5.8	26	3.5	3.3	5.7
28	13	8.5	9.7	7.4	6.3	4.6	3.3	2.7	7.5	3.6	3.4	5.6
29	43	8.5	9.5	7.2	---	4.9	3.1	2.2	50	3.7	88	5.4
30	21	8.1	9.5	5.1	---	5.0	3.1	1.4	15	3.9	287	5.4
31	9.9	---	9.1	7.6	---	4.6	---	1.2	---	14	369	---
TOTAL	388.6	312.6	377.3	253.3	190.2	168.0	271.4	143.72	1,280.5	128.1	1,026.0	400.0
MEAN	12.5	10.4	12.2	8.17	6.79	5.42	9.05	4.64	42.7	4.13	33.1	13.3
MAX	99	33	67	9.6	7.9	6.7	87	42	380	14	369	62
MIN	6.1	8.1	6.1	5.1	5.9	4.5	2.6	0.35	3.8	2.3	3.3	5.4
AC-FT	771	620	748	502	377	333	538	285	2,540	254	2,040	793

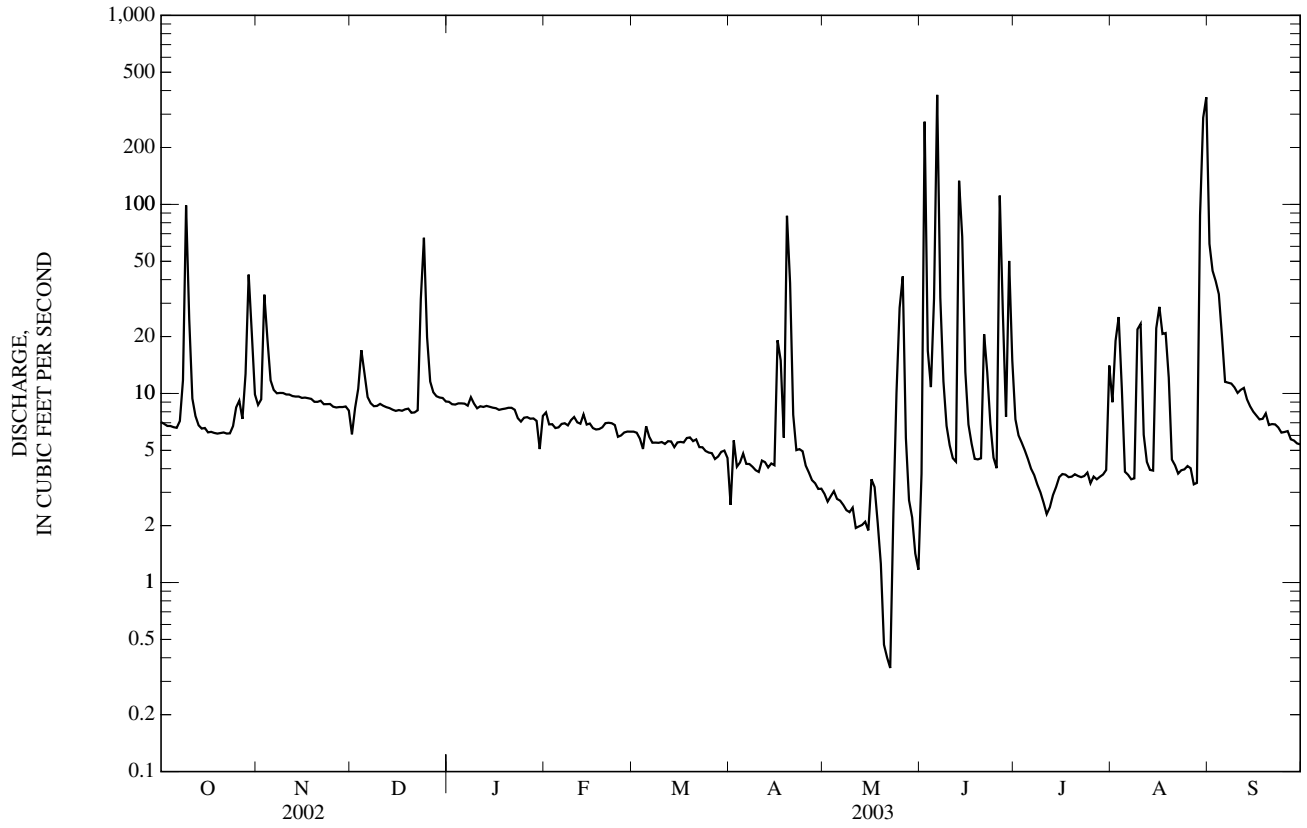
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

MEAN	9.50	10.0	9.54	10.1	15.0	28.9	26.7	63.7	42.9	20.6	28.8	14.2
MAX	17.8	16.1	12.2	14.0	40.6	106	68.7	148	132	31.4	40.4	20.5
(WY)	(2001)	(1999)	(2003)	(2002)	(2001)	(2000)	(2002)	(1999)	(1999)	(2001)	(1999)	(1999)
MIN	4.75	4.14	6.06	3.59	6.79	5.42	7.51	4.64	13.1	4.13	9.30	10.1
(WY)	(2002)	(2000)	(2002)	(2000)	(2003)	(2003)	(2001)	(2003)	(2002)	(2003)	(2002)	(1998)

e Estimated

07300580 BITTER CREEK WEST OF ALTUS, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	6,087.9		4,939.72			
ANNUAL MEAN	16.7		13.5		24.3	
HIGHEST ANNUAL MEAN					36.2	1999
LOWEST ANNUAL MEAN					13.5	2003
HIGHEST DAILY MEAN	1,470	Apr 14	380	Jun 6	2,100	May 20, 2001
LOWEST DAILY MEAN	4.0	Aug 11	0.35	May 22	0.35	May 22, 2003
ANNUAL SEVEN-DAY MINIMUM	4.5	May 17	1.4	May 17	1.4	May 17, 2003
MAXIMUM PEAK FLOW			764	Aug 31	2,760	May 20, 2001
MAXIMUM PEAK STAGE			11.62	Aug 31	14.82	May 20, 2001
ANNUAL RUNOFF (AC-FT)	12,080		9,800		17,590	
10 PERCENT EXCEEDS	15		20		31	
50 PERCENT EXCEEDS	8.6		6.9		8.9	
90 PERCENT EXCEEDS	5.5		3.3		4.0	



07301110 SALT FORK RED RIVER NEAR ELMER, OK

LOCATION.--Lat 34°28'44", long 99°22'55", in NW ¼ NE ¼ sec.15, T.1 S., R.21 W., Jackson County, Hydrologic Unit 11120202, on right bank at bridge on paved county road, formerly State Highway 5, 1.7 mi west of Elmer, and at mile 3.5.

DRAINAGE AREA.--1,878 mi^2, of which 209 mi^2 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.--Records fair. Low flows sustained at times by irrigation returns from Lake Altus.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s and maximum (*):

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	130	45	81	67	56	42	29	8.9	198	13	311
2	15	110	44	82	65	62	41	27	337	298	18	104
3	14	107	52	79	63	e64	41	26	127	202	12	70
4	14	115	78	76	59	70	39	24	40	125	12	51
5	13	95	80	74	58	67	37	22	42	88	7.8	42
6	13	88	81	70	59	64	35	27	1,290	64	7.0	45
7	12	81	101	69	59	63	34	24	249	51	5.6	36
8	32	75	92	70	59	60	32	19	108	41	4.7	33
9	99	69	88	70	62	57	31	16	67	33	6.9	32
10	133	63	83	68	66	54	29	13	54	24	20	30
11	68	60	82	65	65	54	26	11	48	54	23	31
12	47	58	77	65	65	54	26	9.9	43	35	15	1,220
13	48	56	74	65	67	53	25	9.2	61	39	9.9	1,010
14	46	54	71	64	69	51	24	7.0	224	28	12	339
15	40	54	69	63	66	50	23	6.7	99	15	12	196
16	35	57	68	62	62	50	24	5.8	62	11	5.5	136
17	30	56	64	60	60	50	32	5.7	59	13	7.8	95
18	27	54	62	60	61	50	31	5.9	46	31	9.3	71
19	26	53	61	63	62	48	253	7.3	39	37	7.2	56
20	24	51	59	63	59	47	147	7.8	35	15	5.9	48
21	23	51	58	63	60	45	91	9.3	64	15	6.7	40
22	23	50	56	62	60	47	66	7.8	72	14	6.5	35
23	23	49	122	e57	58	51	56	7.5	244	11	4.6	36
24	45	47	165	e54	e54	53	49	6.8	240	7.5	8.0	28
25	63	46	125	e48	e50	55	45	15	176	11	5.6	25
26	209	45	95	54	e48	52	42	34	192	30	9.4	24
27	175	45	90	61	e50	49	43	33	323	29	9.7	25
28	179	44	93	61	54	50	39	19	104	16	19	21
29	244	45	88	66	---	47	34	12	303	7.9	156	19
30	221	45	85	69	---	45	32	7.6	205	14	454	18
31	165	---	80	68	---	44	---	6.0	---	13	1,060	---
TOTAL	2,122	1,953	2,488	2,032	1,687	1,662	1,469	461.3	4,961.9	1,570.4	1,954.1	4,227
MEAN	68.5	65.1	80.3	65.5	60.2	53.6	49.0	14.9	165	50.7	63.0	141
MAX	244	130	165	82	69	70	253	34	1,290	298	1,060	1,220
MIN	12	44	44	48	48	44	23	5.7	8.9	7.5	4.6	18
AC-FT	4,210	3,870	4,930	4,030	3,350	3,300	2,910	915	9,840	3,110	3,880	8,380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY)

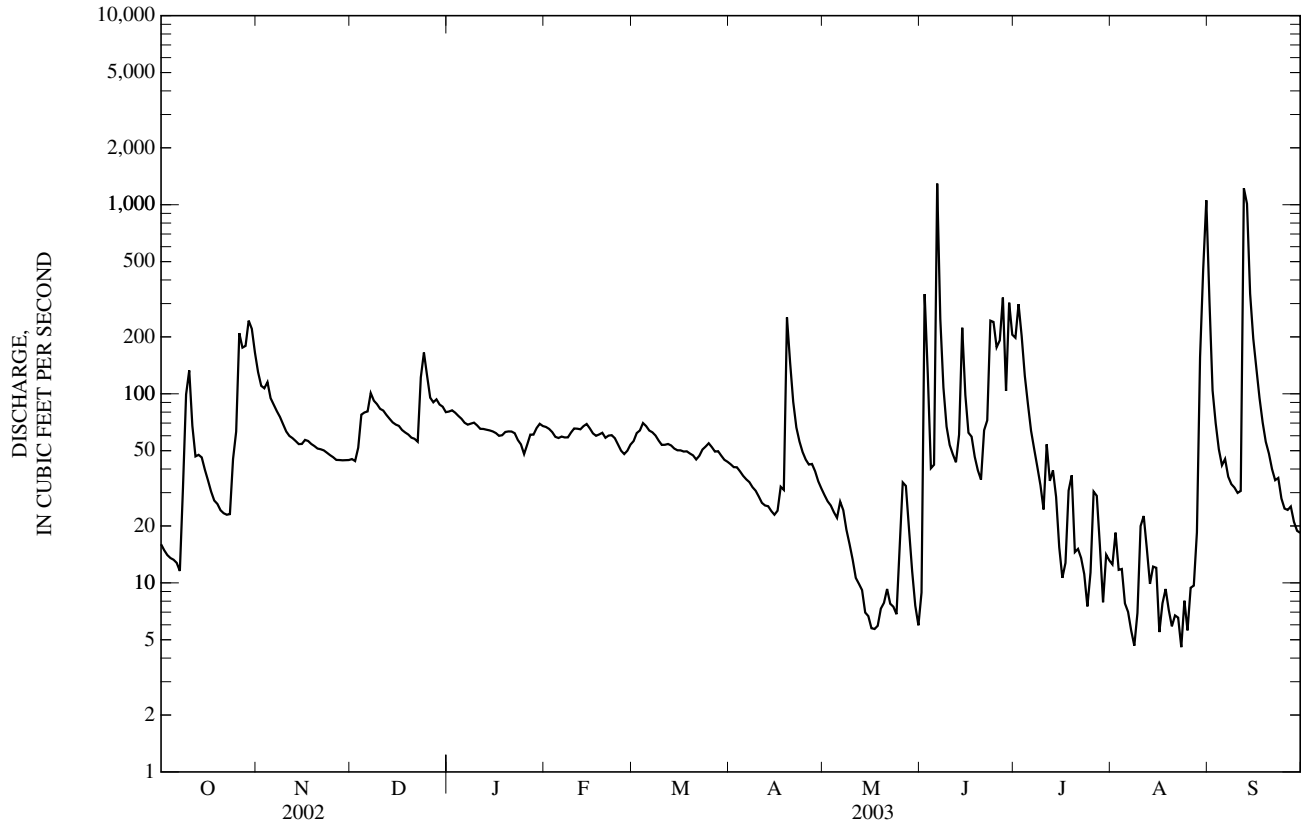
MEAN	224	123	125	119	163	197	260	514	599	175	255	187
MAX	1,828	680	701	362	697	1,100	2,108	2,566	2,836	641	1,681	950
(WY)	(1987)	(1987)	(1992)	(1993)	(1997)	(1998)	(1997)	(1980)	(1995)	(1993)	(1995)	(1986)
MIN	3.79	4.72	16.5	13.3	13.7	21.1	13.9	7.51	35.3	9.25	4.19	7.90
(WY)	(1985)	(1985)	(1983)	(1981)	(1981)	(1982)	(1982)	(1984)	(2002)	(1981)	(1981)	(1981)

e Estimated

07301110 SALT FORK RED RIVER NEAR ELMER, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1980 - 2003	
ANNUAL TOTAL	25,094.3		26,587.7			
ANNUAL MEAN	68.8		72.8		245	
HIGHEST ANNUAL MEAN					594	1997
LOWEST ANNUAL MEAN					59.2	2002
HIGHEST DAILY MEAN	2,160	Apr 14	1,290	Jun 6	28,200	Aug 3, 1995
LOWEST DAILY MEAN	5.0	Jul 3	4.6	Aug 23	0.08	Sep 4, 1981
ANNUAL SEVEN-DAY MINIMUM	5.9	Jun 27	6.4	Aug 19	0.12	Aug 30, 1981
MAXIMUM PEAK FLOW			2,380	Sep 12	44,900	Oct 20, 1983
MAXIMUM PEAK STAGE			5.69	Sep 12	a16.06	May 29, 1987
ANNUAL RUNOFF (AC-FT)	49,770		52,740		177,600	
10 PERCENT EXCEEDS	108		125		418	
50 PERCENT EXCEEDS	47		51		79	
90 PERCENT EXCEEDS	15		11		14	

a From high-water mark.



07301420 SWEETWATER CREEK NEAR SWEETWATER, OK

LOCATION.--Lat 35°25'20", long 99°58'08", in NW ¼ NE ¼ 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 mi^2, of which 20 mi^2 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	53	28	43	31	31	23	19	11	16	0.78	3.4
2	3.3	48	28	38	34	32	24	21	11	14	0.70	2.2
3	8.5	49	30	36	30	32	24	19	10	13	0.66	2.2
4	115	46	38	34	27	32	22	19	39	11	0.67	1.9
5	63	42	40	33	26	29	22	17	84	10	0.68	1.5
6	34	40	38	32	28	27	22	16	54	8.9	0.62	1.2
7	23	38	44	31	31	28	21	15	37	8.3	0.62	0.91
8	17	35	49	33	32	27	20	15	30	7.9	0.59	0.73
9	18	35	48	31	32	27	21	14	26	7.3	0.89	0.63
10	20	32	47	29	36	27	21	13	22	9.5	0.78	0.72
11	18	30	44	29	35	26	21	12	20	18	0.95	2.0
12	16	30	42	29	32	26	22	12	18	8.3	0.81	2.1
13	16	32	40	29	31	26	21	12	24	6.3	0.67	2.4
14	16	32	37	29	32	26	21	12	65	5.4	0.67	2.0
15	14	35	35	29	30	27	31	13	33	4.7	0.67	1.7
16	13	34	34	32	27	29	47	129	28	3.9	0.63	1.6
17	13	33	34	31	27	32	57	106	23	3.3	0.57	1.4
18	13	33	32	31	27	29	42	50	23	3.0	0.51	1.2
19	18	29	31	31	29	28	37	34	24	2.6	0.47	1.2
20	49	28	31	31	32	36	33	24	36	2.3	0.45	1.1
21	36	28	31	30	31	38	28	21	43	2.1	0.44	1.2
22	29	28	30	29	30	36	26	20	45	2.0	0.43	1.3
23	34	28	30	e27	29	35	26	19	34	1.8	0.43	1.6
24	77	28	34	e26	25	33	26	18	26	1.6	0.41	1.4
25	116	27	34	28	e24	28	24	21	20	1.4	0.41	1.2
26	84	27	36	30	25	26	22	18	17	1.2	0.41	1.0
27	70	28	36	29	26	25	22	17	15	1.0	0.41	1.0
28	82	27	36	30	30	24	22	17	14	0.96	0.39	0.97
29	77	27	42	30	---	23	21	16	16	0.87	0.41	0.97
30	74	28	48	28	---	23	21	14	18	0.91	0.53	1.0
31	62	---	50	28	---	24	---	13	---	0.87	6.0	---
TOTAL	1,231.2	1,010	1,157	956	829	892	790	766	866	178.41	23.66	43.73
MEAN	39.7	33.7	37.3	30.8	29.6	28.8	26.3	24.7	28.9	5.76	0.76	1.46
MAX	116	53	50	43	36	38	57	129	84	18	6.0	3.4
MIN	2.4	27	28	26	24	23	20	12	10	0.87	0.39	0.63
AC-FT	2,440	2,000	2,290	1,900	1,640	1,770	1,570	1,520	1,720	354	47	87

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2003, BY WATER YEAR (WY)

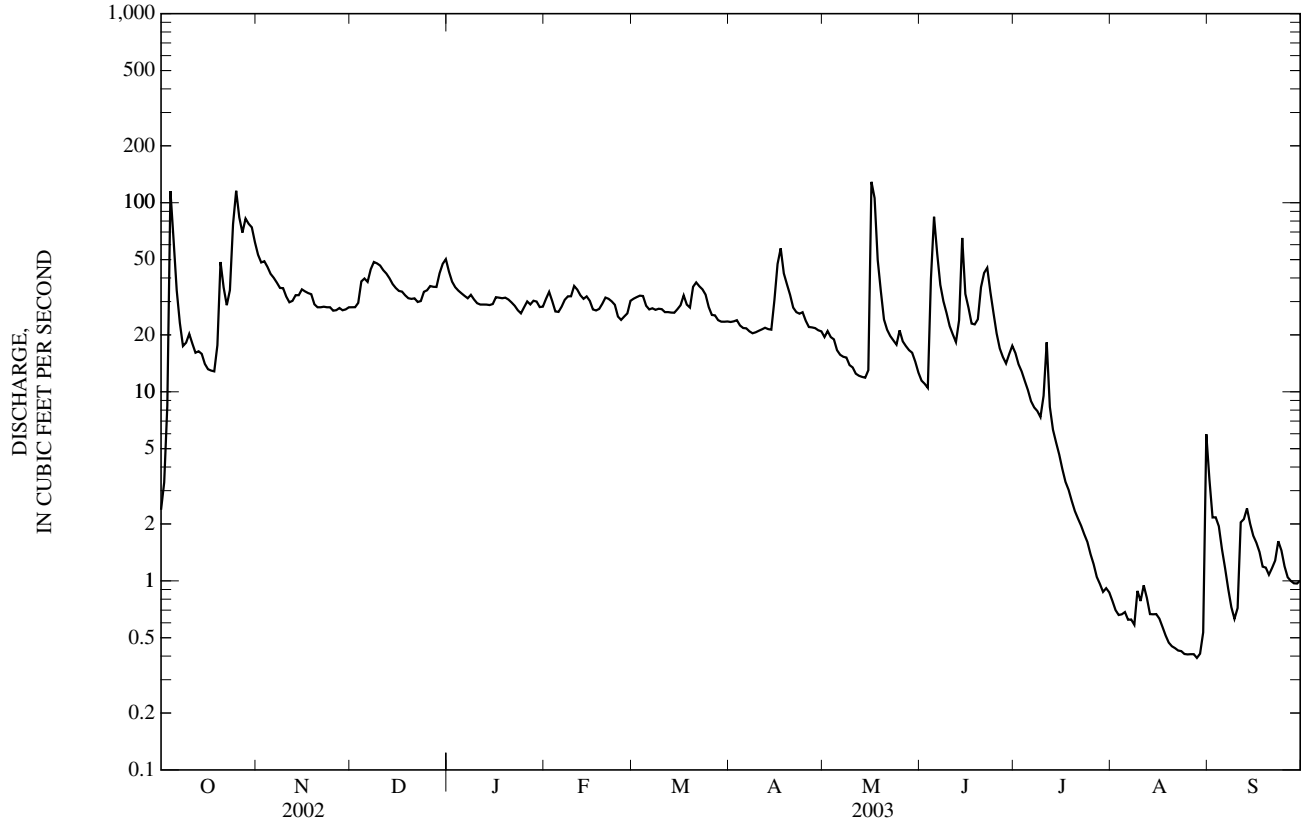
MEAN	18.4	22.6	25.7	28.9	31.2	38.4	37.7	42.4	38.1	12.2	6.61	10.2
MAX	72.2	61.1	51.5	53.7	53.6	85.6	126	150	115	31.6	38.7	51.6
(WY)	(1987)	(1987)	(1998)	(1998)	(2001)	(1998)	(1997)	(1997)	(1995)	(1997)	(1995)	(1988)
MIN	0.20	5.23	6.73	11.2	15.2	17.9	16.2	17.2	7.08	0.97	0.080	0.084
(WY)	(1995)	(1995)	(1995)	(1995)	(1995)	(1991)	(1991)	(2002)	(1994)	(1994)	(1994)	(1994)

e Estimated

07301420 SWEETWATER CREEK NEAR SWEETWATER, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1986 - 2003	
ANNUAL TOTAL	7,459.68		8,743.00			
ANNUAL MEAN	20.4		24.0		26.2	
HIGHEST ANNUAL MEAN					53.0	1997
LOWEST ANNUAL MEAN					10.9	1994
HIGHEST DAILY MEAN	116	Oct 25	129	May 16	755	May 25, 1997
LOWEST DAILY MEAN	0.45	Sep 2,3,4	0.39	Aug 28	0.00	Aug 27, 1994
ANNUAL SEVEN-DAY MINIMUM	0.47	Aug 29	0.41	Aug 23	0.00	Sep 28, 1994
MAXIMUM PEAK FLOW			217	May 16	1,940	Jun 3, 1995
MAXIMUM PEAK STAGE			10.07	May 16	15.89	Jun 3, 1995
INSTANTANEOUS LOW FLOW					0.00	Aug 27, 1994
ANNUAL RUNOFF (AC-FT)	14,800		17,340		18,960	
10 PERCENT EXCEEDS	36		42		49	
50 PERCENT EXCEEDS	21		26		21	
90 PERCENT EXCEEDS	1.7		0.93		2.1	

a No flow at times Aug.-Oct., 1994



07301500 NORTH FORK RED RIVER NEAR CARTER, OK

LOCATION.--Lat 35°10'05", long 99°30'25", in NW ¼ SE ¼ 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.

DRAINAGE AREA.--2,337 mi^2, of which 399 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,673.71 ft above sea level.

REMARKS.--Records good. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 11	2330	*4,600	*8.37	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	180	91	185	119	117	90	69	35	69	0.00	0.85
2	0.00	166	94	173	119	137	87	64	29	88	0.00	0.00
3	0.00	172	101	161	115	138	86	64	29	74	0.00	0.00
4	0.00	168	122	143	109	135	87	66	33	62	0.00	0.00
5	4.8	158	135	130	105	128	87	58	50	46	0.00	0.00
6	52	142	155	122	106	122	88	52	86	36	0.00	0.00
7	53	128	176	118	106	118	83	49	101	30	0.00	0.00
8	46	119	173	116	113	113	80	59	90	24	0.00	0.00
9	41	115	182	116	120	109	78	44	72	19	0.92	0.00
10	37	107	178	108	130	101	77	38	62	14	0.57	0.16
11	37	100	164	105	136	99	76	33	58	10	0.00	2,510
12	42	94	156	102	145	99	75	29	57	7.2	0.00	1,340
13	36	92	145	102	143	96	74	27	82	5.8	0.00	277
14	29	106	142	102	140	92	72	26	73	5.5	0.00	138
15	25	100	136	101	134	91	73	25	64	4.2	0.00	97
16	22	96	133	103	127	89	87	148	98	3.2	0.00	81
17	19	94	135	101	120	89	177	604	96	2.6	0.00	71
18	18	94	132	106	115	92	177	313	81	2.3	0.00	61
19	42	91	130	106	111	97	190	220	66	2.0	0.00	53
20	149	89	123	107	110	104	159	142	58	1.6	0.00	48
21	87	87	120	109	110	108	134	107	90	1.2	0.00	45
22	85	84	119	105	111	120	116	86	213	1.1	0.00	42
23	102	85	132	e92	113	125	122	73	230	0.67	0.00	38
24	458	86	142	e89	e99	120	213	63	160	0.27	0.00	35
25	544	85	140	e78	e88	117	137	189	119	0.00	0.00	33
26	244	86	157	90	e81	106	104	179	102	0.00	0.00	31
27	203	86	159	108	95	101	93	99	86	0.00	0.00	29
28	253	87	152	131	108	100	84	79	74	0.00	0.00	27
29	371	89	152	133	---	95	78	62	66	0.28	0.00	26
30	213	91	165	130	---	91	73	51	66	0.16	0.02	27
31	214	---	179	126	---	91	---	43	---	0.00	8.1	---
TOTAL	3,426.80	3,277	4,420	3,598	3,228	3,340	3,157	3,161	2,526	510.08	9.61	5,010.01
MEAN	111	109	143	116	115	108	105	102	84.2	16.5	0.31	167
MAX	544	180	182	185	145	138	213	604	230	88	8.1	2,510
MIN	0.00	84	91	78	81	89	72	25	29	0.00	0.00	0.00
AC-FT	6,800	6,500	8,770	7,140	6,400	6,620	6,260	6,270	5,010	1,010	19	9,940

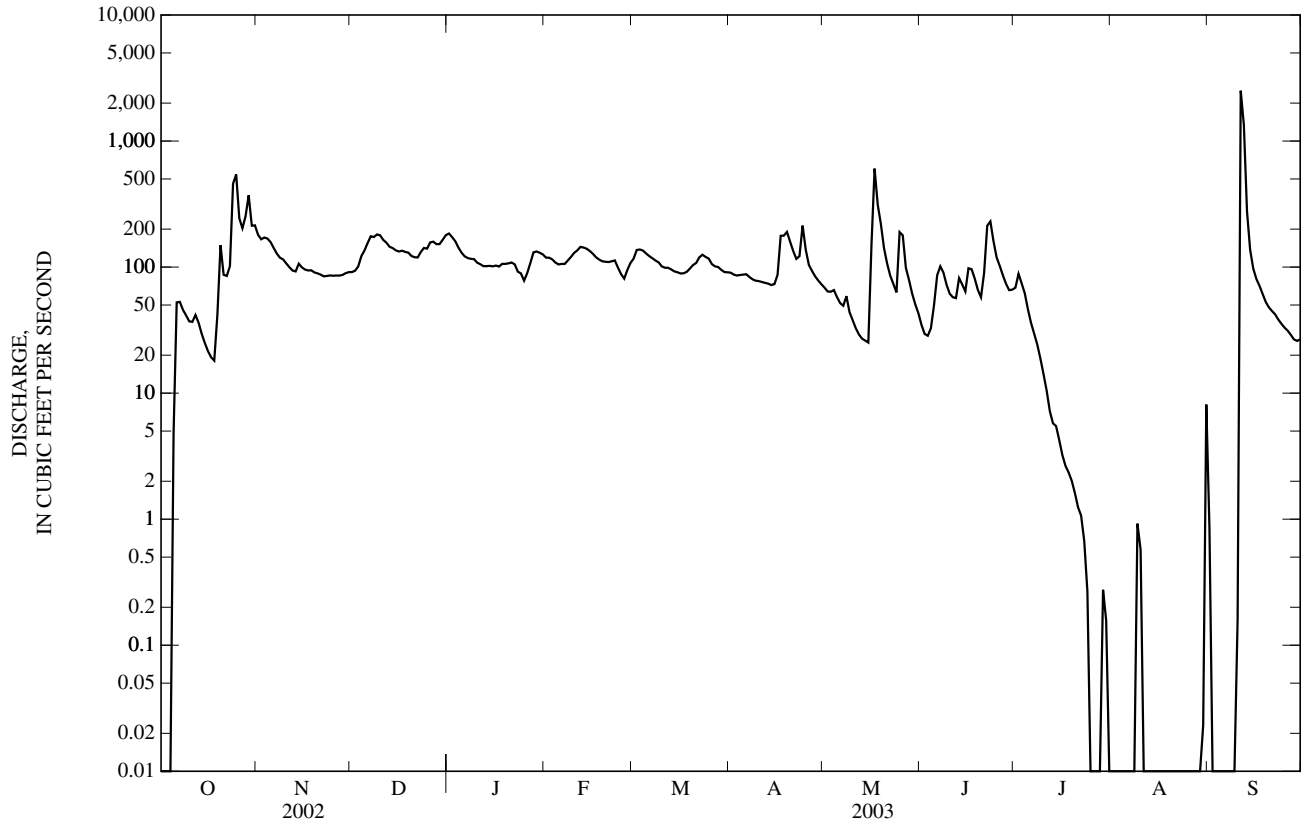
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

MEAN	91.2	61.2	68.8	81.2	105	116	151	402	280	72.6	45.8	56.1
MAX	1,195	360	333	362	365	466	1,253	2,713	1,560	828	560	432
(WY)	(1987)	(1987)	(1998)	(1998)	(1960)	(1998)	(1997)	(1977)	(1995)	(1950)	(1995)	(1996)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.079	0.000	0.60	0.000	0.000	0.000
(WY)	(1946)	(1946)	(1953)	(1953)	(1953)	(1955)	(1971)	(1971)	(1966)	(1954)	(1952)	(1945)

e Estimated

07301500 NORTH FORK RED RIVER NEAR CARTER, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL TOTAL	25,697.21		35,663.50			
ANNUAL MEAN	70.4		97.7		128	
HIGHEST ANNUAL MEAN					356	1987
LOWEST ANNUAL MEAN					12.9	1981
HIGHEST DAILY MEAN	544	Oct 25	2,510	Sep 11	20,700	May 26, 1959
LOWEST DAILY MEAN	0.00	Aug 10	0.00	at times	0.00	most years
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 10	0.00	Jul 31	0.00	May 24, 1945
MAXIMUM PEAK FLOW			4,600	Sep 11	53,400	May 26, 1959
MAXIMUM PEAK STAGE			8.37	Sep 11	15.08	Jun 4, 1995
ANNUAL RUNOFF (AC-FT)	50,970		70,740		92,580	
10 PERCENT EXCEEDS	142		160		226	
50 PERCENT EXCEEDS	67		89		40	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



07301500 NORTH FORK RED RIVER NEAR CARTER, OK—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-51, 1958-63, 1969-79, 2000-01, 2003 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to September 1976, October 2002 to current year.
WATER TEMPERATURE: July 1968 to September 1976, October 2002 to current year.

INSTRUMENTATION.--Water-quality monitor since October 2002.

REMARKS.--Most interruptions in record were due to periods of no flow.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,540 microsiemens Jan. 10, 1976; minimum, 309 microsiemens Sept. 11, 2003.
WATER TEMPERATURE: Maximum, 37.8°C July 12, 2003; minimum , -0.5°C Feb. 2, 3, 1972.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 3,820 microsiemens Sept. 27; minimum, 309 microsiemens Sept. 11.
WATER TEMPERATURE: Maximum, 37.8°C July 12; minimum, -0.3°C several days during winter periods.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	1,860	1,790	1,820	2,460	2,420	2,440	2,300	2,250	2,280
2	---	---	---	1,930	1,860	1,890	2,450	2,400	2,430	2,250	2,190	2,230
3	---	---	---	2,000	1,930	1,970	2,420	2,240	2,350	2,210	2,160	2,180
4	---	---	---	2,110	2,000	2,060	2,270	2,180	2,220	2,250	2,190	2,220
5	---	---	---	2,140	2,110	2,130	2,230	2,200	2,210	2,280	2,240	2,260
6	3,550	2,120	2,570	2,190	2,130	2,160	2,420	2,230	2,310	2,300	2,270	2,280
7	2,160	1,550	1,750	2,220	2,180	2,200	2,420	2,330	2,370	2,300	2,290	2,290
8	1,570	1,480	1,530	2,240	2,200	2,220	2,360	2,310	2,340	2,320	2,290	2,300
9	1,770	1,530	1,650	2,270	2,240	2,250	2,380	2,350	2,360	2,340	2,310	2,320
10	2,050	1,770	1,910	2,300	2,230	2,280	2,350	2,260	2,300	2,370	2,330	2,350
11	2,360	2,050	2,180	2,340	2,300	2,320	2,260	2,220	2,240	2,370	2,340	2,350
12	2,520	2,360	2,460	2,340	2,260	2,330	2,220	2,200	2,210	2,380	2,350	2,370
13	2,520	2,480	2,490	2,360	2,290	2,350	2,230	2,200	2,210	2,390	2,370	2,380
14	2,620	2,510	2,580	2,410	2,350	2,380	2,260	2,220	2,250	2,390	2,370	2,380
15	2,660	2,620	2,630	2,400	2,340	2,350	2,270	2,250	2,260	2,380	2,360	2,370
16	2,710	2,660	2,680	2,410	2,350	2,380	2,300	2,270	2,280	2,380	2,360	2,370
17	2,720	2,700	2,720	2,410	2,380	2,400	2,320	2,300	2,310	2,390	2,370	2,380
18	2,720	2,690	2,700	2,380	2,360	2,370	2,330	2,310	2,320	2,390	2,360	2,370
19	2,690	1,340	2,500	2,370	2,350	2,360	2,330	2,250	2,300	2,370	2,330	2,350
20	1,340	648	816	2,380	2,360	2,370	2,350	2,320	2,340	2,360	2,310	2,330
21	2,070	1,060	1,610	2,390	2,360	2,380	2,360	2,320	2,340	2,380	2,320	2,340
22	2,300	1,830	2,060	2,430	2,390	2,410	2,360	2,340	2,350	2,320	2,290	2,310
23	2,250	1,100	1,940	2,440	2,410	2,430	2,340	2,130	2,210	2,450	2,320	2,380
24	1,550	532	986	2,430	2,410	2,420	2,260	2,140	2,180	2,500	2,400	2,460
25	1,570	813	1,160	2,440	2,420	2,430	2,190	1,840	1,960	2,580	2,360	2,470
26	1,760	1,560	1,650	2,440	2,420	2,430	2,010	1,920	1,970	2,520	2,420	2,460
27	1,770	1,560	1,700	2,430	2,410	2,420	---	---	---	2,570	2,380	2,480
28	1,720	1,500	1,590	2,420	2,410	2,410	2,180	1,990	2,070	2,440	2,290	2,360
29	1,900	1,650	1,780	2,430	2,420	2,420	2,290	2,180	2,240	2,410	2,300	2,330
30	1,650	1,490	1,540	2,420	2,390	2,410	2,350	2,230	2,290	2,370	2,220	2,290
31	1,790	1,580	1,700	---	---	---	2,340	2,300	2,320	2,320	2,260	2,290
MONTH	3,550	532	1,960	2,440	1,790	2,290	2,460	1,840	2,270	2,580	2,160	2,340

07301500 NORTH FORK RED RIVER NEAR CARTER, OK—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2,360	2,290	2,320	2,540	2,340	2,410	2,620	2,570	2,600	3,550	2,800	3,010
2	2,380	2,360	2,360	2,410	2,300	2,380	2,650	2,590	2,630	---	---	---
3	2,380	2,300	2,330	2,300	2,250	2,260	2,690	2,600	2,670	---	---	---
4	2,370	2,350	2,360	2,270	2,230	2,250	2,700	2,650	2,670	---	---	---
5	2,350	2,320	2,330	2,310	2,250	2,280	2,700	2,570	2,660	---	---	---
6	2,340	2,290	2,300	2,340	2,290	2,310	2,680	2,580	2,630	---	---	---
7	2,390	2,300	2,350	2,350	2,310	2,330	2,700	2,620	2,660	---	---	---
8	2,380	2,350	2,360	2,440	2,340	2,380	2,730	2,660	2,690	---	---	---
9	2,360	2,280	2,310	2,450	2,410	2,430	2,770	2,700	2,730	---	---	---
10	2,330	2,260	2,290	2,430	2,390	2,410	2,760	2,690	2,720	---	---	---
11	2,320	2,250	2,280	2,450	2,410	2,430	2,790	2,680	2,730	---	---	---
12	2,320	2,270	2,290	2,460	2,430	2,450	2,810	2,700	2,750	---	---	---
13	2,280	2,210	2,240	2,460	2,430	2,450	2,800	2,720	2,750	---	---	---
14	2,260	2,220	2,250	2,500	2,460	2,480	2,790	2,720	2,750	---	---	---
15	2,290	2,260	2,270	2,510	2,490	2,500	2,770	2,560	2,720	3,020	2,950	2,990
16	2,340	2,280	2,320	2,510	2,480	2,500	2,720	2,420	2,620	3,000	1,230	2,220
17	2,350	2,310	2,330	2,520	2,500	2,510	2,660	2,190	2,430	1,320	1,250	1,300
18	2,370	2,330	2,340	2,530	2,490	2,520	2,490	2,250	2,390	---	---	---
19	2,410	2,370	2,390	2,490	2,410	2,460	2,440	2,120	2,210	---	---	---
20	2,420	2,400	2,410	2,430	2,290	2,380	2,290	2,140	2,200	2,220	1,920	2,100
21	2,420	2,390	2,400	2,370	2,290	2,330	2,420	2,290	2,360	2,330	2,220	2,270
22	2,400	2,350	2,370	2,380	2,360	2,370	2,430	2,370	2,410	2,440	2,330	2,380
23	2,350	2,320	2,330	2,370	2,270	2,310	2,460	2,410	2,430	2,610	2,430	2,520
24	2,510	2,320	2,380	2,320	2,240	2,280	---	---	---	2,670	2,610	2,640
25	2,610	2,360	2,480	2,340	2,310	2,320	2,140	2,020	2,070	2,660	946	2,080
26	---	---	---	2,350	2,300	2,330	2,400	2,120	2,260	2,000	946	1,640
27	2,460	2,060	2,360	2,420	2,340	2,380	2,620	2,400	2,450	2,290	1,990	2,150
28	---	---	---	2,440	2,340	2,410	3,410	2,580	2,970	2,530	2,290	2,450
29	---	---	---	2,510	2,440	2,480	3,720	3,360	3,590	2,520	2,400	2,460
30	---	---	---	2,560	2,510	2,530	3,720	3,550	3,670	2,690	2,520	2,610
31	---	---	---	2,590	2,550	2,570	---	---	---	2,850	2,620	2,730
MONTH	2,610	2,060	2,340	2,590	2,230	2,400	3,720	2,020	2,640	3,550	946	2,350
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2,920	2,800	2,880	2,910	2,630	2,740	---	---	---	2,580	534	1,100
2	2,970	2,760	2,900	2,960	2,850	2,920	---	---	---	---	---	---
3	2,970	2,790	2,890	2,850	2,660	2,700	---	---	---	---	---	---
4	2,970	2,740	2,830	2,750	2,670	2,700	---	---	---	---	---	---
5	2,780	2,480	2,630	2,890	2,740	2,780	---	---	---	---	---	---
6	2,800	2,370	2,650	3,030	2,890	2,960	---	---	---	---	---	---
7	2,370	1,980	2,110	3,120	3,020	3,070	---	---	---	---	---	---
8	1,980	1,810	1,880	3,200	3,120	3,160	---	---	---	---	---	---
9	2,170	1,940	2,060	3,300	3,190	3,250	---	---	---	---	---	---
10	2,310	2,160	2,220	3,420	3,290	3,350	3,510	3,220	3,340	---	---	---
11	2,410	2,140	2,320	3,510	3,380	3,430	---	---	---	1,030	309	516
12	2,400	2,200	2,330	3,500	3,430	3,460	---	---	---	1,010	504	757
13	2,460	1,840	2,230	3,640	3,490	3,540	---	---	---	1,710	1,010	1,360
14	2,160	1,800	1,980	3,690	3,640	3,660	---	---	---	2,300	1,710	2,010
15	2,480	2,050	2,330	3,770	3,610	3,660	---	---	---	2,770	2,300	2,550
16	2,460	1,530	2,160	3,760	3,720	3,730	---	---	---	3,080	2,770	2,920
17	2,100	1,450	1,790	3,720	3,580	3,620	---	---	---	3,160	3,080	3,110
18	2,180	2,050	2,140	3,620	3,520	3,560	---	---	---	3,210	3,080	3,110
19	2,210	2,160	2,190	3,710	3,590	3,630	---	---	---	3,290	3,210	3,260
20	2,320	2,200	2,250	3,750	3,520	3,670	---	---	---	3,350	3,290	3,320
21	2,320	2,090	2,140	3,740	3,580	3,700	---	---	---	3,350	3,320	3,350
22	2,110	1,360	1,690	3,800	3,660	3,720	---	---	---	3,380	3,350	3,370
23	1,900	1,430	1,740	3,810	3,610	3,670	---	---	---	3,410	3,360	3,380
24	2,210	1,900	2,100	---	---	---	---	---	---	3,430	3,380	3,400
25	2,290	2,210	2,260	---	---	---	---	---	---	3,540	3,420	3,480
26	2,310	2,210	2,280	---	---	---	---	---	---	3,780	3,470	3,570
27	2,480	2,290	2,380	---	---	---	---	---	---	3,820	3,380	3,600
28	2,640	2,480	2,560	---	---	---	---	---	---	---	---	---
29	2,720	2,620	2,670	---	---	---	---	---	---	---	---	---
30	2,730	2,630	2,690	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	2,790	480	1,020	---	---	---
MONTH	2,970	1,360	2,310	3,810	2,630	3,330	3,510	480	2,180	3,820	309	2,680

07301500 NORTH FORK RED RIVER NEAR CARTER, OK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	7.8	6.6	7.2	8.9	2.7	5.7	5.5	2.3	4.0
2	---	---	---	7.2	6.2	6.7	9.5	4.5	6.9	6.3	1.0	3.2
3	---	---	---	10.6	7.1	8.5	7.2	2.2	4.6	7.3	1.3	4.1
4	---	---	---	8.1	6.1	7.1	2.4	0.8	1.6	8.9	2.7	5.5
5	---	---	---	10.8	5.4	7.8	3.9	0.3	2.0	9.0	3.7	6.1
6	21.0	16.1	18.3	12.1	5.5	8.7	5.9	-0.1	2.7	6.9	3.8	5.3
7	19.9	13.0	16.1	13.7	6.9	10.1	5.2	2.4	3.7	7.9	1.5	4.5
8	16.7	15.3	16.1	14.4	8.5	11.3	4.6	3.6	4.1	9.9	3.0	6.2
9	16.0	14.5	15.2	17.5	10.7	13.8	5.6	4.3	4.8	8.6	5.1	6.6
10	20.5	15.0	17.0	14.9	11.3	12.9	5.6	4.4	4.9	7.6	2.9	4.9
11	19.7	14.2	16.8	13.3	9.5	11.2	7.0	4.7	5.7	6.4	1.5	4.0
12	18.9	13.3	16.8	14.5	8.9	11.3	9.1	6.2	7.2	5.2	3.7	4.4
13	17.5	9.9	13.1	13.3	7.4	10.2	8.8	3.7	6.1	8.7	4.1	5.7
14	19.8	8.7	13.7	13.4	8.1	10.4	9.1	3.4	6.1	8.8	4.4	6.2
15	20.3	9.3	14.2	12.1	7.9	10.0	9.8	3.7	6.7	5.1	3.6	4.3
16	19.8	10.3	14.4	13.0	7.0	9.7	9.7	5.8	7.6	4.5	-0.2	2.2
17	20.5	10.2	14.7	12.6	6.0	9.2	10.0	5.0	7.5	4.2	-0.2	1.6
18	18.9	13.7	16.0	13.3	7.6	10.1	10.5	6.4	8.4	6.0	-0.3	2.2
19	17.1	12.0	15.1	12.1	6.1	9.1	8.7	5.3	7.3	7.7	0.2	3.7
20	17.1	10.0	13.2	12.8	6.5	9.4	8.1	2.7	5.2	9.3	1.9	5.3
21	19.6	11.4	15.0	14.2	7.2	10.3	7.3	2.3	4.5	7.3	2.8	4.9
22	17.9	15.8	16.7	13.4	7.6	10.3	4.5	2.1	3.4	3.4	-0.3	1.1
23	16.6	11.1	14.1	13.9	7.3	10.4	3.6	-0.2	1.3	0.1	-0.3	-0.2
24	11.1	6.7	7.9	12.0	6.4	9.4	4.2	-0.2	1.4	-0.2	-0.3	-0.2
25	10.3	6.6	8.4	7.3	2.6	5.1	3.5	-0.3	1.1	1.7	-0.3	0.3
26	12.0	9.7	10.6	5.6	2.3	4.1	2.8	0.1	1.3	4.2	-0.3	1.3
27	11.9	10.4	11.2	6.1	0.0	2.9	2.7	-0.3	0.7	5.9	-0.3	2.2
28	11.6	10.9	11.4	8.5	0.8	4.4	4.8	-0.3	1.7	10.9	2.5	6.0
29	11.7	10.7	11.2	7.8	2.9	5.4	6.3	1.3	3.7	8.0	4.6	5.9
30	12.6	9.6	11.1	9.1	4.0	6.2	8.6	4.5	6.1	9.3	1.9	5.4
31	9.6	7.8	8.5	---	---	---	7.7	3.1	5.2	11.8	4.4	7.6
MONTH	21.0	6.6	13.7	17.5	0.0	8.8	10.5	-0.3	4.5	11.8	-0.3	4.0
		FEBRUARY			MARCH			APRIL			MAY	
1	13.0	5.5	9.0	4.9	2.0	3.1	21.7	10.0	15.4	19.8	17.1	18.1
2	13.1	6.8	10	6.2	2.7	4.0	23.8	12.4	17.4	---	---	---
3	10.6	5.6	8.2	11.9	1.4	6.2	23.6	15.2	18.5	---	---	---
4	8.9	2.0	5.3	15.1	5.1	9.2	22.7	13.6	17.6	---	---	---
5	5.5	2.5	4.1	9.4	1.9	5.1	19.4	10.8	14.7	---	---	---
6	4.8	1.5	3.8	11.8	1.4	6.2	21.8	12.5	16.3	---	---	---
7	5.6	-0.3	1.8	15.3	4.1	9.4	19.0	9.7	14.0	---	---	---
8	7.4	-0.3	3.0	16.6	7.3	11.4	17.3	7.4	11.9	---	---	---
9	5.1	2.8	3.8	13.1	4.9	8.7	20.2	6.8	13.0	---	---	---
10	9.0	0.9	4.6	11.2	4.2	7.2	21.3	9.4	15.0	---	---	---
11	10.9	2.9	6.5	16.2	6.6	10.5	22.6	11.8	16.8	---	---	---
12	11.9	4.5	8.0	22.1	12.2	16.4	24.3	11.8	17.8	---	---	---
13	10.6	7.6	8.7	21.5	12.9	16.7	25.3	15.2	20.0	---	---	---
14	17.5	10.6	13.4	21.3	11.2	16.0	26.3	15.8	20.6	---	---	---
15	12.7	4.7	8.5	20.1	11.7	16.0	20.9	15.0	18.6	28.0	21.5	24.1
16	10.6	3.0	6.2	22.6	13.3	17.6	22.0	11.9	16.4	25.1	18.6	21.5
17	12.0	3.7	7.4	21.2	15.1	17.2	19.2	14.0	16.8	21.6	20.0	20.5
18	9.6	6.5	7.8	17.8	12.6	14.7	24.3	15.0	19.1	---	---	---
19	9.5	6.7	8.0	14.1	10.9	12.8	24.3	17.0	20.1	---	---	---
20	11.3	4.5	8.0	11.6	9.0	10.1	24.0	13.7	18.4	21.1	15.2	18.1
21	10.7	8.0	9.3	18.0	7.0	11.9	25.0	14.7	19.4	23.0	17.2	19.6
22	13.7	5.1	9.0	18.3	10.8	13.8	19.8	15.9	17.1	22.2	19.2	20.5
23	8.8	1.5	5.8	20.7	10.0	15.0	19.1	15.0	16.5	26.6	18.8	21.9
24	1.5	-0.3	-0.1	23.4	11.9	17.1	---	---	---	31.8	20.8	25.6
25	0.4	-0.3	-0.1	17.6	11.9	14.7	21.9	14.5	18.0	26.0	20.2	22.5
26	0.9	-0.3	0.0	20.0	9.6	14.3	22.2	15.1	18.6	26.3	18.8	22.0
27	3.2	-0.3	1.3	17.0	10.4	13.2	23.2	16.8	19.9	29.5	19.9	24.1
28	3.1	1.1	2.1	15.5	7.1	10.9	21.5	18.2	19.7	32.2	20.7	26.1
29	---	---	---	16.5	5.9	10.9	20.1	18.3	19.3	33.9	23.1	28.0
30	---	---	---	18.8	7.6	12.8	20.0	17.4	18.9	35.4	23.0	28.8
31	---	---	---	20.3	9.1	14.4	---	---	---	31.2	21.3	26.6
MONTH	17.5	-0.3	5.8	23.4	1.4	11.9	26.3	6.8	17.4	35.4	15.2	23.0

07301500 NORTH FORK RED RIVER NEAR CARTER, OK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	31.9	20.5	25.5	35.7	24.9	30.0	---	---	---	21.4	19.1	20.5
2	32.7	21.6	26.8	35.1	25.5	29.9	---	---	---	---	---	---
3	29.4	21.5	25.0	35.7	24.8	29.6	---	---	---	---	---	---
4	26.4	19.3	22.4	35.1	24.4	29.4	---	---	---	---	---	---
5	24.2	20.0	21.4	34.8	24.6	29.2	---	---	---	---	---	---
6	27.8	18.1	22.6	30.9	23.1	26.5	---	---	---	---	---	---
7	25.2	20.0	22.4	31.4	23.3	26.7	---	---	---	---	---	---
8	29.4	18.8	23.6	31.3	23.4	26.5	---	---	---	---	---	---
9	30.6	21.2	25.5	34.8	22.6	28.2	35.7	22.1	28.4	---	---	---
10	31.4	23.1	26.5	34.2	23.8	28.7	32.2	24.1	27.8	---	---	---
11	33.2	22.1	26.5	34.7	22.5	28.2	---	---	---	21.6	19.8	20.7
12	31.4	21.7	25.8	37.8	22.4	29.4	---	---	---	23.1	19.9	21.4
13	32.4	21.6	26.9	35.4	24.3	29.0	---	---	---	24.2	21.1	22.4
14	26.8	22.6	24.5	34.8	23.0	28.2	---	---	---	25.5	20.4	22.6
15	29.3	20.2	24.8	37.0	23.0	28.8	---	---	---	25.2	19.2	22.2
16	31.9	22.2	26.7	36.1	22.2	28.2	---	---	---	27.4	20.5	23.4
17	32.6	23.2	27.6	35.9	23.0	28.7	---	---	---	27.7	20.7	23.8
18	33.4	23.7	27.7	36.8	23.2	29.3	---	---	---	23.7	17.8	20.5
19	30.2	23.6	26.4	37.6	22.6	29.3	---	---	---	23.5	14.9	18.9
20	31.9	23.0	26.6	35.5	24.2	29.0	---	---	---	24.8	15.9	20.1
21	31.4	22.1	26.4	33.4	24.1	27.9	---	---	---	25.3	19.3	21.7
22	32.1	24.3	27.8	31.8	22.6	26.4	---	---	---	28.3	18.7	23.3
23	32.8	24.9	28.4	33.1	20.8	26.8	---	---	---	25.9	20.5	23.2
24	32.1	25.5	28.5	---	---	---	---	---	---	28.3	18.6	23.1
25	30.1	25.3	27.7	---	---	---	---	---	---	24.9	18.7	21.9
26	28.2	20.3	24.2	---	---	---	---	---	---	28.1	19.4	23.1
27	31.4	20.1	25.4	---	---	---	---	---	---	23.6	15.8	19.3
28	33.9	21.8	27.2	---	---	---	---	---	---	---	---	---
29	30.9	22.3	26.5	---	---	---	---	---	---	---	---	---
30	36.4	24.1	29.5	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	27.0	20.6	22.8	---	---	---
MONTH	36.4	18.1	25.9	37.8	20.8	28.4	35.7	20.6	26.3	28.3	14.9	21.8

07302500 LAKE ALTUS AT LUGERT, OK

LOCATION.--Lat 34°53'08", long 99°17'43", in SW $^1/_4$ SE $^1/_4$ 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 mi^2, of which 399 mi^2 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, 74,490 acre-ft, July 4, 6, elevation 1,547.51 ft; minimum, 14,310 acre-ft, Oct, 6, elevation, 1,527.05 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

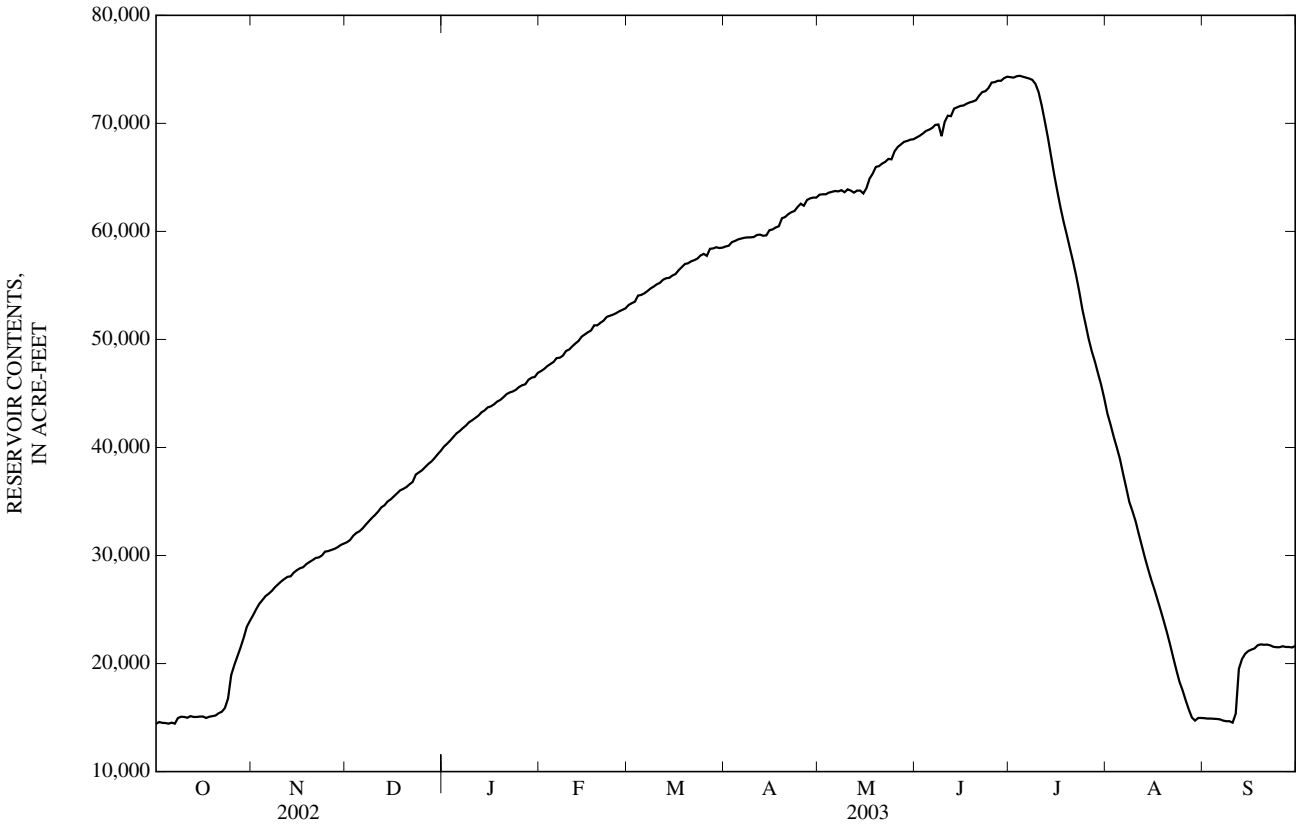
RESERVOIR STORAGE, ACRE FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14,420	24,470	31,230	40,080	47,070	53,180	58,610	63,400	68,690	74,280	43,130	14,950
2	14,590	25,030	31,440	40,350	47,270	53,360	58,680	63,440	68,850	74,230	42,120	14,910
3	14,510	25,530	31,830	40,640	47,530	53,490	59,010	63,440	69,050	74,360	41,000	14,910
4	14,490	25,890	32,090	40,970	47,720	54,050	59,120	63,590	69,290	74,400	39,990	14,890
5	14,440	26,250	32,240	41,300	47,920	54,120	59,260	63,660	69,410	74,320	38,940	14,870
6	14,530	26,460	32,510	41,520	48,270	54,260	59,340	63,740	69,580	74,230	37,580	14,830
7	14,440	26,730	32,850	41,790	48,310	54,470	59,410	63,700	69,860	74,150	36,280	14,720
8	14,960	27,070	33,170	42,030	48,500	54,720	59,450	63,820	69,900	74,030	34,950	14,660
9	15,080	27,340	33,490	42,330	48,930	54,890	59,450	63,630	68,810	73,650	34,110	14,660
10	15,060	27,610	33,760	42,520	49,070	55,100	59,480	63,890	70,140	72,900	33,170	14,530
11	14,980	27,830	34,080	42,730	49,360	55,240	59,670	63,780	70,710	71,650	32,010	15,360
12	15,130	28,020	34,460	42,950	49,630	55,520	59,700	63,590	70,670	70,180	30,900	19,510
13	15,060	28,070	34,650	43,250	49,860	55,670	59,590	63,780	71,370	68,650	29,770	20,410
14	15,060	28,420	35,010	43,440	50,260	55,700	59,630	63,780	71,490	66,950	28,740	20,900
15	15,100	28,640	35,200	43,710	50,460	55,910	60,110	63,510	71,610	65,230	27,750	21,160
16	15,100	28,820	35,480	43,810	50,670	56,060	60,180	64,000	71,650	63,700	26,870	21,290
17	14,960	28,920	35,750	44,000	50,830	56,410	60,370	64,890	71,820	62,230	25,910	21,400
18	15,080	29,200	36,030	44,250	51,310	56,700	60,470	65,350	71,940	60,880	24,940	21,690
19	15,130	29,400	36,170	44,400	51,310	56,980	61,220	65,970	72,020	59,700	23,940	21,780
20	15,190	29,570	36,340	44,650	51,540	57,050	61,330	66,050	72,150	58,460	22,910	21,740
21	15,400	29,770	36,590	44,930	51,740	57,230	61,590	66,280	72,560	57,230	21,780	21,760
22	15,540	29,820	36,820	45,090	52,090	57,340	61,780	66,430	72,900	55,910	20,590	21,690
23	15,890	30,000	37,500	45,180	52,190	57,490	61,890	66,710	72,980	54,440	19,430	21,560
24	16,770	30,360	37,690	45,340	52,290	57,770	62,260	66,670	73,270	52,770	18,330	21,510
25	18,920	30,410	37,900	45,600	52,430	57,920	62,560	67,420	73,770	51,440	17,540	21,510
26	19,850	30,510	38,180	45,760	52,600	57,740	62,380	67,810	73,820	50,060	16,610	21,600
27	20,680	30,610	38,470	45,850	52,740	58,390	62,910	68,050	73,940	48,900	15,750	21,530
28	21,490	30,770	38,700	46,270	52,880	58,420	63,060	68,290	73,940	47,950	15,000	21,530
29	22,380	30,970	39,020	46,460	---	58,530	63,130	68,370	74,190	46,840	14,720	21,490
30	23,410	31,100	39,370	46,520	---	58,460	63,130	68,490	74,320	45,790	14,960	21,620
31	23,960	---	39,700	46,910	---	58,500	---	68,530	---	44,530	14,960	---
MAX	23,960	31,100	39,700	46,910	52,880	58,530	63,130	68,530	74,320	74,400	43,130	21,780
MIN	14,420	24,470	31,230	40,080	47,070	53,180	58,610	63,400	68,690	44,530	14,720	14,530
(‡)	1531.66	1534.58	1537.70	1540.04	1541.83	1543.42	1544.67	1546.06	1547.47	1539.29	1527.39	1530.63
(‡‡)	+9450	+7140	+8600	+7210	+5970	+5620	+4630	+5400	+5790	-29790	-29570	+6660

CAL YR 2002 MAX 75510 MIN 14420 (‡‡) -12220
WTR YR 2003 MAX 74400 MIN 14420 (‡‡) +7110

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

07302500 LAKE ALTUS AT LUGERT, OK—Continued



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 mi^2, of which 399 mi^2 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. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft^3/s, May 18, 1951, gage height, 12.70 ft, maximum gage height, 16.37 ft, May 21, 1977, (backwater from Elm Fork of the North Fork Red River); no flow at times in several years.

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 ft^3/s.

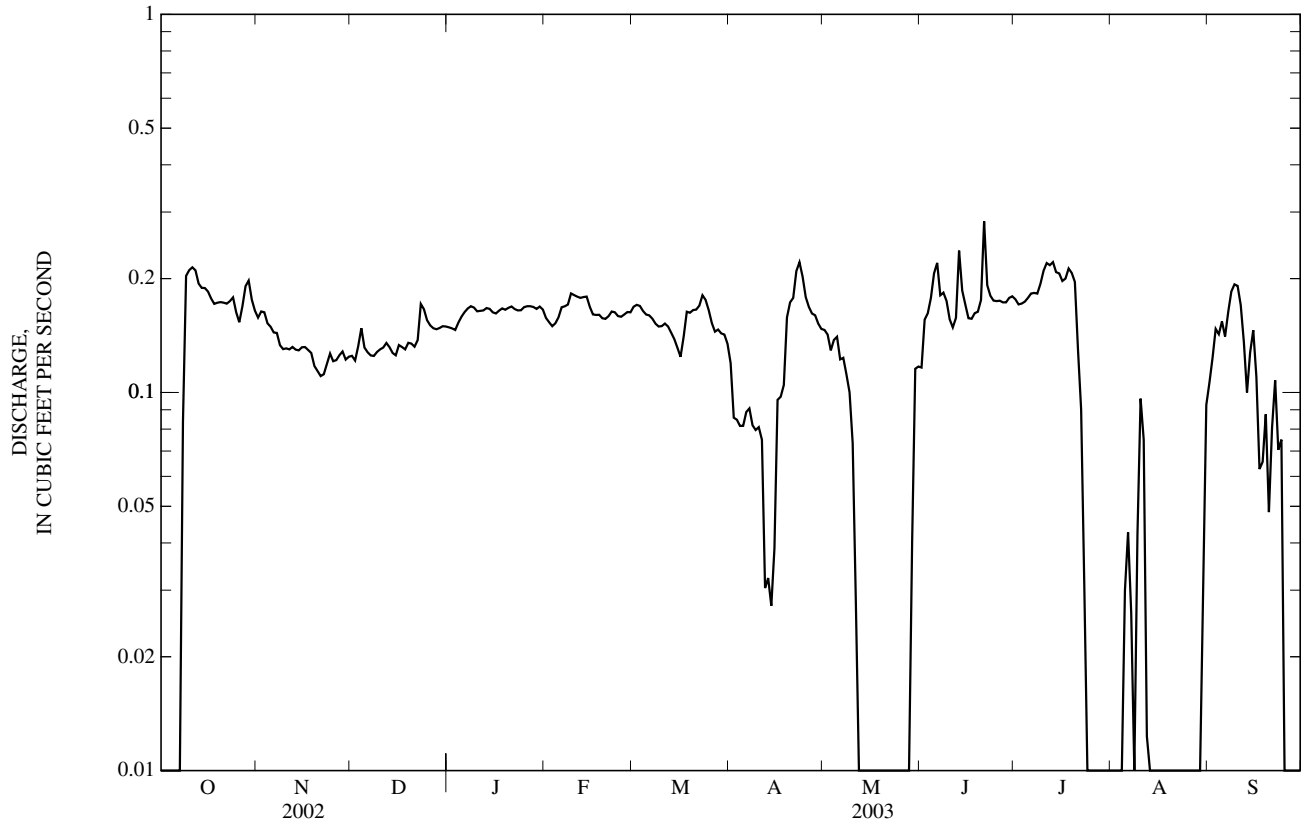
EXTREMES FOR CURRENT YEAR.--Maximum discharge, .48 ft^3/s, June 21, gage height 5.41 ft; minimum daily discharge, no flow at times during year.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.16	0.12	0.15	0.16	0.17	0.12	0.15	0.12	0.18	0.00	0.11
2	0.00	0.16	0.12	0.15	0.15	0.17	0.09	0.14	0.16	0.17	0.00	0.12
3	0.00	0.16	0.13	0.15	0.15	0.17	0.08	0.13	0.16	0.17	0.00	0.15
4	0.00	0.15	0.15	0.15	0.15	0.16	0.08	0.14	0.18	0.17	0.00	0.14
5	0.00	0.15	0.13	0.16	0.16	0.16	0.08	0.14	0.21	0.18	0.03	0.15
6	0.00	0.14	0.13	0.16	0.17	0.16	0.09	0.12	0.22	0.18	0.04	0.14
7	0.00	0.14	0.13	0.17	0.17	0.16	0.09	0.12	0.18	0.18	0.03	0.16
8	0.08	0.13	0.12	0.17	0.17	0.15	0.08	0.11	0.18	0.18	0.01	0.18
9	0.20	0.13	0.13	0.17	0.18	0.15	0.08	0.10	0.17	0.19	0.04	0.19
10	0.21	0.13	0.13	0.16	0.18	0.15	0.08	0.07	0.16	0.21	0.10	0.19
11	0.21	0.13	0.13	0.16	0.18	0.15	0.07	0.03	0.15	0.22	0.07	0.17
12	0.21	0.13	0.14	0.16	0.18	0.15	0.03	0.00	0.16	0.22	0.01	0.14
13	0.19	0.13	0.13	0.17	0.18	0.14	0.03	0.00	0.24	0.22	0.00	0.10
14	0.19	0.13	0.13	0.17	0.18	0.14	0.03	0.00	0.19	0.21	0.00	0.13
15	0.19	0.13	0.13	0.16	0.17	0.13	0.04	0.00	0.17	0.21	0.00	0.15
16	0.18	0.13	0.13	0.16	0.16	0.12	0.10	0.00	0.16	0.20	0.00	0.11
17	0.18	0.13	0.13	0.16	0.16	0.14	0.10	0.00	0.16	0.20	0.00	0.06
18	0.17	0.13	0.13	0.17	0.16	0.16	0.10	0.00	0.16	0.21	0.00	0.07
19	0.17	0.12	0.14	0.17	0.16	0.16	0.16	0.00	0.16	0.21	0.00	0.09
20	0.17	0.11	0.13	0.17	0.16	0.17	0.17	0.00	0.18	0.20	0.00	0.05
21	0.17	0.11	0.13	0.17	0.16	0.17	0.18	0.00	0.28	0.13	0.00	0.08
22	0.17	0.11	0.14	0.17	0.16	0.17	0.21	0.00	0.19	0.09	0.00	0.11
23	0.17	0.12	0.17	0.16	0.16	0.18	0.22	0.00	0.18	0.03	0.00	0.07
24	0.18	0.13	0.17	0.16	0.16	0.18	0.20	0.00	0.17	0.00	0.00	0.08
25	0.16	0.12	0.16	0.17	0.16	0.16	0.18	0.00	0.17	0.00	0.00	0.01
26	0.15	0.12	0.15	0.17	0.16	0.15	0.17	0.00	0.17	0.00	0.00	0.00
27	0.17	0.13	0.15	0.17	0.16	0.14	0.16	0.00	0.17	0.00	0.00	0.00
28	0.19	0.13	0.15	0.17	0.16	0.15	0.16	0.00	0.17	0.00	0.00	0.00
29	0.20	0.12	0.15	0.17	---	0.14	0.15	0.04	0.18	0.00	0.00	0.00
30	0.18	0.12	0.15	0.17	---	0.14	0.15	0.12	0.18	0.00	0.03	0.00
31	0.16	---	0.15	0.17	---	0.13	---	0.12	---	0.00	0.09	---
TOTAL	4.25	3.93	4.28	5.09	4.61	4.77	3.48	1.53	5.33	4.16	0.45	2.95
MEAN	0.14	0.13	0.14	0.16	0.16	0.15	0.12	0.049	0.18	0.13	0.015	0.098
MAX	0.21	0.16	0.17	0.17	0.18	0.18	0.22	0.15	0.28	0.22	0.10	0.19
MIN	0.00	0.11	0.12	0.15	0.15	0.12	0.03	0.00	0.12	0.00	0.00	0.00
AC-FT	8.4	7.8	8.5	10	9.1	9.5	6.9	3.0	11	8.3	0.9	5.9

CAL YR 2002 TOTAL 161.87 MEAN 0.44 MAX 3.3 MIN 0.00 AC-FT 321
WTR YR 2003 TOTAL 44.83 MEAN 0.12 MAX 0.28 MIN 0.00 AC-FT 89

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



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

LOCATION.--Lat 35°00'42", long 99°54'12", in SW ¼ NW ¼ 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.

DRAINAGE AREA.--416 mi^2.

PERIOD OF RECORD.--October 1959 to September 1979, October 1994 to current year.

REVISED RECORDS.--WSP 1731: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,714.95 ft above sea level, Oklahoma State Highway Department datum.

REMARKS.--Records fair. Satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Sep 11	0100	*26,200	*13.45	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	16	16	18	14	e12	12	8.7	4.5	4.4	0.66	1.2
2	3.8	15	15	17	14	e11	11	8.8	4.2	3.2	0.63	1.2
3	3.9	14	18	16	14	e14	11	9.0	5.1	2.7	0.69	1.2
4	4.5	16	21	15	15	16	10	8.8	5.4	2.4	0.68	1.2
5	4.6	14	21	15	15	15	11	8.9	5.8	2.2	0.68	1.2
6	5.0	13	20	15	16	15	11	8.6	5.7	2.1	0.71	1.1
7	5.1	12	18	15	15	15	10	8.7	5.9	2.1	0.70	1.1
8	5.7	12	18	15	15	14	10	9.6	6.7	2.0	0.65	1.1
9	7.6	12	18	15	16	14	10	7.8	6.6	2.0	0.83	1.1
10	9.0	12	18	15	16	14	10	7.2	8.5	2.0	0.73	8.8
11	10	13	18	15	16	14	10	7.0	6.6	1.8	0.68	6,010
12	12	12	18	15	15	14	10	6.5	5.8	1.8	0.67	223
13	10	13	18	15	14	13	9.8	6.2	62	1.6	0.64	120
14	9.2	14	17	15	14	13	9.5	6.4	30	1.5	0.65	e76
15	8.9	13	17	15	14	13	11	6.3	11	1.4	0.65	e54
16	9.0	13	17	15	13	13	19	7.1	6.0	1.3	0.64	e39
17	9.6	13	17	15	13	12	20	5.9	4.9	1.3	0.66	e29
18	10	13	16	15	14	12	13	6.7	6.6	1.2	0.70	e23
19	11	13	16	15	14	13	14	6.8	5.4	1.1	0.69	19
20	16	13	16	15	14	14	12	6.6	7.2	0.97	0.66	16
21	16	12	16	15	13	14	16	6.8	173	0.88	0.67	14
22	15	12	16	e13	14	14	16	6.5	68	0.84	0.66	13
23	15	13	21	e10	e13	14	17	6.4	27	0.78	0.64	12
24	90	13	20	e11	e10	14	19	6.5	e13	0.75	0.66	10
25	86	13	19	e12	e9.0	13	13	7.5	e5.0	0.70	0.66	9.5
26	30	13	19	e12	e8.0	12	11	7.0	e8.0	0.68	0.68	9.4
27	24	14	18	e14	e9.0	13	9.4	6.6	4.5	0.65	0.68	8.9
28	24	14	17	15	e10	14	9.0	6.5	3.8	0.65	0.68	7.8
29	24	14	18	14	---	13	8.7	6.2	4.4	0.92	0.76	7.6
30	18	15	18	14	---	13	9.0	5.6	4.1	1.0	1.7	9.2
31	17	---	18	14	---	12	---	5.0	---	0.73	1.3	---
TOTAL	517.7	399	553	450	377.0	417	362.4	222.2	514.7	47.65	22.69	6,729.6
MEAN	16.7	13.3	17.8	14.5	13.5	13.5	12.1	7.17	17.2	1.54	0.73	224
MAX	90	16	21	18	16	16	20	9.6	173	4.4	1.7	6,010
MIN	3.8	12	15	10	8.0	11	8.7	5.0	3.8	0.65	0.63	1.1
AC-FT	1,030	791	1,100	893	748	827	719	441	1,020	95	45	13,350

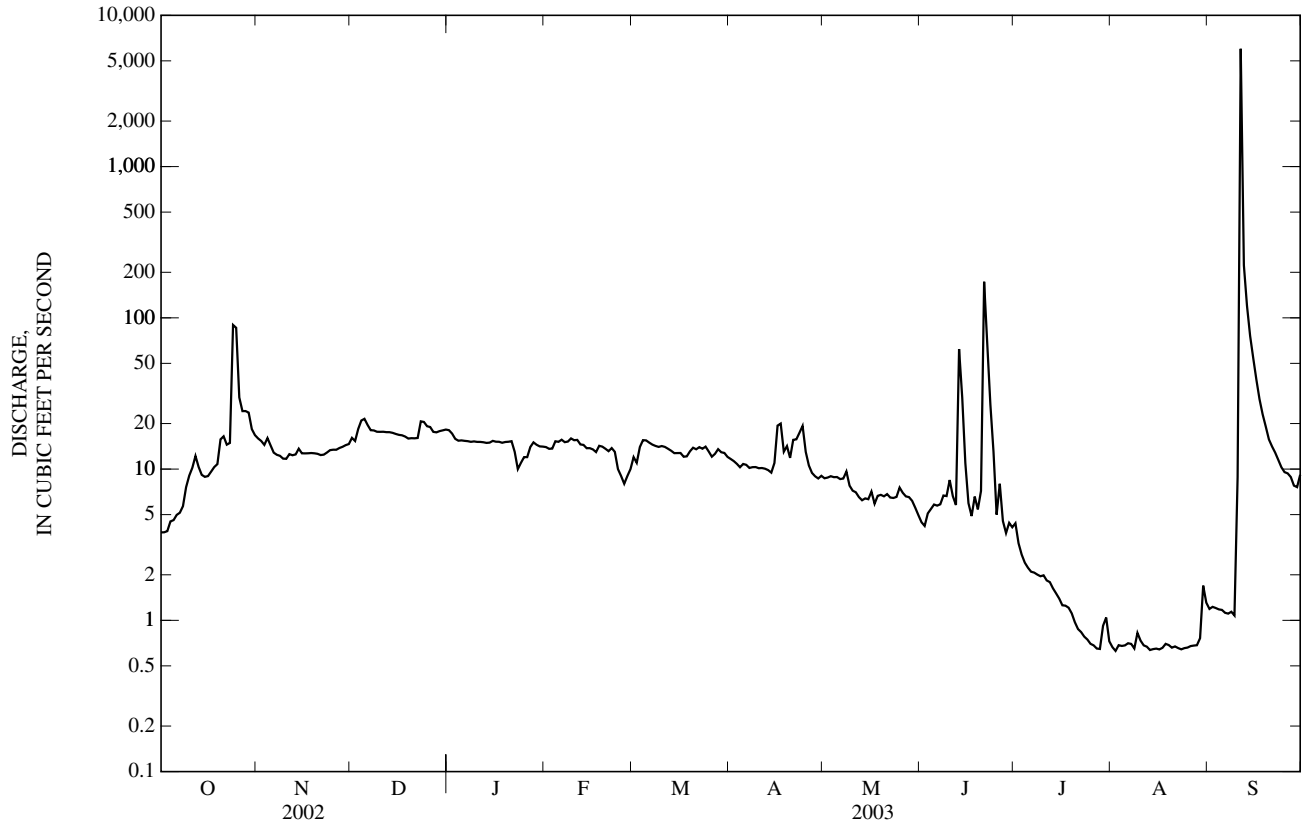
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

MEAN	36.8	29.0	22.9	22.0	25.5	34.2	60.5	94.5	102	27.3	34.6	51.7
MAX	208	91.0	54.9	61.4	64.7	127	351	662	844	133	171	224
(WY)	(1961)	(1975)	(1960)	(1998)	(1998)	(1998)	(1997)	(1977)	(1995)	(1968)	(1995)	(2003)
MIN	2.61	5.97	7.95	10.0	8.97	7.29	5.77	7.17	4.11	0.30	0.48	0.98
(WY)	(1971)	(1971)	(1971)	(1971)	(1972)	(1972)	(1971)	(2003)	(1970)	(1970)	(1976)	(1970)

e Estimated

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

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL TOTAL	5,694.0		10,612.94			
ANNUAL MEAN	15.6		29.1		45.1	
HIGHEST ANNUAL MEAN					107	1995
LOWEST ANNUAL MEAN					10.6	1970
HIGHEST DAILY MEAN	96	Apr 13	6,010	Sep 11	17,100	Jun 3, 1995
LOWEST DAILY MEAN	2.1	Aug 19,Sep 5-8	0.63	Aug 2	0.02	Jul 17, 1971
ANNUAL SEVEN-DAY MINIMUM	2.1	Sep 2	0.66	Aug 11	0.02	Jul 16, 1971
MAXIMUM PEAK FLOW			26,200	Sep 11	62,300	Jun 3, 1995
MAXIMUM PEAK STAGE			13.45	Sep 11	18.80	Jun 3, 1995
ANNUAL RUNOFF (AC-FT)	11,290		21,050		32,670	
10 PERCENT EXCEEDS	23		18		62	
50 PERCENT EXCEEDS	16		12		17	
90 PERCENT EXCEEDS	3.0		0.84		5.3	



07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK

LOCATION.--Lat 34°38'17", long 99°06'12", in NW ¼ NW ¼ sec.21, T.2 N., R.18 W., Tillman County, Hydrologic Unit 11120303, on downstream side of bridge on U.S. Highway 62, 2.2 mi east of Headrick, 13.3 mi upstream from Otter Creek, and at mile 33.4.

DRAINAGE AREA.--4,244 mi^2, of which 399 mi^2 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 0.6 mi downstream at different datum. July 18, 1905, to Mar. 30, 1908, nonrecording gage at Navajo damsite 10.0 mi upstream at different datum. Oct. 1, 1937, to Jan. 29, 1969, water-stage recorder at site .4 mi downstream at datum 5.0 ft higher. Jan. 30, 1969 to Mar. 28, 2002, water-stage recorder at site .4 mi downstream at same datum.

REMARKS.--Records fair. Flow regulated since December 1943 by storage and diversion at Lake Altus, 39.1 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	199	51	98	62	67	40	61	32	42	7.5	75
2	12	115	54	97	52	64	38	55	35	39	6.4	53
3	13	128	58	93	56	57	36	47	229	36	6.6	35
4	14	153	75	91	55	56	40	41	75	31	6.2	25
5	14	118	71	79	50	60	41	43	63	27	7.0	17
6	14	99	76	75	63	57	39	41	408	23	8.1	14
7	16	86	75	75	65	57	40	48	337	22	5.8	12
8	35	77	75	71	58	55	40	40	142	21	5.5	12
9	58	73	72	69	70	52	40	36	85	19	7.8	11
10	61	71	66	67	66	53	37	30	64	18	9.3	9.3
11	52	73	56	73	63	49	38	34	125	16	9.0	12
12	40	75	62	79	60	50	39	35	1,730	16	51	257
13	36	72	62	66	57	50	32	29	2,360	14	32	3,280
14	34	70	61	64	59	47	29	28	2,680	13	20	932
15	32	68	56	59	61	43	30	28	583	13	13	389
16	30	66	59	63	59	43	39	25	446	12	10	250
17	31	69	56	67	62	44	52	28	171	12	8.0	176
18	29	67	55	65	71	44	41	24	102	12	6.1	139
19	30	65	57	65	63	199	55	106	68	11	4.6	116
20	31	61	56	60	60	98	74	83	88	11	3.7	95
21	475	61	53	59	60	75	71	76	69	9.7	3.4	91
22	245	57	57	59	61	70	95	68	275	10	3.0	85
23	116	52	83	e52	59	64	78	55	248	9.9	2.7	74
24	92	54	204	e50	e45	57	67	51	225	8.5	2.5	67
25	400	54	232	e52	e36	53	62	75	121	7.5	2.3	65
26	1,510	56	133	e53	e42	48	66	566	135	7.5	2.2	57
27	560	63	98	e57	e54	48	109	218	100	7.3	1.9	54
28	237	61	85	59	e62	62	93	94	64	7.1	1.8	54
29	265	58	80	61	---	55	76	70	60	7.5	4.8	48
30	255	55	78	59	---	51	62	49	51	8.3	17	50
31	213	---	90	66	---	47	---	38	---	8.6	33	---
TOTAL	4,963	2,376	2,446	2,103	1,631	1,875	1,599	2,222	11,171	499.9	302.2	6,554.3
MEAN	160	79.2	78.9	67.8	58.2	60.5	53.3	71.7	372	16.1	9.75	218
MAX	1,510	199	232	98	71	199	109	566	2,680	42	51	3,280
MIN	12	52	51	50	36	43	29	24	32	7.1	1.8	9.3
AC-FT	9,840	4,710	4,850	4,170	3,240	3,720	3,170	4,410	22,160	992	599	13,000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

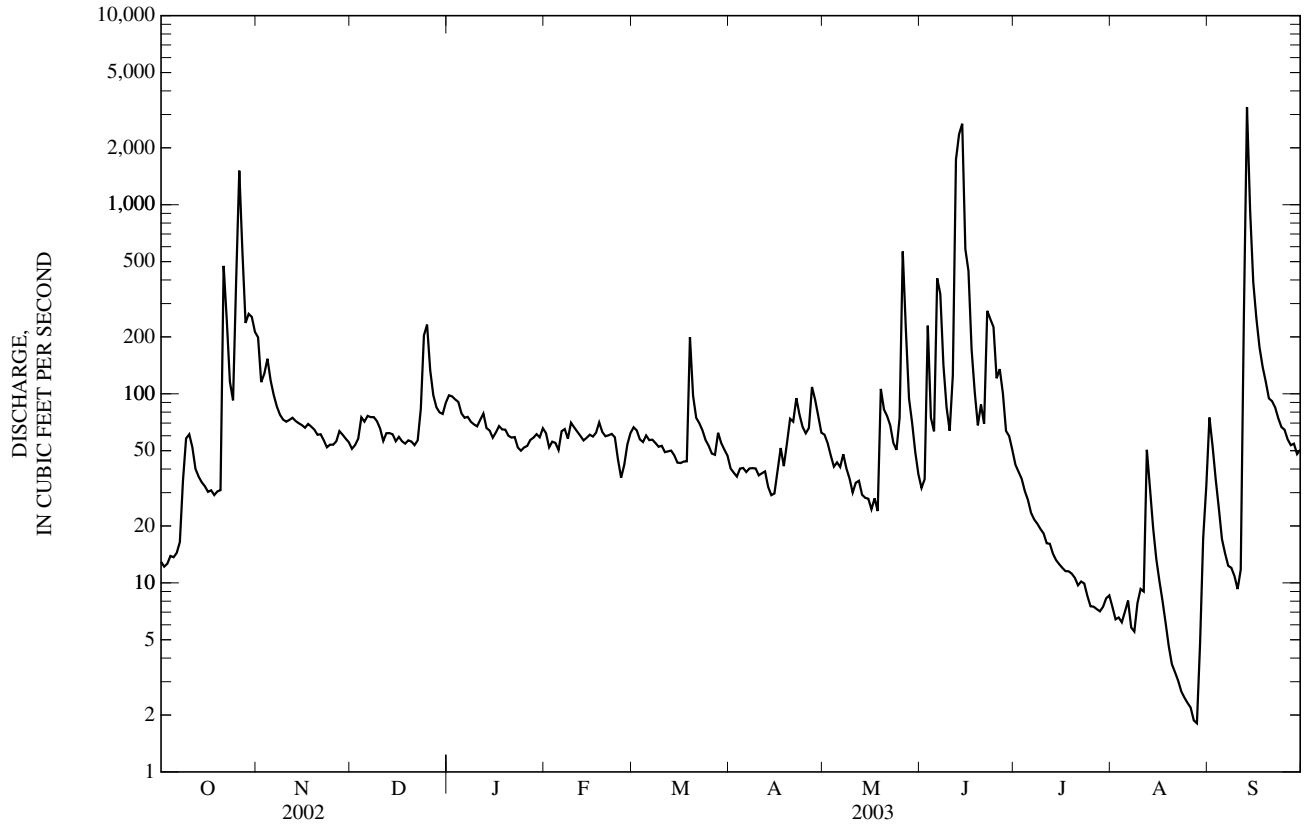
MEAN	349	155	136	117	174	243	336	988	789	235	172	263
MAX	5,608	1,743	984	793	1,375	2,785	5,366	6,104	4,659	2,016	2,522	1,675
(WY)	(1987)	(1987)	(1998)	(1998)	(1997)	(1998)	(1997)	(1977)	(1995)	(1950)	(1995)	(1965)
MIN	0.000	0.000	0.20	0.84	4.06	4.27	0.64	0.31	10.3	0.25	0.000	0.000
(WY)	(1953)	(1953)	(1955)	(1953)	(1953)	(1955)	(1971)	(1953)	(1966)	(1970)	(1952)	(1952)

e Estimated

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL TOTAL	30,717		37,742.4			
ANNUAL MEAN	84.2		103		a330	
HIGHEST ANNUAL MEAN					1,562	1987
LOWEST ANNUAL MEAN					50.0	1970
HIGHEST DAILY MEAN	4,550	Apr 14	3,280	Sep 13	41,600	May 10, 1993
LOWEST DAILY MEAN	10	Aug 24,25	1.8	Aug 28	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	12	Aug 20	2.3	Aug 22	0.00	Aug 2, 1946
MAXIMUM PEAK FLOW			4,560	Jun 14	59,000	Oct 4, 1986
MAXIMUM PEAK STAGE			13.04	Jun 14	19.07	Oct 4, 1986
ANNUAL RUNOFF (AC-FT)	60,930		74,860		239,300	
10 PERCENT EXCEEDS	109		137		577	
50 PERCENT EXCEEDS	48		57		63	
90 PERCENT EXCEEDS	16		10		7.1	

a Prior to regulation water years 1906-07, 1938-43 455 ft^3/s.



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 mi^2.

