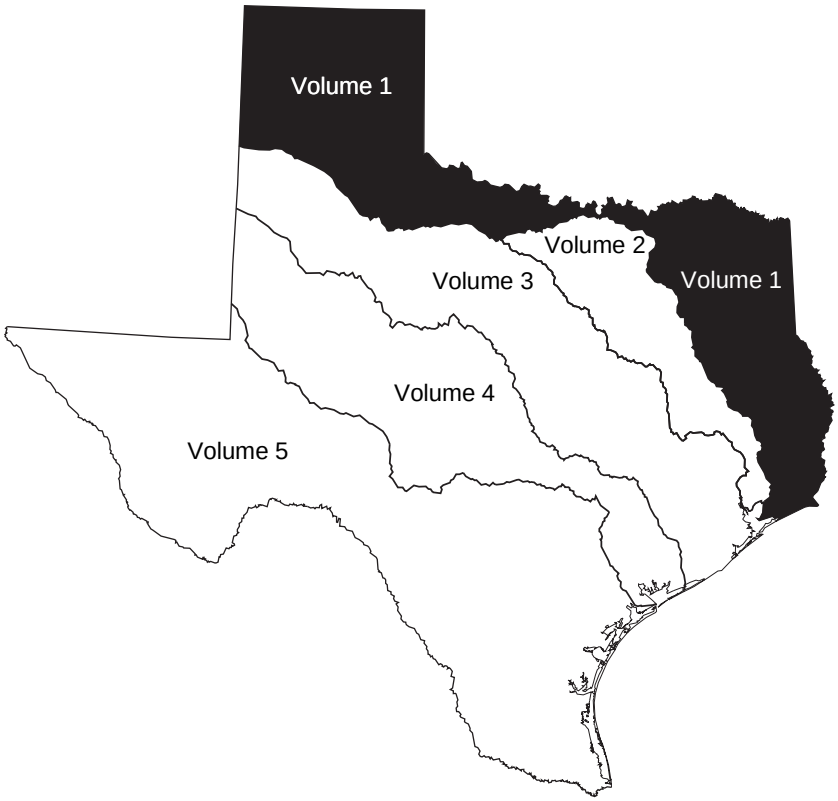
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data
Texas
Water Year 1999

Volume 1. Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, and Intervening Coastal Basins

By S.C. Gandara, W.J. Gibbons, D.L. Barbie, and R.E. Jones

Water-Data Report TX-99-1



Prepared in cooperation with the
State of Texas and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

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PREFACE

This edition of the annual hydrologic data report of Texas is one of a series of annual reports that document hydrologic data collected from the U.S. Geological Survey's collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by Federal, State, local agencies, and the private sector for developing and managing land and water resources in Texas which are contained in 6 volumes:

Volume 1.	Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, and Intervening Coastal Basins
Volume 2.	Trinity River Basin
Volume 3.	San Jacinto River Basin, Brazos River Basin, San Bernard River Basin, and Intervening Coastal Basins
Volume 4.	Colorado River Basin, Lavaca River Basin and Intervening Coastal Basins
Volume 5.	Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins
Volume 6.	Ground-Water Data

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had the primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines, most of the data were collected, computed, and processed from Subdistrict and Field Offices. The following supervised the collection, processing, and tabulation of the data:

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13. ABSTRACT *(Maximum 200 words)*

Water-resources data for the 1999 water year for Texas are presented in six volumes, and consist of records of stage, discharge, and water quality of streams and canals; stage, contents, and water-quality of lakes and reservoirs; and water levels and water quality of ground-water wells. Volume 1 contains records for water discharge at 71 gaging stations; stage only at 3 gaging stations; stage and contents at 23 lakes and reservoirs; water quality at 47 gaging stations; and data for 9 partial-record stations comprised of 6 flood-hydrograph and 3 low-flow stations. Also included are lists of discontinued surface-water discharge or stage-only stations and discontinued surface-water-quality stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal, State, and local agencies in Texas. Records for a few pertinent stations in the bordering States also are included.

14. SUBJECT TERMS

*Texas, *hydrologic data, *surface water, *water quality, flow rate, gaging stations, lakes, reservoirs, chemical analyses, sediments, water temperature, sampling sites.

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

[Type of data collected: (d) discharge; (c) chemical; (b) biological; (t) water temperature; (s) sediment; (e) elevation, gage heights, or contents.]

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

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Texas have been discontinued. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number are currently operated as partial-record stations. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the title page of this report.

[Letters after station name designate the type of data collected: (d) discharge, (e) elevation (stage only).]