PERIOD OF RECORD.--April 1903 to March 1908, October 1951 to September 1971, July 1972 to June 2003 (discontinued). 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 good. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
29	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.32	---	---	---
30	0.00	0.00	0.00	0.00	---	0.00	0.00	0.00	0.46	---	---	---
31	0.00	---	0.00	0.00	---	0.00	---	0.00	---	---	---	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	---	---	---
MEAN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026	---	---	---
MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	---	---	---
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	---	---	---
AC-FT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.5	---	---	---

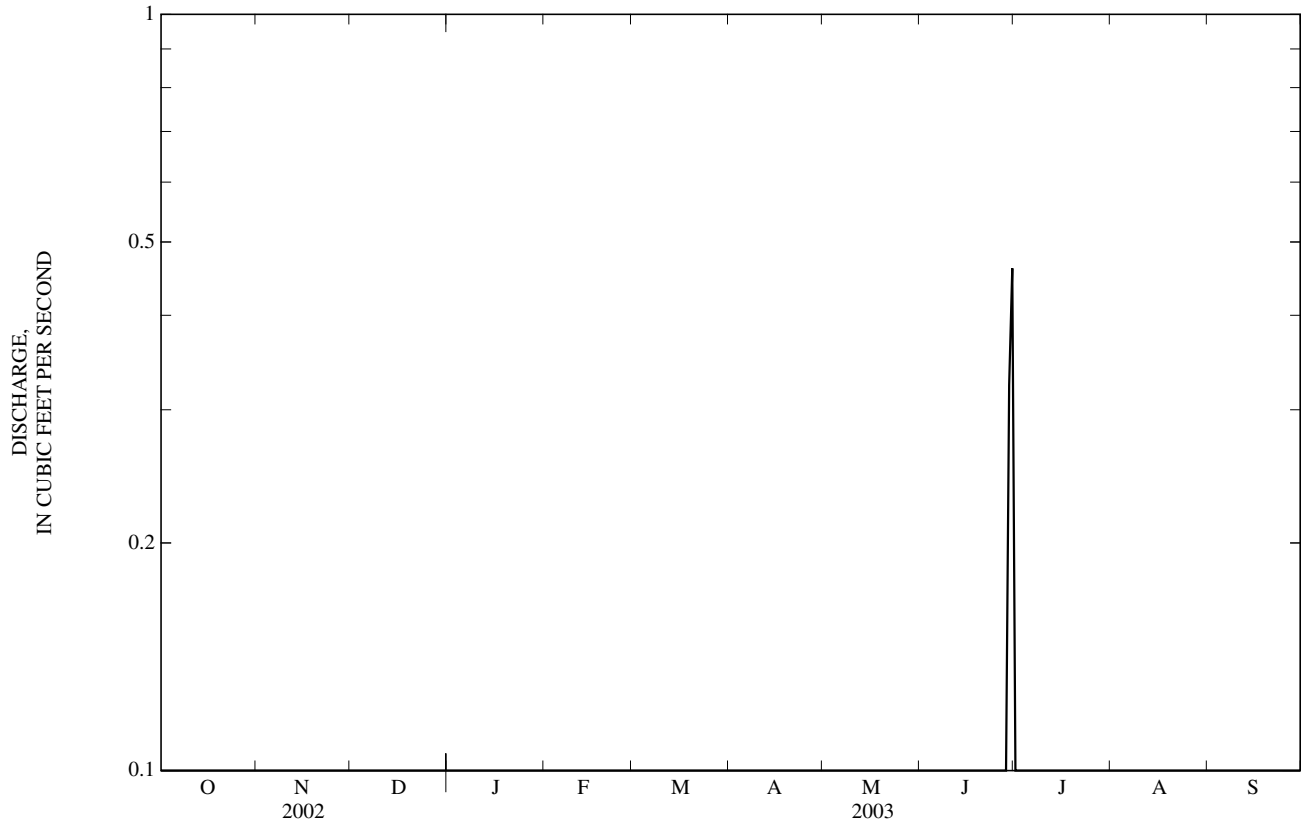
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2003, BY WATER YEAR (WY)

MEAN	7.77	12.8	8.76	2.64	8.87	11.7	4.43	32.7	38.1	4.28	4.79	3.94
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	(1976)	(1976)	(1976)	(1976)	(1977)	(1977)	(1977)	(1979)	(1988)	(1976)	(1976)	(1976)

07305500 WEST OTTER CREEK AT SNYDER LAKE, NEAR MOUNTAIN PARK, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR	FOR PERIOD OCT 2002-JUN 2003	WATER YEARS 1976 - 2003
ANNUAL TOTAL	0.00		
ANNUAL MEAN	0.000		a12.1
HIGHEST ANNUAL MEAN			125 1987
LOWEST ANNUAL MEAN			0.000 1994
HIGHEST DAILY MEAN	0.00 Jan 1	0.46 Jun 30	3,480 May 28, 1987
LOWEST DAILY MEAN	0.00 most days	0.00 most days	0.00 at times
ANNUAL SEVEN-DAY MINIMUM	0.00 Jan 1	0.00 Oct 1	0.00 Oct 1, 1975
MAXIMUM PEAK FLOW		0.55 Jun 29	b4,300 May 29, 1987
MAXIMUM PEAK STAGE		12.00 Jun 29	c15.44 May 29, 1987
ANNUAL RUNOFF (AC-FT)	0.00		8,780
10 PERCENT EXCEEDS	0.00		1.7
50 PERCENT EXCEEDS	0.00		0.00
90 PERCENT EXCEEDS	0.00		0.00

a Prior to regulation water years 1904-07, 1951-71, 1973-74, 23.0 ft^3/s.
b Maximum discharge for period of record, 14,200 ft^3/s, June 6, 1953, from rating curve extended above 1,600 ft^3/s on basis of contracted opening and flow over dam measurments of peak flow.
c Maximum gage height for period of record, 19.50 ft, from flood marks, June 6, 1953.



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 mi^2.

PERIOD OF RECORD.--July 2000 to current year. 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.--No estimated daily discharge. Records poor. U.S. Army Corps of Engineers' satellite telemeter at station.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

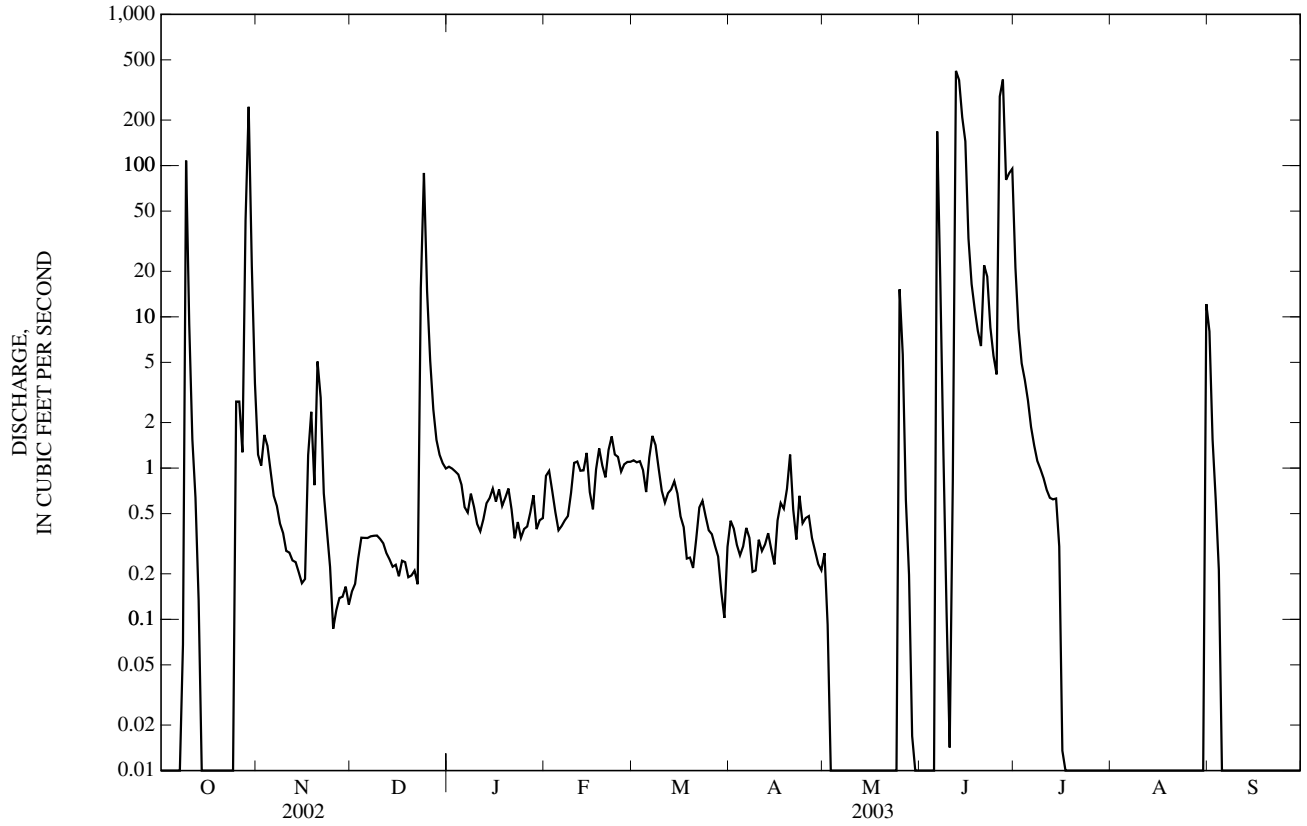
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	1.2	0.15	1.0	0.89	1.1	0.45	0.27	0.00	21	0.00	8.0
2	0.00	1.0	0.17	0.99	0.96	1.1	0.40	0.09	0.00	8.4	0.00	1.5
3	0.00	1.7	0.25	0.95	0.70	1.1	0.31	0.00	0.00	4.9	0.00	0.62
4	0.00	1.4	0.35	0.91	0.51	0.97	0.27	0.00	0.00	3.8	0.00	0.21
5	0.00	0.96	0.35	0.78	0.39	0.69	0.30	0.00	0.00	2.8	0.00	0.00
6	0.00	0.66	0.35	0.55	0.41	1.2	0.40	0.00	168	1.9	0.00	0.00
7	0.00	0.56	0.35	0.51	0.45	1.6	0.35	0.00	17	1.4	0.00	0.00
8	0.07	0.43	0.36	0.68	0.48	1.4	0.21	0.00	1.2	1.1	0.00	0.00
9	108	0.37	0.36	0.55	0.68	0.99	0.21	0.00	0.11	0.98	0.00	0.00
10	8.9	0.28	0.34	0.43	1.1	0.71	0.34	0.00	0.01	0.86	0.00	0.00
11	1.5	0.28	0.32	0.38	1.1	0.59	0.28	0.00	0.82	0.72	0.00	0.00
12	0.64	0.25	0.27	0.46	0.96	0.68	0.31	0.00	423	0.64	0.00	0.00
13	0.13	0.24	0.25	0.59	0.97	0.72	0.37	0.00	368	0.62	0.00	0.00
14	0.00	0.20	0.22	0.63	1.3	0.82	0.29	0.00	209	0.63	0.00	0.00
15	0.00	0.17	0.23	0.73	0.69	0.68	0.23	0.00	145	0.30	0.00	0.00
16	0.00	0.18	0.19	0.60	0.53	0.48	0.45	0.00	33	0.01	0.00	0.00
17	0.00	1.2	0.24	0.72	0.98	0.41	0.59	0.00	16	0.00	0.00	0.00
18	0.00	2.4	0.24	0.56	1.3	0.25	0.54	0.00	11	0.00	0.00	0.00
19	0.00	0.77	0.19	0.64	1.0	0.26	0.73	0.00	8.1	0.00	0.00	0.00
20	0.00	5.1	0.19	0.73	0.87	0.22	1.2	0.00	6.4	0.00	0.00	0.00
21	0.00	2.9	0.21	0.53	1.3	0.34	0.53	0.00	22	0.00	0.00	0.00
22	0.00	0.68	0.17	0.34	1.6	0.55	0.34	0.00	18	0.00	0.00	0.00
23	0.00	0.39	15	0.44	1.2	0.61	0.66	0.00	8.5	0.00	0.00	0.00
24	0.00	0.22	89	0.35	1.2	0.48	0.43	0.00	5.5	0.00	0.00	0.00
25	2.8	0.09	15	0.40	0.95	0.39	0.47	15	4.2	0.00	0.00	0.00
26	2.8	0.11	5.1	0.41	1.1	0.37	0.48	5.6	286	0.00	0.00	0.00
27	1.3	0.14	2.4	0.51	1.1	0.31	0.34	0.61	370	0.00	0.00	0.00
28	44	0.14	1.5	0.66	1.1	0.26	0.28	0.20	81	0.00	0.00	0.00
29	245	0.16	1.2	0.39	---	0.15	0.23	0.02	89	0.00	0.00	0.00
30	22	0.13	1.1	0.45	---	0.10	0.21	0.00	95	0.00	0.00	0.00
31	3.6	---	0.99	0.47	---	0.30	---	0.00	---	0.00	12	---
TOTAL	440.74	24.31	137.04	18.34	25.82	19.83	12.20	21.79	2,385.84	50.06	12.00	10.33
MEAN	14.2	0.81	4.42	0.59	0.92	0.64	0.41	0.70	79.5	1.61	0.39	0.34
MAX	245	5.1	89	1.0	1.6	1.6	1.2	15	423	21	12	8.0
MIN	0.00	0.09	0.15	0.34	0.39	0.10	0.21	0.00	0.00	0.00	0.00	0.00
AC-FT	874	48	272	36	51	39	24	43	4,730	99	24	20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

MEAN	103	12.0	7.82	15.9	16.9	8.96	8.23	81.5	39.1	2.68	1.12	1.65
MAX	288	26.3	13.6	44.7	48.2	19.0	15.1	238	79.5	3.65	3.02	5.28
(WY)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2002)	(2001)	(2003)	(2001)	(2001)	(2001)
MIN	6.83	0.81	4.42	0.59	0.92	0.64	0.41	0.70	2.73	1.61	0.001	0.000
(WY)	(2002)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2000)	(2002)

07307010 OTTER CREEK NEAR SNYDER, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL TOTAL	1,755.37		3,158.30			
ANNUAL MEAN	4.81		8.65		25.1	
HIGHEST ANNUAL MEAN					61.8	2001
LOWEST ANNUAL MEAN					4.93	2002
HIGHEST DAILY MEAN	245	Oct 29	423	Jun 12	2,740	May 20, 2001
LOWEST DAILY MEAN	0.00	at times	0.00	at times	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 19	0.00	Oct 1	0.00	Aug 2, 2000
MAXIMUM PEAK FLOW			662	Jun 27	4,720	Oct 23, 2000
MAXIMUM PEAK STAGE			12.39	Jun 27	14.70	Oct 23, 2000
ANNUAL RUNOFF (AC-FT)	3,480		6,260		18,210	
10 PERCENT EXCEEDS	7.8		5.0		23	
50 PERCENT EXCEEDS	1.6		0.34		3.6	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



07307028 NORTH FORK RED RIVER NEAR TIPTON, OK

LOCATION.--Lat 34°30'25", long 99°12'28", in NW ¼ NE ¼ 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 mi^2, of which 399 mi^2 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	245	67	109	72	71	53	61	51	203	37	82
2	18	237	65	121	72	68	50	56	1,160	135	32	98
3	17	178	71	114	65	67	50	54	138	116	32	80
4	16	187	121	110	65	65	48	50	146	102	32	62
5	17	174	92	103	64	61	47	45	149	92	30	50
6	19	145	86	93	66	61	48	43	2,520	85	32	43
7	31	127	91	89	71	61	45	42	848	79	32	38
8	105	118	90	89	68	63	44	51	450	74	29	35
9	274	109	89	88	73	60	44	46	e200	71	35	33
10	209	100	84	84	80	56	45	41	e140	64	37	30
11	143	94	77	80	74	57	45	34	e110	61	28	36
12	107	95	75	86	70	60	45	34	e280	62	29	34
13	80	96	74	86	71	60	45	36	3,320	64	53	1,670
14	67	88	72	79	72	56	42	34	3,820	64	54	2,030
15	62	87	70	77	68	56	41	32	1,520	69	47	646
16	56	84	68	72	65	54	45	30	923	70	42	e350
17	52	83	69	72	64	53	48	27	453	68	35	e225
18	51	83	68	75	71	53	53	28	263	64	28	e160
19	51	80	64	75	75	76	271	28	186	52	24	137
20	49	77	64	76	69	135	90	79	155	49	23	121
21	63	76	63	72	68	89	85	75	289	47	24	108
22	575	78	62	68	70	72	83	70	250	42	26	103
23	235	81	326	e57	67	69	102	64	293	43	29	92
24	182	73	259	e54	e50	65	84	322	361	52	31	84
25	179	70	344	e61	e40	61	70	76	221	53	30	77
26	1,080	67	215	e64	e50	57	64	186	951	50	22	73
27	1,110	67	159	78	e60	54	77	421	992	46	20	67
28	513	73	131	73	e65	56	97	144	631	42	19	62
29	739	72	120	69	---	61	82	92	868	35	53	58
30	596	70	112	68	---	56	69	73	340	35	182	55
31	322	---	106	69	---	53	---	59	---	37	505	---
TOTAL	7,036	3,214	3,454	2,511	1,865	1,986	2,012	2,433	22,028	2,126	1,632	6,739
MEAN	227	107	111	81.0	66.6	64.1	67.1	78.5	734	68.6	52.6	225
MAX	1,110	245	344	121	80	135	271	421	3,820	203	505	2,030
MIN	16	67	62	54	40	53	41	27	51	35	19	30
AC-FT	13,960	6,370	6,850	4,980	3,700	3,940	3,990	4,830	43,690	4,220	3,240	13,370

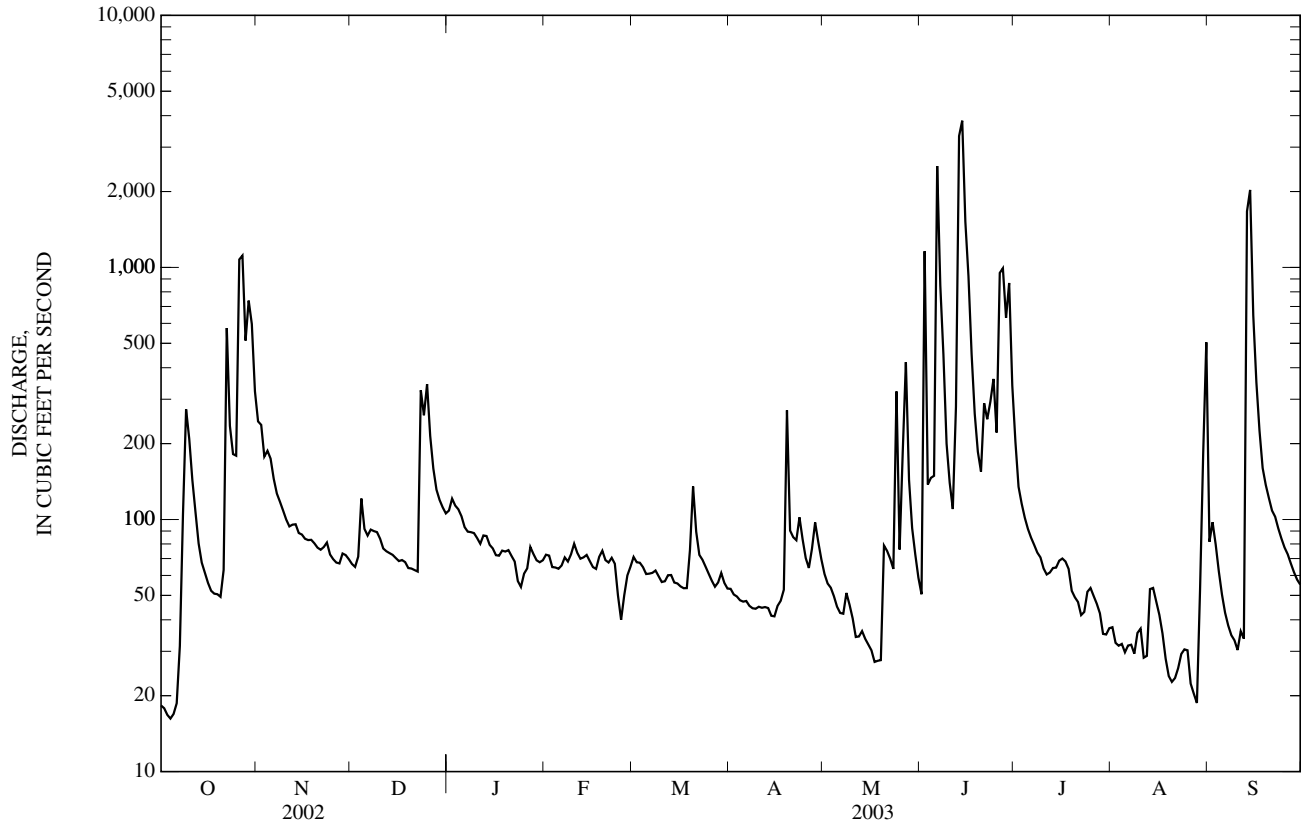
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	665	378	363	276	394	641	635	1,154	1,362	305	455	530
MAX	5,784	2,276	1,287	1,126	1,773	3,268	5,020	5,347	5,560	738	3,932	1,796
(WY)	(1987)	(1987)	(1992)	(1998)	(1998)	(1998)	(1997)	(1993)	(1995)	(1993)	(1995)	(1995)
MIN	15.1	30.8	67.1	65.9	66.6	54.8	49.3	62.6	93.8	49.3	39.5	13.5
(WY)	(1985)	(1985)	(2002)	(2002)	(2003)	(1986)	(1986)	(1984)	(2002)	(1984)	(1985)	(1984)

e Estimated

07307028 NORTH FORK RED RIVER NEAR TIPTON, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	42,183		57,036			
ANNUAL MEAN	116		156		597	
HIGHEST ANNUAL MEAN					1,987	1987
LOWEST ANNUAL MEAN					92.4	2002
HIGHEST DAILY MEAN	2,860	Apr 14	3,820	Jun 14	39,100	May 30, 1987
LOWEST DAILY MEAN	16	Sep 13,Oct 4	16	Oct 4	3.7	Sep 7, 1985
ANNUAL SEVEN-DAY MINIMUM	18	Sep 30	19	Oct 1	4.7	Sep 6, 1985
MAXIMUM PEAK FLOW			4,590	Jun 14	57,200	Oct 5, 1986
MAXIMUM PEAK STAGE			12.22	Jun 14	19.18	May 10, 1993
ANNUAL RUNOFF (AC-FT)	83,670		113,100		432,300	
10 PERCENT EXCEEDS	184		266		1,180	
50 PERCENT EXCEEDS	64		70		159	
90 PERCENT EXCEEDS	35		34		51	



07308500 Red River near Burkburnett, TX

LOCATION.--Lat 34 06'36",long 98 31'53",Cotton County, OK, Hydrologic Unit 11130102, on downstream guardrail of downstream bridge on U.S. Highways 277 and 281, 2.5 mi northeast of Burkburnett, and at mile 933.

DRAINAGE AREA.--20,570 mi^2, of which 5,936 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1924 to Aug. 1925 (monthly discharge only), Dec. 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft above NGVD of 1929. July 11, 1924, to Aug. 31, 1925, nonrecording gage at site 1,000 ft downstream at same datum. Dec. 16, 1959, to Jan. 11, 1960, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. There are many small diversions upstream from station for irrigation. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 3, 1957, reached a stage of 13.54 ft, from floodmarks. According to local residents, higher stages occurred in 1891 and June 1941.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	1280	179	471	249	148	83	178	282	3710	47	238
2	14	1040	184	428	241	152	63	149	250	1830	42	1050
3	12	930	203	426	218	182	60	130	256	1200	38	1160
4	13	809	338	432	228	218	64	113	1250	949	35	525
5	11	656	533	437	220	180	59	100	1860	659	29	317
6	10	601	528	406	209	174	57	81	2610	503	26	192
7	9.4	516	581	409	224	191	48	72	9980	410	22	122
8	106	429	507	393	216	195	47	69	3120	351	18	93
9	234	377	521	372	211	180	167	68	2470	304	34	75
10	268	327	517	361	238	171	229	65	1300	252	26	61
11	408	291	490	349	257	163	169	66	1250	231	21	60
12	459	261	444	363	235	153	149	61	1050	196	16	59
13	325	243	415	376	248	148	137	58	949	162	16	52
14	330	226	394	e363	244	142	118	58	1140	154	36	224
15	219	213	380	e324	207	137	111	59	3730	128	39	1830
16	164	215	360	283	197	133	150	74	4440	120	27	1850
17	132	208	345	286	203	135	141	74	1720	109	36	831
18	116	205	317	281	185	126	145	62	1190	99	35	507
19	108	205	299	275	167	113	e164	52	870	94	26	371
20	116	194	293	271	168	110	160	58	662	88	17	291
21	95	185	283	252	191	117	443	79	560	86	13	236
22	83	184	263	239	227	142	596	90	474	e83	11	209
23	88	183	334	252	187	214	498	95	2340	69	9.0	184
24	212	179	1140	e254	173	160	e418	118	3090	62	7.3	155
25	391	174	1490	e243	179	132	e362	818	1690	58	7.1	140
26	308	177	1110	245	e151	126	276	711	1610	53	7.8	127
27	806	172	1020	e238	e107	116	227	1330	2030	50	7.9	114
28	1490	171	815	e236	126	107	197	2160	2290	50	8.0	100
29	1880	175	640	e235	---	108	177	1390	1890	50	9.7	87
30	3320	171	562	e253	---	107	e187	733	2380	56	63	79
31	1610	---	514	256	---	94	---	420	---	52	211	---
TOTAL	13353.4	10997	15999	10009	5706	4574	5702	9591	58733	12218	940.8	11339
MEAN	431	367	516	323	204	148	190	309	1958	394	30.3	378
MAX	3320	1280	1490	471	257	218	596	2160	9980	3710	211	1850
MIN	9.4	171	179	235	107	94	47	52	250	50	7.1	52
AC-FT	26490	21810	31730	19850	11320	9070	11310	19020	116500	24230	1870	22490

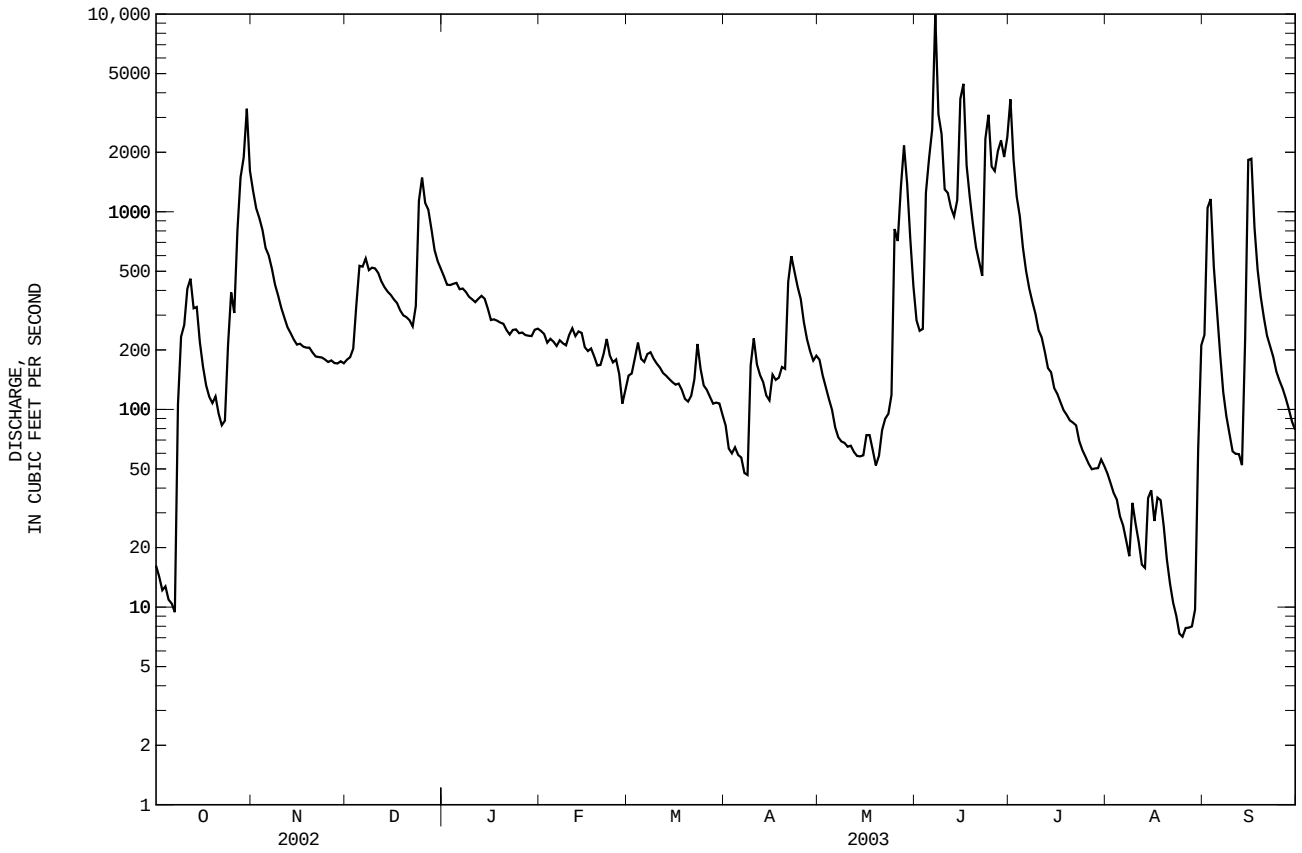
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

MEAN	1457	685	570	497	716	953	1091	2314	3307	871	833	1285
MAX	14900	4960	4435	2293	4986	10050	13040	12470	24780	5947	10540	6381
(WY)	1987	1987	1992	1998	1998	1998	1997	1977	1995	1975	1995	1996
MIN	21.9	0.96	2.98	5.53	8.37	7.97	0.15	11.4	148	0.058	1.29	29.9
(WY)	1971	1971	1971	1971	1971	1971	1971	1971	1970	1970	1964	2002

e Estimated

07308500 Red River near Burkburnett, TX--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL TOTAL	156446.4		159162.2			
ANNUAL MEAN	429		436		1218	
HIGHEST ANNUAL MEAN					4424	1987
LOWEST ANNUAL MEAN					178	1964
HIGHEST DAILY MEAN	5390	Apr 15	9980	Jun 7	144000	Jun 6 1995
LOWEST DAILY MEAN	9.4	Oct 7	7.1	Aug 25	0.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	12	Oct 1	8.1	Aug 23	0.00	Jul 19 1964
MAXIMUM PEAK FLOW			15200	Jun 7	174000	Jun 6 1995
MAXIMUM PEAK STAGE			7.68	Jun 7	16.90	Oct 21 1983
ANNUAL RUNOFF (AC-FT)	310300		315700		882400	
10 PERCENT EXCEEDS	1030		1140		2430	
50 PERCENT EXCEEDS	183		203		303	
90 PERCENT EXCEEDS	32		47		53	



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 Sept. 1982, Oct. 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to Sept. 1981, Oct. 1994 to Jan. 2004.
WATER TEMPERATURE: July 1968 to Sept. 1981, Oct. 1994 to May 2004.

INSTRUMENTATION.--Water-quality monitor Dec. 1968 to Sept. 1981 and Oct. 1994 to May 2004.

REMARKS.--Records fair. Interruptions in the record were due to malfunction of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous years using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. The computation of the selected constituent loads might include estimated discharge or specific conductance data. 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/cm, July 30, 1972; minimum, 440 microsiemens/cm, Apr. 13, 2002.
WATER TEMPERATURE: Maximum, 38.0 C, July 24, 2001; minimum, 0.0 C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 17,800 microsiemens/cm, Oct. 9; minimum, 3,090 microsiemens/cm, Oct. 25.
WATER TEMPERATURE: Maximum, 29.0 C, Oct. 2; minimum, 1.4 C, Dec. 25.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Specif. conductance, wat unf uS/cm 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Temperature, water, deg C (00010)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	Hardness, water, unfltrd mg/L as CaCO3 (00900)	Noncarb hardness, wat flt field, mg/L as CaCO3 (00904)	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Sodium, water, fltrd, mg/L (00930)	Sodium adsorption ratio (00931)
OCT													
10...	1035	298	9450	7.8	16.1	8.4	88	1300	1200	361	87.2	1600	20
NOV													
22...	1230	106	9340	8.3	13.3	12.6	123	1500	1400	411	122	1500	17
DEC													
13...	1355	394	10800	8.0	8.3	12.0	106	1600	1400	437	125	1800	19
JAN													
03...	1230	431	10000	8.1	5.4	12.8	105	1600	1400	412	130	1730	19
FEB													
05...	1505	224	9630	8.2	7.0	13.4	114	1700	1500	433	141	1500	16
MAR													
04...	1035	210	9340	8.1	9.7	13.2	121	1600	1400	411	140	1510	16
APR													
14...	1035	124	9760	8.1	18.5	9.4	104	1700	1600	432	153	1610	17
MAY													
21...	1415	77	9490	8.1	19.3	10.6	117	1600	1500	417	144	1710	18
JUN													
27...	1030	1920	6330	7.9	23.1	8.8	106	870	780	258	54.4	948	14
JUL													
24...	1155	64	7400	8.2	27.6	8.0	103	1700	1600	429dp	155dp	1430dp	15
AUG													
19...	1130	32	6950	8.2	29.4	8.0	106	1400	1300	308d	144d	996d	12
SEP													
24...	1055	156	7920	8.1	22.6	8.5	102	1400	1400	411d	100d	1320d	15

07308500 Red River near Burkburnett, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Potas-sium, water, fltrd, mg/L (00935)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Sulfate water, fltrd, mg/L (00945)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite water, fltrd, mg/L as N (00613)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ammonia water, fltrd, mg/L as N (00608)	Total nitro-gen, water, unfltrd mg/L (00600)
OCT													
10...	11.4	83	1030	2410	.54	6.9	5560	4040r	.48	.090	.57	.10	6.9
NOV													
22...	8.30	169	1250	2480	.50	10.9	5880	134	.80	.009	.81	<.04	1.7
DEC													
13...	9.70	174	1330	3000	.50	9.5	6810	74	.88	.014	.89	.10	1.4
JAN													
03...	9.70	184	1220	2750	.50	10.4	6370	114	1.20	.025	1.22	.09	1.8
FEB													
05...	8.37	145	1330	2500	.51	4.1	6000	22	.55	.015	.56	E.03	1.0
MAR													
04...	8.80	161	1280	2420	.47	2.6	5870	39	.38	.012	.39	<.04	1.0
APR													
14...	12.7	123	1440	2560	.50	1.7	6290	26	--	<.008	<.06	E.04	--
MAY													
21...	12.5	116	1310	2500	.5	6.5	6170	19	--	<.008	<.06	<.04	--
JUN													
27...	11.0	90	709	1630	.5	9.6	3670	263	--	E.010	E.56	E.01	--
JUL													
24...	12.2dp	114	1130d	1820d	.6	8.8	5050	47	.11	.014	.12	.15	.40
AUG													
19...	11.0d	84	1150d	1660d	.6	10.0	4320	29	--	<.008	<.06	E.02n	--
SEP													
24...	13.7d	74	1060d	2050d	.4	9.4	5010	124	--	<.008	<.06	<.04	--

Date	Organic nitro-gen, water, unfltrd mg/L (00605)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Phos-phorus, water, unfltrd mg/L (00665)	Phos-phorus, water, fltrd, mg/L (00666)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Ortho-phos-phate, water, fltrd, mg/L (00660)	Arsenic water unfltrd ug/L (01002)	Arsenic water, fltrd, ug/L (01000)	Barium, water, unfltrd recover-able, ug/L (01007)	Barium, water, fltrd, ug/L (01005)	Cadmium water, unfltrd ug/L (01027)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, unfltrd recover-able, ug/L (01034)
OCT													
10...	6.3	6.4	3.02	<.04	<.02	--	17	1.1	560	104	.56	<.15	36.9
NOV													
22...	--	.85	.16	<.04	E.01	--	5	3.3	110	94	<.14	<.15	1.4
DEC													
13...	.39	.48	.10	.04	.04	.117	E2	2.9	87	87	<.17	<.18	1.7
JAN													
03...	.46	.55	.13	.06	.06	.184	3	3.6	111	92	<.14	<.15	1.6
FEB													
05...	--	.45	E.03	<.04	<.02	--	E1	2.8	70	67	<.14	<.15	<.8
MAR													
04...	--	.64	.05	<.04	<.02	--	E1	2.8	66	62	<.14	E.11n	E.5
APR													
14...	--	.91	.12	<.04	<.02	--	5	2.4	68	69	<.14	<.15	<.8
MAY													
21...	--	1.1	.13	E.02	<.02	--	3	3.3	97	94	<.14	<.15	<.8
JUN													
27...	--	3.7	1.89	.06	E.04	--	12	3.4	542	121	.40	<.11	22.4
JUL													
24...	.13	.28	<.04	<.04	<.02	--	3	4.6d	149d	133	<.10d	.29d	.8
AUG													
19...	--	.72	.05	<.04	<.02	--	4	4.7d	109d	96d	<.10d	<.11d	<.8
SEP													
24...	--	.89	.15	<.04	<.02	--	3	2.5	176	135	<.14	E.03	E.8

07308500 Red River near Burkburnett, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chrom-ium, water, fltrd, ug/L (01030)	Copper, water, unfltrd recover -able, ug/L (01042)	Copper, water, fltrd, ug/L (01040)	Iron, water, unfltrd recover -able, ug/L (01045)	Iron, water, fltrd, ug/L (01046)	Lead, water, unfltrd recover -able, ug/L (01051)	Lead, water, fltrd, ug/L (01049)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mangan-ese, water, fltrd, ug/L (01056)	Mercury water, unfltrd recover -able, ug/L (71900)	Mercury water, fltrd, ug/L (71890)	Nickel, water, unfltrd recover -able, ug/L (01067)	Nickel, water, fltrd, ug/L (01065)
OCT													
10...	<.8	73.7	6.5	28300	<50	59	E.22n	2900	1.7	.23	E.01	101	10.4
NOV													
22...	<.8	15.9	3.6	1160	<50	1	<.32	73	6.5	<.02	<.02	22	16.4
DEC													
13...	<.8	10.1	4.4	780	<100	M	<.40	52	7.5	<.02	<.02	26	18.4
JAN													
03...	<.8	9.6	4.2	940	<50	2	<.32	71	6.4	<.02	<.02	27	21.1
FEB													
05...	<4.0	15.5	4.7	50	<50	Mn	<.32	26	11.3	<.02	<.02	42	26.0
MAR													
04...	.8	6.9	3.3	120	<50	M	E.18n	38	20.7	<.02	<.02	13	14.0
APR													
14...	<.8	10.8	6.8	160	<100	M	<.32	61	45.4	<.02	<.02	18	17.0
MAY													
21...	<.8	12.4	4.9	70	<8	M	<.32	62	25.9	E.01	<.02	16	17.2
JUN													
27...	<.8	49.8	3.5	<6	<8	41	E.13n	1650	E.4n	.05	<.02	57	6.54
JUL													
24...	<.8	6.2d	3.8	460	<40d	Md	<.24d	78d	7.6	<.02	<.02	14d	12.7d
AUG													
19...	<.8	7.4d	5.1d	210d	<40d	Md	<.24d	82d	12.5d	--	--	18d	9.46d
SEP													
24...	<1.6	13.9	4.1	1020	<40	2	.16	94	2.7	<.02	<.02	17	6.06

Date	Selen-ium, water, unfltrd ug/L (01147)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, unfltrd recover -able, ug/L (01077)	Silver, water, fltrd, ug/L (01075)	Zinc, water, unfltrd recover -able, ug/L (01092)	Zinc, water, fltrd, ug/L (01090)	Aldrin, water, unfltrd ug/L (39330)	Aroclor 1016 + 1242, water, unfltrd ug/L (81648)	Aroclor 1221, water, unfltrd ug/L (39488)	Aroclor 1232, water, unfltrd ug/L (39492)	Aroclor 1248, water, unfltrd ug/L (39500)	Aroclor 1254, water, unfltrd ug/L (39504)	Aroclor 1260, water, unfltrd ug/L (39508)
OCT													
10...	4.9	3.2	<.64	1	134	5	--	--	--	--	--	--	--
NOV													
22...	8.1	6.6	<.64	<.80	11	E3n	--	--	--	--	--	--	--
DEC													
13...	6.7	7.1	<.80	<1	10	5	--	--	--	--	--	--	--
JAN													
03...	5.2	4.2p	<.64	<.80	9	E4n	--	--	--	--	--	--	--
FEB													
05...	11.4	8.4	<.64	<.80	E8n	5	--	--	--	--	--	--	--
MAR													
04...	7.3	8.2	<.64	Mn	E4n	4	--	--	--	--	--	--	--
APR													
14...	6.7	4.5	<.64	<.80	11	4	<.20d	<.5d	<5d	<.5d	<.5d	<.5d	<.5d
MAY													
21...	4.7	2.7	<.64	<.80	E6n	6	--	--	--	--	--	--	--
JUN													
27...	3.0	2.7	<.48	<.60	92	E3n	<.04	<.1	<1	<.1	<.1	<.1	<.1
JUL													
24...	4.4d	5.3d	<.48d	<.60d	E5nd	4d	--	--	--	--	--	--	--
AUG													
19...	6.0d	E1.3nd	<.48d	<.60d	E3nd	3d	--	--	--	--	--	--	--
SEP													
24...	4.6	3.9	<.64	<.20	10	2	--	--	--	--	--	--	--

07308500 Red River near Burkburnett, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chlordane, technical, water, unfltrd ug/L (39350)	Dieldrin, water, unfltrd ug/L (39380)	Endosulfan sulfate water unfltrd ug/L (34351)	Endrin, water, unfltrd ug/L (39390)	Endrin aldehyde, water, unfltrd ug/L (34366)	Heptachlor, water, unfltrd ug/L (39410)	Heptachlor epoxide water unfltrd ug/L (39420)	Lindane water, unfltrd ug/L (39340)	PCB 207, surrog, Sch1608 water, unfltrd pct rcv (99781)	Toxaphene, water, unfltrd ug/L (39400)	alpha-Endosulfan, water, unfltrd ug/L (34361)	alpha-HCH, water, unfltrd ug/L (39337)	alpha-HCH-d6, surrog, Sch1608 water, unfltrd pct rcv (99778)
OCT													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.5d	<.10d	<3.0d	<.30d	<1.0d	<.15d	<4.0d	<.15d	53.3d	<10d	<.5d	<.15d	33.0d
MAY													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
27...	<.1	<.02	<.6	<.06	<.2	<.03	<.8	<.03	73.0	<2	<.1	<.03	49.9
JUL													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	beta-Endosulfan, water, unfltrd ug/L (34356)	beta-HCH, water, unfltrd ug/L (39338)	cis-Chlordane, water, unfltrd ug/L (39062)	delta-HCH, water, unfltrd ug/L (34259)	p,p'-DDD, water, unfltrd ug/L (39310)	p,p'-DDE, water, unfltrd ug/L (39320)	p,p'-DDT, water, unfltrd ug/L (39300)	trans-Chlordane, water, unfltrd ug/L (39065)
OCT								
10...	--	--	--	--	--	--	--	--
NOV								
22...	--	--	--	--	--	--	--	--
DEC								
13...	--	--	--	--	--	--	--	--
JAN								
03...	--	--	--	--	--	--	--	--
FEB								
05...	--	--	--	--	--	--	--	--
MAR								
04...	--	--	--	--	--	--	--	--
APR								
14...	<.20d	<.15d	<.5d	<.45d	<.5d	<.20d	<.5d	<.5d
MAY								
21...	--	--	--	--	--	--	--	--
JUN								
27...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL								
24...	--	--	--	--	--	--	--	--
AUG								
19...	--	--	--	--	--	--	--	--
SEP								
24...	--	--	--	--	--	--	--	--

Remark codes used in this report:
  < -- Less than
  E -- Estimated value
  M -- Presence verified, not quantified

Value qualifier codes used in this report:
  d -- Diluted sample: method hi range exceeded
  n -- Below the NDV
  p -- Value reported is preferred
  r -- Value verified by rerun, same method

07308500 Red River near Burkburnett, TX--Continued

SPECIFIC CONDUCTANCE, IN US/CM @ 25c, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8780	8480	8630	---	---	e6400	8550	8460	8500	10200	9970	10100
2	9140	8700	8820	---	---	e6910	8490	8390	8440	---	---	e10100
3	9360	9100	9190	---	---	e7610	8420	7480	8140	---	---	---
4	9380	9160	9270	---	---	e8090	7550	7000	7310	---	---	---
5	9390	9220	9310	---	---	e8520	7000	4970	5700	---	---	---
6	9310	9110	9210	---	---	e9050	6670	5370	5990	---	---	---
7	9300	9200	9260	---	---	e9620	7140	6320	6750	---	---	---
8	17100	8080	10100	---	---	e9800	9270	6880	8050	---	---	---
9	17800	12200	15100	---	---	e9870	10700	9260	9790	---	---	---
10	12200	8910	10000	---	---	e9950	10900	10600	10700	---	---	---
11	9590	7350	8580	---	---	e9870	11700	10700	11200	---	---	---
12	7350	6100	6510	---	---	e9910	11700	10600	11200	---	---	---
13	6940	6200	6520	9840	9580	9720	10800	10400	10600	---	---	---
14	16000	6940	10300	9590	9380	9490	10900	10700	10800	---	---	---
15	16500	12400	14600	9460	9240	9340	11100	10800	11000	---	---	---
16	12400	11000	11500	9320	9180	9260	11200	11100	11200	---	---	---
17	11000	10300	10700	9380	9310	9350	11300	11100	11200	---	---	---
18	10300	9870	10100	9380	9260	9320	11100	11000	11100	---	---	---
19	9870	9600	9740	9350	9220	9290	11100	10800	10900	---	---	---
20	9630	9300	9420	9310	9070	9200	11000	10700	10800	---	---	---
21	9420	9300	9360	9140	9030	9080	10800	10500	10600	---	---	---
22	9350	9300	9320	9100	8930	9020	10600	10500	10500	---	---	---
23	9380	9320	9340	9050	8860	8960	10500	8440	10100	---	---	---
24	9390	8220	9090	8860	8650	8760	8570	3440	6000	---	---	---
25	8730	3090	5300	8910	8780	8860	5140	3600	4470	---	---	---
26	3830	3110	3420	8870	8760	8810	4670	3580	3880	---	---	---
27	14600	3830	6520	8760	8650	8720	5080	4300	4940	---	---	---
28	14600	4880	9860	8700	8420	8540	6640	5020	5960	---	---	---
29	4880	3520	4420	8470	8410	8430	7940	6640	7160	---	---	---
30	4460	---	e4080	8520	8450	8490	9100	7940	8540	---	---	---
31	---	---	e5180	---	---	---	10100	9100	9560	---	---	---
MONTH	---	---	8800	---	---	8940	11700	3440	8740	---	---	---

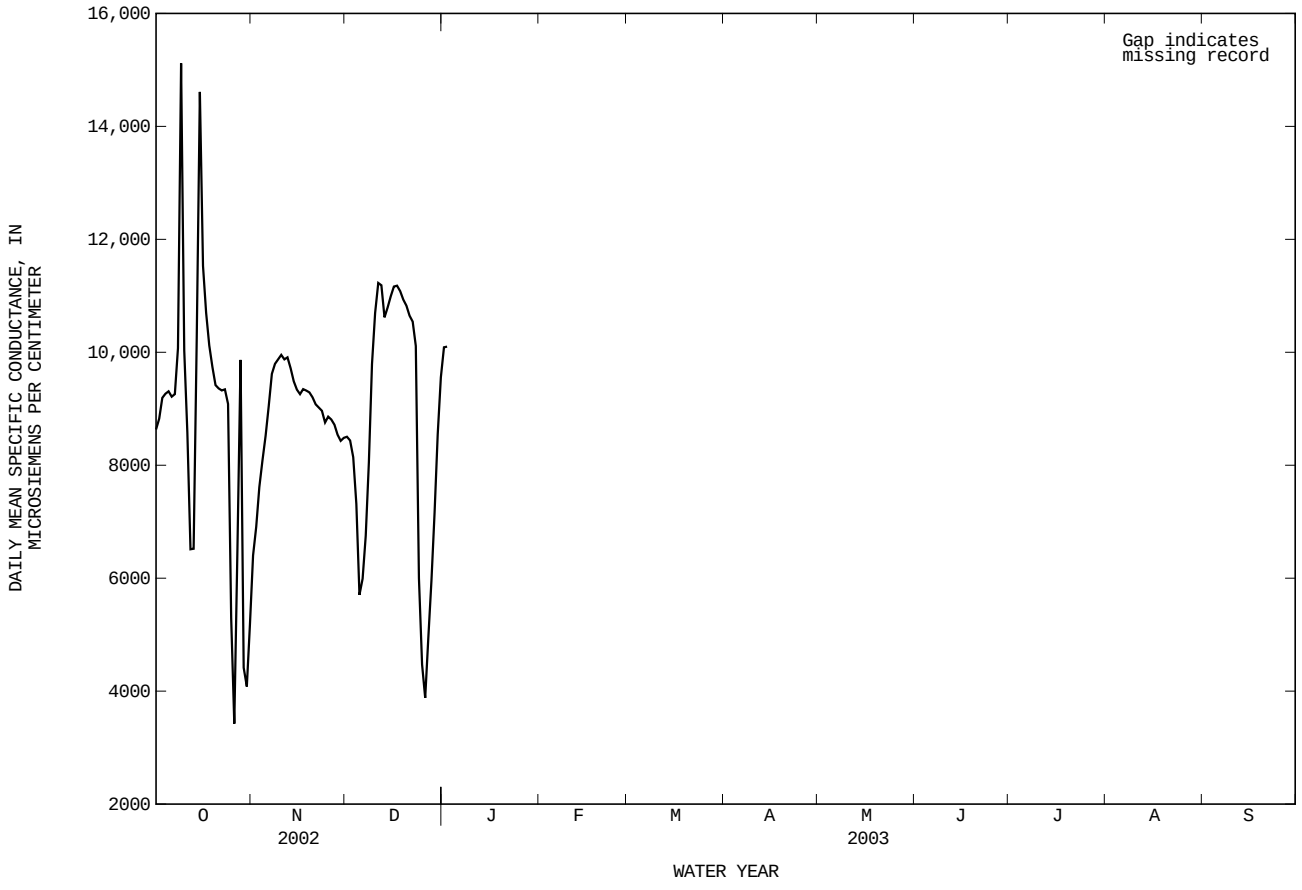
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07308500 Red River near Burkburnett, TX--Continued

SPECIFIC CONDUCTANCE, IN US/CM @ 25c, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated



07308500 Red River near Burkburnett, TX--Continued

WATER TEMPERATURE, IN (DEGREES C), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	27.8	20.3	23.7	9.2	8.0	8.7	10.7	5.2	7.8	9.0	5.0	6.8
2	29.0	21.8	24.8	8.3	7.5	7.9	11.8	7.0	9.0	---	2.8	---
3	28.7	21.7	24.7	10.1	8.3	9.1	9.5	4.9	7.1	---	---	---
4	24.8	18.6	21.8	9.1	7.7	8.7	4.9	2.9	3.8	---	---	---
5	22.6	15.5	19.0	---	8.1	---	6.0	1.5	3.6	---	---	---
6	23.5	17.9	20.5	---	---	---	8.0	2.5	5.0	---	---	---
7	19.3	15.2	16.8	---	---	---	9.9	4.6	7.0	---	---	---
8	17.2	15.5	16.4	---	---	---	7.8	6.9	7.3	---	---	---
9	16.4	14.8	15.6	---	---	---	7.2	6.7	7.0	---	---	---
10	18.6	15.7	16.8	---	---	---	7.7	6.6	7.2	---	---	---
11	23.6	17.3	19.8	---	---	---	10.1	5.2	7.4	---	---	---
12	22.7	16.7	19.9	15.3	---	---	9.2	7.3	8.1	---	---	---
13	16.7	12.1	14.2	14.6	9.5	11.9	9.5	4.8	7.1	---	---	---
14	18.9	12.0	14.8	14.8	9.4	11.8	10.7	5.0	7.6	---	---	---
15	19.2	12.0	15.3	14.6	9.2	11.6	11.8	6.1	8.8	---	---	---
16	18.9	11.8	15.1	14.4	8.9	11.4	11.8	8.4	10	---	---	---
17	19.4	12.3	15.5	14.6	8.6	11.4	13.3	7.6	10.4	---	---	---
18	18.3	15.0	16.5	13.8	9.6	11.4	13.3	10.0	11.6	---	---	---
19	21.2	14.9	17.8	13.9	8.2	11.0	11.7	8.3	10.1	---	---	---
20	20.2	13.3	15.9	13.9	8.4	11.0	10.3	5.2	7.7	---	---	---
21	19.8	13.7	16.6	15.1	8.6	11.7	10.2	5.0	7.3	---	---	---
22	18.7	16.6	17.6	15.0	9.6	12.1	7.8	4.1	6.1	---	---	---
23	17.6	14.6	16.7	15.7	9.3	12.2	6.6	4.1	5.5	---	---	---
24	14.6	10.1	11.7	15.2	9.3	12.0	4.2	2.4	3.2	---	---	---
25	12.4	9.6	10.9	9.3	5.1	6.8	4.8	1.4	3.0	---	---	---
26	12.7	10.5	11.7	6.7	4.4	5.3	6.1	2.6	4.1	---	---	---
27	12.7	11.7	12.2	7.8	1.7	4.6	5.8	2.3	4.1	---	---	---
28	13.0	12.2	12.8	9.6	2.4	5.8	7.8	2.4	5.0	---	---	---
29	13.0	11.6	12.2	10.5	4.8	7.6	10.4	5.1	7.7	---	---	---
30	12.5	11.0	12.1	11.3	6.7	8.8	10.9	8.6	10.1	---	---	---
31	11.0	9.2	9.9	---	---	---	9.9	5.8	7.9	---	---	---
MONTH	29.0	9.2	16.4	---	---	---	13.3	1.4	7.0	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	23.6	---	---
3	---	---	---	---	---	---	---	---	---	26.2	18.4	21.0
4	---	---	---	---	---	---	---	---	---	27.2	20.9	23.2
5	---	---	---	---	---	---	---	---	---	28.8	17.5	22.1
6	---	---	---	---	---	---	---	---	---	---	17.8	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	23.8	---	---	---	---	---
12	---	---	---	---	---	---	25.8	13.9	19.3	---	---	---
13	---	---	---	---	---	---	26.4	16.9	21.2	---	---	---
14	---	---	---	---	---	---	26.3	16.6	21.0	---	---	---
15	---	---	---	---	---	---	20.7	17.4	18.5	---	---	---
16	---	---	---	---	---	---	22.0	---	---	---	---	---
17	---	---	---	---	---	---	23.7	15.2	19.0	---	---	---
18	---	---	---	---	---	---	27.3	16.3	20.2	---	---	---
19	---	---	---	---	---	---	25.6	19.2	20.7	---	---	---
20	---	---	---	---	---	---	24.4	13.3	17.8	---	---	---
21	---	---	---	---	---	---	23.6	15.3	18.6	---	---	---
22	---	---	---	---	---	---	20.7	16.7	18.3	---	---	---
23	---	---	---	---	---	---	18.8	15.9	16.8	---	---	---
24	---	---	---	---	---	---	---	14.8	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	25.8	16.6	20.6	---	---	---
27	---	---	---	---	---	---	26.4	17.7	22.3	---	---	---
28	---	---	---	---	---	---	24.0	19.8	21.2	---	---	---
29	---	---	---	---	---	---	24.9	18.6	21.0	---	---	---
30	---	---	---	---	---	---	27.1	19.1	24.6	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07308500 Red River near Burkburnett, TX--Continued

WATER TEMPERATURE, IN (DEGREES C), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
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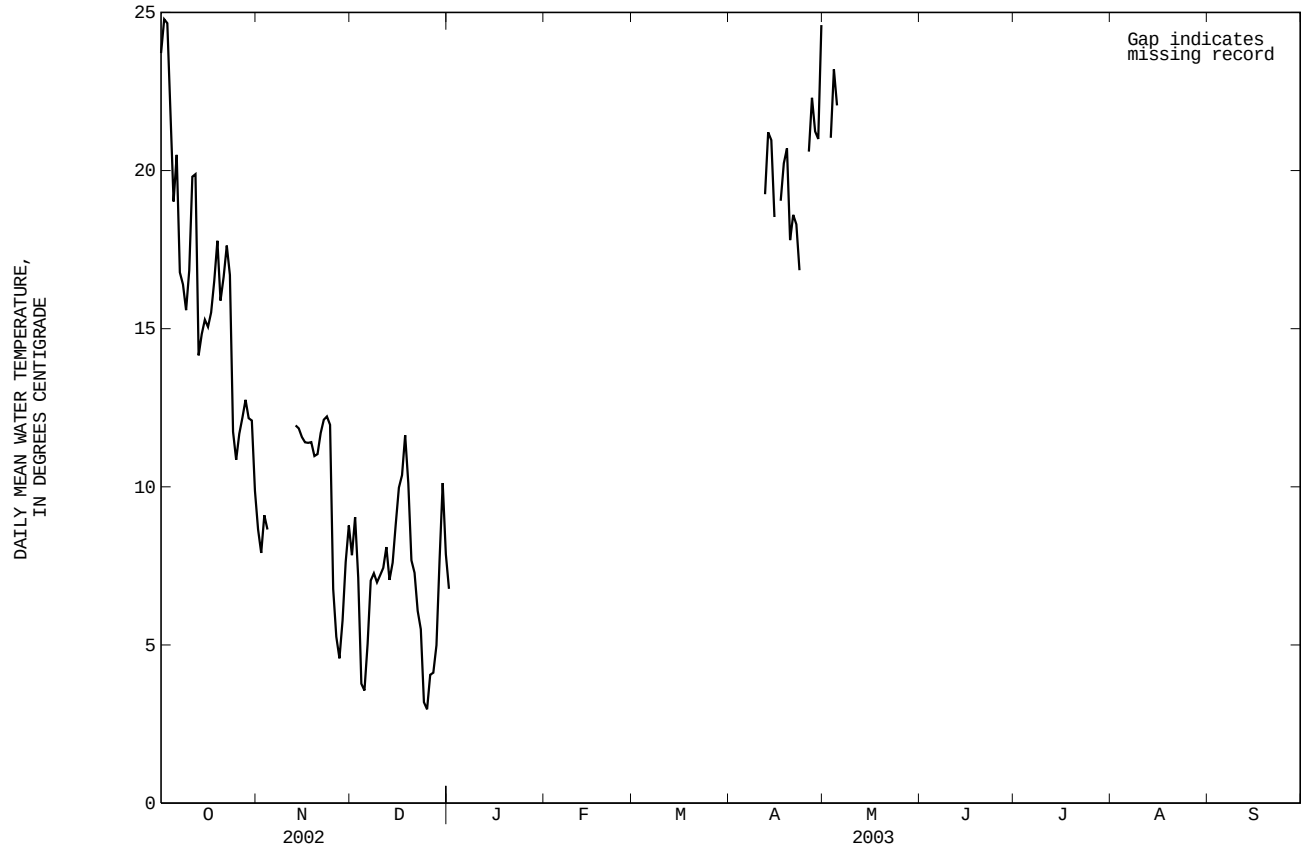
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---



07308990 LAKE ELLSWORTH NEAR ELGIN, OK

LOCATION.--Lat 34°47'10", long 98°22'07", in NW ¼ NW ¼ sec.28, T.4 N., R.11 W., Comanche County, Hydrologic Unit 11130202, near right end of dam on East Cache Creek, 4 miles west of Elgin and at mile 59.9.

DRAINAGE AREA.--249 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 0.47 ft above sea level (City of Lawton benchmark).

REMARKS.--Reservoir is formed by concrete dam. Storage began in 1964. Capacity, 189,200 acre-ft, gage height 1,250.00 ft, top of dam; and 72,490 acre-ft, gage height 1,235.00 ft, top of gates; 25,730 acre-ft, gage height 1,225.00 ft, top of spillway. Reservoir is used for municipal water supply and recreation. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 88,970 acre-ft, Oct. 23, 2000, gage height 1,237.55 ft; minimum contents, 24,140 acre-ft, Sept. 30, 2003, gage height, 1,223.59 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 31,030 acre-ft, June 29, gage height 1,226.28 ft; minimum, 21,140 acre-ft, Sept. 30, gage height, 1,223.59 ft.

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

1220	9,470	1240	104,800
1225	25,730	1245	143,700
1230	46,450	1250	189,200
1235	72,490	1255	242,500

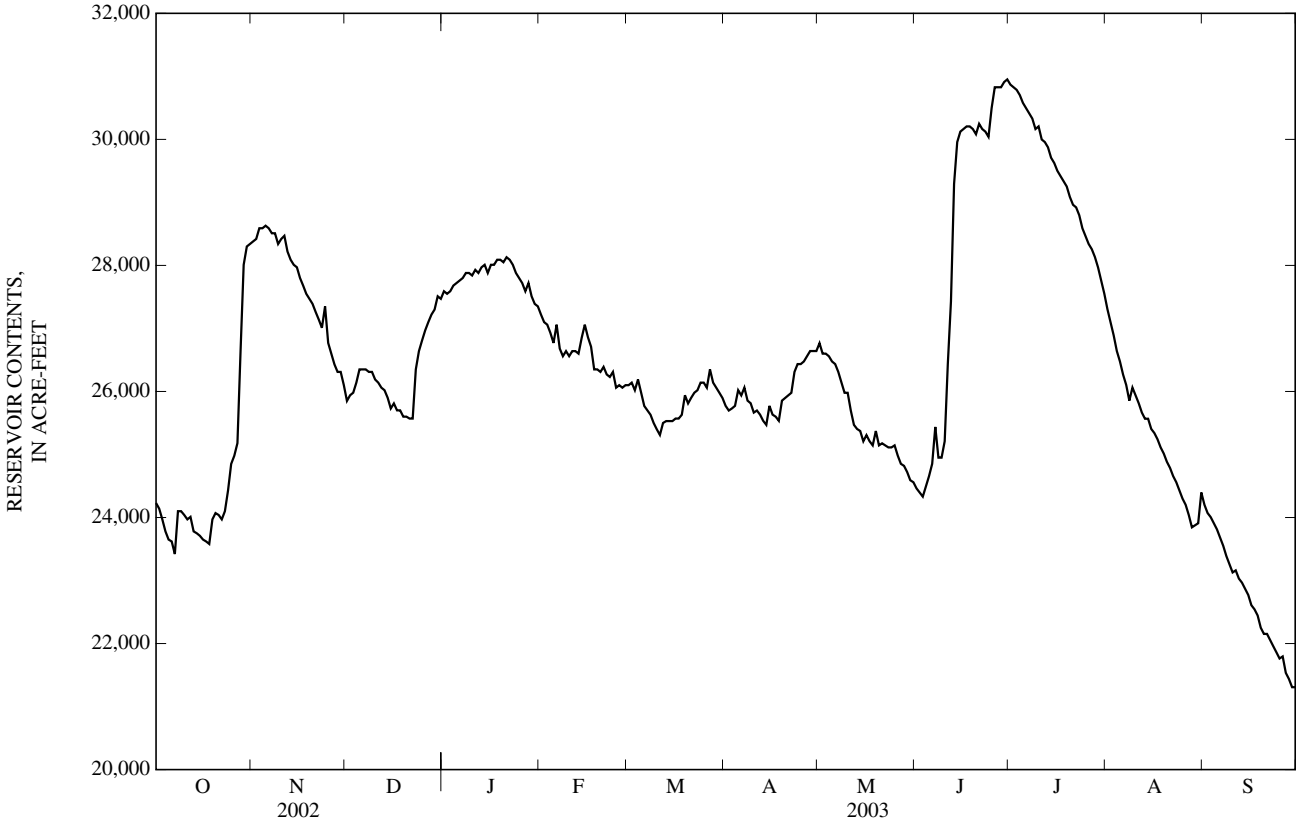
RESERVOIR STORAGE, ACRE FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24,230	28,380	25,850	27,590	27,220	26,100	25,770	26,770	24,460	30,870	27,300	24,200
2	24,140	28,420	25,940	27,550	27,100	26,140	25,700	26,600	24,400	30,830	27,100	24,070
3	23,970	28,590	25,980	27,590	27,060	26,020	25,730	26,600	24,330	30,790	26,890	24,010
4	23,780	28,590	e26,140	27,680	26,930	26,190	25,770	26,560	24,490	30,700	26,640	23,910
5	23,650	28,630	26,350	27,720	26,770	25,980	26,020	26,480	24,660	30,580	26,480	23,810
6	23,620	28,590	26,350	27,760	27,060	25,770	25,940	26,430	24,850	30,500	26,270	23,680
7	23,420	28,510	26,350	27,800	26,680	25,700	26,060	26,310	25,440	30,410	26,100	23,550
8	24,100	28,510	26,310	27,880	26,560	25,630	25,850	26,140	24,950	30,330	25,850	23,390
9	24,100	28,340	26,310	27,880	26,640	25,500	25,810	25,980	24,950	30,160	26,060	23,260
10	24,040	28,420	26,190	27,840	26,560	25,400	25,660	25,980	25,210	30,210	25,940	23,130
11	23,970	28,470	26,140	27,930	26,640	25,310	25,700	25,700	26,430	30,000	25,810	23,160
12	24,010	28,220	26,060	27,880	26,640	25,500	25,630	25,470	27,430	29,960	25,660	23,030
13	23,780	28,090	26,020	27,970	26,600	25,530	25,530	25,400	29,290	29,870	25,570	22,970
14	23,750	28,010	25,900	28,010	26,850	25,530	25,470	25,370	29,960	29,710	25,570	22,870
15	23,710	27,970	25,730	27,880	27,060	25,530	25,770	25,210	30,120	29,630	25,400	22,770
16	23,650	27,800	25,810	28,010	26,860	25,570	25,630	25,310	30,160	29,500	25,340	22,610
17	23,620	27,680	25,700	28,010	e26,710	25,570	25,600	25,210	30,210	29,420	25,240	22,540
18	23,580	27,550	25,700	28,090	26,350	25,630	25,530	25,140	30,210	29,340	25,110	22,450
19	23,970	27,470	25,600	28,090	e26,350	25,940	25,850	25,370	30,160	29,250	25,010	22,250
20	24,070	27,390	25,600	28,050	e26,310	25,810	25,900	25,140	30,080	29,090	24,880	22,150
21	24,040	27,260	25,570	28,130	26,390	25,900	25,940	25,180	30,250	28,960	24,790	22,150
22	23,970	27,140	25,570	28,090	26,270	25,980	25,980	25,140	30,160	28,920	24,660	22,060
23	24,100	27,010	26,350	28,010	26,230	26,020	26,310	25,110	30,120	28,800	24,560	21,960
24	24,430	27,350	26,640	27,880	26,310	26,140	26,430	25,110	30,040	28,590	24,430	21,860
25	24,850	26,770	26,810	27,800	26,060	26,140	26,430	25,140	30,500	28,470	24,300	21,760
26	24,980	26,600	26,970	27,720	26,100	26,060	26,480	24,980	30,830	28,340	24,200	21,800
27	25,180	26,430	27,100	27,590	26,060	26,350	26,560	24,850	30,830	28,260	24,040	21,530
28	26,640	26,310	27,220	27,720	26,100	26,140	26,640	24,820	30,830	28,130	23,840	21,440
29	28,010	26,310	27,300	27,510	---	26,060	26,640	24,720	30,910	27,970	23,880	21,310
30	28,300	26,100	27,510	27,390	---	25,980	26,640	24,590	30,950	27,760	23,910	21,310
31	28,340	---	27,470	27,350	---	25,900	---	24,560	---	27,550	24,400	---
MEAN	24,520	27,700	26,280	27,820	26,590	25,840	25,970	25,530	28,240	29,450	25,330	22,700
MAX	28,340	28,630	27,510	28,130	27,220	26,350	26,640	26,770	30,950	30,870	27,300	24,200
MIN	23,420	26,100	25,570	27,350	26,060	25,310	25,470	24,560	24,330	27,550	23,840	21,310
(‡)	1225.62	1225.10	1225.42	1225.38	1225.09	1225.02	1225.23	1224.64	1226.25	1225.45	1224.59	1223.64
(‡‡)	+4040	+2240	+1370	-120	-1250	-200	+740	-2080	+6390	-3400	-3150	-3090

CAL YR 2002 MAX 42260 MIN 23420 (‡‡) -14920
WTR YR 2003 MAX 30950 MIN 21310 (‡‡) -2990

e Estimated
(‡) ELEVATION, IN FEET, AT END OF MONTH
(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET

07308990 LAKE ELLSWORTH NEAR ELGIN, OK—Continued



07309500 LAKE LAWTONKA NEAR LAWTON, OK

LOCATION.--Lat 34°44'10", long 98°30'11", in NE ¼ NW ¼ 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 mi^2.

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. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 63,600 acre-ft, Mar. 16, 1998, elevation 1,347.27 ft; minimum, 44,460 acre-ft, Oct. 18, 19, 2002, elevation, 1,338.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 53,160 acre-ft, July 1, elevation 1,342.65 ft; minimum, 44,460 acre-ft, Oct. 18, 19, elevation, 1,338.47 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

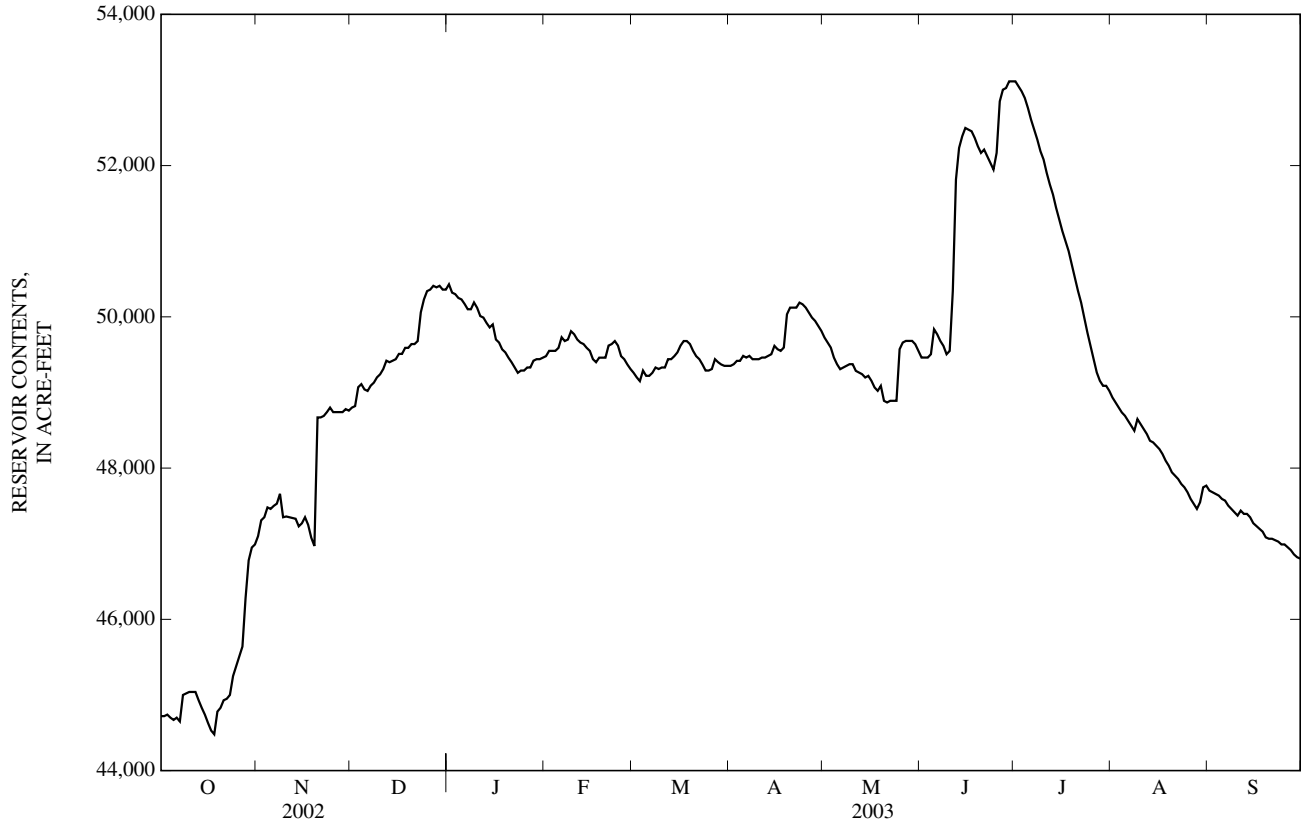
RESERVOIR STORAGE, ACRE FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44,720	47,100	48,800	50,430	49,480	49,260	49,350	49,730	49,460	53,110	48,930	47,700
2	44,720	47,310	48,820	50,320	49,550	49,200	49,370	49,660	49,460	53,050	48,870	47,680
3	44,740	47,350	49,070	50,300	49,550	49,150	49,420	49,590	49,460	52,980	48,800	47,660
4	44,700	47,480	49,110	50,250	49,550	49,290	49,420	49,460	49,510	52,890	48,740	47,640
5	44,670	47,460	49,040	50,230	49,590	49,220	49,480	49,370	49,840	52,760	48,690	47,590
6	44,700	47,500	49,020	50,170	49,730	49,220	49,460	49,310	49,770	52,610	48,630	47,570
7	44,650	47,530	49,090	50,100	49,680	49,260	49,480	49,330	49,680	52,480	48,560	47,500
8	45,000	47,660	49,130	50,100	49,700	49,330	49,440	49,350	49,620	52,340	48,490	47,460
9	45,020	47,350	49,200	50,190	49,810	49,310	49,440	49,370	49,510	52,190	48,650	47,420
10	45,040	e47,360	49,240	50,120	49,770	49,330	49,440	49,370	49,550	52,080	48,580	47,370
11	45,040	e47,350	49,310	50,010	49,700	49,330	49,460	49,290	50,340	51,900	48,520	47,440
12	45,040	e47,340	49,420	49,990	49,660	49,440	49,460	49,260	51,820	51,750	48,450	47,390
13	44,930	47,330	49,400	49,920	49,640	49,440	49,480	49,240	52,230	51,620	48,360	47,390
14	44,830	47,230	49,420	49,860	49,590	49,480	49,510	49,200	52,390	51,440	48,340	47,350
15	44,740	47,270	49,440	49,900	49,550	49,530	49,620	49,220	52,500	51,290	48,300	47,270
16	44,630	47,350	49,510	49,700	49,440	49,620	49,570	49,150	52,480	51,130	48,250	47,230
17	44,530	47,250	49,510	49,660	49,400	49,680	49,550	49,070	52,450	51,000	48,190	47,200
18	44,480	47,080	49,590	49,570	49,460	49,680	49,590	49,020	52,370	50,870	48,100	47,160
19	44,780	46,970	49,590	49,530	49,460	49,640	50,030	49,090	52,260	50,690	48,030	47,080
20	44,830	48,670	49,640	49,460	49,460	49,550	50,120	48,890	52,170	50,520	47,940	47,070
21	44,930	48,670	49,640	49,400	49,620	49,480	50,120	48,870	52,210	50,340	47,900	47,070
22	44,950	48,690	49,680	49,330	49,640	49,440	50,120	48,890	52,120	50,190	47,860	47,050
23	45,000	48,740	50,060	49,260	49,680	49,370	50,190	48,890	52,040	49,990	47,790	47,030
24	45,250	48,800	50,230	49,290	49,620	49,290	50,170	48,890	51,950	49,790	47,750	46,990
25	45,380	48,740	50,340	49,290	49,480	49,290	50,120	49,570	52,170	49,620	47,680	46,990
26	45,510	48,740	50,360	49,330	49,440	49,310	50,060	49,660	52,850	49,440	47,590	46,950
27	45,640	48,740	50,410	49,330	49,370	49,440	49,990	49,680	53,000	49,260	47,530	46,920
28	46,280	48,740	50,390	49,420	49,310	49,400	49,950	49,680	53,030	49,150	47,460	46,860
29	46,780	48,780	50,410	49,440	---	49,370	49,880	49,680	53,110	49,090	47,550	46,820
30	46,950	48,760	50,360	49,440	---	49,350	49,810	49,640	53,110	49,090	47,750	46,800
31	46,990	---	50,360	49,460	---	49,350	---	49,550	---	49,020	47,770	---
MEAN	45,140	47,840	49,600	49,770	49,570	49,390	49,700	49,320	51,420	51,090	48,200	47,260
MAX	46,990	48,800	50,410	50,430	49,810	49,680	50,190	49,730	53,110	53,110	48,930	47,700
MIN	44,480	46,970	48,800	49,260	49,310	49,150	49,350	48,870	49,460	49,020	47,460	46,800
(‡)	1339.82	1340.66	1341.36	1340.97	1340.90	1346.93	1341.12	1341.01	1342.64	1340.77	1340.20	1339.72
(‡‡)	+2230	+1770	+1600	-900	-150	+40	+460	-260	+3560	-4090	-1250	-970

CAL YR 2002 MAX 51840 MIN 44480 (‡‡) +1120
WTR YR 2003 MAX 53110 MIN 44480 (‡‡) +2040

e Estimated
(‡) ELEVATION, IN FEET, AT END OF MONTH
(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET

07309500 LAKE LAWTONKA NEAR LAWTON, OK—Continued



07311000 EAST CACHE CREEK NEAR WALTERS, OK

LOCATION.--Lat 34°21'44", long 98°16'56", on south line of SE ¼ SE ¼ 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 mi^2.

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 poor. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	66	23	61	46	42	46	e17	30	135	17	242
2	24	60	21	57	45	40	46	14	39	73	19	82
3	23	212	23	50	44	41	45	16	71	55	20	48
4	23	185	110	50	41	40	48	21	53	47	26	39
5	37	83	287	46	43	39	48	23	286	43	33	38
6	27	62	92	49	41	37	48	24	475	39	33	33
7	41	50	54	48	52	37	49	26	504	37	33	34
8	67	43	40	45	65	37	49	32	128	40	33	36
9	e55	37	36	47	38	37	48	25	108	41	34	34
10	e44	34	38	47	33	35	50	23	68	39	71	34
11	e34	32	53	45	50	36	54	18	278	39	43	35
12	e25	32	44	47	35	38	53	10	296	37	28	42
13	e21	32	38	44	40	39	42	e8.8	477	37	23	43
14	e19	31	32	48	49	40	25	e8.0	202	37	19	32
15	e17	30	24	44	57	40	24	e8.4	125	32	19	27
16	15	30	19	45	55	41	23	15	129	25	20	27
17	15	31	18	33	53	40	46	21	79	24	27	28
18	16	30	23	26	49	37	51	19	60	24	30	27
19	15	29	24	27	49	54	48	18	53	23	30	26
20	15	27	24	27	50	46	73	43	44	22	27	25
21	20	23	23	37	50	45	80	69	54	e20	27	24
22	16	16	20	46	44	45	59	43	125	e19	27	24
23	15	15	117	42	60	44	55	40	77	18	28	25
24	26	15	1,680	44	1,160	43	79	25	56	18	25	27
25	96	15	648	41	1,270	42	116	1,060	59	23	24	26
26	76	19	188	44	33	33	51	871	1,430	31	17	25
27	33	24	119	45	45	20	e36	95	1,970	31	16	25
28	42	25	94	45	44	21	e33	48	401	33	16	28
29	612	24	77	45	---	36	e28	32	293	32	16	32
30	839	24	68	46	---	56	e21	28	613	28	26	32
31	152	---	64	48	---	50	---	26	---	19	82	---
TOTAL	2,480	1,336	4,121	1,369	3,641	1,231	1,474	2,727.2	8,583	1,121	889	1,200
MEAN	80.0	44.5	133	44.2	130	39.7	49.1	88.0	286	36.2	28.7	40.0
MAX	839	212	1,680	61	1,270	56	116	1,060	1,970	135	82	242
MIN	15	15	18	26	33	20	21	8.0	30	18	16	24
AC-FT	4,920	2,650	8,170	2,720	7,220	2,440	2,920	5,410	17,020	2,220	1,760	2,380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

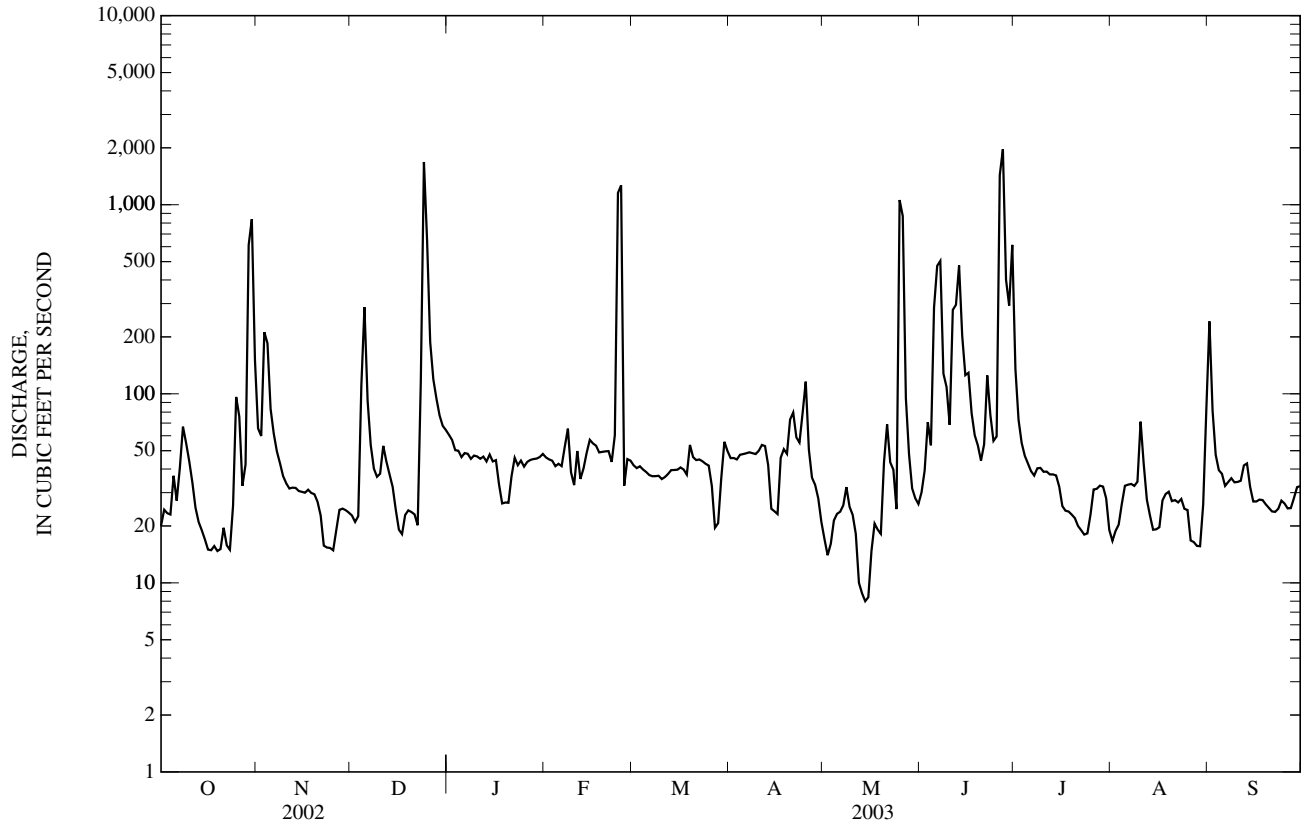
MEAN	250	117	133	110	164	268	245	572	447	98.8	60.0	146
MAX	2,738	1,167	1,796	916	1,356	2,120	1,243	2,654	2,619	483	285	1,637
(WY)	(1984)	(2001)	(1992)	(1998)	(1987)	(1998)	(1990)	(1987)	(1962)	(1975)	(1971)	(1986)
MIN	0.000	0.15	0.15	0.63	2.20	2.09	7.81	5.13	12.6	9.25	3.75	0.000
(WY)	(1940)	(1940)	(1940)	(1940)	(1940)	(1940)	(1939)	(1939)	(1939)	(1954)	(1954)	(1939)

e Estimated

07311000 EAST CACHE CREEK NEAR WALTERS, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	30,358		30,172.2			
ANNUAL MEAN	83.2		82.7		219	
HIGHEST ANNUAL MEAN					911	1987
LOWEST ANNUAL MEAN					12.6	1939
HIGHEST DAILY MEAN	1,850	Apr 14	1,970	Jun 27	34,600	Oct 21, 1983
LOWEST DAILY MEAN	13	Aug 25	8.0	May 14	a0.00	Jul 24, 1939
ANNUAL SEVEN-DAY MINIMUM	16	Oct 14	13	May 11	0.00	Aug 1, 1939
MAXIMUM PEAK FLOW			4,840	Feb 25	50,900	Oct 21, 1983
MAXIMUM PEAK STAGE			25.59	Feb 25	30.66	Oct 21, 1983
ANNUAL RUNOFF (AC-FT)	60,220		59,850		158,600	
10 PERCENT EXCEEDS	107		101		424	
50 PERCENT EXCEEDS	42		38		37	
90 PERCENT EXCEEDS	21		19		11	

a No flow at times in 1934-40.



07311200 BLUE BEAVER CREEK NEAR CACHE, OK
(Hydrologic benchmark station)

LOCATION.--Lat 34°37'24", long 98°33'48", in NE ¼ NE ¼ 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 mi^2.

PERIOD OF RECORD.--July 1964 to September 2003 (discontinued).

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. U.S. Geological Survey telemeter at station.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 12	0600	*523	*9.81

No other peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	18	1.4	13	1.9	1.8	2.1	1.2	0.40	21	0.00	0.00
2	0.00	23	1.3	12	1.9	1.8	1.9	0.97	0.37	14	0.00	0.00
3	0.00	27	2.1	10	1.8	1.7	1.9	0.84	0.30	9.4	0.00	0.00
4	0.00	21	5.4	8.5	1.7	1.8	1.8	0.77	0.33	6.5	0.00	0.00
5	0.00	19	3.5	7.5	1.5	1.6	1.6	0.68	0.44	4.4	0.00	0.00
6	0.00	15	2.8	7.0	1.9	1.5	1.6	0.62	1.1	3.1	0.00	0.00
7	0.00	13	2.9	7.0	1.7	1.5	1.4	0.58	0.66	2.3	0.00	0.00
8	0.58	12	2.9	6.5	1.7	1.5	1.4	0.57	0.64	1.7	0.00	0.00
9	0.83	9.7	3.0	5.9	1.9	1.4	1.4	0.48	0.55	1.2	0.00	0.00
10	0.13	8.2	3.4	7.0	1.9	1.4	1.9	0.45	2.4	0.93	0.00	0.00
11	0.10	6.9	3.8	6.2	1.9	1.5	1.8	0.36	38	0.69	0.00	0.00
12	0.06	5.9	3.9	5.1	1.8	1.5	1.6	0.34	268	0.52	0.00	0.00
13	0.03	5.3	4.0	4.5	1.7	1.4	1.4	0.32	70	0.37	0.00	0.00
14	0.02	5.0	4.9	4.0	1.8	1.4	1.3	0.31	40	0.26	0.00	0.00
15	0.01	4.4	4.2	3.6	1.7	1.4	1.3	0.31	28	0.20	0.00	0.00
16	0.01	3.8	3.7	3.4	1.5	1.5	1.5	0.27	18	0.16	0.00	0.00
17	0.00	3.6	3.4	4.7	1.6	1.7	1.2	0.25	12	0.14	0.00	0.00
18	0.00	3.5	3.3	4.4	1.8	1.7	1.1	0.23	8.6	0.13	0.00	0.00
19	0.02	3.1	3.0	3.7	1.8	1.6	1.6	0.21	5.8	0.11	0.00	0.00
20	0.04	2.9	2.7	3.4	1.7	1.4	1.1	0.25	3.9	0.09	0.00	0.00
21	0.02	2.7	2.7	3.1	1.9	1.5	0.92	0.31	6.4	0.08	0.00	0.00
22	0.02	2.5	2.5	2.7	2.0	2.5	0.89	0.31	4.8	0.07	0.00	0.00
23	0.07	2.5	79	2.5	1.9	2.2	1.1	0.28	3.3	0.05	0.00	0.00
24	0.42	2.3	57	2.4	1.7	2.2	1.8	0.23	2.4	0.03	0.00	0.00
25	2.4	2.0	29	2.7	1.7	2.6	6.0	1.1	2.0	0.01	0.00	0.00
26	4.9	1.9	25	2.5	1.8	2.8	6.0	9.2	24	0.00	0.00	0.00
27	6.1	1.8	24	2.4	1.8	3.3	3.4	8.8	46	0.00	0.00	0.00
28	118	1.8	20	2.3	1.8	2.7	2.4	4.3	27	0.00	0.00	0.00
29	111	1.7	18	2.1	---	3.1	1.9	2.1	29	0.00	0.00	0.00
30	38	1.5	16	2.0	---	3.0	1.5	1.1	34	0.00	0.00	0.00
31	23	---	15	1.8	---	2.5	---	0.58	---	0.00	0.00	---
TOTAL	305.76	231.0	353.8	153.9	49.8	59.5	56.81	38.32	678.39	67.44	0.00	0.00
MEAN	9.86	7.70	11.4	4.96	1.78	1.92	1.89	1.24	22.6	2.18	0.000	0.000
MAX	118	27	79	13	2.0	3.3	6.0	9.2	268	21	0.00	0.00
MIN	0.00	1.5	1.3	1.8	1.5	1.4	0.89	0.21	0.30	0.00	0.00	0.00
AC-FT	606	458	702	305	99	118	113	76	1,350	134	0.00	0.00

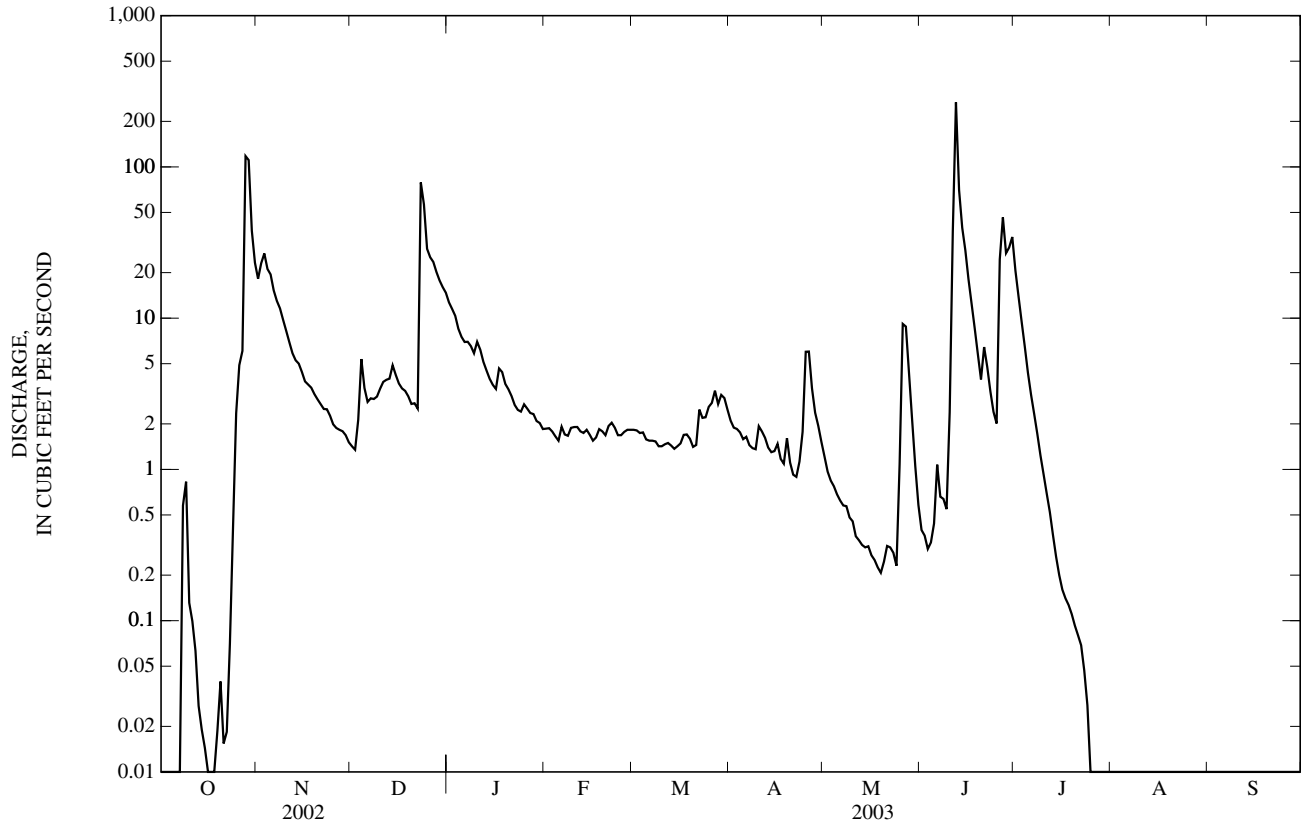
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	16.3	8.18	9.43	8.41	12.6	23.0	18.0	32.0	23.0	1.77	1.97	6.45
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	0.000	0.000	0.000	0.000	0.000	0.000	0.017	0.026	0.012	0.000	0.000	0.000
(WY)	(1965)	(1966)	(1966)	(1966)	(1966)	(1966)	(1971)	(1971)	(1971)	(1964)	(1964)	(1964)

07311200 BLUE BEAVER CREEK NEAR CACHE, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	1,493.47		1,994.72			
ANNUAL MEAN	4.09		5.46		13.4	
HIGHEST ANNUAL MEAN					47.8	1987
LOWEST ANNUAL MEAN					0.48	1966
HIGHEST DAILY MEAN	241	Apr 13	268	Jun 12	2,600	Oct 20, 1983
LOWEST DAILY MEAN	0.00	Aug 7	a0.00	Oct 1	a0.00	Jul 1, 1964
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 7	0.00	Oct 1	0.00	Jul 1, 1964
MAXIMUM PEAK FLOW			523	Jun 12	b13,600	Aug 28, 1977
MAXIMUM PEAK STAGE			9.81	Jun 12	c18.02	Aug 28, 1977
ANNUAL RUNOFF (AC-FT)	2,960		3,960		9,740	
10 PERCENT EXCEEDS	6.9		12		24	
50 PERCENT EXCEEDS	0.24		1.6		1.1	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a Many days.
b From rating curve extended above 4,000 ft^3/s on basis of contracted opening.
c From high-water mark.



07311500 DEEP RED CREEK NEAR RANDLETT, OK

LOCATION.--Lat 34°13'15", long 98°27'10", in SW ¼ SW ¼ 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.

DRAINAGE AREA.--617 mi^2.

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

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1631: 1956. WSP 1920: 1951.

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

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

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 30	1545	*2,940	*19.85	Dec 24	1715	2,760	19.40

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	152	3.5	24	9.9	7.5	3.6	2.9	5.6	355	0.00	138
2	0.00	101	3.7	20	9.7	7.4	3.6	2.6	5.2	74	0.00	31
3	0.00	311	4.5	19	9.4	7.3	3.6	2.4	4.1	30	0.00	17
4	0.00	240	79	16	8.5	7.2	3.4	2.4	3.4	18	0.00	10
5	0.00	82	358	15	8.3	6.8	3.2	2.3	3.4	13	0.00	7.3
6	0.00	43	95	14	8.7	6.7	3.4	2.4	231	10	0.00	5.1
7	0.00	27	40	13	8.6	6.4	3.5	2.3	404	8.1	0.00	3.5
8	0.00	20	24	12	8.5	6.1	3.3	2.2	66	6.8	0.00	2.8
9	29	14	19	12	8.6	6.1	2.9	2.0	27	6.0	0.00	1.7
10	414	10	22	12	8.7	6.1	2.7	2.1	19	5.1	0.08	1.1
11	68	8.2	22	12	8.6	6.1	2.7	2.1	27	4.3	0.05	1.3
12	30	7.3	18	11	8.3	6.1	2.6	2.1	39	3.8	0.00	1.5
13	20	5.6	14	11	8.9	6.0	3.0	2.0	71	3.3	0.04	0.92
14	16	4.6	11	12	8.7	6.1	2.5	2.0	802	2.7	1.2	0.83
15	11	3.6	9.5	12	8.6	5.9	2.6	1.8	548	2.1	15	0.72
16	7.3	3.3	8.1	11	8.6	5.8	3.1	1.9	185	1.7	17	0.43
17	4.9	3.3	6.9	11	8.2	6.4	3.0	1.7	45	1.5	11	0.17
18	3.3	3.2	6.3	9.9	8.4	6.4	3.0	1.5	20	1.2	6.7	0.07
19	2.5	2.9	6.1	10	7.4	5.8	3.0	1.4	13	0.97	3.9	0.00
20	2.3	2.8	5.5	10	6.9	6.0	3.1	1.9	9.8	0.74	2.2	0.00
21	1.7	2.7	5.1	9.9	7.2	6.1	3.0	8.4	8.5	0.49	1.4	0.00
22	1.3	2.6	4.3	9.8	7.5	5.8	3.1	5.2	7.1	0.34	1.0	0.00
23	1.4	2.5	86	8.9	7.9	5.4	3.3	10	6.5	0.17	0.71	0.00
24	6.5	2.3	1,170	8.8	7.9	5.0	58	7.9	5.5	0.05	0.29	0.00
25	41	2.6	1,010	8.7	7.7	4.8	35	222	5.5	0.00	0.09	0.00
26	103	2.6	318	8.7	13	4.8	9.2	395	530	0.00	0.01	0.00
27	40	2.9	104	8.6	7.7	4.5	5.0	116	1,620	0.00	0.00	0.00
28	33	3.2	62	9.0	7.1	4.5	4.8	28	878	0.00	0.00	0.00
29	1,070	3.4	43	9.0	---	4.2	4.3	14	165	0.00	0.35	0.00
30	2,650	3.4	33	9.4	---	4.4	3.4	10	382	0.00	35	0.00
31	814	---	29	9.4	---	4.1	---	7.3	---	0.00	160	---
TOTAL	5,370.20	1,073.0	3,620.5	367.1	237.5	181.8	190.9	865.8	6,136.6	549.36	256.02	223.44
MEAN	173	35.8	117	11.8	8.48	5.86	6.36	27.9	205	17.7	8.26	7.45
MAX	2,650	311	1,170	24	13	7.5	58	395	1,620	355	160	138
MIN	0.00	2.3	3.5	8.6	6.9	4.1	2.5	1.4	3.4	0.00	0.00	0.00
AC-FT	10,650	2,130	7,180	728	471	361	379	1,720	12,170	1,090	508	443

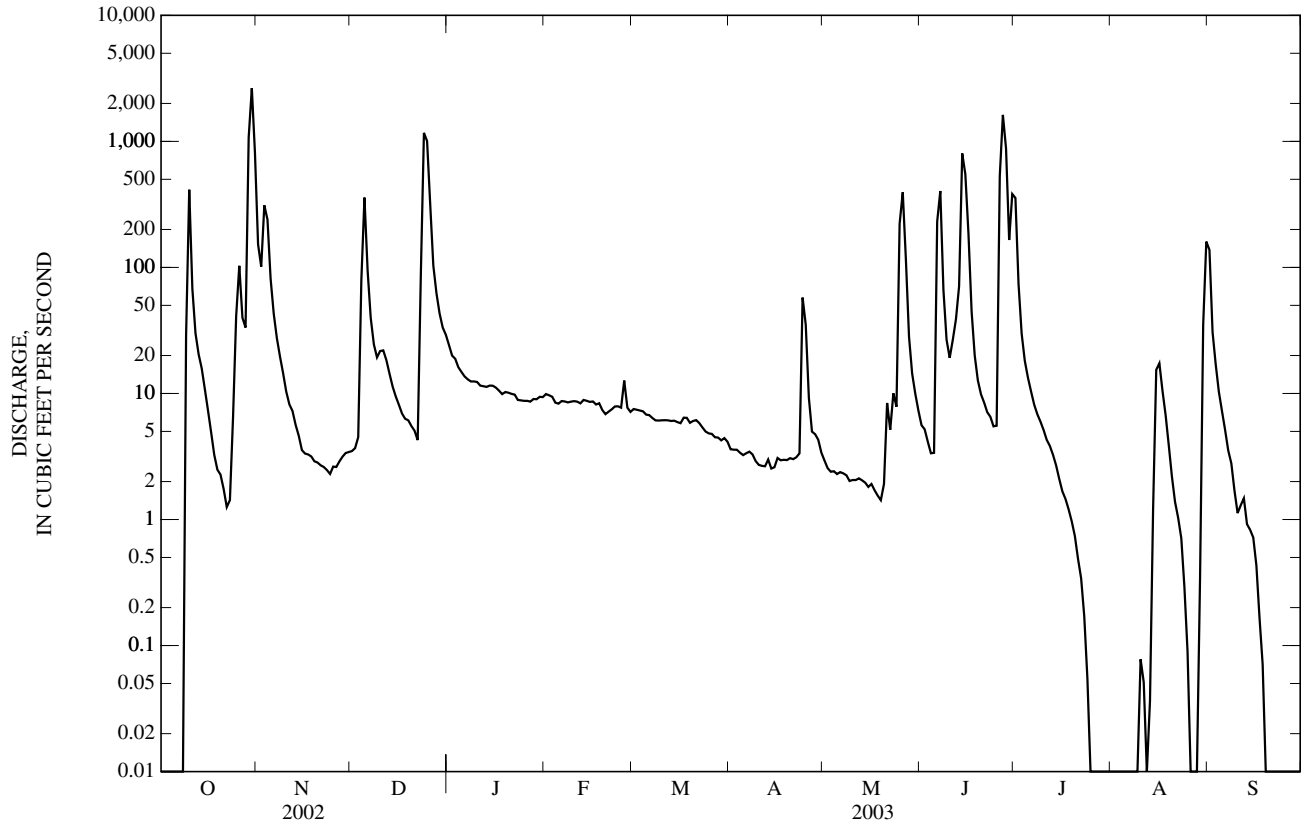
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	263	98.2	70.4	61.0	85.0	137	138	454	422	58.2	64.4	172
MAX	3,345	994	1,493	568	1,020	1,540	1,398	2,800	4,654	795	1,109	1,453
(WY)	(1984)	(1987)	(1992)	(1998)	(1987)	(1998)	(1990)	(1987)	(1995)	(1991)	(1995)	(1969)
MIN	0.000	0.000	0.000	0.000	0.022	0.10	0.003	0.061	0.000	0.000	0.000	0.000
(WY)	(1953)	(1955)	(1955)	(1953)	(1981)	(1980)	(1955)	(1971)	(1966)	(1964)	(1952)	(1952)

07311500 DEEP RED CREEK NEAR RANDLETT, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	29,148.25		19,072.22			
ANNUAL MEAN	79.9		52.3		169	
HIGHEST ANNUAL MEAN					904	1987
LOWEST ANNUAL MEAN					15.1	2000
HIGHEST DAILY MEAN	4,510	Apr 14	2,650	Oct 30	46,300	Oct 20, 1983
LOWEST DAILY MEAN	0.00	Sep 24	0.00	at times	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 24	0.00	Oct 1	0.00	Oct 3, 1951
MAXIMUM PEAK FLOW			2,940	Oct 30	72,300	Oct 20, 1983
MAXIMUM PEAK STAGE			19.85	Oct 30	a29.58	May 29, 1987
ANNUAL RUNOFF (AC-FT)	57,820		37,830		122,400	
10 PERCENT EXCEEDS	95		69		185	
50 PERCENT EXCEEDS	4.0		6.1		4.8	
90 PERCENT EXCEEDS	0.98		0.00		0.00	

a Due to backwater from West Cache Creek.



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 mi^2 of which 5,936 mi^2 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 NGVD of 1929. Prior to Jan. 12, 1939, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Apr. 1938, at least 10% of contributing drainage area has been regulated. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230	5250	333	1130	402	374	297	346	943	3260	67	834
2	232	2870	327	977	399	362	292	335	730	3780	63	630
3	233	2170	338	891	394	376	280	330	612	2940	63	722
4	236	2530	376	806	389	378	272	296	547	1640	63	1030
5	233	2530	396	745	382	374	265	275	630	1190	63	914
6	241	1840	823	710	393	375	287	256	1560	950	64	610
7	244	1410	1320	673	390	365	298	245	3020	753	67	462
8	247	1190	1040	634	381	359	284	231	10400	586	70	366
9	252	1020	885	613	389	357	270	216	4600	473	85	289
10	264	887	781	582	406	345	260	212	4300	390	102	230
11	294	789	794	558	405	342	263	241	2490	324	102	245
12	332	712	801	540	390	343	260	200	2310	277	100	322
13	405	636	771	535	397	344	248	190	2730	245	119	435
14	514	587	706	538	419	332	241	187	2840	219	116	363
15	570	547	628	532	424	323	239	173	2540	207	115	256
16	507	511	570	511	e415	308	272	195	4010	202	126	277
17	403	488	528	497	e406	303	253	177	5820	190	142	1260
18	346	472	489	483	e397	327	288	178	3020	169	158	1080
19	332	452	458	472	385	330	279	191	1840	153	157	722
20	342	443	435	452	369	349	255	269	1420	138	134	519
21	310	432	419	439	382	347	252	678	1130	121	123	439
22	404	419	408	429	400	332	245	768	959	119	114	380
23	323	404	444	415	411	318	427	536	836	111	104	327
24	308	e388	534	415	452	312	735	478	774	104	100	322
25	333	e367	5980	425	425	356	732	3670	2520	96	97	285
26	473	348	6050	420	398	352	739	5320	2010	87	95	250
27	758	341	3070	407	373	321	686	5820	2510	82	94	229
28	878	341	2090	409	392	311	552	2910	8250	77	82	220
29	1670	338	1640	403	---	310	469	2310	5600	76	95	204
30	5850	341	1620	397	---	305	399	1890	2860	75	133	195
31	10000	---	1580	400	---	302	---	1310	---	73	317	---
TOTAL	27764	31053	36634	17438	11165	10532	10639	30433	83811	19107	3330	14417
MEAN	896	1035	1182	563	399	340	355	982	2794	616	107	481
MAX	10000	5250	6050	1130	452	378	739	5820	10400	3780	317	1260
MIN	230	338	327	397	369	302	239	173	547	73	63	195
AC-FT	55070	61590	72660	34590	22150	20890	21100	60360	166200	37900	6610	28600

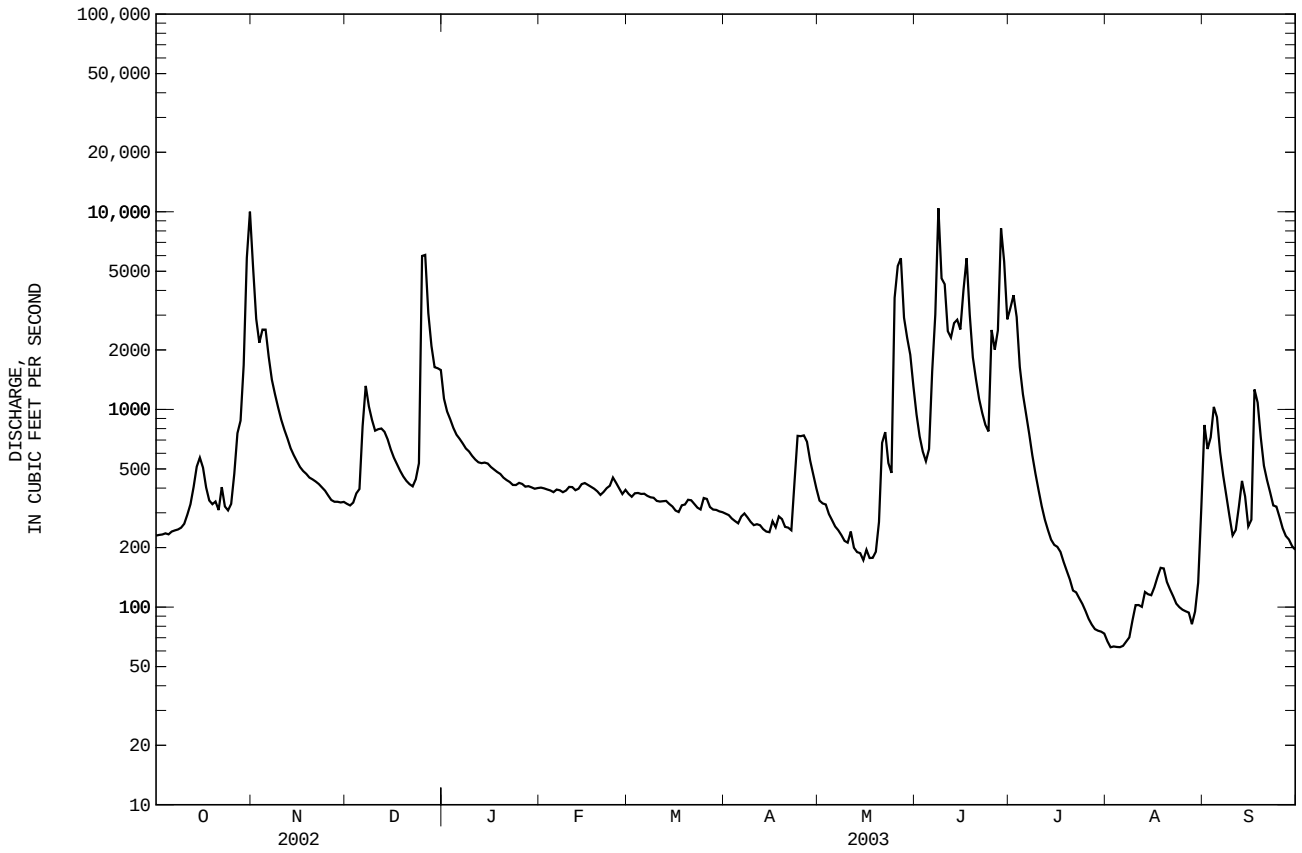
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

MEAN	2927	1532	1140	954	1392	2024	2585	6353	6081	1636	1287	1938
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	107	100
(WY)	1953	1940	1939	1940	1953	1940	1971	1971	1966	1964	2003	2000

e Estimated

07315500 Red River near Terral, OK--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	375801		296323			
ANNUAL MEAN	1030		812		2485	
HIGHEST ANNUAL MEAN					8925	1987
LOWEST ANNUAL MEAN					523	1953
HIGHEST DAILY MEAN	13900	Apr 15	10400	Jun 8	215000	Jun 7 1995
LOWEST DAILY MEAN	46	Sep 7	63	Aug 2	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	56	Sep 3	64	Aug 1	47	Mar 18 1940
MAXIMUM PEAK FLOW			13600	Jun 8	236000	Jun 7 1995
MAXIMUM PEAK STAGE			14.32	Jun 8	33.60	Oct 22 1983
ANNUAL RUNOFF (AC-FT)	745400		587800		1801000	
10 PERCENT EXCEEDS	2270		2040		5440	
50 PERCENT EXCEEDS	444		390		595	
90 PERCENT EXCEEDS	233		130		177	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1967 to Sept. 1997, Oct. 2002 to current year.
BIOLOGICAL DATA: May 1997 to Sept. 1997, Oct. 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instan-taneous dis-charge, cfs (00061)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	pH, water, unfltrd field, std units (00400)	Temper-ature, water, deg C (00010)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	Fecal coli-form, M-FC 0.7u MF col/ 100 mL (31625)	E coli, m-TEC MF, water, col/ 100 mL (31633)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite water, fltrd, mg/L as N (00613)	Nitrite + nitrate water fltrd, mg/L as N (00631)
OCT													
29...	1225	1780	4410	7.9	13.6	8.8	86	6700k	3600k	--	.96	.038	1.00
MAR													
11...	1110	341	7050	8.4	11.2	13.9	130	E9k	10k	100	--	E.004	<.06
JUN													
03...	0930	627	5910	8.1	25.1	6.4	82	280	<3i	110	.50	.008	.50
AUG													
20...	1225	135	4650	8.4	38.5	8.3	127	22k	28k	59	--	<.008	<.06

Date	Ammonia water, fltrd, mg/L as N (00608)	Total nitro-gen, water, unfltrd mg/L (00600)	Organic nitro-gen, water, unfltrd mg/L (00605)	Organic nitro-gen, water, fltrd, mg/L (00607)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Phos-phorus, water, unfltrd mg/L (00665)	Phos-phorus, water, fltrd, mg/L (00666)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Ortho-phos-phate, water, fltrd, mg/L (00660)
OCT										
29...	.20	4.7	3.5	.30	.50	3.7	1.46	.062	.05	.166
MAR										
11...	<.04	--	--	--	.38	1.4	.186	.016	<.02	--
JUN										
03...	<.04	1.9	--	--	.40	1.4	.39	.083	.06	.193
AUG										
20...	<.04	--	--	--	.56	1.7	.24oc	.024	<.02	--

Remark codes used in this report:
< -- Less than
E -- Estimated value

Value qualifier codes used in this report:
c -- See laboratory comment
i -- Result may be affected by interference
k -- Counts outside acceptable range
o -- Result determined by alternate method

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07315700 MUD CREEK NEAR COURTNEY, OK

LOCATION.--Lat 34°00'15", long 97°34'00", in NW ¼ SE ¼ 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 mi^2.

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 fair except for estimated periods which are poor. U.S. Geiological Survey satellite telemeter at station.

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

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 27	0930	*2,580	*23.47

No other peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	e0.90	e2.7	861	e2.1	8.6	e4.0	e7.5	e11	20	0.00	336
2	e0.00	e0.88	e2.6	258	e2.0	e6.5	e3.5	e7.0	e9.0	13	0.00	769
3	e0.00	e3.0	e2.6	73	e1.9	e5.9	e3.4	e6.5	7.4	9.8	0.00	176
4	e0.00	9.4	e2.7	39	e1.8	e5.3	e3.4	e6.2	5.8	7.8	0.00	44
5	e0.00	9.9	e2.7	25	e2.9	e4.8	e3.3	e5.7	5.5	6.2	0.00	19
6	e0.00	8.8	e2.6	17	e3.6	e4.4	e3.2	e5.0	200	5.2	0.00	9.1
7	e0.00	19	e2.6	14	e2.9	e4.3	e3.2	e4.7	669	4.4	0.00	4.9
8	e0.00	13	e2.5	10	e2.6	e4.2	e3.1	e5.0	441	3.7	0.00	2.8
9	e0.00	8.7	e2.5	8.7	e2.5	e4.1	e3.0	e3.9	105	3.2	0.00	1.9
10	e0.00	6.9	e2.5	e7.0	e2.3	3.9	2.9	e3.7	59	2.8	0.00	1.2
11	e0.00	e5.1	e2.5	e6.3	e2.1	e3.8	e2.9	e3.5	40	2.3	0.00	1.2
12	e0.00	e4.0	e2.5	e5.2	e4.9	e3.8	e2.8	e3.3	162	1.9	0.00	1.5
13	e0.00	e3.7	e2.5	4.6	e4.0	e3.7	e2.8	e3.1	160	1.7	0.00	103
14	e0.00	e3.5	e2.4	e3.9	e2.8	e3.7	e8.0	e2.9	67	1.4	0.17	55
15	e0.00	e3.3	e2.4	e3.6	e2.6	e3.6	e7.0	e2.7	33	1.2	0.96	22
16	e0.00	e3.2	e2.5	e3.3	e2.5	e3.5	e6.3	e6.0	32	0.97	0.53	9.8
17	e2.0	e3.1	e2.5	e3.2	e2.3	e3.5	e5.0	e5.0	80	0.79	0.19	5.5
18	e4.5	e3.0	e2.4	e3.1	e2.2	e5.0	e4.3	e4.3	34	0.68	0.00	3.4
19	e4.9	e2.9	e2.4	e3.0	e2.1	e5.5	e3.3	e3.8	19	0.59	0.00	2.3
20	e2.7	e3.0	e2.4	e2.9	e2.0	e4.8	e2.6	144	13	0.49	0.00	1.4
21	e1.4	e2.9	e2.5	e2.8	4.9	19	2.5	633	10	0.35	0.00	1.0
22	e1.2	e2.9	e2.5	e2.8	13	19	e2.4	501	e8.0	0.27	0.00	0.80
23	e1.2	e2.9	7.0	e2.7	40	14	e2.3	105	e6.7	0.24	0.00	0.48
24	e1.8	e2.8	30	e2.7	24	12	e2.2	43	5.7	0.07	0.00	0.40
25	e1.4	e2.7	419	e2.7	19	e10	e2.1	1,080	5.5	0.00	0.00	0.31
26	e1.2	e2.7	185	e2.6	17	e8.5	11	1,970	5.3	0.00	0.00	0.11
27	e1.2	e2.7	75	e2.5	13	e7.0	19	2,500	45	0.00	0.00	0.00
28	e1.1	e2.8	42	e2.5	11	e6.0	15	947	217	0.00	0.00	0.00
29	e1.0	e2.8	29	e2.4	---	e5.5	9.3	76	66	0.00	0.00	0.00
30	e0.96	e2.7	161	e2.4	---	e5.0	e8.0	34	33	0.00	0.00	0.00
31	e0.92	---	430	e2.3	---	e4.5	---	19	---	0.00	395	---
TOTAL	27.48	143.18	1,433.5	1,380.2	194.0	203.4	151.8	8,141.8	2,554.9	89.05	396.85	1,572.10
MEAN	0.89	4.77	46.2	44.5	6.93	6.56	5.06	263	85.2	2.87	12.8	52.4
MAX	4.9	19	430	861	40	19	19	2,500	669	20	395	769
MIN	0.00	0.88	2.4	2.3	1.8	3.5	2.1	2.7	5.3	0.00	0.00	0.00
AC-FT	55	284	2,840	2,740	385	403	301	16,150	5,070	177	787	3,120

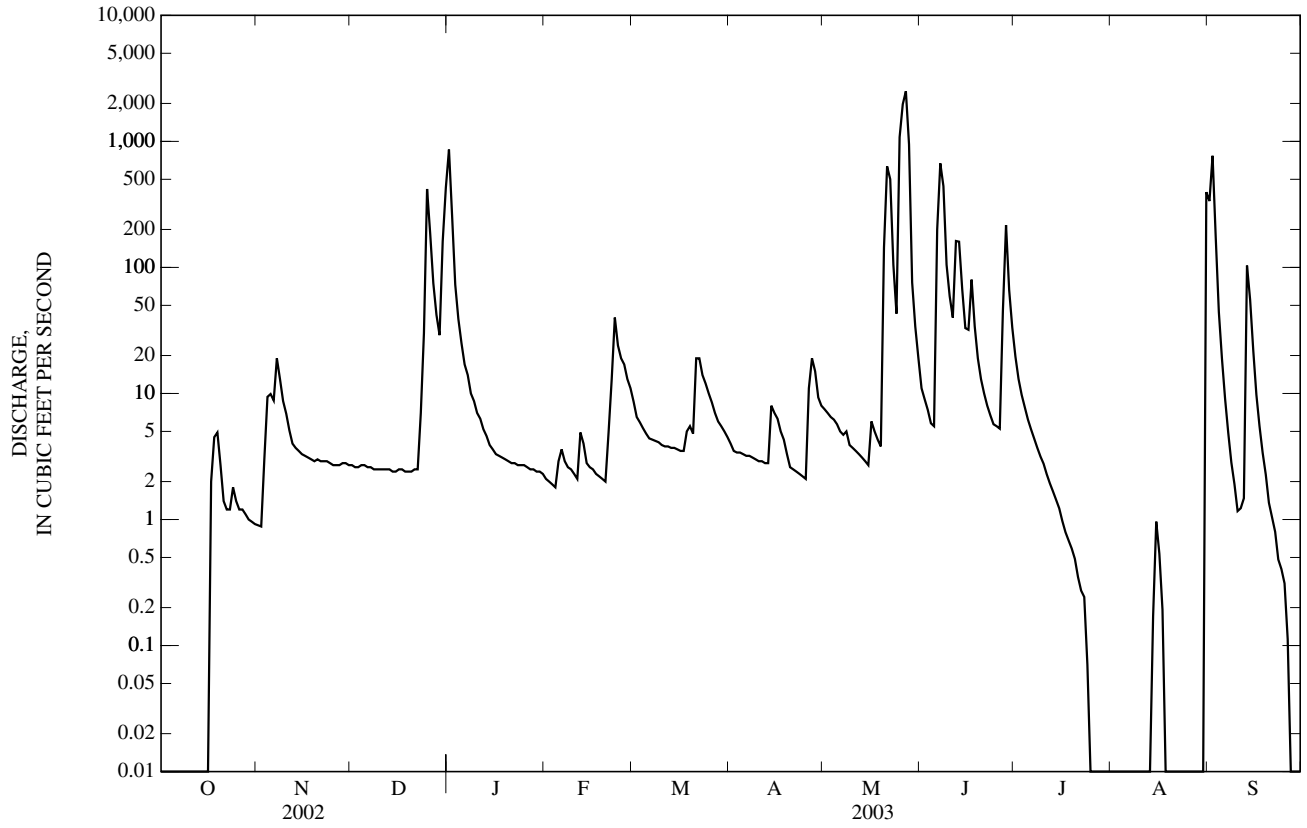
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

MEAN	105	123	152	101	180	280	293	496	343	38.7	22.3	106
MAX	1,216	854	1,766	898	1,251	1,594	3,075	3,670	1,859	279	293	571
(WY)	(1982)	(1974)	(1992)	(1985)	(1997)	(1998)	(1990)	(1982)	(1989)	(1975)	(1964)	(1989)
MIN	0.000	0.000	0.009	0.000	0.060	0.001	0.16	0.10	0.021	0.000	0.000	0.000
(WY)	(1964)	(1978)	(1979)	(1964)	(2000)	(1980)	(1980)	(2000)	(1972)	(1964)	(1980)	(1963)

e Estimated

07315700 MUD CREEK NEAR COURTNEY, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	33,354.06		16,288.26			
ANNUAL MEAN	91.4		44.6		186	
HIGHEST ANNUAL MEAN					614	1990
LOWEST ANNUAL MEAN					1.68	2000
HIGHEST DAILY MEAN	4,230	Apr 14	2,500	May 27	37,800	May 3, 1990
LOWEST DAILY MEAN	0.00	Sep 9	0.00	at times	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 9	0.00	Oct 1	0.00	Jul 28, 1961
MAXIMUM PEAK FLOW			2,580	May 27	49,600	May 3, 1990
MAXIMUM PEAK STAGE			23.47	May 27	33.14	May 29, 1987
ANNUAL RUNOFF (AC-FT)	66,160		32,310		135,100	
10 PERCENT EXCEEDS	80		43		249	
50 PERCENT EXCEEDS	4.5		3.1		7.6	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW $^1/_4$ sec.36, T.9 S., R.1 E., Love County, 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 mi^2 of which 5,936 mi^2 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 fair. 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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 24,000 ft^3/s and maximum (*):

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e180	8,670	329	3,880	454	995	377	585	2,360	6,590	190	408
2	e178	7,150	323	2,920	454	866	377	499	1,820	4,490	183	1,290
3	e177	4,640	344	1,960	467	775	372	422	1,350	4,850	184	2,200
4	e176	3,070	430	1,410	451	681	366	382	1,040	5,290	186	1,660
5	e174	2,620	465	1,210	437	620	351	376	873	4,040	e180	1,260
6	e170	2,880	428	1,060	491	582	414	355	758	2,720	e178	1,440
7	e165	2,580	405	947	524	547	393	325	753	2,150	e176	1,550
8	208	1,890	534	878	499	532	340	288	2,360	1,740	e175	1,100
9	338	1,500	1,480	836	491	508	330	268	7,220	1,430	e174	845
10	338	1,270	1,560	765	484	491	337	278	10,200	1,220	184	693
11	282	1,090	1,200	713	479	474	334	264	6,490	1,040	213	828
12	255	944	988	669	481	467	322	248	5,980	906	226	734
13	700	842	901	636	493	458	310	240	4,340	796	218	594
14	1,290	765	879	615	534	445	301	280	3,960	708	202	524
15	995	696	820	603	535	435	292	393	4,070	632	225	727
16	819	635	776	593	498	425	295	486	3,970	562	220	771
17	675	593	696	588	489	412	286	1,290	3,680	506	196	555
18	675	556	635	565	499	494	287	850	5,790	466	e182	467
19	1,520	517	575	554	501	866	299	414	7,120	442	e180	1,210
20	846	490	530	552	487	922	272	1,070	3,980	404	178	1,780
21	613	467	489	543	569	709	281	3,280	2,650	364	e176	1,280
22	557	447	453	519	1,020	596	266	2,080	2,180	336	e175	997
23	509	434	642	483	981	559	273	1,760	1,690	310	e174	805
24	534	428	1,090	473	801	542	274	1,410	1,410	287	e173	676
25	1,070	406	1,020	466	760	512	282	3,670	1,210	274	e172	588
26	706	400	2,560	468	761	458	516	8,900	1,140	258	e171	518
27	719	375	7,300	469	835	438	720	9,560	3,190	251	e168	481
28	639	355	4,790	486	993	451	754	11,100	2,930	237	e167	409
29	930	343	2,990	488	---	432	800	8,720	4,520	217	e166	359
30	1,120	337	2,410	464	---	392	688	4,200	9,420	206	186	322
31	1,940	---	3,690	457	---	391	---	e2,990	---	198	216	---
TOTAL	19,498	47,390	41,732	27,270	16,468	17,475	11,509	66,983	108,454	43,920	5,794	27,071
MEAN	629	1,580	1,346	880	588	564	384	2,161	3,615	1,417	187	902
MAX	1,940	8,670	7,300	3,880	1,020	995	800	11,100	10,200	6,590	226	2,200
MIN	165	337	323	457	437	391	266	240	753	198	166	322
AC-FT	38,670	94,000	82,780	54,090	32,660	34,660	22,830	132,900	215,100	87,120	11,490	53,700

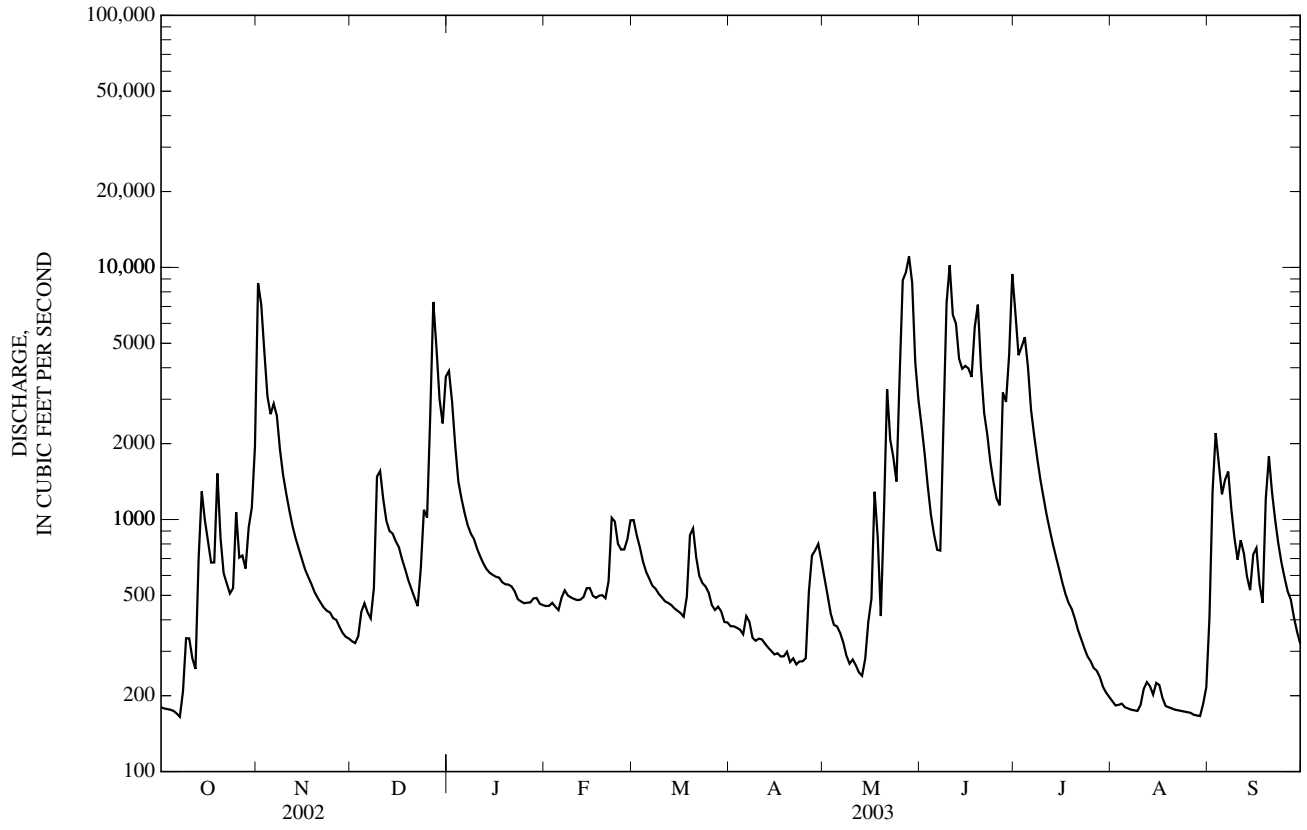
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2003, BY WATER YEAR (WY)

MEAN	3,670	2,040	1,610	1,280	1,940	2,881	3,538	7,811	8,068	2,144	1,550	2,401
MAX	31,080	14,020	14,990	7,258	10,920	19,590	27,400	47,780	43,510	9,857	20,730	12,880
(WY)	(1942)	(1942)	(1992)	(1998)	(2001)	(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)

e Estimated

07316000 RED RIVER NEAR GAINESVILLE, TX—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1937 - 2003	
ANNUAL TOTAL	592,635		433,564			
ANNUAL MEAN	1,624		1,188		3,246	
HIGHEST ANNUAL MEAN					11,890	1987
LOWEST ANNUAL MEAN					651	1953
HIGHEST DAILY MEAN	23,500	Apr 15	11,100	May 28	232,000	May 31, 1987
LOWEST DAILY MEAN	164	Sep 24	165	Oct 7	48	Jan 18, 1940
ANNUAL SEVEN-DAY MINIMUM	174	Oct 1	170	Aug 23	48	Jan 18, 1940
MAXIMUM PEAK FLOW			12,800	May 28	265,000	May 31, 1987
MAXIMUM PEAK STAGE			15.23	May 28	40.08	May 31, 1987
ANNUAL RUNOFF (AC-FT)	1,175,000		860,000		2,351,000	
10 PERCENT EXCEEDS	3,520		2,990		7,200	
50 PERCENT EXCEEDS	675		543		849	
90 PERCENT EXCEEDS	262		215		216	



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, 9,820 microsiemens June 28, 2003; 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, 9,820 microsiemens June 28; minimum, 646 microsiemens May 21.
WATER TEMPERATURE: Maximum, 35.3°C Aug. 7; minimum, -0.3°C Feb. 25.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Gage height, feet (00065)	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
OCT													
09...	1200	1028	80020	8.70	338	748	8.8	93	7.9	2,440	16.2	16.6	330
NOV													
29...	1415	1028	80020	8.92	343	754	12.6	112	8.4	5,500	20.7	8.8	900
DEC													
31...	1350	1028	80020	12.00	3,790	746	10.3	92	8.1	1,930	12.5	9.3	380
JAN													
31...	1440	1028	80020	9.11	465	755	19.0	178	8.6	5,390	16.6	11.1	920
FEB													
25...	0930	1028	80020	9.49	780	760	13.9	97	8.1	4,530	-7.8	0.0	740
MAR													
11...	1030	1028	80020	9.03	475	748	12.4	118	8.4	5,360	13.9	11.4	850
APR													
02...	0925	1028	80020	8.78	393	750	9.0	93	7.9	5,000	18.7	15.4	1,000
MAY													
27...	1005	1028	80020	14.41	10,000	752	7.3	85	6.9	977	22.4	21.9	170
JUN													
11...	0742	1028	80020	12.93	6,350	746	4.8	60	7.3	1,890	21.2	25.3	310
JUL													
01...	0750	1028	80020	13.30	7,120	749	5.2	68	6.9	2,270	25.8	27.8	340
AUG													
04...	1413	1028	80020	8.23	187	748	9.7	137	8.3	5,010	38.1	31.8	800
SEP													
02...	0825	1028	80020	9.92	1,280	751	7.1	86	7.3	1,610	22.8	23.6	250

07316000 RED RIVER NEAR GAINESVILLE, TX—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Noncarb hard-ness, wat flt field, mg/L as CaCO3 (00904)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon-ate, wat flt incrm. titr., field, mg/L (00452)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)
OCT													
09...	200	110	12.8	5.63	8	327	68	124	148	1	510	0.32	8.6
NOV													
29...	770	230	79.8	8.01	13	902	68	133	157	2	1,380	0.41	7.9
DEC													
31...	270	102	30.2	5.77	6	261	60	105	128	0.0	418	0.25	8.4
JAN													
31...	770	232	84.0	7.42	12	827	66	151	184	0.0	1,310	0.40	2.7
FEB													
25...	--	189	65.9	6.05	10	620	64	--	--	--	1,010	0.35	4.2
MAR													
11...	--	165	106	6.50	15	1,030	72	--	--	--	1,260	0.35	0.6
APR													
02...	860	254	90.7	7.17	11	829	64	152	182	1	1,170	0.41	2.5
MAY													
27...	96	47.0	13.2	5.96	4	115	58	75	92	0.0	191	0.2	6.1
JUN													
11...	210	85.1	22.9	7.67	7	279	66	97	118	0.0	404	0.3	8.7
JUL													
01...	250	97.3	22.7	8.18	8	339	68	89	109	0.0	506	0.3	11.2
AUG													
04...	690	190	79.5	8.25	10	670	64	107	122	4	1,240	0.5	10.8
SEP													
02...	170	63.8	22.9	5.64	6	208	63	82	100	0.0	336	0.3	6.7

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (71846)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate water, fltrd, mg/L (71851)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L (71856)	Nitrite water, fltrd, mg/L as N (00613)
OCT													
09...	265	1,310	1.79	1,200	73	1.1	--	<0.04	--	--	E.03	--	E.005
NOV													
29...	683	3,380	4.59	3,130	29	0.99	--	<0.04	--	--	<0.06	--	<0.008
DEC													
31...	1,160	2,050	2.79	21,000	740	1.9	0.08	0.07	3.51	0.79	0.81	0.053	0.016
JAN													
31...	667	3,220	4.37	4,040	27	1.1	0.17	0.129	--	--	<0.022	--	<0.002
FEB													
25...	516	--	--	--	28	0.84	0.06	0.049	--	--	<0.022	--	E.002
MAR													
11...	674	--	--	--	46	0.94	0.08	0.061	--	--	<0.022	--	<0.002
APR													
02...	643	3,090	4.20	3,270	49	0.97	0.09	0.070	--	--	<0.022	--	<0.002
MAY													
27...	97.7	523	0.71	14,200	690	2.9	0.24	0.189	1.23	0.28	0.325	0.154	0.047
JUN													
11...	196	1,070	1.45	18,300	1,320	2.5	0.03	0.021	2.78	0.63	0.736	0.355	0.108
JUL													
01...	235	1,280	1.74	24,500	1,360	2.1	0.04	0.032	2.41	0.55	0.561	0.053	0.016
AUG													
04...	625	2,880	3.92	1,460	10	1.6	0.07	0.057	--	--	<0.022	--	<0.002
SEP													
02...	166	861	1.17	2,990	346	3.0	0.16	0.121	1.34	0.30	0.323	0.066	0.020

07316000 RED RIVER NEAR GAINESVILLE, TX—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic nitro-gen, water, unfltrd mg/L (00605)	Ortho-phos-phate, water, fltrd, mg/L (00660)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, fltrd, ug/L (01030)
OCT													
09...	--	0.055	0.02	E.03	0.18	--	3	4	105	116	<8	<0.2	<0.8
NOV													
29...	--	--	<0.02	<0.04	0.12	--	2	2	127	117	<40	<0.4	<0.8
DEC													
31...	1.8	0.267	0.09	0.10	0.58	2.7	E2	4	114	263	<8	E.1	<0.8
JAN													
31...	0.92	--	<0.007	0.010	0.104	--	<4	2	113	111	<24	<0.4	<0.8
FEB													
25...	0.79	--	<0.007	0.012	0.103	--	E1	E2	107	110	<8	<0.2	<0.8
MAR													
11...	0.88	--	<0.007	0.015	0.133	--	E1	E2	106	72.6	<24	<0.2	<0.8
APR													
02...	0.90	--	<0.007	0.016	0.20	--	3	4	119	105	<24	<0.2	<0.8
MAY													
27...	2.7	0.181	0.059	0.071	0.84	3.2	E2	5	85.1	286	<2	E.1	<0.8
JUN													
11...	2.5	0.221	0.072	0.084	0.97	3.3	3	6	110	365	<2	E.2	<0.8
JUL													
01...	2.1	0.325	0.106	0.123	0.86	2.7	2	4	103	367	<2	E.1	<0.8
AUG													
04...	1.5	--	<0.007	0.012	0.132	--	5	6	147	194	<40	<0.2	<0.8
SEP													
02...	2.8	0.052	0.017	0.027	0.68	3.3	3	5	79	256	E.02	E.1	<0.8

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)
OCT													
09...	E.6	<20	2.8	<10	860	E.06	2	4.3	177	<0.02	<0.02	<30	<80
NOV													
29...	<0.8	<30	E1.6	<50	40	<0.24	<2	20.6	51.2	<0.02	<0.02	<150	<80
DEC													
31...	6.8	<6	13.5	E5	7,580	<0.08	11	1.9	529	<0.02	0.02	<30	<80
JAN													
31...	<0.8	<20	4.0	<30	<20	<0.24	<2	<5.0	29.9	<0.02	<0.02	<90	<80
FEB													
25...	<0.8	<6	1.5	<10	180	<0.40	1	39.7	69.5	<0.02	E.01	<30	E40
MAR													
11...	E.5	<20	1.6	<30	160	0.43	<1	69.2	126	<0.02	<0.02	<90	<230
APR													
02...	E.6	<20	1.3	<30	400	<0.16	M	42.8	115	<0.02	<0.02	<90	E50
MAY													
27...	3.6	<7	13.6	13	8,990	<0.08	16	1.0	736	<0.02	0.02	<7.0	<80
JUN													
11...	12.1	<7	19.5	E6	11,700	E.06	18	E.3	712	<0.02	0.02	<7.0	<80
JUL													
01...	9.7	E4	19.7	E5	690	E.06	15	0.4	52.9	<0.02	0.02	M	M
AUG													
04...	<4.0	<140	E1.1	<160	460	<0.16	1	<8.0	430	E.01	<0.02	<140	<6
SEP													
02...	7.8	2.0	16.5	E8	9,340	E.05	17	0.4	680	<0.02	0.02	1.93	20

07316000 RED RIVER NEAR GAINESVILLE, TX—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Silver, water, fltrd, ug/L (01075)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Aldrin, water, unfltrd ug/L (39330)	alpha-Endosulfan, water, unfltrd ug/L (34361)	alpha-HCH, water, unfltrd ug/L (39337)	alpha-HCH-d6, surrog, Sch1608 water, unfltrd pct rcv (99778)	Aroclor 1016 + 1242, water, unfltrd ug/L (81648)	Aroclor 1221, water, unfltrd ug/L (39488)	Aroclor 1232, water, unfltrd ug/L (39492)
OCT 09...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
NOV 29...	<3	<3	<0.5	<0.3	<120	<25	--	--	--	--	--	--	--
DEC 31...	<3	<3	<0.3	<0.3	<24	E25	--	--	--	--	--	--	--
JAN 31...	<5	E2	<0.3	E.1	<72	E20	--	--	--	--	--	--	--
FEB 25...	E1	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
MAR 11...	E1	<3	<0.3	<0.5	<72	<25	<0.04	<0.1	<0.03	88.0	<0.1	<1	<0.1
APR 02...	E2	<3	<0.3	<0.3	<72	<25	--	--	--	--	--	--	--
MAY 27...	<3	--	<0.3	<0.3	E2	29	<0.20	<0.5	<0.15	36.2	<0.5	<5	<0.5
JUN 11...	<3	2	<0.3	<0.3	<3	52	--	--	--	--	--	--	--
JUL 01...	<3	<3	<0.3	<0.3	4	E4	--	--	--	--	--	--	--
AUG 04...	<3	<3	<0.3	<0.3	<60	E11	--	--	--	--	--	--	--
SEP 02...	4	0.9	<0.2	<0.3	1	34	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Aroclor 1248, water, unfltrd ug/L (39500)	Aroclor 1254, water, unfltrd ug/L (39504)	Aroclor 1260, water, unfltrd ug/L (39508)	beta-Endosulfan, water, unfltrd ug/L (34356)	beta-HCH, water, unfltrd ug/L (39338)	Chlordane, technical, water, unfltrd ug/L (39350)	cis-Chlordane, water, unfltrd ug/L (39062)	delta-HCH, water, unfltrd ug/L (34259)	Dieldrin, water, unfltrd ug/L (39380)	Endosulfan sulfate water unfltrd ug/L (34351)	Endrin aldehyde, water, unfltrd ug/L (34366)	Endrin, water, unfltrd ug/L (39390)	Heptachlor epoxide water unfltrd ug/L (39420)
OCT 09...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 29...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC 31...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB 25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 11...	<0.1	<0.1	<0.1	<0.04	<0.03	<0.1	<0.1	<0.09	<0.02	<0.6	<0.2	<0.06	<0.8
APR 02...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY 27...	<0.5	<0.5	<0.5	<0.20	<0.15	<0.5	<0.5	<0.45	<0.10	<3.0	<1.0	<0.30	<4.0
JUN 11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 04...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 02...	--	--	--	--	--	--	--	--	--	--	--	--	--

07316000 RED RIVER NEAR GAINESVILLE, TX—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Hepta-chlor, water, unfltrd ug/L (39410)	Isodrin surrog, Sch1608 wat unf percent recovry (90570)	Lindane water, unfltrd ug/L (39340)	p,p-' DDD, water, unfltrd ug/L (39310)	p,p-' DDE, water, unfltrd ug/L (39320)	p,p-' DDT, water, unfltrd ug/L (39300)	PCB 207, surrog, Sch1608 water, unfltrd pct rcv (99781)	Toxa-phene, water, unfltrd ug/L (39400)	trans-Chlor-dane, water, unfltrd ug/L (39065)
OCT									
09...	--	--	--	--	--	--	--	--	--
NOV									
29...	--	--	--	--	--	--	--	--	--
DEC									
31...	--	--	--	--	--	--	--	--	--
JAN									
31...	--	--	--	--	--	--	--	--	--
FEB									
25...	--	--	--	--	--	--	--	--	--
MAR									
11...	<0.03	59.9	<0.03	<0.1	<0.04	<0.1	74.1	<2	<0.1
APR									
02...	--	--	--	--	--	--	--	--	--
MAY									
27...	<0.15	65.2	<0.15	<0.5	<0.20	<0.5	67.0	<10	<0.5
JUN									
11...	--	--	--	--	--	--	--	--	--
JUL									
01...	--	--	--	--	--	--	--	--	--
AUG									
04...	--	--	--	--	--	--	--	--	--
SEP									
02...	--	--	--	--	--	--	--	--	--

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3,740	2,930	3,280	7,410	2,190	3,720	5,590	5,500	5,540	2,280	1,620	1,820
2	4,040	3,640	3,840	2,800	2,410	2,660	5,570	5,510	5,530	2,300	1,760	2,050
3	4,550	4,040	4,240	2,820	2,610	2,690	5,540	5,110	5,460	2,360	1,760	1,950
4	5,220	4,550	4,900	3,360	2,820	3,160	5,140	4,740	4,990	3,670	2,360	3,030
5	5,390	5,080	5,270	3,420	3,260	3,330	4,810	4,460	4,630	4,390	3,670	4,070
6	5,170	4,640	4,990	3,670	3,350	3,540	4,600	4,490	4,570	4,840	4,390	4,620
7	4,760	4,230	4,450	3,350	2,680	2,870	4,740	4,600	4,650	4,980	4,840	4,950
8	4,230	3,060	3,640	2,790	2,660	2,710	---	---	---	4,970	4,910	4,940
9	3,220	2,260	2,670	3,380	2,790	3,120	---	---	---	5,050	4,940	4,980
10	2,890	2,600	2,760	3,980	3,380	3,720	---	---	---	5,300	5,050	5,160
11	2,800	2,710	2,760	4,650	3,980	4,310	---	---	---	5,380	5,290	5,320
12	2,880	2,630	2,760	5,180	4,650	4,970	---	---	---	5,450	5,370	5,420
13	2,830	2,410	2,640	5,500	5,180	5,360	---	---	---	5,460	5,310	5,420
14	2,770	1,990	2,460	5,620	5,490	5,550	---	---	---	5,320	5,250	5,300
15	1,990	1,720	1,780	5,780	5,610	5,700	---	---	---	5,260	5,210	5,230
16	2,240	1,750	1,900	5,830	5,750	5,800	---	---	---	5,260	5,240	5,250
17	2,950	2,240	2,620	5,890	5,770	5,840	---	---	---	5,440	5,250	5,340
18	2,980	2,550	2,870	5,970	5,870	5,930	---	---	---	5,490	5,390	5,430
19	2,550	1,200	1,600	6,090	5,890	5,950	---	---	---	5,470	5,430	5,460
20	2,280	1,730	2,110	6,040	5,860	5,950	6,240	6,100	6,190	5,430	5,340	5,380
21	2,720	2,040	2,300	5,980	5,740	5,840	6,260	6,210	6,230	5,550	5,320	5,410
22	3,960	2,720	3,500	5,870	5,740	5,800	6,420	6,230	6,310	5,540	5,460	5,480
23	4,090	3,580	3,910	6,000	5,770	5,830	6,440	4,840	5,750	5,500	5,340	5,420
24	3,580	2,670	3,150	5,920	5,780	5,840	5,480	3,440	4,170	5,430	5,340	5,380
25	2,840	1,460	2,120	5,830	5,620	5,720	4,150	3,470	3,710	5,560	5,430	5,490
26	2,790	2,340	2,510	5,680	5,540	5,630	5,680	3,110	4,630	5,630	5,520	5,570
27	3,720	2,790	3,180	5,600	5,370	5,500	3,110	1,730	2,080	5,620	5,530	5,580
28	3,720	2,150	2,810	5,540	5,400	5,480	1,730	1,590	1,630	5,630	5,530	5,570
29	3,390	2,150	2,620	5,540	5,480	5,510	2,280	1,690	1,930	5,620	5,570	5,590
30	4,120	3,390	3,910	5,500	5,430	5,460	2,400	2,160	2,300	5,650	5,510	5,580
31	4,560	2,020	3,020	---	---	---	2,160	1,610	1,840	5,540	5,390	5,480
MONTH	5,390	1,200	3,120	7,410	2,190	4,780	6,440	1,590	4,320	5,650	1,620	4,890

07316000 RED RIVER NEAR GAINESVILLE, TX—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5,530	5,360	5,430	4,110	3,860	3,970	6,030	5,200	5,690	5,750	5,350	5,490
2	5,560	5,360	5,480	4,240	3,930	4,100	5,220	5,010	5,120	5,760	5,540	5,700
3	5,670	5,480	5,580	4,410	4,240	4,340	5,260	5,010	5,150	5,790	5,490	5,730
4	5,620	5,530	5,580	4,330	4,190	4,270	5,560	5,230	5,390	6,200	5,640	5,900
5	5,750	5,620	5,680	4,450	4,300	4,380	5,710	5,530	5,620	6,710	6,190	6,410
6	5,680	5,510	5,600	4,400	4,280	4,340	5,530	5,020	5,260	6,880	6,200	6,630
7	5,510	5,300	5,400	4,850	4,360	4,620	5,440	5,390	5,420	6,250	5,860	6,080
8	5,450	5,350	5,410	5,000	4,850	4,930	5,600	5,170	5,370	5,930	5,760	5,870
9	5,560	5,400	5,490	5,160	4,940	5,080	5,850	5,580	5,690	6,020	5,780	5,930
10	5,400	5,300	5,350	5,450	5,130	5,330	5,990	5,840	5,910	6,240	5,860	5,990
11	5,430	5,300	5,360	5,390	5,160	5,290	6,000	5,590	5,810	5,910	5,590	5,760
12	5,550	5,340	5,470	5,260	5,060	5,200	5,720	5,550	5,620	5,940	5,660	5,780
13	5,510	5,380	5,430	5,250	5,050	5,130	5,720	5,590	5,660	5,780	5,470	5,620
14	5,510	5,260	5,390	5,350	5,150	5,260	5,640	5,470	5,540	5,620	4,840	5,320
15	5,320	5,010	5,170	5,480	5,310	5,410	5,900	5,640	5,800	4,840	2,820	4,400
16	5,320	4,980	5,090	5,650	5,440	5,540	5,920	5,570	5,760	---	---	---
17	5,470	5,320	5,430	5,690	5,560	5,660	5,690	5,490	5,590	---	---	---
18	5,530	5,380	5,450	5,820	5,030	5,510	5,600	5,510	5,550	---	---	---
19	5,670	5,430	5,510	5,240	3,810	4,400	5,570	5,410	5,500	---	---	---
20	5,670	5,600	5,640	3,810	3,110	3,400	5,620	5,460	5,510	3,730	916	2,560
21	5,620	5,070	5,380	4,200	3,680	4,000	5,670	5,490	5,560	1,010	646	761
22	5,070	3,920	4,370	4,670	4,200	4,470	5,710	5,610	5,660	1,740	1,010	1,550
23	4,230	4,020	4,150	4,860	4,670	4,810	5,730	5,480	5,640	2,390	1,620	1,930
24	4,410	4,210	4,290	5,060	4,860	4,970	5,500	4,910	5,260	2,350	1,460	1,650
25	4,850	4,360	4,610	5,080	4,870	5,000	5,600	4,960	5,340	1,640	1,010	1,350
26	4,910	4,750	4,830	5,050	4,870	4,950	6,130	5,340	5,620	---	---	---
27	4,840	4,660	4,770	5,090	5,000	5,040	8,100	6,130	7,220	---	---	---
28	4,730	4,040	4,370	5,480	5,090	5,290	7,700	5,180	5,970	1,300	540	939
29	---	---	---	5,730	5,480	5,640	5,830	5,290	5,640	1,140	832	926
30	---	---	---	6,100	5,730	5,980	5,840	5,680	5,790	---	---	---
31	---	---	---	6,140	6,030	6,090	---	---	---	---	---	---
MONTH	5,750	3,920	5,200	6,140	3,110	4,920	8,100	4,910	5,620	6,880	540	4,270
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	2,410	2,190	2,310	---	---	---	3,610	1,870	2,900
2	8,270	4,550	6,820	3,220	2,410	2,760	---	---	---	3,600	1,250	1,790
3	8,320	7,500	8,060	3,210	2,020	2,510	---	---	---	1,940	1,500	1,700
4	7,500	6,260	6,870	2,570	2,040	2,380	---	---	---	1,630	936	1,130
5	6,260	5,540	5,900	2,730	2,510	2,650	5,450	4,870	5,350	1,890	970	1,280
6	5,540	4,930	5,280	2,910	2,500	2,610	5,460	5,310	5,400	2,000	1,770	1,900
7	4,950	4,790	4,890	3,740	2,910	3,430	5,480	5,180	5,360	3,210	1,930	2,840
8	5,020	4,440	4,770	4,040	3,740	3,810	5,360	5,110	5,230	3,110	2,910	3,010
9	4,780	1,820	2,660	4,320	4,040	4,250	5,160	4,700	4,950	3,120	2,850	3,020
10	2,520	2,050	2,350	4,320	3,960	4,130	4,900	4,500	4,730	2,850	2,640	2,710
11	2,050	1,660	1,820	4,020	3,940	3,970	4,750	4,560	4,640	2,680	1,430	2,290
12	3,080	1,660	2,120	4,080	3,980	4,020	4,850	4,630	4,740	2,660	2,170	2,400
13	4,740	2,210	3,910	4,260	4,080	4,160	4,870	4,710	4,790	3,000	2,660	2,850
14	4,740	4,330	4,510	4,410	4,260	4,310	4,920	4,810	4,860	3,290	3,000	3,200
15	4,500	2,820	3,530	4,480	4,370	4,440	4,860	4,300	4,640	3,520	3,060	3,380
16	2,820	1,700	2,240	4,680	4,450	4,570	4,680	3,920	4,410	3,120	2,740	2,960
17	2,530	1,740	2,180	4,760	4,590	4,660	4,240	4,040	4,120	2,860	2,680	2,760
18	3,180	2,070	2,560	4,820	4,730	4,780	4,470	4,240	4,320	2,940	2,240	2,720
19	2,950	1,770	2,090	4,970	4,810	4,900	4,560	4,400	4,480	3,470	2,280	2,550
20	1,770	1,540	1,630	5,090	4,850	4,990	4,550	4,460	4,500	4,760	3,470	4,290
21	1,540	1,450	1,480	5,100	4,730	5,000	4,490	4,250	4,400	4,230	3,610	3,890
22	1,780	1,460	1,540	5,050	4,920	4,980	4,250	4,100	4,170	3,640	3,580	3,610
23	2,400	1,780	2,110	5,040	4,990	5,010	4,310	4,160	4,240	3,630	3,590	3,610
24	2,520	2,400	2,490	5,060	5,010	5,030	4,450	4,310	4,400	3,820	3,580	3,670
25	2,700	2,520	2,580	5,120	5,010	5,040	4,680	4,390	4,550	4,010	3,260	3,760
26	3,380	2,700	2,950	5,170	5,090	5,130	4,760	4,600	4,710	4,280	4,000	4,100
27	8,640	3,380	5,150	5,170	5,080	5,130	4,650	4,240	4,540	4,630	4,280	4,450
28	9,820	8,640	9,580	5,200	4,870	5,090	4,420	4,120	4,310	4,900	4,620	4,740
29	9,500	4,950	8,360	---	---	---	4,400	4,180	4,270	4,940	4,780	4,870
30	4,950	2,180	2,690	---	---	---	4,340	3,450	4,160	4,940	4,750	4,820
31	---	---	---	---	---	---	4,110	3,610	3,870	---	---	---
MONTH	9,820	1,450	3,900	5,200	2,020	4,140	5,480	3,450	4,600	4,940	936	3,110
YEAR	9,820	540	4,410									

07316000 RED RIVER NEAR GAINESVILLE, TX—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.8	23.5	25.9	11.8	11.0	11.5	9.9	6.9	8.5	8.7	7.0	7.9
2	28.6	24.4	26.3	11.0	10.2	10.5	10.5	7.6	8.9	7.4	5.9	6.7
3	29.8	24.6	27.0	10.7	10.1	10.4	9.3	8.1	8.9	7.4	5.1	6.3
4	27.4	23.4	25.5	10.7	9.6	10.2	8.1	5.5	7.0	8.6	5.7	7.2
5	25.7	19.6	22.7	11.9	9.9	10.8	6.8	4.4	5.6	9.4	7.0	8.2
6	26.3	21.1	23.5	12.0	9.9	11.0	7.6	4.2	5.9	9.1	7.4	8.1
7	23.9	20.1	21.3	12.8	10.0	11.4	9.0	5.4	7.2	8.3	5.9	7.1
8	20.8	16.9	18.4	13.9	10.9	12.4	9.4	6.8	8.2	10.0	6.4	8.1
9	17.5	16.6	17.0	16.3	13.1	14.6	---	---	---	11.6	9.0	10.1
10	18.9	16.9	17.7	15.9	14.7	15.4	---	---	---	9.6	7.6	8.5
11	21.5	18.0	19.3	15.4	13.1	14.3	---	---	---	7.9	6.2	7.1
12	23.4	18.3	20.4	14.3	12.5	13.5	---	---	---	7.3	5.8	6.5
13	20.5	16.1	17.8	14.1	11.6	12.8	---	---	---	6.8	5.4	6.0
14	17.3	15.6	16.5	14.2	11.2	12.7	---	---	---	6.3	5.2	5.8
15	17.9	14.5	16.1	13.6	11.3	12.4	---	---	---	6.3	5.5	5.9
16	17.5	14.3	15.9	12.7	10.2	11.5	---	---	---	6.3	4.0	5.4
17	18.2	14.4	16.3	13.1	9.9	11.5	---	---	---	4.2	2.8	3.6
18	17.1	16.2	16.7	13.2	10.6	11.8	---	---	---	5.8	2.3	4.0
19	18.2	16.9	17.4	13.4	10.1	11.7	---	---	---	7.4	3.4	5.3
20	17.6	16.4	16.8	13.2	10.2	11.7	11.5	8.8	10.2	10.6	5.8	8.1
21	17.6	15.2	16.5	13.9	10.4	12.1	10.7	8.0	9.3	10.0	7.9	8.8
22	18.5	17.3	17.8	13.7	10.9	12.3	9.3	7.0	8.2	7.9	4.7	6.5
23	17.9	17.2	17.5	13.6	10.3	12.0	8.3	6.3	7.4	4.7	1.6	3.1
24	17.3	15.4	16.6	14.1	11.1	12.6	6.3	4.3	5.3	2.7	1.0	2.0
25	15.4	13.6	14.2	12.9	8.9	10.3	5.5	3.0	4.3	3.1	1.8	2.4
26	15.0	12.8	13.8	9.3	7.7	8.5	4.8	3.9	4.3	4.9	3.1	3.8
27	15.2	14.2	14.7	8.8	5.9	7.4	4.6	3.5	4.1	5.5	2.3	3.8
28	15.7	14.8	15.2	9.2	5.4	7.3	5.3	3.5	4.4	11.4	5.1	8.1
29	16.4	14.3	15.1	9.5	6.2	7.9	8.6	4.6	6.1	11.1	9.3	10.3
30	15.0	13.5	14.5	10.7	7.7	9.0	11.0	8.6	10.2	9.7	8.4	8.9
31	13.5	11.8	12.2	---	---	---	10.2	8.5	9.2	12.1	8.0	9.8
MONTH	29.8	11.8	18.3	16.3	5.4	11.4	11.5	3.0	7.2	12.1	1.0	6.6
		FEBRUARY			MARCH			APRIL			MAY	
1	12.7	8.6	10.6	6.4	5.0	5.7	19.6	13.4	16.3	29.0	22.8	25.6
2	14.9	10.2	12.5	10.2	6.2	7.9	21.7	14.8	17.9	26.3	23.1	24.4
3	14.2	11.3	13.5	10.5	7.3	8.7	21.0	17.4	19.0	26.7	22.7	24.6
4	12.0	8.7	10.4	13.0	9.1	10.7	23.7	18.0	20.5	27.3	23.4	25.3
5	9.9	7.7	8.5	11.6	7.1	8.7	20.8	17.7	19.3	29.0	24.1	26.0
6	7.7	5.7	6.9	11.0	5.4	8.1	22.6	17.3	19.5	30.7	24.4	27.0
7	7.0	3.6	5.4	14.4	8.1	11.1	21.0	16.2	18.5	29.7	24.3	26.9
8	5.8	4.3	5.1	14.7	11.9	13.2	17.3	12.6	14.8	28.1	25.7	26.8
9	6.6	5.3	5.9	14.4	11.0	12.8	17.9	11.0	14.2	28.4	24.8	26.4
10	9.7	5.0	7.2	12.5	10.0	11.5	20.3	12.4	16.0	27.7	24.1	25.9
11	11.4	6.7	8.9	16.8	11.0	13.7	21.6	15.5	18.3	27.3	21.5	24.5
12	12.8	7.9	10.4	19.5	14.9	16.9	23.7	16.0	19.6	27.1	21.3	24.1
13	13.5	11.6	12.6	20.1	17.2	18.4	24.6	18.8	21.5	25.5	22.1	23.8
14	18.1	13.5	15.8	21.0	15.3	18.0	24.5	19.1	21.7	25.4	23.3	24.4
15	17.3	9.9	14.2	21.1	15.6	18.3	21.4	18.9	19.9	25.6	22.3	24.0
16	9.9	6.7	7.7	21.7	17.5	19.5	22.8	17.2	19.7	---	---	---
17	9.7	5.2	7.5	21.6	17.6	19.6	24.7	17.5	20.8	---	---	---
18	12.4	8.3	10.2	19.3	15.8	17.6	23.6	19.7	21.8	---	---	---
19	12.6	11.2	11.8	18.0	14.2	16.0	25.7	19.8	22.5	---	---	---
20	11.4	10.5	10.9	16.3	13.2	14.4	23.9	18.0	21.0	28.1	20.0	22.4
21	10.9	10.0	10.5	16.5	12.2	14.0	24.8	17.6	21.0	20.0	18.7	19.2
22	13.3	9.4	11.1	16.5	13.0	14.8	21.9	19.1	20.1	20.7	18.2	19.3
23	11.8	8.2	10.5	19.7	13.6	16.4	19.2	17.7	18.2	24.1	18.9	21.3
24	8.2	-0.2	4.1	20.9	15.3	18.0	23.9	17.3	20.2	27.2	22.4	24.6
25	1.6	-0.3	0.5	20.0	17.2	18.2	24.1	18.0	20.8	26.6	22.4	24.0
26	3.3	0.8	2.0	20.8	14.6	17.5	25.0	18.8	21.9	22.4	21.3	21.9
27	4.7	3.1	3.8	20.5	15.2	17.9	25.0	20.8	22.9	23.9	21.4	22.5
28	5.4	3.8	4.5	17.8	13.1	14.7	23.3	21.5	22.1	24.4	22.2	23.3
29	---	---	---	14.6	10.5	12.5	26.3	20.4	23.0	27.3	23.9	25.4
30	---	---	---	15.9	10.1	13.1	26.3	22.1	24.3	---	---	---
31	---	---	---	19.2	12.0	15.4	---	---	---	---	---	---
MONTH	18.1	-0.3	8.7	21.7	5.0	14.3	26.3	11.0	19.9	30.7	18.2	24.1

07316000 RED RIVER NEAR GAINESVILLE, TX—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	30.8	27.8	29.2	---	---	---	28.1	24.4	25.6
2	29.8	26.8	28.3	31.6	29.0	30.3	---	---	---	24.7	23.5	24.2
3	29.9	26.1	28.0	32.1	29.6	30.7	---	---	---	25.5	23.8	24.6
4	28.3	25.4	26.4	31.8	29.6	30.7	---	---	---	27.7	24.2	25.7
5	25.6	23.6	24.3	31.0	29.3	30.2	30.5	26.6	28.7	29.0	24.7	26.6
6	26.1	22.3	23.9	29.8	28.2	28.6	34.5	26.9	30.4	28.7	24.8	26.7
7	28.9	22.3	25.5	30.2	27.0	28.4	35.3	28.2	31.6	27.7	24.4	26.2
8	27.5	24.4	25.8	30.1	27.1	28.6	34.2	29.1	31.6	27.5	23.7	25.6
9	26.5	24.5	25.6	30.4	26.8	28.5	31.7	27.3	29.3	28.1	24.1	26.0
10	26.7	25.4	25.9	32.2	26.9	29.2	33.7	26.6	29.9	28.7	24.5	26.5
11	28.3	23.8	26.7	33.1	28.7	30.9	34.0	27.8	30.5	26.6	22.8	24.3
12	27.6	24.2	26.2	33.0	28.5	30.8	32.3	27.1	29.5	23.1	21.9	22.4
13	25.7	24.1	24.8	33.3	28.5	30.7	30.0	26.2	28.1	23.9	20.9	22.1
14	27.5	23.9	25.6	33.5	28.5	30.9	29.8	25.5	27.6	24.1	21.0	22.5
15	28.4	25.4	26.9	32.0	28.6	30.3	33.3	26.0	29.4	25.4	20.1	22.7
16	28.7	26.0	27.2	33.2	28.0	30.5	34.5	27.7	30.9	26.7	22.3	24.4
17	28.8	25.9	27.3	34.1	28.5	31.2	34.5	28.5	31.5	27.7	23.3	25.3
18	29.1	26.6	27.9	35.1	29.4	32.1	34.1	28.8	31.4	26.4	23.2	24.6
19	29.7	27.3	28.4	34.7	29.8	32.2	33.9	28.6	31.1	23.5	20.3	22.1
20	30.5	27.6	29.0	34.8	29.4	31.8	32.9	28.2	30.5	23.5	20.2	21.9
21	30.8	27.7	29.2	33.2	28.6	31.0	34.5	27.8	30.9	24.9	22.2	23.4
22	31.4	27.8	29.5	34.4	28.3	31.0	34.4	28.5	31.1	27.0	22.6	24.6
23	31.6	28.2	29.8	33.6	28.6	30.9	34.3	27.8	30.9	26.5	23.7	25.1
24	31.0	28.7	29.9	32.4	26.8	29.5	33.2	27.9	30.6	25.2	23.2	24.2
25	31.5	28.2	29.8	32.9	27.0	29.7	33.8	27.8	30.6	25.9	22.2	24.1
26	30.2	25.8	27.8	33.0	28.2	30.5	32.1	27.8	29.8	27.9	23.0	25.3
27	28.1	24.3	26.1	33.7	28.0	30.6	31.8	26.0	28.6	27.1	23.7	25.1
28	29.0	25.0	27.0	33.3	28.1	30.6	32.0	26.7	29.0	25.4	20.6	22.9
29	28.7	26.1	27.5	---	---	---	32.8	26.7	29.5	23.6	20.2	21.7
30	28.8	26.9	27.8	---	---	---	30.2	27.3	28.4	22.7	18.9	20.6
31	---	---	---	---	---	---	29.3	26.5	27.7	---	---	---
MONTH	31.6	22.3	27.2	35.1	26.8	30.3	35.3	25.5	30.0	29.0	18.9	24.2
YEAR	35.3	-0.3	18.6									

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 mi^2.

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 present datum.

REMARKS.--Records good except for estimated periods, which are poor. 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 1.7 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	92	43	58	46	45	29	29	14	36	3.5	50
2	0.02	85	43	56	46	46	28	28	13	33	3.5	33
3	30	81	46	54	46	48	27	29	13	31	3.4	27
4	55	78	52	54	43	49	27	28	34	28	3.3	23
5	55	75	55	53	42	48	23	26	32	26	2.8	21
6	51	69	55	53	45	45	22	24	30	24	2.3	19
7	35	65	58	52	46	42	25	23	28	22	1.9	18
8	25	63	60	51	46	42	26	22	27	21	1.8	16
9	22	61	61	51	50	41	27	20	25	19	6.4	15
10	19	58	62	49	52	40	26	19	22	43	9.3	14
11	18	56	61	47	52	40	23	17	21	48	5.1	15
12	17	55	59	47	51	42	23	16	19	34	3.2	14
13	15	55	58	46	51	41	25	15	20	27	2.4	12
14	15	55	58	47	52	42	26	15	348	23	2.2	11
15	14	54	56	47	52	40	39	16	380	19	1.9	11
16	13	53	54	48	48	40	132	61	209	17	1.7	9.8
17	13	53	54	47	46	49	76	43	124	15	1.5	9.0
18	12	52	52	47	46	48	51	38	78	13	1.1	8.2
19	440	50	50	47	45	46	49	30	61	12	0.86	8.2
20	336	50	48	48	45	49	44	25	55	10	0.71	7.9
21	125	48	49	48	46	48	40	23	90	8.8	0.69	8.0
22	89	48	48	e45	46	47	37	21	103	8.1	0.65	7.3
23	125	48	51	e42	e44	45	38	20	76	7.1	0.57	6.9
24	172	48	e50	e41	e41	44	38	20	58	7.1	0.39	6.3
25	147	47	e49	e42	e38	43	36	54	48	6.4	0.25	5.9
26	123	45	e48	e44	e38	41	34	42	42	5.8	0.14	6.0
27	130	44	e49	45	e39	39	33	34	39	5.1	0.13	5.7
28	120	43	54	46	44	37	32	27	36	5.5	0.04	5.6
29	123	44	56	46	---	35	32	23	37	4.5	0.29	7.0
30	114	43	59	45	---	33	30	20	38	4.5	808	7.5
31	103	---	59	46	---	32	---	16	---	3.9	129	---
TOTAL	2,556.02	1,718	1,657	1,492	1,286	1,327	1,098	824	2,120	567.8	999.02	408.3
MEAN	82.5	57.3	53.5	48.1	45.9	42.8	36.6	26.6	70.7	18.3	32.2	13.6
MAX	440	92	62	58	52	49	132	61	380	48	808	50
MIN	0.00	43	43	41	38	32	22	15	13	3.9	0.04	5.6
AC-FT	5,070	3,410	3,290	2,960	2,550	2,630	2,180	1,630	4,210	1,130	1,980	810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

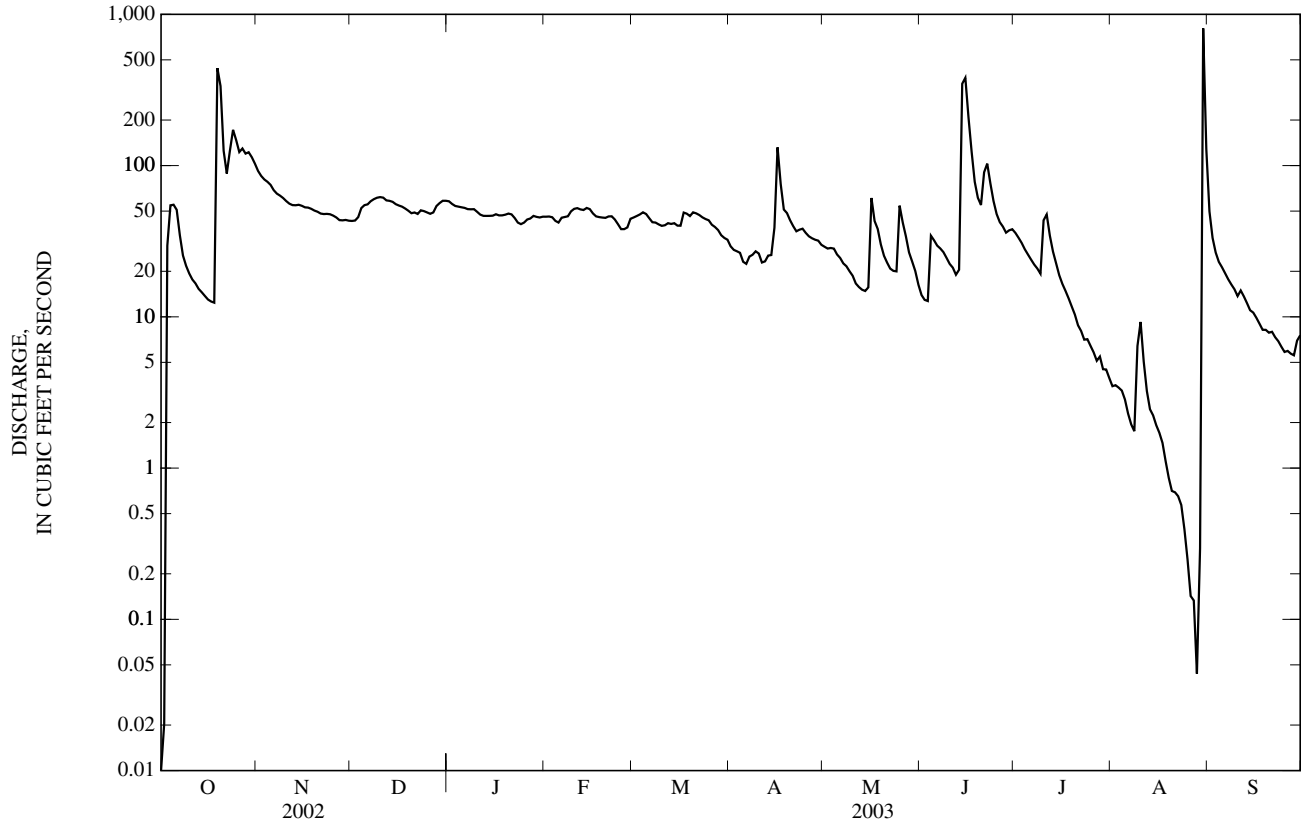
MEAN	10.5	11.1	13.1	16.4	20.9	27.9	33.4	49.8	41.3	8.94	5.15	5.74
MAX	82.5	64.3	67.7	80.7	71.0	138	146	348	203	61.7	32.8	44.7
(WY)	(2003)	(1987)	(1998)	(1998)	(2001)	(1998)	(1997)	(1977)	(1982)	(1982)	(1995)	(1997)
MIN	0.000	0.000	0.000	0.026	1.50	2.22	1.08	0.000	0.005	0.000	0.000	0.000
(WY)	(1964)	(1964)	(1964)	(1973)	(1973)	(1967)	(1971)	(1971)	(1970)	(1964)	(1963)	(1964)

e Estimated

07316500 WASHITA RIVER NEAR CHEYENNE, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	9,324.03		16,053.14			
ANNUAL MEAN	25.5		44.0		a20.3	
HIGHEST ANNUAL MEAN					64.0	1997
LOWEST ANNUAL MEAN					2.60	1972
HIGHEST DAILY MEAN	440	Oct 19	808	Aug 30	1,560	Apr 23, 1990
LOWEST DAILY MEAN	0.00	several days	0.00	Oct 1	0.00	most years
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 5	0.26	Aug 23	0.00	Oct 1, 1961
MAXIMUM PEAK FLOW			1,590	Aug 30	b7,250	Apr 22, 1990
MAXIMUM PEAK STAGE			14.04	Aug 30	c16.60	Apr 22, 1990
ANNUAL RUNOFF (AC-FT)	18,490		31,840		14,720	
10 PERCENT EXCEEDS	56		61		46	
50 PERCENT EXCEEDS	17		40		8.0	
90 PERCENT EXCEEDS	0.00		5.8		0.00	

a Prior to regulation, water years 1938-60, 41.7 ft^3/s,
b Maximum discharge for period of record 69,800 ft^3/s, Apr. 29, 1954, from rating curve extended above 27,000 ft^3/s on basis of contracted opening.
c Maximum gage-height for period of record, 20.24 ft, Apr. 29, 1954, present datum.



07324200 WASHITA RIVER NEAR HAMMON, OK

LOCATION.--Lat 35°39'23", long 99°18'21", on west line of sec.26, T.14 N., R.20 W., Custer County, Hydrologic Unit 11130301, on right bank near county road bridge, 2.2 mi downstream from Quartermaster Creek, 4.7 mi northeast of Hammon, and at mile 494.5.

DRAINAGE AREA.--1,387 mi^2.

PERIOD OF RECORD.--October 1969 to September 1987, October 1989 to current year.

REVISED RECORD.--OK-92-2: 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,643.22 ft above sea level.

REMARKS.--Records fair. Flow regulated since 1961 by numerous flood-retarding structures. U.S. Geological Survey satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	147	62	85	70	74	60	48	29	72	7.3	295
2	1.6	136	62	83	71	75	58	47	33	67	6.8	88
3	17	127	63	81	71	75	55	45	29	61	6.1	57
4	40	119	72	79	71	75	52	44	57	55	5.5	44
5	23	113	79	77	69	75	52	42	92	50	5.3	37
6	29	106	79	76	71	75	52	40	54	46	5.0	33
7	32	100	83	75	72	73	49	37	47	41	4.4	30
8	31	96	84	74	74	71	48	36	43	39	3.7	28
9	27	92	86	75	78	69	48	33	39	37	127	26
10	24	89	87	75	79	68	49	31	36	35	41	24
11	22	85	87	74	80	68	48	29	34	37	21	23
12	20	82	86	73	80	68	46	28	32	52	16	26
13	18	80	85	72	80	67	44	26	30	45	12	23
14	17	80	83	71	80	68	43	24	313	36	9.8	21
15	16	78	82	71	78	68	44	23	828	31	8.7	20
16	16	77	80	71	77	67	66	121	630	27	8.0	20
17	15	76	79	70	76	67	165	170	506	24	7.3	17
18	14	74	77	71	75	68	154	90	354	23	6.6	16
19	17	73	74	72	72	88	113	71	269	21	6.0	15
20	173	72	72	72	72	86	101	57	222	19	5.5	15
21	431	70	71	71	72	85	84	50	244	18	5.0	15
22	188	69	70	71	73	82	74	46	265	16	4.5	15
23	153	68	72	e67	73	78	100	42	243	14	3.9	14
24	259	67	e73	e66	e65	75	196	40	202	13	3.5	13
25	380	66	e73	e67	e64	73	83	37	164	12	3.1	12
26	248	66	e72	e70	e68	75	70	47	131	11	2.7	12
27	189	65	e72	72	75	74	63	57	106	9.9	2.4	11
28	204	64	e78	74	74	69	58	52	91	9.4	2.2	11
29	189	63	83	72	---	67	54	43	82	8.8	2.1	11
30	176	63	87	71	---	65	51	37	76	8.4	28	13
31	162	---	87	71	---	62	---	32	---	8.0	101	---
TOTAL	3,133.2	2,563	2,400	2,269	2,060	2,250	2,180	1,525	5,281	946.5	471.4	985
MEAN	101	85.4	77.4	73.2	73.6	72.6	72.7	49.2	176	30.5	15.2	32.8
MAX	431	147	87	85	80	88	196	170	828	72	127	295
MIN	1.6	63	62	66	64	62	43	23	29	8.0	2.1	11
AC-FT	6,210	5,080	4,760	4,500	4,090	4,460	4,320	3,020	10,470	1,880	935	1,950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

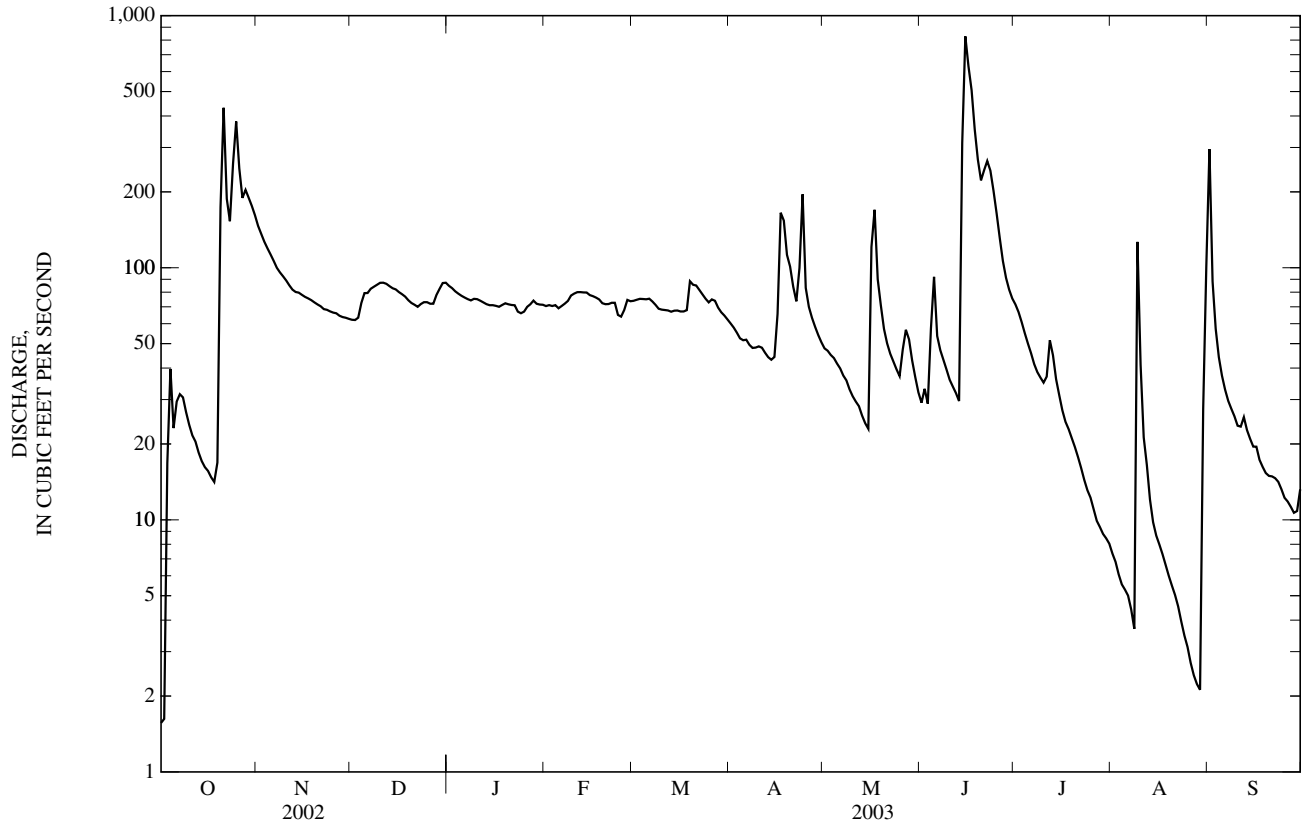
MEAN	39.2	43.0	37.4	45.3	53.5	77.4	95.7	159	132	37.1	28.0	35.0
MAX	384	253	258	342	299	548	528	755	502	158	170	450
(WY)	(1987)	(1987)	(1998)	(1998)	(1998)	(1998)	(1997)	(1982)	(1997)	(1997)	(1997)	(1997)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.001	0.028	0.000	0.001
(WY)	(1973)	(1972)	(1973)	(1973)	(1972)	(1972)	(1972)	(1971)	(1972)	(1970)	(1972)	(1976)

e Estimated

07324200 WASHITA RIVER NEAR HAMMON, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL TOTAL	17,475.1		26,064.1			
ANNUAL MEAN	47.9		71.4		65.2	
HIGHEST ANNUAL MEAN					262	1997
LOWEST ANNUAL MEAN					0.49	1972
HIGHEST DAILY MEAN	431	Oct 21	828	Jun 15	4,340	May 17, 1982
LOWEST DAILY MEAN	1.3	Sep 8	1.6	Oct 1,2	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	1.8	Sep 3	2.8	Aug 23	0.00	Jul 13, 1970
MAXIMUM PEAK FLOW			1,220	Jun 15	a6,000	May 17, 1982
MAXIMUM PEAK STAGE			15.66	Jun 15	23.44	May 17, 1982
ANNUAL RUNOFF (AC-FT)	34,660		51,700		47,240	
10 PERCENT EXCEEDS	86		115		150	
50 PERCENT EXCEEDS	39		67		23	
90 PERCENT EXCEEDS	3.2		12		0.14	

a From rating curve extended above 2,500 ft^3/s on basis of slope-area measurement.