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Punta De Agua Creek near Channing (d)	07227448	3,568	1968-73
East Chyenne Creek Tributary near Channing (e)	07227460	0.86	1965-74
Canadian River at Tascosa (d)	07227470	18,536	1969-77
Tecovas Creek Tributary near Bushland (e)	07227480	2.5	1966-74
Dixon Creek near Borger (d)	07227920	134	1974-89
Palo Duro Creek near Canyon (e)	07229700	982	1942-54
White Woman Creek Tributary near Darrouzett (e)	07234150	4.03	1966-74
Tierra Blanca Creek above Buffalo Lake near Umbarger (d)	07295500	1,968	1939-54, 1967-73
Buffalo Lake near Umbarger (e)	07296000	2,075	1938-54
Tierra Blanca Creek below Buffalo Lake near Umbarger (d)	07296100	2,075	1967-73
Prairie Dog Town Fork Red River near Canyon (d)	07297500	3,369	1924-26, 1938-49
Middle Tule Draw near Tulia (e)	07297920	313	1967-74
North Tule Draw at Reservoir near Tulia (d)	07298000	189	1939-40, 1941-73
Rock Creek Tributary near Silverton (d)	07298150	13.7	1966-74
Tule Creek near Silverton (d)	07298200	1,150	1964-86
Prairie Dog Town Fork Red River near Brice (d)	07298500	6,082	1939-44, 1949-51, 1960-63
Mulberry Creek near Brice (d)	07299000	534	1949-51
Prairie Dog Town Fork Red River near Lakeview (d)	07299200	6,792	1963-80
Little Red River near Turkey (d)	07299300	139	1968-81
Prairie Dog Town Fork Red River near Estelline (d)	07299500	7,293	1924-25, 1938-47
Prairie Dog Town Fork Red River below Mountain Creek near Estelline (e)	07299505	7,341	1974-77
Prairie Dog Town Fork Red River above Jonah Creek near Estelline (e)	07299510	7,533	1974-77
Jonah Creek at Weir near Estelline (d)	07299512	65.50	1974-82
Jonah Creek below Weir near Estelline (d)	07299514	66.60	1974-76
Jonah Creek at mouth near Estelline (d)	07299516	76	1974-76
Salt Creek near Estelline (d)	07299530	142	1974-79
Buck Creek near Wellington (e)	07299550	210	1951-64
Red River near Quanah (d)	07299570	8,321	1960-82
North Groesbeck Creek Tributary near Kirkland (d)	07299575	0.16	1966-74
Wanders Creek at Odell (e)	07299750	199	1949-50, 1952-89
Salt Fork Red River near Clarendon (d)	07299850	457	1960-64
Lelia Lake Creek near Hedley (e)	07299900	86	1951-70
Salt Fork Red River near Hedley (e)	07299930	744	1951, 1956-62
Oklahoma Draw Tributary near Hedley (e)	07299940	1.1	1965-74
Sweetwater Creek near Wheeler (e)	07301400	164	1951-64
Doodlebug Creek near Wheeler (e)	07301405	0.19	1967-73
Elm Creek near Shamrock (e)	07303300	N/A	1947-89
Quitaque Creek near Quitaque (d)	07307500	293	1945-59
North Pease River near Childress (d)	07307600	1,434	1973-79
North Pease River near Kirkland (e)	07307660	N/A	1973-79
Roaring Springs near Roaring Springs (e)	07307700	N/A	1937, 1943-95
Cottonwood Creek Tributary near Afton (e)	07307720	0.68	1967-74
Middle Pease River near Paducah (d)	07307750	1,086	1973-79
Middle Pease River near Paducah (d)	07307760	1,123	1980-82
Middle Pease River near Kirkland (e)	07307780	1,250	1973-79

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Canal Creek near Crowell (e)	07307950	49.0	1968-70, 1978-79
Pease River near Crowell (d)	07308000	3,037	1924-47
Plum Creek near Vernon (e)	07308220	4.99	1967-74
China Creek near Electra (e)	07308400	37	1967-76
North Fork Wichita River near Crowell (d)	07311622	591	1971-76
Middle Fork Wichita River near Truscott (d)	07311648	161	1971-76
South Fork Wichita River near Guthrie (d)	07311780	239	1952-54, 1956-57 1971-76
South Fork Wichita River at Ross Ranch near Benjamin (d)	07311790	499	1971-79
Beaver Creek Tributary near Crowell (e)	07312140	3.43	1966-74
Wolf Creek near Iowa Park (e)	07312300	8.5	1966-74
North Fork Little Wichita River Tributary near Archer City (e)	07314200	0.10	1966-74
Little Wichita River near Henrietta (d)	07315000	1,037	1953-79
Little Wichita River near Ringgold (d)	07315400	1,350	1959-65
Farmers Creek near Saint Jo (e)	07315550	0.82	1966-74
Mineral Creek near Sadler (d)	07316200	26	1968-77
Sandy Creek near Sadler (e)	07316230	24	1968-74
Lake Texoma near Denison (e)	07331500	39,719	1943-93
Red River at Denison Dam near Denison (d)	07331600	39,720	1924-89
Bois D'Arc Creek near Randolph (d)	07332600	72	1963-85
Cooper Creek near Bonham (e)	07332602	6.21	1966-74
Pat Mayse Lake near Chicota (d)	07335390	175	1968-96
Sanders Creek near Chicota (d)	07335400	175	1968-86
	07335500	44,531	1905-11 1936-97
Little Pine Creek near Kanawha (d)	07336750	75.40	1969-80
Pecan Bayou near Clarksville (d)	07336800	100	1962-77
McKinney Bayou near Leary (e)	07336940	3.33	1966-73
Barkman Creek near Leary (e)	07336950	31.5	1958-64
Nelson Branch near Leonard (e)	07342450	0.22	1966-74
South Sulphur River near Commerce (d)	07342470	189	1980-91
Cuthand Creek near Bogata (d)	07343300	69	1964-74
Dial Branch near Bagwell (e)	07343350	1.00	1966-74
White Oak Creek near Mt. Vernon (e)	07343480	434	1966, 1969-75
White Oak Creek below Talco (d)	07343800	579	1938-50
Buck Creek near Cookville (e)	07343900	0.78	1966-74
Sulphur River near Darden (d)	07344000	2,774	1924-56
Sulphur River near Texarkana (d)	07344210	3,443	1980-85
Big Cypress Creek near Winnsboro (d)	07344482	27.2	1974-92
Dragoo Creek near Mt. Pleasant (e)	07344490	4.27	1967-74
Williamson Creek near Pittsburg (e)	07344600	7.11	1967-74
Boggy Creek near Daingerfield (d)	07345000	72	1943-77
Ellison Creek Reservoir near Lone Star (e)	07345500	37	1943-62, 1974-89
Cypress Creek Tributary near Jefferson (e)	07346010	0.51	1966-74
Taylor Branch near Smithland (e)	07346072	0.73	1966-74
Big Cypress Creek near Karnack (e)	07346085	2,174	1980-85
Frazier Creek near Linden (d)	07346140	48.0	1965-91
Sabine River near Emory (d)	08017500	888	1952-73
Burnett Branch near Canton (e)	08017700	0.33	1966-74
Grand Saline Creek near Grand Saline (d)	08018200	91.4	1968-73
Burke Creek near Yantis (d)	08018730	33.10	1979-89
Dry Creek near Quitman (e)	08018950	63.6	1968-75
Lake Winnsboro near Winnsboro (d)	08019300	27.1	1962-86
Big Sandy Creek near Hawkins (e)	08019430	196	1980-82
Prairie Creek near Gladewater (d)	08020200	48.90	1968-77
Sabine River near Longview (d)	08020500	2,947	1904-07,