07324300 FOSS RESERVOIR NEAR FOSS, OK

LOCATION.--Lat 35°32'20", long 99°11'09", in S ½ 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 mi^2.

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, 181,600 acre-ft, June 24, 25, elevation, 1,642.53 ft; minimum, 163,100 acre-ft, Oct. 18, 19, elevation, 1,639.74 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	*Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30	1639.93	164,300	--	--
Oct. 31	1640.75	169,600	+5,300	227
Nov. 30	1641.25	172,900	+3,300	246
Dec. 31	1641.93	177,400	+4,500	220
CAL YR 02	--	--	+16,500	3,213
Jan. 31	1641.10	171,900	-5,500	257
Feb. 28	1641.42	174,000	+2,100	206
Mar. 31	1641.84	176,800	+2,800	188
Apr. 30	1641.86	177,000	+200	209
May 31	1641.59	175,100	-1,900	208
June 30	1642.13	178,800	+3,700	156
July 31	1641.26	172,900	-5,900	233
Aug. 31	1640.82	170,000	-2,900	203
Sept. 30	1640.57	168,400	-1,600	191
WTR YR 03	-	-	+4,100	2,544

*Elevation at 0800 on the following day.

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07324400 WASHITA RIVER NEAR FOSS, OK

LOCATION.--Lat 35°32'20", long 99°10'10", in SW ¼ SW ¼ 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 mi^2.

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 mi^2 intervening area. U.S. Geological Survay 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	5.3	6.6	180	178	7.4	150	195	5.5	334	4.4	4.6
2	4.7	6.0	6.5	179	179	7.1	151	192	5.7	338	4.4	4.1
3	4.7	5.9	6.3	180	88	7.0	149	171	5.4	353	4.5	4.0
4	4.8	5.6	6.2	180	7.4	7.4	151	94	9.6	123	4.5	3.9
5	4.9	5.5	6.6	179	7.2	7.3	130	178	7.0	10	4.5	4.0
6	4.9	5.3	6.4	179	7.6	7.3	76	177	6.2	8.5	4.4	4.0
7	5.1	5.3	6.6	178	7.7	7.1	154	178	5.8	5.6	4.4	4.0
8	5.4	5.5	6.4	178	7.7	7.5	153	176	5.9	5.7	4.3	4.0
9	5.1	5.4	6.1	179	7.9	7.3	152	177	5.7	5.6	13	4.1
10	4.5	5.4	6.1	179	7.4	7.3	59	176	5.5	5.3	5.8	4.4
11	4.6	5.4	6.2	179	7.0	7.5	7.5	175	5.6	5.4	4.3	4.4
12	4.9	5.3	6.4	179	7.2	6.7	7.3	78	5.7	5.4	4.2	4.4
13	4.7	5.5	6.5	178	7.2	6.4	7.4	5.5	5.5	5.4	4.2	4.3
14	4.6	6.0	6.3	178	7.7	7.0	8.6	5.8	40	5.2	4.2	4.4
15	4.6	5.9	6.3	175	7.4	7.0	9.0	6.5	8.3	5.2	4.1	4.3
16	4.1	5.8	6.2	178	7.1	7.1	8.1	45	5.4	5.0	4.2	4.4
17	4.0	5.7	6.3	179	7.1	6.9	9.0	9.1	102	4.4	4.2	4.3
18	4.6	5.7	6.4	178	7.4	7.0	9.6	7.4	166	4.4	4.2	4.1
19	8.0	5.6	6.4	178	7.0	7.1	14	7.4	168	4.4	4.1	4.2
20	8.8	5.8	6.4	178	7.3	6.9	11	7.6	171	4.4	4.1	4.2
21	4.7	6.2	6.3	177	7.1	6.8	8.1	6.6	177	4.4	4.0	4.2
22	4.5	6.3	6.3	178	7.3	6.8	7.6	6.5	170	4.5	4.0	4.3
23	5.7	6.2	6.9	178	7.1	6.4	34	6.6	257	4.5	4.1	4.3
24	47	6.2	7.0	179	6.8	5.3	28	6.0	339	4.5	4.0	4.5
25	15	6.0	6.6	179	7.0	5.2	116	6.0	337	4.5	4.1	4.7
26	6.1	5.9	6.6	180	7.3	5.2	195	5.9	337	4.5	4.1	4.4
27	7.5	6.0	6.6	179	7.7	5.4	197	5.7	337	4.5	4.0	4.5
28	7.5	6.2	6.7	179	7.7	98	197	5.7	336	4.5	3.9	5.3
29	7.0	6.5	7.2	179	---	151	196	5.7	310	4.5	4.0	5.2
30	5.8	6.6	7.6	178	---	150	194	5.4	336	4.5	6.5	5.3
31	5.1	---	104	178	---	151	---	5.5	---	4.4	7.9	---
TOTAL	217.3	174.0	299.0	5,535	628.3	733.4	2,589.2	2,126.9	3,675.8	1,287.2	146.6	130.8
MEAN	7.01	5.80	9.65	179	22.4	23.7	86.3	68.6	123	41.5	4.73	4.36
MAX	47	6.6	104	180	179	151	197	195	339	353	13	5.3
MIN	4.0	5.3	6.1	175	6.8	5.2	7.3	5.4	5.4	4.4	3.9	3.9
AC-FT	431	345	593	10,980	1,250	1,450	5,140	4,220	7,290	2,550	291	259

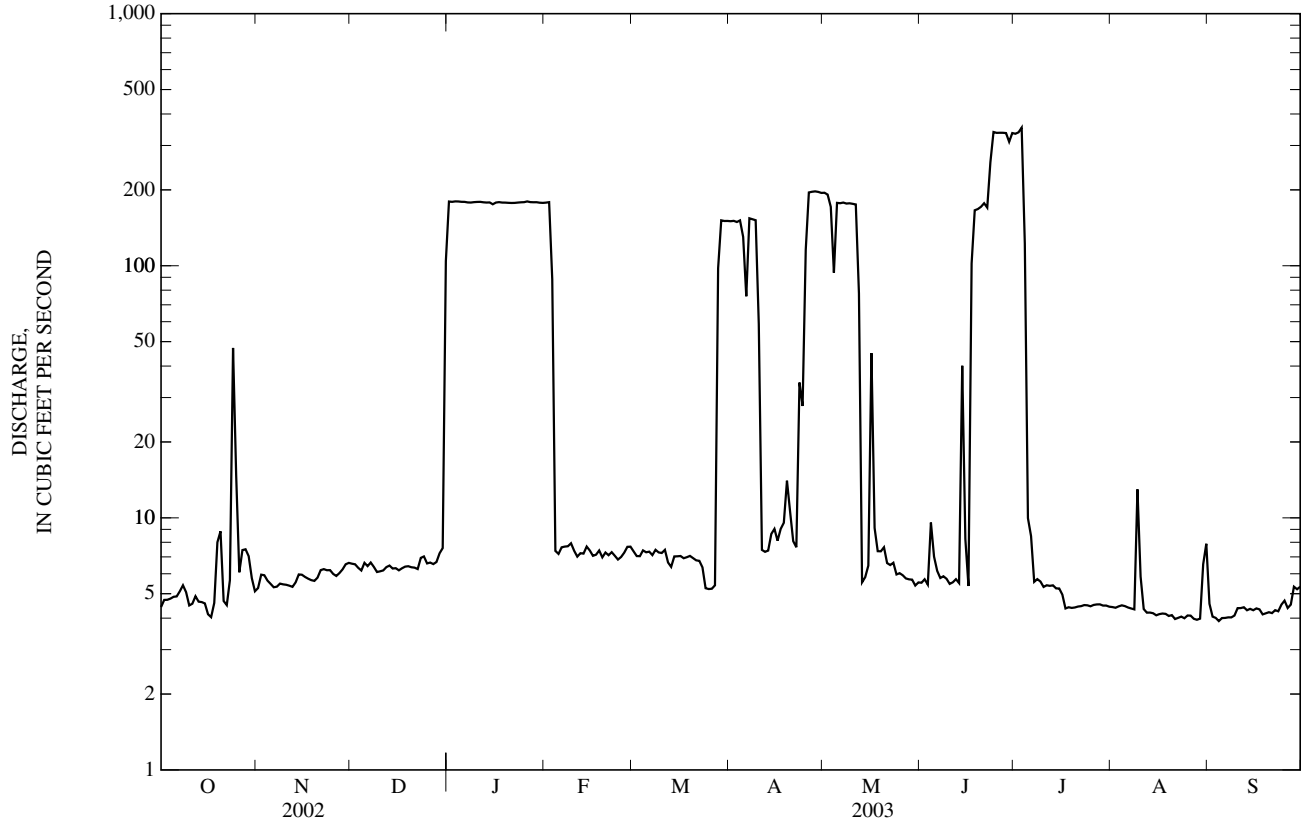
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

MEAN	51.1	26.7	26.4	44.8	43.4	51.0	72.3	104	142	55.8	50.6	30.0
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	0.15	0.28	0.36	0.56	0.60	0.57	1.62	1.08	1.28	2.27	3.12	0.46
(WY)	(1968)	(1968)	(1968)	(1968)	(1968)	(1968)	(1967)	(1967)	(1966)	(1967)	(1973)	(1966)

07324400 WASHITA RIVER NEAR FOSS, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	2,300.2		17,543.5			
ANNUAL MEAN	6.30		48.1		58.2	
HIGHEST ANNUAL MEAN					373	1997
LOWEST ANNUAL MEAN					3.87	1963
HIGHEST DAILY MEAN	104	Dec 31	353	Jul 3	1,370	Sep 15, 1996
LOWEST DAILY MEAN	4.0	Jan 2	3.9	Aug 28,Sep 4	a0.06	Oct 2, 1967
ANNUAL SEVEN-DAY MINIMUM	4.4	Mar 4	4.0	Sep 2	0.08	Sep 28, 1967
MAXIMUM PEAK FLOW			363	Jul 3,4	b3,010	Aug 26, 1969
MAXIMUM PEAK STAGE			11.40	Jul 3,4	21.56	Oct 3, 1986
ANNUAL RUNOFF (AC-FT)	4,560		34,800		42,160	
10 PERCENT EXCEEDS	6.6		178		193	
50 PERCENT EXCEEDS	5.5		6.5		7.0	
90 PERCENT EXCEEDS	4.6		4.3		2.2	

a Minimum daily discharge for period of record, no flow at times in 1956.
b Maximum discharge for period of record 14,000 ft^3/s, Apr. 19, 1957, from rating curve extended above 3,600 ft^3/s, on basis of velocity-area study.



07325000 WASHITA RIVER NEAR CLINTON, OK

LOCATION.--Lat 35°31'51", long 98°58'00", in SW ¼ NE ¼ sec.11, T.12 N., R.17 W., Custer County, Hydrologic Unit 11130302, on downstream side 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.

DRAINAGE AREA.--1,977 mi^2.

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

REVISED RECORDS.--WSP 1221: Drainage area.

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

REMARKS.--Records fair. Flow regulated since February 1961 by Foss Reservoir (station 07324300) and by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at station.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	37	29	116	185	40	151	165	18	321	13	38
2	12	34	29	172	184	42	155	160	50	318	12	20
3	12	34	32	175	182	42	159	160	53	317	12	15
4	13	34	39	178	104	40	161	132	130	304	11	12
5	12	32	41	180	55	41	160	113	65	85	11	11
6	14	30	40	180	51	39	141	149	37	47	11	9.9
7	13	29	39	180	50	37	116	147	31	39	10	9.5
8	13	28	41	180	49	36	161	147	27	34	9.9	9.5
9	16	27	39	181	50	36	162	145	24	31	13	9.5
10	15	26	38	181	52	35	161	145	22	28	19	9.2
11	14	26	37	182	51	35	75	142	21	25	20	9.7
12	14	26	38	182	48	34	42	141	20	24	12	10
13	13	25	38	182	45	35	38	72	21	22	12	10
14	13	25	37	183	46	33	34	34	241	21	11	9.9
15	13	26	35	183	46	34	33	28	842	20	12	9.4
16	13	27	34	184	45	33	34	82	234	19	12	9.5
17	13	26	33	185	43	32	42	88	163	18	12	9.2
18	13	26	32	186	42	34	38	53	196	17	12	8.8
19	15	26	31	186	41	36	41	41	205	16	11	9.0
20	26	25	30	185	41	39	80	36	199	15	11	9.0
21	26	25	29	185	40	43	58	35	209	14	11	8.9
22	18	26	28	185	40	40	43	33	205	14	11	9.4
23	30	26	33	180	39	36	38	31	180	13	11	9.4
24	177	27	e33	182	e32	34	323	29	287	13	10	8.9
25	326	29	e30	186	e30	32	154	28	320	13	9.9	8.5
26	117	29	e28	184	e31	30	164	26	321	12	10	8.5
27	65	29	e27	185	e35	29	185	24	319	12	9.8	8.4
28	64	28	e30	188	40	30	178	22	317	12	10	8.5
29	62	29	40	186	---	104	174	21	301	13	10	8.8
30	53	29	43	186	---	148	169	20	314	14	24	10
31	43	---	49	185	---	149	---	18	---	13	60	---
TOTAL	1,260	846	1,082	5,593	1,697	1,408	3,470	2,467	5,372	1,864	423.6	327.4
MEAN	40.6	28.2	34.9	180	60.6	45.4	116	79.6	179	60.1	13.7	10.9
MAX	326	37	49	188	185	149	323	165	842	321	60	38
MIN	12	25	27	116	30	29	33	18	18	12	9.8	8.4
AC-FT	2,500	1,680	2,150	11,090	3,370	2,790	6,880	4,890	10,660	3,700	840	649

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

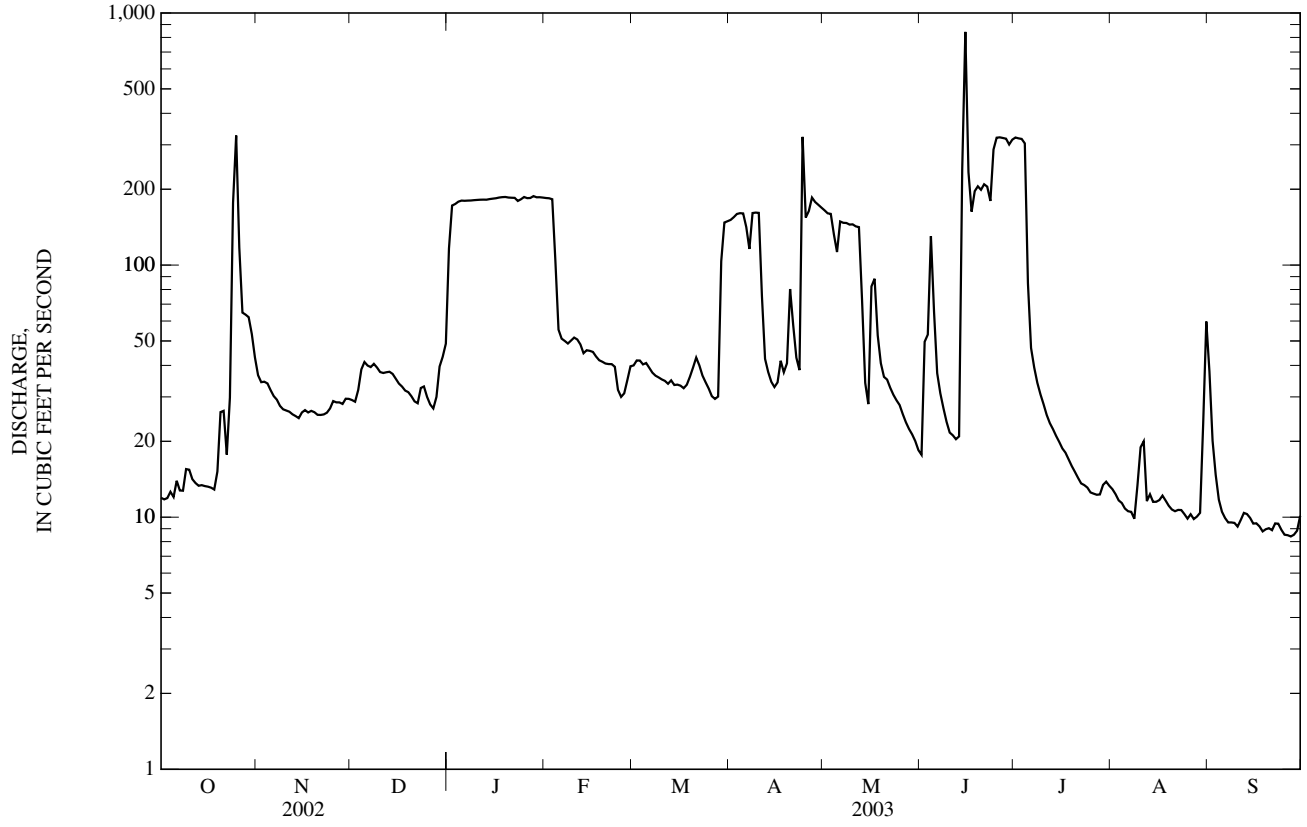
MEAN	113	77.6	64.2	79.5	91.8	112	140	231	260	110	108	117
MAX	1,477	494	504	742	574	654	1,112	1,256	1,190	705	1,061	1,519
(WY)	(1987)	(1987)	(1997)	(1998)	(1997)	(1998)	(1997)	(1997)	(1997)	(1989)	(1995)	(1996)
MIN	3.30	4.23	5.68	4.78	7.00	6.24	9.64	4.10	4.44	6.42	6.01	5.87
(WY)	(1967)	(1964)	(1964)	(1971)	(1967)	(1968)	(1971)	(1967)	(1966)	(1966)	(1965)	(1964)

e Estimated

07325000 WASHITA RIVER NEAR CLINTON, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	11,818.3		25,810.0			
ANNUAL MEAN	32.4		70.7		a125	
HIGHEST ANNUAL MEAN					696	1997
LOWEST ANNUAL MEAN					13.8	1967
HIGHEST DAILY MEAN	326	Oct 25	842	Jun 15	7,710	Oct 3, 1986
LOWEST DAILY MEAN	9.0	Sep 8	8.4	Sep 27	b0.00	Jul 26, 1964
ANNUAL SEVEN-DAY MINIMUM	9.4	Sep 2	8.7	Sep 23	0.04	Jul 23, 1964
MAXIMUM PEAK FLOW			1,160	Jun 15	c10,800	Sep 15, 1996
MAXIMUM PEAK STAGE			13.83	Jun 15	d26.24	Sep 15, 1996
ANNUAL RUNOFF (AC-FT)	23,440		51,190		90,870	
10 PERCENT EXCEEDS	51		184		365	
50 PERCENT EXCEEDS	27		34		31	
90 PERCENT EXCEEDS	13		11		8.5	

a Prior to regulation, water years 1936-60, 146 ft^3/s.
b Also occurred at times in 1952-56, 1964, 1966.
c Maximum discharge for period of record, 66,800 ft^3/s, May 16, 1951, from rating curve extended above 22,800 ft^3/s, by contracted-opening measurement of peak flow.
d Maximum gage height for period of record, 31.09 ft, May 16, 1951.



07325500 WASHITA RIVER AT CARNEGIE, OK

LOCATION.--Lat 35°07'02", long 98°33'49", in NW ¼ NW ¼ 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 mi^2, 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 poor. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

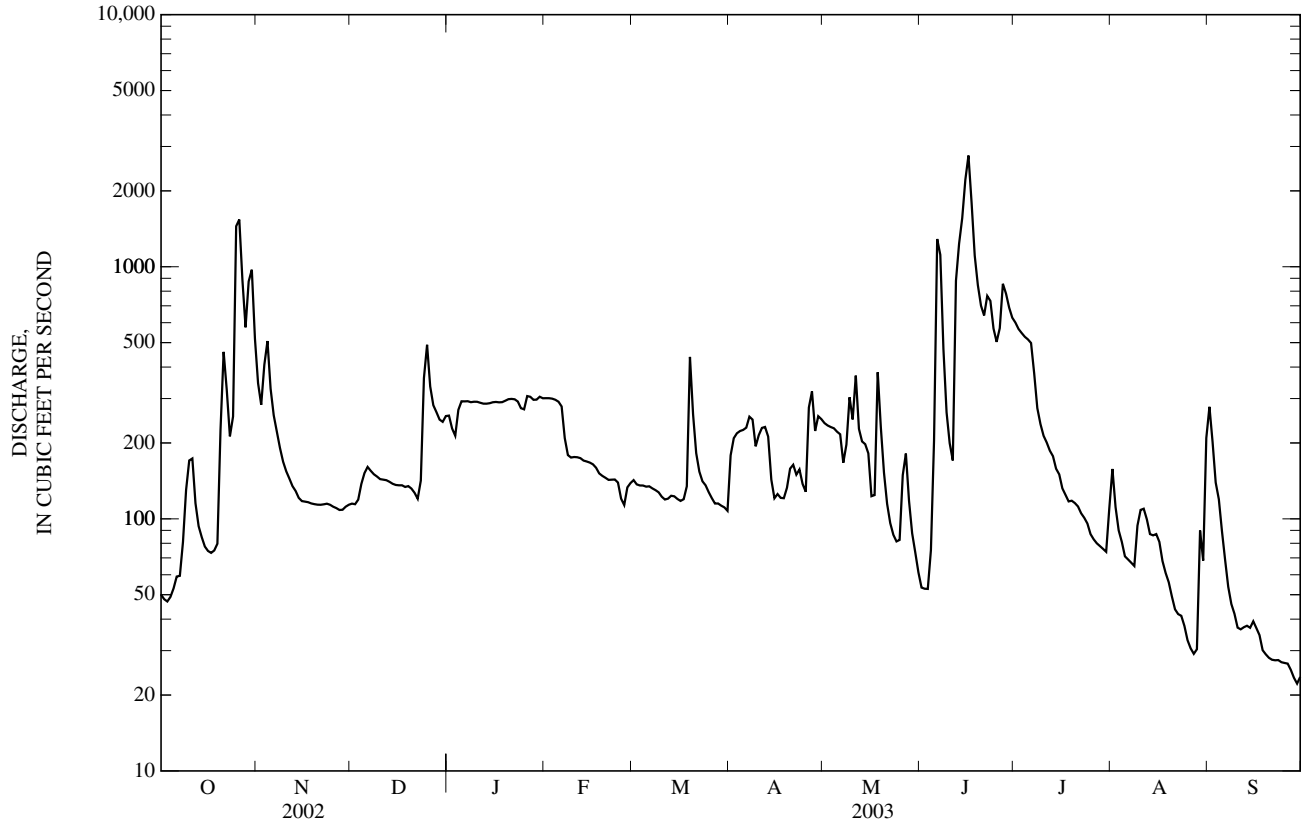
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e50	345	115	257	301	142	179	240	53	600	158	278
2	e48	283	114	228	301	137	209	235	53	566	111	202
3	47	408	119	214	300	136	218	231	53	546	90	139
4	e49	507	138	271	297	136	223	229	75	528	e81	120
5	53	328	152	293	291	134	225	222	204	515	e71	89
6	59	258	161	292	279	135	230	216	1,290	498	e69	69
7	59	221	155	293	209	132	254	167	1,120	377	e67	54
8	81	191	150	290	179	130	248	197	472	275	e65	46
9	130	169	147	291	175	127	194	303	265	238	94	42
10	170	154	144	291	176	122	215	248	199	214	108	37
11	174	144	143	289	176	119	229	370	170	201	110	36
12	115	135	142	286	174	120	231	227	880	186	99	37
13	94	129	140	286	170	123	212	203	1,230	177	87	38
14	85	121	138	287	169	123	143	198	1,560	158	86	37
15	78	118	136	290	167	120	121	182	2,210	150	87	39
16	75	117	136	291	165	118	125	123	2,760	132	e81	37
17	73	116	136	290	159	120	121	124	1,790	125	e68	35
18	75	115	134	290	151	135	121	382	1,110	117	e61	30
19	80	114	135	294	148	439	133	231	846	118	56	29
20	226	114	132	298	145	260	158	152	701	116	49	28
21	460	114	127	299	143	182	164	115	641	112	44	28
22	324	114	120	298	143	154	150	96	766	105	42	27
23	212	115	142	292	143	141	157	86	732	101	41	28
24	255	114	362	275	139	136	137	81	569	96	38	27
25	1,450	112	490	272	120	128	128	82	503	87	33	27
26	1,540	110	335	307	113	121	277	149	570	e83	31	27
27	884	108	282	305	133	115	320	182	856	e80	29	25
28	575	109	265	297	139	115	223	118	782	e78	30	23
29	875	112	248	297	---	113	255	88	688	e76	90	22
30	973	114	243	305	---	111	249	74	628	e74	68	24
31	518	---	256	301	---	108	---	61	---	110	209	---
TOTAL	9,887	5,209	5,637	8,869	5,205	4,432	5,849	5,612	23,776	6,839	2,353	1,680
MEAN	319	174	182	286	186	143	195	181	793	221	75.9	56.0
MAX	1,540	507	490	307	301	439	320	382	2,760	600	209	278
MIN	47	108	114	214	113	108	121	61	53	74	29	22
AC-FT	19,610	10,330	11,180	17,590	10,320	8,790	11,600	11,130	47,160	13,570	4,670	3,330
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)												
MEAN	418	289	227	218	247	387	402	826	841	279	250	354
MAX	5,311	1,471	1,032	1,100	1,127	2,255	2,832	5,356	4,994	1,150	1,760	2,468
(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 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	63,177		85,348			
ANNUAL MEAN	173		234		a395	
HIGHEST ANNUAL MEAN					1,432	1987
LOWEST ANNUAL MEAN					72.8	1967
HIGHEST DAILY MEAN	3,580	Jun 10	2,760	Jun 16	28,500	Jun 5, 1995
LOWEST DAILY MEAN	44	Aug 25	22	Sep 29	b0.00	Jul 20, 1964
ANNUAL SEVEN-DAY MINIMUM	47	Aug 20	25	Sep 24	0.00	Jul 20, 1964
MAXIMUM PEAK FLOW			3,330	Jun 16	c40,600	Oct 20, 1983
MAXIMUM PEAK STAGE			13.54	Jun 16	31.70	Oct 20, 1983
ANNUAL RUNOFF (AC-FT)	125,300		169,300		286,200	
10 PERCENT EXCEEDS	278		479		875	
50 PERCENT EXCEEDS	115		143		138	
90 PERCENT EXCEEDS	56		52		38	

a Prior to regulation, water years 1938-60, 314 ft^3/s.
b Also occurred at times 1956 and 1964.
c Maximum discharge for period of record, 50,000 ft^3/s, May 18, 1949, from rating curve extended above 35,000 ft^3/s on basis of contracted-opening measurement.



07325800 COBB CREEK NEAR EAKLY, OK

LOCATION.--Lat 35°17'26", long 98°35'38", in NW ¼ NE ¼ 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 mi^2.

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	23	17	24	21	e20	17	13	9.3	17	7.8	15
2	11	23	17	23	21	e21	16	13	9.1	17	7.6	12
3	12	26	18	22	21	e21	16	13	9.3	11	7.6	10
4	13	24	26	21	21	e20	16	13	16	10	7.8	9.7
5	12	22	23	21	20	21	16	13	99	9.9	7.5	9.5
6	12	20	21	21	22	19	17	12	115	9.9	7.2	9.1
7	11	19	21	21	24	19	17	12	44	9.4	6.8	8.8
8	13	18	20	21	22	19	16	52	29	9.4	6.9	8.7
9	30	17	20	21	24	19	15	23	23	10	13	8.8
10	23	17	20	21	25	19	15	31	20	9.0	11	8.8
11	20	17	20	20	22	19	14	18	105	7.9	8.4	9.4
12	18	17	19	20	21	20	15	15	57	7.7	7.8	10
13	17	16	19	21	22	22	16	14	34	7.6	7.8	9.8
14	15	16	19	21	23	21	15	14	166	7.1	7.7	9.4
15	15	17	19	21	e21	20	15	13	196	7.0	7.9	8.9
16	14	17	19	21	e20	20	19	18	63	7.0	7.7	8.6
17	14	17	19	21	e20	21	19	22	38	7.2	7.6	8.3
18	14	17	19	20	e20	27	16	18	21	7.3	7.4	8.3
19	16	18	19	20	e21	25	20	16	14	7.1	7.1	8.7
20	60	17	18	21	e20	24	20	16	14	6.8	6.9	8.6
21	e30	18	18	21	e21	22	18	14	19	6.7	6.7	8.5
22	23	18	18	21	e21	20	17	13	20	6.7	6.8	8.9
23	22	17	27	e19	e20	19	17	13	16	6.9	6.7	8.7
24	88	18	36	e18	e19	19	17	13	14	6.8	6.6	8.3
25	164	18	28	20	e18	18	17	13	13	7.0	6.7	8.2
26	66	17	25	21	e19	18	16	13	14	7.3	6.5	8.3
27	58	17	26	21	e20	17	15	12	13	7.0	6.7	7.9
28	48	17	25	21	e20	20	14	11	e14	6.7	7.5	8.0
29	58	17	29	21	---	19	14	11	e15	6.9	11	8.8
30	35	17	27	21	---	17	13	9.8	16	11	18	10
31	27	---	26	21	---	17	---	9.0	---	8.5	36	---
TOTAL	970	552	678	647	589	623	488	490.8	1,235.7	266.8	278.7	276.0
MEAN	31.3	18.4	21.9	20.9	21.0	20.1	16.3	15.8	41.2	8.61	8.99	9.20
MAX	164	26	36	24	25	27	20	52	196	17	36	15
MIN	11	16	17	18	18	17	13	9.0	9.1	6.7	6.5	7.9
AC-FT	1,920	1,090	1,340	1,280	1,170	1,240	968	974	2,450	529	553	547

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

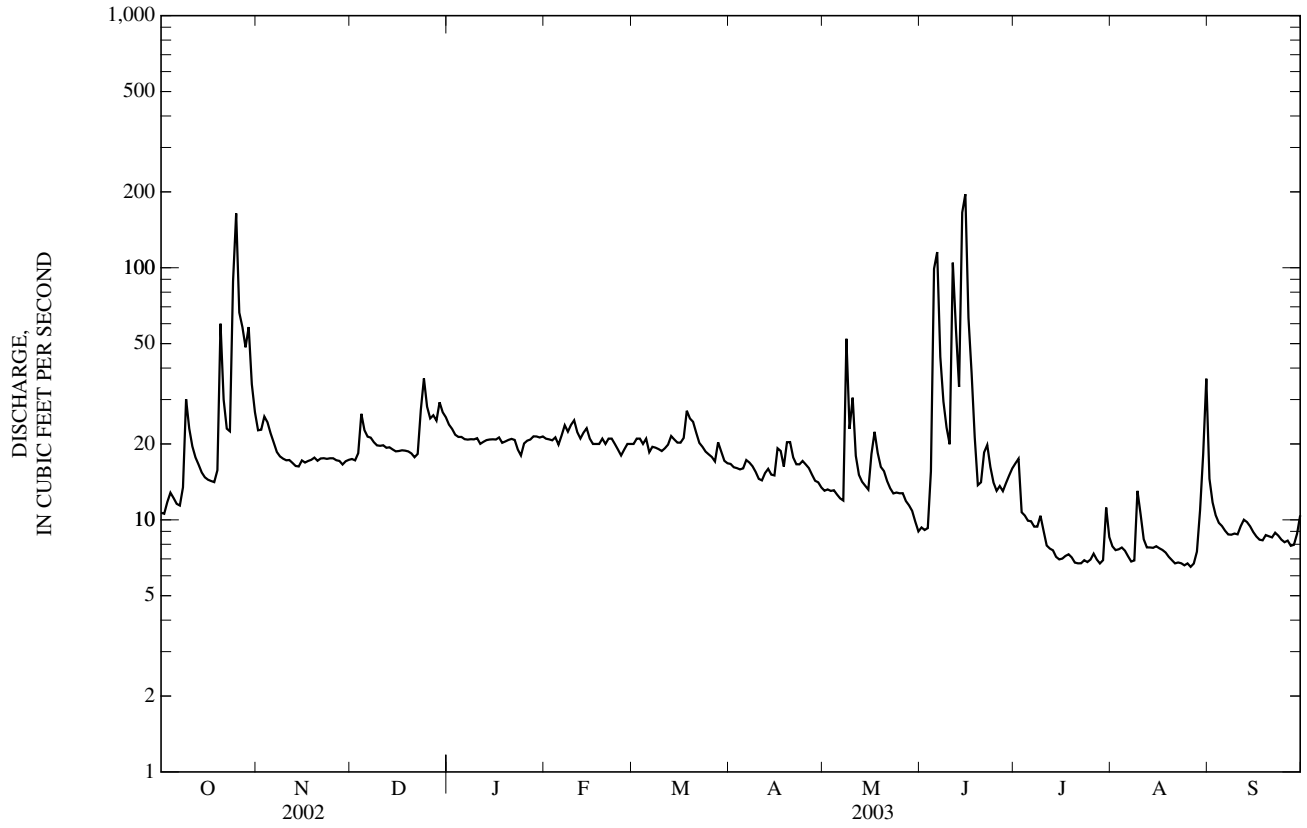
MEAN	29.0	27.0	24.9	20.8	21.7	32.2	28.9	60.4	52.1	15.6	17.5	20.3
MAX	317	104	84.9	50.2	55.1	138	140	303	291	85.1	86.0	161
(WY)	(1987)	(1993)	(1993)	(1993)	(1997)	(1998)	(1997)	(1993)	(1995)	(1975)	(1974)	(1986)
MIN	4.34	6.11	4.88	8.78	8.99	8.38	5.27	2.79	7.84	1.01	0.90	2.15
(WY)	(1973)	(1979)	(1979)	(1981)	(1981)	(1971)	(1971)	(1971)	(1984)	(1974)	(1972)	(1972)

e Estimated

07325800 COBB CREEK NEAR EAKLY, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	8,958.2		7,095.0			
ANNUAL MEAN	24.5		19.4		29.2	
HIGHEST ANNUAL MEAN					91.0	1987
LOWEST ANNUAL MEAN					10.1	1979
HIGHEST DAILY MEAN	750	Jun 9	196	Jun 15	3,750	Sep 29, 1986
LOWEST DAILY MEAN	7.5	Aug 23	6.5	Aug 26	a0.00	Aug 18, 1970
ANNUAL SEVEN-DAY MINIMUM	8.0	Aug 20	6.7	Aug 21	0.04	May 24, 1971
MAXIMUM PEAK FLOW			381	Jun 15	12,000	Jun 4, 1995
MAXIMUM PEAK STAGE			8.43	Jun 15	24.38	Sep 29, 1986
ANNUAL RUNOFF (AC-FT)	17,770		14,070		21,170	
10 PERCENT EXCEEDS	33		25		38	
50 PERCENT EXCEEDS	20		17		15	
90 PERCENT EXCEEDS	10		7.7		5.0	

a No flow Aug. 18-19, 1970, and May 26-30, 1971.



07325900 FORT COBB RESERVOIR NEAR FORT COBB, OK

LOCATION.--Lat 35°09'58", long 98°27'23", in SE $^1/_4$ NW $^1/_4$ 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 mi^2.

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, 77,610 acre-ft, June 18, elevation, 1,342.97 ft; minimum, 68,160 acre-ft, Sept. 29, elevation 1,340.45 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	*Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30	1340.90	69,760	--	--
Oct. 31	1341.66	72,570	+2,810	1,007
Nov. 30	1341.76	72,940	+370	1,185
Dec. 31	1342.24	74,770	+1,830	1,059
CAL YR 02	--	--	+7,320	12,906
Jan. 31	1342.17	74,500	-270	969
Feb. 28	1342.44	75,550	+1,050	842
Mar. 31	1342.13	74,340	-1,210	634
Apr. 30	1342.27	74,880	+540	780
May 31	1342.14	74,380	-500	1,004
June 30	1342.43	75,510	+1,130	1,089
July 31	1341.72	72,790	-2,720	1,358
Aug. 31	1341.13	70,600	-2,190	1,403
Sept. 30	1340.47	68,230	-2,370	1,147
WTR YR 03	-	-	-1,530	14,477

*Elevation at 2400

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07326000 COBB CREEK NEAR FORT COBB, OK

LOCATION.--Lat 35°08'37", long 98°26'33", in NE ¼ NE ¼ 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 mi^2. Area at site used prior to Oct. 1, 1969, 319 mi^2.

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 fair. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	e3.0	3.0	3.0	2.8	3.3	3.2	4.9	e3.1	e4.7	3.9	3.3
2	2.9	e3.2	3.0	2.9	2.9	3.3	3.2	5.2	e3.0	e4.8	4.0	3.2
3	3.0	e3.1	e3.0	2.9	2.9	3.2	3.3	5.4	e3.1	e4.8	4.0	3.1
4	2.8	e3.2	e3.0	2.9	2.9	3.2	3.3	5.4	e3.0	e4.7	4.0	3.0
5	2.8	e3.1	3.0	2.9	2.9	3.1	3.3	5.1	e3.1	e4.7	3.9	3.0
6	3.0	e3.0	2.9	2.9	3.1	3.1	3.4	5.0	e3.1	e4.6	3.8	3.0
7	3.0	e3.0	2.9	2.8	2.9	3.1	3.3	4.7	e3.1	e4.7	3.5	2.9
8	e3.0	e3.0	2.9	2.9	2.9	3.1	3.3	4.6	e3.1	4.7	3.5	2.9
9	3.2	e3.0	2.9	2.9	3.1	3.1	3.3	4.5	e3.0	4.8	4.1	2.9
10	2.8	e3.0	2.9	2.8	3.0	46	3.3	4.4	3.2	4.7	3.2	2.9
11	2.7	3.1	2.9	2.9	3.0	95	3.4	4.1	e3.1	4.6	3.3	3.1
12	2.8	3.3	2.9	2.8	3.0	94	3.5	4.1	e3.0	4.6	3.3	3.0
13	2.8	2.9	2.8	2.8	3.1	93	3.5	4.2	e3.0	4.7	3.3	2.9
14	2.8	3.1	2.9	2.8	3.2	93	3.3	4.1	e3.1	4.5	3.4	2.8
15	2.8	3.2	2.9	2.8	3.1	94	3.4	4.1	e3.1	4.7	3.3	2.8
16	2.8	3.2	2.9	2.8	3.0	93	3.7	4.1	e3.1	4.5	3.2	2.8
17	2.8	e3.1	2.9	2.8	3.1	94	3.6	3.8	e3.0	4.4	3.2	2.9
18	2.8	3.0	2.9	2.8	3.1	94	3.8	3.8	e3.1	4.3	3.1	2.9
19	3.0	3.2	3.0	2.9	3.1	94	e4.0	3.5	e105	4.2	3.2	3.0
20	3.0	3.2	3.0	2.9	3.2	94	4.0	3.6	e186	4.2	3.3	2.9
21	2.9	3.2	3.0	2.9	3.3	94	4.1	3.5	e186	4.3	3.3	2.8
22	3.0	3.1	3.1	2.9	3.3	94	4.3	3.5	e186	4.2	3.3	2.8
23	3.1	3.1	e3.2	2.9	3.3	94	4.5	3.5	e105	4.3	3.3	2.9
24	e3.1	3.1	3.4	2.9	3.2	94	4.4	3.5	e5.1	4.3	3.2	2.8
25	3.1	3.1	3.2	e2.9	3.2	94	4.4	3.5	e4.9	4.4	3.2	2.8
26	3.1	3.0	3.2	e2.9	3.2	94	4.6	3.3	e4.8	4.5	3.2	2.8
27	3.1	3.0	3.2	e3.0	3.3	81	4.8	3.2	e4.9	4.5	3.2	2.7
28	3.3	3.1	3.1	3.0	3.3	4.5	5.0	3.3	e4.8	4.1	3.2	2.8
29	3.2	3.0	3.0	3.0	---	3.7	4.9	3.3	e4.8	4.0	e3.3	2.8
30	3.0	3.0	3.0	2.9	---	3.6	4.8	3.1	e4.7	4.1	e3.4	2.8
31	3.0	---	2.9	2.9	---	4.2	---	e3.1	---	3.9	3.4	---
TOTAL	91.5	92.6	92.9	89.4	86.4	1,673.5	114.9	125.4	857.3	138.5	106.5	87.3
MEAN	2.95	3.09	3.00	2.88	3.09	54.0	3.83	4.05	28.6	4.47	3.44	2.91
MAX	3.3	3.3	3.4	3.0	3.3	95	5.0	5.4	186	4.8	4.1	3.3
MIN	2.7	2.9	2.8	2.8	2.8	3.1	3.2	3.1	3.0	3.9	3.1	2.7
AC-FT	181	184	184	177	171	3,320	228	249	1,700	275	211	173

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

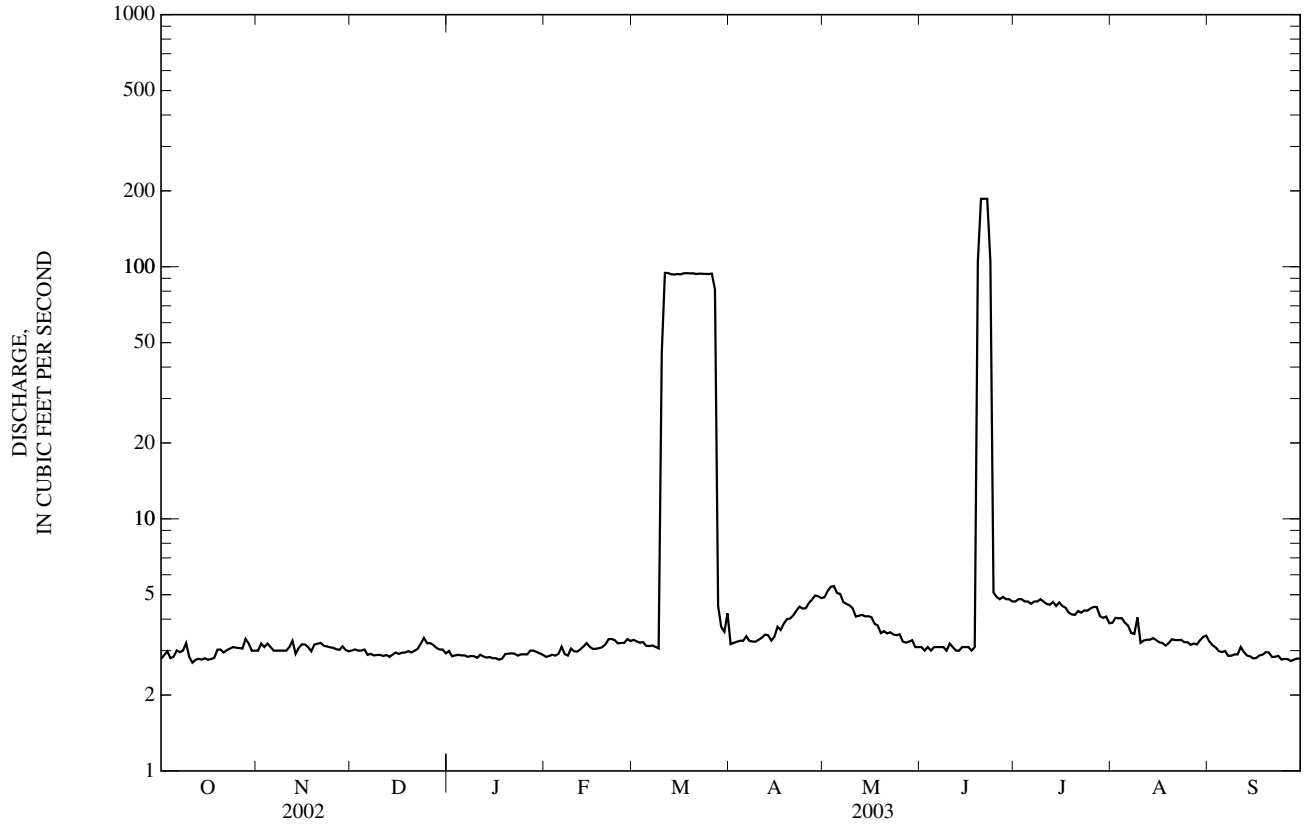
MEAN	22.9	28.1	21.3	25.5	25.0	39.8	36.0	52.9	125	32.0	18.7	19.3
MAX	345	538	194	139	131	312	237	429	779	262	211	157
(WY)	(1987)	(1987)	(1993)	(1969)	(1975)	(1990)	(1998)	(1993)	(1987)	(1995)	(1975)	(1965)
MIN	1.41	1.62	1.57	1.99	2.14	2.12	2.01	1.50	1.90	0.78	1.48	1.60
(WY)	(1985)	(1973)	(1973)	(1977)	(1981)	(1977)	(1985)	(1985)	(1972)	(1985)	(1981)	(1978)

e Estimated

07326000 COBB CREEK NEAR FORT COBB, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL TOTAL	3,302.5		3,556.2			
ANNUAL MEAN	9.05		9.74		a37.1	
HIGHEST ANNUAL MEAN					176	1987
LOWEST ANNUAL MEAN					2.34	1981
HIGHEST DAILY MEAN	405	Jun 12	186	Jun 20	1,270	Jun 23, 1987
LOWEST DAILY MEAN	1.8	Jan 15	b2.7	Oct 11	c0.20	Jul 20, 1981
ANNUAL SEVEN-DAY MINIMUM	1.9	Jan 14	2.8	Oct 10	0.20	Jul 20, 1981
MAXIMUM PEAK FLOW			d186	Jun 20-22	e1,280	Jun 23, 1987
MAXIMUM PEAK STAGE			f7.88	Jun 14	g20.50	Jun 4, 1995
ANNUAL RUNOFF (AC-FT)	6,550		7,050		26,890	
10 PERCENT EXCEEDS	3.3		4.8		90	
50 PERCENT EXCEEDS	2.8		3.2		3.0	
90 PERCENT EXCEEDS	2.0		2.9		2.0	

a Prior to regulation by Fort Cobb Reservoir, water years 1940-58, 50.2 ft^3/s.
b Also occurred Sept. 23.
c Also occurred Sept. 20, 24-28, 1956, July 20-27, 1981.
d Maximum daily discharge from release records.
e Maximum discharge for period of record, 35,000 ft^3/s, May 17, 1949, from rating curve extended above 4,300 ft^3/s on basis of contracted opening measurement.
f From highwater mark which occurred during backwater from Punjo Creek.
g Occurred during backwater from Punjo Creek.



07326500 WASHITA RIVER AT ANADARKO, OK

LOCATION.--Lat 35°05'03", long 98°14'35", in NW ¼ 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 mi^2.

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	621	159	265	292	170	158	247	140	623	91	121
2	59	448	160	279	290	173	173	242	139	578	105	156
3	57	383	168	257	288	173	205	240	137	544	109	150
4	59	492	186	245	287	169	214	236	140	509	97	110
5	58	616	195	264	287	169	217	229	147	479	88	99
6	58	404	192	295	292	167	281	224	218	453	e74	89
7	57	300	195	297	291	168	323	219	1,150	429	64	78
8	72	272	196	298	254	175	245	203	1,120	326	61	71
9	96	228	190	297	229	167	241	196	542	221	77	67
10	109	218	188	295	223	164	218	264	284	184	78	64
11	109	204	186	297	218	171	208	237	231	161	80	63
12	119	196	184	295	215	211	223	327	206	148	81	63
13	100	188	183	294	214	217	230	240	805	139	78	63
14	82	181	181	293	213	218	227	217	1,400	135	77	63
15	76	176	179	293	211	218	197	211	1,740	128	76	62
16	72	171	177	294	209	218	189	207	2,440	120	74	60
17	70	171	178	294	208	217	181	184	2,370	115	73	60
18	69	169	177	293	206	225	182	167	1,500	112	68	59
19	73	167	176	292	203	230	184	317	1,030	107	64	58
20	78	165	176	292	201	444	199	246	970	106	62	57
21	102	163	176	292	201	339	183	199	962	104	60	58
22	266	162	173	295	203	265	184	178	915	104	58	59
23	253	162	190	295	201	242	181	166	1,010	101	58	58
24	180	162	210	e290	199	231	182	159	902	94	57	58
25	223	161	331	284	e190	226	174	154	574	97	59	58
26	1,370	160	544	e270	e180	220	163	153	487	100	57	60
27	1,210	160	371	289	e170	215	215	163	524	96	56	57
28	850	159	308	299	165	218	322	213	839	92	56	53
29	699	158	288	292	---	175	239	179	800	86	57	54
30	951	158	272	290	---	163	247	158	690	92	63	59
31	991	---	265	294	---	160	---	146	---	93	97	---
TOTAL	8,628	7,375	6,754	8,919	6,340	6,518	6,385	6,521	24,412	6,676	2,255	2,187
MEAN	278	246	218	288	226	210	213	210	814	215	72.7	72.9
MAX	1,370	621	544	299	292	444	323	327	2,440	623	109	156
MIN	57	158	159	245	165	160	158	146	137	86	56	53
AC-FT	17,110	14,630	13,400	17,690	12,580	12,930	12,660	12,930	48,420	13,240	4,470	4,340

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

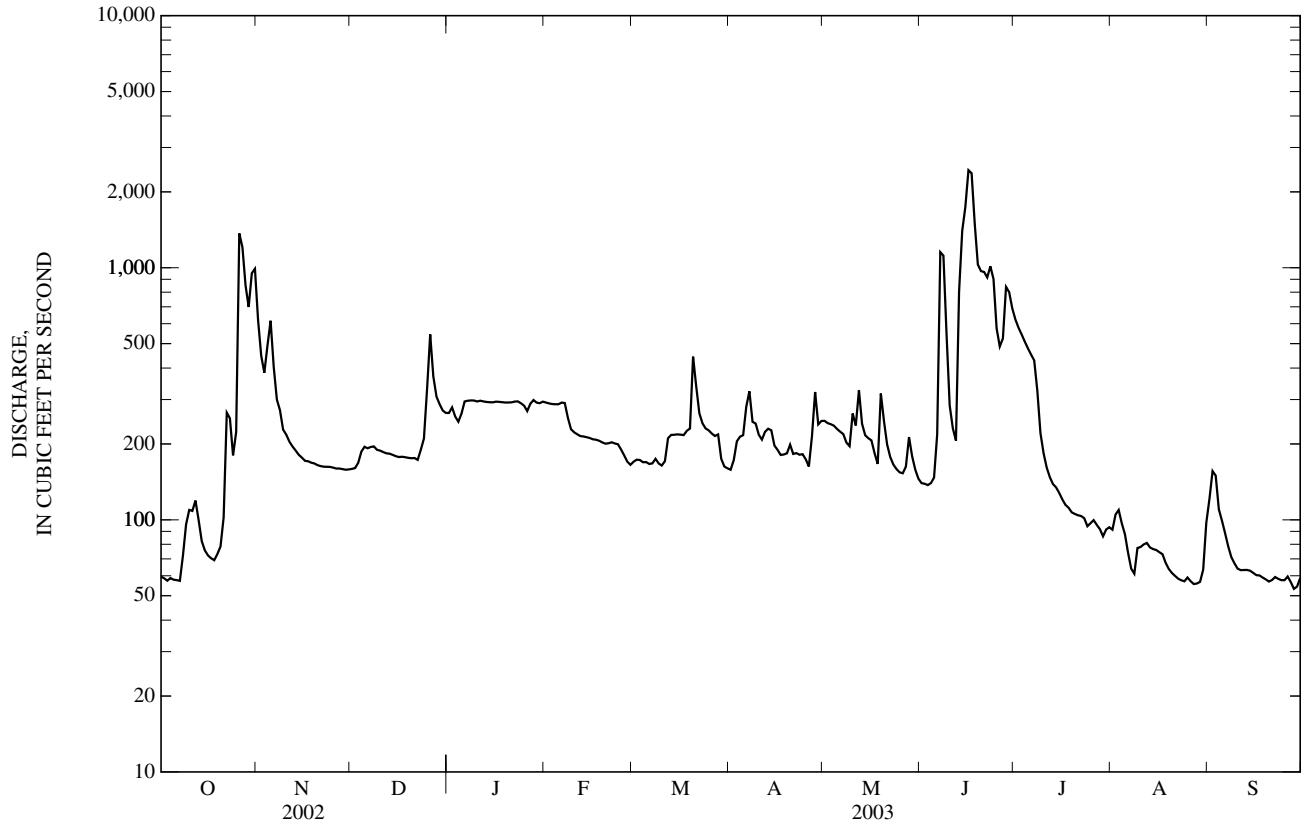
MEAN	485	355	291	283	315	485	495	937	1,080	382	311	394
MAX	5,480	2,205	1,352	1,213	1,269	2,981	3,003	5,601	5,843	1,459	2,223	2,654
(WY)	(1987)	(1987)	(1993)	(1998)	(1997)	(1998)	(1997)	(1993)	(1995)	(1989)	(1995)	(1996)
MIN	21.2	37.0	41.6	52.0	55.4	50.6	16.7	9.57	85.7	12.6	19.7	32.2
(WY)	(1973)	(1971)	(1971)	(1971)	(1971)	(1971)	(1971)	(1971)	(1967)	(1964)	(1972)	(1984)

e Estimated

07326500 WASHITA RIVER AT ANADARKO, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	77,548		92,970			
ANNUAL MEAN	212		255		a485	
HIGHEST ANNUAL MEAN					1,788	1987
LOWEST ANNUAL MEAN					72.7	1971
HIGHEST DAILY MEAN	3,130	Jun 10	2,440	Jun 16	37,700	Oct 21, 1983
LOWEST DAILY MEAN	48	Aug 26	53	Sep 28	0.00	Aug 1, 1964
ANNUAL SEVEN-DAY MINIMUM	51	Aug 20	57	Sep 23	0.77	Jul 19, 1964
MAXIMUM PEAK FLOW			2,870	Jun 16	52,800	Jun 6, 1995
MAXIMUM PEAK STAGE			12.61	Jun 16	25.37	Jun 6, 1995
ANNUAL RUNOFF (AC-FT)	153,800		184,400		351,100	
10 PERCENT EXCEEDS	328		463		1,130	
50 PERCENT EXCEEDS	145		188		185	
90 PERCENT EXCEEDS	60		63		53	

a Prior to regulations, water years 1903-08, 1936-37, 595 ft^3/s.



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

LOCATION.-- Lat 34°54'53", long 98°15'02", in SW ¼ SW ¼ 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 mi^2.

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 good. U.S. Geological Survey's satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.10	0.70	0.65	0.54	0.55	0.44	1.0	0.89	0.63	0.29	0.05	0.05
2	0.12	0.74	0.66	0.52	0.56	0.43	1.0	0.88	0.67	0.26	0.05	0.05
3	0.15	0.64	0.79	0.53	0.54	0.46	1.0	0.89	0.60	0.22	0.05	0.05
4	0.15	0.60	0.76	0.53	0.55	0.49	1.0	0.86	0.95	0.20	0.06	0.05
5	0.16	0.57	0.69	0.53	0.56	0.49	0.99	0.83	0.91	0.19	0.05	0.04
6	0.18	0.53	0.69	0.52	0.62	0.52	1.0	0.81	1.2	0.18	0.06	0.04
7	0.18	0.49	0.68	0.52	0.56	0.54	1.00	0.80	0.43	0.18	0.05	0.04
8	0.75	0.50	0.69	0.54	0.57	0.55	0.98	0.78	0.39	0.18	0.05	0.04
9	1.4	0.56	0.75	0.53	0.61	0.57	0.99	0.75	0.30	0.16	0.22	0.04
10	0.50	0.54	0.67	0.52	0.58	0.61	0.92	0.74	0.33	0.14	0.07	0.04
11	0.45	0.53	0.62	0.53	0.52	0.63	0.89	0.71	5.8	0.13	0.05	0.04
12	0.41	0.54	0.61	0.53	0.51	0.66	0.91	0.72	3.5	0.13	0.05	0.05
13	0.39	0.55	0.61	0.55	0.54	1.8	0.90	0.72	21	0.12	0.05	0.05
14	0.38	0.57	0.61	0.54	0.59	1.1	0.89	0.95	1.1	0.11	0.05	0.04
15	0.38	0.55	0.62	0.54	0.58	1.3	0.96	0.74	0.67	0.10	0.05	0.05
16	0.38	0.56	0.62	0.53	0.58	1.3	0.99	0.72	0.53	0.09	0.05	0.04
17	0.38	0.56	0.62	0.53	0.61	1.3	0.84	0.70	0.55	0.10	0.05	0.04
18	0.40	0.57	0.62	0.54	0.52	1.3	0.84	0.69	0.51	0.08	0.05	0.04
19	16	0.57	0.61	0.54	0.50	1.3	0.97	0.69	0.49	0.07	0.05	0.05
20	0.65	0.59	0.61	0.55	0.51	1.3	0.81	0.75	0.47	0.06	0.05	0.05
21	0.22	0.60	0.61	0.54	0.53	1.3	0.82	0.73	0.47	0.06	0.05	0.05
22	0.14	0.60	0.61	0.53	0.47	1.3	0.84	0.71	0.38	0.06	0.05	0.04
23	0.11	0.60	1.2	0.52	0.46	1.3	1.1	0.71	0.36	0.05	0.05	0.03
24	1.6	0.58	0.69	0.52	0.42	1.3	1.0	0.70	0.34	0.05	0.05	0.02
25	0.83	0.59	0.60	0.53	0.41	1.2	0.96	0.71	0.35	0.05	0.05	0.01
26	0.36	0.60	0.58	0.53	0.43	1.1	0.94	0.69	0.89	0.05	0.05	0.03
27	0.32	0.62	0.55	0.53	0.43	1.1	0.93	0.66	0.32	0.05	0.05	0.01
28	13	0.63	0.54	0.56	0.44	1.1	0.92	0.65	0.28	0.05	0.04	0.00
29	1.7	0.63	0.54	0.54	---	1.0	0.91	0.65	0.32	0.05	0.05	0.00
30	0.80	0.63	0.54	0.56	---	1.0	0.89	0.63	0.31	0.06	0.05	e0.00
31	0.69	---	0.53	0.55	---	1.1	---	0.61	---	0.05	0.81	---
TOTAL	43.28	17.54	20.17	16.57	14.75	29.89	28.19	23.07	45.05	3.57	2.51	1.08
MEAN	1.40	0.58	0.65	0.53	0.53	0.96	0.94	0.74	1.50	0.12	0.081	0.036
MAX	16	0.74	1.2	0.56	0.62	1.8	1.1	0.95	21	0.29	0.81	0.05
MIN	0.10	0.49	0.53	0.52	0.41	0.43	0.81	0.61	0.28	0.05	0.04	0.00
AC-FT	86	35	40	33	29	59	56	46	89	7.1	5.0	2.1

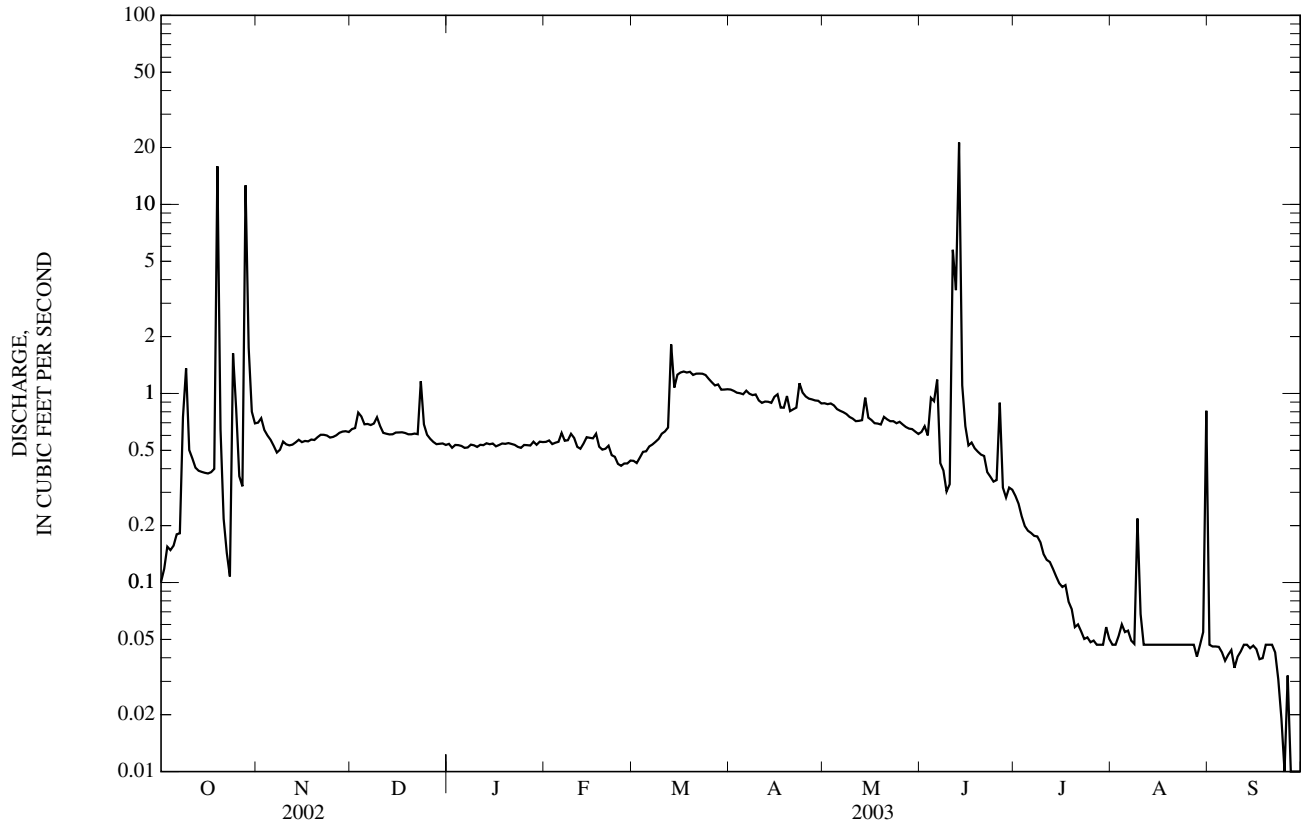
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2003, BY WATER YEAR (WY)

MEAN	3.69	1.40	1.22	1.68	1.82	2.99	2.07	2.52	3.70	1.43	1.08	0.59
MAX	19.9	3.34	2.62	7.18	4.39	11.9	3.73	10.9	21.6	4.81	3.74	1.91
(WY)	(2001)	(1999)	(2001)	(1998)	(1998)	(1998)	(1995)	(1995)	(1995)	(1997)	(1995)	(1996)
MIN	0.22	0.26	0.29	0.33	0.40	0.43	0.59	0.29	0.32	0.12	0.081	0.036
(WY)	(2002)	(2000)	(2002)	(2002)	(2002)	(2002)	(1996)	(1996)	(2002)	(2003)	(2003)	(2003)

e Estimated

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

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1995 - 2003	
ANNUAL TOTAL	180.59		245.67			
ANNUAL MEAN	0.49		0.67		1.69	
HIGHEST ANNUAL MEAN					3.39	1998
LOWEST ANNUAL MEAN					0.34	2002
HIGHEST DAILY MEAN	16	Oct 19	21	Jun 13	471	Oct 23, 2000
LOWEST DAILY MEAN	0.06	Aug 3	0.00	Sep 28-30	0.00	Sep 28-30, 2003
ANNUAL SEVEN-DAY MINIMUM	0.07	Aug 3	0.01	Sep 24	0.01	Sep 24, 2003
MAXIMUM PEAK FLOW			139	Oct 19	2,280	Oct 23, 2000
MAXIMUM PEAK STAGE			6.61	Oct 19	14.26	Oct 23, 2000
ANNUAL RUNOFF (AC-FT)	358		487		1,220	
10 PERCENT EXCEEDS	0.63		1.0		2.3	
50 PERCENT EXCEEDS	0.36		0.54		0.73	
90 PERCENT EXCEEDS	0.14		0.05		0.20	



073274408 LITTLE WASHITA RIVER TRIBUTARY NEAR CYRIL, OK

LOCATION.-- Lat 34°55'33", long 98°14'00", in SE ¼ NE ¼ NE ¼ 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 mi^2.

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.02	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.01	e0.40	0.02	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00
5	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00
6	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.69	0.00	0.00	0.00
7	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	1.2	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	1.0	0.00	0.04	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	2.1	0.00	0.00	0.00
12	0.00	0.00	0.03	0.00	0.00	0.20	0.00	0.00	0.07	0.00	0.00	0.00
13	0.00	0.00	0.02	0.00	0.00	2.6	0.00	0.00	7.9	0.00	0.00	0.00
14	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
15	0.00	0.00	0.02	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.02	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	9.3	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
20	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	2.3	0.00	0.00	0.00	1.2	0.00	0.00	0.00	0.00	0.00
24	9.4	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.05	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00
27	0.04	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	21	0.00	0.06	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
29	1.5	0.00	0.07	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.03	0.00	0.06	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.02	---	0.04	0.00	---	0.00	---	0.00	---	0.00	0.36	---
TOTAL	43.56	0.10	3.60	0.11	0.03	2.81	1.39	0.67	12.17	0.00	0.36	0.00
MEAN	1.41	0.003	0.12	0.004	0.001	0.091	0.046	0.022	0.41	0.000	0.012	0.000
MAX	21	0.05	2.3	0.05	0.02	2.6	1.2	0.67	7.9	0.00	0.36	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	86	0.2	7.1	0.2	0.06	5.6	2.8	1.3	24	0.00	0.7	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2003, BY WATER YEAR (WY)

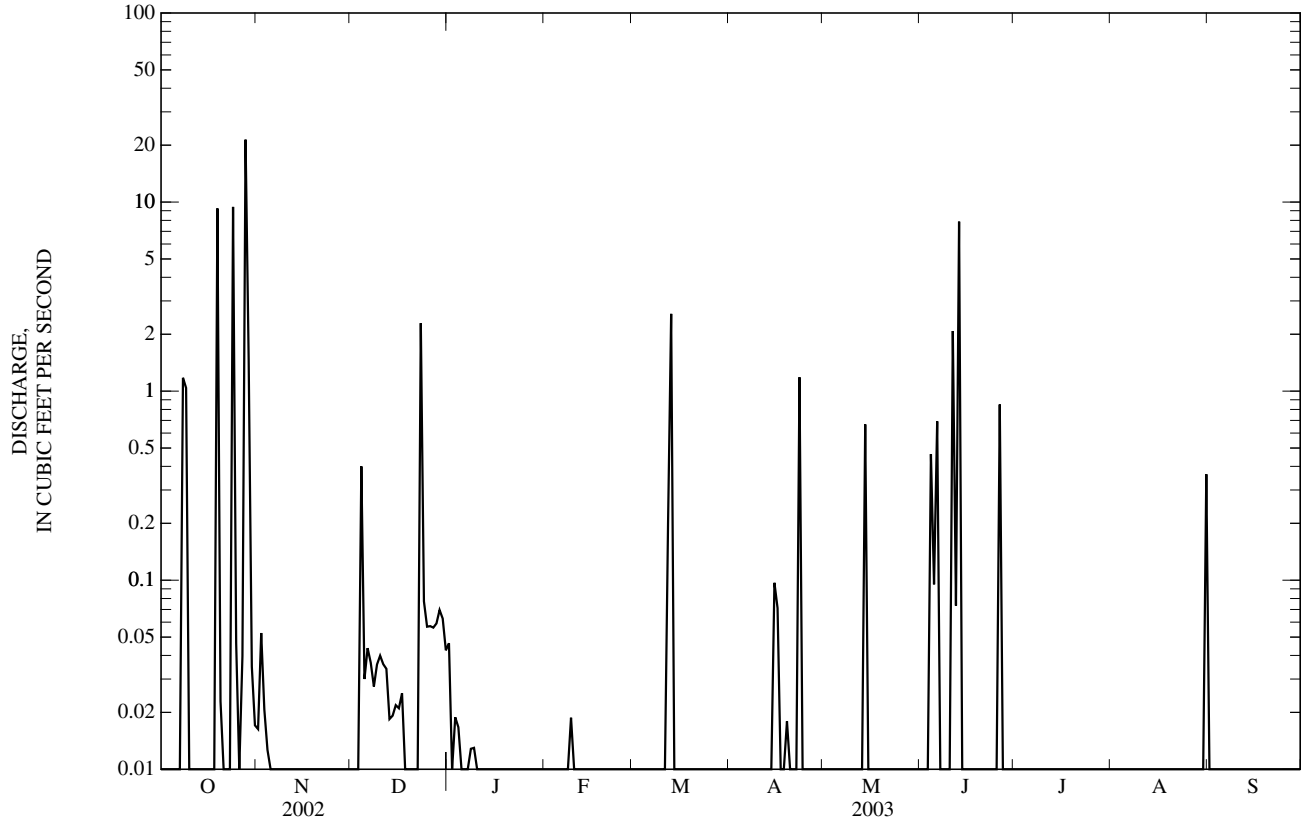
MEAN	1.38	0.29	0.28	0.33	0.33	0.62	0.55	0.32	0.47	0.26	0.10	0.10
MAX	8.23	0.74	0.72	1.54	0.96	2.84	1.04	0.71	2.59	1.47	0.42	0.27
(WY)	(2001)	(1997)	(2000)	(1998)	(1998)	(1998)	(1999)	(2001)	(1995)	(1997)	(1995)	(1995)
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.046	0.022	0.000	0.000	0.000	0.000
(WY)	(2000)	(2000)	(2002)	(2000)	(2002)	(2002)	(2003)	(2003)	(2002)	(1998)	(1999)	(1998)

e Estimated

073274408 LITTLE WASHITA RIVER TRIBUTARY NEAR CYRIL, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1995 - 2003	
ANNUAL TOTAL	84.62		64.80			
ANNUAL MEAN	0.23		0.18		0.39	
HIGHEST ANNUAL MEAN					0.99	2001
LOWEST ANNUAL MEAN					0.10	2002
HIGHEST DAILY MEAN	21	Oct 28	21	Oct 28	229	Oct 23, 2000
LOWEST DAILY MEAN	0.00	at times	0.00	at times	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	May 19, 1996
MAXIMUM PEAK FLOW			21	Oct 28	a1,920	Oct 23, 2000
MAXIMUM PEAK STAGE			7.76	Oct 28	b13.50	Oct 23, 2000
ANNUAL RUNOFF (AC-FT)	168		129		286	
10 PERCENT EXCEEDS	0.04		0.04		0.53	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

a From theoretical rating.
b From high-water mark.



07327441 SCS POND NO. 26 NEAR CYRIL, OK

LOCATION.--Lat 34°54'09", long 98°14'22", in SW ¼ SE ¼ 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 mi^2 (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 sea level.

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, 1,225 acre-ft, Oct. 23, 2000, elevation 1,348.38 ft (from HWM); minimum after initial storage, 166 acre-ft, at times, elevation 1,320.48 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 194 acre-ft, Oct. 28, elevation 1,322.49 ft (from HWM); minimum, 167 acre-ft, Aug. 29, elevation 1,320.55 ft.

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

1320	159.0	1338	582.0
1326	246.0	1344	909.0
1332	376.0	1350	1370.0

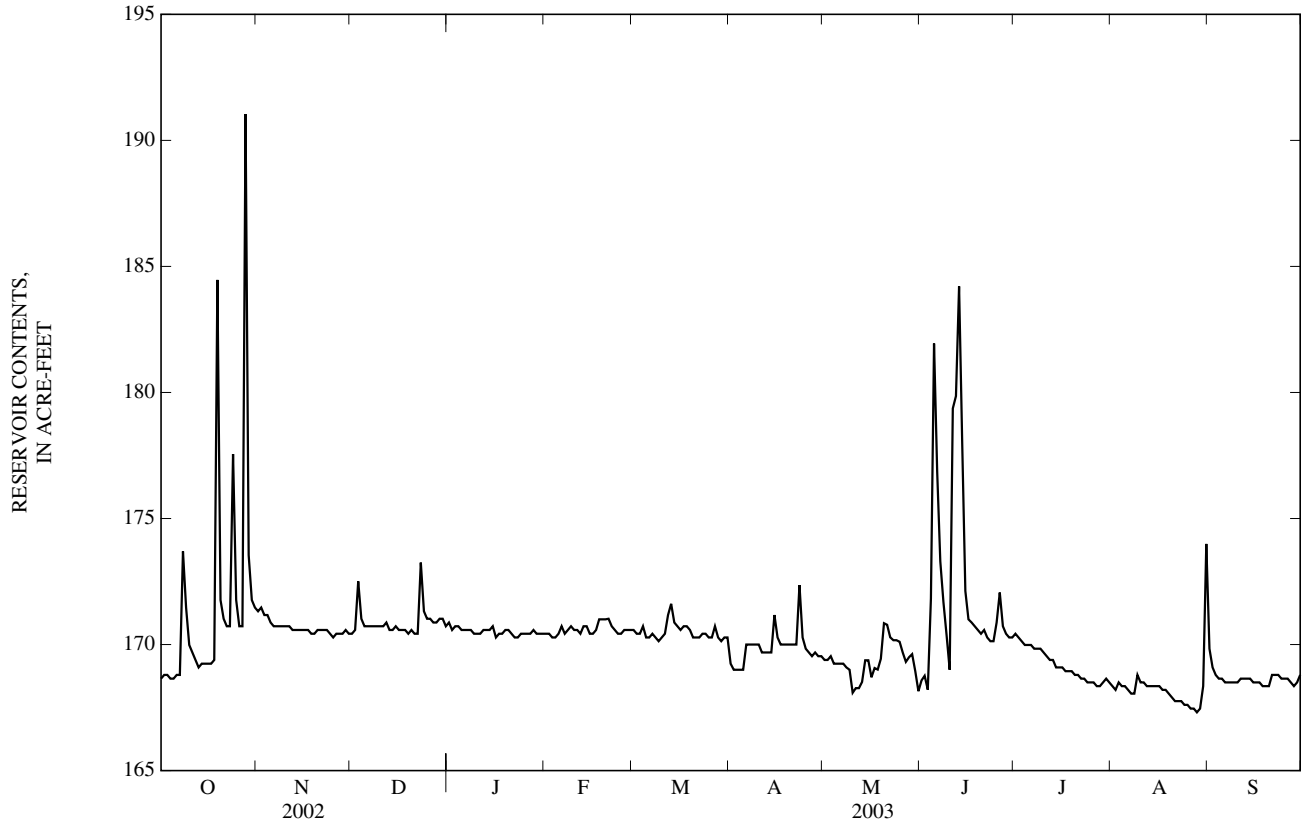
RESERVOIR STORAGE, ACRE FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	169	171	170	171	170	171	169	169	e169	170	168	170
2	169	171	171	171	170	170	e169	169	e169	170	168	169
3	169	171	173	171	170	170	e169	170	e168	170	168	169
4	169	171	171	171	170	171	e169	169	e172	170	168	169
5	169	171	171	171	170	170	e169	169	e182	170	168	169
6	169	171	171	171	171	170	e170	169	e177	170	168	168
7	169	171	171	171	170	170	e170	169	e173	170	168	168
8	174	171	171	171	171	170	e170	169	e172	170	168	168
9	171	171	171	170	171	170	170	169	e170	170	169	168
10	170	171	171	170	171	170	170	e168	e169	170	168	168
11	170	171	171	170	171	170	170	e168	e179	170	168	169
12	169	171	171	171	170	171	170	e168	e180	169	168	169
13	169	171	171	171	171	172	170	e169	e184	169	168	169
14	169	171	171	171	171	171	170	e169	e178	169	168	169
15	169	171	171	171	170	171	171	e169	e172	169	168	168
16	169	171	171	170	170	171	170	e169	171	169	168	168
17	169	171	171	170	171	171	170	e169	171	169	168	168
18	169	170	171	170	171	171	e170	e169	171	169	168	168
19	184	170	170	171	e171	171	e170	e169	171	169	168	168
20	172	171	171	171	171	170	e170	e171	170	169	168	168
21	171	171	170	170	171	170	e170	e171	171	169	168	169
22	171	171	170	170	171	170	170	e170	170	169	168	169
23	171	171	173	170	171	170	172	e170	170	169	168	169
24	178	170	171	170	170	170	170	e170	170	168	168	169
25	172	170	171	170	170	170	170	e170	171	168	168	169
26	171	170	171	170	171	170	170	e170	172	168	167	169
27	171	170	171	170	171	171	170	e169	171	168	167	168
28	191	170	171	171	171	170	170	e169	170	168	167	168
29	174	171	171	170	---	170	170	e170	170	168	167	168
30	172	170	171	170	---	170	170	e169	170	169	168	169
31	171	---	171	170	---	170	---	e168	---	168	174	---
MAX	191	171	173	171	171	172	172	171	184	170	174	170
MIN	169	170	170	170	170	170	169	168	168	168	167	168
(‡)	1320.84	1320.77	1320.79	1320.77	1320.78	1320.76	1320.71	1320.60	1320.77	1320.64	1321.04	1320.65
(‡‡)	+2	-1	+1	-1	+1	-1	0	-2	+2	-2	+6	-5

CAL YR 2002 MAX 191 MIN 167 (‡‡) +2
WTR YR 2003 MAX 191 MIN 167 (‡‡) 0

e Estimated
(‡) ELEVATION, IN FEET, AT END OF MONTH
(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET

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



07327442 LITTLE WASHITA RIVER NEAR CYRIL, OK

LOCATION.-- Lat 34°53'32", long 98°13'58", in SW ¼ NW ¼ 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 mi^2.

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.19	2.7	1.9	2.1	1.9	2.1	1.3	e0.86	e0.46	1.4	0.32	3.3
2	0.21	2.6	2.0	2.0	1.9	2.0	1.3	e0.80	e0.45	1.3	0.27	0.75
3	0.25	2.5	2.4	2.0	1.9	1.9	1.4	e0.76	e0.45	1.1	0.28	0.46
4	0.27	2.5	3.0	2.0	1.8	2.0	1.3	e0.72	e0.45	1.0	0.28	0.37
5	0.18	2.4	2.3	2.0	1.8	1.8	1.3	e0.67	e0.45	0.90	0.25	0.28
6	0.19	2.3	2.2	2.0	2.1	1.9	1.7	e0.65	e0.44	0.85	0.23	0.29
7	0.24	2.2	2.2	2.0	1.9	2.0	1.3	e0.63	e0.43	0.85	e0.20	0.28
8	0.71	2.0	2.2	2.0	1.9	2.0	1.2	e0.60	e0.41	0.80	e0.18	0.28
9	2.1	2.0	2.2	2.1	2.1	1.9	1.3	e0.58	e0.38	0.80	e0.13	0.33
10	0.83	2.0	2.2	2.0	2.1	1.9	1.3	e0.55	0.53	0.76	e0.10	0.29
11	0.55	2.0	2.2	2.0	2.0	2.0	e1.2	e0.54	10	0.66	e0.08	0.30
12	0.46	1.9	2.2	2.1	1.9	1.8	e1.2	e0.53	11	0.61	0.48	0.39
13	0.39	1.9	2.1	2.1	2.0	2.3	e1.2	e0.51	e4.8	0.58	0.89	0.39
14	0.36	2.0	2.1	2.1	2.1	1.9	e1.1	e0.49	e2.7	0.53	0.93	0.41
15	0.36	1.9	2.1	2.1	2.1	1.6	e1.1	e0.47	e2.3	0.47	0.99	0.39
16	0.33	1.9	2.1	2.1	1.8	1.6	e1.4	e0.46	e2.6	0.45	0.97	0.36
17	0.33	1.9	2.1	2.0	1.7	1.6	e1.2	e0.45	e2.5	0.43	0.91	0.32
18	0.33	1.9	2.1	2.0	1.8	1.7	e1.2	e0.43	e2.3	0.43	0.83	0.36
19	5.2	1.8	2.1	2.0	1.9	1.6	e1.1	e0.42	e2.3	0.43	0.86	0.41
20	3.4	1.9	2.0	2.1	1.8	1.5	e1.1	e0.68	e1.7	0.41	0.81	0.28
21	0.81	1.9	2.0	2.0	2.0	1.4	e1.1	e0.64	e8.0	0.39	0.76	0.38
22	0.72	1.9	2.0	2.0	2.1	1.4	e1.0	e0.60	e5.4	0.39	0.74	0.44
23	0.72	1.9	3.5	1.8	2.1	1.5	e1.5	e0.56	e3.8	0.38	0.76	0.43
24	2.4	1.9	3.2	1.9	1.9	1.4	e1.3	e0.54	e2.1	0.36	0.76	0.36
25	2.5	1.8	2.4	2.0	1.7	1.4	e1.2	e0.53	1.8	0.32	0.69	0.32
26	1.1	1.8	2.2	2.0	1.9	1.4	e1.2	e0.51	4.2	0.32	0.63	0.33
27	0.94	1.8	2.1	1.9	2.0	1.3	e1.1	e0.48	2.5	0.30	0.61	0.30
28	7.9	1.9	2.1	2.0	2.0	1.6	e1.0	e0.47	1.8	0.31	0.58	0.20
29	9.7	1.9	2.1	1.9	---	1.3	e0.96	e0.49	1.5	0.31	0.65	0.17
30	3.7	1.9	2.2	1.9	---	1.3	e0.90	e0.49	1.5	0.34	1.1	0.26
31	2.9	---	2.0	1.9	---	1.3	---	e0.47	---	0.37	13	---
TOTAL	50.27	61.0	69.5	62.1	54.2	52.4	36.46	17.58	79.25	18.55	30.27	13.43
MEAN	1.62	2.03	2.24	2.00	1.94	1.69	1.22	0.57	2.64	0.60	0.98	0.45
MAX	9.7	2.7	3.5	2.1	2.1	2.3	1.7	0.86	11	1.4	13	3.3
MIN	0.18	1.8	1.9	1.8	1.7	1.3	0.90	0.42	0.38	0.30	0.08	0.17
AC-FT	100	121	138	123	108	104	72	35	157	37	60	27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

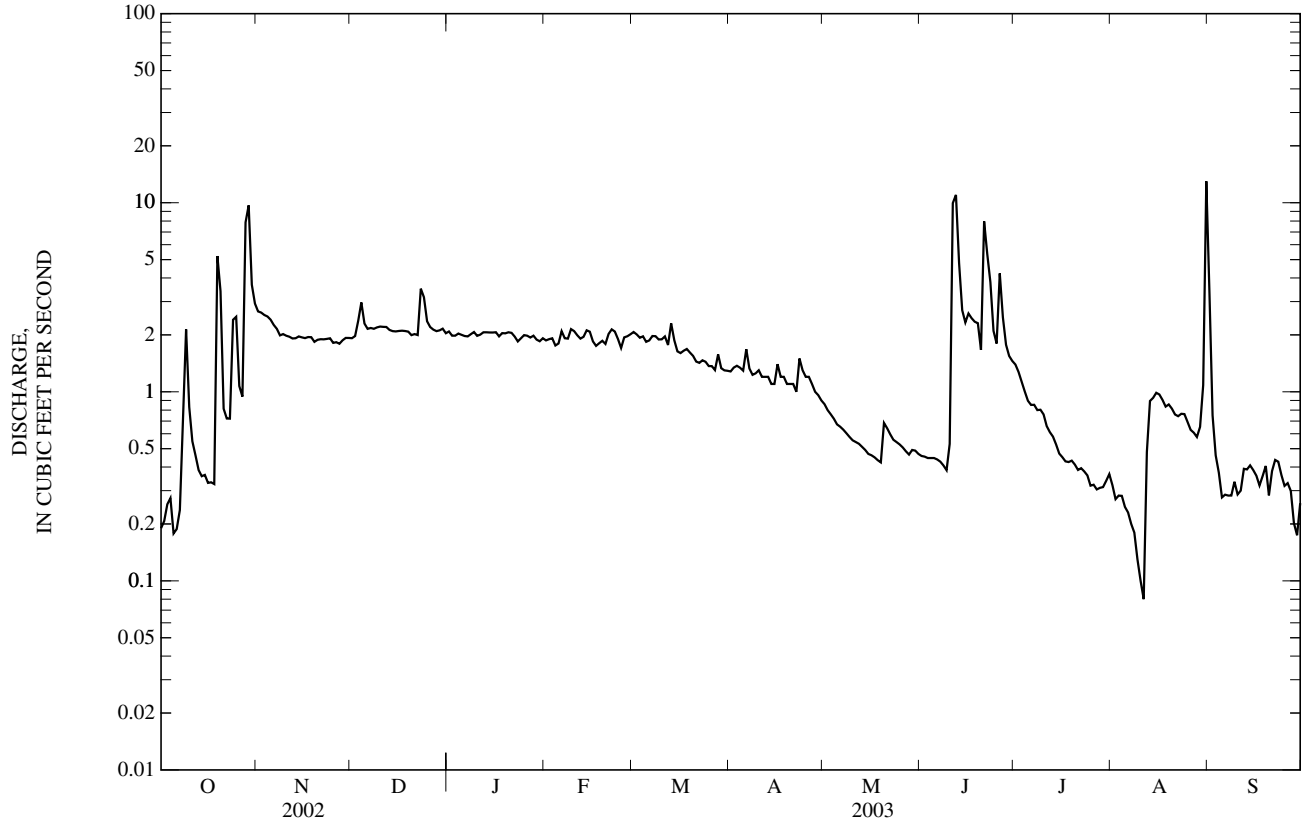
MEAN	5.31	4.48	5.38	5.43	5.98	7.53	7.13	7.05	7.88	3.35	2.23	1.94
MAX	25.7	11.6	19.5	16.7	15.4	22.8	17.3	26.2	35.8	9.55	7.34	7.13
(WY)	(2001)	(1993)	(1993)	(1998)	(1993)	(1998)	(1993)	(1993)	(1995)	(1997)	(1995)	(1996)
MIN	0.69	0.92	1.23	1.27	1.39	1.60	1.22	0.57	0.91	0.45	0.079	0.14
(WY)	(2002)	(2000)	(2002)	(2002)	(2002)	(2002)	(2003)	(2003)	(2002)	(2002)	(2002)	(2000)

e Estimated

07327442 LITTLE WASHITA RIVER NEAR CYRIL, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1993 - 2003	
ANNUAL TOTAL	482.36		545.01			
ANNUAL MEAN	1.32		1.49		5.30	
HIGHEST ANNUAL MEAN					13.2	1993
LOWEST ANNUAL MEAN					1.07	2002
HIGHEST DAILY MEAN	9.7	Oct 29	13	Aug 31	416	Oct 23, 2002
LOWEST DAILY MEAN	0.00	Aug 21	0.08	Aug 11	0.00	Aug 21-25, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 20	0.17	Aug 5	0.00	Aug 20, 2002
MAXIMUM PEAK FLOW			109	Jun 11	a1,930	Oct 23, 2000
MAXIMUM PEAK STAGE			9.47	Jun 11	18.09	Oct 23, 2000
ANNUAL RUNOFF (AC-FT)	957		1,080		3,840	
10 PERCENT EXCEEDS	2.3		2.3		11	
50 PERCENT EXCEEDS	1.2		1.4		3.2	
90 PERCENT EXCEEDS	0.12		0.33		0.64	

a From theoretical rating.



073274458 LITTLE WASHITA RIVER TRIBUTARY NEAR CEMENT, OK

LOCATION.-- Lat 34°51'58", long 98°08'30", in NW $\frac{1}{4}$ NW $\frac{1}{4}$ 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 mi^2.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

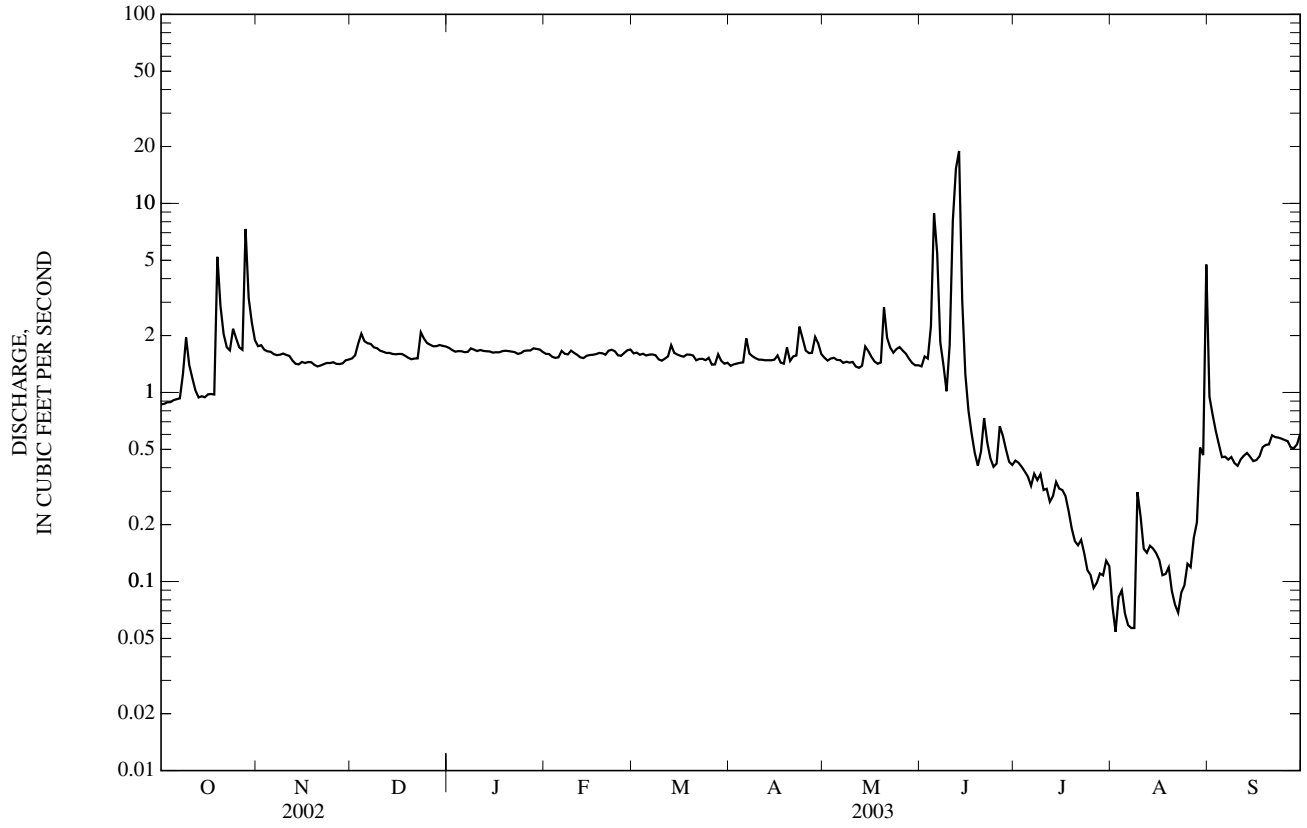
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.86	1.8	1.5	1.7	1.6	1.6	1.4	1.5	1.4	0.44	0.07	0.95
2	0.87	1.8	1.6	1.7	1.6	1.6	1.4	1.5	1.6	0.42	0.05	0.77
3	0.89	1.7	1.8	1.6	1.5	1.6	1.4	1.5	1.5	0.40	0.08	0.63
4	0.89	1.7	2.0	1.7	1.5	1.6	1.4	1.5	2.2	0.38	0.09	0.53
5	0.91	1.6	1.9	1.7	1.5	1.6	1.4	1.5	8.9	0.36	0.07	0.45
6	0.92	1.6	1.8	1.6	1.7	1.6	1.9	1.5	5.4	0.32	0.06	0.46
7	0.93	1.6	1.8	1.6	1.6	1.6	1.6	1.4	1.8	0.37	0.06	0.44
8	1.3	1.6	1.7	1.7	1.6	1.6	1.6	1.5	1.4	0.34	0.06	0.46
9	2.0	1.6	1.7	1.7	1.7	1.5	1.5	1.4	1.0	0.37	0.30	0.42
10	1.4	1.6	1.7	1.7	1.6	1.5	1.5	1.5	1.8	0.30	0.22	0.41
11	1.2	1.6	1.6	1.7	1.6	1.5	1.5	1.4	8.1	0.31	0.15	0.44
12	1.0	1.5	1.6	1.7	1.5	1.6	1.5	1.3	15	0.26	0.14	0.46
13	0.94	1.4	1.6	1.7	1.5	1.8	1.5	1.4	19	0.28	0.15	0.48
14	0.95	1.4	1.6	1.6	1.6	1.6	1.5	1.7	3.1	0.34	0.15	0.46
15	0.94	1.5	1.6	1.6	1.6	1.6	1.5	1.7	1.2	0.31	0.14	0.43
16	0.98	1.4	1.6	1.6	1.6	1.6	1.6	1.5	0.80	0.30	0.13	0.44
17	0.98	1.4	1.6	1.6	1.6	1.5	1.4	1.5	0.61	0.28	0.11	0.46
18	0.98	1.4	1.6	1.7	1.6	1.6	1.4	1.4	0.48	0.24	0.11	0.51
19	5.2	1.4	1.5	1.7	1.6	1.6	1.7	1.4	0.41	0.19	0.12	0.53
20	2.8	1.4	1.5	1.7	1.6	1.6	1.5	2.8	0.49	0.16	0.09	0.53
21	2.0	1.4	1.5	1.6	1.7	1.5	1.6	1.9	0.73	0.16	0.08	0.59
22	1.7	1.4	1.5	1.6	1.7	1.5	1.6	1.7	0.54	0.17	0.07	0.58
23	1.7	1.4	2.1	1.6	1.7	1.5	2.2	1.6	0.45	0.14	0.09	0.58
24	2.2	1.4	1.9	1.6	1.6	1.5	1.9	1.7	0.40	0.11	0.10	0.57
25	1.9	1.4	1.8	1.7	1.6	1.5	1.7	1.7	0.42	0.11	0.12	0.56
26	1.7	1.4	1.8	1.7	1.6	1.4	1.6	1.7	0.66	0.09	0.12	0.55
27	1.7	1.4	1.8	1.7	1.7	1.4	1.6	1.6	0.59	0.10	0.17	0.51
28	7.3	1.4	1.8	1.7	1.7	1.6	2.0	1.5	0.50	0.11	0.21	0.51
29	3.2	1.5	1.8	1.7	---	1.5	1.8	1.4	0.43	0.11	0.51	0.53
30	2.3	1.5	1.8	1.7	---	1.4	1.6	1.4	0.41	0.13	0.47	0.61
31	1.9	---	1.8	1.6	---	1.4	---	1.4	---	0.12	4.7	---
TOTAL	54.54	45.2	52.9	51.5	45.0	48.0	47.8	48.5	81.32	7.72	8.99	15.85
MEAN	1.76	1.51	1.71	1.66	1.61	1.55	1.59	1.56	2.71	0.25	0.29	0.53
MAX	7.3	1.8	2.1	1.7	1.7	1.8	2.2	2.8	19	0.44	4.7	0.95
MIN	0.86	1.4	1.5	1.6	1.5	1.4	1.4	1.3	0.40	0.09	0.05	0.41
AC-FT	108	90	105	102	89	95	95	96	161	15	18	31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2003, BY WATER YEAR (WY)

MEAN	3.64	2.13	2.11	2.54	2.32	2.67	3.03	2.46	2.26	1.11	1.28	1.19
MAX	15.1	4.01	2.82	7.55	3.19	6.90	5.45	4.61	3.01	1.73	2.72	1.99
(WY)	(2001)	(1999)	(1999)	(1998)	(2001)	(1998)	(1999)	(1997)	(1999)	(1997)	(1995)	(1996)
MIN	1.35	1.51	1.65	1.59	1.53	1.30	1.59	1.16	1.49	0.25	0.29	0.53
(WY)	(2000)	(2003)	(2001)	(2000)	(2002)	(1996)	(2003)	(1996)	(2000)	(2003)	(2003)	(2003)

073274458 LITTLE WASHITA RIVER TRIBUTARY NEAR CEMENT, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1995 - 2003	
ANNUAL TOTAL	616.62		507.32			
ANNUAL MEAN	1.69		1.39		2.21	
HIGHEST ANNUAL MEAN					3.20	1998
LOWEST ANNUAL MEAN					1.39	2003
HIGHEST DAILY MEAN	16	Apr 13	19	Jun 13	319	Oct 23, 2000
LOWEST DAILY MEAN	0.70	Sep 5	0.05	Aug 2	0.05	Aug 2, 2003
ANNUAL SEVEN-DAY MINIMUM	0.73	Sep 1	0.07	Aug 2	0.07	Aug 2, 2003
MAXIMUM PEAK FLOW			161	Jun 12	1,630	Oct 23, 2000
MAXIMUM PEAK STAGE			7.98	Jun 12	12.58	Oct 23, 2000
ANNUAL RUNOFF (AC-FT)	1,220		1,010		1,600	
10 PERCENT EXCEEDS	2.2		1.8		2.8	
50 PERCENT EXCEEDS	1.6		1.5		1.7	
90 PERCENT EXCEEDS	0.92		0.17		0.85	



07327446 SCS POND NO. 31 NEAR CEMENT, OK

LOCATION.--Lat 34°51'07", long 98°08'27", in NW ¼ NW ¼ 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 mi^2 (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, 628 acre-ft, Oct. 23, 2000, elevation 1,242.53 ft; minimum after initial storage, 313 acre-ft, at times, elevation 1,236.46 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 385 acre-ft, Apr. 13, elevation 1,238.21 ft; minimum, 357 acre-ft, Aug. 27-29, elevation 1,237.55 ft.

Capacity table (elevation in feet, and capacity 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 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

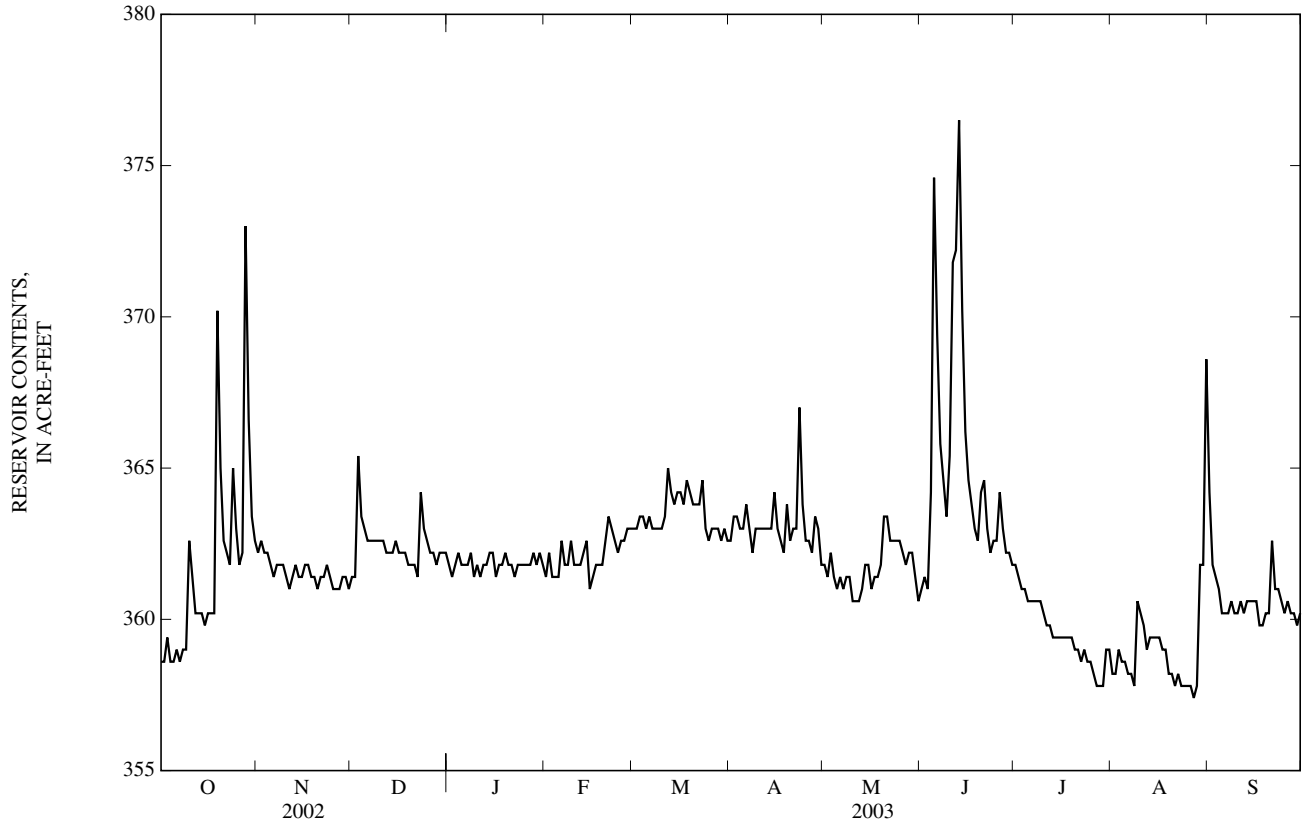
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	359	362	361	362	361	363	363	362	361	362	358	364
2	359	363	361	361	362	363	363	361	361	361	358	362
3	359	362	365	362	361	363	363	362	361	361	359	361
4	359	362	363	362	361	363	363	361	364	361	359	361
5	359	362	363	362	361	363	363	361	375	361	359	360
6	359	361	363	362	363	363	364	361	369	361	358	360
7	359	362	363	362	362	363	363	361	366	361	358	360
8	359	362	363	362	362	363	362	361	365	361	358	361
9	e359	362	363	361	363	363	363	361	363	361	361	360
10	363	361	363	362	362	363	363	361	365	360	360	360
11	361	361	363	361	362	363	363	361	372	360	360	361
12	360	361	362	362	362	365	363	361	372	360	359	360
13	360	362	362	362	362	364	363	361	377	359	359	361
14	360	361	362	362	363	364	363	362	370	359	359	361
15	360	361	363	362	361	364	364	362	366	359	359	361
16	360	362	362	361	361	364	363	361	365	359	359	361
17	360	362	362	362	362	364	363	361	364	359	359	360
18	360	361	362	362	362	365	362	361	363	359	359	360
19	370	361	362	362	362	364	364	362	363	359	358	360
20	365	361	362	362	363	364	363	363	364	359	358	360
21	363	361	362	362	363	364	363	363	365	359	358	363
22	362	361	361	361	363	364	363	363	363	359	358	361
23	362	362	364	362	363	365	367	363	362	359	358	361
24	365	361	363	362	362	363	364	363	363	359	358	361
25	363	361	363	362	363	363	363	363	363	359	358	360
26	362	361	362	362	363	363	363	362	364	358	358	361
27	362	361	362	362	363	363	362	362	363	358	357	360
28	373	361	362	362	363	363	363	362	362	358	358	360
29	367	361	362	362	---	363	363	362	362	358	362	360
30	363	361	362	362	---	363	362	361	362	359	362	360
31	363	---	362	362	---	363	---	361	---	359	369	---
MAX	373	363	365	362	363	365	367	363	377	362	369	364
MIN	359	361	361	361	361	363	362	361	361	358	357	360
(‡)	1237.69	1237.66	1237.68	1237.68	1237.71	1237.69	1237.67	1237.64	1237.67	1237.60	1237.84	1237.64
(‡‡)	+4	-2	+1	0	+1	0	-1	-1	+1	-3	+10	-9

CAL YR 2002 MAX 377 MIN 357 (‡‡) -1
WTR YR 2003 MAX 377 MIN 357 (‡‡) +1

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

e Estimated

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



07327447 LITTLE WASHITA RIVER NEAR CEMENT, OK

LOCATION.--Lat 34°50'16", long 98°07'27", in NW ¼ NW ¼ 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 mi^2.

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	10	7.5	10	8.9	10	4.5	4.9	2.3	5.2	1.0	27
2	2.5	10	7.7	10	9.2	9.8	4.3	4.8	3.5	5.2	0.90	5.6
3	2.7	10	10	9.8	9.2	9.5	4.5	4.8	3.7	4.6	0.90	2.7
4	2.9	9.0	23	10	8.5	9.8	4.7	5.1	8.2	4.2	1.2	1.9
5	2.8	8.4	13	11	8.5	9.0	4.1	4.6	31	4.0	0.98	1.4
6	2.9	7.2	10	10	11	8.3	7.9	4.5	42	3.5	0.86	0.99
7	2.8	6.9	9.8	9.6	12	8.7	6.1	4.4	15	3.2	0.74	0.87
8	21	7.1	9.5	10	9.7	8.8	4.2	4.8	12	3.1	0.65	0.85
9	30	7.5	9.8	11	12	8.5	3.8	5.0	7.1	3.1	3.1	0.84
10	14	7.2	10	9.4	12	8.0	4.0	4.9	5.0	3.0	3.8	0.76
11	8.7	6.8	9.7	9.1	11	8.4	4.2	4.2	22	2.8	2.4	0.91
12	7.0	6.7	9.5	9.2	9.7	9.9	4.2	3.7	226	2.6	1.9	1.1
13	6.1	6.8	9.3	9.4	10	18	4.3	3.5	141	2.2	1.6	1.2
14	5.2	7.1	9.1	9.7	12	13	4.2	4.4	91	2.1	1.6	1.2
15	5.1	7.2	9.2	9.3	11	9.8	4.1	6.3	25	1.8	e2.0	1.1
16	5.2	7.2	9.3	9.6	9.7	9.2	10	4.5	15	1.6	e1.9	0.95
17	5.1	7.1	9.5	8.7	9.0	9.2	6.5	3.9	11	1.6	e1.8	0.92
18	5.2	7.4	9.5	9.1	9.4	10	4.7	3.4	9.0	1.5	e1.5	0.87
19	21	6.8	9.2	9.2	10	10	7.7	3.4	7.5	1.5	e1.2	0.85
20	53	6.9	9.0	9.6	9.8	9.0	6.3	12	7.4	1.3	e0.99	0.80
21	15	7.3	9.0	9.6	e9.0	7.7	4.2	6.5	11	1.2	e0.83	1.5
22	9.1	7.3	8.6	9.1	e8.6	7.2	3.9	5.2	8.0	1.3	e0.76	1.8
23	7.2	7.5	19	9.0	e8.5	7.1	5.9	4.3	6.4	1.1	e0.74	1.5
24	10	7.5	22	8.9	e8.4	6.7	18	4.3	5.3	1.0	e0.70	1.2
25	29	7.2	15	8.8	e8.3	6.1	8.6	4.6	5.2	0.96	e0.69	1.1
26	12	6.7	13	9.1	e8.2	5.2	6.4	5.2	13	0.91	e0.72	1.2
27	9.3	6.9	12	8.9	e8.1	4.9	6.0	4.1	11	0.82	e0.69	1.0
28	40	7.3	11	9.9	9.7	7.1	5.9	3.6	7.1	0.75	e0.70	0.83
29	84	7.6	11	9.4	---	5.5	5.8	3.4	5.9	0.77	e0.71	0.80
30	21	7.7	12	8.6	---	4.4	5.3	2.8	5.5	0.93	2.4	1.2
31	12	---	11	8.9	---	4.5	---	2.5	---	1.1	60	---
TOTAL	454.1	226.3	347.2	293.9	271.4	263.3	174.3	143.6	763.1	68.94	99.96	64.94
MEAN	14.6	7.54	11.2	9.48	9.69	8.49	5.81	4.63	25.4	2.22	3.22	2.16
MAX	84	10	23	11	12	18	18	12	226	5.2	60	27
MIN	2.3	6.7	7.5	8.6	8.1	4.4	3.8	2.5	2.3	0.75	0.65	0.76
AC-FT	901	449	689	583	538	522	346	285	1,510	137	198	129

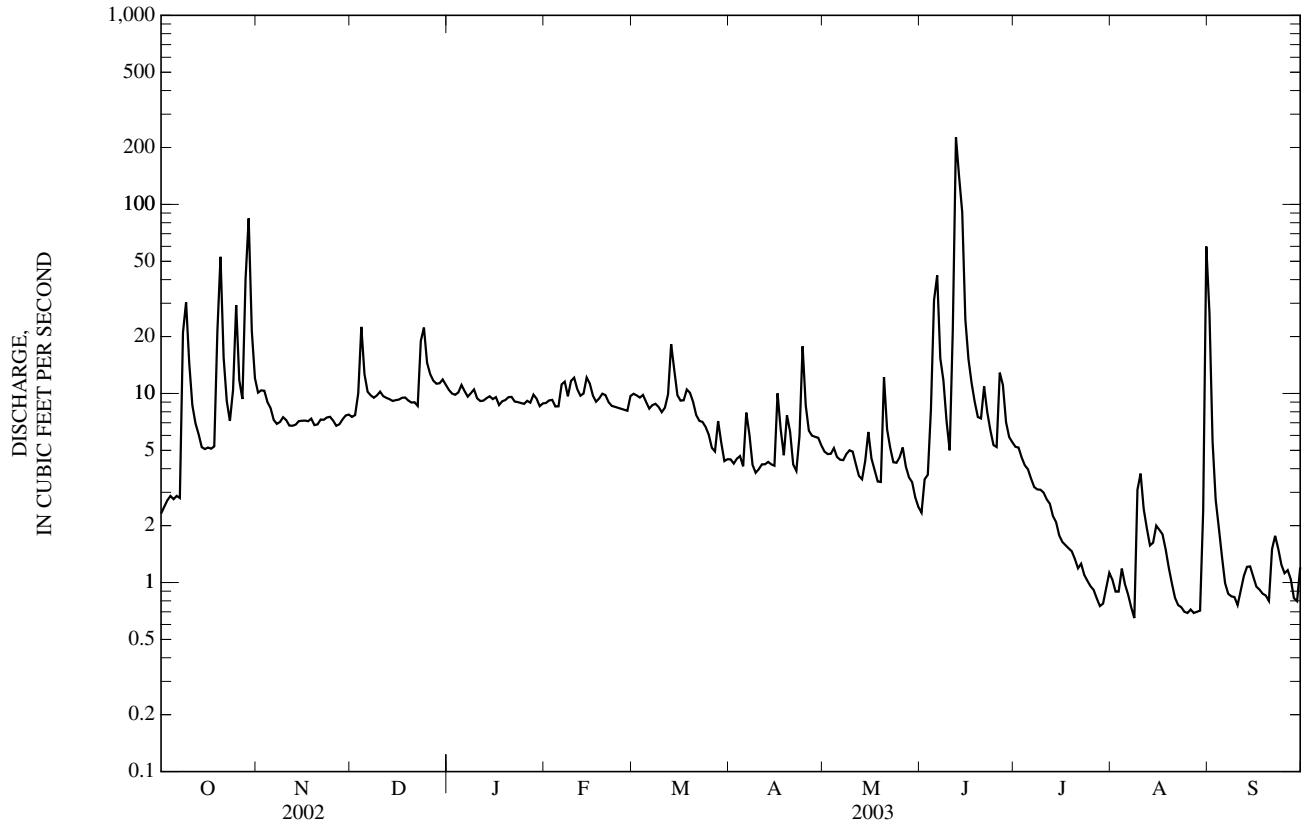
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

MEAN	24.9	17.6	22.6	23.9	27.1	33.3	37.0	38.5	36.5	18.2	11.7	9.98
MAX	118	37.4	77.1	73.3	62.2	97.6	69.9	124	90.8	57.5	38.7	31.9
(WY)	(2001)	(1993)	(1993)	(1998)	(1993)	(1998)	(1998)	(1993)	(1995)	(1992)	(1992)	(1992)
MIN	4.69	7.54	9.95	9.48	9.69	8.49	5.81	4.63	8.55	2.22	1.28	1.34
(WY)	(1999)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2000)	(2000)

e Estimated

07327447 LITTLE WASHITA RIVER NEAR CEMENT, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	3,437.31		3,171.04			
ANNUAL MEAN	9.42		8.69		23.8	
HIGHEST ANNUAL MEAN					51.6	1993
LOWEST ANNUAL MEAN					8.55	2002
HIGHEST DAILY MEAN	124	Apr 13	226	Jun 12	1,020	Oct 23, 2000
LOWEST DAILY MEAN	0.81	Aug 25	0.65	Aug 8	0.65	Aug 8, 2003
ANNUAL SEVEN-DAY MINIMUM	0.92	Aug 20	0.71	Aug 23	0.70	Aug 31, 2000
MAXIMUM PEAK FLOW			558	Jun 12	2,020	Oct 23, 2000
MAXIMUM PEAK STAGE			7.88	Jun 12	17.66	Oct 23, 2000
ANNUAL RUNOFF (AC-FT)	6,820		6,290		17,270	
10 PERCENT EXCEEDS	15		12		45	
50 PERCENT EXCEEDS	8.5		7.0		14	
90 PERCENT EXCEEDS	2.3		1.0		3.8	



07327483 BOGGY CREEK NEAR NINNEKAH, OK

LOCATION.--Lat 34°53'03", long 97°59'43", in SE ¼ SW ¼ 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 Ninnekah and at mile 1.2.

DRAINAGE AREA.--1.66 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1142.36 ft above sea level.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.01	e0.20	e0.18	0.63	e0.32	e0.16	0.64	e0.43	e0.07	0.11	e0.01	0.06
2	0.01	e0.22	0.17	0.62	e0.31	e0.15	0.63	e0.37	e0.05	0.11	e0.01	0.06
3	0.01	e0.21	0.78	0.54	e0.31	e0.18	0.61	e0.39	e0.07	0.11	e0.01	0.06
4	0.01	e0.20	0.68	0.53	e0.31	e0.19	0.64	e0.37	e0.38	0.11	e0.01	0.06
5	0.01	e0.19	0.33	0.57	e0.31	e0.19	0.65	e0.39	e0.36	0.10	e0.01	0.06
6	0.02	e0.20	0.27	0.59	e0.38	e0.17	0.68	e0.37	e0.34	0.10	e0.00	0.06
7	0.02	e0.21	0.25	0.48	e0.37	e0.21	0.78	e0.40	e0.32	0.11	e0.00	0.06
8	0.07	e0.21	0.23	0.42	e0.33	e0.19	0.97	e0.34	e0.32	0.11	e0.00	0.06
9	0.45	e0.23	0.25	0.46	e0.38	e0.18	0.88	e0.30	0.30	0.12	e0.00	0.06
10	0.09	e0.23	0.28	0.44	e0.32	e0.17	e0.48	e0.30	0.28	0.12	e0.00	0.07
11	0.07	e0.19	0.28	0.40	e0.29	e0.17	e0.39	e0.24	0.82	0.10	0.00	0.07
12	0.09	e0.17	0.27	0.52	0.24	0.24	e0.38	e0.19	1.0	0.10	e0.00	0.07
13	0.07	e0.18	0.27	0.36	0.27	0.28	e0.41	e0.11	0.84	0.10	e0.00	0.07
14	e0.08	e0.23	0.28	0.39	e0.33	0.33	e0.39	e0.98	0.87	0.09	e0.00	0.07
15	e0.07	e0.21	0.27	0.46	e0.32	0.55	e0.36	e0.61	0.84	0.07	e0.00	0.08
16	e0.08	e0.24	0.26	0.45	e0.28	0.55	e0.34	e0.49	0.76	0.07	e0.00	0.08
17	e0.07	e0.22	0.26	0.41	e0.29	0.55	e0.38	e0.43	0.72	0.07	e0.00	0.08
18	e0.07	e0.20	0.25	0.37	e0.25	0.60	e0.59	e0.37	0.68	0.07	e0.00	0.08
19	e0.12	e0.19	0.23	0.39	e0.25	0.66	e0.90	e0.28	0.57	0.07	e0.03	0.08
20	e0.08	e0.19	0.22	0.37	e0.23	0.65	e0.61	e0.22	0.47	0.07	0.05	0.08
21	e0.10	e0.20	0.24	0.37	e0.24	0.53	e0.37	e0.19	0.66	0.08	0.06	0.10
22	e0.10	e0.20	0.30	0.40	e0.20	0.42	e0.35	e0.16	0.50	0.07	0.06	0.11
23	e0.07	e0.20	0.80	0.39	e0.19	0.43	e0.36	e0.12	0.24	0.06	0.06	0.08
24	e0.37	e0.20	0.79	0.37	e0.18	0.53	e0.65	e0.12	0.23	0.05	0.06	0.08
25	e0.25	e0.20	0.62	0.34	e0.22	0.45	e0.48	e0.09	0.27	0.04	0.06	0.08
26	e0.22	e0.20	0.60	0.26	e0.19	0.48	e0.57	e0.09	0.56	e0.03	0.06	0.09
27	e0.25	e0.19	0.70	0.32	e0.18	0.56	e0.63	e0.10	0.43	e0.03	0.06	0.08
28	e0.80	e0.18	0.49	e0.34	e0.17	0.77	e0.62	e0.11	0.22	e0.02	0.06	0.08
29	e0.68	e0.18	0.44	e0.38	---	0.61	e0.57	e0.12	0.13	e0.02	0.06	0.08
30	e0.54	e0.18	0.61	e0.34	---	0.64	e0.50	e0.11	0.13	e0.02	0.07	0.10
31	e0.38	---	0.81	e0.34	---	0.63	---	e0.08	---	e0.01	0.06	---
TOTAL	5.26	6.05	12.41	13.25	7.66	12.42	16.81	8.87	13.43	2.34	0.80	2.25
MEAN	0.17	0.20	0.40	0.43	0.27	0.40	0.56	0.29	0.45	0.075	0.026	0.075
MAX	0.80	0.24	0.81	0.63	0.38	0.77	0.97	0.98	1.0	0.12	0.07	0.11
MIN	0.01	0.17	0.17	0.26	0.17	0.15	0.34	0.08	0.05	0.01	0.00	0.06
AC-FT	10	12	25	26	15	25	33	18	27	4.6	1.6	4.5

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

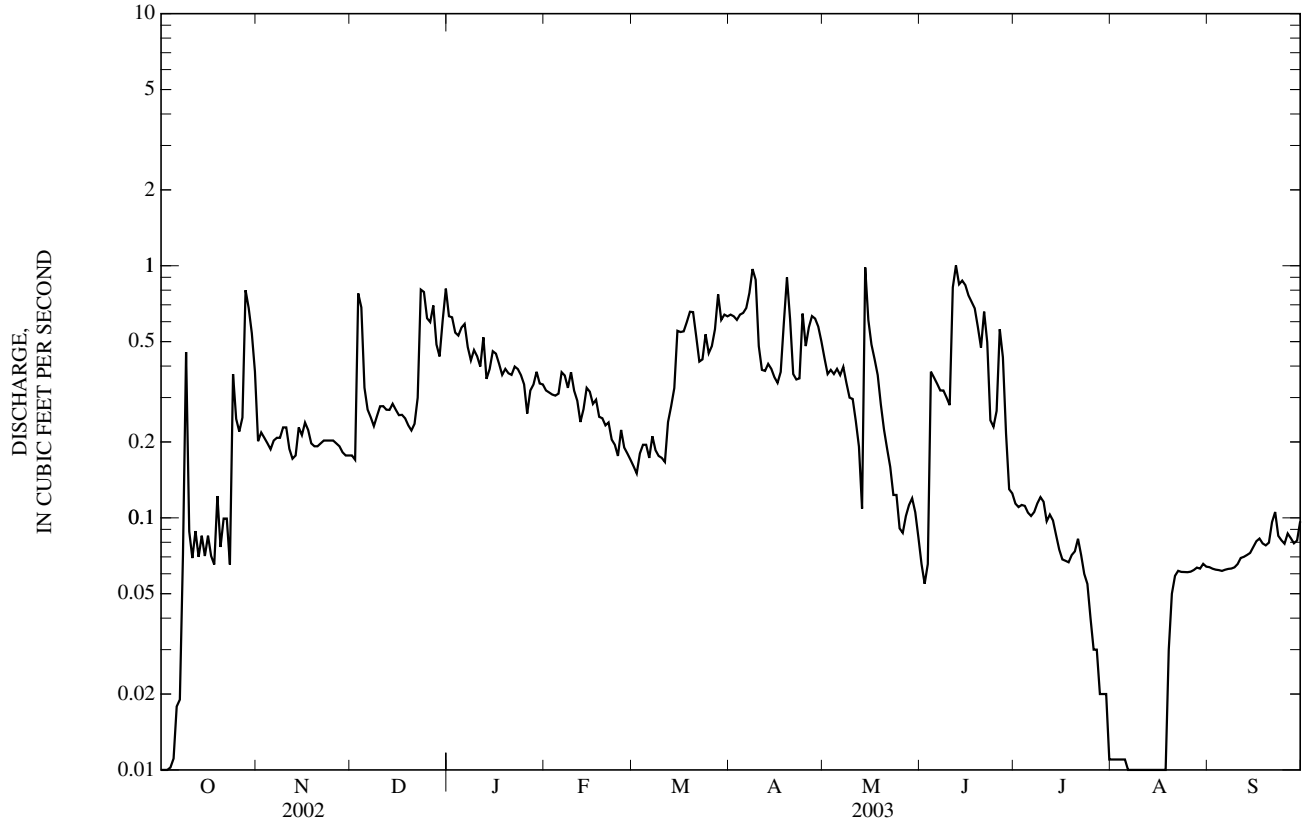
MEAN	0.33	0.39	0.56	0.65	0.64	0.71	0.72	0.48	0.45	0.16	0.12	0.18
MAX	1.06	0.95	0.99	1.44	1.28	1.42	1.56	1.79	1.54	0.76	0.63	1.01
(WY)	(1997)	(1997)	(1997)	(1998)	(1997)	(1998)	(1997)	(1997)	(1997)	(1997)	(1996)	(1996)
MIN	0.10	0.12	0.18	0.21	0.27	0.24	0.39	0.093	0.14	0.056	0.001	0.000
(WY)	(2002)	(2002)	(2002)	(2002)	(2003)	(2002)	(2002)	(2000)	(2000)	(2002)	(2001)	(2000)

e Estimated

07327483 BOGGY CREEK NEAR NINNEKAH, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL TOTAL	76.06		101.55			
ANNUAL MEAN	0.21		0.28		0.44	
HIGHEST ANNUAL MEAN					1.02	1997
LOWEST ANNUAL MEAN					0.18	2002
HIGHEST DAILY MEAN	2.4	Jun 4	1.0	Jun 12	17	May 30, 1997
LOWEST DAILY MEAN	0.00	Aug 17	0.00	Aug 6-18	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 17	0.00	Aug 6	0.00	Aug 11, 2000
MAXIMUM PEAK FLOW			6.9	Jun 11	a64	May 30, 1997
MAXIMUM PEAK STAGE			9.72	Jun 11	11.94	May 30, 1997
ANNUAL RUNOFF (AC-FT)	151		201		318	
10 PERCENT EXCEEDS	0.33		0.62		0.98	
50 PERCENT EXCEEDS	0.20		0.23		0.25	
90 PERCENT EXCEEDS	0.02		0.06		0.03	

a From rating based on step-backwater analysis.



07327484 SCS POND NO. 11 NEAR NINNEKAH, OK

LOCATION.--Lat 34°53'41", long 97°59'48", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ 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 Ninnekah.

DRAINAGE AREA.--2.07 mi^2 (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, 55 acre-ft, Oct. 11-21, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 99 acre-ft, June 5, elevation 1,149.14 ft; minimum daily, 75 acre-ft, Sept. 24-30.

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

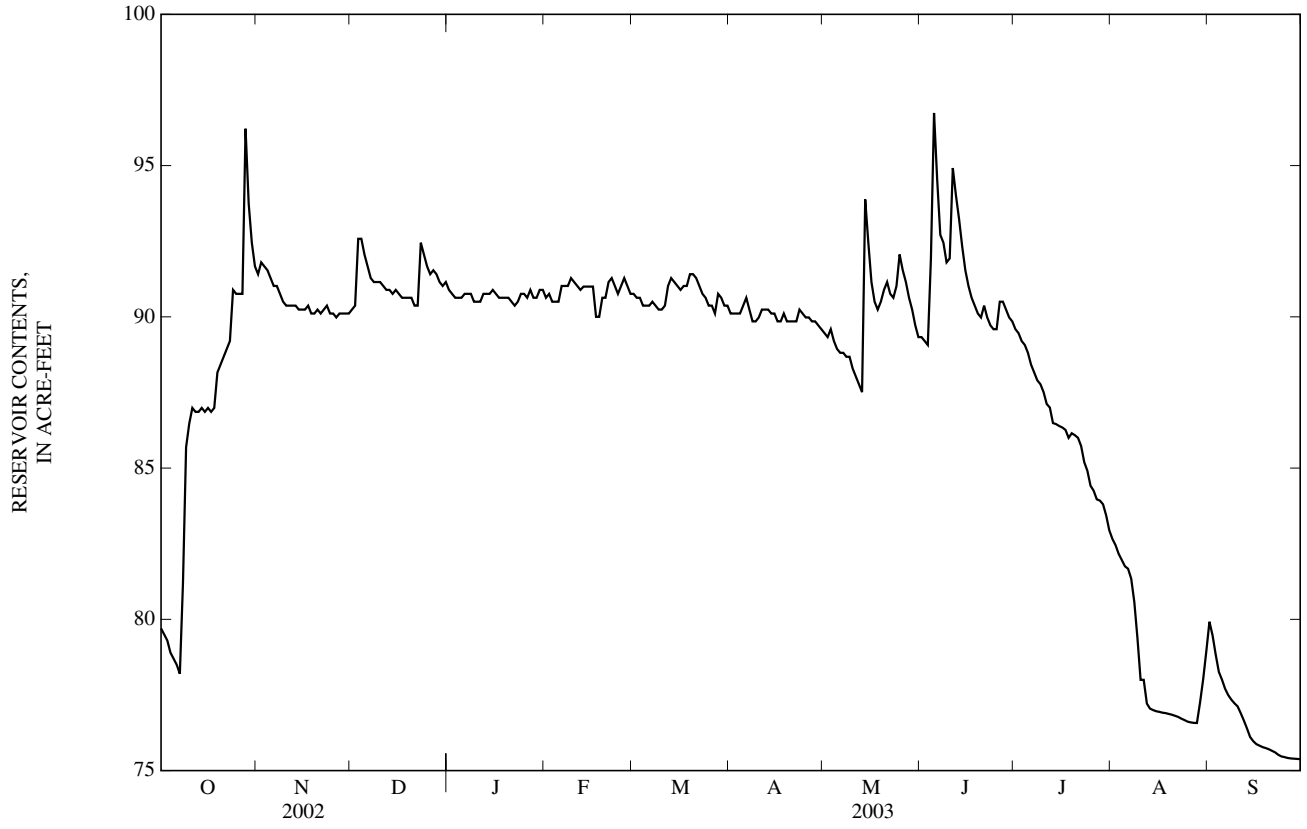
RESERVOIR STORAGE, ACRE FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	91	90	91	91	91	90	89	89	90	e83	e80
2	80	92	90	91	91	91	90	89	89	89	e82	e79
3	79	92	93	91	90	91	90	90	89	89	e82	e79
4	79	92	93	91	90	90	90	89	92	89	e82	e78
5	79	91	92	91	90	90	90	89	97	89	e82	e78
6	78	91	92	91	91	90	91	89	95	88	e82	e78
7	78	91	91	91	91	90	90	89	93	88	e81	e77
8	81	91	91	91	91	90	90	89	92	88	e81	e77
9	86	90	91	90	91	90	90	89	92	88	e79	e77
10	86	90	91	90	91	90	90	88	92	88	e78	e77
11	87	90	91	90	91	90	90	88	95	87	78	e77
12	87	90	91	91	91	91	90	88	94	87	e77	e77
13	87	90	91	91	91	91	90	88	93	e86	e77	e76
14	87	90	91	91	e91	91	90	94	92	e86	77	e76
15	87	90	91	91	e91	91	90	92	92	e86	e77	e76
16	87	90	91	91	e91	91	90	91	91	e86	e77	e76
17	87	90	91	91	e90	91	90	90	91	e86	e77	e76
18	87	90	91	91	90	91	90	90	90	e86	e77	e76
19	88	90	91	91	91	91	90	90	90	e86	e77	e76
20	88	90	91	91	91	91	90	91	90	e86	e77	e76
21	89	90	90	90	91	91	90	91	90	e86	e77	e76
22	89	90	90	90	91	91	90	91	90	e86	e77	e76
23	89	90	92	90	91	91	90	91	90	e85	e77	e76
24	91	90	92	91	91	91	90	91	90	e85	e77	e75
25	91	90	92	91	91	90	90	92	90	e84	e77	e75
26	91	90	91	91	91	90	90	92	90	e84	e77	e75
27	91	90	92	91	91	90	90	91	90	e84	e77	e75
28	96	90	91	91	91	91	90	91	90	e84	e77	e75
29	94	90	91	91	---	91	90	90	90	e84	e77	e75
30	92	90	91	91	---	90	90	90	90	e83	e78	e75
31	92	---	91	91	---	90	---	89	---	e83	e79	---
MAX	96	92	93	91	91	91	91	94	97	90	83	80
MIN	78	90	90	90	90	90	90	88	89	83	77	75
(‡)	1148.62	1148.46	1148.54	1148.54	1148.54	1148.46	1148.46	1148.39	1147.46	1147.90	1147.50	1147.10
(‡‡)	+12	-2	+1	0	0	-1	0	-1	+1	-7	-4	-4

CAL YR 2002 MAX 102 MIN 78 (‡‡) +1
WTR YR 2003 MAX 97 MIN 75 (‡‡) -5

e Estimated
(‡) ELEVATION, IN FEET, AT END OF MONTH
(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET

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



07327550 LITTLE WASHITA RIVER EAST OF NINNEKAH, OK

LOCATION.--Lat 34°57'48", long 97°53'57", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ 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 Ninnekah.

DRAINAGE AREA.--236 mi^2.

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

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

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4.6	e55	17	29	23	28	16	17	4.4	14	e2.2	e59
2	4.6	e54	18	28	23	27	14	17	5.9	12	e2.0	e29
3	e4.4	e51	32	26	22	27	14	16	6.7	10	e1.9	e9.5
4	e4.4	e44	e88	30	22	27	15	17	27	8.6	e2.0	e4.9
5	e4.3	e38	e54	32	20	26	14	14	376	7.0	e1.9	e3.0
6	e4.0	e32	e40	31	27	24	24	12	222	e6.3	e1.7	e1.6
7	e4.3	e29	e36	30	33	23	23	11	95	e5.8	1.5	e1.5
8	e5.4	e26	e33	29	29	23	21	12	65	e5.2	2.0	e1.4
9	94	e23	e33	28	31	22	22	12	46	e4.8	8.2	e1.4
10	61	e21	32	27	37	22	21	12	32	e4.3	12	e1.4
11	37	e20	30	24	32	23	21	9.6	69	e4.1	8.5	e1.4
12	27	e20	28	24	29	25	21	8.3	366	e4.0	8.3	e1.5
13	23	e19	28	25	27	37	21	8.1	334	e3.7	4.7	e1.7
14	e18	e19	27	25	32	41	20	142	268	e3.6	4.2	e1.8
15	e17	18	26	25	31	29	19	45	120	e3.4	3.7	e1.8
16	e16	17	26	26	27	28	27	31	81	e3.3	3.4	e1.6
17	e15	18	26	25	25	e26	32	23	45	e3.2	4.0	e1.6
18	e14	18	25	24	24	e25	24	18	33	e3.0	2.4	e1.4
19	e24	17	24	24	25	e24	25	17	28	e2.9	2.0	e1.3
20	99	17	23	25	25	e23	32	61	23	e2.8	1.9	e1.4
21	60	17	22	25	27	e22	23	40	29	e2.6	e1.7	e1.7
22	37	17	22	24	41	e22	20	30	29	e2.6	e1.5	e1.9
23	30	17	42	20	37	e21	21	24	21	2.4	e1.5	e2.0
24	54	17	66	e20	30	e20	46	33	17	2.2	e1.4	e1.9
25	81	17	45	e19	e29	19	39	32	16	e2.1	e1.4	e1.7
26	56	15	37	e19	e28	17	27	24	23	e2.0	e1.3	e1.5
27	43	15	33	e18	28	16	23	19	35	e1.9	e1.1	e1.4
28	134	15	31	17	28	23	20	14	24	e1.8	e1.7	e1.3
29	237	17	31	26	---	23	20	11	18	e1.9	e1.8	e1.2
30	102	17	32	25	---	18	18	9.5	15	e1.9	e2.6	e1.5
31	61	---	31	24	---	17	---	5.7	---	e2.2	e72	---
TOTAL	1,376.0	720	1,038	774	792	748	683	745.2	2,474.0	135.6	166.5	144.3
MEAN	44.4	24.0	33.5	25.0	28.3	24.1	22.8	24.0	82.5	4.37	5.37	4.81
MAX	237	55	88	32	41	41	46	142	376	14	72	59
MIN	4.0	15	17	17	20	16	14	5.7	4.4	1.8	1.1	1.2
AC-FT	2,730	1,430	2,060	1,540	1,570	1,480	1,350	1,480	4,910	269	330	286

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

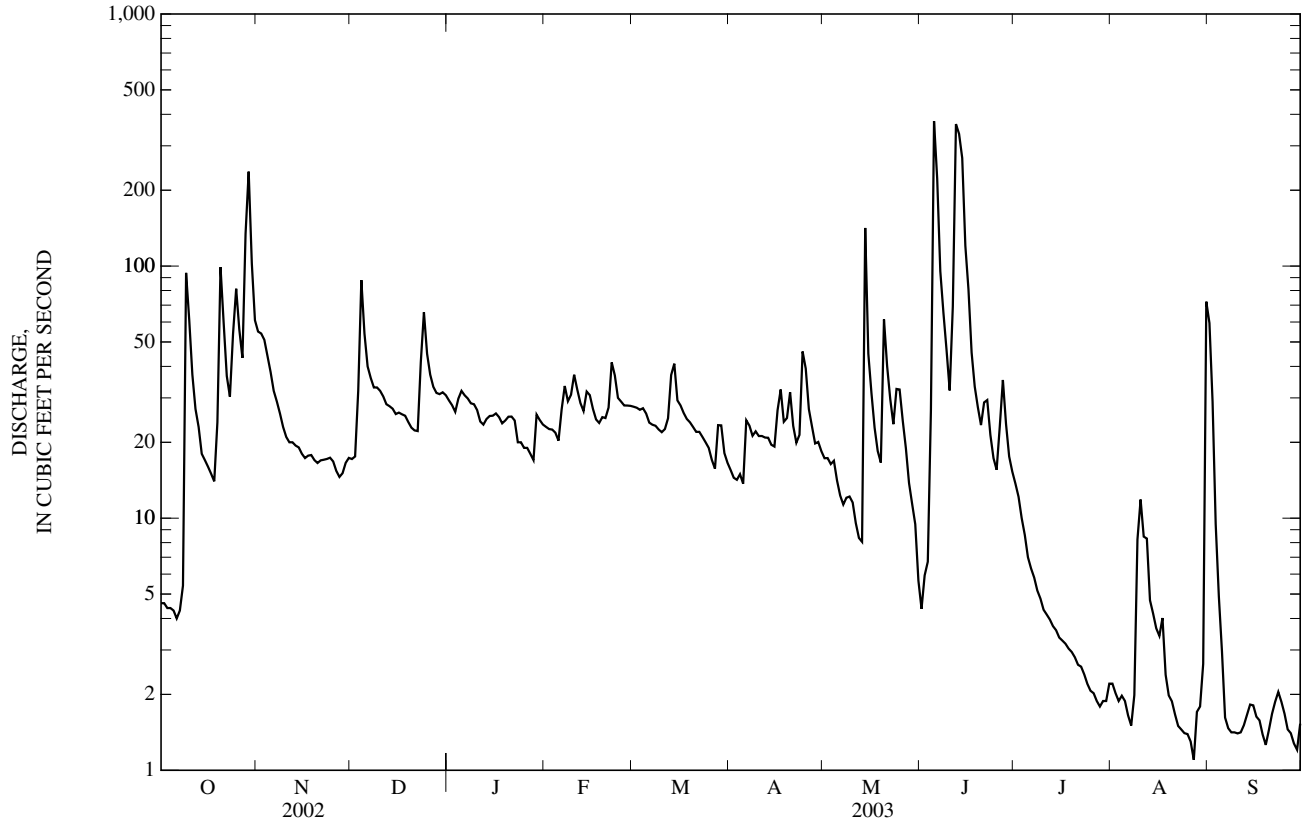
MEAN	48.8	49.6	62.0	69.6	78.8	89.1	95.5	113	107	41.9	29.1	29.6
MAX	164	105	185	264	196	320	181	325	352	126	92.7	85.4
(WY)	(2001)	(1993)	(1993)	(1998)	(1993)	(1998)	(1998)	(1993)	(1995)	(1992)	(1992)	(1992)
MIN	9.75	16.0	21.2	24.0	24.1	23.9	22.8	18.1	35.8	4.37	2.77	4.81
(WY)	(1999)	(2000)	(2002)	(2002)	(2002)	(2002)	(2003)	(1996)	(2001)	(2003)	(2000)	(2003)

e Estimated

07327550 LITTLE WASHITA RIVER EAST OF NINNEKAH, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	10,242.1		9,796.6			
ANNUAL MEAN	28.1		26.8		64.9	
HIGHEST ANNUAL MEAN					137	1993
LOWEST ANNUAL MEAN					23.6	2002
HIGHEST DAILY MEAN	244	Apr 13	376	Jun 5	3,570	May 30, 1997
LOWEST DAILY MEAN	3.2	Sep 5	1.1	Aug 27	1.1	Aug 27, 2003
ANNUAL SEVEN-DAY MINIMUM	3.8	Sep 2	1.4	Aug 21	1.4	Aug 21, 2003
MAXIMUM PEAK FLOW			1,250	Jun 5	a9,920	May 9, 1993
MAXIMUM PEAK STAGE			11.78	Jun 5	b20.70	May 9, 1993
ANNUAL RUNOFF (AC-FT)	20,320		19,430		47,020	
10 PERCENT EXCEEDS	51		44		125	
50 PERCENT EXCEEDS	21		21		39	
90 PERCENT EXCEEDS	5.4		1.9		9.3	

a From rating extended above 2,300 ft^3/s.
b From high-water mark on crest-stage gage.



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 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 990.00 ft above sea level. Oct. 1, 1988 to Sept. 30, 2000, datum 5.00 ft higher. Prior to Oct. 1, 1988, datum 10.00 ft higher.

REMARKS.--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 telementer at station.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	1,320	205	423	423	274	277	326	172	719	69	251
2	95	1,020	205	408	430	279	265	325	168	847	70	280
3	90	836	218	408	419	286	255	322	163	707	65	188
4	90	731	382	409	413	286	273	319	182	638	73	218
5	e81	644	374	391	409	281	306	307	663	587	82	218
6	e76	756	350	375	415	275	357	296	906	538	73	206
7	83	719	332	407	432	266	562	286	670	509	59	e172
8	96	558	319	432	440	260	570	285	860	479	55	95
9	251	476	317	432	440	255	475	275	1,540	454	66	e88
10	327	416	316	435	403	253	402	288	1,170	364	100	76
11	271	374	309	428	371	251	380	270	851	283	95	144
12	242	341	304	427	354	251	337	369	1,140	239	118	102
13	225	319	295	433	341	288	330	328	1,270	206	101	94
14	221	302	287	430	338	339	334	813	1,570	182	96	93
15	196	285	282	433	328	355	332	563	1,860	160	92	94
16	172	270	278	427	320	344	356	396	2,000	150	e90	89
17	155	260	273	426	310	337	328	335	e1,940	135	e87	83
18	147	252	265	423	304	346	308	312	2,500	122	e79	77
19	157	246	260	424	298	372	295	271	1,910	112	e73	75
20	428	237	258	426	293	407	308	419	1,270	104	68	74
21	314	231	255	425	294	431	363	471	1,080	97	e67	81
22	241	227	251	428	313	628	350	366	1,030	88	e64	96
23	227	225	277	418	313	532	319	294	885	86	e60	82
24	426	221	402	419	301	451	359	260	829	82	58	81
25	724	213	455	425	280	409	366	241	951	79	e54	79
26	575	208	415	425	e280	387	314	227	647	75	50	74
27	1,100	208	599	416	e270	367	286	209	524	72	50	69
28	1,570	207	652	412	e285	378	262	195	464	72	e48	69
29	1,930	207	533	427	---	369	323	202	520	e71	e46	70
30	1,290	206	476	435	---	350	405	240	711	e70	80	74
31	1,150	---	447	420	---	290	---	196	---	e70	380	---
TOTAL	13,052	12,515	10,591	13,047	9,817	10,597	10,397	10,006	30,446	8,397	2,568	3,492
MEAN	421	417	342	421	351	342	347	323	1,015	271	82.8	116
MAX	1,930	1,320	652	435	440	628	570	813	2,500	847	380	280
MIN	76	206	205	375	270	251	255	195	163	70	46	69
AC-FT	25,890	24,820	21,010	25,880	19,470	21,020	20,620	19,850	60,390	16,660	5,090	6,930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

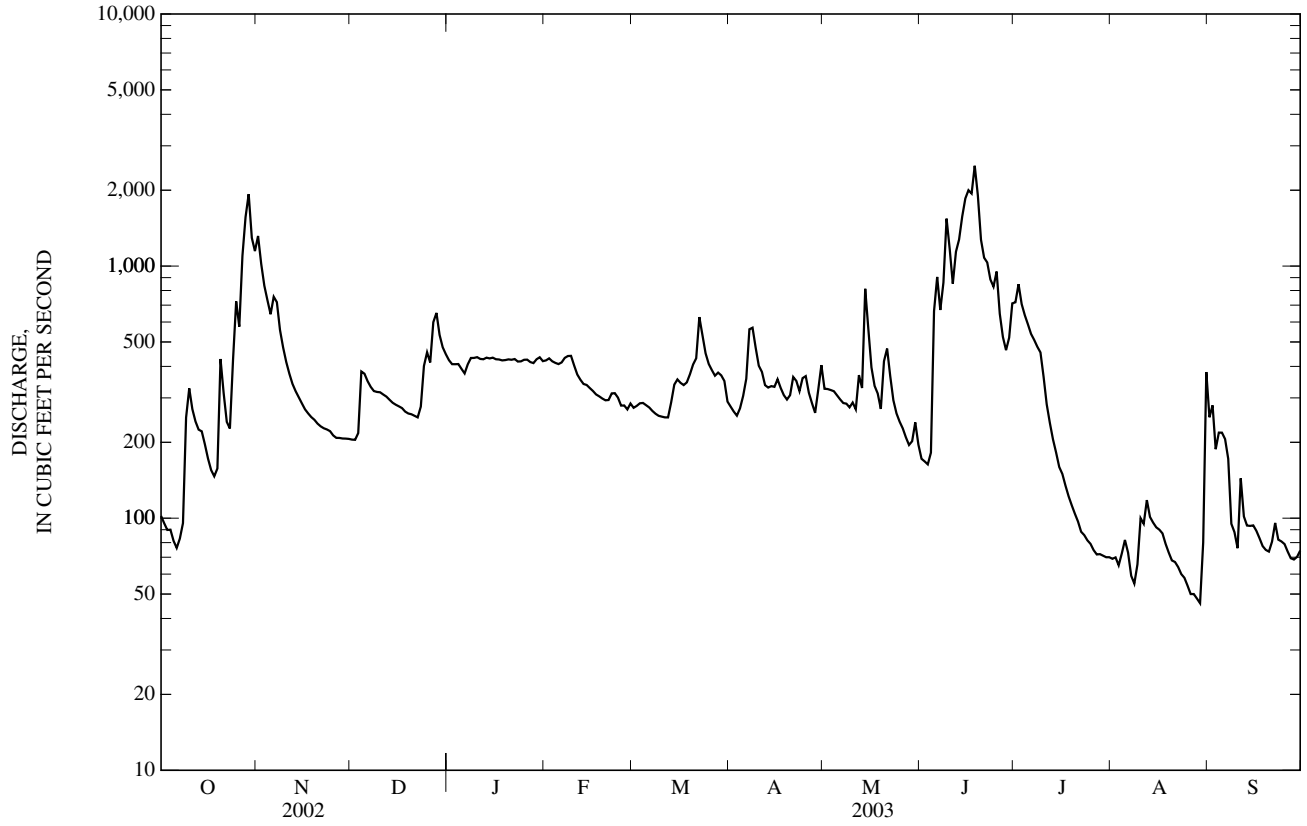
MEAN	573	486	468	430	483	724	774	1,310	1,453	513	387	514
MAX	4,441	1,672	2,615	2,057	1,829	4,446	3,598	6,916	6,865	1,678	2,325	3,345
(WY)	(1984)	(1993)	(1993)	(1998)	(1998)	(1998)	(1997)	(1993)	(1995)	(1975)	(1995)	(1996)
MIN	61.1	52.9	64.5	77.3	86.1	73.8	23.9	22.9	96.9	13.9	3.88	40.0
(WY)	(1979)	(1971)	(1968)	(1971)	(1967)	(1971)	(1971)	(1971)	(1967)	(1970)	(1972)	(1972)

e Estimated

07328100 WASHITA RIVER AT ALEX, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL TOTAL	129,634		134,925			
ANNUAL MEAN	355		370		675	
HIGHEST ANNUAL MEAN					1,902	1993
LOWEST ANNUAL MEAN					120	1971
HIGHEST DAILY MEAN	2,770	Jun 12	2,500	Jun 18	22,500	Oct 21, 1983
LOWEST DAILY MEAN	55	Aug 25	46	Aug 29	0.00	aAug 13, 1970
ANNUAL SEVEN-DAY MINIMUM	63	Aug 20	52	Aug 23	0.01	Aug 12, 1970
MAXIMUM PEAK FLOW			b2,710	Jun 18	25,000	Jun 8, 1995
MAXIMUM PEAK STAGE			b8.86	Jun 18	c33.78	Oct 21, 1983
ANNUAL RUNOFF (AC-FT)	257,100		267,600		489,100	
10 PERCENT EXCEEDS	721		685		1,570	
50 PERCENT EXCEEDS	248		304		307	
90 PERCENT EXCEEDS	96		79		77	

a No flow Aug. 13, 18, 1970, Aug. 30 to Sept. 1, 1971.
b Maximum known. May have been higher during estimated periods.
c Present datum.



07328180 NORTH CRINER CREEK NEAR CRINER, OK

LOCATION.--Lat 34°58'17", long 97°35'04", in SE ¼ SE ¼ 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 mi^2

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

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

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

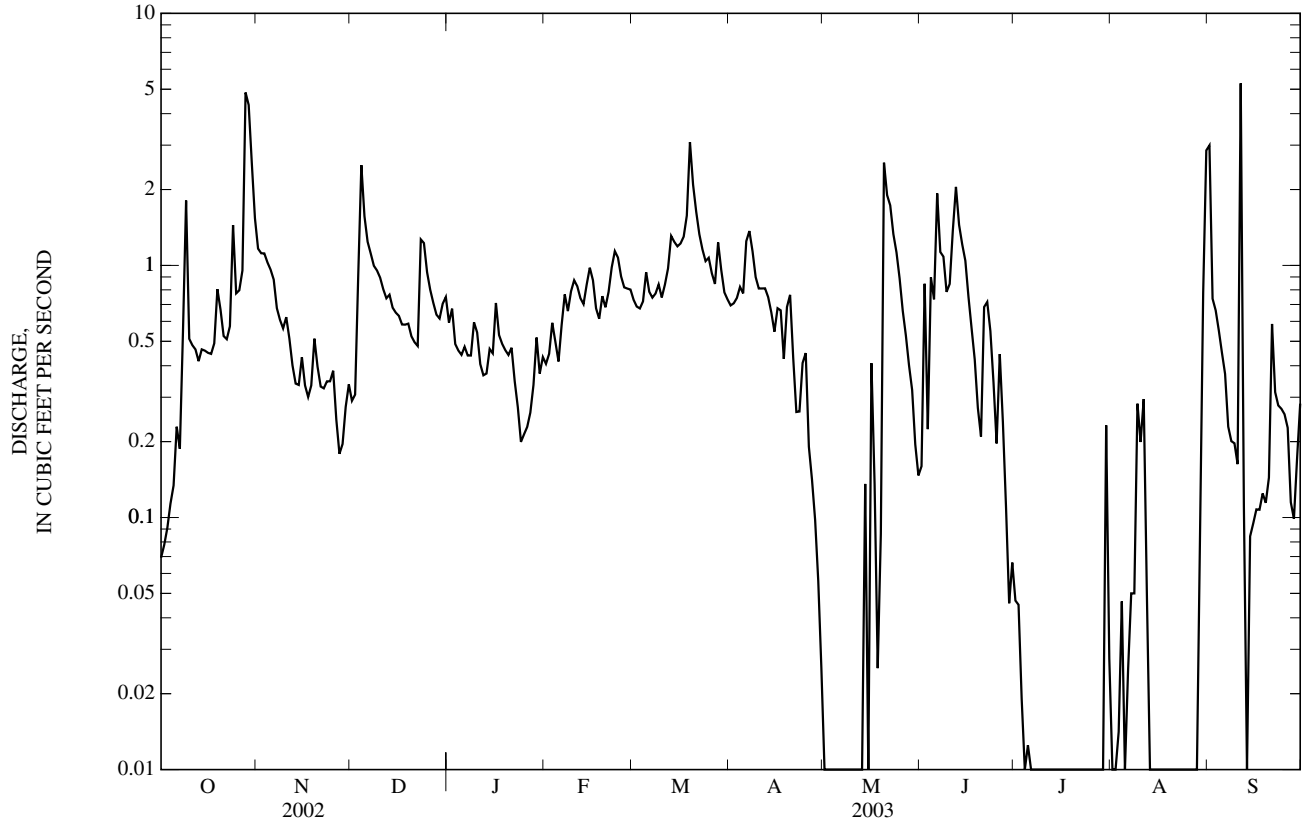
DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.07	1.2	0.29	0.59	0.41	0.73	0.69	0.00	0.16	0.05	0.00	3.0
2	0.08	1.1	0.31	0.67	0.45	0.69	0.71	0.00	0.85	0.05	0.00	0.74
3	0.09	1.1	0.91	0.49	0.59	0.68	0.74	0.00	0.22	0.02	0.01	0.66
4	0.11	1.0	2.5	0.46	0.50	0.72	0.82	0.00	0.90	0.01	0.05	0.55
5	0.13	0.96	1.6	0.44	0.42	0.94	0.77	0.00	0.73	0.01	0.00	0.45
6	0.23	0.88	1.2	0.48	0.58	0.79	1.2	0.00	1.9	0.01	0.02	0.37
7	0.19	0.68	1.1	0.44	0.77	0.75	1.4	0.00	1.1	0.00	0.05	0.23
8	0.55	0.61	1.00	0.44	0.66	0.77	1.1	0.00	1.1	0.00	0.05	0.20
9	1.8	0.56	0.95	0.59	0.79	0.84	0.90	0.00	0.79	0.00	0.28	0.20
10	0.51	0.62	0.89	0.54	0.87	0.75	0.81	0.00	0.84	0.00	0.20	0.16
11	0.48	0.51	0.80	0.41	0.83	0.84	0.81	0.00	1.4	0.00	0.30	5.3
12	0.46	0.40	0.74	0.37	0.74	0.97	0.81	0.00	2.0	0.00	0.05	0.11
13	0.42	0.34	0.77	0.37	0.70	1.3	0.75	0.00	1.4	0.00	e0.00	0.00
14	0.46	0.34	0.68	0.47	0.84	1.2	0.65	0.14	1.2	0.00	e0.00	0.08
15	0.46	0.43	0.65	0.45	0.98	1.2	0.55	0.00	1.0	0.00	e0.00	0.09
16	0.45	0.33	0.63	0.71	0.87	1.2	0.68	0.41	0.75	0.00	e0.00	0.11
17	0.45	0.30	0.58	0.53	0.68	1.3	0.66	0.14	0.56	0.00	e0.00	0.11
18	0.49	0.33	0.58	0.49	0.61	1.6	0.43	0.03	0.42	0.00	e0.00	0.12
19	0.80	0.51	0.59	0.46	0.76	3.1	0.68	0.09	0.27	0.00	e0.00	0.11
20	0.67	0.40	0.52	0.44	0.68	2.1	0.76	2.6	0.21	0.00	e0.00	0.14
21	0.52	0.33	0.50	0.47	0.78	1.6	0.43	1.9	0.68	0.00	e0.00	0.59
22	0.51	0.33	0.48	0.35	0.98	1.3	0.26	1.7	0.72	0.00	e0.00	0.31
23	0.57	0.35	1.3	0.27	1.1	1.2	0.26	1.3	0.55	0.00	e0.00	0.28
24	1.4	0.35	1.2	0.20	1.1	1.0	0.41	1.1	0.34	0.00	e0.00	0.27
25	0.77	0.38	0.94	0.21	0.90	1.1	0.45	0.89	0.20	0.00	e0.00	0.26
26	0.80	0.24	0.80	0.23	0.82	0.93	0.19	0.66	0.45	0.00	e0.00	0.23
27	0.95	0.18	0.71	0.26	0.81	0.84	0.14	0.53	0.24	0.00	e0.00	0.11
28	4.9	0.20	0.64	0.34	0.80	1.2	0.10	0.40	0.11	0.00	e0.00	0.10
29	4.3	0.27	0.62	0.52	---	0.96	0.06	0.32	0.05	0.00	0.09	0.17
30	2.5	0.34	0.70	0.37	---	0.78	0.03	0.19	0.07	0.23	0.78	0.28
31	1.5	---	0.75	0.43	---	0.73	---	0.15	---	0.03	2.9	---
TOTAL	27.62	15.57	25.93	13.49	21.02	34.11	18.25	12.55	21.21	0.41	4.78	15.33
MEAN	0.89	0.52	0.84	0.44	0.75	1.10	0.61	0.40	0.71	0.013	0.15	0.51
MAX	4.9	1.2	2.5	0.71	1.1	3.1	1.4	2.6	2.0	0.23	2.9	5.3
MIN	0.07	0.18	0.29	0.20	0.41	0.68	0.03	0.00	0.05	0.00	0.00	0.00
AC-FT	55	31	51	27	42	68	36	25	42	0.8	9.5	30
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)												
MEAN	1.25	1.91	2.41	2.26	3.11	4.07	4.56	5.53	3.12	1.49	1.58	1.34
MAX	3.68	7.23	9.59	7.37	9.67	12.5	14.7	23.1	9.93	5.98	11.0	5.91
(WY)	(1997)	(1997)	(1993)	(1993)	(1993)	(1998)	(1990)	(1993)	(1992)	(1992)	(1996)	(1996)
MIN	0.12	0.39	0.33	0.16	0.75	0.86	0.50	0.40	0.42	0.013	0.009	0.016
(WY)	(2000)	(2002)	(1991)	(2000)	(2003)	(1991)	(2000)	(2003)	(1994)	(2003)	(2000)	(2000)

e Estimated

07328180 NORTH CRINER CREEK NEAR CRINER, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1990 - 2003	
ANNUAL TOTAL	473.02		210.27			
ANNUAL MEAN	1.30		0.58		2.72	
HIGHEST ANNUAL MEAN					6.65	1993
LOWEST ANNUAL MEAN					0.58	2003
HIGHEST DAILY MEAN	14	Apr 13	5.3	Sep 11	151	May 2, 1990
LOWEST DAILY MEAN	0.07	Oct 1	0.00	at times	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.09	Aug 20	0.00	May 1	0.00	Jun 21, 1994
MAXIMUM PEAK FLOW			55	Sep 11	605	May 23, 1993
MAXIMUM PEAK STAGE			5.07	Sep 11	11.24	May 23, 1993
ANNUAL RUNOFF (AC-FT)	938		417		1,970	
10 PERCENT EXCEEDS	2.5		1.2		6.2	
50 PERCENT EXCEEDS	0.95		0.46		1.2	
90 PERCENT EXCEEDS	0.13		0.00		0.11	



07328500 WASHITA RIVER NEAR PAULS VALLEY, OK

LOCATION.--Lat 34°45'17", long 97°15'04", in NE ¼, SE ¼ 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 mi^2.

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 poor. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e145	1,270	e322	546	e505	e389	e532	540	337	937	100	1,290
2	e128	1,360	e311	477	e500	e382	e512	559	271	1,020	92	568
3	115	1,150	e367	448	e490	e389	e504	495	275	948	94	526
4	e104	960	723	510	e481	e390	e495	503	274	914	98	387
5	e102	850	704	e518	e477	e382	e493	487	326	849	87	323
6	e97	719	587	e510	e470	e375	e471	472	1,130	811	98	320
7	e98	766	496	e505	e500	e368	e525	456	1,180	722	112	267
8	e118	800	440	e500	e495	e359	e531	447	1,010	678	102	196
9	2,330	655	e438	524	e490	e351	e523	442	1,150	639	84	162
10	1,310	537	e437	534	514	e349	e518	447	1,570	606	101	134
11	700	514	437	520	e482	e342	e484	445	1,250	542	136	978
12	530	474	e434	e518	e480	e339	e456	414	1,590	416	169	1,420
13	428	430	e429	e509	e478	e369	e470	445	1,660	326	119	583
14	376	e420	e419	e505	e469	e419	485	787	1,540	268	e115	435
15	e336	e402	e402	e508	e454	e458	e460	1,410	1,940	224	e113	315
16	e309	e390	e391	e515	e443	e446	e462	956	1,890	199	e109	252
17	e288	e382	e382	e505	e435	530	e493	923	2,130	171	e107	227
18	e281	e374	e378	e500	e425	999	e490	656	2,620	158	e100	e218
19	e293	e368	e372	e495	e417	1,080	e465	550	2,360	142	e95	e201
20	470	e361	e370	e495	e403	1,030	e432	501	1,690	128	e87	e194
21	558	e357	e366	e505	e399	912	e427	650	1,300	114	e82	e203
22	440	e355	e365	e505	e400	792	402	805	1,160	105	e78	e222
23	e380	e357	466	e510	e410	864	597	722	1,140	e95	e75	229
24	365	e358	616	e520	e415	873	598	556	1,030	e92	e70	214
25	807	e349	531	e510	e400	712	506	466	964	e85	e69	162
26	861	e341	563	e503	e390	668	570	410	1,100	e83	e68	144
27	723	e335	519	e500	e386	630	528	372	925	e80	e64	133
28	1,340	e331	559	e505	e381	609	460	331	797	e78	e62	114
29	3,050	e330	746	e500	---	e590	406	302	731	e75	e60	103
30	2,170	e330	666	e491	---	e573	397	278	715	e83	754	103
31	1,360	---	580	e510	---	e559	---	311	---	133	1,370	---
TOTAL	20,612	16,625	14,816	15,701	12,589	17,528	14,692	17,138	36,055	11,721	4,870	10,623
MEAN	665	554	478	506	450	565	490	553	1,202	378	157	354
MAX	3,050	1,360	746	546	514	1,080	598	1,410	2,620	1,020	1,370	1,420
MIN	97	330	311	448	381	339	397	278	271	75	60	103
AC-FT	40,880	32,980	29,390	31,140	24,970	34,770	29,140	33,990	71,520	23,250	9,660	21,070

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

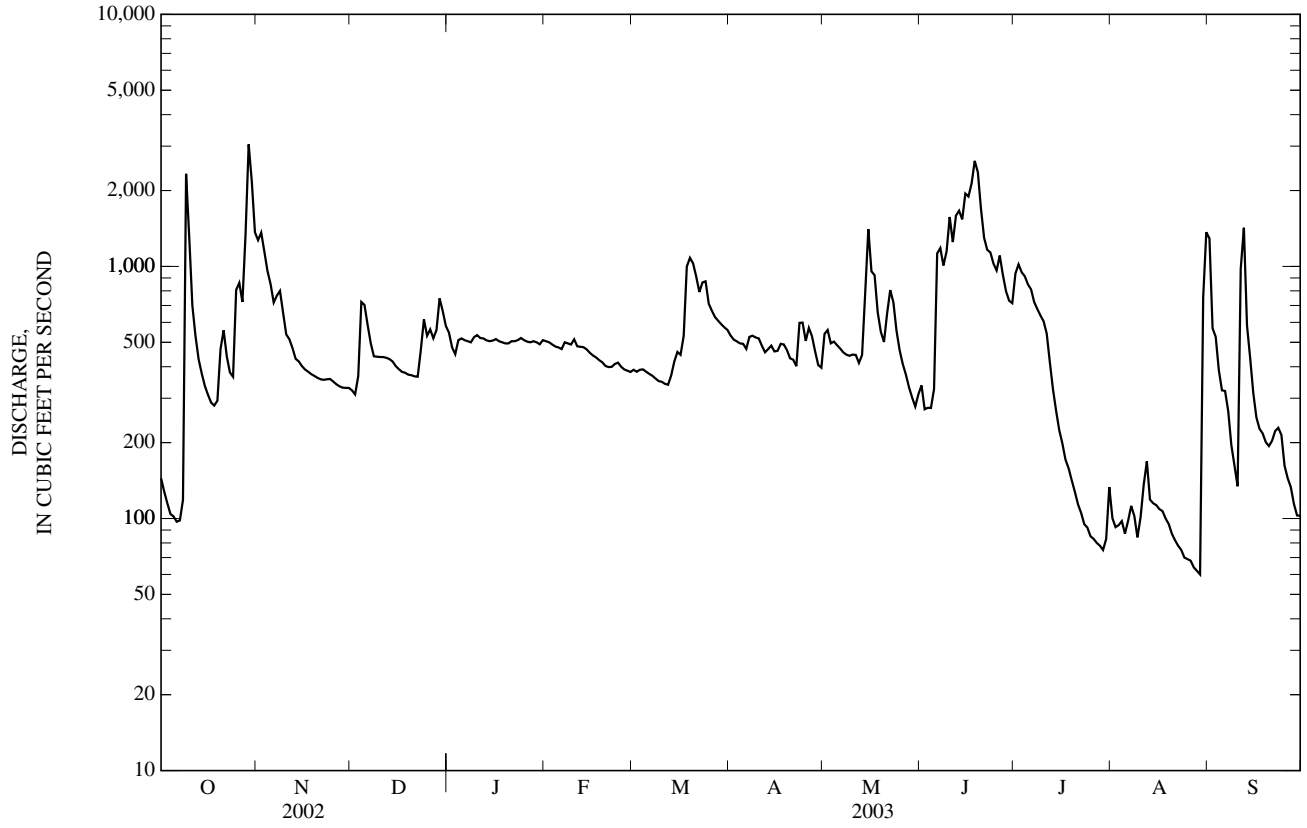
MEAN	892	761	638	619	739	1,054	1,070	1,852	1,962	674	453	627
MAX	7,934	3,608	3,347	2,868	3,149	5,573	4,311	10,690	9,788	3,174	2,961	4,086
(WY)	(1987)	(1987)	(1992)	(1998)	(1987)	(1998)	(1997)	(1993)	(1995)	(1987)	(1995)	(1996)
MIN	35.2	61.7	69.6	91.3	87.8	78.9	58.9	38.1	151	16.3	0.28	23.6
(WY)	(1964)	(1968)	(1968)	(1967)	(1967)	(1967)	(1982)	(1971)	(1966)	(1964)	(1972)	(1972)

e Estimated

07328500 WASHITA RIVER NEAR PAULS VALLEY, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	169,930		192,970			
ANNUAL MEAN	466		529		a945	
HIGHEST ANNUAL MEAN					3,661	1987
LOWEST ANNUAL MEAN					181	1967
HIGHEST DAILY MEAN	3,050	Oct 29	3,050	Oct 29	41,700	May 29, 1987
LOWEST DAILY MEAN	97	Oct 6	60	Aug 29	b0.00	Jul 21, 1964
ANNUAL SEVEN-DAY MINIMUM	109	Oct 2	67	Aug 23	0.00	Jul 21, 1964
MAXIMUM PEAK FLOW			3,420	Oct 29	43,600	May 29, 1987
MAXIMUM PEAK STAGE			6.67	Oct 29	c28.72	May 29, 1987
ANNUAL RUNOFF (AC-FT)	337,100		382,800		684,500	
10 PERCENT EXCEEDS	869		1,000		2,130	
50 PERCENT EXCEEDS	330		460		423	
90 PERCENT EXCEEDS	161		106		93	

a Prior to regulation, water years 1938-50, 829 ft^3/s.
b No flow in 1956, 1964, 1966, 1967, 1970, 1972.
c Maximum gage height for period of record, 29.08 ft, May 11, 1950.



07329849 ANTELOPE SPRING AT SULPHUR, OK

LOCATION.--Lat 34°30'16", long 96°56'28", in NW $^1/_4$ NE $^1/_4$ sec.1, T.1 S., R.3 E., Murray County, Hydrologic Unit 11130303, 10 ft downstream from spring in the Chickasaw National Park, 1.1 mi up the self-guiding nature trail from the nature center, at Sulphur, OK.

PERIOD OF RECORD.--November 1985 to September 1989, October 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,080 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. Several unpublished observations of water temperature were made during the year and are available at the District Office. U.S.Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11 ft^3/s. Mar.28, Apr. 1, 2, 1988, gage height, 0.75 ft; minimum daily discharge 0.08 ft^3/s, Feb. 9. 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5.7 ft^3/s, Dec. 23, gage height, 0.62 ft; minimum daily discharge, .86 ft^3/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

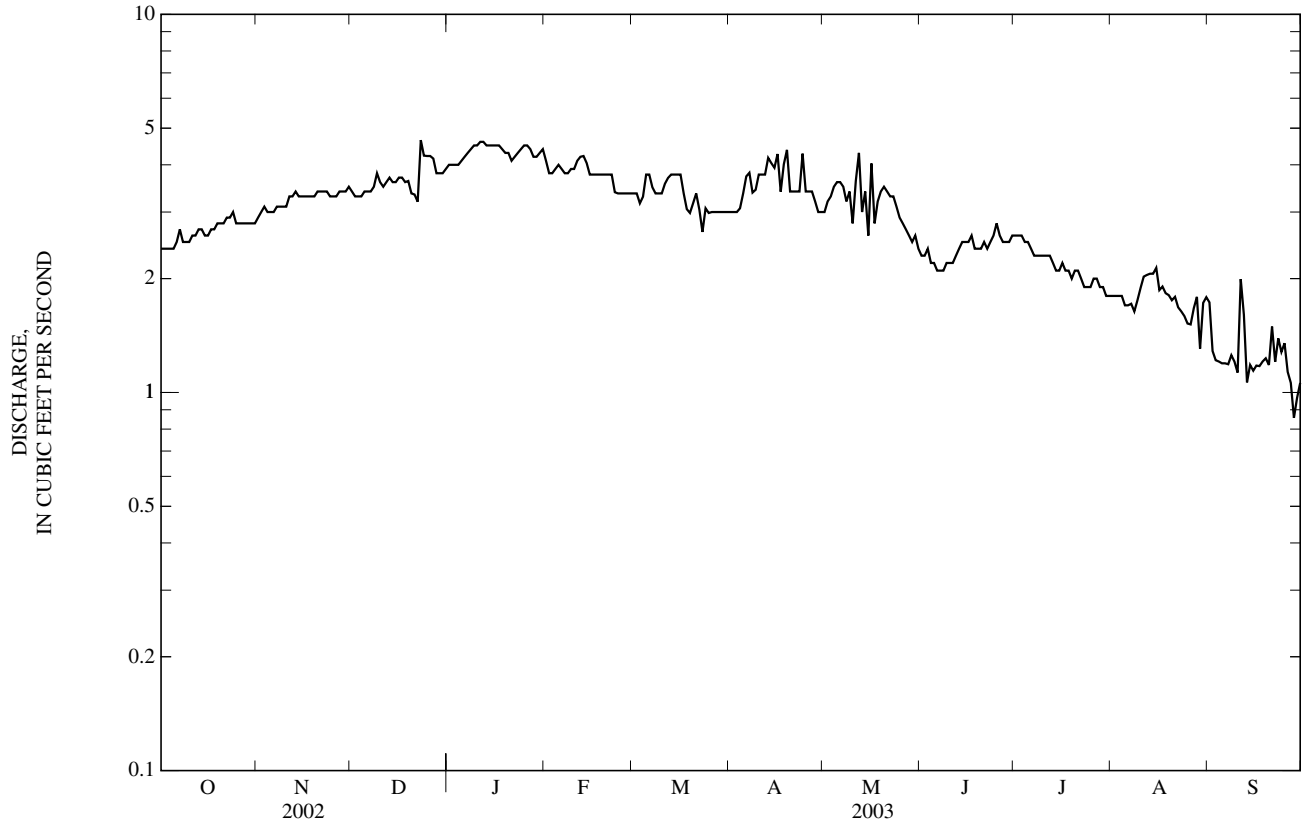
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.4	e2.9	e3.4	e4.0	e4.1	3.4	e3.0	e3.0	e2.3	e2.6	e1.8	1.7
2	e2.4	e3.0	e3.3	e4.0	e3.8	3.4	e3.0	e3.2	e2.3	e2.6	e1.8	1.3
3	e2.4	e3.1	e3.3	e4.0	e3.8	3.2	3.0	e3.3	e2.4	e2.6	e1.8	1.2
4	e2.4	e3.0	e3.3	e4.0	e3.9	3.3	3.1	e3.5	e2.2	e2.5	e1.8	1.2
5	e2.4	e3.0	e3.4	e4.1	e4.0	3.8	3.4	e3.6	e2.2	e2.5	e1.7	1.2
6	e2.5	e3.0	e3.4	e4.2	e3.9	3.8	3.7	e3.6	e2.1	e2.4	1.7	1.2
7	e2.7	e3.1	e3.4	e4.3	e3.8	3.5	3.8	e3.5	e2.1	e2.3	1.7	1.2
8	e2.5	e3.1	e3.5	e4.4	e3.8	3.4	3.4	e3.2	e2.1	e2.3	1.6	1.3
9	e2.5	e3.1	e3.8	e4.5	e3.9	3.4	3.4	e3.4	e2.2	e2.3	1.8	1.2
10	e2.5	e3.1	e3.6	e4.5	e3.9	3.4	3.8	e2.8	e2.2	e2.3	1.9	1.1
11	e2.6	e3.3	e3.5	e4.6	e4.1	3.6	3.8	e3.6	e2.2	e2.3	2.0	2.0
12	e2.6	e3.3	e3.6	e4.6	4.2	3.7	3.8	e4.3	e2.3	e2.3	2.0	1.6
13	e2.7	e3.4	e3.7	e4.5	4.2	3.8	4.2	e3.0	e2.4	e2.2	2.1	1.1
14	e2.7	e3.3	e3.6	e4.5	4.0	3.8	4.0	e3.4	e2.5	e2.1	2.1	1.2
15	e2.6	e3.3	e3.6	e4.5	3.8	3.8	3.9	e2.6	e2.5	e2.1	2.1	1.1
16	e2.6	e3.3	e3.7	e4.5	3.8	3.8	e4.3	e4.0	e2.5	e2.2	1.9	1.2
17	e2.7	e3.3	e3.7	e4.5	3.8	3.4	e3.4	e2.8	e2.6	e2.1	1.9	1.2
18	e2.7	e3.3	3.6	e4.4	3.8	3.1	e4.0	e3.2	e2.4	e2.1	1.8	1.2
19	e2.8	e3.3	3.6	e4.3	3.8	3.0	e4.4	e3.4	e2.4	e2.0	1.8	1.2
20	e2.8	e3.4	3.4	e4.3	3.8	3.2	e3.4	e3.5	e2.4	e2.1	1.8	1.2
21	e2.8	e3.4	3.3	e4.1	3.8	3.4	e3.4	e3.4	e2.5	e2.1	1.8	1.5
22	e2.9	e3.4	3.2	e4.2	3.8	3.0	e3.4	e3.3	e2.4	e2.0	1.7	1.2
23	e2.9	e3.4	4.6	e4.3	3.4	2.7	e3.4	e3.3	e2.5	e1.9	1.6	1.4
24	e3.0	e3.3	4.2	e4.4	3.4	3.1	e4.3	e3.1	e2.6	e1.9	1.6	1.3
25	e2.8	e3.3	4.2	e4.5	3.4	3.0	e3.4	e2.9	e2.8	e1.9	1.5	1.3
26	e2.8	e3.3	4.2	e4.5	3.4	3.0	e3.4	e2.8	e2.6	e2.0	1.5	1.1
27	e2.8	e3.4	4.2	e4.4	3.4	e3.0	e3.4	e2.7	e2.5	e2.0	1.7	1.1
28	e2.8	e3.4	e3.8	e4.2	3.4	e3.0	e3.2	e2.6	e2.5	e1.9	1.8	0.86
29	e2.8	e3.4	e3.8	e4.2	---	e3.0	e3.0	e2.5	e2.5	e1.9	1.3	0.97
30	e2.8	e3.5	e3.8	e4.3	---	e3.0	e3.0	e2.6	e2.6	e1.8	1.7	1.1
31	e2.8	---	e3.9	e4.4	---	e3.0	---	e2.4	---	e1.8	1.8	---
TOTAL	82.7	97.4	113.6	134.2	106.2	103.0	106.7	98.5	71.8	67.1	55.1	37.43
MEAN	2.67	3.25	3.66	4.33	3.79	3.32	3.56	3.18	2.39	2.16	1.78	1.25
MAX	3.0	3.5	4.6	4.6	4.2	3.8	4.4	4.3	2.8	2.6	2.1	2.0
MIN	2.4	2.9	3.2	4.0	3.4	2.7	3.0	2.4	2.1	1.8	1.3	0.86
AC-FT	164	193	225	266	211	204	212	195	142	133	109	74

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2003, BY WATER YEAR (WY)

MEAN	2.31	2.58	3.64	4.44	4.28	4.47	4.34	3.99	3.99	3.45	2.91	2.61
MAX	3.15	3.85	5.22	7.48	7.10	7.81	7.94	5.88	5.15	4.07	3.32	3.25
(WY)	(1988)	(1988)	(1986)	(1988)	(1988)	(1988)	(1988)	(1988)	(1987)	(1986)	(1987)	(1988)
MIN	1.44	0.91	0.71	0.49	0.78	2.42	2.98	2.42	2.39	2.16	1.78	1.25
(WY)	(1989)	(1989)	(1989)	(1989)	(1989)	(1989)	(1986)	(1989)	(2003)	(2003)	(2003)	(2003)

e Estimated

07329849 ANTELOPE SPRING AT SULPHUR, OK—Continued



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 mi^2.