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
			1924-33
Rabbit Creek at Kilgore (d)	08020700	75.80	1964-77
Grace Creek Tributary at Longview (e)	08020800	5.05	1967-74
Mill Creek near Henderson (d)	08020960	20.30	1979-81
Mill Creek near Longview (d)	08020980	47.90	1979-81
Tiawichi Creek near Longview (d)	08020990	62.70	1978-81
Cherokee Bayou near Elderville	08021000	120	1940-49
Lake Cherokee near Longview (e)	08021500	158	1951-83
Sabine River near Tatum (d)	08022000	3,493	1939-78,
(e)			1979-82
Redmon Branch near Hallesville (e)	08022010	0.46	1966-74
Eight Mile Creek near Tatum (e)	08022050	106	1962-71
Martin Creek near Tatum (d)	08022070	148	1974-96
Martin Creek near Beckville (e)	08022080	192	1962-71
Murvaul Bayou near Gary (d)	08022300	134	1958-83
Socagee Creek near Carthage (d)	08022400	82.60	1962-73
Tenaha Creek near Shelbyville (d)	08023200	97.80	1952-81
Dorsey Branch near Milam (e)	08024290	0.70	1967-74
Patroon Bayou near Milam (e)	08024300	130	1952-54,
			1959-63
Sabine River near Milam (d)	08024400	6,508	1924-25,
			1939-68
Palo Gaucho Bayou near Hemphill (d)	08024500	123	1952-65
Housen Bayou near Yellowpine (e)	08025250	92.1	1952-54,
			1957,
			1959-63
Sandy Creek near Yellowpine (e)	08025300	135	1952-54,
			1957,
			1959-63
Mill Creek near Burkeville (d)	08025307	17.6	1974-79
Little Cow Creek below McGraw Creek near Burkeville (e)	08026500	112	1952-58
Moore Branch near Newton (e)	08028505	3.77	1967-74
Nichols Creek near Buna (e)	08029750	54.4	1959-64
Cypress Creek near Buna (d)	08030000	69.20	1952-83
Adams Bayou Tributary near Deweyville (e)	08030700	12.4	1966-74
Cow Bayou near Mauriceville (d)	08031000	83.30	1952-86
Neches River Basin:			
Bethlehem Branch near Van (e)	08031100	1.09	1966-74
Kickapoo Creek near Brownsboro (d)	08031200	232	1962-89
Neches River near Reese (d)	08031500	851	1924-27
Hurricane Creek Tributary near Palestine (e)	08032100	0.39	1966-74
One Arm Creek near Maydelle (e)	08032250	6.01	1967-74
Squirrel Creek near Elkhart (e)	08032300	1.57	1967-74
Neches River near Alto (d)	08032500	1,945	1944-79
Piney Creek Tributary near Pennington (e)	08033250	1.17	1967-74
Piney Creek near Groveton (d)	08033300	79	1962-89
Shawnee Creek Tributary near Huntington (e)	08033450	0.52	1966-74
Greenwood Creek Tributary near Colmesneil (e)	08033480	0.15	1966-74
Bowles Creek near Selman City (e)	08033600	14.5	1968-85
Striker Creek near Summerfield (d)	08033700	146	1941-49
Striker Creek Reservoir near New Salem (e)	08033800	148	1941-49
East Fork Angelina River near Cushing (d)	08033900	158	1964-89
Mud Creek near Jacksonville (d)	08034500	376	1939-79
Mud Creek at Ponta (d)	08035000	475	1924-27
Angelina River near Lufkin (d)	08037000	1,600	1924-34,
			1939-79
Bayou Lanana at Nacogdoches (d)	08037050	31.3	1965-86,
			1988-93
Gingham Branch near Mt. Enterprise (e)	08037300	0.90	1967-74
Arenoso Creek near San Augustine (d)	08037500	75.30	1938-40
Angelina River near Zavalla (d)	08038500	2,892	1952-65