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

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.5	11	13	215	13	29	22	11	9.3	8.9	6.1	19
2	8.3	14	13	98	14	27	21	11	9.3	8.8	5.7	7.0
3	8.3	14	33	60	14	26	21	10	9.3	8.5	6.3	5.5
4	8.2	13	57	45	13	26	32	10	11	8.4	6.2	5.0
5	8.1	13	14	36	12	25	62	9.8	11	8.3	5.8	4.7
6	14	12	11	31	21	23	27	9.8	24	8.1	5.4	4.5
7	9.7	12	9.9	27	19	22	20	9.5	14	8.2	5.3	4.5
8	17	12	9.4	26	17	22	16	12	20	8.5	5.4	4.5
9	13	12	11	26	17	21	15	11	12	8.6	5.9	4.4
10	10	12	12	22	16	20	15	9.6	11	9.1	6.6	4.3
11	9.7	13	11	20	15	20	16	11	17	9.2	6.8	60
12	9.5	13	10	20	14	20	15	8.6	28	8.5	6.2	13
13	9.3	13	11	19	17	33	14	8.3	21	8.2	6.4	6.8
14	9.0	14	9.8	18	30	27	13	28	15	7.7	6.3	5.7
15	8.9	14	9.1	18	23	25	13	10	13	7.2	6.2	5.3
16	8.7	14	9.1	18	19	22	39	244	12	6.9	5.9	5.3
17	8.5	14	9.1	16	17	21	24	56	11	6.8	5.5	5.3
18	10	15	9.1	17	16	94	19	28	10	6.7	5.2	6.7
19	10	15	9.5	17	16	143	16	22	9.8	6.6	5.0	6.1
20	10	15	9.0	17	15	68	14	27	9.4	6.4	4.9	5.6
21	9.2	14	8.9	17	23	49	13	23	10	6.4	4.9	47
22	9.0	14	8.6	15	100	41	12	19	9.8	6.3	4.7	15
23	10	14	356	14	52	37	23	16	9.3	6.1	4.5	7.4
24	26	14	142	14	35	34	47	15	9.0	6.0	4.5	6.6
25	17	13	64	14	30	32	27	14	8.9	5.9	4.4	6.3
26	12	13	43	14	30	29	19	13	40	5.9	4.3	e6.0
27	10	13	33	14	31	28	16	12	19	5.7	4.9	e5.7
28	15	13	27	15	30	29	14	12	13	5.6	6.0	e5.4
29	13	13	23	15	---	26	13	12	11	5.6	5.0	e5.2
30	12	13	796	14	---	23	12	11	9.7	6.3	14	e5.2
31	12	---	411	14	---	23	---	9.7	---	6.0	13	---
TOTAL	343.9	399	2,192.5	926	669	1,065	630	703.3	416.8	225.4	187.3	293.0
MEAN	11.1	13.3	70.7	29.9	23.9	34.4	21.0	22.7	13.9	7.27	6.04	9.77
MAX	26	15	796	215	100	143	62	244	40	9.2	14	60
MIN	8.1	11	8.6	14	12	20	12	8.3	8.9	5.6	4.3	4.3
AC-FT	682	791	4,350	1,840	1,330	2,110	1,250	1,390	827	447	372	581

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

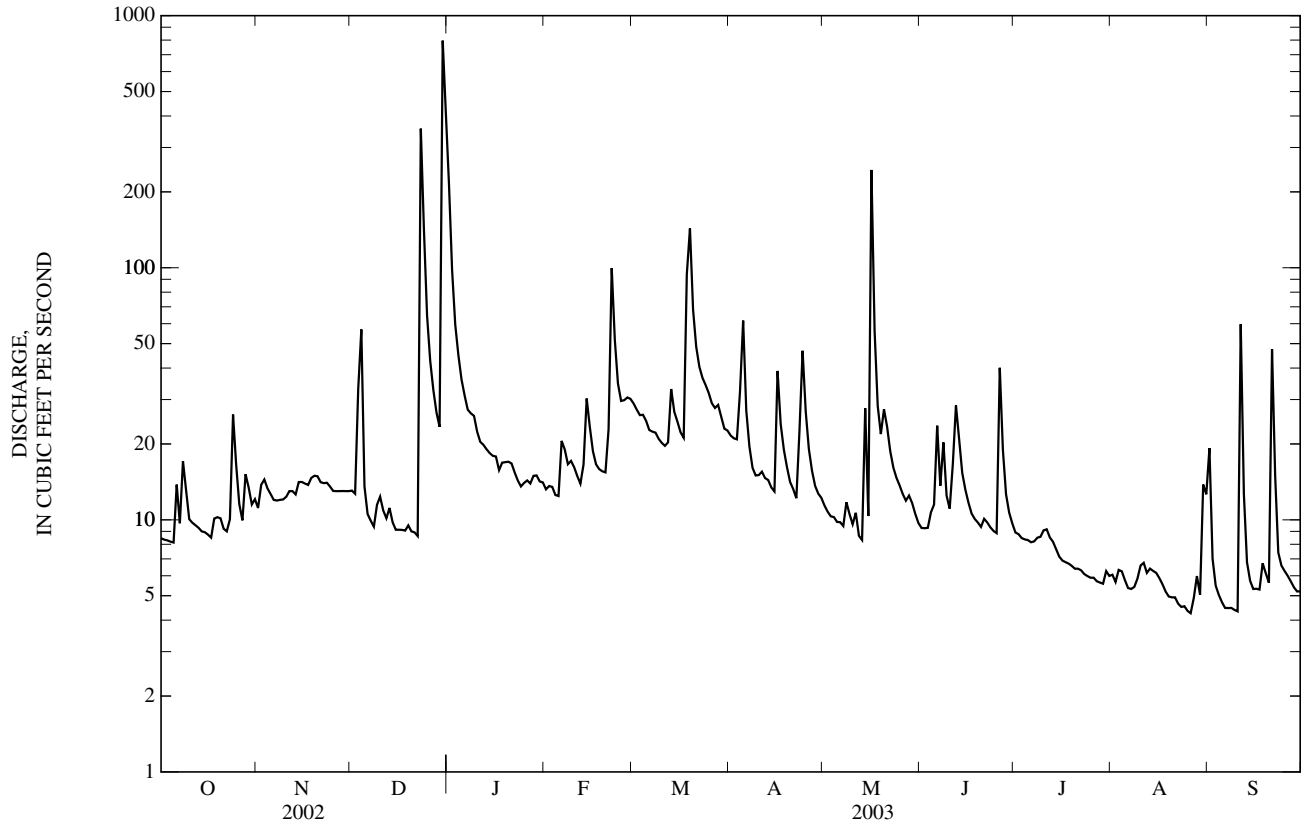
MEAN	28.1	41.8	60.5	62.7	59.8	98.2	101	93.2	63.1	22.9	17.3	52.5
MAX	77.3	170	210	281	243	261	390	406	211	121	53.1	213
(WY)	(1997)	(1997)	(1992)	(1998)	(2001)	(1990)	(1990)	(1990)	(1991)	(1992)	(1996)	(1993)
MIN	6.33	9.65	8.34	7.69	7.66	27.0	21.0	10.2	8.49	6.09	3.48	2.34
(WY)	(1995)	(1998)	(2000)	(2000)	(2000)	(2000)	(2003)	(2000)	(2000)	(2000)	(2000)	(2000)

e Estimated

07329852 ROCK CREEK AT SULPHUR, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1990 - 2003	
ANNUAL TOTAL	17,380.1		8,051.2			
ANNUAL MEAN	47.6		22.1		58.4	
HIGHEST ANNUAL MEAN					129	1990
LOWEST ANNUAL MEAN					10.4	2000
HIGHEST DAILY MEAN	1,210	Apr 7	796	Dec 30	3,450	May 2, 1990
LOWEST DAILY MEAN	8.1	Oct 5	4.3	Aug 26,Sep 10	1.9	Sep 21, 2000
ANNUAL SEVEN-DAY MINIMUM	8.3	Sep 29	4.6	Sep 4	2.0	Sep 16, 2000
MAXIMUM PEAK FLOW			3,100	Dec 30	a10,400	Apr 26, 1990
MAXIMUM PEAK STAGE			12.31	Dec 30	19.65	Apr 26, 1990
ANNUAL RUNOFF (AC-FT)	34,470		15,970		42,280	
10 PERCENT EXCEEDS	67		31		102	
50 PERCENT EXCEEDS	17		13		20	
90 PERCENT EXCEEDS	9.2		5.8		7.7	

a From indirect measurement.



07331000 WASHITA RIVER NEAR DICKSON, OK

LOCATION.--Lat 34°14'00", long 96°58'32", in SW ¼ SE ¼ 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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to Oct. 1, 1979, published as Washita River near Durwood.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1281: 1935 (M).

GAGE.--Water-stage recorder. Datum of gage is 650.57 ft 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

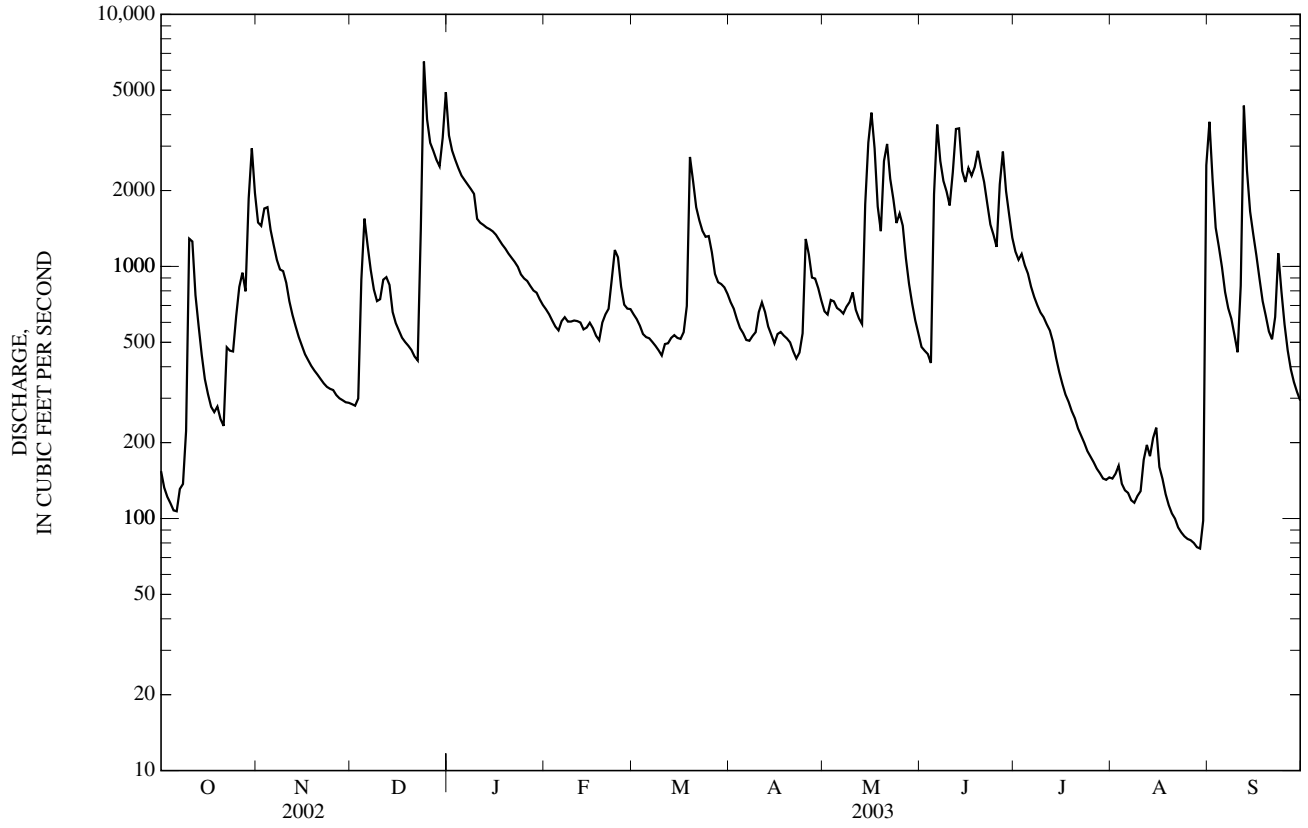
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	1,490	284	3,310	676	645	721	663	479	1,150	144	3,750
2	133	1,450	280	2,880	646	618	679	644	463	1,060	151	2,210
3	122	1,700	299	2,650	609	582	618	736	449	1,120	162	1,420
4	115	1,720	885	2,450	577	539	570	727	414	1,010	137	1,200
5	108	1,400	1,550	2,290	557	524	543	684	1,930	937	129	994
6	107	1,210	1,210	2,200	607	519	511	670	3,650	831	126	792
7	131	1,060	968	2,110	629	501	507	650	2,620	757	118	683
8	137	973	810	2,030	604	484	530	692	2,180	702	116	620
9	223	958	728	1,940	604	464	549	722	1,980	657	123	534
10	1,290	861	741	1,540	610	443	659	788	1,750	629	128	457
11	1,260	727	886	1,490	607	492	720	672	2,370	590	171	838
12	769	642	906	1,460	599	496	659	622	3,510	557	196	4,340
13	580	578	844	1,430	563	520	578	590	3,530	503	177	2,400
14	446	525	659	1,410	572	534	535	1,770	2,390	434	209	1,650
15	357	485	596	1,380	598	520	495	3,100	2,160	381	229	1,340
16	311	448	557	1,340	569	516	539	4,070	2,460	342	160	1,110
17	277	425	521	1,280	531	549	549	2,940	2,290	310	144	894
18	264	403	501	1,220	510	696	531	1,730	2,480	290	125	728
19	278	386	485	1,180	599	2,720	518	1,380	2,870	267	113	637
20	248	372	466	1,120	645	2,180	500	2,620	2,470	250	105	552
21	233	357	439	1,080	679	1,720	461	3,060	2,160	228	100	514
22	478	343	424	1,040	885	1,520	431	2,230	1,780	213	92	630
23	463	333	1,400	997	1,160	1,380	455	1,850	1,470	200	88	1,130
24	460	327	6,500	930	1,090	1,310	543	1,490	1,330	185	e85	796
25	635	323	3,830	896	831	1,320	1,290	1,620	1,200	176	e83	589
26	829	309	3,090	876	705	1,140	1,110	1,450	2,120	167	82	465
27	945	300	2,870	837	680	933	903	1,080	2,850	158	80	391
28	797	295	2,650	802	677	865	895	853	1,990	151	e77	348
29	1,860	289	2,490	787	---	851	820	713	1,600	144	e76	317
30	2,940	288	3,240	740	---	826	732	611	1,300	142	98	294
31	1,960	---	4,910	703	---	778	---	541	---	146	2,520	---
TOTAL	18,910	20,977	46,019	46,398	18,619	27,185	19,151	41,968	60,245	14,687	6,344	32,623
MEAN	610	699	1,484	1,497	665	877	638	1,354	2,008	474	205	1,087
MAX	2,940	1,720	6,500	3,310	1,160	2,720	1,290	4,070	3,650	1,150	2,520	4,340
MIN	107	288	280	703	510	443	431	541	414	142	76	294
AC-FT	37,510	41,610	91,280	92,030	36,930	53,920	37,990	83,240	119,500	29,130	12,580	64,710
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)												
MEAN	1,503	1,594	1,417	1,241	1,548	2,376	2,495	3,969	3,464	993	600	1,141
MAX	8,274	5,879	9,324	6,061	6,996	10,890	15,940	18,720	14,090	4,042	3,048	5,236
(WY)	(1987)	(1987)	(1992)	(1998)	(2001)	(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

07331000 WASHITA RIVER NEAR DICKSON, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	454,668		353,126			
ANNUAL MEAN	1,246		967		a1,861	
HIGHEST ANNUAL MEAN					5,644	1987
LOWEST ANNUAL MEAN					340	1964
HIGHEST DAILY MEAN	27,400	Apr 8	6,500	Dec 24	94,400	May 3, 1990
LOWEST DAILY MEAN	107	Oct 6	76	Aug 29	b0.10	Aug 11, 1964
ANNUAL SEVEN-DAY MINIMUM	122	Oct 2	82	Aug 23	0.30	Aug 8, 1964
MAXIMUM PEAK FLOW			8,330	Dec 24	c118,000	May 3, 1990
MAXIMUM PEAK STAGE			16.26	Dec 24	45.24	May 30, 1987
ANNUAL RUNOFF (AC-FT)	901,800		700,400		1,348,000	
10 PERCENT EXCEEDS	2,620		2,250		4,210	
50 PERCENT EXCEEDS	527		657		721	
90 PERCENT EXCEEDS	212		159		145	

a Prior to regulation, water years 1929-58, 1,573 ft^3/s.
b No flow Aug. 28, Sept. 14 to Oct. 1, 7-12, 1956.
c Gage height 44.26 ft.



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, 1,890 microsiements, Aug. 4; minimum, 260 microsiemens, June 5, 6.
WATER TEMPERATURE: Maximum, 36.2°C, Aug. 7; minimum, 0.1°C, Jan. 24.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Gage height, feet (00065)	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
OCT													
09...	1545	1028	80020	9.95	212	748	9.6	102	8.2	1,050	--	17.0	390
NOV													
29...	1550	1028	80020	10.25	293	754	14.4	124	8.3	1,410	18.1	8.1	630
DEC													
31...	1620	1028	80020	14.14	4,530	746	10.4	93	8.2	449	11.2	9.3	190
JAN													
31...	1650	1028	80020	10.80	698	750	15.4	141	8.2	1,610	21.0	10.7	770
FEB													
25...	1330	1028	80020	11.14	770	758	15.6	111	8.4	1,140	-3.6	1.2	490
MAR													
11...	1315	1028	80020	10.66	505	748	12.2	117	8.2	1,350	22.0	12.3	580
APR													
01...	1420	1028	80020	11.01	698	750	10.2	111	8.1	1,190	27.2	18.2	510
MAY													
28...	0900	1028	80020	11.48	883	751	8.0	94	8.0	1,100	17.7	22.4	430
JUN													
10...	0800	1028	80020	12.37	1,760	745	5.7	71	7.4	656	24.7	25.3	280
JUL													
02...	0735	1028	80020	11.52	1,050	746	4.2	55	8.0	1,020	25.0	28.6	450
AUG													
04...	0916	1028	80020	9.54	137	744	10.2	129	8.0	1,670	25.3	25.7	640
SEP													
03...	0752	1028	80020	12.06	1,460	752	6.1	74	*7.8	395	23.3	23.7	140

* pH, Lab

07331000 WASHITA RIVER NEAR DICKSON, OK—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Noncarb hard-ness, wat flt field, mg/L as CaCO3 (00904)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon-ate, wat flt incrm. titr., field, mg/L (00452)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)
OCT													
09...	210	94.1	37.8	5.92	2	71.4	28	178	212	3	73.4	0.79	6.8
NOV													
29...	410	146	63.3	3.62	1	81.9	22	219	264	1	94.4	0.47	9.7
DEC													
31...	73	53.1	14.5	3.54	0.6	18.5	17	119	145	0.0	24.9	0.20	6.7
JAN													
31...	550	177	78.9	3.38	1	85.1	19	217	262	1	90.5	0.40	9.0
FEB													
25...	--	122	44.1	2.82	1	64.8	22	--	--	--	82.7	0.32	6.1
MAR													
11...	--	140	56.4	2.75	1	78.5	23	--	--	--	92.4	0.35	5.2
APR													
01...	300	121	49.4	3.43	1	68.6	23	202	241	3	74.7	0.36	1.7
MAY													
28...	260	101	43.0	4.33	1	53.5	21	164	200	0.0	66.7	0.4	6.9
JUN													
10...	130	68.3	25.8	5.28	0.8	31.5	19	143	174	0.0	38.7	0.3	8.0
JUL													
02...	270	114	39.8	6.21	0.9	44.9	18	176	197	9	49.0	0.4	9.9
AUG													
04...	480	128	77.3	5.77	2	134	31	156	191	0.0	169	1.1	4.0
SEP													
03...	25	34.4	13.1	4.87	0.7	17.9	21	115	141	0.0	25.1	0.3	8.4

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L (71846)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate water, fltrd, mg/L (71851)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L (71856)	Nitrite water, fltrd, mg/L as N (00613)
OCT													
09...	248	647	0.88	370	58	1.2	0.41	0.32	1.20	0.27	0.33	0.200	0.061
NOV													
29...	433	964	1.31	763	24	0.86	--	<0.04	--	--	0.10	--	E.007
DEC													
31...	72.5	267	0.36	3,260	684	2.2	--	E.03	--	--	0.31	--	E.006
JAN													
31...	584	1,160	1.58	2,190	50	0.74	0.18	0.138	1.03	0.23	0.244	0.039	0.012
FEB													
25...	283	--	--	--	58	0.88	0.08	0.066	0.350	0.08	0.086	0.023	0.007
MAR													
11...	396	--	--	--	45	0.62	0.03	0.027	0.212	0.05	0.054	0.020	0.006
APR													
01...	311	752	1.02	1,420	61	0.73	0.02	0.018	0.199	0.04	0.056	0.036	0.011
MAY													
28...	307	682	0.93	1,630	190	0.91	0.02	0.019	0.248	0.06	0.079	0.076	0.023
JUN													
10...	119	384	0.52	1,830	126	1.4	0.03	0.020	1.05	0.24	0.257	0.066	0.020
JUL													
02...	285	656	0.89	1,860	1,190	1.1	0.02	0.018	0.969	0.22	0.227	0.026	0.008
AUG													
04...	509	1,120	1.53	415	49	1.1	0.03	0.024	--	--	<0.022	0.013	0.004
SEP													
03...	38.4	214	0.29	842	135	2.0	0.11	0.087	1.48	0.33	0.363	0.092	0.028

07331000 WASHITA RIVER NEAR DICKSON, OK—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic nitro-gen, water, unfltrd mg/L (00605)	Ortho-phos-phate, water, fltrd, mg/L (00660)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover-able, ug/L (01007)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, fltrd, ug/L (01030)
OCT													
09...	0.84	0.307	0.10	0.11	0.23	1.5	3	3	142	140	<8	<0.2	<0.8
NOV													
29...	--	--	E.01	E.02	0.11	0.96	E2	2	162	156	<8	<0.2	<0.8
DEC													
31...	--	0.135	0.04	0.06	0.73	2.5	M	2	84.3	316	<8	E.2	<0.8
JAN													
31...	0.60	--	<0.007	0.011	0.086	0.98	E2	E2	152	156	<8	<0.2	<0.8
FEB													
25...	0.81	--	E.005	0.016	0.113	0.97	M	E1	117	126	<8	<0.2	<0.8
MAR													
11...	0.59	--	<0.007	0.007	0.074	0.67	E1	E1	123	129	<8	<0.2	<0.8
APR													
01...	0.71	--	<0.007	0.012	0.125	0.79	<4	E1	151	151	<8	<0.2	<0.8
MAY													
28...	0.89	0.028	0.009	0.017	0.170	0.99	2	2	153	180	<2	<0.2	<0.8
JUN													
10...	1.4	0.107	0.035	0.046	0.37	1.6	2	3	145	256	<2	E.1	<0.8
JUL													
02...	1.1	0.126	0.041	0.053	0.27	1.4	3	3	186	250	<2	<0.2	<0.8
AUG													
04...	1.0	--	<0.007	0.010	0.136	--	2	3	164	183	<2	<0.2	<0.8
SEP													
03...	1.9	0.147	0.048	0.069	0.56	2.4	3	4	78	312	E.02	<0.2	<0.8

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chrom-ium, water, unfltrd recover-able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover-able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover-able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover-able, ug/L (01051)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover-able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover-able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover-able, ug/L (01067)
OCT													
09...	E.7	<6	1.9	<10	810	E.07	2	5.5	109	<0.02	<0.02	<30	<80
NOV													
29...	<0.8	<6	1.9	E5	200	0.10	<1	19.3	39.2	<0.02	<0.02	<30	<80
DEC													
31...	8.4	<6	15.1	17	11,300	<0.08	17	5.7	871	<0.02	0.04	<30	<80
JAN													
31...	<0.8	<6	1.6	<10	370	<0.08	<1	E.9	33.5	<0.02	<0.02	<30	<80
FEB													
25...	E.4	<6	1.6	E7	470	E.04	1	19.9	72.4	<0.02	E.01	<30	<80
MAR													
11...	E.6	<6	1.9	E7	350	0.08	3	14.2	86.4	<0.02	<0.02	<30	<80
APR													
01...	E.6	E3	2.1	<10	560	<0.08	M	11.1	75.7	<0.02	<0.02	<30	<80
MAY													
28...	1.0	<7	2.3	<8	960	E.05	1	1.9	124	<0.02	<0.02	<7.0	<80
JUN													
10...	3.9	<7	8.2	<8	4,860	E.05	8	0.6	551	<0.02	E.02	M	<80
JUL													
02...	2.5	<7	6.5	<8	2,900	<0.08	4	1.0	291	<0.02	E.02	<7.0	M
AUG													
04...	<4.0	<7	1.5	E5	520	<0.08	1	1.8	220	<0.02	E.01	<7	M
SEP													
03...	9.3	2.7	12.6	E6	8,070	0.17	14	0.7	697	<0.02	0.02	1.74	10

07331000 WASHITA RIVER NEAR DICKSON, OK—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Silver, water, fltrd, ug/L (01075)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Aldrin, water, unfltrd ug/L (39330)	alpha-Endosulfan, water, unfltrd ug/L (34361)	alpha-HCH, water, unfltrd ug/L (39337)	alpha-HCH-d6, surrog, Sch1608 water, unfltrd pct rcv (99778)	Aroclor 1016 + 1242, water, unfltrd ug/L (81648)	Aroclor 1221, water, unfltrd ug/L (39488)	Aroclor 1232, water, unfltrd ug/L (39492)
OCT 09...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
NOV 29...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
DEC 31...	<3	<3	<0.3	<0.3	<24	39	--	--	--	--	--	--	--
JAN 31...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
FEB 25...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
MAR 11...	<3	<3	<0.5	<0.3	<24	<25	<0.04	<0.1	<0.03	87.6	<0.1	<1	<0.1
APR 01...	<5	<3	<0.5	<0.3	<24	<25	--	--	--	--	--	--	--
MAY 28...	<3	--	<0.3	<0.3	3	42	<0.20	<0.5	<0.15	42.5	<0.5	<5	<0.5
JUN 10...	<3	<1	<0.3	<0.3	<3	E21	--	--	--	--	--	--	--
JUL 02...	<3	<3	<0.3	<0.3	<3	14	--	--	--	--	--	--	--
AUG 04...	<3	--	<0.3	<0.3	5	6	--	--	--	--	--	--	--
SEP 03...	3	0.9	<0.2	<0.3	3	37	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Aroclor 1248, water, unfltrd ug/L (39500)	Aroclor 1254, water, unfltrd ug/L (39504)	Aroclor 1260, water, unfltrd ug/L (39508)	beta-Endosulfan, water, unfltrd ug/L (34356)	beta-HCH, water, unfltrd ug/L (39338)	Chlordane, technical, water, unfltrd ug/L (39350)	cis-Chlordane, water, unfltrd ug/L (39062)	delta-HCH, water, unfltrd ug/L (34259)	Dieldrin, water, unfltrd ug/L (39380)	Endosulfan sulfate water unfltrd ug/L (34351)	Endrin aldehyde, water, unfltrd ug/L (34366)	Endrin, water, unfltrd ug/L (39390)	Heptachlor epoxide water unfltrd ug/L (39420)
OCT 09...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 29...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC 31...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB 25...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 11...	<0.1	<0.1	<0.1	<0.04	<0.03	<0.1	<0.1	<0.09	<0.02	<0.6	<0.2	<0.06	<0.8
APR 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY 28...	<0.5	<0.5	<0.5	<0.20	<0.15	<0.5	<0.5	<0.45	<0.10	<3.0	<1.0	<0.30	<4.0
JUN 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 02...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 04...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 03...	--	--	--	--	--	--	--	--	--	--	--	--	--

07331000 WASHITA RIVER NEAR DICKSON, OK—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Hepta-chlor, water, unfltrd ug/L (39410)	Isodrin surrog, Sch1608 wat unf percent recovry (90570)	Lindane water, unfltrd ug/L (39340)	p,p-' DDD, water, unfltrd ug/L (39310)	p,p-' DDE, water, unfltrd ug/L (39320)	p,p-' DDT, water, unfltrd ug/L (39300)	PCB 207, surrog, Sch1608 water, unfltrd pct rcv (99781)	Toxa-phene, water, unfltrd ug/L (39400)	trans-Chlor-dane, water, unfltrd ug/L (39065)
OCT									
09...	--	--	--	--	--	--	--	--	--
NOV									
29...	--	--	--	--	--	--	--	--	--
DEC									
31...	--	--	--	--	--	--	--	--	--
JAN									
31...	--	--	--	--	--	--	--	--	--
FEB									
25...	--	--	--	--	--	--	--	--	--
MAR									
11...	<0.03	52.9	<0.03	<0.1	<0.04	<0.1	70.8	<2	<0.1
APR									
01...	--	--	--	--	--	--	--	--	--
MAY									
28...	<0.15	72.1	<0.15	<0.5	<0.20	<0.5	64.2	<10	<0.5
JUN									
10...	--	--	--	--	--	--	--	--	--
JUL									
02...	--	--	--	--	--	--	--	--	--
AUG									
04...	--	--	--	--	--	--	--	--	--
SEP									
03...	--	--	--	--	--	--	--	--	--

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1,200	1,160	1,180	628	541	573	1,450	1,440	1,440	684	543	607
2	1,280	1,200	1,250	683	628	658	1,460	1,440	1,450	699	657	684
3	1,280	1,180	1,240	791	683	756	1,460	1,350	1,440	700	653	669
4	1,210	1,180	1,200	789	703	731	1,350	967	1,090	790	700	750
5	1,270	1,210	1,250	736	707	729	1,070	751	883	828	790	814
6	1,290	1,240	1,270	734	720	727	873	801	832	881	828	856
7	1,310	1,250	1,290	799	727	764	902	870	884	897	879	890
8	1,260	1,080	1,160	836	799	824	1,040	902	959	922	894	906
9	1,090	934	1,010	912	834	868	1,070	996	1,030	942	921	934
10	1,070	589	874	981	912	947	1,140	1,010	1,080	1,190	933	1,080
11	589	505	534	1,040	981	1,010	1,160	1,000	1,080	1,240	1,190	1,220
12	541	487	507	1,090	1,040	1,070	1,040	1,000	1,030	1,240	1,220	1,230
13	601	487	529	1,070	1,020	1,040	1,020	1,010	1,020	1,310	1,230	1,270
14	766	601	685	1,090	1,020	1,050	1,200	1,020	1,110	1,380	1,310	1,350
15	807	766	780	1,140	1,090	1,110	1,240	1,200	1,220	1,400	1,360	1,370
16	960	807	903	1,190	1,140	1,170	1,240	1,240	1,240	1,430	1,400	1,420
17	1,050	954	1,000	1,230	1,190	1,210	1,240	1,200	1,240	1,460	1,430	1,440
18	1,120	1,050	1,090	1,230	1,210	1,220	1,240	1,230	1,230	1,470	1,450	1,460
19	1,080	1,030	1,050	1,230	1,220	1,220	1,230	1,210	1,220	1,480	1,470	1,480
20	1,100	1,040	1,080	1,250	1,230	1,240	1,220	1,210	1,210	1,480	1,470	1,480
21	1,140	1,090	1,110	1,270	1,200	1,250	1,220	1,190	1,220	1,520	1,460	1,490
22	1,340	1,130	1,230	1,300	1,260	1,280	1,240	1,220	1,230	1,520	1,500	1,510
23	1,320	814	1,020	1,320	1,280	1,310	1,250	507	951	1,530	1,510	1,520
24	838	768	792	1,340	1,310	1,320	636	394	447	1,560	1,520	1,540
25	909	711	823	1,350	1,320	1,330	502	422	472	1,570	1,540	1,570
26	1,000	695	824	1,380	1,340	1,360	653	502	581	1,610	1,570	1,590
27	976	874	902	1,410	1,380	1,390	702	631	661	1,610	1,570	1,590
28	958	871	905	1,420	1,400	1,410	769	702	745	1,610	1,570	1,590
29	1,090	844	970	1,430	1,410	1,420	817	751	788	1,620	1,590	1,600
30	987	581	693	1,440	1,420	1,430	857	438	713	1,630	1,600	1,610
31	587	543	574	---	---	---	687	446	535	1,700	1,580	1,620
MONTH	1,340	487	959	1,440	541	1,080	1,460	394	1,000	1,700	543	1,260

07331000 WASHITA RIVER NEAR DICKSON, OK—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1,600	1,570	1,590	1,290	1,260	1,270	1,200	1,170	1,190	1,400	1,360	1,380
2	1,590	1,570	1,580	1,310	1,290	1,300	1,240	1,200	1,220	1,430	1,390	1,410
3	1,590	1,570	1,580	1,310	1,300	1,310	1,260	1,230	1,250	1,670	1,430	1,610
4	1,600	1,580	1,590	1,320	1,310	1,320	1,260	1,250	1,260	1,680	1,660	1,670
5	1,640	1,590	1,620	1,340	1,320	1,330	1,290	1,260	1,270	1,730	1,480	1,590
6	1,630	1,560	1,590	1,360	1,340	1,350	1,290	1,270	1,280	1,830	1,710	1,790
7	1,590	1,540	1,570	1,380	1,360	1,370	1,380	1,280	1,310	1,790	1,420	1,640
8	1,590	1,570	1,580	1,380	1,360	1,370	1,470	1,380	1,420	1,420	1,350	1,370
9	1,620	1,590	1,600	1,390	1,360	1,370	1,570	1,470	1,520	1,460	1,360	1,410
10	1,620	1,580	1,610	1,420	1,390	1,400	1,640	1,570	1,600	1,480	1,400	1,440
11	1,630	1,600	1,610	1,430	1,280	1,360	1,710	1,580	1,660	1,730	1,450	1,530
12	1,640	1,620	1,630	1,280	1,260	1,270	1,700	1,420	1,550	1,790	1,530	1,690
13	1,640	1,610	1,630	1,260	1,220	1,230	1,510	1,430	1,470	1,820	1,750	1,780
14	1,620	1,520	1,580	1,250	1,220	1,230	1,490	1,440	1,470	1,780	655	1,280
15	1,520	1,460	1,490	1,240	1,220	1,230	1,470	1,420	1,440	916	559	697
16	1,480	1,460	1,470	1,240	1,230	1,240	1,530	1,470	1,510	860	496	720
17	1,490	1,480	1,480	1,270	1,240	1,250	1,550	1,520	1,530	620	496	548
18	1,480	1,460	1,470	1,270	1,120	1,240	1,580	1,550	1,570	725	617	686
19	1,480	1,280	1,410	1,180	627	887	1,600	1,570	1,580	808	723	778
20	1,300	1,280	1,290	653	586	612	1,650	1,600	1,620	800	446	640
21	1,300	1,240	1,270	718	653	688	1,680	1,630	1,650	648	470	517
22	1,240	1,130	1,180	781	718	749	1,650	1,610	1,620	676	563	616
23	1,130	1,030	1,070	872	781	830	1,670	1,580	1,640	795	676	757
24	1,120	1,060	1,110	951	871	910	1,580	1,530	1,560	925	787	872
25	1,190	1,110	1,140	1,010	948	972	1,540	1,130	1,340	870	687	788
26	1,220	1,190	1,200	1,080	1,010	1,050	1,220	1,090	1,130	947	771	872
27	1,230	1,210	1,220	1,310	1,080	1,200	1,320	1,220	1,260	1,090	942	1,030
28	1,260	1,210	1,230	1,330	1,140	1,260	1,380	1,320	1,350	1,220	1,080	1,140
29	---	---	---	1,140	1,050	1,080	1,380	1,330	1,360	1,120	1,040	1,070
30	---	---	---	1,110	1,070	1,090	1,390	1,340	1,360	1,080	1,060	1,070
31	---	---	---	1,170	1,110	1,140	---	---	---	1,120	1,060	1,080
MONTH	1,640	1,030	1,440	1,430	586	1,160	1,710	1,090	1,430	1,830	446	1,140
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1,190	1,120	1,140	1,020	982	1,010	1,620	1,550	1,590	521	312	401
2	1,210	1,190	1,190	1,080	1,010	1,030	1,640	1,580	1,610	365	316	352
3	1,270	1,210	1,240	1,280	1,080	1,180	1,700	1,610	1,650	410	362	393
4	1,280	1,250	1,270	1,390	1,280	1,340	1,890	1,640	1,780	495	410	445
5	1,340	260	971	1,450	1,350	1,420	1,830	1,700	1,780	676	495	577
6	604	260	460	1,350	1,300	1,320	1,710	1,440	1,570	781	676	751
7	828	437	583	1,430	1,300	1,360	1,580	1,440	1,490	863	768	818
8	836	572	705	1,550	1,430	1,490	1,690	1,580	1,650	922	859	900
9	603	543	559	1,630	1,540	1,580	1,730	1,680	1,710	1,030	918	953
10	713	603	665	1,720	1,620	1,670	1,730	1,680	1,700	1,170	1,030	1,110
11	1,060	704	886	1,770	1,710	1,740	1,740	1,630	1,690	1,180	515	935
12	1,060	496	833	1,830	1,750	1,780	1,650	1,320	1,540	943	370	497
13	568	421	488	1,880	1,830	1,850	1,640	1,280	1,450	475	378	412
14	581	541	558	1,880	1,850	1,870	1,700	1,440	1,620	428	390	410
15	661	581	625	1,880	1,860	1,870	1,640	1,460	1,590	447	427	436
16	830	634	743	1,880	1,850	1,870	1,600	1,440	1,510	508	447	482
17	941	636	775	1,870	1,780	1,830	1,650	1,480	1,580	562	506	530
18	1,140	928	1,040	1,800	1,730	1,770	1,480	1,390	1,440	629	549	590
19	928	731	782	1,750	1,630	1,700	1,390	1,220	1,280	706	629	660
20	922	712	790	1,670	1,580	1,630	1,440	1,280	1,370	779	706	742
21	923	606	774	1,610	1,530	1,580	1,490	1,420	1,450	822	770	797
22	758	647	716	1,580	1,540	1,570	1,510	1,420	1,460	888	816	845
23	790	758	780	1,590	1,520	1,560	1,460	1,380	1,420	964	664	828
24	838	787	803	1,550	1,500	1,530	1,440	1,380	1,410	688	597	643
25	933	838	886	1,550	1,510	1,530	1,430	1,350	1,390	839	634	749
26	941	442	665	1,580	1,530	1,550	1,420	1,360	1,390	871	799	830
27	716	594	664	1,570	1,520	1,540	1,430	1,360	1,400	814	763	792
28	751	661	718	1,530	1,460	1,510	1,440	1,350	1,400	923	762	821
29	862	740	800	1,520	1,470	1,500	1,390	1,320	1,360	1,030	920	981
30	982	862	921	1,570	1,510	1,540	1,760	1,360	1,470	1,130	1,030	1,090
31	---	---	---	1,580	1,520	1,560	1,880	451	1,080	---	---	---
MONTH	1,340	260	801	1,880	982	1,560	1,890	451	1,510	1,180	312	692

07331000 WASHITA RIVER NEAR DICKSON, OK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.8	23.7	26.1	11.2	10.2	10.7	9.1	5.9	7.6	8.2	6.7	7.5
2	28.5	24.8	26.5	10.2	9.7	9.9	9.6	6.8	8.1	7.3	5.8	6.5
3	29.2	24.7	26.7	10.3	9.7	10	8.6	7.2	7.9	7.1	5.2	6.2
4	27.2	23.9	25.9	10.4	9.0	9.8	7.2	5.3	6.3	8.0	5.9	6.9
5	24.9	20.3	22.7	11.9	9.9	10.7	5.5	4.0	4.8	8.7	6.9	7.7
6	25.3	21.4	23.1	12.1	9.5	10.8	5.7	3.4	4.5	8.2	6.9	7.5
7	23.0	19.4	21.3	12.9	9.7	11.2	7.0	4.2	5.5	7.3	5.5	6.5
8	20.9	17.2	19.1	14.1	11.1	12.5	8.3	5.8	7.0	8.6	5.9	7.2
9	17.5	16.6	17.0	16.3	13.0	14.5	8.5	7.9	8.2	9.3	7.9	8.5
10	17.3	16.8	17.1	15.5	13.9	14.9	8.6	8.1	8.3	8.2	6.5	7.4
11	18.5	16.8	17.4	13.9	12.1	13.0	8.2	7.2	7.7	7.1	5.5	6.3
12	19.2	17.0	18.0	13.3	11.4	12.3	8.5	7.6	8.0	6.4	5.4	5.8
13	18.0	15.2	16.3	13.4	10.3	11.9	9.6	7.9	8.5	5.7	5.0	5.3
14	16.3	14.0	15.0	14.0	10.8	12.3	9.3	6.7	8.0	6.5	4.5	5.3
15	17.7	12.9	15.1	13.4	10.9	12.1	10.0	6.9	8.5	6.0	5.2	5.6
16	18.0	13.4	15.6	12.6	9.8	11.2	11.4	9.3	10.3	5.8	3.7	4.9
17	18.8	13.8	16.3	12.7	9.1	10.9	12.8	9.3	10.9	4.4	2.2	3.3
18	17.4	15.9	16.8	13.3	10.5	11.8	13.1	12.1	12.7	5.1	2.1	3.6
19	18.5	16.9	17.5	13.1	9.7	11.5	12.5	10.8	11.7	6.3	2.9	4.5
20	17.3	15.9	16.6	12.7	9.6	11.2	10.8	8.4	9.5	8.7	4.8	6.6
21	18.5	14.7	16.5	13.3	9.5	11.4	9.7	7.1	8.3	8.2	6.8	7.4
22	17.6	16.6	17.1	13.0	9.9	11.5	8.3	6.2	7.4	6.8	3.6	5.5
23	17.0	16.4	16.6	13.0	9.4	11.3	7.6	5.8	6.5	3.6	1.2	2.3
24	16.4	15.1	15.9	13.3	10.4	11.9	6.1	4.4	5.2	1.8	0.1	1.1
25	15.1	13.2	13.9	12.0	8.5	9.8	4.7	3.3	4.0	2.2	0.8	1.5
26	14.1	12.2	13.1	8.5	7.1	7.9	4.5	3.5	4.0	4.0	2.2	2.9
27	13.7	13.0	13.3	7.9	5.0	6.5	5.8	4.0	4.8	4.0	1.6	2.7
28	14.4	13.5	13.9	8.1	4.4	6.3	6.3	4.2	5.3	9.1	3.4	6.2
29	14.2	13.6	13.9	8.1	5.0	6.8	8.7	5.8	6.8	10.0	8.3	8.9
30	13.8	12.8	13.4	9.7	6.6	8.0	11.1	8.7	10.3	8.6	7.5	7.9
31	12.8	11.2	11.7	---	---	---	10.1	8.2	9.1	10.7	7.3	8.8
MONTH	29.2	11.2	17.7	16.3	4.4	10.8	13.1	3.3	7.6	10.7	0.1	5.8
		FEBRUARY			MARCH			APRIL			MAY	
1	11.5	7.8	9.6	5.4	4.0	4.7	19.1	13.8	16.2	28.8	23.4	25.7
2	13.6	9.6	11.5	7.9	5.1	6.3	20.4	15.7	17.9	25.9	22.7	24.4
3	13.8	11.3	12.8	10.7	6.2	8.3	20.2	17.5	18.9	26.6	22.2	24.3
4	11.3	8.6	9.9	12.5	9.1	10.4	22.9	18.2	20.2	27.2	23.7	25.1
5	9.2	7.0	7.8	11.5	6.7	8.6	20.3	16.9	18.5	29.0	23.5	25.9
6	7.0	5.2	6.1	9.4	4.7	7.0	21.5	17.1	18.9	29.4	24.6	26.9
7	5.7	2.9	4.4	12.7	7.0	9.7	20.0	15.7	17.9	28.5	23.5	26.2
8	5.5	3.2	4.2	14.5	11.1	12.6	17.6	13.5	15.3	27.2	25.3	26.1
9	5.4	4.7	5.1	13.7	10.4	12.1	16.7	11.2	13.9	28.1	24.8	26.4
10	8.4	4.4	6.3	11.8	9.2	10.7	18.5	12.0	15.1	27.5	25.2	26.1
11	9.8	5.8	7.7	14.8	10.3	12.2	20.1	14.9	17.3	27.0	21.6	24.4
12	11.1	7.1	9.0	18.5	13.6	15.8	21.9	16.1	18.9	27.0	21.3	24.2
13	11.1	9.8	10.4	19.5	16.2	17.6	23.5	18.1	20.6	25.0	22.6	23.6
14	16.0	11.1	13.5	19.1	14.6	16.9	24.1	19.4	21.6	23.7	18.3	21.4
15	15.6	10.6	13.6	19.6	15.0	17.3	22.3	19.4	20.4	22.6	20.0	21.2
16	10.6	6.6	8.1	20.9	16.9	18.7	21.5	17.3	19.5	22.9	20.8	22.1
17	8.7	4.8	6.7	20.2	17.4	18.8	22.7	17.3	19.9	22.6	21.5	22.0
18	10.4	7.1	8.6	18.7	15.7	17.0	23.2	18.9	21.2	25.3	20.7	22.8
19	11.9	10.0	10.7	16.0	14.5	15.2	24.7	20.6	22.3	28.2	23.5	25.5
20	10.7	9.5	9.9	15.3	13.1	14.2	23.8	19.2	21.5	26.8	19.5	22.2
21	10.1	9.4	9.6	15.0	12.2	13.4	24.0	18.0	20.9	19.5	18.3	18.8
22	12.0	8.9	10.3	15.1	12.7	13.9	22.0	18.9	20.4	20.1	18.2	19.0
23	10.4	7.2	9.1	17.6	13.4	15.3	20.0	17.5	18.2	23.1	19.3	20.9
24	7.2	1.3	4.2	19.4	15.5	17.2	22.2	16.5	19.0	26.2	22.2	23.9
25	1.7	0.4	1.1	18.2	16.2	17.6	21.7	18.1	19.8	25.6	22.8	24.0
26	2.7	0.9	1.7	18.3	14.1	16.2	23.7	18.0	20.6	24.0	21.2	22.5
27	3.6	2.3	2.9	19.4	15.1	17.1	24.7	19.5	22.0	26.2	21.2	23.5
28	4.3	3.3	3.7	17.3	12.8	14.8	23.1	21.4	22.2	27.7	21.9	24.6
29	---	---	---	14.0	10.6	12.2	25.1	20.5	22.5	30.3	23.8	26.8
30	---	---	---	15.1	10.2	12.5	26.6	21.4	23.9	31.1	25.6	28.3
31	---	---	---	17.3	11.6	14.3	---	---	---	30.3	26.1	28.3
MONTH	16.0	0.4	7.8	20.9	4.0	13.5	26.6	11.2	19.5	31.1	18.2	24.1

07331000 WASHITA RIVER NEAR DICKSON, OK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.3	24.9	27.2	33.1	28.7	30.6	34.6	28.1	31.0	25.4	24.0	25.0
2	30.5	25.7	27.9	33.7	29.2	31.4	31.5	28.3	29.8	24.1	23.3	23.7
3	29.8	25.3	27.4	33.7	29.8	31.7	30.1	26.7	27.9	25.1	23.6	24.3
4	27.6	23.7	25.1	33.6	30.0	31.7	31.7	25.4	28.2	27.5	24.1	25.4
5	24.3	20.4	22.4	32.8	29.8	31.3	32.8	26.8	29.4	29.1	24.7	26.6
6	23.3	20.2	21.6	31.3	28.9	30.1	34.9	27.6	31.0	29.5	24.5	26.8
7	25.7	21.9	23.6	32.1	27.8	29.8	36.2	28.4	31.7	28.4	23.8	26.1
8	26.5	23.4	24.8	32.1	28.3	30.0	34.9	28.7	31.5	28.1	23.5	25.8
9	27.2	24.1	25.6	31.8	27.7	29.6	32.1	27.7	29.8	29.1	24.4	26.6
10	28.0	25.4	26.4	33.6	27.6	30.3	33.0	26.7	29.5	29.3	24.9	27.0
11	28.5	25.2	26.7	34.4	29.3	31.8	33.8	26.7	29.6	27.2	22.6	24.4
12	27.7	24.3	25.9	33.9	29.2	31.6	31.4	26.4	28.9	23.0	21.7	22.0
13	25.1	23.1	24.1	34.0	29.2	31.5	29.0	25.9	27.4	22.1	21.3	21.6
14	27.4	24.3	25.7	34.7	28.9	31.7	28.7	24.5	26.3	21.9	20.6	21.2
15	27.9	25.1	26.5	34.0	29.2	31.5	33.4	25.1	28.6	23.8	19.8	21.6
16	28.2	26.2	27.0	34.1	28.5	31.2	34.0	27.5	30.6	25.3	21.5	23.2
17	28.4	25.6	26.9	35.1	28.8	31.8	35.5	28.4	31.7	26.9	22.7	24.6
18	29.5	26.6	27.8	35.9	29.4	32.5	35.6	29.1	32.2	25.3	22.8	24.2
19	29.2	27.0	28.2	35.4	29.6	32.5	35.4	29.3	32.0	24.1	20.3	22.1
20	29.7	27.0	28.4	35.3	29.4	32.1	34.1	28.6	31.2	23.7	19.4	21.6
21	28.9	27.0	28.0	34.1	29.1	31.3	35.6	28.0	31.5	24.3	21.4	22.7
22	30.5	27.1	28.5	34.0	28.9	31.2	35.2	28.6	31.6	26.7	21.5	23.8
23	31.5	27.9	29.5	33.4	27.5	30.3	35.3	28.0	31.2	25.5	22.9	24.3
24	31.8	28.8	30.2	32.8	26.3	29.4	35.1	27.7	31.0	26.4	22.8	24.3
25	31.8	28.8	30.1	32.9	26.9	29.7	34.6	28.1	31.1	26.7	22.8	24.7
26	30.3	24.9	26.5	34.1	28.1	30.8	34.7	27.9	30.8	27.7	23.2	25.3
27	26.4	23.5	24.9	34.8	28.1	31.1	34.2	27.0	30.0	26.4	23.3	24.9
28	28.7	24.9	26.6	34.2	28.2	31.0	33.1	27.6	30.1	24.9	20.8	22.8
29	30.1	26.2	27.9	35.1	28.4	31.5	32.9	27.6	29.9	22.9	19.9	21.3
30	31.3	27.3	29.2	32.2	28.4	29.8	30.9	27.5	28.9	22.3	18.8	20.4
31	---	---	---	34.2	26.5	30.0	28.1	25.1	26.2	---	---	---
MONTH	31.8	20.2	26.7	35.9	26.3	31.0	36.2	24.5	30.0	29.5	18.8	23.9

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 mi^2, of which 5,936 mi^2 is probably noncontributing. At site used prior to October 1961 drainage area was 39,777 mi^2, of which 5,936 mi^2 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.--Records fair except for discharges less than 100 ft^3/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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

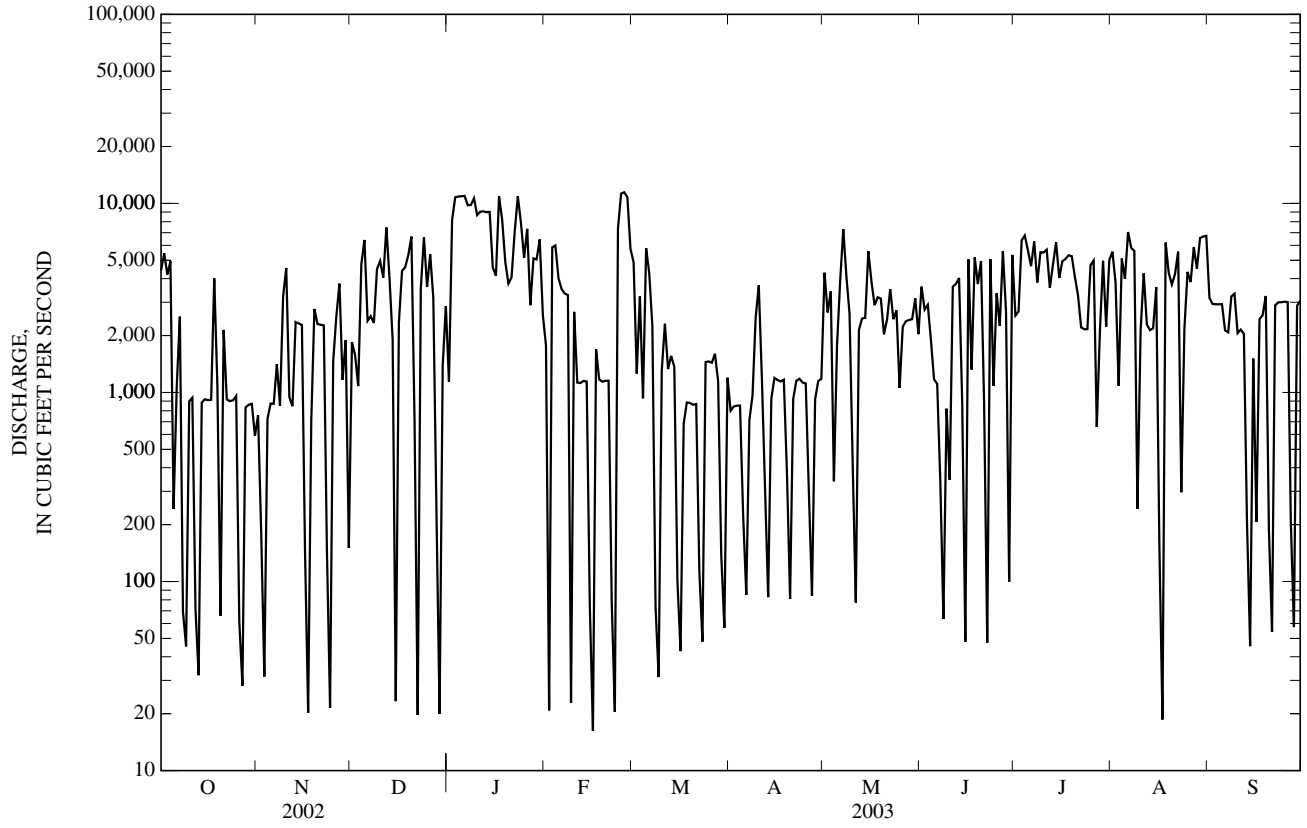
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,410	757	1,840	1,140	1,770	4,880	801	4,300	3,630	2,550	5,550	3,170
2	5,450	180	1,570	8,190	21	1,260	842	2,650	2,740	2,680	3,810	2,940
3	4,210	31	1,080	10,800	5,860	3,220	852	3,420	2,910	6,370	1,080	2,930
4	4,940	724	4,770	10,900	5,990	931	852	339	1,890	6,760	5,110	2,920
5	242	874	6,410	10,900	4,010	5,790	224	1,780	1,170	5,640	3,990	2,930
6	1,060	871	2,390	11,000	3,520	4,260	85	3,900	1,110	4,660	7,050	2,130
7	2,520	1,410	2,530	9,780	3,340	2,230	714	7,300	340	6,290	5,820	2,080
8	69	853	2,330	9,810	3,280	74	968	4,100	63	3,820	5,610	3,220
9	45	3,220	4,500	10,600	23	31	2,500	2,600	821	5,520	243	3,330
10	898	4,550	4,960	8,670	2,670	1,310	3,680	424	345	5,500	2,120	2,060
11	939	943	4,050	9,040	1,130	2,310	1,170	77	e3,630	5,690	4,270	2,150
12	72	847	7,460	9,080	1,120	1,330	309	2,140	e3,750	3,580	2,290	2,040
13	32	2,360	4,030	8,980	1,150	1,560	83	2,460	e4,030	4,740	2,140	204
14	884	2,320	1,900	9,020	1,140	1,370	927	2,480	e875	6,240	2,180	46
15	921	2,280	23	4,580	75	100	1,190	5,580	e48	4,030	3,600	1,510
16	911	144	2,340	4,150	16	43	1,160	3,870	e5,060	4,950	155	207
17	915	20	4,400	10,900	1,690	684	1,140	2,890	1,320	5,080	19	2,440
18	4,020	707	4,590	8,180	1,170	885	1,170	3,190	5,180	5,320	6,210	2,560
19	1,080	2,760	5,320	4,880	1,140	880	372	3,140	3,750	5,260	4,280	3,240
20	66	2,300	6,670	3,770	1,150	861	81	2,030	4,940	4,090	3,730	187
21	2,140	2,280	713	4,060	1,150	868	924	2,450	875	3,270	4,230	54
22	919	2,270	20	7,090	79	114	1,150	3,520	48	2,210	5,560	2,890
23	900	145	3,540	10,900	20	48	1,180	2,440	5,060	2,160	297	2,990
24	909	21	6,630	7,900	7,350	1,450	1,130	2,720	1,080	2,160	2,170	3,000
25	958	1,460	3,610	5,150	11,300	1,460	1,120	1,060	3,340	4,710	4,340	3,020
26	62	2,520	5,380	7,340	11,500	1,440	298	2,230	2,250	4,990	3,840	3,010
27	28	3,770	3,160	2,890	10,800	1,600	84	2,380	5,590	657	5,870	208
28	834	1,170	231	5,120	5,750	1,150	921	2,420	2,670	2,100	4,520	57
29	861	1,890	20	5,060	---	139	1,150	2,440	100	4,970	6,560	2,880
30	870	151	1,390	6,450	---	57	1,180	3,140	5,340	2,230	6,680	3,050
31	590	---	2,860	2,560	---	1,200	---	2,030	---	5,010	6,730	---
TOTAL	42,755	43,828	100,717	228,890	88,214	43,535	28,257	85,500	73,955	133,237	120,054	63,453
MEAN	1,379	1,461	3,249	7,384	3,150	1,404	942	2,758	2,465	4,298	3,873	2,115
MAX	5,450	4,550	7,460	11,000	11,500	5,790	3,680	7,300	5,590	6,760	7,050	3,330
MIN	28	20	20	1,140	16	31	81	77	48	657	19	46
AC-FT	84,800	86,930	199,800	454,000	175,000	86,350	56,050	169,600	146,700	264,300	238,100	125,900
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)												
MEAN	4,714	3,644	3,427	3,748	3,561	4,680	4,928	7,382	10,990	5,436	3,506	2,597
MAX	27,860	18,880	13,320	20,630	13,800	24,760	20,400	34,710	66,960	21,820	25,570	10,330
(WY)	(1987)	(1975)	(1997)	(1998)	(1987)	(1987)	(1945)	(1957)	(1957)	(1982)	(1950)	(1950)
MIN	66.7	79.6	569	271	678	614	789	712	1,449	1,580	953	325
(WY)	(1957)	(1957)	(1981)	(1945)	(1945)	(1976)	(1978)	(1959)	(1956)	(1956)	(1972)	(1984)

e Estimated

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL TOTAL	1,420,111		1,052,395			
ANNUAL MEAN	3,891		2,883		a4,831	
HIGHEST ANNUAL MEAN					16,030	1987
LOWEST ANNUAL MEAN					1,510	1964
HIGHEST DAILY MEAN	27,000	Apr 21	11,500	Feb 26	96,200	Jun 5, 1957
LOWEST DAILY MEAN	20	Nov 17	16	Feb 16	16	Feb 16, 2003
ANNUAL SEVEN-DAY MINIMUM	420	Oct 8	420	Oct 8	25	Mar 8, 2000
MAXIMUM PEAK FLOW			11,700	Aug 30,31	b102,000	Jun 5, 1957
MAXIMUM PEAK STAGE			11.10	Aug 30	c26.26	Jun 5, 1957
ANNUAL RUNOFF (AC-FT)	2,817,000		2,087,000		3,500,000	
10 PERCENT EXCEEDS	7,270		6,260		10,600	
50 PERCENT EXCEEDS	2,850		2,310		2,780	
90 PERCENT EXCEEDS	182		94		188	

a Prior to regulation, water years 1924-43, 5,684 ft^3/s.
b Maximum discharge for period of record, 201,000 ft^3/s May 21, 1935.
c Maximum gage height for period of record, 32.00 ft Apr. 25, 1942, site and datum then in use.



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: May 1944 to September 1989; February 1997 to current year.
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, 1,880 microsiemens Apr. 1; minimum, 1200 microsiemens Oct. 24, 28.
WATER TEMPERATURE: Maximum, 26.1°C Aug. 23, Sept. 1; minimum, 3.2°C Dec. 23.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Agency collecting sample, code (00027)	Agency analyzing sample, code (00028)	Gage height, feet (00065)	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
OCT													
09...	0900	1028	80020	4.94	46	750	2.5	29	7.3	1,320	13.6	21.1	300
NOV													
29...	1220	1028	80020	5.77	640	754	13.7	133	8.3	1,320	17.8	13.5	300
DEC													
30...	1115	1028	80020	4.91	20	744	14.9	140	7.3	1,390	20.1	11.3	310
JAN													
31...	1240	1028	80020	6.73	2,550	755	14.4	124	8.2	1,420	15.7	8.1	310
FEB													
24...	1315	1028	80020	9.56	8,300	764	12.3	104	8.3	1,480	-2.3	7.8	320
MAR													
10...	1500	1028	80020	5.52	477	756	16.1	141	8.6	1,480	12.5	9.1	320
APR													
01...	1030	1028	80020	5.00	138	754	13.7	132	8.3	1,550	20.4	13.0	330
MAY													
27...	1440	1028	80020	8.10	5,520	756	6.5	74	7.8	1,540	29.5	20.6	320
JUN													
10...	1208	1028	80020	4.58	23	745	6.7	77	7.8	1,530	--	20.7	360
JUL													
01...	1100	1028	80020	6.93	2,810	749	5.4	65	7.4	1,580	31.1	23.5	360
AUG													
05...	0740	1028	80020	5.47	103	748	1.0	12	7.2	1,600	28.0	22.6	350
SEP													
02...	1130	1028	80020	5.10	70	755	1.9	22	7.0	1,640	25.1	22.1	350

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Noncarb hard-ness, wat flt field, mg/L as CaCO3 (00904)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon-ate, wat flt incrm. titr., field, mg/L (00452)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)
OCT 09...	170	78.0	25.7	4.43	4	142	50	134	163	0.0	219	0.27	7.0
NOV 29...	190	75.2	27.2	4.50	4	162	54	106	127	1	239	0.31	4.7
DEC 30...	190	78.3	27.2	4.63	4	171	54	113	136	0.0	248	0.28	4.2
JAN 31...	200	80.0	27.9	4.54	4	173	54	114	138	0.0	262	0.30	4.5
FEB 24...	--	82.7	27.6	4.84	4	172	53	--	--	--	273	0.29	4.6
MAR 10...	--	82.1	28.8	4.56	4	185	55	--	--	--	280	0.28	4.3
APR 01...	220	84.6	29.7	4.60	4	185	54	116	141	0.0	276	0.28	4.1
MAY 27...	200	81.8	27.9	4.35	4	162	52	121	148	0.0	266	0.3	5.3
JUN 10...	210	91.3	32.0	5.18	4	179	52	149	181	2	272	0.3	6.2
JUL 01...	210	90.0	32.6	5.33	4	187	53	147	179	1	277	0.3	5.5
AUG 05...	210	91.0	30.1	4.54	5	198	55	135	165	0.0	297	0.3	6.2
SEP 02...	210	89.8	30.8	4.86	4	189	54	144	176	0.0	297	0.3	9.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue water, fltrd, tons/d (70302)	Residue total at 105 deg. C, sus-pended, mg/L (00530)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L (71846)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate water, fltrd, mg/L (71851)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L (71856)	Nitrite water, fltrd, mg/L as N (00613)
OCT 09...	171	731	0.99	90.8	<10	1.5	1.16	0.90	0.199	0.05	0.07	0.076	0.023
NOV 29...	190	768	1.05	1,330	<10	0.33	--	<0.04	--	--	0.22	--	<0.008
DEC 30...	192	795	1.08	42.9	<10	0.28	--	<0.04	--	--	0.21	--	<0.008
JAN 31...	198	820	1.11	5,640	<10	0.41	--	E.008	1.16	0.26	0.267	0.020	0.006
FEB 24...	203	--	--	--	<10	0.37	0.04	0.030	1.19	0.27	0.274	0.020	0.006
MAR 10...	204	--	--	--	<10	0.40	0.02	0.019	1.05	0.24	0.243	0.020	0.006
APR 01...	207	862	1.17	321	<10	0.37	0.02	0.016	0.823	0.19	0.191	0.016	0.005
MAY 27...	212	835	1.14	12,400	20	0.42	0.04	0.033	1.11	0.25	0.262	0.039	0.012
JUN 10...	211	890	1.21	55.5	<10	0.47	0.09	0.068	1.10	0.25	0.256	0.026	0.008
JUL 01...	215	904	1.23	6,860	<10	0.44	0.09	0.071	0.567	0.13	0.140	0.039	0.012
AUG 05...	219	929	1.26	258	<10	0.57	0.34	0.266	--	--	<0.022	--	<0.002
SEP 02...	211	920	1.25	174	<10	1.3	0.95	0.739	--	--	E.012	--	E.002

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Organic nitro-gen, water, unfltrd mg/L (00605)	Ortho-phos-phate, water, fltrd, mg/L (00660)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total nitro-gen, water, unfltrd mg/L (00600)	Arsenic water, fltrd, ug/L (01000)	Arsenic water unfltrd ug/L (01002)	Barium, water, fltrd, ug/L (01005)	Barium, water, unfltrd recover -able, ug/L (01007)	Cadmium water, fltrd, ug/L (01025)	Cadmium water, unfltrd ug/L (01027)	Chrom-ium, water, fltrd, ug/L (01030)
OCT													
09...	0.60	0.619	0.20	0.22	0.29	1.6	4	4	131	127	<8	<0.2	<0.8
NOV													
29...	--	--	E.02	E.02	E.03	0.55	E1	E1	116	106	<8	<0.2	<0.8
DEC													
30...	--	--	E.01	E.03	E.04	0.49	E2	E1	118	112	<8	<0.2	<0.8
JAN													
31...	--	--	E.004	0.013	0.052	0.68	<2	E1	119	113	<8	<0.2	<0.8
FEB													
24...	0.34	--	<0.007	0.009	0.022	0.65	E1	<2	117	117	<8	<0.2	<0.8
MAR													
10...	0.38	--	<0.007	0.007	0.026	0.64	E1	E1	118	115	<8	<0.2	<0.8
APR													
01...	0.35	--	<0.007	0.009	0.019	0.56	<2	E2	121	111	<8	<0.2	<0.8
MAY													
27...	0.39	--	E.005	0.014	0.036	0.69	<2	E2	115	124	<2	<0.2	<0.8
JUN													
10...	0.40	0.193	0.063	0.072	0.087	0.72	4	4	120	120	<2	<0.2	<0.8
JUL													
01...	0.37	0.095	0.031	0.044	0.055	0.58	<2	E2	126	125	<2	<0.2	<0.8
AUG													
05...	0.30	0.233	0.076	0.093	0.106	--	2	2	131	128	<2	<0.2	<0.8
SEP													
02...	0.58	0.595	0.194	0.21	0.25	--	4	4	130	143	0.04	<0.2	<0.8

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Chrom-ium, water, unfltrd recover -able, ug/L (01034)	Copper, water, fltrd, ug/L (01040)	Copper, water, unfltrd recover -able, ug/L (01042)	Iron, water, fltrd, ug/L (01046)	Iron, water, unfltrd recover -able, ug/L (01045)	Lead, water, fltrd, ug/L (01049)	Lead, water, unfltrd recover -able, ug/L (01051)	Mangan-ese, water, fltrd, ug/L (01056)	Mangan-ese, water, unfltrd recover -able, ug/L (01055)	Mercury water, fltrd, ug/L (71890)	Mercury water, unfltrd recover -able, ug/L (71900)	Nickel, water, fltrd, ug/L (01065)	Nickel, water, unfltrd recover -able, ug/L (01067)
OCT													
09...	<0.8	<6	1.5	17	150	0.12	1	878	1,240	E.01	<0.02	<30	E40
NOV													
29...	<0.8	<6	<1.0	<10	70	<0.08	<1	E1.7	20.1	<0.02	<0.02	<30	<80
DEC													
30...	<1.6	<6	E1.0	<10	30	<0.08	<1	E1.1	12.4	<0.02	<0.02	<30	<80
JAN													
31...	<0.8	E6	E.9	<10	40	E.05	<1	<2.0	13.3	<0.02	<0.02	<30	<80
FEB													
24...	<0.8	<6	E1.1	<10	E10	<0.08	<1	E.9	8.2	<0.02	<0.02	<30	<80
MAR													
10...	<0.8	<6	E.8	<10	<20	E.05	<1	E.8	8.4	<0.02	<0.02	<30	<80
APR													
01...	<0.8	<6	E.9	<10	20	E.04	<1	E1.3	10.4	<0.02	<0.02	<30	<80
MAY													
27...	<0.8	<7	1.4	<8	190	E.05	M	96.0	180	<0.02	E.01	<7.0	<80
JUN													
10...	<0.8	<7	2.7	<8	60	0.12	M	499	472	<0.02	<0.02	<7.0	<80
JUL													
01...	<0.8	<7	2.3	<8	80	0.10	M	207	207	<0.02	<0.02	<7.0	<2.0
AUG													
05...	<0.8	<7	<1.2	13	70	0.42	<1	371	364	<0.02	E.01	<7	<2
SEP													
02...	<0.8	1.8	<1.2	28	160	0.12	<1	469	454	<0.02	<0.02	2.17	<2

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Selenium, water, fltrd, ug/L (01145)	Selenium, water, unfltrd ug/L (01147)	Silver, water, fltrd, ug/L (01075)	Silver, water, unfltrd recoverable, ug/L (01077)	Zinc, water, fltrd, ug/L (01090)	Zinc, water, unfltrd recoverable, ug/L (01092)	Aldrin, water, unfltrd ug/L (39330)	alpha-Endosulfan, water, unfltrd ug/L (34361)	alpha-HCH, water, unfltrd ug/L (39337)	alpha-HCH-d6, surrog, Sch1608 water, unfltrd pct rcv (99778)	Aroclor 1016 + 1242, water, unfltrd ug/L (81648)	Aroclor 1221, water, unfltrd ug/L (39488)	Aroclor 1232, water, unfltrd ug/L (39492)
OCT 09...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
NOV 29...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
DEC 30...	<3	<3	<0.5	<0.3	<24	<25	--	--	--	--	--	--	--
JAN 31...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
FEB 24...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
MAR 10...	<3	<3	<0.5	<0.3	<24	<25	<0.04	<0.1	<0.03	98.1	<0.1	<1	<0.1
APR 01...	<3	<3	<0.3	<0.3	<24	<25	--	--	--	--	--	--	--
MAY 27...	<3	--	<0.3	<0.3	3	26	<0.20	<0.5	<0.15	37.6	<0.5	<5	<0.5
JUN 10...	<3	<1	<0.3	<0.3	E2	<25	--	--	--	--	--	--	--
JUL 01...	<3	--	<0.3	<0.3	4	6	--	--	--	--	--	--	--
AUG 05...	<3	--	<0.3	<0.3	<3	E3	--	--	--	--	--	--	--
SEP 02...	4	1.0	<0.2	<0.3	4	8	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Aroclor 1248, water, unfltrd ug/L (39500)	Aroclor 1254, water, unfltrd ug/L (39504)	Aroclor 1260, water, unfltrd ug/L (39508)	beta-Endosulfan, water, unfltrd ug/L (34356)	beta-HCH, water, unfltrd ug/L (39338)	Chlordane, technical, water, unfltrd ug/L (39350)	cis-Chlordane, water, unfltrd ug/L (39062)	delta-HCH, water, unfltrd ug/L (34259)	Dieldrin, water, unfltrd ug/L (39380)	Endosulfan sulfate water unfltrd ug/L (34351)	Endrin aldehyde, water, unfltrd ug/L (34366)	Endrin, water, unfltrd ug/L (39390)	Heptachlor epoxide water unfltrd ug/L (39420)
OCT 09...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV 29...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC 30...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 31...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB 24...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 10...	<0.1	<0.1	<0.1	<0.04	<0.03	<0.1	<0.1	<0.09	<0.02	<0.6	<0.2	<0.06	<0.8
APR 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY 27...	<0.5	<0.5	<0.5	<0.20	<0.15	<0.5	<0.5	<0.45	<0.10	<3.0	<1.0	<0.30	<4.0
JUN 10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP 02...	--	--	--	--	--	--	--	--	--	--	--	--	--

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Hepta-chlor, water, unfltrd ug/L (39410)	Isodrin surrog, Sch1608 wat unf percent recovry (90570)	Lindane water, unfltrd ug/L (39340)	p,p-' DDD, water, unfltrd ug/L (39310)	p,p-' DDE, water, unfltrd ug/L (39320)	p,p-' DDT, water, unfltrd ug/L (39300)	PCB 207, surrog, Sch1608 water, unfltrd pct rcv (99781)	Toxa-phene, water, unfltrd ug/L (39400)	trans-Chlor-dane, water, unfltrd ug/L (39065)
OCT									
09...	--	--	--	--	--	--	--	--	--
NOV									
29...	--	--	--	--	--	--	--	--	--
DEC									
30...	--	--	--	--	--	--	--	--	--
JAN									
31...	--	--	--	--	--	--	--	--	--
FEB									
24...	--	--	--	--	--	--	--	--	--
MAR									
10...	<0.03	62.8	<0.03	<0.1	<0.04	<0.1	85.6	<2	<0.1
APR									
01...	--	--	--	--	--	--	--	--	--
MAY									
27...	<0.15	73.6	<0.15	<0.5	<0.20	<0.5	74.7	<10	<0.5
JUN									
10...	--	--	--	--	--	--	--	--	--
JUL									
01...	--	--	--	--	--	--	--	--	--
AUG									
05...	--	--	--	--	--	--	--	--	--
SEP									
02...	--	--	--	--	--	--	--	--	--

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1,360	1,300	1,330	1,290	1,280	1,280	1,330	1,310	1,320	1,380	1,360	1,380
2	1,360	1,320	1,350	1,290	1,240	1,280	1,330	1,320	1,330	1,380	1,380	1,380
3	1,370	1,330	1,360	1,280	1,260	1,270	1,330	1,310	1,320	1,380	1,380	1,380
4	1,370	1,330	1,350	1,290	1,280	1,290	1,330	1,310	1,330	1,380	1,380	1,380
5	1,330	1,300	1,310	1,300	1,270	1,290	1,330	1,320	1,330	1,380	1,380	1,380
6	1,340	1,320	1,330	1,300	1,270	1,290	1,330	1,320	1,330	1,380	1,380	1,380
7	1,340	1,310	1,320	1,300	1,280	1,290	1,340	1,330	1,330	1,390	1,380	1,380
8	1,330	1,220	1,280	1,300	1,280	1,290	1,350	1,330	1,340	1,390	1,380	1,380
9	1,320	1,290	1,310	1,300	1,290	1,300	1,350	1,310	1,330	1,390	1,390	1,390
10	1,330	1,310	1,320	1,300	1,270	1,300	1,340	1,340	1,340	1,410	1,390	1,400
11	1,330	1,310	1,320	1,300	1,260	1,290	1,340	1,340	1,340	1,420	1,400	1,410
12	1,320	1,310	1,310	1,300	1,280	1,290	1,380	1,340	1,360	1,420	1,410	1,420
13	1,330	1,300	1,320	1,300	1,290	1,300	1,370	1,340	1,350	1,420	1,420	1,420
14	1,330	1,320	1,330	1,320	1,290	1,300	1,350	1,350	1,350	1,430	1,410	1,420
15	1,330	1,300	1,320	1,310	1,290	1,300	1,360	1,350	1,350	1,470	1,420	1,440
16	1,310	1,280	1,300	1,310	1,290	1,300	1,380	1,350	1,360	1,480	1,420	1,440
17	1,300	1,280	1,290	1,310	1,300	1,310	1,370	1,360	1,360	1,440	1,430	1,440
18	1,290	1,230	1,280	1,320	1,300	1,310	1,410	1,370	1,380	1,440	1,430	1,440
19	1,250	1,210	1,230	1,320	1,310	1,320	1,410	1,410	1,410	1,440	1,430	1,440
20	1,280	1,250	1,270	1,320	1,310	1,320	1,420	1,410	1,410	1,450	1,440	1,440
21	1,280	1,270	1,280	1,320	1,310	1,320	1,420	1,400	1,410	1,460	1,440	1,440
22	1,280	1,270	1,280	1,320	1,310	1,320	1,450	1,400	1,420	1,450	1,440	1,440
23	1,290	1,270	1,280	1,320	1,300	1,310	1,650	1,230	1,400	1,440	1,440	1,440
24	1,280	1,200	1,270	1,320	1,300	1,310	1,370	1,360	1,370	1,440	1,440	1,440
25	1,280	1,260	1,270	1,320	1,310	1,320	1,370	1,360	1,370	1,450	1,430	1,440
26	1,280	1,270	1,280	1,320	1,320	1,320	1,370	1,360	1,360	1,450	1,440	1,440
27	1,280	1,270	1,280	1,320	1,320	1,320	1,370	1,360	1,360	1,450	1,440	1,440
28	1,290	1,200	1,270	1,320	1,310	1,320	1,370	1,330	1,360	1,440	1,440	1,440
29	1,290	1,260	1,280	1,320	1,320	1,320	1,370	1,360	1,360	1,440	1,440	1,440
30	1,290	1,260	1,280	1,330	1,310	1,320	1,390	1,310	1,370	1,450	1,440	1,440
31	1,290	1,270	1,280	---	---	---	1,380	1,350	1,380	1,460	1,440	1,450
MONTH	1,370	1,200	1,300	1,330	1,240	1,300	1,650	1,230	1,360	1,480	1,360	1,420

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1,460	1,450	1,460	1,480	1,470	1,470	1,880	1,560	1,670	1,540	1,530	1,540
2	1,470	1,450	1,460	1,500	1,460	1,480	1,720	1,550	1,610	1,540	1,530	1,540
3	1,470	1,450	1,460	1,490	1,480	1,480	1,720	1,420	1,640	1,540	1,520	1,540
4	1,470	1,450	1,460	1,500	1,480	1,490	---	---	---	1,550	1,530	1,540
5	1,470	1,460	1,470	1,500	1,480	1,490	---	---	---	1,540	1,530	1,540
6	1,470	1,450	1,460	1,500	1,480	1,490	---	---	---	1,540	1,520	1,530
7	1,470	1,450	1,460	1,500	1,480	1,490	1,710	1,540	1,620	1,540	1,530	1,540
8	1,470	1,460	1,460	1,500	1,480	1,490	1,620	1,510	1,540	1,560	1,540	1,540
9	1,470	1,440	1,460	1,500	1,480	1,490	1,540	1,520	1,530	1,560	1,540	1,550
10	1,470	1,450	1,460	1,500	1,480	1,490	1,620	1,520	1,550	1,560	1,530	1,550
11	1,460	1,450	1,460	1,510	1,490	1,500	1,580	1,540	1,560	1,550	1,530	1,540
12	1,460	1,450	1,460	1,510	1,500	1,510	1,680	1,540	1,590	1,560	1,530	1,550
13	1,480	1,460	1,460	1,580	1,490	1,540	1,560	1,540	1,550	1,570	1,520	1,550
14	1,480	1,460	1,470	1,580	1,520	1,550	1,560	1,540	1,550	1,550	1,500	1,530
15	1,520	1,470	1,500	1,710	1,570	1,640	1,560	1,530	1,550	1,560	1,540	1,550
16	1,490	1,470	1,480	1,820	1,710	1,750	1,540	1,520	1,530	1,560	1,540	1,540
17	1,500	1,480	1,490	1,830	1,600	1,700	1,550	1,530	1,540	1,560	1,540	1,550
18	1,500	1,480	1,490	1,730	1,560	1,640	1,570	1,520	1,540	1,570	1,540	1,550
19	1,500	1,480	1,490	1,810	1,610	1,670	1,780	1,530	1,630	1,550	1,540	1,550
20	1,490	1,480	1,490	1,780	1,560	1,640	1,550	1,530	1,540	1,550	1,380	1,510
21	1,490	1,440	1,470	1,670	1,540	1,590	1,560	1,540	1,550	1,550	1,530	1,540
22	1,490	1,470	1,480	1,740	1,610	1,680	1,560	1,530	1,540	1,550	1,540	1,540
23	1,490	1,470	1,480	1,740	1,680	1,710	1,550	1,510	1,520	1,550	1,540	1,540
24	1,490	1,480	1,480	1,680	1,580	1,620	1,530	1,510	1,520	1,560	1,530	1,550
25	1,490	1,480	1,490	1,640	1,590	1,610	1,530	1,510	1,520	1,540	1,440	1,500
26	1,490	1,480	1,490	1,610	1,560	1,580	1,530	1,520	1,530	1,550	1,530	1,540
27	1,490	1,480	1,490	1,610	1,560	1,590	1,530	1,510	1,520	1,550	1,520	1,540
28	1,480	1,470	1,480	1,610	1,560	1,580	1,540	1,520	1,530	1,550	1,530	1,540
29	---	---	---	1,590	1,550	1,570	1,540	1,520	1,540	1,550	1,520	1,540
30	---	---	---	1,580	1,560	1,570	1,540	1,530	1,540	1,550	1,530	1,540
31	---	---	---	1,580	1,560	1,580	---	---	---	1,550	1,520	1,540
MONTH	1,520	1,440	1,470	1,830	1,460	1,570	1,880	1,420	1,560	1,570	1,380	1,540
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1,550	1,530	1,540	1,590	1,570	1,580	1,600	1,570	1,580	1,660	1,560	1,640
2	1,550	1,530	1,540	1,600	1,570	1,580	1,590	1,570	1,580	1,650	1,630	1,640
3	1,540	1,520	1,540	1,600	1,570	1,580	1,630	1,580	1,600	1,670	1,650	1,660
4	1,540	1,500	1,520	1,600	1,580	1,600	1,610	1,580	1,590	1,680	1,660	1,670
5	1,530	1,430	1,500	1,580	1,580	1,580	1,620	1,590	1,610	1,680	1,660	1,670
6	1,530	1,510	1,520	1,590	1,580	1,580	1,630	1,610	1,620	1,670	1,650	1,660
7	1,530	1,500	1,520	1,590	1,580	1,590	1,640	1,620	1,630	1,660	1,650	1,660
8	1,510	1,490	1,500	1,590	1,580	1,590	1,640	1,620	1,630	1,680	1,660	1,670
9	1,550	1,500	1,520	1,590	1,570	1,580	1,640	1,620	1,630	1,680	1,650	1,660
10	1,560	1,510	1,540	1,590	1,570	1,580	1,650	1,610	1,640	1,670	1,650	1,660
11	1,570	1,480	1,520	1,580	1,570	1,580	1,660	1,640	1,650	1,660	1,460	1,610
12	1,570	1,400	1,530	1,590	1,570	1,580	1,670	1,640	1,660	1,640	1,620	1,630
13	1,540	1,520	1,530	1,580	1,570	1,580	1,680	1,660	1,660	1,660	1,630	1,650
14	1,540	1,520	1,530	1,580	1,570	1,580	1,680	1,650	1,670	1,660	1,620	1,640
15	1,550	1,530	1,540	1,580	1,570	1,580	1,700	1,680	1,690	1,650	1,610	1,630
16	1,560	1,550	1,560	1,580	1,570	1,580	1,700	1,670	1,680	1,640	1,620	1,630
17	1,570	1,540	1,560	1,580	1,560	1,570	1,700	1,670	1,690	1,640	1,610	1,630
18	1,570	1,540	1,560	1,580	1,560	1,570	1,730	1,680	1,710	1,640	1,540	1,620
19	1,570	1,550	1,560	1,580	1,540	1,570	1,730	1,710	1,720	1,620	1,580	1,600
20	1,580	1,560	1,570	1,580	1,550	1,570	1,730	1,710	1,720	1,640	1,600	1,620
21	1,570	1,560	1,570	1,580	1,570	1,580	1,730	1,690	1,700	1,640	1,570	1,620
22	1,580	1,560	1,570	1,580	1,560	1,570	1,730	1,690	1,710	1,640	1,590	1,610
23	1,610	1,560	1,590	1,580	1,560	1,570	1,710	1,680	1,690	1,630	1,580	1,600
24	1,610	1,560	1,580	1,580	1,560	1,570	1,730	1,670	1,690	1,630	1,590	1,600
25	1,620	1,580	1,600	1,580	1,560	1,570	1,710	1,680	1,690	1,620	1,600	1,610
26	1,600	1,410	1,570	1,590	1,560	1,580	1,700	1,680	1,690	1,620	1,600	1,610
27	1,600	1,580	1,590	1,610	1,580	1,590	1,700	1,680	1,690	1,640	1,620	1,630
28	1,590	1,570	1,580	1,630	1,570	1,590	1,700	1,680	1,690	1,640	1,620	1,630
29	1,580	1,560	1,570	1,600	1,570	1,580	1,700	1,670	1,680	1,640	1,600	1,620
30	1,590	1,580	1,580	1,590	1,580	1,580	1,690	1,660	1,680	1,630	1,600	1,620
31	---	---	---	1,620	1,580	1,590	1,690	1,660	1,670	---	---	---
MONTH	1,620	1,400	1,550	1,630	1,540	1,580	1,730	1,570	1,660	1,680	1,460	1,630
YEAR	1,880	1,200	1,500									

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.0	21.5	23.6	18.2	16.9	17.4	13.9	10.6	12.1	11.0	8.9	9.8
2	25.0	22.2	24.2	17.9	16.3	16.9	13.8	12.2	12.8	9.7	8.4	9.4
3	25.0	22.3	24.0	17.2	16.3	16.6	12.6	11.9	12.3	9.7	9.5	9.6
4	25.3	22.3	24.2	17.9	15.8	16.8	12.4	11.6	12.1	9.8	9.5	9.6
5	25.1	21.6	23.2	17.5	16.0	16.8	12.2	11.1	11.7	9.8	9.5	9.6
6	25.1	21.1	23.2	18.6	15.3	16.8	12.6	10.7	11.5	9.6	9.4	9.6
7	24.8	21.6	23.6	18.2	15.6	16.9	12.3	9.9	11.2	9.8	9.4	9.6
8	22.7	20.3	20.9	18.2	15.5	16.8	12.3	10.3	11.1	9.8	9.5	9.7
9	22.0	20.7	21.4	17.4	16.3	16.7	11.3	10.6	11.1	10.0	9.6	9.8
10	23.5	21.8	22.5	17.2	15.5	16.4	11.6	11.0	11.2	10.4	9.4	9.6
11	23.4	22.2	22.8	18.3	15.5	16.7	11.5	10.6	11.1	9.8	9.3	9.4
12	25.2	21.5	23.0	17.8	15.2	16.3	11.1	10.9	11.0	9.3	9.1	9.3
13	23.4	20.4	21.6	17.5	15.3	16.4	11.5	10.4	10.8	9.4	9.1	9.2
14	22.6	20.5	21.3	17.4	15.2	16.3	11.9	10.0	10.8	9.3	9.0	9.1
15	23.7	19.8	21.3	16.9	15.0	15.9	12.5	9.6	10.9	9.1	8.8	8.9
16	22.9	19.7	21.0	17.0	14.1	15.2	12.4	10.8	11.2	8.9	7.7	8.6
17	23.4	19.4	20.9	16.9	13.8	15.1	12.1	10.5	11.0	8.6	8.2	8.4
18	21.4	20.1	20.8	16.4	14.0	15.0	11.5	9.9	10.9	8.5	7.9	8.3
19	21.4	19.0	20.4	17.0	14.6	15.5	10.9	9.8	10.1	9.5	7.7	8.4
20	20.4	19.7	20.1	16.4	14.0	15.2	10.6	9.4	9.9	10.3	8.2	8.8
21	20.9	19.7	20.4	17.2	14.2	15.5	11.0	8.4	9.6	9.1	8.5	8.7
22	20.7	19.6	20.1	16.6	14.3	15.3	10.4	7.8	8.7	8.5	8.0	8.3
23	20.6	19.7	20.1	16.3	13.9	14.9	10.7	3.2	8.7	8.1	7.7	8.0
24	20.4	19.5	19.8	16.3	13.8	14.9	10.6	9.8	10.2	8.2	7.5	7.7
25	20.0	18.5	19.3	14.6	13.3	14.0	11.1	9.0	9.9	7.5	7.1	7.4
26	20.4	18.3	19.1	14.5	13.4	14.0	10.5	9.2	9.8	7.4	7.2	7.3
27	19.3	18.6	18.9	14.1	12.4	13.6	11.2	9.1	10.0	8.2	6.5	7.3
28	19.3	18.5	18.8	14.9	12.3	13.5	11.7	9.0	10.1	8.4	7.2	7.5
29	19.7	17.9	18.7	13.7	11.9	13.0	10.9	9.1	10.2	7.8	7.5	7.6
30	19.0	17.8	18.4	14.0	11.5	12.7	11.3	9.8	10.8	7.7	7.4	7.5
31	18.6	16.7	17.5	---	---	---	10.9	8.7	9.7	9.4	7.1	7.8
MONTH	25.3	16.7	21.1	18.6	11.5	15.6	13.9	3.2	10.7	11.0	6.5	8.7
		FEBRUARY			MARCH			APRIL			MAY	
1	8.9	6.5	7.5	7.4	6.9	7.1	12.0	6.8	9.5	18.8	16.1	17.2
2	10.3	7.4	8.6	10.6	6.8	7.9	15.0	7.6	11.7	18.7	16.4	17.2
3	8.9	7.6	8.3	7.1	6.5	7.0	13.6	11.2	12.0	19.3	16.4	17.5
4	8.9	7.3	7.9	9.3	7.0	7.6	15.8	11.6	12.9	19.7	17.2	18.2
5	7.9	7.2	7.5	7.2	6.5	7.1	14.6	11.1	12.7	18.1	16.8	17.6
6	7.4	7.0	7.3	9.7	6.6	7.6	16.0	12.2	13.5	19.6	17.1	17.9
7	8.7	6.4	7.3	10.1	6.6	7.7	13.7	7.9	11.2	20.3	17.5	19.2
8	7.5	6.3	7.0	9.8	7.2	8.2	16.3	10.3	12.8	18.9	17.8	18.2
9	7.6	6.9	7.2	11.1	6.6	8.5	16.5	11.8	13.5	18.9	17.6	18.0
10	9.4	6.5	7.5	9.2	6.9	7.8	13.6	11.1	12.5	18.7	17.5	18.0
11	10.4	6.5	7.8	9.5	6.8	7.5	16.3	11.8	13.1	20.6	15.6	17.9
12	10.3	6.6	7.9	9.7	6.9	7.7	16.7	9.6	12.9	19.6	15.5	17.7
13	8.3	7.1	7.5	10.7	7.0	8.1	17.0	12.7	14.6	18.8	17.2	18.1
14	10.1	7.3	8.2	11.1	6.9	8.4	17.1	12.9	14.2	18.8	17.6	18.3
15	8.4	6.9	7.9	11.1	7.1	9.0	15.5	12.9	13.7	19.9	17.5	18.9
16	7.5	6.2	6.7	10.9	7.7	9.1	17.2	13.1	14.5	20.7	18.1	19.5
17	9.3	6.1	7.5	10.2	7.3	8.4	17.6	12.8	14.3	20.8	17.6	19.2
18	9.4	7.0	7.8	8.8	7.4	7.9	16.5	13.4	14.5	21.0	17.6	19.6
19	8.9	7.4	7.9	11.4	7.2	9.0	16.9	9.4	13.4	21.5	18.0	19.5
20	8.4	7.7	7.9	10.0	8.0	9.3	18.4	13.3	15.8	21.0	17.2	19.3
21	8.6	7.6	7.9	12.7	8.5	10.2	18.4	13.2	15.2	20.4	17.4	19.2
22	11.8	7.5	9.0	10.9	7.9	9.2	16.1	14.0	15.0	21.2	18.0	19.6
23	10.2	6.7	8.1	12.2	7.7	9.7	15.4	14.3	14.7	21.2	17.8	19.4
24	7.8	6.5	7.4	12.5	8.6	9.9	18.9	14.5	16.0	20.9	18.2	19.7
25	7.3	7.1	7.3	12.3	8.9	10	19.9	14.1	16.3	20.4	17.7	18.9
26	7.3	7.1	7.2	13.8	8.7	10.9	18.8	14.7	16.6	20.2	16.7	18.5
27	7.2	7.1	7.2	13.2	9.4	10.8	19.3	14.6	16.8	21.3	18.0	19.7
28	7.9	7.0	7.3	11.7	9.1	10.6	17.2	15.8	16.4	21.9	18.1	19.8
29	---	---	---	14.0	9.3	11.2	19.9	15.9	16.9	21.6	18.8	20.2
30	---	---	---	14.2	9.7	12.0	19.4	15.6	16.7	21.8	18.8	20.4
31	---	---	---	14.0	9.6	11.5	---	---	---	23.7	19.0	21.2
MONTH	11.8	6.1	7.7	14.2	6.5	8.9	19.9	6.8	14.1	23.7	15.5	18.8

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.2	19.7	21.1	23.0	20.7	21.6	23.7	20.8	22.6	26.1	22.3	24.2
2	23.5	19.9	21.2	22.5	19.3	21.2	23.8	20.9	22.7	25.6	21.4	23.7
3	23.0	19.4	20.9	22.5	19.5	21.6	23.6	20.4	21.9	25.6	21.9	23.6
4	22.4	20.1	21.3	22.4	20.9	21.8	23.4	20.3	22.3	25.9	21.7	23.7
5	21.3	19.9	20.6	22.4	20.6	21.6	23.5	21.4	22.5	25.5	21.7	23.7
6	23.1	19.9	21.3	22.6	20.4	21.5	24.1	21.2	23.3	25.4	21.1	23.4
7	24.0	19.7	21.7	22.8	20.3	21.9	23.9	21.4	23.0	25.2	20.4	23.0
8	23.0	19.4	20.9	23.1	21.4	22.2	23.9	21.0	22.8	25.0	21.1	23.7
9	23.9	19.4	21.3	22.7	20.3	21.9	23.1	20.5	21.7	25.0	22.2	24.0
10	21.8	19.8	20.8	23.1	20.8	22.4	24.5	19.7	22.0	24.7	22.1	23.9
11	21.5	18.9	20.1	23.5	20.7	22.4	24.2	20.8	22.8	24.9	21.8	23.4
12	22.2	18.8	20.5	23.0	21.0	21.9	23.4	21.3	22.4	25.1	22.3	23.7
13	21.6	19.2	20.6	23.3	21.1	22.2	23.8	20.9	22.4	23.9	21.2	22.1
14	23.4	19.8	21.2	23.3	21.5	22.6	24.6	21.2	22.7	23.2	20.4	21.5
15	22.3	18.5	20.3	23.6	21.7	22.8	24.9	21.1	22.9	24.7	19.6	22.1
16	22.1	18.6	20.7	23.4	20.6	22.4	24.6	21.2	22.6	24.2	21.3	22.8
17	22.4	19.5	21.1	24.4	21.4	22.9	24.2	20.2	22.0	24.6	20.9	22.6
18	22.2	18.8	20.8	23.9	21.7	22.8	24.8	20.4	23.2	24.7	21.3	23.0
19	22.6	19.8	21.1	24.1	21.4	22.6	24.4	22.0	23.2	24.7	20.5	22.9
20	22.2	19.7	21.1	23.9	21.6	22.7	24.4	21.5	23.1	25.1	20.7	22.8
21	23.1	20.4	21.6	23.7	21.0	22.6	24.8	21.8	23.3	23.7	21.1	22.2
22	23.1	19.5	21.2	23.2	20.6	22.2	25.0	21.5	23.7	24.3	20.5	22.4
23	21.6	19.8	20.9	23.1	20.8	22.1	26.1	21.5	23.2	24.7	21.7	23.5
24	23.3	19.8	21.1	23.0	19.6	21.9	25.3	20.6	22.6	24.2	21.8	23.0
25	22.9	20.3	21.2	23.6	20.1	22.0	25.1	21.2	23.3	24.2	21.6	23.0
26	22.0	20.2	21.2	23.7	21.2	22.5	24.9	21.9	23.3	24.5	21.7	23.2
27	22.9	19.3	21.8	24.1	21.2	22.4	25.2	21.7	23.9	25.0	21.5	23.2
28	22.5	19.7	21.3	23.9	20.3	22.0	24.7	22.9	23.7	24.6	20.5	22.3
29	23.4	19.2	21.2	23.8	20.4	22.5	25.0	22.0	23.9	24.1	20.5	22.4
30	22.8	19.2	21.7	23.2	21.2	22.4	25.5	22.2	24.5	23.9	21.0	22.8
31	---	---	---	23.7	20.3	22.4	25.3	22.2	24.5	---	---	---
MONTH	24.0	18.5	21.1	24.4	19.3	22.2	26.1	19.7	23.0	26.1	19.6	23.1
YEAR	26.1	3.2	16.3									

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 mi^2.

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 500.60 ft above sea level. Prior to Oct. 1, 1988, at datum 3.00 ft higher. 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.--No estimated daily discharge. Records good. 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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 26	1700	*7,710	*22.01	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	59	173	93	901	132	636	107	66	61	62	12	263
2	57	151	92	384	130	361	108	62	60	53	14	375
3	56	198	91	281	128	252	102	58	61	63	14	122
4	56	286	160	240	125	207	103	59	66	47	31	61
5	56	337	390	221	122	184	103	59	423	42	33	43
6	56	318	224	207	128	169	99	58	676	40	25	35
7	56	218	154	194	168	155	100	55	176	37	19	31
8	81	166	133	185	174	145	96	57	127	36	17	29
9	112	145	130	182	149	137	93	81	99	35	16	28
10	160	136	443	178	144	131	88	75	87	33	17	26
11	115	128	370	170	143	127	87	61	169	33	17	55
12	85	119	239	162	138	126	87	60	154	32	16	498
13	75	114	191	159	132	233	86	51	141	30	16	260
14	70	109	201	157	136	243	84	223	98	28	15	109
15	66	107	171	156	218	180	77	205	120	26	17	72
16	64	106	150	154	200	150	80	122	125	23	18	58
17	62	105	142	151	154	137	80	217	88	21	20	46
18	65	103	138	147	139	177	77	146	74	21	18	41
19	224	104	132	145	130	570	79	102	67	20	16	51
20	222	103	127	145	127	394	82	122	63	20	14	43
21	156	100	124	142	135	258	79	131	63	20	13	37
22	112	98	120	145	563	193	71	106	64	19	12	43
23	93	98	657	141	440	163	74	87	65	18	12	77
24	88	97	3,630	137	262	149	79	82	60	18	11	71
25	1,420	97	1,270	135	212	139	78	107	54	16	11	51
26	814	100	413	135	207	133	80	113	4,790	13	11	42
27	270	100	292	136	318	127	81	80	2,550	12	17	37
28	190	96	243	137	825	120	76	69	237	12	17	36
29	276	95	217	137	---	115	73	69	121	11	13	34
30	446	94	390	137	---	109	70	65	81	11	16	32
31	238	---	2,270	134	---	106	---	64	---	12	65	---
TOTAL	5,900	4,201	13,397	6,035	5,879	6,326	2,579	2,912	11,020	864	563	2,706
MEAN	190	140	432	195	210	204	86.0	93.9	367	27.9	18.2	90.2
MAX	1,420	337	3,630	901	825	636	108	223	4,790	63	65	498
MIN	56	94	91	134	122	106	70	51	54	11	11	26
AC-FT	11,700	8,330	26,570	11,970	11,660	12,550	5,120	5,780	21,860	1,710	1,120	5,370

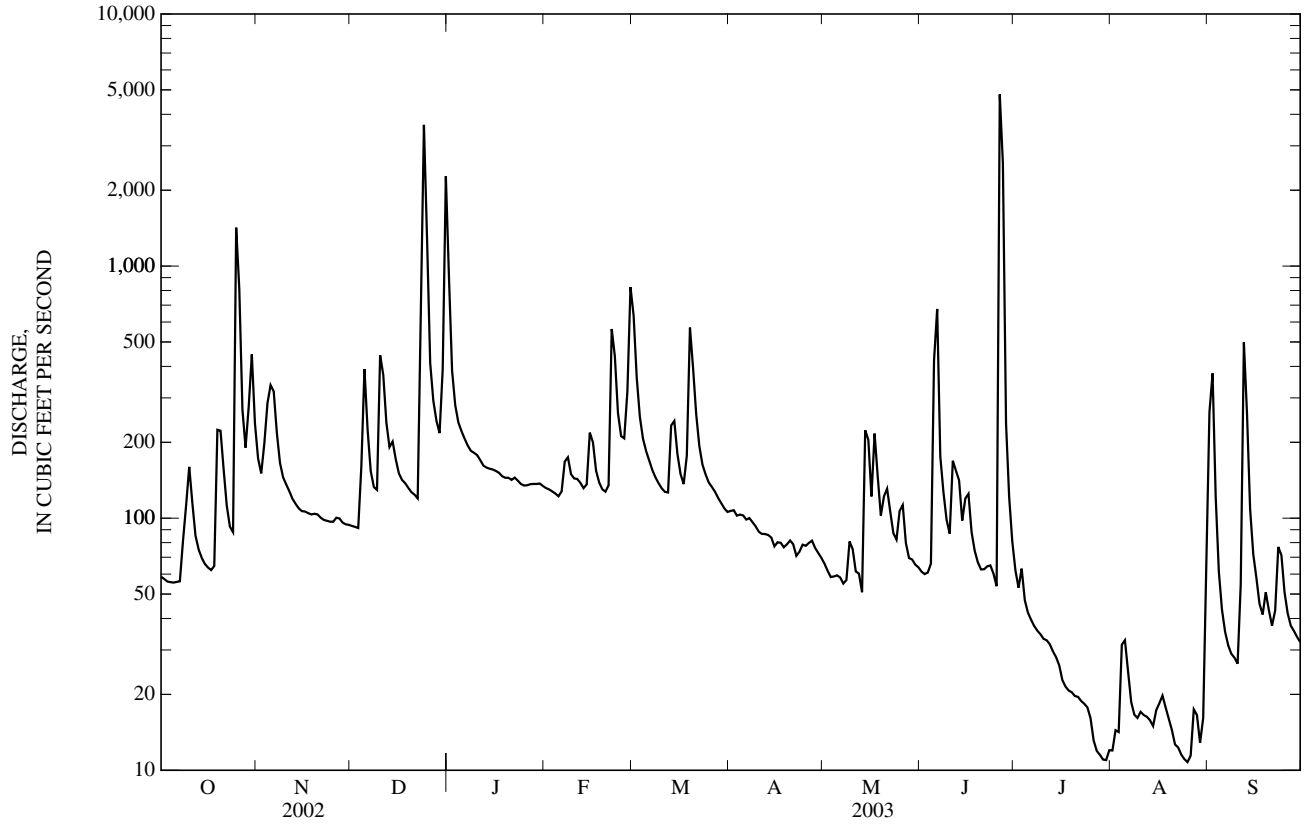
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	245	269	274	237	390	469	584	616	420	144	80.9	162
MAX	3,613	1,813	1,384	1,291	2,156	3,089	3,846	2,953	2,510	780	755	1,501
(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	0.94	0.42
(WY)	(1940)	(1940)	(1940)	(1940)	(1967)	(1940)	(1956)	(1939)	(1939)	(1956)	(1956)	(1956)

07332500 BLUE RIVER NEAR BLUE, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	165,390		62,382			
ANNUAL MEAN	453		171		324	
HIGHEST ANNUAL MEAN					972	1945
LOWEST ANNUAL MEAN					30.8	1956
HIGHEST DAILY MEAN	19,900	Apr 8	4,790	Jun 26	45,500	Oct 14, 1981
LOWEST DAILY MEAN	49	Aug 10	a11	Jul 29	b0.00	Aug 3, 1936
ANNUAL SEVEN-DAY MINIMUM	52	Aug 5	12	Jul 26	0.00	Sep 19, 1956
MAXIMUM PEAK FLOW			8,190	Jun 26	65,200	Oct 14, 1981
MAXIMUM PEAK STAGE			22.55	Jun 26	c44.20	Oct 14, 1981
ANNUAL RUNOFF (AC-FT)	328,100		123,700		234,600	
10 PERCENT EXCEEDS	542		262		538	
50 PERCENT EXCEEDS	136		103		90	
90 PERCENT EXCEEDS	66		20		28	

a Also occurred July 30, Aug. 24-26.
b Result of regulation at fish hatchery and no flow Sept. 19 to Oct. 16, 1956.
c From high-water mark.



07333010 ATOKA RESERVOIR NEAR STRINGTOWN, OK.

LOCATION.--Lat 34°26'43", long 96°05'00", in NW ¼ NE ¼ 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 mi^2 (City of Oklahoma City).

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

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 PERIOD OF RECORD.--Maximum contents, 148,900 acre-ft, Apr. 8, 2002, elevation 594.14 ft; minimum, 81,600 acre-ft, Oct. 20, 25, 26, 2000, elevation 581.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 101,500 acre-ft, Oct. 1, elevation 586.04 ft; minimum, 82,650 acre-ft, Mar. 18, elevation 582.21 ft.

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

580	72,780	588	112,000
582	81,670	590	123,500
584	91,160	595	154,400
586	101,300		

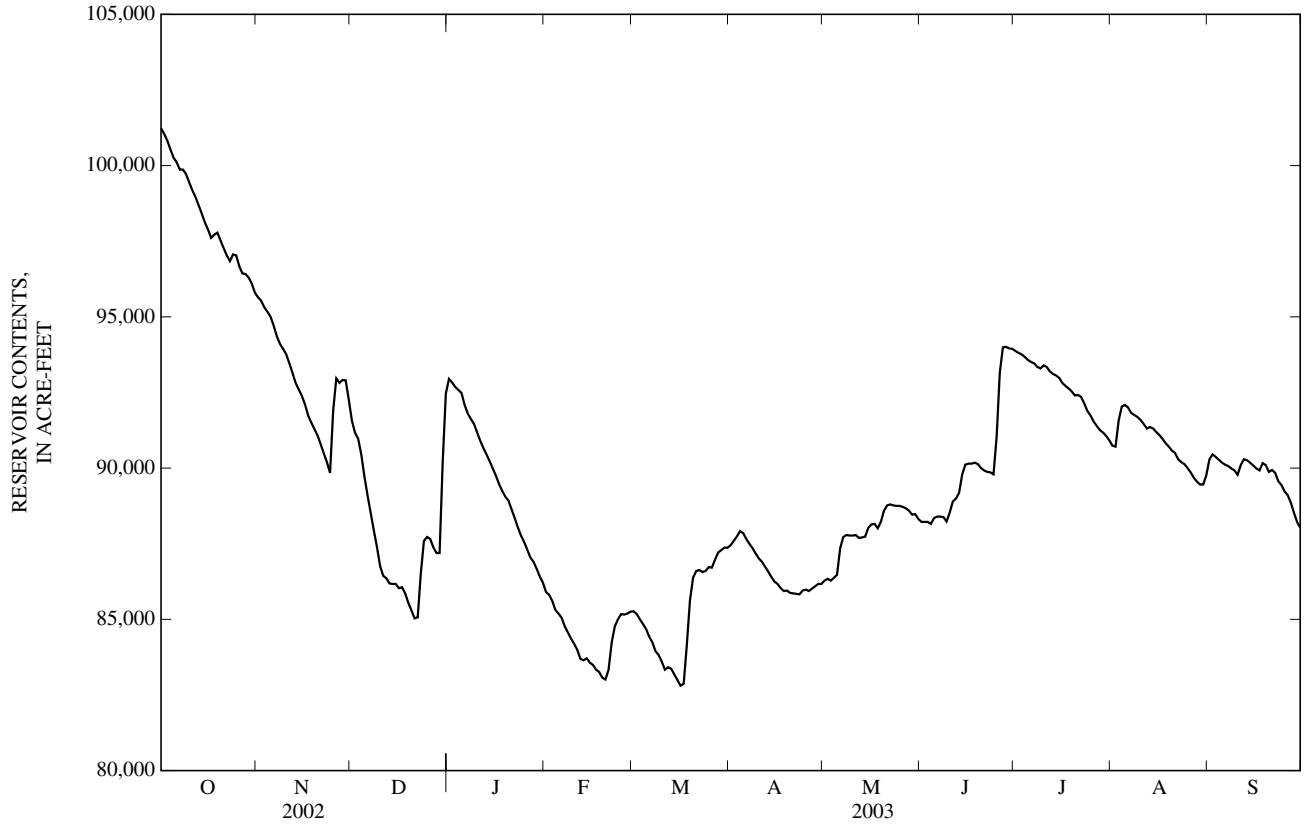
RESERVOIR STORAGE, ACRE FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101,400	95,680	91,950	92,850	86,150	85,270	87,350	86,150	88,220	93,940	90,870	89,910
2	101,100	95,630	91,360	93,000	85,780	85,270	87,500	86,340	88,220	93,840	90,680	90,480
3	101,000	95,480	91,060	92,750	85,830	85,130	87,640	86,340	88,220	93,790	90,730	90,440
4	100,700	95,230	90,920	92,650	85,500	84,940	87,790	86,250	88,220	93,740	92,000	90,340
5	100,400	95,130	90,200	92,550	85,220	84,800	87,980	86,440	88,120	93,640	92,050	90,240
6	100,200	94,930	89,470	92,450	85,170	84,610	87,790	86,490	88,460	93,540	92,100	90,150
7	100,100	94,590	88,890	91,900	84,990	84,330	87,590	87,790	88,360	93,490	91,950	90,100
8	99,760	94,240	88,320	91,750	84,660	84,190	87,450	87,690	88,410	93,440	91,750	90,050
9	99,920	94,040	87,740	91,560	84,520	83,820	87,300	87,830	88,360	93,290	91,750	89,950
10	99,610	93,890	87,210	91,410	84,290	83,820	87,110	87,740	88,170	93,290	91,660	89,910
11	99,350	93,690	86,530	91,060	84,150	83,490	86,970	87,790	88,700	93,440	91,560	89,710
12	99,100	93,340	86,390	90,820	83,910	83,260	86,870	87,790	88,990	93,290	91,410	90,290
13	98,890	93,050	86,340	90,580	83,590	83,490	86,680	87,640	88,990	93,150	91,260	90,290
14	98,590	92,700	86,110	90,390	83,680	83,310	86,530	87,740	89,280	93,100	91,410	90,240
15	98,330	92,550	86,200	90,150	83,730	83,120	86,340	87,740	90,050	93,050	91,260	90,150
16	98,020	92,300	86,150	89,910	83,490	82,930	86,200	88,170	90,150	92,950	91,160	90,050
17	97,820	92,000	85,970	89,670	83,490	82,750	86,150	88,120	90,150	92,750	91,060	89,950
18	97,510	91,610	86,110	89,380	83,260	82,930	85,970	88,170	90,150	92,700	90,920	89,910
19	97,820	91,460	85,730	89,180	83,260	84,750	85,920	87,930	90,200	92,600	90,770	90,290
20	97,770	91,210	85,450	88,990	82,980	86,060	85,970	88,360	90,100	92,500	90,680	90,000
21	97,410	91,010	85,220	88,890	83,030	86,530	85,830	88,700	89,950	92,350	90,530	89,810
22	97,200	90,680	84,940	88,510	83,490	86,630	85,870	88,800	89,910	92,450	90,480	90,000
23	96,950	90,390	85,130	88,270	84,610	86,630	85,830	88,800	89,860	92,300	90,200	89,760
24	96,790	90,100	87,210	87,930	84,850	86,530	85,830	88,750	89,860	92,050	90,200	89,470
25	97,200	89,710	87,790	87,690	85,080	86,630	86,010	88,750	89,760	91,800	90,100	89,420
26	96,950	93,000	87,690	87,500	85,220	86,770	85,970	88,750	91,660	91,710	89,950	89,140
27	96,540	92,950	87,640	87,210	85,130	86,680	85,920	88,700	93,890	91,460	89,810	89,090
28	96,380	92,750	87,260	86,970	85,220	87,110	86,060	88,650	94,040	91,360	89,620	88,750
29	96,430	93,000	87,160	86,870	---	87,260	86,110	88,560	93,990	91,210	89,520	88,410
30	96,230	92,850	87,210	86,580	---	87,300	86,200	88,410	93,940	91,160	89,420	88,120
31	96,030	---	e91,710	86,340	---	87,400	---	88,510	---	91,010	89,470	---
MAX	101,400	95,680	91,950	93,000	86,150	87,400	87,980	88,800	94,040	93,940	92,100	90,480
MIN	96,030	89,710	84,940	86,340	82,980	82,750	85,830	86,150	88,120	91,010	89,420	88,120
(‡)	584.98	584.34	584.11	583.00	582.76	583.22	582.97	583.45	584.56	583.97	583.65	583.37
(‡‡)	-5570	-3180	-1140	-5370	-1120	+2180	-1200	+2310	+5430	-2930	-1540	-1350

CAL YR 2002 MAX 148800 MIN 84940 (‡‡) -32690
WTR YR 2003 MAX 101400 MIN 82750 (‡‡) -13480

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

07333010 ATOKA RESERVOIR NEAR STRINGTOWN, OK.—Continued



07334000 MUDDY BOGGY CREEK NEAR FARRIS, OK

LOCATION.--Lat 34°16'17", long 95°54'43", in NE ¼ NW ¼ 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 mi^2.

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.--Records good. Some regulation since June 1959 by Atoka Reservoir, drainage area, 176 mi^2; pipeline diversions to Oklahoma City since November 1963, and since April 1987 by McGee Creek Lake, drainage area 178 mi^2. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	55	23	3,890	47	1,270	57	29	43	79	20	28
2	20	63	24	1,960	47	1,060	54	29	41	59	20	31
3	20	64	25	867	47	1,020	51	28	39	48	23	393
4	19	55	35	632	46	1,170	49	26	37	40	760	186
5	19	55	32	532	48	981	46	25	38	35	1,330	92
6	19	50	117	476	53	705	44	24	37	32	363	59
7	19	45	164	441	55	384	43	55	36	30	140	44
8	21	39	132	316	60	133	39	156	36	27	84	35
9	22	42	96	114	62	109	36	76	35	26	58	29
10	21	44	89	98	63	97	34	119	34	25	43	23
11	21	39	84	86	68	89	38	127	49	25	35	26
12	21	35	77	80	69	83	40	74	83	24	31	25
13	20	32	83	75	66	137	38	53	269	23	28	28
14	20	29	111	71	89	231	35	43	427	23	26	30
15	20	27	125	67	233	198	34	38	851	23	24	29
16	20	26	178	63	266	185	33	37	1,320	22	23	50
17	20	24	136	61	215	163	31	40	661	21	21	41
18	21	24	103	59	207	235	31	71	257	20	20	33
19	29	26	82	57	390	1,310	31	62	164	20	20	56
20	27	24	68	56	370	1,630	37	171	114	20	19	52
21	26	25	63	55	344	1,320	33	432	86	20	18	70
22	27	25	55	54	1,130	1,210	31	836	69	20	18	79
23	27	24	344	52	1,820	956	31	329	60	20	18	117
24	29	24	2,850	e51	1,110	832	32	182	53	20	17	165
25	48	25	2,760	e49	581	548	31	125	48	20	17	82
26	43	24	1,130	50	394	141	33	96	1,920	20	18	60
27	45	24	411	49	430	111	32	77	1,870	19	20	45
28	37	22	239	50	941	93	30	64	542	19	21	34
29	38	22	169	49	---	79	28	56	203	19	20	27
30	35	23	246	48	---	63	28	50	114	20	20	24
31	37	---	3,310	47	---	62	---	46	---	20	20	---
TOTAL	811	1,036	13,361	10,555	9,251	16,605	1,110	3,576	9,536	839	3,295	1,993
MEAN	26.2	34.5	431	340	330	536	37.0	115	318	27.1	106	66.4
MAX	48	64	3,310	3,890	1,820	1,630	57	836	1,920	79	1,330	393
MIN	19	22	23	47	46	62	28	24	34	19	17	23
AC-FT	1,610	2,050	26,500	20,940	18,350	32,940	2,200	7,090	18,910	1,660	6,540	3,950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

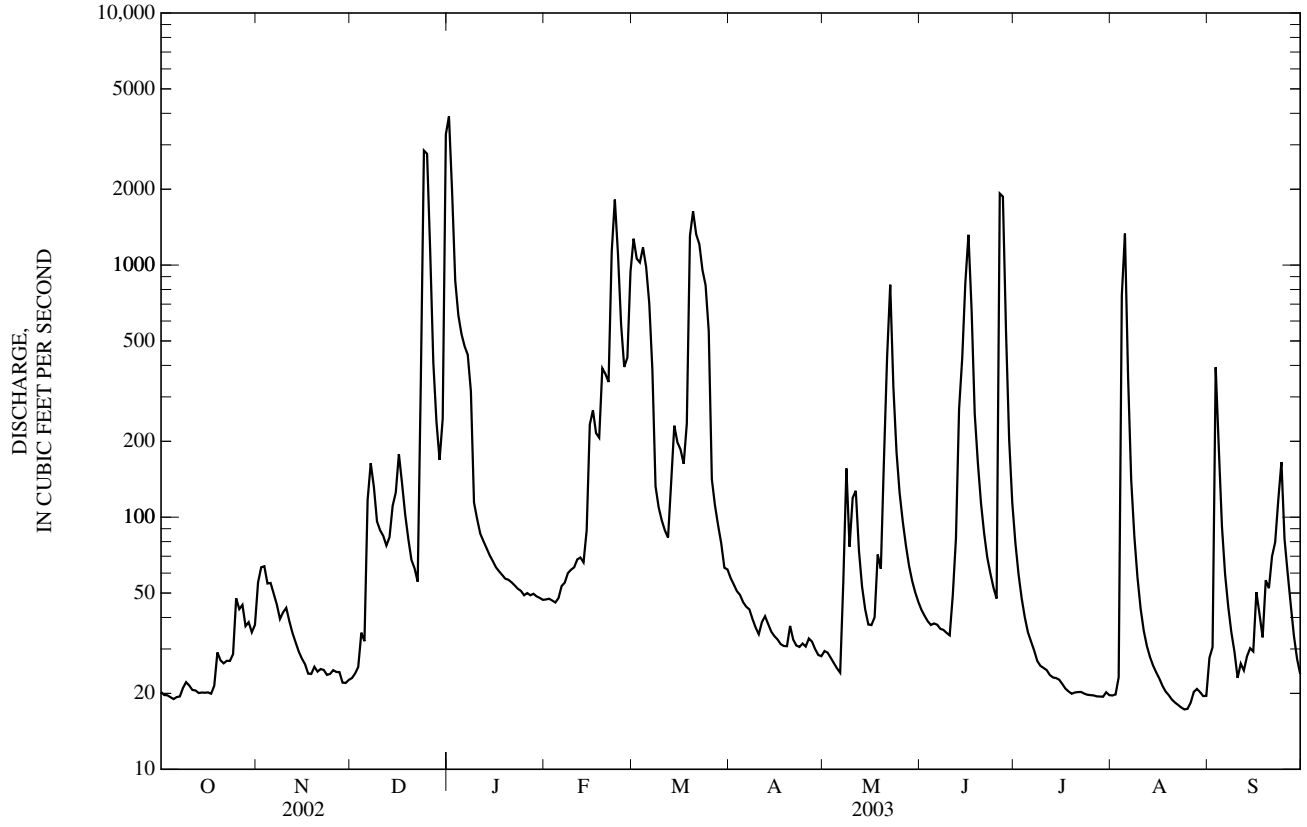
MEAN	261	885	1,400	1,026	1,201	1,883	1,817	1,875	999	297	203	343
MAX	1,489	4,184	4,223	5,313	4,165	4,541	6,622	8,384	2,764	1,854	1,525	1,026
(WY)	(1992)	(1997)	(1992)	(1998)	(2001)	(1990)	(1990)	(1990)	(1991)	(1992)	(1992)	(1992)
MIN	13.5	26.0	25.5	81.6	41.5	265	37.0	34.7	25.0	15.5	13.7	13.8
(WY)	(2000)	(2002)	(1990)	(2000)	(1996)	(2000)	(2003)	(1988)	(1988)	(1998)	(1998)	(1988)

e Estimated

07334000 MUDDY BOGGY CREEK NEAR FARRIS, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1988 - 2003	
ANNUAL TOTAL	320,988		71,968			
ANNUAL MEAN	879		197		a1,014	
HIGHEST ANNUAL MEAN					2,145	1990
LOWEST ANNUAL MEAN					197	2003
HIGHEST DAILY MEAN	22,000	Apr 8	3,890	Jan 1	45,700	May 5, 1990
LOWEST DAILY MEAN	17	Sep 7	17	Aug 24,25	b7.5	Sep 26, 2000
ANNUAL SEVEN-DAY MINIMUM	18	Sep 1	18	Aug 20	11	Oct 18, 1991
MAXIMUM PEAK FLOW			4,170	Jan 1	c49,800	May 5, 1990
MAXIMUM PEAK STAGE			21.22	Jan 1	d48.73	May 5, 1990
INSTANTANEOUS LOW FLOW					7.5	Sep 26, 2000
ANNUAL RUNOFF (AC-FT)	636,700		142,700		735,000	
10 PERCENT EXCEEDS	2,590		498		2,540	
50 PERCENT EXCEEDS	84		48		134	
90 PERCENT EXCEEDS	21		20		20	

a Prior to regulation, water years 1938-86, 880 ft^3/s.
b No flow at times in many years prior to regulation.
c Maximum discharge for period of record 61,900 ft^3/s, June 17, 1945, from rating curve above 37,000 ft^3/s.
d Maximum gage height for period of record 51.94 ft, June 17, 1945, present datum.



07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK

LOCATION.--Lat 34°35'40", long 96°39'55", in SW $^1/_4$ SW $^1/_4$ sec.34, T.2 N., R.6 E., Pontotoc County, Hydrologic Unit 11140104, upstream from weir outlet of spring, 0.5 mi 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 poor. Prior to December 1989 records do not include diversion of about 6 to 15 ft^3/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 ft^3/s. Satellite telemeter at station.

AVERAGE DISCHARGE.--Creek only: 43 years, 9.10 ft^3/s. Combined spring flow: 13 years, 19.6 ft^3/s.

EXTREMES FOR PERIOD OF RECORD.--Combined flow: maximum daily discharge, 43 ft^3/s, May 4, 5, 1990; minimum daily discharge, 5.4 ft^3/s, Sept. 3, 4, 2003.

EXTREMES FOR CURRENT YEAR.--Combined flow: maximum daily discharge, 20.0 ft^3/s, at times; minimum daily discharge, 5.4 ft^3/s, Sept. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	7.7	7.8	10	9.4	8.5	9.8	7.8	5.4	6.4	5.0	5.4
2	5.9	7.8	7.8	10	9.4	8.4	9.8	7.8	7.1	6.3	6.1	5.4
3	5.8	7.8	7.8	10	9.2	8.5	9.8	7.8	9.8	5.5	6.1	5.4
4	9.0	7.8	7.8	10	9.1	8.6	9.8	7.8	9.8	5.2	5.9	5.4
5	11	10	7.8	11	9.2	11	9.8	7.8	9.6	6.0	6.1	5.4
6	11	9.2	7.8	11	9.1	13	9.8	9.0	9.5	5.9	5.0	5.4
7	11	8.0	7.8	12	9.0	8.3	9.8	7.8	9.0	5.9	5.1	5.4
8	11	8.2	7.8	11	9.0	8.4	11	7.8	5.2	7.9	5.9	5.4
9	9.1	8.0	7.8	11	9.0	8.4	11	7.7	6.5	8.8	5.7	5.3
10	6.1	7.8	9.2	11	8.8	8.4	9.8	7.6	8.3	6.1	5.7	5.2
11	6.2	7.8	8.5	11	8.7	8.5	9.8	7.5	6.9	6.1	4.9	5.4
12	6.3	7.8	7.8	11	11	8.3	9.6	7.4	7.9	6.0	5.7	5.4
13	6.3	7.8	7.8	11	10	8.2	9.5	7.6	8.8	5.0	4.6	5.4
14	6.4	7.9	7.8	11	8.6	8.2	9.7	7.5	8.7	3.4	5.7	5.4
15	6.4	8.1	7.8	11	8.6	8.2	9.7	7.4	8.6	3.7	5.7	5.5
16	6.4	8.1	7.1	11	8.6	8.2	9.3	7.4	7.7	5.8	5.7	5.7
17	6.3	8.1	6.5	11	8.6	8.2	8.3	7.2	6.6	4.2	5.7	5.7
18	7.9	8.0	6.4	11	8.6	9.6	8.3	7.2	6.6	3.2	3.8	5.7
19	9.1	8.0	6.4	11	8.6	9.8	8.2	7.2	6.5	3.4	3.1	5.7
20	9.1	8.0	7.0	11	8.6	9.7	8.1	7.4	6.5	3.4	3.4	5.7
21	8.5	7.9	7.8	11	8.6	9.6	8.1	7.3	6.4	3.8	4.6	5.7
22	7.4	7.9	7.8	11	8.6	9.6	8.2	7.2	6.4	5.7	1.3	5.7
23	7.4	8.0	8.2	11	8.6	9.7	8.2	7.2	6.7	5.7	1.8	5.7
24	7.4	7.9	8.7	11	8.5	9.7	8.2	7.2	6.8	5.7	1.7	5.7
25	7.4	7.9	9.0	11	8.6	9.7	8.2	7.1	6.7	5.1	3.9	5.7
26	7.4	7.8	9.0	11	8.6	9.7	8.1	7.1	6.7	3.5	5.1	5.7
27	7.4	7.8	9.0	11	8.6	9.8	7.9	7.1	6.7	3.6	5.1	5.0
28	7.4	7.8	9.0	11	8.6	9.8	7.9	7.1	6.5	3.6	5.1	5.8
29	7.7	7.8	9.3	11	---	9.8	7.8	6.2	6.5	3.4	5.2	6.1
30	7.7	7.8	9.4	11	---	9.8	7.8	5.6	6.3	4.4	5.3	6.1
31	7.7	---	9.8	10	---	9.8	---	5.5	---	6.0	3.9	---
TOTAL	239.7	240.5	249.5	337	249.8	285.4	271.3	227.3	220.7	158.7	147.9	166.5
MEAN	7.73	8.02	8.05	10.9	8.92	9.21	9.04	7.33	7.36	5.12	4.77	5.55
MAX	11	10	9.8	12	11	13	11	9.0	9.8	8.8	6.1	6.1
MIN	5.8	7.7	6.4	10	8.5	8.2	7.8	5.5	5.2	3.2	1.3	5.0
AC-FT	475	477	495	668	495	566	538	451	438	315	293	330

CAL YR 2002 TOTAL 3650.7 MEAN 10.0 MAX 18 MIN 3.1 AC-FT 7240
WTR YR 2003 TOTAL 2794.3 MEAN 7.66 MAX 13 MIN 1.3 AC-FT 5540

07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	16	16	19	19	18	18	17	15	15	11	8.0
2	16	16	16	19	19	18	18	17	16	15	11	6.8
3	16	17	16	19	19	18	18	17	16	14	11	5.4
4	17	16	16	19	18	18	18	17	16	14	9.7	5.4
5	16	16	16	20	18	18	18	17	16	14	8.1	6.0
6	16	16	16	20	18	19	18	17	16	14	9.8	6.8
7	16	17	16	19	18	17	18	17	16	14	11	6.9
8	16	17	17	20	18	18	18	17	15	14	11	6.9
9	16	17	16	20	18	18	18	17	15	14	11	7.7
10	16	17	16	20	18	18	18	17	16	14	11	7.6
11	16	17	16	20	18	18	18	17	16	13	11	7.9
12	16	17	16	20	18	17	18	16	16	13	9.9	7.8
13	16	17	16	20	18	17	18	17	16	13	11	7.7
14	16	17	16	20	18	17	18	17	16	13	11	7.9
15	16	17	16	20	18	17	18	16	16	12	11	7.9
16	16	17	16	20	18	17	18	16	15	13	11	8.0
17	16	17	16	20	18	17	18	16	15	13	11	8.1
18	16	17	16	20	18	18	17	16	15	12	10	8.1
19	16	17	16	20	18	18	17	16	15	12	11	8.0
20	16	17	16	20	18	18	17	16	15	12	10	8.2
21	16	16	16	20	18	18	17	16	15	12	9.6	8.1
22	16	17	16	20	18	18	17	16	15	12	10	8.1
23	16	17	17	20	18	18	17	16	15	12	10	8.3
24	16	16	17	20	18	18	17	16	15	12	10	8.2
25	16	16	18	20	18	18	17	16	15	12	10	8.0
26	16	16	18	20	18	18	17	16	15	12	10	7.9
27	16	16	18	20	18	18	17	16	15	12	10	8.3
28	16	16	18	20	18	18	17	16	15	12	9.5	8.2
29	16	16	18	20	---	18	17	16	15	12	9.3	8.3
30	16	16	18	20	---	18	17	16	15	12	7.6	8.3
31	16	---	18	19	---	18	---	16	---	12	8.7	---
TOTAL	497	497	513	614	507	552	527	509	462	400	316.2	228.8
MEAN	16.0	16.6	16.5	19.8	18.1	17.8	17.6	16.4	15.4	12.9	10.2	7.63
MAX	17	17	18	20	19	19	18	17	16	15	11	8.3
MIN	16	16	16	19	18	17	17	16	15	12	7.6	5.4
AC-FT	986	986	1,020	1,220	1,010	1,090	1,050	1,010	916	793	627	454

CAL YR 2002 TOTAL 7087 MEAN 19.4 MAX 28 MIN 16 AC-FT 14060
WTR YR 2003 TOTAL 5623.0 MEAN 15.4 MAX 20 MIN 5.4 AC-FT 11150

07335300 MUDDY BOGGY CREEK NEAR UNGER, OK

LOCATION.--Lat 34°01'36", long 95°45'00", in SE ¼ SE ¼ 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 mi^2.

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.--No estimated daily discharge. Records good. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

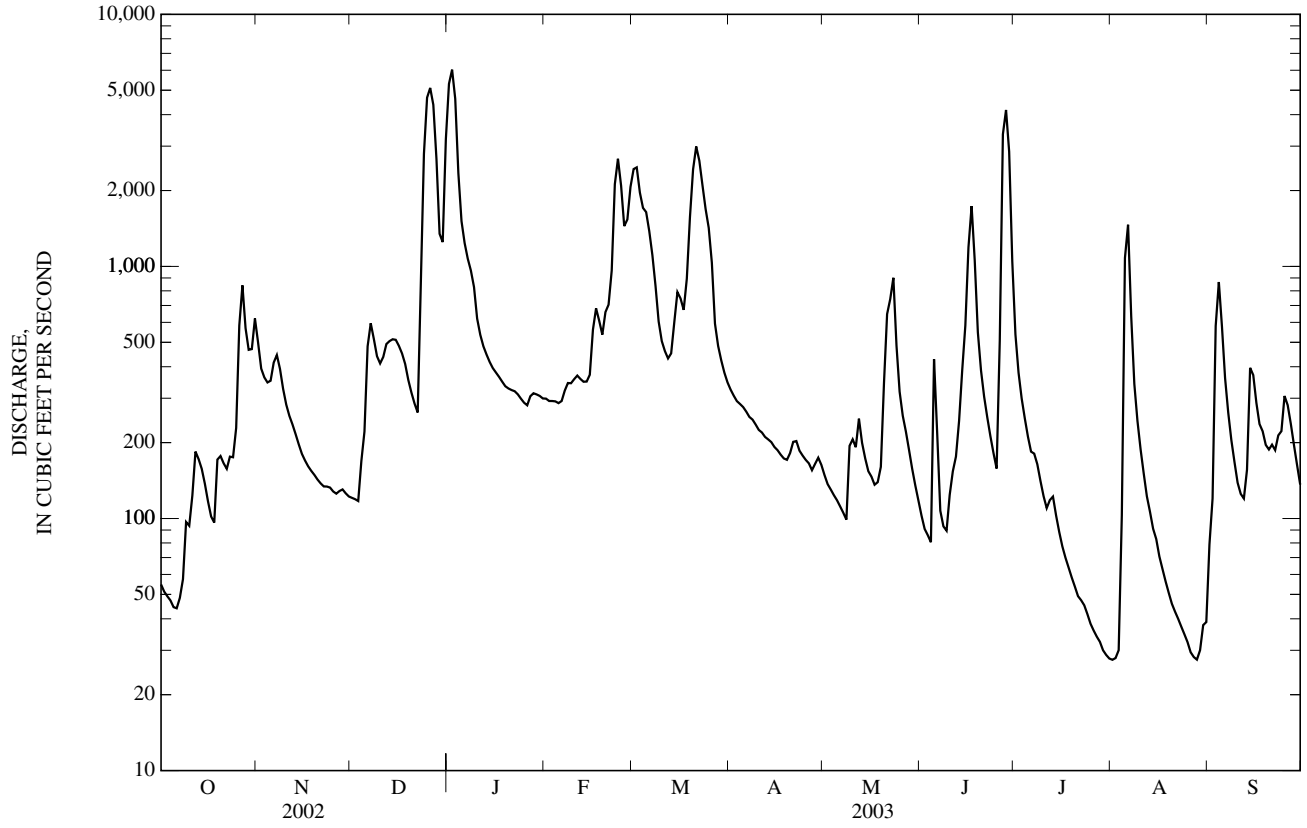
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	499	121	5,300	299	2,430	325	149	103	538	28	79
2	51	393	119	6,030	293	2,470	307	137	91	379	28	120
3	49	363	117	4,620	292	1,960	292	130	86	299	30	580
4	47	346	169	2,350	292	1,710	285	124	81	249	103	867
5	45	352	221	1,510	287	1,640	277	118	428	211	1,080	578
6	44	416	482	1,240	292	1,380	265	112	218	184	1,460	361
7	48	445	595	1,070	322	1,110	253	105	107	181	633	263
8	57	392	515	963	345	836	247	99	93	164	342	205
9	97	327	440	828	344	605	236	194	89	141	244	168
10	94	283	412	621	357	506	225	206	124	123	188	139
11	123	255	438	535	369	461	219	192	154	110	151	125
12	184	236	492	482	358	431	211	249	176	118	123	120
13	172	216	505	447	349	452	206	200	244	122	106	156
14	157	197	514	418	349	601	201	173	388	103	91	396
15	137	181	511	395	372	791	192	154	583	88	83	371
16	117	170	484	379	561	746	187	147	1,190	77	71	287
17	102	161	451	365	682	673	179	136	1,740	70	63	237
18	96	155	410	349	609	894	173	139	1,060	64	56	222
19	171	149	354	335	536	1,570	171	160	548	58	51	196
20	177	143	316	328	659	2,430	182	345	387	54	46	188
21	166	138	286	323	705	2,990	201	647	305	49	43	196
22	157	134	263	320	963	2,620	203	742	253	47	40	187
23	176	134	852	311	2,120	2,100	186	902	212	45	37	214
24	175	133	2,790	299	2,670	1,690	178	485	182	42	35	222
25	229	128	4,670	288	2,090	1,420	171	319	158	38	32	306
26	583	125	5,110	281	1,450	1,030	165	256	508	36	29	282
27	841	128	4,380	305	1,540	593	155	221	3,340	34	28	238
28	569	130	2,670	314	2,070	484	165	187	4,180	32	28	196
29	467	126	1,350	311	---	424	174	158	2,850	30	30	163
30	470	122	1,250	306	---	379	163	136	1,050	29	38	136
31	621	---	3,190	299	---	347	---	118	---	28	39	---
TOTAL	6,477	6,977	34,477	31,922	21,575	37,773	6,394	7,440	20,928	3,743	5,356	7,798
MEAN	209	233	1,112	1,030	771	1,218	213	240	698	121	173	260
MAX	841	499	5,110	6,030	2,670	2,990	325	902	4,180	538	1,460	867
MIN	44	122	117	281	287	347	155	99	81	28	28	79
AC-FT	12,850	13,840	68,390	63,320	42,790	74,920	12,680	14,760	41,510	7,420	10,620	15,470

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	727	1,899	2,720	1,977	2,601	3,812	3,624	4,169	2,197	587	340	630
MAX	3,713	9,607	9,832	9,591	7,497	10,970	14,270	21,720	7,293	4,536	2,517	2,218
(WY)	(1985)	(1997)	(1992)	(1998)	(2001)	(1990)	(1990)	(1990)	(1991)	(1992)	(1992)	(1996)
MIN	34.0	84.0	76.3	177	195	677	213	92.3	49.8	57.8	28.7	16.7
(WY)	(1989)	(1989)	(1990)	(1984)	(1996)	(1986)	(2003)	(1988)	(1988)	(1998)	(1988)	(2000)

07335300 MUDDY BOGGY CREEK NEAR UNGER, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	697,973		190,860			
ANNUAL MEAN	1,912		523		2,103	
HIGHEST ANNUAL MEAN					4,951	1990
LOWEST ANNUAL MEAN					450	2000
HIGHEST DAILY MEAN	36,600	Apr 11	6,030	Jan 2	76,000	May 6, 1990
LOWEST DAILY MEAN	44	Oct 6	28	Jul 31-Aug 2,27,28	1.8	Sep 8, 1984
ANNUAL SEVEN-DAY MINIMUM	48	Oct 1	29	Jul 28	2.6	Sep 3, 1984
MAXIMUM PEAK FLOW			6,150	Jan 2	76,700	May 6, 1990
MAXIMUM PEAK STAGE			26.31	Jan 2	55.27	May 6, 1990
ANNUAL RUNOFF (AC-FT)	1,384,000		378,600		1,524,000	
10 PERCENT EXCEEDS	3,990		1,290		6,400	
50 PERCENT EXCEEDS	355		244		466	
90 PERCENT EXCEEDS	97		57		53	



07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'30", long 95°30'06", in NW $\frac{1}{4}$ 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 mi^2, of which 5,936 mi^2 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. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

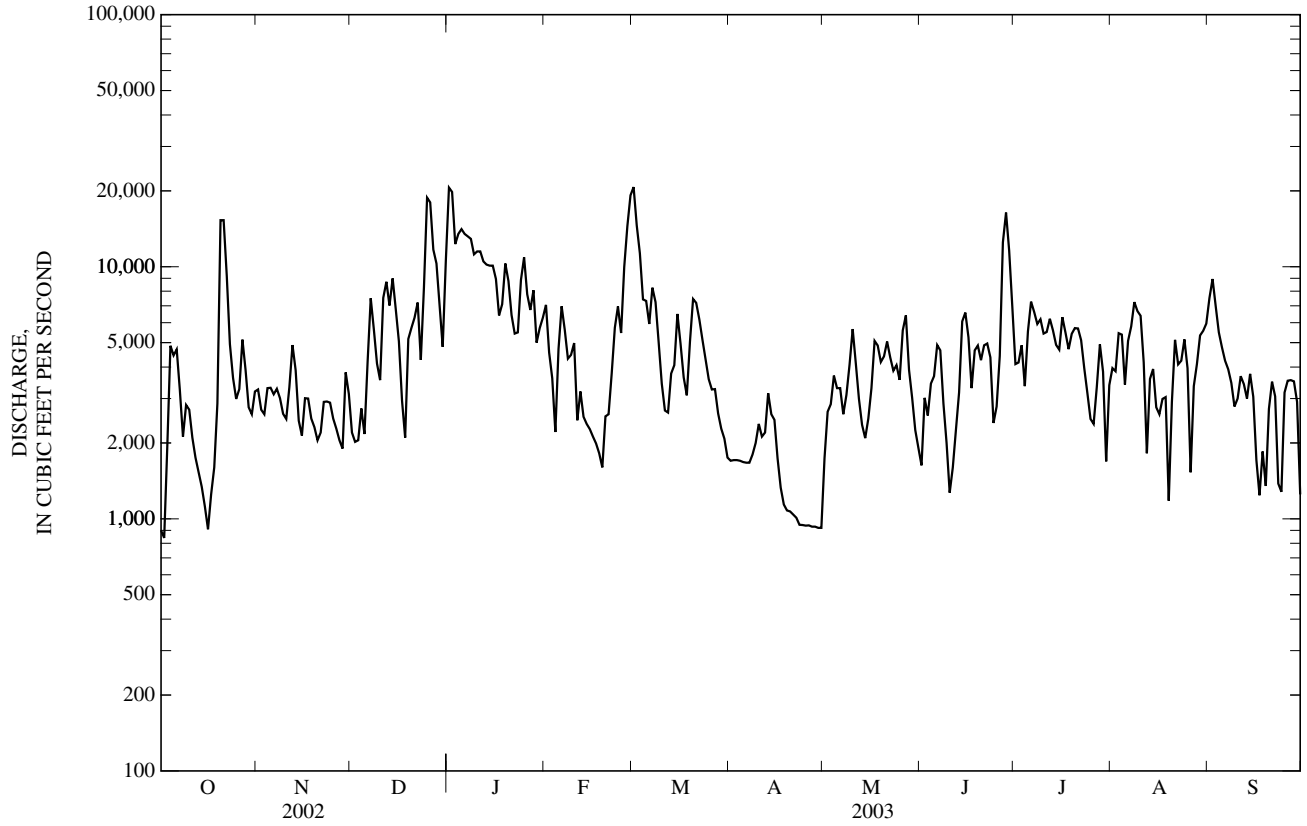
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e900	3,260	e2,200	20,600	7,060	20,700	e1,700	e1,740	e1,630	4,110	3,960	7,520
2	840	e2,710	e2,020	19,800	4,570	14,600	e1,710	e2,660	3,020	4,170	3,850	8,940
3	1,950	e2,600	e2,050	12,300	3,610	11,300	e1,710	2,850	2,570	4,880	5,450	6,980
4	4,860	3,300	2,740	13,500	e2,210	7,420	e1,700	3,700	3,440	3,360	5,380	5,490
5	4,450	3,310	e2,170	14,100	e4,720	7,320	e1,680	3,300	3,680	5,540	3,410	4,790
6	4,700	3,120	4,200	13,500	6,970	5,930	e1,670	e3,300	4,890	7,270	5,080	4,240
7	3,240	3,280	7,500	13,200	5,620	8,260	e1,670	e2,600	4,660	6,610	5,800	3,920
8	2,120	e3,010	5,630	12,900	4,320	7,240	e1,800	e3,100	e2,870	5,930	7,240	3,460
9	2,830	e2,610	4,130	11,200	4,470	5,020	e2,000	e4,090	e2,000	6,190	6,670	2,790
10	2,710	e2,490	3,550	11,500	4,980	3,440	e2,380	5,660	1,270	5,430	6,390	3,000
11	2,100	3,330	7,530	11,500	e2,460	e2,690	e2,120	4,140	e1,600	5,510	4,170	3,680
12	e1,750	4,890	8,720	10,500	e3,200	e2,640	e2,200	2,990	e2,260	6,220	1,820	3,420
13	e1,530	3,890	7,020	10,200	e2,540	3,770	3,150	e2,360	3,170	5,590	3,590	3,000
14	e1,340	e2,450	8,990	10,100	e2,380	4,070	e2,600	e2,090	6,070	4,900	3,930	3,760
15	e1,120	2,140	6,780	10,100	e2,270	6,500	e2,470	e2,500	6,580	4,690	2,770	3,050
16	e909	3,010	5,060	8,940	e2,120	4,950	e1,740	3,300	5,250	6,310	2,600	1,710
17	e1,250	3,000	2,940	6,410	e1,990	3,640	e1,330	5,080	3,300	5,480	2,990	1,240
18	1,600	e2,500	e2,100	7,100	e1,820	3,090	e1,140	4,870	4,660	4,710	3,040	1,850
19	2,870	e2,310	5,170	10,300	e1,600	5,040	e1,080	4,190	4,870	5,420	1,180	1,350
20	15,300	e2,050	5,720	8,780	2,550	7,450	e1,070	4,410	4,260	5,710	2,900	2,730
21	15,300	2,200	6,280	6,430	2,600	7,190	e1,040	5,050	4,880	5,690	5,130	3,500
22	9,180	2,910	7,210	5,430	3,780	6,180	e1,010	4,370	4,960	5,110	4,100	3,060
23	4,930	2,920	4,270	5,490	5,730	5,130	947	3,870	4,370	3,960	4,240	1,380
24	3,620	2,890	8,260	8,860	6,960	4,290	e945	4,070	e2,400	3,150	5,150	1,280
25	2,990	e2,500	18,800	10,900	5,460	3,580	e940	3,560	e2,790	2,490	3,960	3,170
26	3,270	e2,280	18,000	7,780	9,970	3,260	e942	5,590	4,430	2,380	1,530	3,530
27	5,140	e2,050	11,700	6,740	14,500	3,270	e931	6,410	12,500	3,330	3,360	3,550
28	3,900	1,900	10,300	8,070	19,200	e2,620	e931	3,900	16,400	4,920	4,110	3,510
29	2,770	3,810	7,030	5,000	---	e2,280	e921	3,020	11,600	3,830	5,340	2,910
30	2,600	3,130	4,810	5,710	---	e2,080	e921	e2,250	6,980	1,690	5,570	1,250
31	3,200	---	10,600	6,280	---	e1,750	---	e1,910	---	3,390	5,950	---
TOTAL	115,269	85,850	203,480	313,220	139,660	176,700	46,448	112,930	143,360	147,970	130,660	104,060
MEAN	3,718	2,862	6,564	10,100	4,988	5,700	1,548	3,643	4,779	4,773	4,215	3,469
MAX	15,300	4,890	18,800	20,600	19,200	20,700	3,150	6,410	16,400	7,270	7,240	8,940
MIN	840	1,900	2,020	5,000	1,600	1,750	921	1,740	1,270	1,690	1,180	1,240
AC-FT	228,600	170,300	403,600	621,300	277,000	350,500	92,130	224,000	284,400	293,500	259,200	206,400
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)												
MEAN	6,691	7,342	7,491	7,113	8,719	11,180	11,860	16,460	17,420	7,692	4,866	4,720
MAX	40,240	37,170	32,340	39,930	32,130	39,430	55,500	103,900	83,820	27,700	34,840	19,010
(WY)	(1982)	(1975)	(1992)	(1992)	(2001)	(2001)	(1990)	(1990)	(1957)	(1989)	(1950)	(1950)
MIN	263	242	894	1,126	1,138	1,118	1,344	2,837	2,074	1,586	1,108	859
(WY)	(1957)	(1957)	(1957)	(1964)	(1959)	(1967)	(1956)	(1980)	(1956)	(1956)	(1972)	(1988)

e Estimated

07335500 RED RIVER AT ARTHUR CITY, TX—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL TOTAL	3,108,769		1,719,607			
ANNUAL MEAN	8,517		4,711		a9,289	
HIGHEST ANNUAL MEAN					23,290	1990
LOWEST ANNUAL MEAN					2,754	1964
HIGHEST DAILY MEAN	63,200	Mar 21	20,700	Mar 1	269,000	May 4, 1990
LOWEST DAILY MEAN	840	Oct 2	840	Oct 2	134	bDec 11, 1956
ANNUAL SEVEN-DAY MINIMUM	1,360	Oct 12	933	Apr 24	134	Dec 11, 1956
MAXIMUM PEAK FLOW			22,800	Jan 1	c275,000	May 4, 1990
MAXIMUM PEAK STAGE			10.34	Jan 1	d34.21	May 4, 1990
ANNUAL RUNOFF (AC-FT)	6,166,000		3,411,000		6,730,000	
10 PERCENT EXCEEDS	18,800		8,940		23,900	
50 PERCENT EXCEEDS	4,820		3,700		4,310	
90 PERCENT EXCEEDS	2,200		1,690		1,380	

a Prior to regulation, water years 1906-11, 1937-43, 9,266 ft^3/s.
b Also occurred Dec. 12, 1956.
c Maximum discharge for period of record, 400,000 ft^3/s, May 28, 1908.
d Maximum gage height for period of record, 43.2 ft, May 28, 1908.



07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK
(Hydrologic benchmark station)

LOCATION.--Lat 34°38'18", long 94°36'45", in SW ¼ SE ¼ sec.18, T.2 N., R.26 E., Le Flore County, Hydrologic Unit 11140105, in Ouachita National Forest, on downstream side of right bank pier of bridge on State Highway 63, 0.2 mi upstream from Rattlesnake Creek, 1.1 mi upstream from Big Branch, 2.1 mi east of Big Cedar, and at mile 157.6.

DRAINAGE AREA.--40.1 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 886.97 ft above sea level.

REMARKS.--Records good. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 30	2200	2,160	9.01	Jun 17	2000	*3,270	*10.36

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.00	1.2	11	216	8.8	111	26	22	7.8	16	0.44	2.0
2	0.00	1.7	11	139	8.7	118	24	18	12	10	0.25	12
3	0.00	2.8	12	105	8.9	113	22	14	13	7.8	0.26	9.7
4	0.00	3.9	83	86	7.9	102	21	11	9.5	6.0	0.28	4.3
5	0.00	8.8	57	72	7.8	88	19	11	19	4.8	0.26	2.7
6	0.00	11	40	59	12	76	19	8.3	79	3.9	0.20	1.8
7	0.00	11	33	51	12	65	25	9.4	55	3.5	0.06	1.4
8	0.00	13	27	46	11	57	20	6.9	39	3.1	0.00	1.0
9	0.00	17	22	41	11	51	18	5.2	29	2.7	0.00	0.96
10	0.00	17	22	35	11	44	16	4.5	22	3.9	0.00	0.86
11	0.00	14	20	32	11	40	15	4.2	46	4.2	0.00	1.2
12	0.00	13	17	29	10	37	14	3.3	54	3.4	0.00	2.7
13	0.00	12	70	26	11	53	13	3.4	47	3.5	0.00	3.3
14	0.00	13	89	24	81	47	11	15	77	3.4	0.00	5.2
15	0.00	13	69	22	112	42	10	11	146	2.6	0.00	5.1
16	0.00	12	56	21	89	40	10	145	119	2.1	0.00	4.0
17	0.00	11	47	19	77	38	9.4	215	508	1.9	0.00	3.5
18	0.00	10	40	18	67	97	8.9	122	386	1.7	0.00	2.8
19	0.00	9.3	36	16	60	389	11	83	188	1.6	0.00	2.2
20	0.00	9.1	30	15	53	202	28	104	112	1.6	0.00	2.0
21	0.00	9.0	26	15	55	144	22	97	80	1.5	0.00	2.0
22	0.00	8.2	22	14	234	114	18	80	60	1.4	0.00	1.9
23	0.00	7.8	93	12	187	95	18	62	47	1.4	0.00	1.6
24	0.00	7.3	194	13	131	80	137	53	36	1.1	0.00	1.6
25	0.00	11	120	13	111	67	97	46	28	0.80	0.00	1.5
26	0.00	12	91	11	100	58	69	37	26	0.72	0.00	1.4
27	0.00	11	72	9.9	95	50	53	29	22	0.52	0.00	1.2
28	0.00	10	59	9.7	101	44	43	22	15	0.38	0.00	0.95
29	0.10	9.9	52	10	---	37	34	17	12	0.27	0.00	0.75
30	0.09	11	446	9.5	---	32	27	13	11	0.64	0.22	0.74
31	0.31	---	626	9.3	---	29	---	10	---	0.69	1.6	---
TOTAL	0.50	301.0	2,593	1,198.4	1,684.1	2,560	858.3	1,282.2	2,305.3	97.12	3.57	82.36
MEAN	0.016	10.0	83.6	38.7	60.1	82.6	28.6	41.4	76.8	3.13	0.12	2.75
MAX	0.31	17	626	216	234	389	137	215	508	16	1.6	12
MIN	0.00	1.2	11	9.3	7.8	29	8.9	3.3	7.8	0.27	0.00	0.74
AC-FT	1.0	597	5,140	2,380	3,340	5,080	1,700	2,540	4,570	193	7.1	163
CFSM	0.00	0.25	2.09	0.96	1.50	2.06	0.71	1.03	1.92	0.08	0.00	0.07
IN.	0.00	0.28	2.41	1.11	1.56	2.37	0.80	1.19	2.14	0.09	0.00	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

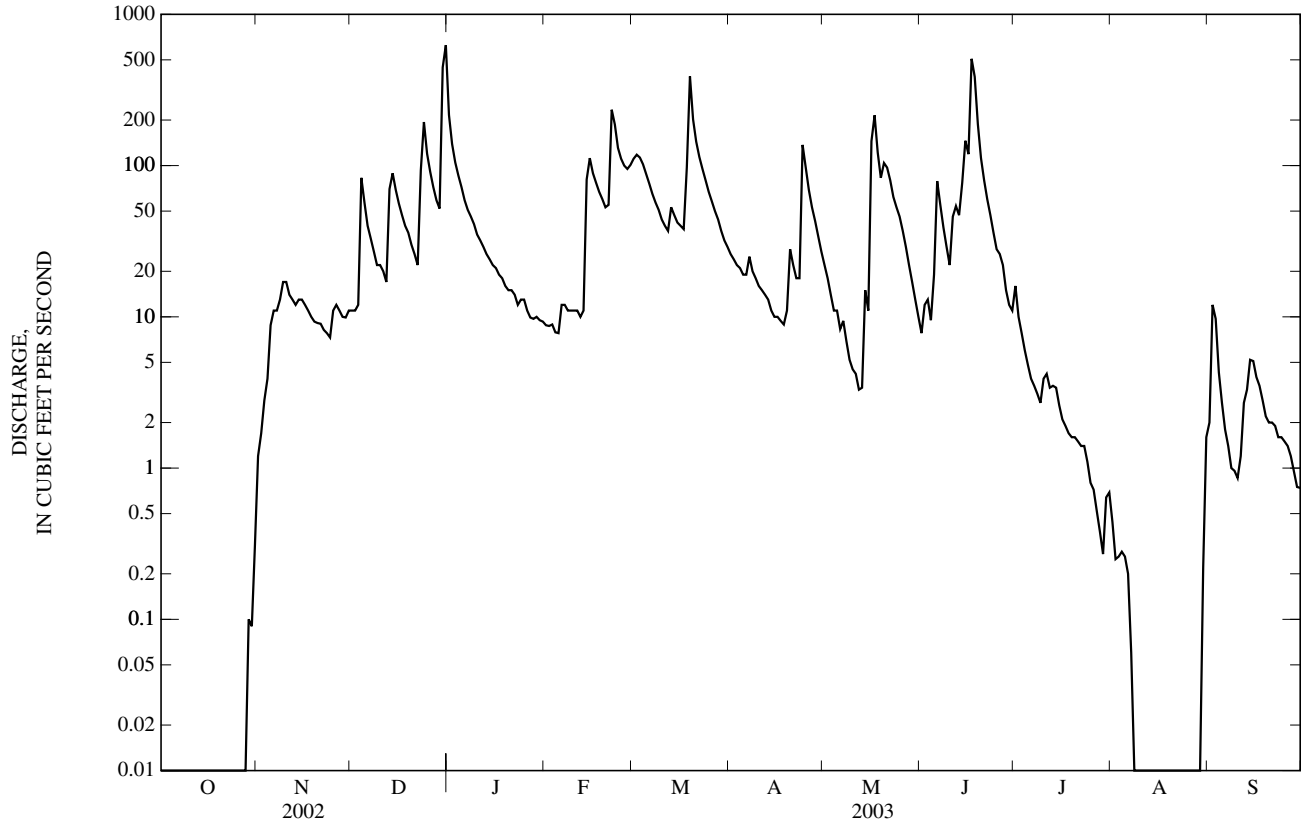
MEAN	62.4	98.8	131	101	120	149	128	129	61.9	20.8	6.54	19.1
MAX	514	533	445	253	354	362	362	614	263	128	51.0	283
(WY)	(1985)	(1997)	(1972)	(1998)	(2001)	(1973)	(1991)	(1990)	(2000)	(1991)	(1988)	(1992)
MIN	0.000	0.000	0.92	2.50	6.12	28.8	28.6	6.97	0.078	0.000	0.000	0.000
(WY)	(1984)	(1967)	(1967)	(1967)	(1967)	(1967)	(2003)	(1977)	(1988)	(1988)	(1972)	(1983)

e Estimated

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	34,721.20		12,965.85			
ANNUAL MEAN	95.1		35.5		85.4	
HIGHEST ANNUAL MEAN					152	1985
LOWEST ANNUAL MEAN					33.9	1978
HIGHEST DAILY MEAN	5,170	Mar 19	626	Dec 31	5,960	May 13, 1982
LOWEST DAILY MEAN	0.00	Aug 9	0.00	at times	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 17	0.00	Oct 1	0.00	Oct 16, 1966
MAXIMUM PEAK FLOW			3,270	Jun 17	a27,400	May 19, 1990
MAXIMUM PEAK STAGE			10.36	Jun 17	19.60	May 19, 1990
ANNUAL RUNOFF (AC-FT)	68,870		25,720		61,890	
ANNUAL RUNOFF (CFSM)	2.37		0.89		2.13	
ANNUAL RUNOFF (INCHES)	32.21		12.03		28.95	
10 PERCENT EXCEEDS	126		96		175	
50 PERCENT EXCEEDS	18		12		26	
90 PERCENT EXCEEDS	0.00		0.00		0.07	

a From rating curve extended above 9,000 ft^3/s.



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 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 520.00 ft above sea level.

REMARKS.--Records fair. 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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.19	11	11	4,310	48	1,720	193	81	64	45	e4.6	0.93
2	0.16	13	9.9	2,790	46	1,650	171	74	54	38	e4.2	2.3
3	0.13	14	9.9	2,290	45	1,170	148	64	49	33	e3.9	2.6
4	0.11	14	23	2,060	44	726	135	56	45	28	e3.6	2.4
5	0.06	16	322	1,920	42	629	122	51	43	25	3.3	2.1
6	0.05	24	314	1,830	52	526	287	49	40	23	3.2	1.6
7	0.07	34	185	1,140	70	441	865	71	37	22	3.0	2.6
8	0.12	31	129	316	100	379	437	58	38	21	e2.8	6.3
9	0.65	26	103	276	93	324	287	65	67	17	e2.6	6.3
10	1.1	22	90	239	86	282	225	59	82	19	e2.4	5.1
11	0.99	21	85	204	83	245	189	50	76	20	e2.2	5.3
12	0.81	21	79	172	82	218	163	42	66	16	e2.1	9.6
13	0.71	22	296	151	75	241	138	36	59	13	e1.9	146
14	0.55	20	896	133	324	299	120	36	62	14	2.0	249
15	0.49	19	633	120	612	311	103	32	87	14	1.8	107
16	0.39	17	405	111	572	256	91	46	139	13	1.6	74
17	0.33	16	299	101	451	221	81	157	248	e13	e1.3	52
18	0.31	14	237	92	666	1,590	73	632	462	e13	e1.0	40
19	0.98	12	196	85	1,070	6,300	74	365	1,170	e12	0.83	31
20	1.5	12	172	81	1,020	4,050	76	738	746	e12	0.62	24
21	1.5	12	150	78	877	3,730	72	2,080	438	e12	0.46	20
22	2.1	12	120	74	1,000	3,780	77	2,110	294	12	0.39	18
23	2.4	12	857	70	1,660	3,440	85	447	212	11	0.41	15
24	2.5	11	3,130	64	1,620	2,650	82	320	157	9.0	0.55	e13
25	4.0	13	1,700	59	2,200	1,770	79	263	120	7.6	0.48	e10
26	4.0	12	947	56	2,130	3,020	198	220	105	6.8	0.43	e8.6
27	4.1	12	649	54	2,270	2,520	170	181	94	e6.4	0.37	e7.4
28	4.1	12	487	52	2,290	1,090	131	142	74	e5.9	0.30	e6.4
29	5.8	12	382	52	---	310	108	113	63	e5.7	0.29	5.0
30	5.7	11	903	50	---	261	92	92	52	5.6	0.35	4.5
31	6.6	---	6,180	49	---	225	---	76	---	5.4	0.42	---
TOTAL	52.50	498	19,999.8	19,079	19,628	44,374	5,072	8,806	5,243	498.4	53.40	878.03
MEAN	1.69	16.6	645	615	701	1,431	169	284	175	16.1	1.72	29.3
MAX	6.6	34	6,180	4,310	2,290	6,300	865	2,110	1,170	45	4.6	249
MIN	0.05	11	9.9	49	42	218	72	32	37	5.4	0.29	0.93
AC-FT	104	988	39,670	37,840	38,930	88,020	10,060	17,470	10,400	989	106	1,740

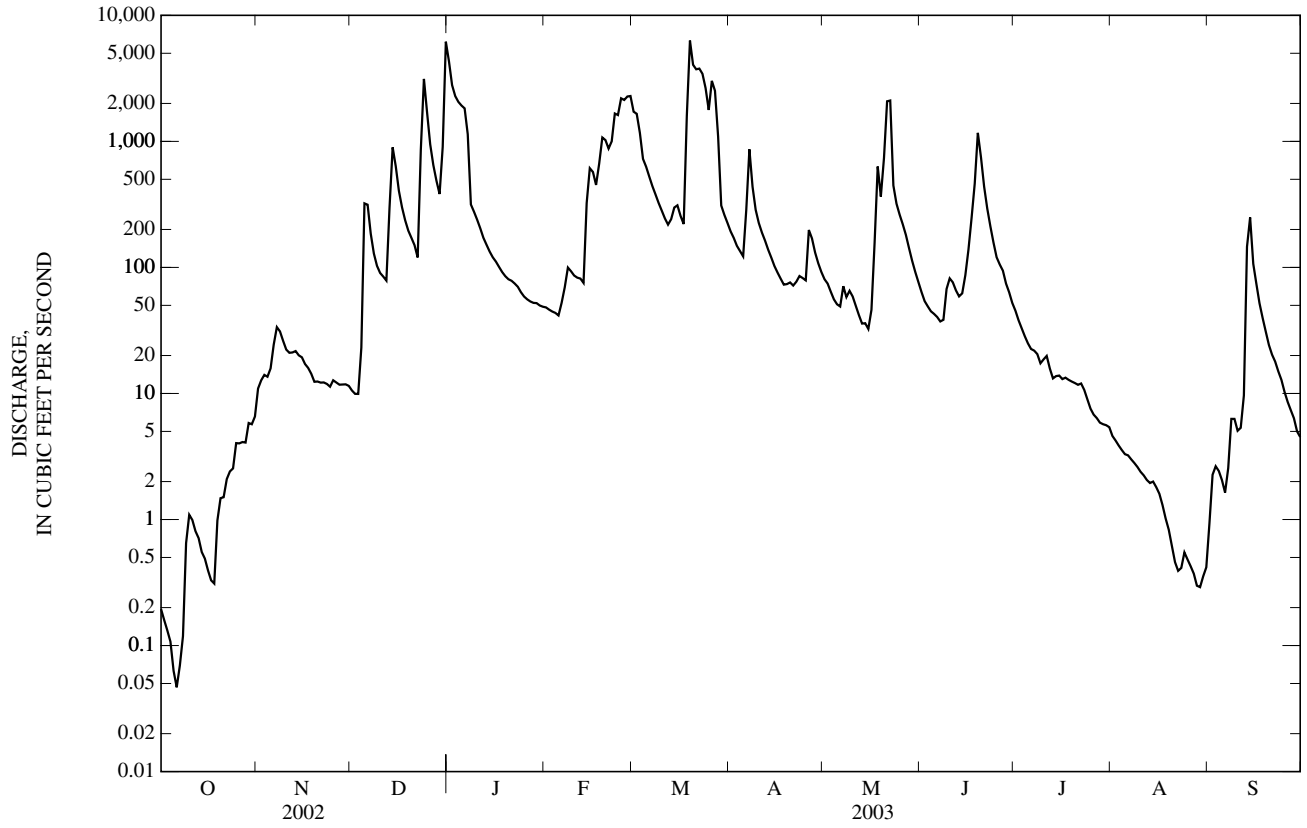
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, BY WATER YEAR (WY)

MEAN	694	1,262	1,566	1,224	1,560	1,627	1,606	1,799	911	218	165	269
MAX	4,628	4,837	3,376	4,569	4,196	3,882	5,242	7,658	2,288	984	1,268	2,735
(WY)	(1985)	(1985)	(1988)	(1998)	(1990)	(2002)	(2002)	(1990)	(1986)	(1992)	(1992)	(1992)
MIN	0.13	2.89	24.5	88.3	116	517	169	53.7	7.33	3.52	0.29	0.36
(WY)	(2000)	(2000)	(1990)	(1986)	(1996)	(2000)	(2003)	(1988)	(1988)	(1998)	(1998)	(2000)

e Estimated

07335790 KIAMICHI RIVER NEAR CLAYTON, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1982 - 2003	
ANNUAL TOTAL	426,329.14		124,182.13			
ANNUAL MEAN	1,168		340		1,072	
HIGHEST ANNUAL MEAN					1,967	1990
LOWEST ANNUAL MEAN					340	2003
HIGHEST DAILY MEAN	32,000	Apr 8	6,300	Mar 19	36,800	May 4, 1990
LOWEST DAILY MEAN	0.05	Oct 6	0.05	Oct 6	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.10	Oct 2	0.10	Oct 2	0.00	Oct 3, 1983
MAXIMUM PEAK FLOW			7,220	Dec 31	40,200	May 4, 1990
MAXIMUM PEAK STAGE			9.85	Dec 31	22.23	May 4, 1990
ANNUAL RUNOFF (AC-FT)	845,600		246,300		776,700	
10 PERCENT EXCEEDS	2,920		968		3,070	
50 PERCENT EXCEEDS	112		58		248	
90 PERCENT EXCEEDS	1.3		1.5		3.9	



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 mi^2.

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	50	19	7,770	89	2,810	318	130	181	180	23	4.6
2	1.1	37	19	3,950	86	2,310	283	115	159	148	21	9.5
3	1.1	37	21	2,780	83	1,980	258	103	142	127	32	43
4	0.97	50	69	2,280	80	1,280	233	92	128	112	61	84
5	0.90	97	100	2,030	77	975	213	83	131	99	95	59
6	0.91	155	116	1,860	85	825	198	74	124	87	94	43
7	1.00	122	380	1,730	92	702	627	66	115	77	61	30
8	1.8	103	281	917	109	604	921	97	109	70	33	22
9	4.1	87	224	448	146	530	535	180	104	64	20	16
10	3.6	80	234	392	188	463	400	128	98	60	14	12
11	3.1	74	256	346	189	410	328	105	108	57	9.9	11
12	2.7	65	218	306	180	370	280	93	155	55	7.9	13
13	2.4	57	357	271	173	390	246	78	199	52	6.6	16
14	2.3	51	631	245	212	477	216	69	198	48	5.9	18
15	2.1	47	1,010	225	920	525	196	64	230	45	5.7	20
16	1.9	41	723	210	959	501	170	69	210	43	5.3	146
17	1.8	38	521	196	778	430	151	83	199	40	4.7	134
18	2.3	38	418	180	628	707	136	217	275	37	4.0	102
19	9.5	38	353	166	834	8,190	127	563	524	34	3.4	79
20	8.1	34	300	155	1,060	7,840	131	430	959	31	2.8	63
21	7.2	31	260	148	1,060	4,750	145	1,080	676	28	2.2	52
22	6.3	25	236	140	1,480	4,600	141	2,240	483	28	1.8	43
23	5.4	22	869	132	2,280	4,020	130	1,530	381	28	1.5	36
24	6.5	20	5,770	124	1,940	3,600	128	591	310	27	1.2	30
25	45	21	3,760	117	2,190	1,930	128	472	260	26	1.0	26
26	70	20	1,850	111	2,370	2,650	121	405	952	25	1.3	23
27	51	20	1,170	105	2,630	3,030	134	356	905	25	1.5	19
28	32	19	850	100	3,180	2,030	210	312	464	24	1.5	16
29	72	18	667	98	---	860	178	274	298	24	1.6	12
30	98	19	750	95	---	423	151	240	225	24	1.7	10
31	74	---	7,070	93	---	364	---	208	---	24	1.6	---
TOTAL	520.38	1,516	29,502	27,720	24,098	60,576	7,433	10,547	9,302	1,749	527.1	1,192.1
MEAN	16.8	50.5	952	894	861	1,954	248	340	310	56.4	17.0	39.7
MAX	98	155	7,070	7,770	3,180	8,190	921	2,240	959	180	95	146
MIN	0.90	18	19	93	77	364	121	64	98	24	1.0	4.6
AC-FT	1,030	3,010	58,520	54,980	47,800	120,200	14,740	20,920	18,450	3,470	1,050	2,360

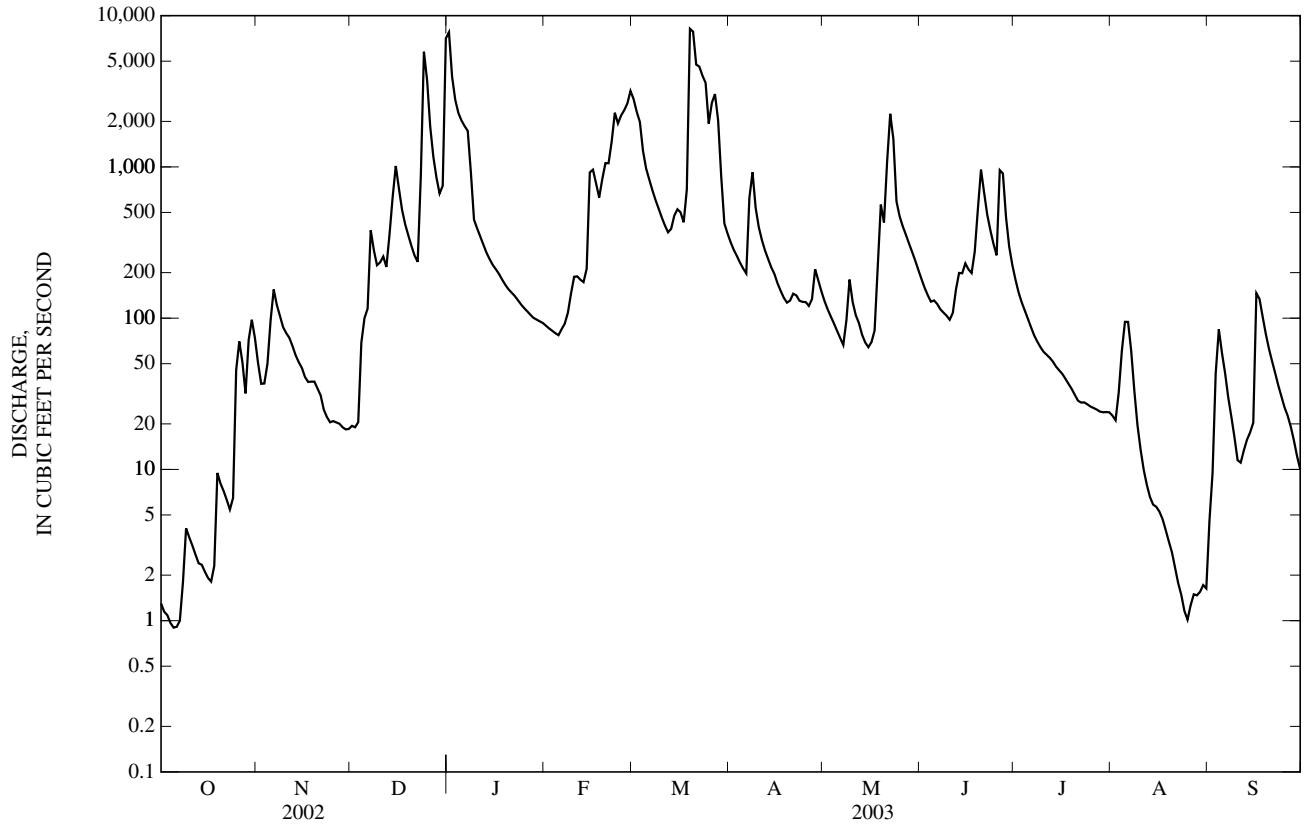
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	996	2,111	2,451	1,860	2,397	2,769	2,717	2,757	1,360	369	236	383
MAX	7,763	8,614	5,288	7,159	6,316	5,918	7,401	12,700	3,784	1,704	2,017	2,960
(WY)	(1985)	(1997)	(1993)	(1998)	(1990)	(2002)	(2002)	(1990)	(1992)	(1992)	(1992)	(1992)
MIN	2.37	5.19	7.84	154	154	853	248	77.9	21.5	10.1	0.000	0.16
(WY)	(2000)	(1990)	(1990)	(1986)	(1996)	(2000)	(2003)	(1988)	(1988)	(1998)	(1998)	(2000)

07336200 KIAMICHI RIVER NEAR ANTLERS, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	609,574.68		174,682.58			
ANNUAL MEAN	1,670		479		a1,696	
HIGHEST ANNUAL MEAN					3,184	1990
LOWEST ANNUAL MEAN					479	2003
HIGHEST DAILY MEAN	45,400	Apr 8	8,190	Mar 19	57,000	May 4, 1990
LOWEST DAILY MEAN	0.90	Oct 5	0.90	Oct 5	b0.00	at times
ANNUAL SEVEN-DAY MINIMUM	1.0	Oct 1	1.0	Oct 1	0.00	Jul 31, 1998
MAXIMUM PEAK FLOW			9,340	Mar 19	62,300	May 3, 1990
MAXIMUM PEAK STAGE			15.04	Mar 19	42.65	May 3, 1990
ANNUAL RUNOFF (AC-FT)	1,209,000		346,500		1,229,000	
10 PERCENT EXCEEDS	4,200		1,070		4,610	
50 PERCENT EXCEEDS	234		115		392	
90 PERCENT EXCEEDS	3.7		5.6		9.0	

a Prior to regulation by Sardis Lake, 1973-82, 1,484 ft^3/s.
b Prior to regulation by Sardis Lake, no flow many years.



07337900 GLOVER RIVER NEAR GLOVER, OK

LOCATION.--Lat 34°05'51", long 94°54'07", in NW ¼ NE ¼ 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.

DRAINAGE AREA.--315 mi^2.

PERIOD OF RECORD.--October 1961 to current year. Prior to October 1990, published as Glover Creek near Glover.

GAGE.--Water-stage recorder. Datum of gage is 378.70 ft above sea level.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1961 reached a stage of 28.84 ft, from floodmark. Flood in 1908 was higher than in May 1961, from information provided by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 31	0630	*10,200	*10.23	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.51	206	28	2,300	41	1,910	139	73	22	81	7.7	e40
2	0.51	162	31	1,240	39	1,780	125	72	18	88	7.0	e400
3	0.50	163	33	800	37	1,210	114	75	14	65	7.7	523
4	0.50	284	210	597	34	858	110	72	11	45	10	316
5	0.50	377	667	470	32	669	108	75	115	34	10	201
6	0.84	425	426	375	37	526	157	68	263	27	10	131
7	1.7	379	295	300	38	421	243	58	248	21	9.2	86
8	1.6	292	226	249	39	353	355	49	143	17	8.3	58
9	42	228	195	221	52	299	250	41	82	14	7.7	43
10	123	185	177	196	62	250	199	36	48	13	7.2	31
11	36	149	191	173	63	212	170	35	50	e15	9.1	28
12	19	130	211	152	69	193	147	29	51	e22	12	88
13	13	110	500	137	85	194	127	24	72	e33	9.3	1,490
14	9.8	91	1,040	126	450	236	111	58	65	e43	7.3	845
15	8.0	80	632	116	1,110	239	92	401	90	61	7.5	511
16	6.9	68	415	109	807	205	80	287	52	e48	7.0	345
17	6.3	57	305	101	578	190	69	203	191	e40	6.5	239
18	7.4	52	238	92	446	232	62	161	249	e32	5.0	168
19	261	46	198	88	366	2,910	58	124	841	e26	3.6	124
20	281	41	173	84	312	1,970	63	111	554	e23	2.9	93
21	167	36	151	80	372	1,200	72	191	367	e22	2.5	70
22	116	32	128	75	1,800	842	67	230	258	21	2.2	55
23	85	29	446	67	1,480	633	63	216	177	19	e1.8	44
24	77	28	2,120	58	922	493	108	163	123	15	e1.6	35
25	64	26	1,280	56	757	402	185	123	89	12	e1.4	30
26	54	24	744	53	674	347	182	95	104	10	e1.3	25
27	54	24	498	49	863	286	149	73	158	9.3	e1.2	20
28	123	25	363	48	1,400	237	123	58	173	8.2	e1.2	16
29	118	25	282	48	---	203	104	44	149	7.4	e1.1	13
30	245	28	724	45	---	175	87	35	106	10	e1.1	11
31	287	---	5,920	44	---	155	---	27	---	9.6	e1.0	---
TOTAL	2,210.06	3,802	18,847	8,549	12,965	19,830	3,919	3,307	4,883	891.5	171.4	6,079
MEAN	71.3	127	608	276	463	640	131	107	163	28.8	5.53	203
MAX	287	425	5,920	2,300	1,800	2,910	355	401	841	88	12	1,490
MIN	0.50	24	28	44	32	155	58	24	11	7.4	1.0	11
AC-FT	4,380	7,540	37,380	16,960	25,720	39,330	7,770	6,560	9,690	1,770	340	12,060
CFSM	0.23	0.40	1.93	0.88	1.47	2.03	0.41	0.34	0.52	0.09	0.02	0.64
IN.	0.26	0.45	2.23	1.01	1.53	2.34	0.46	0.39	0.58	0.11	0.02	0.72

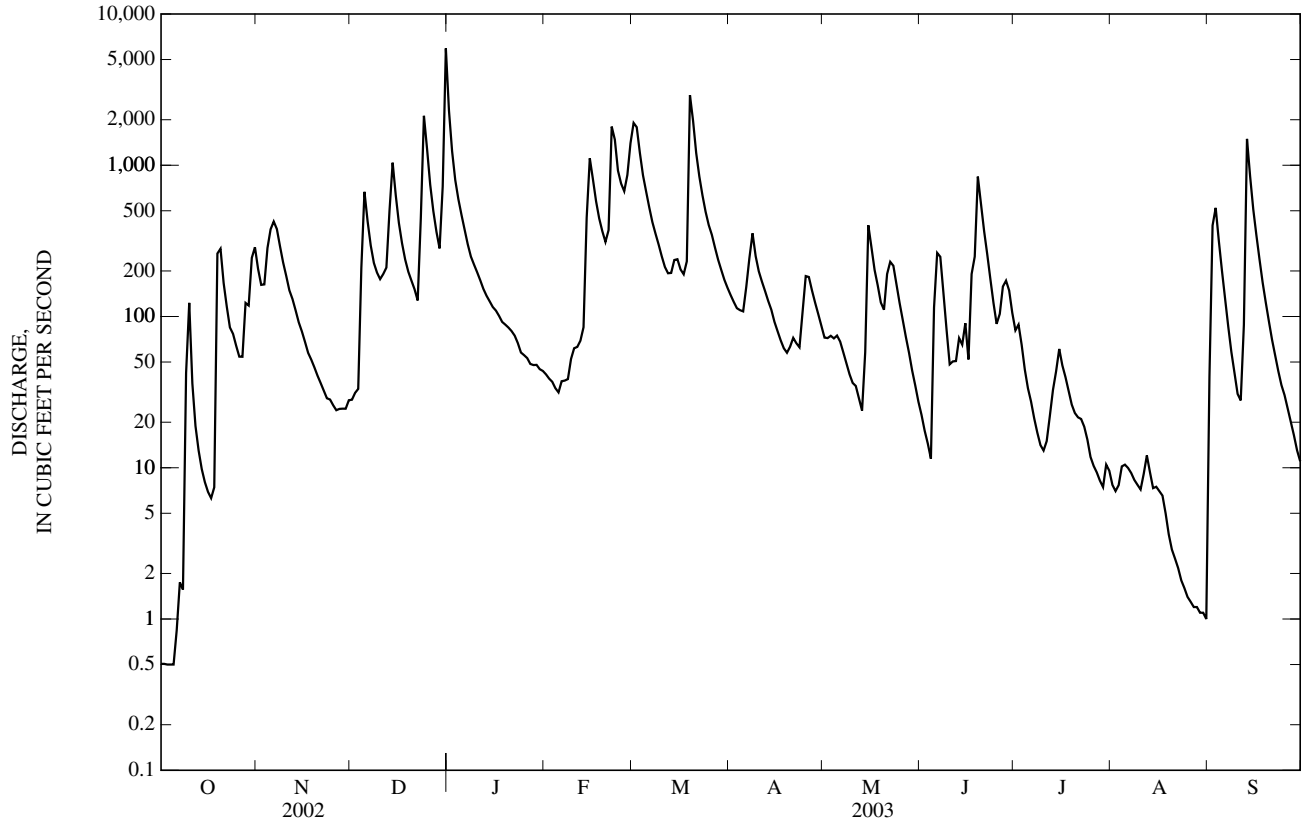
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

MEAN	373	576	764	512	697	841	700	820	350	87.4	65.5	207
MAX	2,427	2,615	3,376	1,556	1,943	2,506	2,753	3,503	1,514	534	461	2,690
(WY)	(1985)	(1997)	(1972)	(1998)	(1997)	(1973)	(1991)	(1990)	(1973)	(1994)	(1992)	(1974)
MIN	0.000	0.33	2.80	1.96	48.7	96.9	125	40.4	4.59	1.06	0.000	0.000
(WY)	(1979)	(1964)	(1964)	(1964)	(1996)	(1980)	(1987)	(1988)	(1972)	(1966)	(1972)	(1972)

e Estimated

07337900 GLOVER RIVER NEAR GLOVER, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	199,516.00		85,453.96			
ANNUAL MEAN	547		234		498	
HIGHEST ANNUAL MEAN					979	1973
LOWEST ANNUAL MEAN					169	1976
HIGHEST DAILY MEAN	20,700	Apr 8	5,920	Dec 31	53,100	Dec 10, 1971
LOWEST DAILY MEAN	0.50	Oct 3	0.50	Oct 3-5	0.00	at times
ANNUAL SEVEN-DAY MINIMUM	0.57	Sep 30	0.72	Oct 1	0.00	Aug 4, 1970
MAXIMUM PEAK FLOW			10,200	Dec 31	98,600	Dec 10, 1971
MAXIMUM PEAK STAGE			10.23	Dec 31	29.72	Dec 10, 1971
ANNUAL RUNOFF (AC-FT)	395,700		169,500		361,000	
ANNUAL RUNOFF (CFSM)	1.74		0.74		1.58	
ANNUAL RUNOFF (INCHES)	23.56		10.09		21.49	
10 PERCENT EXCEEDS	908		537		1,050	
50 PERCENT EXCEEDS	120		88		124	
90 PERCENT EXCEEDS	2.9		8.1		3.6	



07338500 LITTLE RIVER BELOW LUKFATA CREEK NEAR IDABEL, OK

LOCATION.--Lat 33°56'28", long 94°45'30", in SE $^1/_4$ SE $^1/_4$ sec.14, T.7 S., R.24 E., McCurtain County, Hydrologic Unit 11140107, on left bank at downstream side of bridge on U.S. Highway 70 just downstream from Lukfata Creek, 5.0 mi northeast of Idabel, and at mile 103.4.