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Ayish Bayou at San Augustine (d)	08039000	15.80	1924-25
Angelina River at Horger (d)	08039500	3,486	1928-51, 1967-73
Little Sandy Creek Tributary near Jasper (e)	08039900	0.46	1967-74
Drakes Branch near Spurger (e)	08041400	5.03	1967-74
Taylor Bayou Basin:			
Hillebrandt Bayou near Lovell Lake (d)	08042500	128	1954-84
Double Bayou Basin:			
West Fork Double Bayou near Anahuac (e)	08042550	4.43	1967-74

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 1999 water year. Daily records of specific conductance, temperature, sediment, color, pH, dissolved oxygen, or chloride were collected and published for the record shown for each station.

[SC, specific conductance; T, temperature; S, sediment; C, color; pH, pH; DO, dissolved oxygen; Cl, chloride.]

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Canadian River at Tascosa	07227470	19,200	SC, T, Cl	1948-53,
		18,536	SC, T, pH, Cl	1969-77
Canadian River near Canadian	07228000	22,866	SC, T	1974-81
Prairie Dog Town Fork Red River near Wayside	07297910	4,221	SC, T	1969-81
Tule Creek near Silverton	07298200	1,150	SC, T, pH, Cl	1968-69
Prairie Dog Town Fork Red River near Brice	07298500	6,082	SC, pH, Cl, S	1949-51,
			T	1950-51
Mulberry Creek near Brice	07299000	534	SC, pH, Cl, S	1949-51
Prairie Dog Town Fork Red River near Lakeview	07299200	6,792	SC, T	1968-80,
			S	1979-80
Little Red River near Turkey	07299300	139	SC, T	1968-81,
			S	1979-81
Jonah Creek at Weir near Estelline	07299512	65.50	SC	1974-82
Jonah Creek below Weir near Estelline	07299514	66.60	SC	1974-76
Salt Creek near Estelline	07299530	142	SC	1974-79
Prairie Dog Town Fork Red River near Childress	07299540	7,725	SC, T	1968-82,
				1994-97
Salt Fork Red River near Hedley	07299930	868	SC, T, pH, Cl	1956-61
Salt Fork Red River near Wellington	07300000	1,222	SC, T, pH, Cl	1952-54,
			SC, T	1968-91
North Pease River near Childress	07307600	1,434	SC, T	1973-79
Middle Pease River near Paducah	07307750	1,086	SC	1973-79,
			T	1973-79,
			S	1994-97
Middle Pease River near Paducah	07307760	1,128	SC	1980-82,
			T	1980
Pease River near Childress	07307800	2,754	SC, T	1968-82,
				1994-97
Pease River near Crowell	07308000	3,037	SC	1942-43
Red River near Burkburnett	07308500	20,570	SC, T	1968-81
North Fork Wichita River near Paducah	07311600	540	SC, T	1968-76
North Fork Wichita River near Crowell	07311622	591	SC	1971-76
Middle Fork Wichita River near Truscott	07311648	161	SC	1970-76
Truscott Brine Lake near Truscott	07311669	26.2	SC, T	1985-90
North Fork Wichita River near Truscott	07311700	937	SC, T	1969-92
South Fork Wichita River near Guthrie	07311780	239	SC	1970-76
South Wichita River below Low-Flow Dam near Guthrie	07311783	223	SC, T	1987-89
South Fork Wichita River at Ross Ranch near Guthrie	07311790	499	SC	1971-79,
			Cl	1988-97,
			S	1978-79
Wichita River near Seymour	07311900	1,874	SC, T	1968-79
Little Wichita River near Archer City	07314500	481	SC	1953-55,
			T	1953-54
Little Wichita River near Henrietta	07315000	1,037	SC, T, pH, Cl	1953-56,
			S, T	1959-66,
East Fork Little Wichita River near Henrietta	07315200	178	T	1954
Little Wichita River near Ringgold	07315400	1,350	SC, pH, Cl	1959-62
Red River near Gainesville	07316000	30,872	SC, Cl	1944-46,
			SC, T, pH, Cl	1953-63,
			SC, T	1967-89,
Red River at Denison Dam near Denison	07331600	39,720	SC	1944-89,
			T	1945-89

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Little Pine Creek near Kanawha	07336750	75.40	T	1980
Red River near De Kalb	07336820	47,348	SC, T	1968-91
South Sulphur River near Cooper	07342500	527	SC, T, pH, Cl	1959-66, 1968-72,
			SC, T	1973-89
Sulphur River near Talco	07343200	1,365	SC, T, pH, Cl	1966-72,
			SC, T	1973-91
White Oak Creek near Talco	07343500	494	SC, T, pH, Cl	1966-72,
			SC, T	1973-91
Sulphur River near Darden	07344000	2,774	SC, T, pH, Cl	1947-50
Big Cypress Creek near Pittsburg	07344500	366	SC, T, pH, Cl	1968-72,
			SC, T	1973-89
Little Cypress Creek near Jefferson	07346070	675	SC, T, pH, Cl	1968-72,
			SC, T	1973-91
Sabine River near Emory	08017500	888	SC, T, pH, Cl	1952-54
Grand Saline Creek near Grand Saline	08018200	91.40	SC, T, pH, Cl	1968-73
Sabine River near Mineola	08018500	1,357	SC, T, pH, Cl	1968-72,
			SC, T	1973-92
Lake Fork Creek near Quitman	08019000	585	SC, T, pH, Cl	1968-72,
			SC, T	1973-89
Big Sandy Creek near Big Sandy	08019500	231	SC, T, S	1985-86
Sabine River below Toledo Bend near Burkeville	08026000	7,482	SC, T	1969-86,
			C	1969-75
Sabine River near Bon Wier	08028500	8,229	SC, T, C	1969-84
Sabine River near Ruliff	08030500	9,329	SC	1945,
				1947-98
			T	1947-98
			pH, DO	1968-75,
			C	1970-76,
			Cl	1968
Cow Bayou near Mauriceville	08031000	83.30	SC, T, pH, Cl	1952-54,
			SC, T	1954-56
Neches River near Neches	08032000	1,145	SC, T	1974-91
Neches River near Alto	08032500	1,945	SC, T	1950-69
Neches River near Diboll	08033000	2,724	SC, T	1970-81
Neches River near Rockland	08033500	3,636	SC	1941-42,
				1946-47
Angelina River near Lufkin	08037000	1,600	SC, T, pH, Cl	1955-68,
			SC, T	1969-79
Angelina River below Sam Rayburn Dam near Jasper	08039400	3,449	SC, T	1964-79
Village Creek near Kountze	08041500	860	SC, T	1968-70
Pine Island Bayou near Sour Lake	08041700	336	SC, T, pH, Cl	1968-72,
			SC, T	1973-89

WATER RESOURCES DATA—TEXAS, 1999

VOLUME 1

ARKANSAS RIVER BASIN, RED RIVER BASIN, SABINE RIVER BASIN, NECHES RIVER BASIN, AND INTERVENING COASTAL BASINS

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with Federal, State, and City agencies, obtains a large amount of data pertaining to the water resources of Texas each water year. Such 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 U.S. Geological Survey, the data are published annually in six volumes of this report series entitled "Water Resources Data - Texas."

This report series includes records of stage, discharge, and water quality of streams and canals; stage, contents, and water quality of lakes and reservoirs, and water levels and water quality of ground water wells. Volume 1 contains records for water discharge at 71 gaging stations; stage only at 3 gaging stations; stage and contents at 23 lakes and reservoirs; and water quality at 47 gaging stations. Also included are data for 9 partial-record stations comprised of 6 flood-hydrograph and 3 low-flow stations. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating Federal, State, and City agencies in Texas.

This series of annual reports for Texas 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 was changed to its present format, with data on quantities and quality of surface water contained in each of three volumes, and expanding to five volumes beginning with the 1999 water year. Ground-water levels and water quality have been published in a separate volume beginning with the 1991 water year.

Prior to introduction of this series and for several water years concurrent with it, water resources data for Texas 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 7 and 8." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425 Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official U.S. Geological 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 TX-99-1." For archiving and general distribution, the reports for the 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or may be purchased on microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161, (703) 605-6000.

Additional information, including the current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (512) 927-3500.

COOPERATION

Federal agencies that assisted the U.S. Geological Survey in the collection of data in this report in the form of funds or services in water year 1999 are:

- Corps of Engineers, U.S. Army.
- International Boundary and Water Commission United States and Mexico, U.S. Section.
- U.S. Bureau of Reclamation.

Organizations that assisted in the collection of data in this report through joint funding agreements through the Texas Water Development Board or through direct joint funding agreements with the U.S. Geological Survey are:

Texas Water Development Board, G.E. Kretzschmar, Executive Administrator; the cities of Abilene, Arlington, Austin, Corpus Christi, Fort Worth, Gainesville, Garland, Georgetown, Graham, Houston, Lubbock, Nacogdoches, San Angelo, and Wichita Falls; Bexar, Medina, and Atascosa Counties Water Improvement District No. 1; Barton Springs/Edwards Aquifer Authority; Brazos River Authority; Canadian Municipal Water Authority; Coastal Water Authority; Colorado River Municipal Water District; Dallas Public Works Department; Dallas Water Utilities; Fort Bend Subsidence District; Franklin County Water District; Galveston County; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris-Galveston Coastal Subsidence District; Harris County Office of Emergency Management; Harris County Flood Control District; Houston-Galveston Area Council; Lavaca-Navidad River Authority; Lower Colorado River Authority; Lower Neches Valley Authority; North Central Texas Council of Governments; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; North Texas Municipal Water District; Pecos River Commission; Red Bluff Water Power Control District; Red River Authority; Sabine River Authority of Texas; Sabine River Compact Administration; San Antonio City Public Service Board; San Antonio River Authority; San Antonio Water System; San Jacinto River Authority; Somervell County Water District; Tarrant Regional Water District; Texas Soil & Water Conservation Board; Texas State Department of Highways & Public Transportations; Texas Natural Resources Conservation Commission; Titus County Fresh Water Supply District No. 1; Trinity River Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; West Central Texas Municipal Water District; and Wichita County Water Improvement District No. 2.