DRAINAGE AREA.--1,226 mi^2.

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.--Records good. 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 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	304	299	69	8,100	114	4,310	332	167	107	182	56	121
2	251	254	72	6,620	112	4,570	319	151	97	156	53	299
3	106	417	73	4,920	109	4,240	e310	143	96	139	52	370
4	57	427	153	4,120	108	4,270	e305	148	91	132	53	440
5	46	638	437	3,770	104	3,880	e300	151	228	116	56	298
6	43	1,450	762	3,540	111	3,720	e295	154	1,350	100	55	217
7	42	1,780	551	3,350	128	2,910	e320	160	853	88	53	164
8	44	1,430	416	1,670	142	1,570	800	151	509	82	52	129
9	86	1,060	341	785	136	647	e900	132	352	77	50	108
10	248	1,000	310	890	144	538	e930	120	261	73	50	93
11	243	959	324	608	161	1,080	e910	112	218	71	54	89
12	150	915	356	310	157	1,860	e720	107	250	69	59	154
13	100	529	555	259	162	923	e530	100	270	68	66	436
14	77	194	1,130	241	524	473	467	115	236	95	248	1,240
15	66	132	1,220	225	1,290	470	464	563	222	137	288	738
16	60	114	837	213	1,320	446	411	856	281	276	135	524
17	56	105	1,760	200	908	406	236	536	290	315	71	602
18	58	98	3,350	187	692	511	167	377	755	310	56	559
19	721	92	3,400	184	1,170	2,630	155	298	1,260	315	50	508
20	808	88	2,350	179	1,580	4,030	157	850	1,390	361	47	470
21	560	85	782	174	1,820	3,880	155	2,230	1,080	e400	45	445
22	336	e82	465	267	3,430	4,430	155	1,930	932	441	45	425
23	236	e80	684	597	3,950	3,780	155	967	852	445	44	412
24	186	e79	2,890	594	2,500	3,450	201	767	644	428	43	402
25	166	e77	3,240	483	2,310	3,290	292	328	279	387	43	360
26	155	76	1,790	278	2,690	3,500	306	228	210	e245	43	256
27	142	74	2,870	251	3,280	2,090	284	190	498	e111	43	227
28	129	71	3,570	246	3,810	967	247	164	430	e72	43	216
29	144	70	3,430	224	---	629	213	145	283	56	45	209
30	167	70	3,390	148	---	e400	187	132	226	57	44	206
31	213	---	6,600	121	---	e350	---	120	---	58	46	---
TOTAL	6,000	12,745	48,177	43,754	32,962	70,250	11,223	12,592	14,550	5,862	2,088	10,717
MEAN	194	425	1,554	1,411	1,177	2,266	374	406	485	189	67.4	357
MAX	808	1,780	6,600	8,100	3,950	4,570	930	2,230	1,390	445	288	1,240
MIN	42	70	69	121	104	350	155	100	91	56	43	89
AC-FT	11,900	25,280	95,560	86,790	65,380	139,300	22,260	24,980	28,860	11,630	4,140	21,260

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2003, BY WATER YEAR (WY)

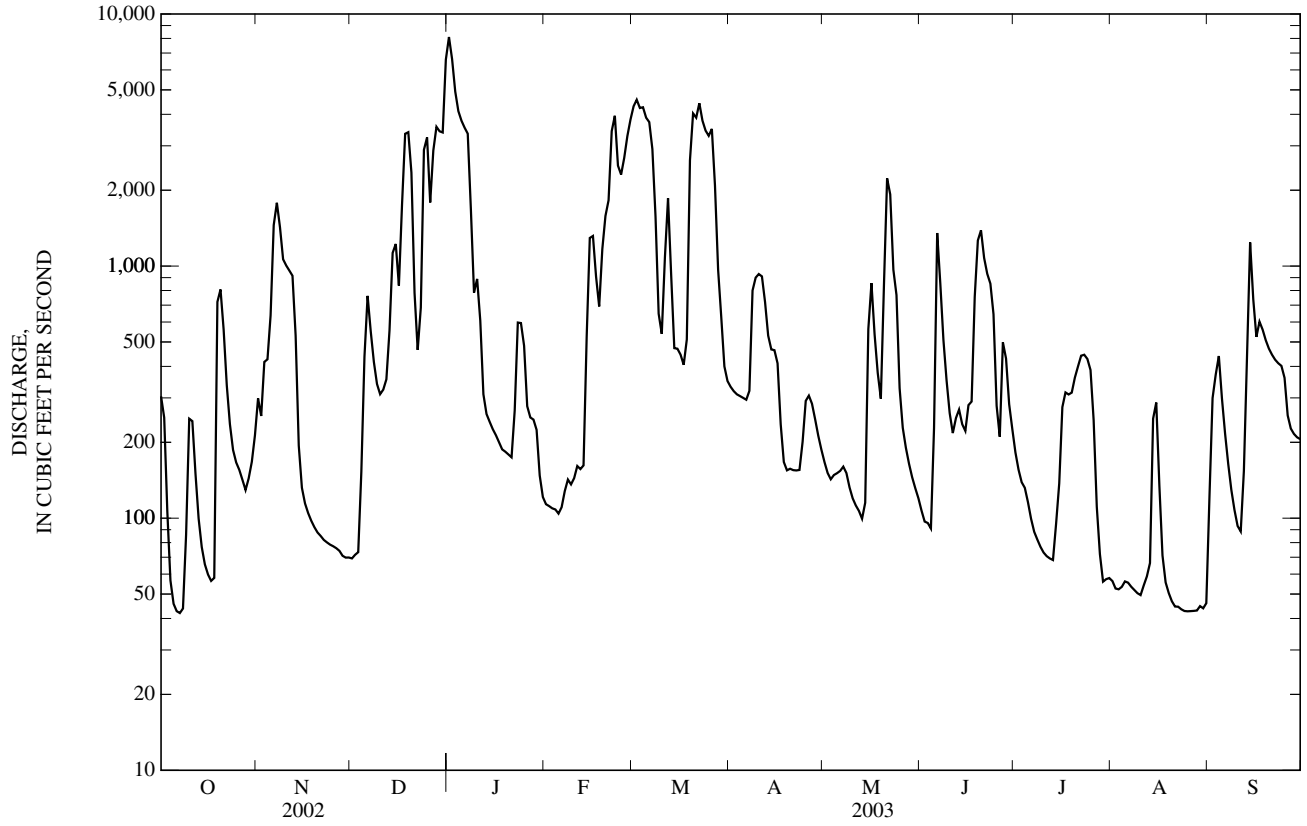
MEAN	1,092	2,265	2,964	2,130	2,607	3,113	2,419	2,918	1,833	419	286	662
MAX	4,453	8,381	10,320	7,746	5,513	7,730	7,843	8,976	6,044	2,058	2,299	6,992
(WY)	(1985)	(1997)	(1972)	(1998)	(1997)	(1973)	(2002)	(1990)	(1973)	(1992)	(1992)	(1974)
MIN	26.4	38.2	37.3	157	176	209	374	143	46.9	31.0	18.5	25.0
(WY)	(1979)	(1990)	(1990)	(1981)	(1976)	(1996)	(2003)	(1988)	(1972)	(1977)	(1972)	(1972)

e Estimated

07338500 LITTLE RIVER BELOW LUKFATA CREEK NEAR IDABEL, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1971 - 2003	
ANNUAL TOTAL	797,998		270,920			
ANNUAL MEAN	2,186		742		a1,888	
HIGHEST ANNUAL MEAN					3,424	1973
LOWEST ANNUAL MEAN					676	1976
HIGHEST DAILY MEAN	25,200	Mar 21	8,100	Jan 1	66,800	Dec 11, 1971
LOWEST DAILY MEAN	42	Sep 7	42	Oct 7	b7.8	Aug 14, 1976
ANNUAL SEVEN-DAY MINIMUM	44	Sep 3	43	Aug 22	11	Oct 15, 1972
MAXIMUM PEAK FLOW			8,290	Jan 1	103,000	Dec 10, 1971
MAXIMUM PEAK STAGE			20.15	Jan 1	39.39	Dec 10, 1971
ANNUAL RUNOFF (AC-FT)	1,583,000		537,400		1,368,000	
10 PERCENT EXCEEDS	7,080		2,550		5,980	
50 PERCENT EXCEEDS	483		267		579	
90 PERCENT EXCEEDS	49		60		47	

a Prior to regulation, water years 1947-68, 1,622 ft^3/s.
b Minimum daily discharge for period of record, 0.4 ft^3/s, Sept. 15-16, 21 to Oct. 1, 1956.



07338750 MOUNTAIN FORK AT SMITHVILLE, OK

LOCATION.--Lat 34°27'44", long 94°38'06", in SE ¼ SW ¼ 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 mi^2.

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.--No estimated daily discharge. Records good. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft^3/s and maximum (*):

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

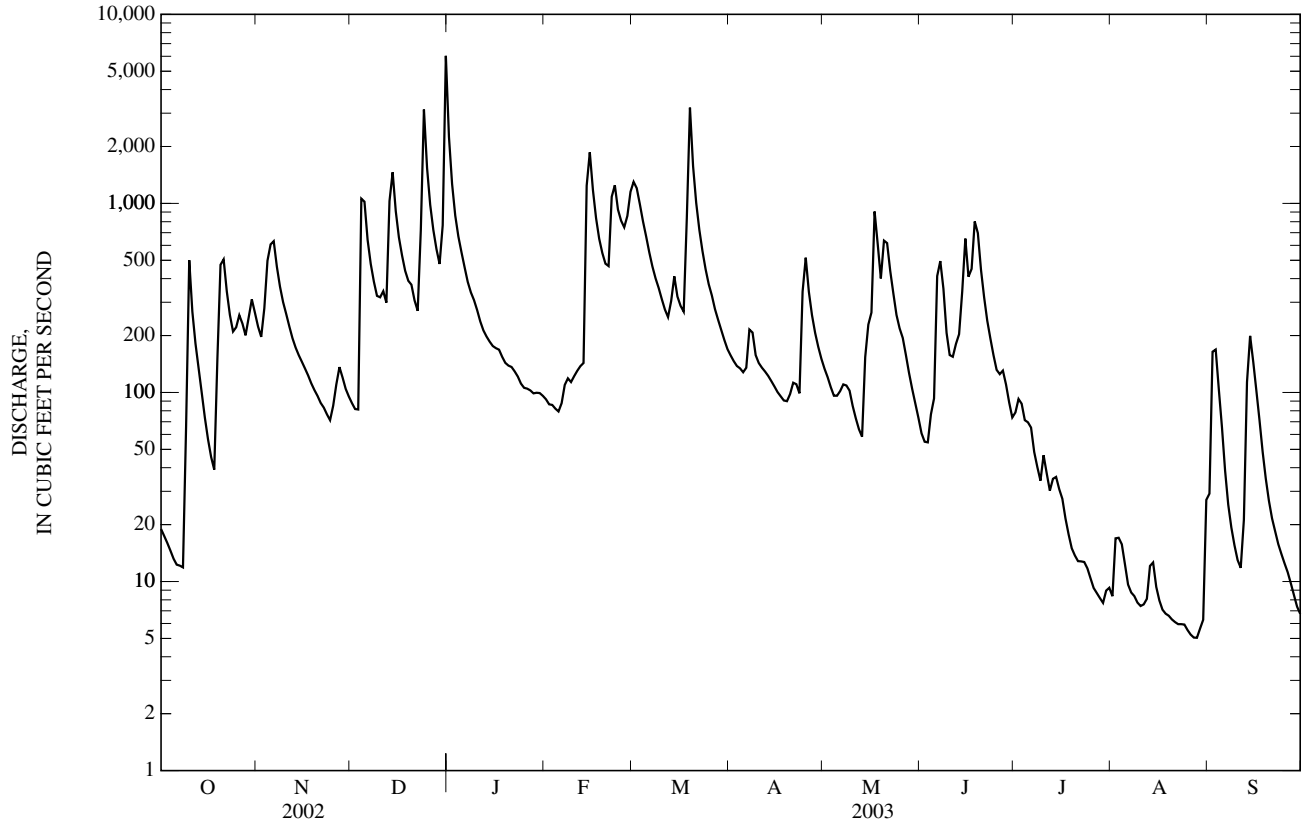
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	223	88	2,250	92	1,300	157	134	61	78	8.4	29
2	17	197	82	1,270	87	1,200	146	120	55	92	17	164
3	16	279	81	863	86	989	138	107	54	87	17	169
4	15	498	1,060	669	82	803	134	96	77	71	16	104
5	13	607	1,020	551	79	669	128	96	93	70	12	66
6	12	631	641	459	88	551	135	102	413	65	9.6	39
7	12	463	479	384	110	464	215	110	495	48	8.8	26
8	12	363	386	338	119	402	207	109	354	40	8.4	19
9	66	300	324	308	114	357	158	102	207	34	7.7	16
10	501	259	319	273	122	312	143	85	158	47	7.4	13
11	268	223	343	237	130	275	135	73	154	37	7.6	12
12	181	194	299	213	138	250	129	64	181	30	8.1	21
13	134	173	1,030	198	143	305	122	58	203	35	12	113
14	100	157	1,460	186	1,240	411	115	154	342	36	13	199
15	74	145	909	176	1,860	322	108	229	651	31	9.4	145
16	57	134	662	171	1,180	287	100	265	409	27	7.9	102
17	46	123	531	168	836	268	95	906	450	22	7.1	71
18	39	112	440	154	650	835	91	609	802	18	6.8	49
19	151	103	390	143	546	3,210	90	401	696	15	6.6	35
20	473	96	371	139	480	1,570	98	635	445	14	6.3	27
21	506	88	307	136	466	1,010	113	617	319	13	6.1	22
22	343	83	270	129	1,080	725	111	440	240	13	6.0	18
23	257	77	722	121	1,250	560	99	334	193	13	5.9	16
24	210	71	3,140	111	928	449	342	257	157	12	5.9	14
25	221	85	1,540	106	810	374	516	218	132	10	5.5	12
26	256	110	983	105	747	326	341	194	125	9.2	5.2	11
27	231	136	724	103	859	276	257	158	131	8.7	5.1	9.8
28	201	120	573	99	1,150	242	207	127	110	8.2	5.0	8.5
29	249	104	478	100	---	214	174	105	89	7.7	5.6	7.4
30	311	95	766	99	---	189	151	88	74	9.0	6.3	6.7
31	264	---	6,030	96	---	169	---	73	---	9.3	27	---
TOTAL	5,255	6,249	26,448	10,355	15,472	19,314	4,955	7,066	7,870	1,010.1	280.7	1,544.4
MEAN	170	208	853	334	553	623	165	228	262	32.6	9.05	51.5
MAX	506	631	6,030	2,250	1,860	3,210	516	906	802	92	27	199
MIN	12	71	81	96	79	169	90	58	54	7.7	5.0	6.7
AC-FT	10,420	12,390	52,460	20,540	30,690	38,310	9,830	14,020	15,610	2,000	557	3,060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

MEAN	507	824	1,177	785	827	874	650	650	452	150	41.3	199
MAX	1,936	1,814	2,351	1,417	2,208	1,886	1,443	1,397	1,825	549	158	1,525
(WY)	(1999)	(1997)	(2002)	(1998)	(2001)	(2002)	(2002)	(1993)	(2000)	(1994)	(1996)	(1992)
MIN	7.69	8.97	115	190	129	271	165	97.1	78.4	8.01	5.90	5.40
(WY)	(2000)	(1996)	(1996)	(2000)	(1996)	(1996)	(2003)	(1997)	(2001)	(1998)	(2000)	(2000)

07338750 MOUNTAIN FORK AT SMITHVILLE, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	234,222.9		105,819.2			
ANNUAL MEAN	642		290		594	
HIGHEST ANNUAL MEAN					821	1999
LOWEST ANNUAL MEAN					214	1996
HIGHEST DAILY MEAN	18,800	Mar 19	6,030	Dec 31	33,700	Oct 6, 1998
LOWEST DAILY MEAN	4.0	Sep 2	5.0	Aug 28	0.12	Aug 31, 1995
ANNUAL SEVEN-DAY MINIMUM	4.9	Aug 21	5.5	Aug 23	0.70	Aug 29, 1995
MAXIMUM PEAK FLOW			9,940	Dec 31	46,500	Oct 6, 1998
MAXIMUM PEAK STAGE			13.15	Dec 31	30.40	Oct 6, 1998
ANNUAL RUNOFF (AC-FT)	464,600		209,900		430,000	
10 PERCENT EXCEEDS	1,010		723		1,210	
50 PERCENT EXCEEDS	221		134		208	
90 PERCENT EXCEEDS	9.8		12		9.6	



07338905 MOUNTAIN FORK AT HIGHWAY 259A NEAR BROKEN BOW, OK

LOCATION.--Lat 34°08'15", long 94°41'16", in SE ¼ NE ¼ 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, 23.8°C July 23; minimum, 2.2°C Jan. 24.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.6	19.1	19.8	15.6	14.4	15.1	9.8	6.8	7.9	9.6	7.4	8.3
2	20.7	19.4	20.0	14.4	13.5	14.1	10.7	6.8	8.5	8.2	6.1	7.3
3	20.4	19.4	19.8	13.7	13.1	13.5	9.3	8.0	8.7	7.9	5.2	6.4
4	22.6	19.8	21.1	13.3	12.7	13.0	8.6	7.3	8.2	8.2	5.0	6.4
5	21.1	19.5	20.3	13.2	12.4	12.8	8.2	6.3	7.1	8.6	5.5	7.0
6	21.3	19.6	20.2	13.8	11.5	12.4	8.1	5.2	6.3	8.9	6.5	7.5
7	20.2	18.7	19.4	13.1	11.5	12.3	8.0	4.8	6.2	7.9	5.3	6.5
8	18.7	17.9	18.3	13.5	11.8	12.7	9.3	6.7	8.2	8.5	4.9	6.6
9	17.9	16.6	17.0	15.1	13.1	13.9	9.6	8.7	9.1	9.5	6.2	7.7
10	19.0	16.8	18.0	16.3	14.8	15.5	10.4	8.5	9.2	7.7	5.8	6.8
11	19.9	19.0	19.3	15.8	14.8	15.3	9.9	8.6	9.1	7.0	4.7	5.7
12	19.5	18.9	19.2	14.8	12.6	13.8	9.2	8.6	8.8	5.8	4.7	5.1
13	19.3	18.2	18.8	13.4	11.3	12.3	9.7	7.9	8.8	5.5	4.6	5.2
14	18.2	16.6	17.3	12.9	10.4	11.7	9.8	7.6	8.3	7.1	5.1	5.8
15	18.2	15.9	16.8	13.8	10.6	12.0	10.0	6.8	8.1	6.5	5.3	5.9
16	17.1	15.4	16.3	12.5	9.7	10.9	11.6	8.3	10.0	5.9	3.4	5.0
17	18.1	15.8	16.8	12.9	9.0	10.5	13.2	9.9	11.6	4.9	2.9	3.6
18	17.9	16.5	17.2	13.1	9.6	11.1	13.8	12.0	13.1	5.1	2.5	3.4
19	17.5	17.1	17.3	13.2	9.9	11.2	12.3	9.5	11.5	6.2	2.7	4.1
20	17.8	17.1	17.3	12.9	9.6	10.9	9.9	7.1	8.5	8.7	3.9	6.2
21	17.4	16.6	17.1	12.9	9.5	11.0	9.2	6.1	7.5	10.1	6.5	8.0
22	17.7	16.6	17.0	12.5	9.6	10.6	8.8	5.8	7.1	7.8	5.5	7.3
23	17.5	16.8	17.1	12.4	8.8	10.2	7.7	6.7	7.2	5.5	3.2	4.0
24	17.3	16.8	17.1	12.7	8.9	10.8	7.6	5.3	6.8	4.0	2.2	3.1
25	17.1	16.6	16.9	11.9	10.2	10.8	6.5	3.6	4.9	4.4	2.7	3.4
26	17.0	16.3	16.6	11.4	8.5	10.0	6.7	3.9	5.2	5.8	2.9	4.1
27	16.4	16.0	16.2	10.2	7.3	8.3	7.6	5.1	6.1	6.6	3.4	4.7
28	16.5	15.9	16.2	9.8	6.5	7.8	8.0	4.6	6.0	7.1	5.3	6.2
29	17.1	16.2	16.5	9.9	6.5	8.1	8.1	4.9	6.6	8.1	7.1	7.7
30	16.7	15.8	16.3	10.2	7.7	8.5	10.6	8.1	9.5	8.9	6.3	7.5
31	16.3	15.0	15.7	---	---	---	10.6	8.7	10.0	9.1	6.2	7.5
MONTH	22.6	15.0	17.8	16.3	6.5	11.7	13.8	3.6	8.2	10.1	2.2	5.9

07338905 MOUNTAIN FORK AT HIGHWAY 259A NEAR BROKEN BOW, OK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.7	5.3	7.2	8.5	6.0	7.0	14.8	11.7	13.3	20.7	19.5	20.1
2	10.1	6.1	8.0	9.9	6.5	8.0	16.0	13.3	14.6	20.3	18.9	19.5
3	10.7	7.3	9.2	10.0	6.6	8.2	15.8	14.8	15.2	19.8	18.9	19.3
4	9.1	6.3	7.3	8.4	7.1	7.8	15.4	14.4	15.0	19.5	18.3	18.8
5	7.5	5.3	6.3	9.2	7.8	8.4	15.3	13.4	14.5	19.4	18.1	18.5
6	5.9	5.0	5.5	10.4	6.7	8.4	14.8	13.9	14.3	19.5	18.3	18.7
7	6.0	3.5	4.6	10.8	7.9	9.3	16.0	14.1	15.0	19.5	19.0	19.3
8	5.8	3.0	4.2	11.3	9.8	10.6	15.6	13.3	14.5	20.3	18.8	19.5
9	4.4	3.0	4.0	12.0	10.1	11.0	14.8	12.3	13.7	20.6	19.4	20.1
10	7.6	4.3	5.5	11.4	9.8	10.6	15.3	12.2	13.8	20.7	19.8	20.2
11	9.1	4.4	6.6	10.6	9.7	10.1	16.2	13.4	14.7	19.9	18.5	19.5
12	9.7	6.1	7.6	10.6	9.4	10.0	16.6	14.2	15.5	20.2	17.5	19.0
13	8.9	8.1	8.5	12.7	10.4	11.4	18.1	14.9	16.5	20.2	19.0	19.3
14	10.0	8.2	9.1	14.1	11.8	12.8	18.9	16.3	17.6	19.2	16.7	18.2
15	11.2	8.9	10.2	14.0	12.8	13.3	18.5	17.0	17.7	17.4	16.1	16.7
16	8.9	5.3	6.9	13.6	12.8	13.2	18.9	17.0	17.8	18.1	17.2	17.5
17	7.9	3.7	5.7	14.1	12.3	13.2	19.0	16.0	17.3	18.1	17.4	17.7
18	9.2	5.2	7.3	14.1	11.5	13.1	18.8	16.9	18.0	18.6	16.8	17.7
19	9.9	8.5	9.2	13.3	11.1	12.0	18.6	17.4	17.8	20.6	18.1	19.4
20	9.8	8.5	9.0	12.6	12.1	12.3	18.5	16.9	17.6	20.8	19.7	20.5
21	8.8	8.2	8.5	12.3	11.4	11.9	18.7	15.4	17.0	19.7	18.0	18.7
22	10.5	8.3	9.0	12.9	10.4	11.7	18.2	16.0	17.3	18.9	16.8	17.9
23	10.5	7.0	8.5	14.2	11.4	12.8	17.8	15.6	16.5	19.7	17.9	18.7
24	8.1	3.2	6.1	14.9	12.2	13.6	18.0	15.1	16.3	20.2	18.7	19.3
25	5.4	3.0	3.9	14.6	13.6	13.8	18.4	15.5	16.8	20.1	18.5	19.3
26	5.1	3.1	4.1	14.1	12.7	13.5	18.3	16.3	17.3	19.6	17.7	18.7
27	6.6	4.5	5.4	15.4	12.5	13.8	19.3	17.0	18.1	20.5	18.1	19.3
28	6.7	5.6	6.1	15.1	12.3	13.8	19.8	18.3	19.0	22.3	18.5	20.3
29	---	---	---	12.8	11.0	11.9	19.9	18.4	19.2	22.1	19.6	20.9
30	---	---	---	12.3	9.3	10.8	20.9	18.8	19.8	23.6	20.0	21.6
31	---	---	---	13.6	9.9	11.7	---	---	---	23.1	21.1	22.2
MONTH	11.2	3.0	6.9	15.4	6.0	11.3	20.9	11.7	16.4	23.6	16.1	19.2
		JUNE			JULY			AUGUST			SEPTEMBER	
1	22.9	21.0	22.1	20.9	18.8	19.8	21.8	19.4	20.4	20.9	20.1	20.5
2	22.9	21.2	22.0	20.8	18.7	19.8	20.9	19.8	20.3	20.1	19.2	19.6
3	22.4	20.8	21.6	21.4	19.6	20.4	20.1	18.3	19.0	19.8	18.5	19.2
4	21.8	20.3	21.1	21.8	19.6	20.6	19.1	17.0	18.1	21.5	19.2	20.4
5	21.2	18.2	19.6	22.1	19.8	20.7	20.3	18.6	19.4	22.4	20.6	21.4
6	18.2	17.0	17.5	21.4	19.5	20.5	20.9	18.9	19.9	21.8	19.7	20.6
7	18.9	16.2	17.4	21.2	19.3	20.3	21.5	19.9	20.7	21.2	19.1	20.1
8	20.5	18.4	19.4	21.5	19.6	20.6	21.4	19.7	20.5	21.3	19.6	20.3
9	21.1	18.6	19.9	22.3	19.9	20.9	21.7	20.1	20.7	21.5	20.0	20.7
10	21.3	20.1	20.9	20.9	19.7	20.4	20.9	18.9	20.0	22.0	20.4	21.2
11	22.5	20.3	21.1	21.2	19.2	20.3	20.5	18.9	19.9	21.4	20.0	20.7
12	21.4	19.8	20.6	22.1	20.1	21.1	19.7	17.9	18.8	20.0	18.7	19.0
13	20.7	19.0	19.8	21.1	19.6	20.2	20.4	19.0	19.7	20.4	18.5	19.3
14	20.5	19.5	20.1	20.1	18.3	19.2	19.8	18.3	19.1	20.0	18.6	19.2
15	20.1	19.0	19.5	22.3	19.6	20.7	20.5	18.6	19.5	20.4	17.9	19.2
16	20.1	18.5	19.3	22.4	20.1	21.2	21.7	19.7	20.7	20.9	18.9	19.9
17	19.9	18.8	19.2	22.8	20.4	21.5	21.7	20.3	21.0	20.9	18.9	20.0
18	19.5	18.6	19.1	22.0	20.3	21.2	21.8	20.1	20.9	21.6	19.2	20.2
19	20.4	18.4	19.3	21.6	20.5	21.1	22.2	20.3	21.2	21.1	19.5	20.2
20	22.2	20.0	21.1	20.6	19.0	19.6	22.4	20.4	21.3	21.4	19.7	20.5
21	23.1	20.9	22.0	19.3	17.9	18.4	22.3	20.5	21.3	20.3	19.2	19.8
22	23.3	21.6	22.5	17.9	17.1	17.5	22.4	20.7	21.4	20.2	18.3	19.2
23	23.8	22.3	23.0	19.2	16.4	17.7	21.8	20.4	21.2	21.4	19.4	20.3
24	23.4	22.3	23.0	21.2	18.4	19.8	21.9	20.3	21.0	20.7	19.7	20.2
25	23.4	22.3	23.0	20.9	19.0	20.0	21.6	20.0	20.9	20.1	18.6	19.5
26	23.2	21.7	22.6	20.9	19.4	20.2	22.0	20.0	21.0	21.9	19.5	20.5
27	22.0	20.3	21.1	21.9	19.0	20.2	22.2	20.3	21.2	21.8	19.8	20.7
28	21.5	19.6	20.5	22.7	19.8	21.0	21.5	20.6	21.1	21.3	18.9	19.9
29	21.2	19.3	20.2	22.9	20.0	21.1	22.0	19.9	21.0	20.5	18.0	19.2
30	20.8	19.5	20.1	21.1	19.3	20.4	22.2	20.4	21.3	20.3	18.7	19.5
31	---	---	---	20.3	18.4	19.3	21.8	20.8	21.3	---	---	---
MONTH	23.8	16.2	20.6	22.9	16.4	20.2	22.4	17.0	20.4	22.4	17.9	20.0
YEAR	23.8	2.2	14.9									

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 11140108, 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 27.7°C Aug. 30, 2003; minimum 2.9°C Jan. 1, 2001.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded 27.7°C Aug. 30 (more than 20% missing record); minimum recorded 6.0°C Feb. 17 (more than 20% missing record).

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	23.1	20.2	21.4	15.9	15.0	15.5	10.4	8.6	9.6	---	---	---
2	23.0	20.2	21.4	15.0	14.2	14.7	11.0	8.6	9.8	---	---	---
3	22.5	20.4	21.5	14.9	14.0	14.3	10.3	9.2	9.7	---	---	---
4	23.4	21.0	21.9	14.5	13.6	14.1	10.8	8.9	10.0	---	---	---
5	22.2	20.1	21.1	14.3	13.6	14.0	11.4	10.6	10.9	---	---	---
6	23.0	20.2	21.4	14.4	12.4	13.5	11.3	10.0	10.6	---	---	---
7	20.9	19.4	20.1	14.6	12.1	13.3	11.1	9.6	10.3	---	---	---
8	20.1	19.0	19.8	14.6	11.7	13.2	10.8	9.6	10.2	---	---	---
9	19.1	18.1	18.6	15.5	13.1	14.3	10.6	10.1	10.3	---	---	---
10	19.4	18.6	19.0	16.0	13.6	14.9	10.7	10.1	10.4	---	---	---
11	19.1	18.0	18.4	15.8	14.2	15.1	10.5	9.7	10.2	---	---	---
12	20.4	18.2	19.3	14.8	13.5	14.2	10.4	9.9	10.2	---	---	---
13	19.4	18.1	18.7	14.9	12.5	13.8	10.5	9.7	10.1	---	---	---
14	18.7	16.8	17.8	14.1	12.2	13.3	10.9	9.4	10.1	---	---	---
15	19.5	17.1	18.1	14.3	12.9	13.6	11.0	8.8	10.0	---	---	---
16	18.9	16.1	17.5	13.2	11.7	12.5	11.6	9.7	10.7	---	---	---
17	18.7	16.6	17.6	13.4	11.0	12.3	12.3	10.0	11.2	---	---	---
18	18.5	16.0	17.2	13.2	11.1	12.3	12.2	11.1	11.6	---	---	---
19	18.0	16.9	17.4	13.4	11.3	12.3	12.3	11.6	11.9	---	---	---
20	18.0	17.3	17.7	13.7	11.4	12.6	12.0	10.3	11.2	---	---	---
21	17.6	16.8	17.2	14.1	11.6	13.0	11.3	9.4	10.4	---	---	---
22	18.3	17.2	17.7	13.4	11.6	12.6	10.7	9.0	10.1	---	---	---
23	17.7	16.8	17.2	13.3	11.0	12.2	---	---	---	---	---	---
24	17.3	16.7	17.1	13.3	10.6	12.1	---	---	---	---	---	---
25	18.0	16.9	17.4	13.0	11.4	12.0	---	---	---	---	---	---
26	17.9	16.8	17.3	12.0	10.8	11.5	---	---	---	---	---	---
27	17.2	16.3	16.6	11.5	9.6	10.6	---	---	---	---	---	---
28	17.2	16.3	16.8	11.3	9.3	10.4	---	---	---	---	---	---
29	17.6	16.4	16.9	11.4	9.2	10.4	---	---	---	---	---	---
30	17.5	15.8	16.6	11.0	9.5	10.3	---	---	---	---	---	---
31	16.9	15.0	16.0	---	---	---	---	---	---	---	---	---
MONTH	23.4	15.0	18.5	16.0	9.2	13.0	12.3	8.6	10.4	---	---	---

07338960 MOUNTAIN FORK AT PRESBYTERIAN FALLS NEAR EAGLETOWN, OK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	7.9	7.1	7.5	14.8	11.3	12.8	---	---	---
2	---	---	---	9.8	7.0	8.3	16.0	11.0	13.3	---	---	---
3	---	---	---	8.3	7.1	7.8	14.6	11.5	13.2	---	---	---
4	---	---	---	8.2	7.4	7.7	14.3	11.7	13.0	---	---	---
5	---	---	---	7.9	7.1	7.5	15.3	12.0	13.4	---	---	---
6	---	---	---	8.0	7.2	7.5	13.1	11.6	12.3	---	---	---
7	---	---	---	8.9	7.5	8.1	17.1	11.8	14.1	---	---	---
8	---	---	---	10.3	7.7	9.0	15.1	11.9	13.8	---	---	---
9	---	---	---	12.0	8.2	10.1	13.7	12.9	13.5	---	---	---
10	---	---	---	10.4	8.7	9.4	13.8	12.2	13.0	---	---	---
11	---	---	---	8.9	7.8	8.3	15.7	12.0	13.8	---	---	---
12	---	---	---	8.9	8.1	8.5	18.0	11.7	14.7	---	---	---
13	8.2	7.6	8.0	12.8	8.3	10.5	18.2	12.7	15.5	---	---	---
14	8.7	8.0	8.2	12.8	10.0	11.2	18.0	13.3	15.7	---	---	---
15	9.8	8.0	9.0	12.7	9.7	11.1	17.5	13.9	15.9	---	---	---
16	9.0	6.6	7.7	13.3	10.1	11.7	19.9	15.4	17.7	---	---	---
17	8.4	6.0	7.2	15.3	10.2	12.8	19.9	15.5	17.7	---	---	---
18	8.4	7.3	7.7	13.6	11.6	12.3	20.6	15.8	18.3	---	---	---
19	8.7	7.6	8.2	16.2	12.4	14.4	19.7	17.6	18.2	---	---	---
20	8.5	7.9	8.2	14.3	13.3	13.6	22.4	18.3	20.2	---	---	---
21	8.8	8.0	8.5	13.6	10.7	12.7	22.6	18.6	20.7	---	---	---
22	9.6	8.1	8.8	13.6	10.7	12.2	21.9	18.7	20.5	---	---	---
23	9.5	7.6	8.3	15.5	10.7	12.9	21.0	18.2	18.8	---	---	---
24	8.5	6.8	7.6	14.9	10.5	12.9	23.5	18.3	20.6	---	---	---
25	6.9	6.3	6.7	14.6	11.4	12.9	21.5	18.2	19.8	---	---	---
26	7.1	6.6	6.9	14.6	11.5	12.6	22.3	18.7	20.5	---	---	---
27	7.3	6.8	7.1	14.6	11.5	12.7	22.3	18.0	20.3	---	---	---
28	7.3	7.1	7.2	13.5	10.6	13.0	23.5	18.8	21.3	---	---	---
29	---	---	---	12.6	10.3	11.3	24.4	19.8	22.2	22.7	18.8	20.6
30	---	---	---	13.7	9.8	11.8	23.9	20.7	22.4	23.0	18.7	20.2
31	---	---	---	12.2	10.2	11.2	---	---	---	22.0	18.3	20.0
MONTH	9.8	6.0	7.8	16.2	7.0	10.8	24.4	11.0	16.9	23.0	18.3	20.3
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.2	17.9	19.5	25.0	22.2	23.3	25.3	21.9	23.0	24.6	23.4	24.0
2	21.8	17.1	19.0	26.3	22.2	23.5	24.3	22.2	22.9	24.1	22.3	23.1
3	23.7	20.7	22.1	25.4	20.8	22.4	---	---	---	24.3	22.5	23.5
4	22.4	17.7	19.9	22.2	19.2	20.7	---	---	---	24.9	22.4	23.5
5	22.4	18.8	19.9	23.9	20.1	21.5	---	---	---	24.6	22.5	23.4
6	20.9	18.4	19.2	23.1	20.2	21.6	---	---	---	24.8	22.1	23.2
7	22.7	19.1	20.9	24.4	20.3	21.8	---	---	---	25.1	21.6	23.0
8	20.6	17.5	19.2	22.7	19.7	20.9	---	---	---	24.3	21.7	22.7
9	22.4	16.4	19.1	23.9	20.3	21.7	---	---	---	24.6	22.0	22.9
10	22.8	19.4	21.7	23.2	20.6	21.7	---	---	---	24.8	22.1	23.1
11	23.9	19.6	21.4	25.1	20.7	22.5	---	---	---	23.4	21.9	22.9
12	23.4	19.0	21.6	23.8	20.9	22.5	23.1	20.3	21.6	22.7	21.2	22.2
13	22.0	17.9	19.5	22.6	21.6	22.2	22.3	20.2	21.1	22.9	21.4	22.1
14	22.9	20.4	21.6	24.8	20.7	22.3	22.9	20.3	21.6	22.6	21.1	21.7
15	20.8	18.0	19.3	24.5	20.8	22.5	---	---	---	23.9	21.1	22.0
16	22.7	18.1	19.5	24.4	20.6	22.0	---	---	---	23.4	21.0	21.9
17	23.4	21.0	22.1	23.5	20.0	21.1	---	---	---	23.2	20.0	21.4
18	23.0	20.5	21.7	23.0	18.9	20.6	---	---	---	24.5	21.1	22.6
19	23.6	21.3	22.4	21.3	19.5	20.3	---	---	---	23.9	21.9	22.9
20	23.0	19.6	21.2	21.6	20.0	20.6	25.7	22.8	24.0	23.2	21.4	22.2
21	23.9	18.8	21.1	20.5	19.4	20.0	25.0	23.1	23.9	22.0	21.1	21.5
22	25.2	22.3	23.9	21.6	20.4	21.0	25.5	23.1	24.0	23.6	20.9	22.0
23	26.9	19.7	22.2	23.6	20.4	21.9	26.9	23.7	24.6	23.7	21.2	22.2
24	23.9	20.7	22.0	24.6	20.8	22.2	26.2	23.7	24.6	22.2	21.1	21.6
25	22.3	20.3	21.0	23.6	19.9	21.4	26.1	23.9	24.6	23.6	20.9	21.9
26	23.8	21.7	22.7	23.0	19.6	21.1	26.0	23.8	24.5	23.6	21.1	22.0
27	24.4	21.1	22.3	23.6	19.9	21.0	26.2	23.9	24.7	23.6	21.4	22.3
28	23.6	20.4	21.8	23.8	19.4	21.2	25.7	24.1	24.5	22.7	20.9	21.6
29	24.2	19.9	21.9	23.7	20.0	21.2	26.4	24.2	25.0	22.4	20.0	21.1
30	24.0	19.6	21.5	22.9	21.4	22.0	27.7	24.7	25.7	22.2	20.3	21.1
31	---	---	---	25.1	21.5	22.9	25.3	23.9	24.6	---	---	---
MONTH	26.9	16.4	21.0	26.3	18.9	21.7	27.7	20.2	23.8	25.1	20.0	22.4
YEAR	27.7	6.0	17.0									

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK

LOCATION.--Lat 34°02'30", long 94°37'11", in SE ¼ SE ¼ 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 mi^2.

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, pub- lished 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.--No estimated daily discharge. Records good. Flow completely regulated except for 33 mi^2 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 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	361	219	135	789	135	1,570	463	133	174	275	1,450	264
2	374	175	130	1,200	117	370	199	152	180	386	936	307
3	341	224	146	2,750	815	1,220	614	139	248	681	402	269
4	337	212	1,240	2,330	1,460	1,260	482	139	225	622	635	253
5	322	198	1,090	380	1,830	1,820	396	143	320	344	773	233
6	280	197	797	1,370	2,120	2,010	152	191	282	363	907	252
7	174	184	589	2,830	1,670	1,480	132	202	333	510	947	242
8	250	174	169	2,390	817	294	1,140	404	168	558	537	241
9	216	176	182	1,820	162	145	2,190	387	178	340	465	240
10	383	170	538	2,950	681	1,290	1,360	531	292	337	317	242
11	184	161	199	2,290	1,300	1,910	325	162	243	316	425	242
12	245	151	232	1,600	889	1,570	142	139	338	338	664	296
13	169	144	375	2,570	931	309	132	153	203	297	505	276
14	163	137	567	2,110	958	210	131	336	351	315	348	246
15	196	126	203	437	550	166	129	526	160	431	984	240
16	182	146	170	621	213	133	156	314	177	710	1,700	208
17	427	145	162	802	809	130	133	434	303	887	2,070	119
18	176	138	229	900	1,490	171	133	186	532	988	1,960	216
19	442	195	389	284	277	565	133	305	458	961	2,130	231
20	274	295	530	131	297	491	129	672	198	636	2,270	280
21	202	157	165	120	669	713	123	236	174	1,500	2,450	242
22	261	150	143	375	721	481	121	290	271	1,290	2,710	235
23	178	145	526	2,110	292	172	124	296	450	432	1,830	234
24	170	141	1,100	5,010	999	139	131	407	1,180	386	1,630	236
25	173	137	276	3,070	1,970	279	120	166	792	887	1,740	236
26	167	146	752	444	2,050	1,160	125	217	424	1,270	2,190	219
27	159	160	1,940	1,720	2,090	353	123	253	367	876	1,860	251
28	154	150	882	1,760	2,660	949	116	434	356	661	1,880	238
29	170	146	559	316	---	802	113	587	224	1,290	890	240
30	175	140	1,020	729	---	166	130	633	170	2,100	281	207
31	181	---	1,770	375	---	789	---	532	---	1,550	264	---
TOTAL	7,486	5,039	17,205	46,583	28,972	23,117	9,897	9,699	9,771	22,537	38,150	7,235
MEAN	241	168	555	1,503	1,035	746	330	313	326	727	1,231	241
MAX	442	295	1,940	5,010	2,660	2,010	2,190	672	1,180	2,100	2,710	307
MIN	154	126	130	120	117	130	113	133	160	275	264	119
AC-FT	14,850	9,990	34,130	92,400	57,470	45,850	19,630	19,240	19,380	44,700	75,670	14,350

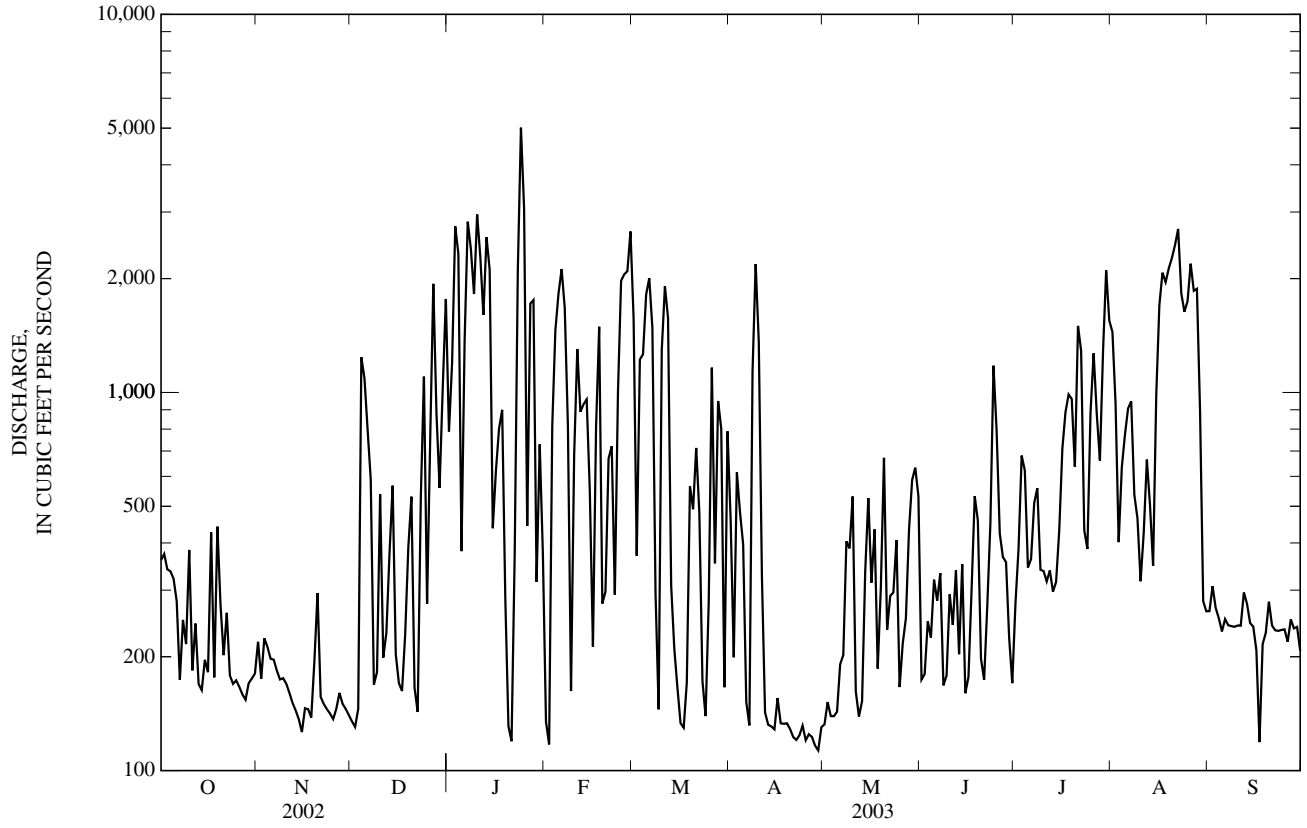
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

MEAN	661	1,201	2,024	1,788	1,845	2,199	2,061	1,988	1,553	979	782	615
MAX	2,638	6,897	5,286	5,121	4,159	5,623	4,976	7,264	6,061	3,371	1,515	2,300
(WY)	(1994)	(1985)	(1997)	(1988)	(1989)	(1997)	(1979)	(1991)	(1990)	(1999)	(1983)	(1992)
MIN	136	110	154	166	292	348	306	313	219	155	238	155
(WY)	(1989)	(1996)	(1990)	(2000)	(1981)	(1996)	(1980)	(2003)	(1988)	(1988)	(1985)	(1989)

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL TOTAL	576,411		225,691			
ANNUAL MEAN	1,579		618		a1,473	
HIGHEST ANNUAL MEAN					2,468	1973
LOWEST ANNUAL MEAN					450	1996
HIGHEST DAILY MEAN	7,980	Mar 28	5,010	Jan 24	11,500	May 19, 1991
LOWEST DAILY MEAN	115	Mar 17	113	Apr 29	b16	Dec 12, 1971
ANNUAL SEVEN-DAY MINIMUM	141	Nov 12	122	Apr 23	68	Jan 12, 1996
MAXIMUM PEAK FLOW			8,210	Jan 24	c18,200	Jun 2, 1990
MAXIMUM PEAK STAGE			7.66	Jan 24	d11.58	Jun 2, 1990
ANNUAL RUNOFF (AC-FT)	1,143,000		447,700		1,067,000	
10 PERCENT EXCEEDS	4,520		1,750		4,030	
50 PERCENT EXCEEDS	691		315		678	
90 PERCENT EXCEEDS	167		140		157	

a Prior to regulation by Broken Bow Lake, 1925, 1930-68, 1,291 ft^3/s.
b No flow in several years prior to regulation by Broken Bow Lake.
c Maximum discharge for period of record, 101,000 ft^3/s May 20, 1960, from rating curve extended above 65,000 ft^3/s.
d Maximum gage-height for period of record, 26.73 ft May 20, 1960.



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 26.7°C June 23; minimum 5.7°C Jan. 18, Feb. 17.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.2	19.4	20.8	15.3	14.0	14.8	10.5	8.2	9.2	10.3	8.6	9.4
2	22.2	19.3	20.9	14.3	13.1	13.8	10.5	8.0	9.1	9.9	8.4	9.2
3	22.2	19.4	20.8	13.5	12.6	13.2	9.7	8.8	9.3	9.6	8.2	8.7
4	22.7	19.9	21.2	13.6	12.7	13.2	10.1	8.1	9.2	9.6	8.5	9.0
5	21.7	19.5	20.6	13.7	12.7	13.2	10.9	9.8	10.2	9.7	8.0	8.9
6	21.9	19.1	20.5	13.8	12.0	12.7	10.5	9.2	9.9	9.7	8.4	9.0
7	21.1	19.2	20.5	14.5	11.6	12.7	10.7	8.9	9.6	9.4	8.5	8.9
8	19.4	18.3	18.7	14.6	11.8	12.9	10.3	9.3	9.8	9.6	8.4	8.9
9	18.6	17.4	17.8	15.8	12.7	14.2	10.2	9.5	9.8	10.2	8.4	9.1
10	19.1	17.4	18.3	16.0	14.4	15.0	10.2	9.4	9.8	9.5	8.5	8.9
11	18.8	17.8	18.4	15.4	13.9	14.5	10.1	9.4	9.7	9.1	8.0	8.6
12	19.4	17.3	18.3	14.6	12.7	13.6	9.7	9.3	9.5	8.5	7.9	8.2
13	19.3	17.3	18.6	14.5	11.8	12.8	9.7	9.2	9.4	8.4	7.6	8.1
14	17.8	16.0	17.0	13.5	11.9	12.7	10.2	8.6	9.4	8.7	8.0	8.3
15	18.1	15.5	16.7	14.0	12.2	12.9	10.6	8.4	9.4	8.1	7.5	7.8
16	17.9	15.9	16.8	13.2	11.2	12.0	11.3	9.1	10.2	7.9	6.3	7.5
17	18.1	15.8	16.9	13.1	10.4	11.5	12.5	10.1	11.2	7.5	6.1	6.6
18	17.8	16.3	16.9	12.9	10.8	11.7	12.5	11.3	11.9	7.6	5.7	6.6
19	17.3	16.4	16.9	13.0	10.8	11.7	11.7	10.8	11.2	8.2	5.8	6.9
20	17.5	16.8	17.1	12.5	10.7	11.7	11.4	10.0	10.6	9.7	6.8	7.9
21	17.2	16.2	16.7	13.5	11.1	12.1	10.5	9.0	9.8	10.9	7.6	8.8
22	17.5	16.2	16.7	13.4	11.2	12.1	10.7	8.7	9.5	8.9	7.1	8.2
23	17.3	16.5	16.9	13.4	10.5	11.5	9.3	8.0	8.7	8.0	6.5	7.1
24	16.8	16.3	16.6	13.1	10.6	11.7	8.9	7.9	8.4	7.6	6.6	7.1
25	17.4	16.2	16.7	12.1	11.1	11.7	8.3	6.4	7.6	7.5	6.9	7.2
26	17.4	16.2	16.7	11.7	10.1	10.9	8.2	6.6	7.4	8.4	6.5	7.3
27	16.6	15.7	16.1	11.0	9.2	9.9	9.5	7.3	8.5	7.8	6.5	7.1
28	16.6	15.6	16.0	10.9	8.5	9.4	9.9	7.9	8.9	8.0	7.0	7.6
29	17.2	15.8	16.3	10.5	8.5	9.4	9.7	8.1	8.7	8.4	7.7	8.1
30	16.6	15.2	15.9	11.1	9.0	9.8	10.5	9.5	9.9	8.5	7.5	8.0
31	16.0	14.6	15.3	---	---	---	9.9	9.1	9.6	9.3	7.1	8.0
MONTH	22.7	14.6	17.9	16.0	8.5	12.3	12.5	6.4	9.5	10.9	5.7	8.1

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.4	7.1	8.4	8.3	6.9	7.5	14.9	10.6	12.7	25.1	21.5	22.8
2	10.6	7.8	8.9	9.4	7.0	8.2	17.0	13.3	14.8	22.9	20.0	21.4
3	10.0	8.3	9.1	8.8	7.6	8.2	14.7	13.1	13.9	23.2	21.1	21.7
4	8.9	7.2	8.0	8.3	7.3	7.8	15.0	11.7	13.3	21.6	19.8	20.4
5	7.9	6.7	7.3	8.2	7.3	7.7	15.2	11.7	13.6	23.7	19.6	21.1
6	7.5	6.8	7.3	8.7	6.8	7.6	14.7	12.6	13.8	24.3	21.7	22.9
7	7.8	6.3	7.0	9.7	7.2	8.3	16.6	12.5	14.0	23.9	21.3	22.9
8	7.3	6.1	6.7	10.1	7.5	8.7	14.8	13.0	14.0	23.7	21.0	22.2
9	7.2	6.2	6.6	13.8	9.1	10.5	14.3	12.7	13.4	24.5	20.4	22.2
10	8.2	5.8	6.9	10.6	8.4	9.6	14.4	11.7	13.0	22.1	18.6	19.6
11	8.4	6.0	7.1	8.8	7.7	8.4	15.0	11.7	13.3	20.9	17.4	19.0
12	8.6	6.6	7.6	9.7	7.8	8.8	18.3	13.4	15.2	22.9	18.3	20.0
13	8.4	7.5	7.9	12.2	8.4	10.2	19.0	14.3	16.4	20.6	18.5	19.2
14	9.4	8.0	8.6	13.7	11.3	12.3	20.3	15.5	17.5	20.1	18.3	19.2
15	9.6	8.3	9.0	13.6	10.9	11.9	19.0	15.8	17.3	20.0	18.3	19.0
16	9.3	6.7	8.0	14.6	11.3	12.5	19.4	16.2	17.5	20.0	17.6	18.4
17	9.0	5.7	7.1	17.2	11.5	13.5	20.9	16.9	18.5	19.3	17.2	18.3
18	8.7	7.2	7.9	14.3	12.6	13.5	21.1	17.0	18.9	21.5	17.8	19.4
19	8.8	7.8	8.3	15.6	12.0	13.9	19.4	17.8	18.6	23.3	19.2	20.8
20	9.2	8.3	8.5	14.6	12.8	13.3	20.9	17.5	18.9	20.8	18.5	19.4
21	8.9	7.8	8.4	13.9	12.3	13.0	21.8	18.3	19.7	19.6	18.0	19.2
22	10.1	8.4	9.1	13.2	10.5	12.1	21.7	18.6	19.9	20.5	17.0	18.7
23	9.5	7.6	8.5	15.1	11.8	13.2	19.6	18.0	18.9	22.2	19.1	20.3
24	8.5	6.4	7.8	17.2	12.6	14.4	21.7	17.5	19.4	20.4	18.5	19.4
25	7.1	6.2	6.7	14.9	12.9	13.6	21.8	19.0	20.2	20.8	18.9	19.7
26	7.4	6.2	6.8	13.9	11.9	13.1	22.6	18.1	20.0	20.9	18.2	19.2
27	7.5	6.7	7.0	14.9	10.8	12.9	23.8	19.0	21.0	21.7	18.3	19.8
28	7.5	6.9	7.2	14.5	11.6	12.9	23.2	19.8	21.4	22.1	18.3	20.2
29	---	---	---	12.4	9.9	11.2	24.3	20.3	22.0	22.2	18.5	20.3
30	---	---	---	12.7	9.9	11.3	25.8	21.3	23.1	22.3	18.4	20.1
31	---	---	---	13.1	10.5	11.6	---	---	---	21.6	18.1	19.8
MONTH	10.6	5.7	7.8	17.2	6.8	11.0	25.8	10.6	17.1	25.1	17.0	20.2
		JUNE			JULY			AUGUST			SEPTEMBER	
1	23.4	20.5	21.5	23.9	20.7	22.4	24.1	20.4	21.7	23.6	22.1	22.8
2	22.5	19.7	21.1	25.1	21.1	22.9	23.4	20.7	21.8	22.4	21.1	21.6
3	22.9	18.9	20.9	23.9	20.1	21.9	22.5	20.9	21.5	22.6	20.9	21.8
4	23.9	20.1	22.0	22.5	18.6	20.4	22.9	19.7	21.4	23.9	21.2	22.4
5	20.7	18.3	19.7	22.6	18.3	20.4	21.5	18.6	19.7	23.6	20.9	22.2
6	19.0	18.0	18.5	23.1	19.4	21.2	22.9	18.1	20.5	22.9	19.9	21.5
7	22.0	18.4	20.2	23.1	18.9	20.7	23.3	19.6	21.3	23.0	20.0	21.5
8	22.6	20.5	21.5	22.5	19.0	20.6	24.5	21.5	22.9	23.2	19.8	21.5
9	23.3	18.9	20.8	23.4	18.5	20.9	23.3	21.1	22.0	23.4	20.0	21.6
10	23.3	19.7	21.4	22.9	19.8	21.0	23.4	20.0	21.7	23.4	20.1	21.8
11	23.3	19.5	21.4	24.6	19.6	21.9	22.5	19.5	20.9	22.8	20.4	21.5
12	22.6	20.7	21.6	24.0	20.1	22.0	22.0	19.3	20.5	21.6	19.7	20.8
13	23.0	19.7	20.9	23.0	20.1	21.3	21.5	19.4	20.3	21.6	19.5	20.5
14	22.5	19.8	21.2	23.9	20.1	21.9	21.8	18.9	20.3	20.9	19.4	20.2
15	22.9	20.4	21.5	24.2	20.0	21.9	23.2	19.2	20.6	22.3	19.0	20.4
16	21.6	19.3	20.1	23.7	19.7	21.3	23.6	19.4	21.2	21.6	18.3	20.1
17	22.4	19.1	20.8	22.5	19.0	20.4	24.0	20.9	21.9	22.9	20.3	21.1
18	22.1	19.7	21.1	22.2	18.3	19.8	24.4	21.3	22.3	22.3	19.2	20.8
19	22.9	20.2	21.5	20.7	18.1	19.3	24.2	21.1	22.1	22.5	20.1	21.3
20	23.9	21.3	22.4	20.6	18.9	19.7	24.3	21.1	22.1	22.2	20.2	21.1
21	24.7	21.3	22.7	20.2	17.9	18.9	23.9	20.8	22.0	21.1	19.4	19.9
22	25.8	20.7	23.2	20.2	18.5	19.4	23.8	20.8	21.9	21.9	18.8	20.2
23	26.7	22.8	24.6	22.3	19.4	20.7	24.6	21.5	22.7	22.2	19.6	20.9
24	24.0	20.0	21.7	23.8	20.1	21.7	24.7	21.5	22.7	21.6	19.2	20.1
25	22.7	19.3	20.8	22.9	19.5	20.7	24.6	21.7	22.7	22.1	18.9	20.4
26	23.2	19.4	21.3	22.0	18.2	19.8	24.5	21.6	22.5	22.0	19.1	20.6
27	23.7	20.8	22.2	22.5	18.6	20.2	24.9	21.7	22.7	21.9	19.3	20.7
28	23.3	19.7	21.4	22.6	18.8	20.3	24.0	21.8	22.6	20.8	18.8	19.9
29	23.1	19.5	21.4	22.6	18.7	20.1	24.5	21.9	23.1	20.5	18.0	19.3
30	25.3	22.2	23.1	21.3	19.4	20.2	26.0	22.6	24.2	20.2	18.2	19.3
31	---	---	---	23.9	19.9	21.3	24.9	22.5	23.4	---	---	---
MONTH	26.7	18.0	21.4	25.1	17.9	20.8	26.0	18.1	21.8	23.9	18.0	20.9
YEAR	26.7	5.7	15.8									

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 TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	76.26	75.64	75.60	74.68	74.50	74.30	74.32	74.28	74.57	74.46	74.98	75.52
10	76.09	75.46	75.28	74.75	74.45	74.39	74.45	74.35	74.53	74.50	75.13	75.51
15	76.14	75.76	75.13	74.69	74.33	74.22	74.28	74.42	74.59	74.57	75.40	75.64
20	76.12	75.71	75.17	74.54	74.47	74.17	74.49	74.71	74.56	74.61	75.31	75.44
25	76.06	75.81	75.06	74.80	74.58	74.24	74.32	74.57	74.50	74.75	75.41	75.45
EOM	76.01	75.68	74.70	74.64	74.37	74.44	74.29	74.54	74.49	74.94	75.41	75.57
MAX	76.34	76.03	75.62	75.01	---	74.57	74.62	74.72	74.64	74.94	75.42	75.67
MIN	75.82	75.37	74.63	74.51	---	73.95	74.19	74.27	74.45	74.39	74.91	75.36

OTTAWA COUNTY

WELL-IDENTIFICATION NUMBER.--365732094513201. Local number, 29N-23E-30 CDD 1.

LOCATION.--Lat 36°57'34", long 094°51'27", Hydrologic Unit 11070206, 2.2 mi southeast of Picher.

AQUIFER.-Boone Formation. Formerly published as Roubidoux Formation.

WELL CHARACTERISTICS.--Abandoned mine air shaft, diameter 8 in., depth 289 ft.

INSTRUMENTATION.--Submersible transducer interfaced to a data logger with a 30 min. update interval.

DATUM.-- Datum of gage is NAVD of 1988. Measuring point is top of casing, elevation 827.35 ft, top of casing is 1.0 ft above land surface.

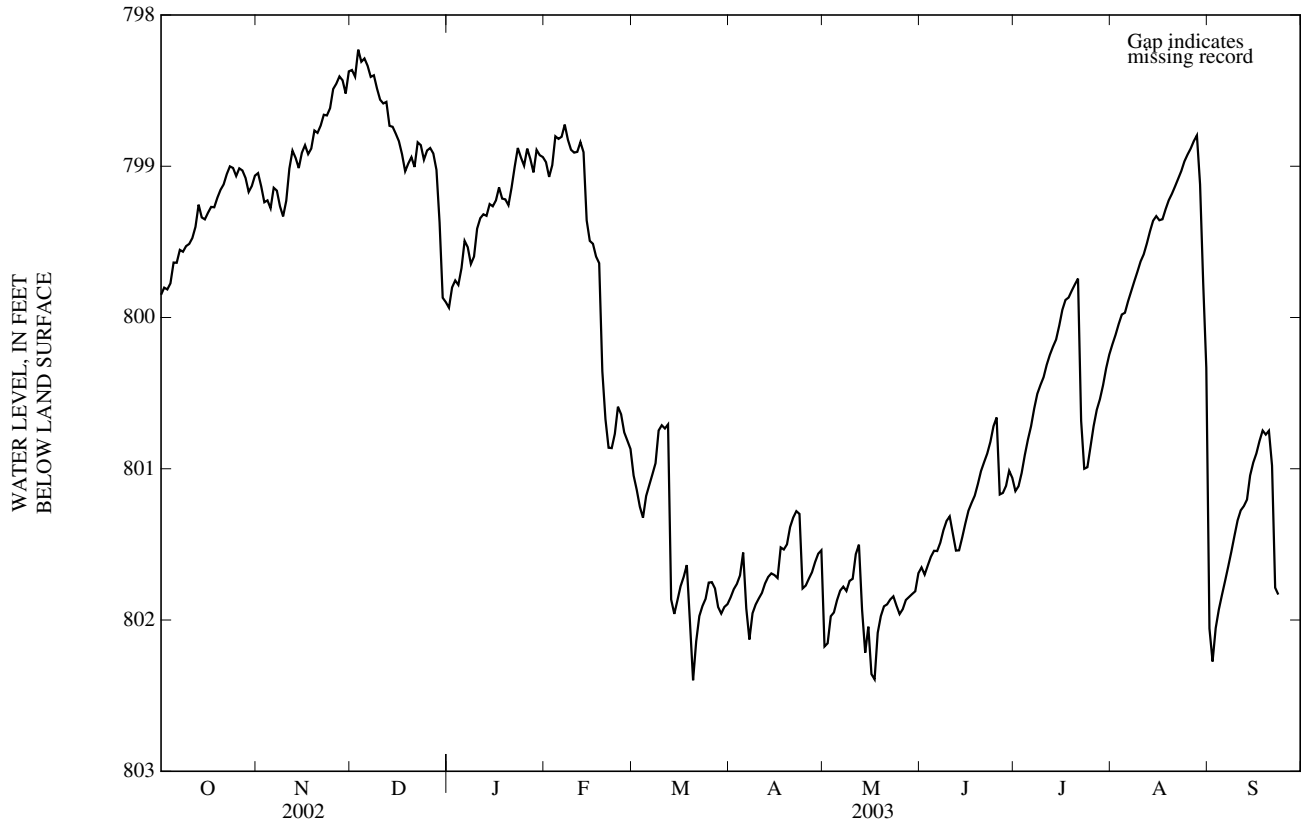
REMARKS.--September 1975 to September 1997 records were published as water levels, depth below land surface.

PERIOD OF RECORD.--September 1975 to September 1997, October 2002 to September 2003 (discontinued). Mean daily-water level published February 1980 to September 1994, October 2002 to September 2003.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 808.12 ft, Sept. 25, 1993; lowest, 655.65 ft, Sept. 9, 1975.

GROUND-WATER LEVEL ABOVE NAVD 1988, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	799.64	799.28	798.29	799.67	798.82	801.18	801.55	801.87	801.54	800.81	799.97	801.83
10	799.51	799.23	798.56	799.41	798.91	800.71	801.86	801.73	801.32	800.39	799.63	801.34
15	799.35	798.91	798.78	799.26	799.49	801.87	801.70	802.04	801.36	800.05	799.33	800.96
20	799.16	798.78	798.94	799.26	800.67	802.40	801.39	801.91	801.02	799.78	799.18	800.75
25	799.06	798.49	798.90	799.00	800.64	801.75	801.77	801.96	800.66	800.85	798.92	---
EOM	799.06	798.37	799.90	798.94	800.87	801.90	801.54	801.69	801.06	800.25	800.33	---
MAX	799.85	799.33	799.90	799.94	800.87	802.40	802.13	802.39	801.70	801.15	800.33	---
MIN	799.00	798.37	798.23	798.88	798.72	800.71	801.28	801.50	800.66	799.74	798.80	---



OTTAWA COUNTY—Continued

WELL-IDENTIFICATION NUMBER.--365942094504203. Local number, 29N-23E-17 BCA 1.

LOCATION.--Lat 36°59'42", long 094°50'42", Hydrologic Unit 11070206, .5 mi northwest of Picher.

AQUIFER.-Boone Formation.

WELL CHARACTERISTICS.--Abandoned mine air shaft, diameter 8 in., depth estimated at 200-230 ft.

INSTRUMENTATION.--Submersible transducer interfaced to a data logger with a 30 min. update interval.

DATUM.-- Datum of gage is NAVD of 1988. Measuring point is top of casing, elevation 830.72 ft, top of casing is 1.0 ft above land surface.

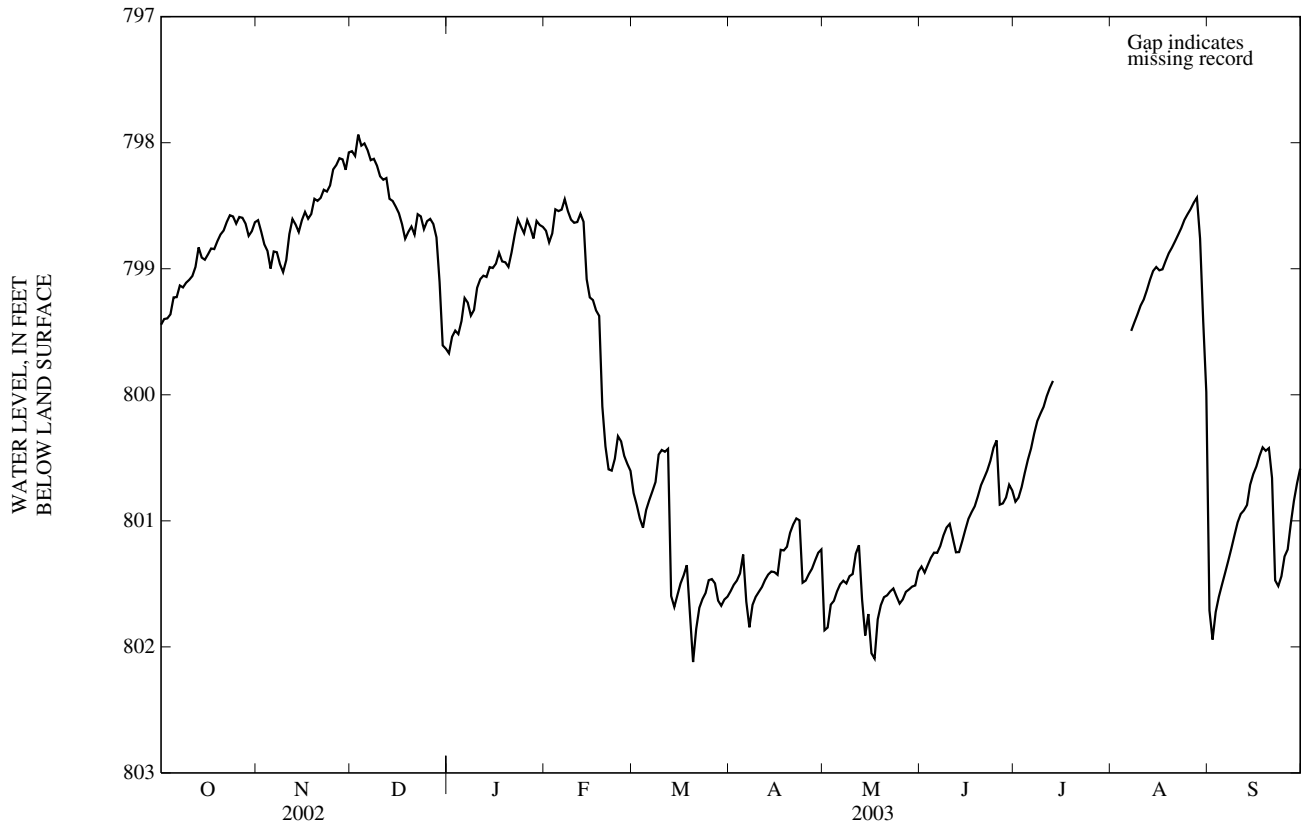
REMARKS.--Records good.

PERIOD OF RECORD.--October 2002 to September 2003 (discontinued).

EXTREMES FOR CURRENT YEAR.--Maximum water level, 802.44 ft, May 16; minimum water level, 797.90 ft, Dec. 3.

GROUND-WATER LEVEL ABOVE NAVD 1988, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	799.23	799.00	798.01	799.41	798.54	800.91	801.27	801.56	801.25	800.51	---	801.51
10	799.09	798.93	798.27	799.15	798.64	800.44	801.56	801.42	801.02	800.10	799.29	801.01
15	798.93	798.62	798.51	798.99	799.23	801.59	801.41	801.74	801.07	---	798.99	800.63
20	798.73	798.46	798.67	798.99	800.41	802.12	801.09	801.61	800.72	---	798.83	800.42
25	798.64	798.21	798.62	798.72	800.37	801.47	801.47	801.66	800.36	---	798.57	801.28
EOM	798.63	798.08	799.63	798.67	800.60	801.60	801.23	801.40	800.76	---	799.98	800.59
MAX	799.44	799.03	799.63	799.67	800.60	802.12	801.84	802.09	801.41	---	---	801.94
MIN	798.58	798.08	797.94	798.61	798.45	800.43	800.98	801.19	800.36	---	---	800.42



PONTOTOC COUNTY

WELL-IDENTIFICATION NUMBER.--343457096404501. Local number 01N-06E-04 CAD 1.

LOCATION.--Lat 34°34'57", long 096°40'45", Hydrologic Unit 11140102, 3.3 mi southwest of Fittstown.

GEOLOGIC UNIT.--Arbuckle Group.

WELL CHARACTERISTICS.--Drilled oil test well, diameter 14 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.

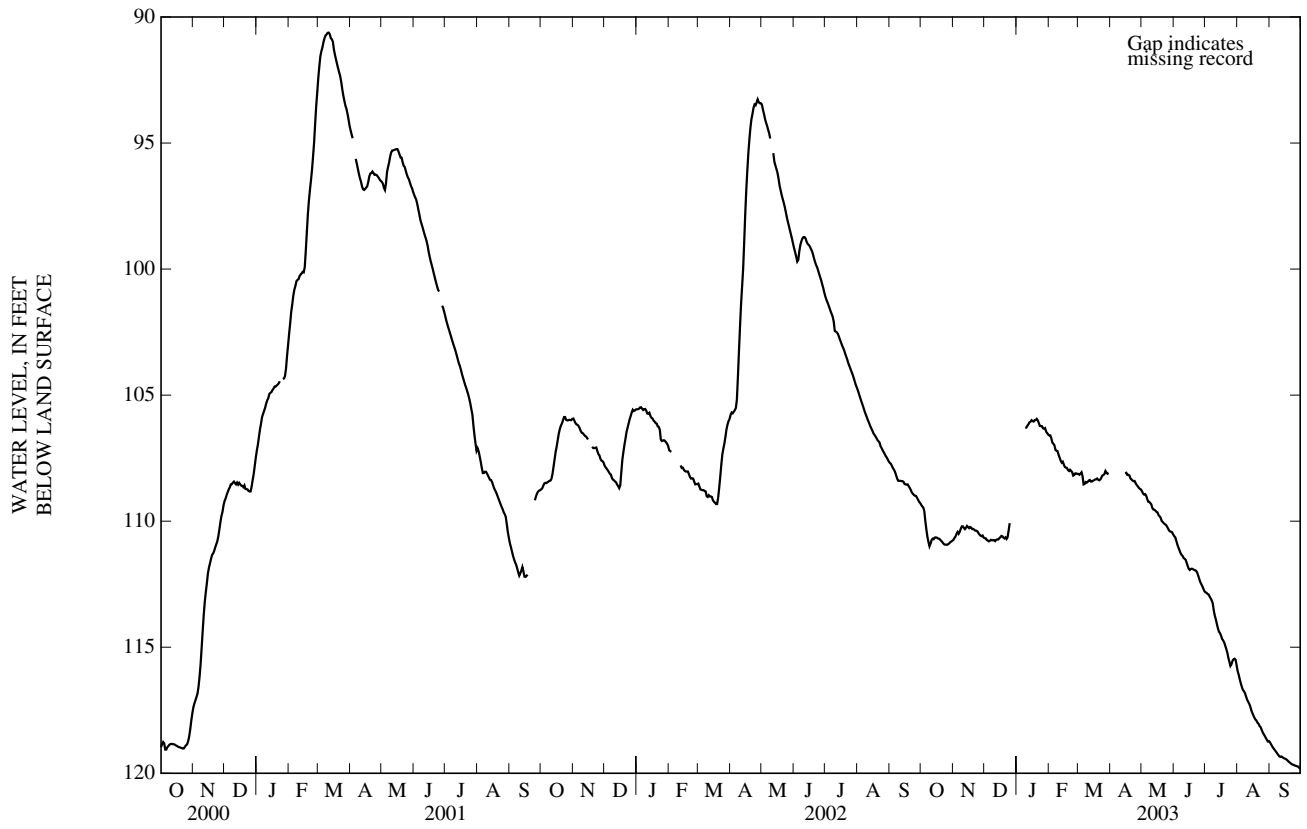
REMARKS.--Well originally 1,707 ft deep.

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, 128.23 ft below land-surface datum, Apr. 10, 1967.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	110.00	110.43	110.80	---	106.93	108.22	---	108.98	111.04	112.99	116.58	119.05
10	110.89	110.20	110.75	106.29	107.37	108.44	---	109.33	111.46	113.75	117.08	119.33
15	110.64	110.24	110.68	106.00	107.75	108.39	108.10	109.63	111.89	114.45	117.61	119.41
20	110.77	110.31	110.69	105.94	108.01	108.36	108.31	109.99	111.93	114.94	117.99	119.58
25	110.93	110.48	110.08	106.23	108.16	108.17	108.50	110.21	112.28	115.74	118.38	119.70
EOM	110.77	110.65	---	106.57	108.13	---	108.74	110.53	112.78	115.73	118.73	119.82
MEAN	110.58	110.40	---	---	107.58	---	---	109.70	111.73	114.40	117.56	119.40
MAX	110.99	110.74	---	---	108.19	---	---	110.53	112.78	115.74	118.74	119.82



WOODWARD COUNTY

WELL-IDENTIFICATION NUMBER.--361714099315101. Local number 21N-22W-23 BBB 1.

LOCATION.--Lat 36°17'25", long 99°31'58", Hydrologic Unit 11100203, 11.0 mi west of Sharon.

GEOLOGIC UNIT.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled test hole, diameter 6 in., depth 322 ft.

DATUM.--Altitude of land-surface datum is 2,335 ft. Measuring point: top of shelf 3 ft above land-surface datum.

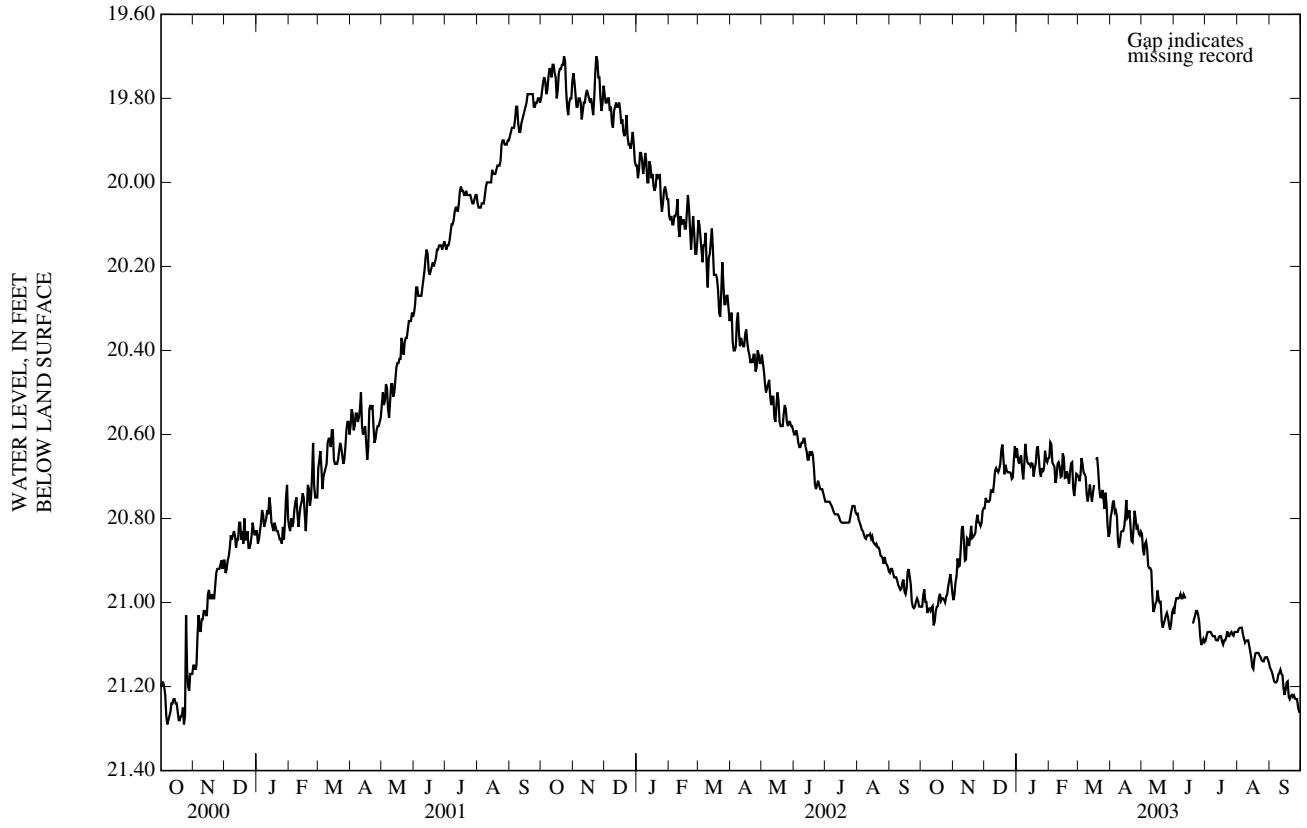
REMARKS.--Digital recorder installed Sept. 30, 1982, mean-daily water levels published thereafter, except Oct. 5, 1993 to Apr. 17, 1994 when bimonthly measurements were made. Satellite telemeter at station since July 10, 2000.

PERIOD OF RECORD.--1957 to 1963, 1965 to September 1995, July 2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest daily water level, 19.70 ft below land-surface datum, Oct. 21, 2001; lowest water level, 32.64 ft below land-surface datum, May 19, 1971.

DEPTH TO WATER LEVEL, FEET BELOW LAND SURFACE
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	21.00	20.90	20.76	20.65	20.67	20.67	20.79	20.85	20.99	21.07	21.06	21.19
10	21.02	20.82	20.71	20.65	20.67	20.76	20.85	20.92	20.98	21.08	21.09	21.17
15	21.02	20.85	20.68	20.67	20.65	20.74	20.80	21.00	---	21.08	21.15	21.22
20	21.00	20.84	20.69	20.64	20.72	20.69	20.82	21.05	21.04	21.09	21.12	21.23
25	20.99	20.81	20.69	20.68	20.75	20.75	20.80	21.02	21.05	21.07	21.14	21.23
EOM	20.98	20.78	20.66	20.66	20.70	20.83	20.83	21.02	21.09	21.07	21.14	21.26
MAX	21.05	20.99	20.78	20.71	20.75	---	20.87	21.06	---	21.10	21.16	21.26
MIN	20.93	20.78	20.62	20.62	20.62	---	20.76	20.84	---	21.09	21.06	21.16



DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

DISCHARGE AT PARTIAL-RECORD STATIONS

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		RED RIVER BASIN				
07303500	Elm Fork of North Fork Red River near Mangum, OK	Lat 35°55′36″, long 99°30′00″, in NW 1/4, NW 1/4, sec.10 T.5 N., R.22 E., Greer County, Hydrologic Unit 11120304, at bridge on US Hwy 283, 3 miles north of Mangum and 5 miles downstream from Haystack Creek.	838	*1905-08, 65-76 2002-03	05-14-03 09-11-03	6.2 3400
07304500	Elk Creek near Hobart, OK	Lat 34°54′51″, long 99°06′49″, in NE 1/4, NE 1/4, sec.17 T.5 N., R.18 W.,Kiowa County, Hydrologic Unit 11120303, on county road bridge, 7 miles downstream from Little Elk Creek, 7.5 miles south of Hobart.	549	*1904-08, 49-93 2002-03	05-25-0 06-13-03	616 1640
07308240	Red River near Davidson, OK	Lat 34°12′42″, long 99°04′54″, in NE 1/4, NE 1/4, sec.12 T.4 S., R.18 W., Tillman County, Hydrologic Unit 11130102, on US Hwy 183 bridge, 2.0 miles south of Davidson and 2.5 miles downstream of Pease River.		2002-03	06-02-03 06-03-03	152 1600
07311510	West Cache Creek near Taylor, OK	Lat 34°12′34″, long 98°19′50″, in NW 1/4, SW 1/4, sec.14 T.4 S., R.11 W., Tillman County, Hydrologic Unit 11130203, on SH 5 B bridge, 1.5 miles upstream Of East Cache Creek and 2.5 north of Taylor.	404	2002-03	05-25-03 05-25-03	2450 4010
07312720	Red River near Waurika, OK	Lat 34°07′58″, long 98°05′30″, in SW 1/4, SE 1/4, sec.12 T.5 S., R.9 W., Jefferson County, Hydrologic Unit 11130201, On SH 79 bridge, 2.6 miles downstream of Whiskey Creek and 5.8 miles southwest of Waurika.	21,614	2002-03	10-01-02 06-04-03	94.5 293
07325150	Washita River near Cordell, OK	Lat 35°17′30″, long 98°50′11″, in NE 1/4, NE 1/4, sec.1 T.9 N., R.16 W., Washita County, Hydrologic Unit 11130302, on SH 152 bridge, 1.2 miles upstream of Cavalry Creek and 2.6 miles north of Cloud Chief.		2002-03	10-29-02 04-24-03 06-16-03	243 122 822
07332950	Muddy Boggy River at Atoka, OK	Lat 34°23′23″, long 96°07′12″, in NW 1/4, SW 1/4, sec.11 T.2 S., R.11 E., Atoka County, Hydrologic Unit 11140103, On US Hwy 69 bridge, .1 mile north of SH 3 US Hwy 69 junction and .5 mile upstream of MKT railroad bridge.	445	*1978-81 2002-03	04-22-03 06-11-03	13.6 21.4

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements: Date	Measurements: Discharge (ft^3/s)
		RED RIVER BASIN				
07335000	Clear Boggy near Caney, Ok	Lat 34°15′09″, long 96°12′19″, in NW 1/4, SE 1/4, sec.36 T.3 S., R.10 E., Atoka County, Hydrologic Unit 11140104, on Old Hwy 69 bridge, 0.5 mile downstream of Caney Creek and 1.5 miles north of Caney.	720	*1943-89 2002-03	10-31-02 04-24-03 06-10-03	353 63.6 62.5
07335770	Kiamichi River at Tuskahoma, OK	Lat 34°36′44″, long 95°16′38″, in NW 1/4, SE 1/4, sec.26 T.2 N., R.19 E.,Pushmataha County, Hydrologic Unit 11140105, on county road bridge, .3 mile south of Tuskahoma and 3.9 miles upstream of Jackfork Creek.	405	2002-03	04-16-03 06-18-03	72.3 800
07336820	Red River near DeKalb, Tx	Lat 33°41′15″, long 94°41′39″, in NW 1/4, NW 1/4, sec.15 T.10 S., R.25 E.,McCurtain County, Hydrologic Unit 11140106, on US Hwy 259, 4.8 miles upstream of Northmill Creek and 13 miles north of DeKalb, TX	47,348	*1967-98 2002-03	04-15-03	1600
07337100	Little River near Cloudy, OK	Lat 34°19′32″, long 95°11′58″, in SE 1/4, NW 1/4, sec.3 T.3 S., R.20 E., Pushmataha County, Hydrologic Unit 11140107, on county road bridge, 0.2 mile downstream of Cloudy Creek and 5.2 miles northeast of Cloudy.	324	2002-03	10-30-02 04-16-03 06-18-03	249 76.7 174

*Operated as a continuous-record gaging station.