HYDROLOGIC CONDITIONS

Large variations in precipitation, runoff, and streamflow characterize the usual hydrologic conditions in Texas. In the eastern part of the State, streams typically are deep with wide alluvial flood plains, and streamflow is perennial. In the western part of the State, most streams flow through arroyos, and streamflow usually is ephemeral.

Streamflow across the State averaged normal during water year 1999.

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,481,000 acre-feet, increased from 75 percent at the end of September 1998 to 76 percent at the end of September 1999. Records from these reservoirs indicate that storage decreased in 42, increased in 34, and remained the same in 1.

The area for which water resources data are presented in volume 1 includes the Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, and Intervening Coastal Basins. The area described in volume 1 and the location of selected streamflow and water-quality stations in the area are shown in figure 1.

Streamflow

In the area covered in volume 1, streamflow averaged normal during water year 1999. Streamflow for water year 1999 and for the period of record at four selected stations (fig. 1) for which data are included in volume 1 is presented in table 1.

At the four long-term hydrologic index stations in the State, monthly mean streamflow during water year 1999 averaged normal. Monthly mean discharges for water year 1999 and the median of the long-term monthly means for water years 1961–90 for the four long-term hydrologic index stations in the State are shown in figure 2. Streamflow at the hydrologic index station Neches River near Rockland was above normal during October through February and normal for the remaining 7 months. The station North Bosque River near Clifton had above normal streamflow during November and December, below normal streamflow during May, August, and September and normal streamflow for the remaining 7 months. The station North Concho River near Carlsbad had normal streamflow for each month of water year 1999. Streamflow for the station Guadalupe River near Spring Branch was above normal during October through December, below normal during September and normal for the remaining 8 months.

Conservation storage in 22 selected reservoirs in this area of the State, with a total combined conservation capacity of 14,654,000 acre-feet, increased from 78 percent of capacity at the end of September 1998 to 83 percent of capacity at the end of September 1999. Records from these reservoirs indicate that storage increased in 16, decreased in 5, and remained the same in 1 during the water year.

Water Quality

Dissolved-solids concentrations in most streams in the State are inversely related to streamflow discharges. During years when precipitation and runoff are less than normal, streamflow

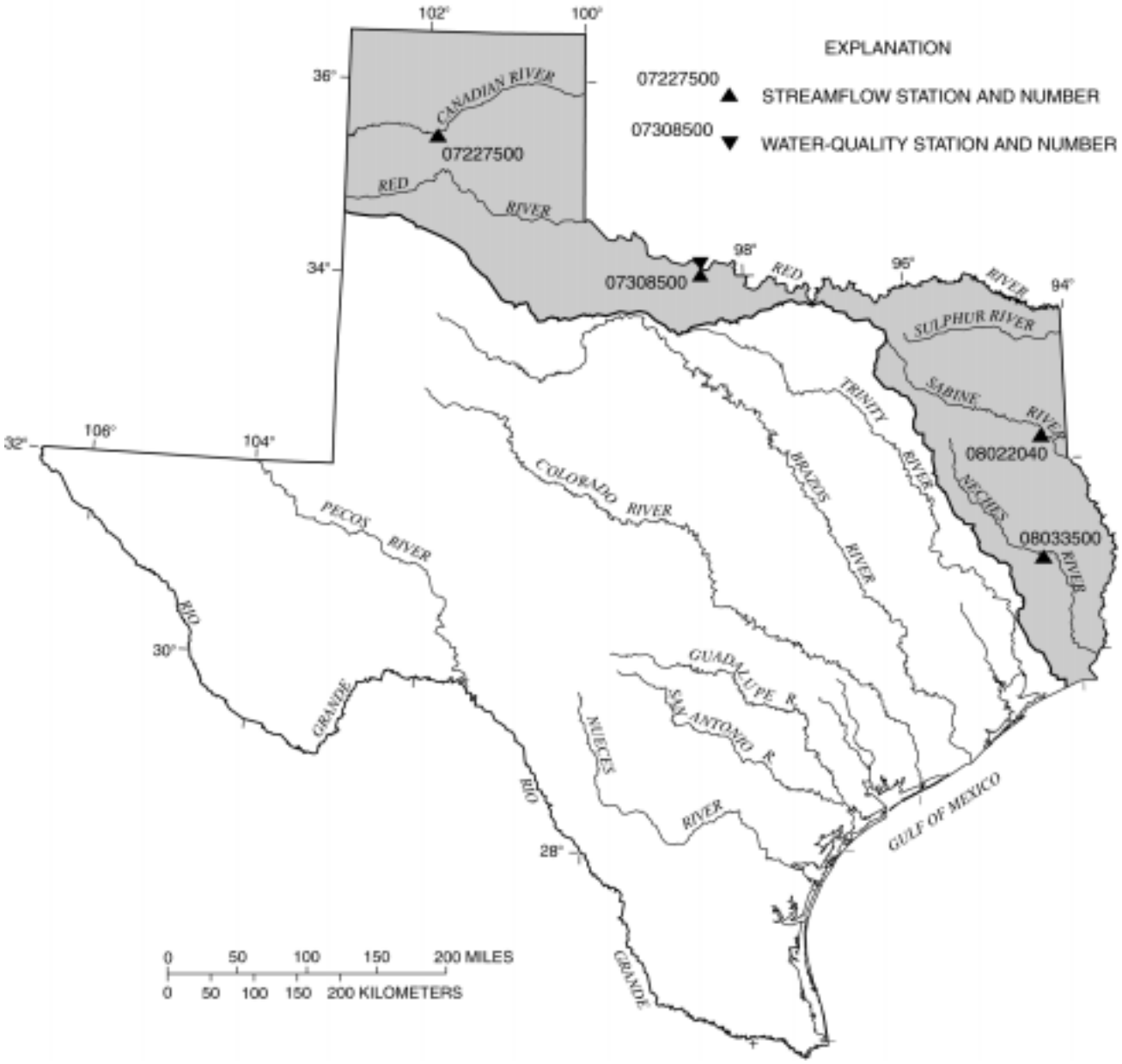
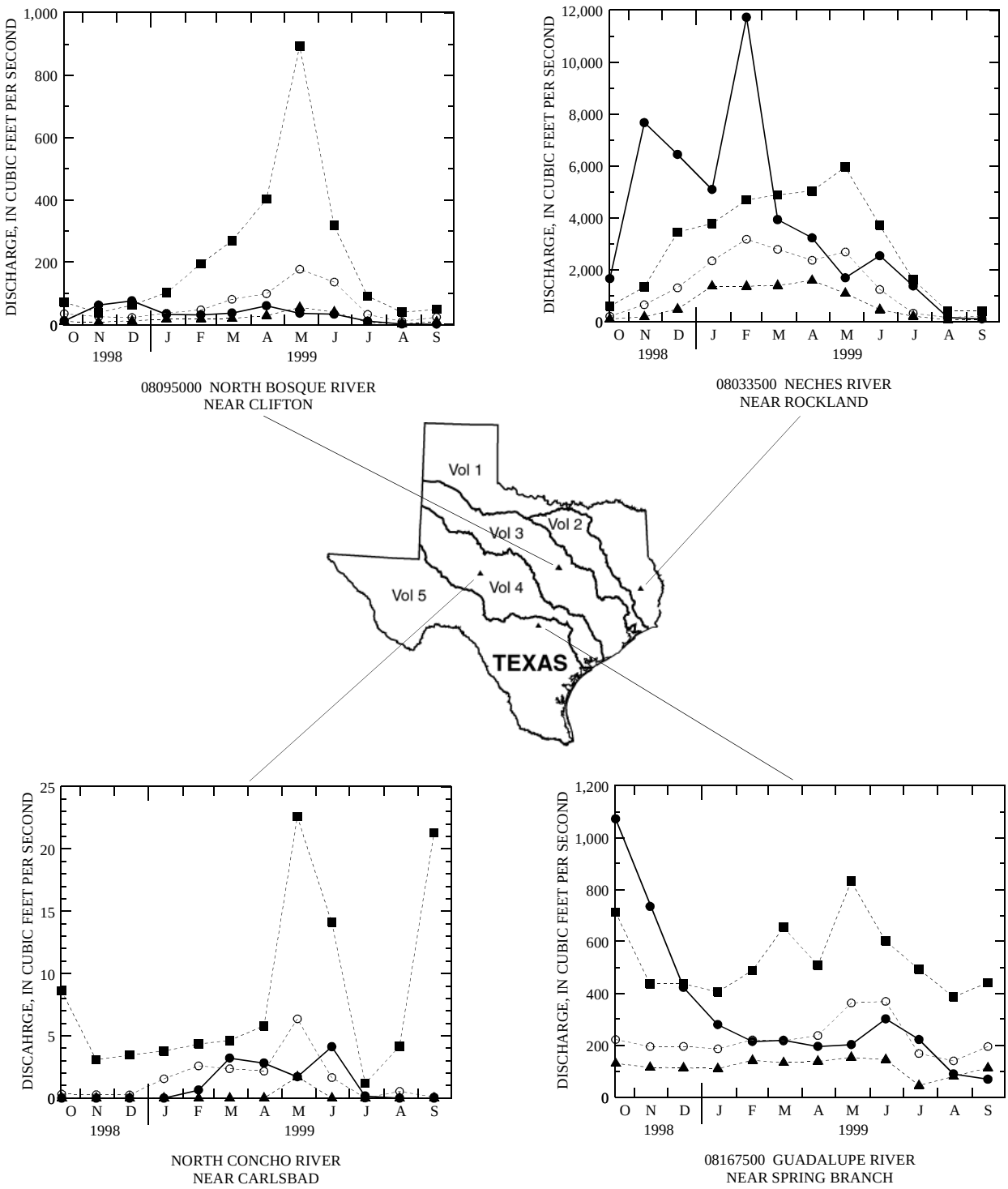


Figure 1. Area of Texas covered by volume 1 (shaded) and location of selected streamflow and water-quality stations in volume 1.



EXPLANATION

MONTHLY MEAN DISCHARGE FOR 1999 WATER YEAR

MEDIAN OF MONTHLY MEAN DISCHARGE FOR 1961–90 WATER YEARS

25 PERCENT QUARTILE

75 PERCENT QUARTILE

Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 1999 water year and median of the monthly mean discharges for 1961–90 water years.

commonly is more mineralized than during years when precipitation and runoff are normal or greater than normal. However, for streams in which discharge is controlled by reservoirs, the dissolved-solids concentrations may remain relatively constant despite substantial fluctuations in precipitation and runoff.

Records of discharge-weighted-average concentrations of dissolved solids for water year 1999 are compared with those for water years 1995–99 for selected long-term daily or continuous-record water-quality stations (fig. 1) in the Red River Basin. Results are shown in table 2.

Table 1. Streamflow at four selected stations

Station no. and name	Discharge during 1999 water year (cubic feet per second)			Discharge during period of record (cubic feet per second)		
	Maximum instantaneous	Minimum daily mean	Mean	Maximum instantaneous	Minimum daily mean	Mean
Arkansas River Basin						
07227500 Canadian River near Amarillo, Tex.	11,800	1.9	322	135,000	0	281 (1939-99)
Red River Basin						
07308500 Red River near Burkburnett, Tex.	19,000	37	1,005	174,000	0	1,276 (1960-99)
Sabine River Basin						
08022040 Sabine River near Beckville, Tex.	14,700	95	3,871	49,400	2.4	2,572 (1961-99)
Neches River Basin						
08033500 Neches River near Rockland, Tex.	27,800	89	3,748	42,300	18	2,386 (1962-99)

1/ Hydrologic index station.

Table 2. Comparison of records of discharge-weighted-average concentrations of dissolved solids for the 1999 and 1995-99 water years

Station no. and name	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	1999	1995-99	1999	1995-99
Red River Basin				
07308500 Red River near Burkburnett, Tex.	1,010	2,410	3,020	2,310

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 40 stations. 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 the constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and remobilization 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 is available through the world wide web at:

http://water.usgs.gov/nasqan/

The National Atmospheric Deposition Program/National Trends Network (NAPD/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of over 200 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO_2 emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO_2 and NOx scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

http://nadp.sws.uiuc.edu

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

Assessment activities are being conducted in 59 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

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. There are currently two NAWQA Programs operating in Texas; the Trinity NAWQA and the South Central Texas NAWQA.

Additional information about the NAWQA Program is available through the world wide web at:

http://water.usgs.gov/nawqa/nawqa_home.html
http://tx.usgs.gov/trin
http://tx.usgs.gov/sctx

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

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

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1999 water year that began October 1, 1998, and ended September 30, 1999. 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, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order Numbering

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

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 08057000, which appears just to the left of the station name, includes the 2-digit Part number "08" plus the 6-digit downstream-order number "057000." The Part number designates the major river basin; for example, Part "08" is the Western Gulf of Mexico basin.

Records of Stage and Water Discharge

Records of stage and streamflow may be complete or partial. Complete records of discharge are those obtained using a stage-recording device through which either instantaneous or daily mean discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated for any time, or period of time. They may be obtained using a stage-recording device, but need not be. Because daily-mean discharges and reservoir contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements 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 "Flood-hydrograph partial records, "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow channel gain and loss studies, may be considered as partial records, but they are presented separately in this report. Instantaneous peak discharges are presented for all but the low-flow partial-record stations.

Data Collection and Computation

The data obtained at a complete record gaging station on a stream or canal consist of records of stage (that is recorded every 15, 30, or 60 minutes), measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relation between stage and discharge. These data, together with supplemental information such as weather records, are used to compute daily mean discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relation between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute lake storage.

Records of stage are obtained with recorders at selected time intervals. Measurements of discharge are made with current meters and indirect procedures using methods adopted by the U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, TWRI, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves then are constructed. From these curves, rating tables indicating the discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves can be extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques. Stage-discharge ratings at gaging stations are described in TWRI, Book 3, Chapter A10.

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

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

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

For some streamflow gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the stage sensor or recorder fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily mean discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

Streamflow data in this report are presented in a format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consists of four parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly-mean flow data for a designated period, by water year; and 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.

Station Manuscript

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

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station

name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

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

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

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years which the revisions apply to. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

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

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

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

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

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error. Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscripts published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the offices whose addresses are given on the back of the title page of this report to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check, because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

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

Data table of daily mean values

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

Statistics of monthly mean data

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

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS ____-____," will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. However, data for partial water years, if any, will only be used in the statistical calculations, if appropriate. For example, 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 column heading. When this occurs, it should be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data is omitted if there is extensive regulation or diversion of flow in the drainage basin.

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

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

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

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

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

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

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

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency 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.)

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period.

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

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

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

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

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

Inches (INCHES) indicates the depth to which the drainage area would be covered if all 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 is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage 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 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.

Identifying Estimated Daily Discharge

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

Accuracy of the Records

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

The accuracy attributed to the records is indicated under “REMARKS.” “Excellent” means that about 95 percent of the daily discharges are within 5 percent of their true values; “good,” within 10 percent; and “fair,” within 15 percent.

Records that do not meet the criteria mentioned are rated “poor.” Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 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 discharges listed for partial-record stations and miscellaneous sites.

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

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables, is on file in the Texas District. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the offices whose addresses are given on the back of the title page of this report.

Records of Surface-Water Quality

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

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications.

A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station where random samples are collected to give better areal coverage to define water-quality conditions in the river basin. A careful distinction needs to be made between "continuing records", as used in this report, and "continuous recordings," which refers to a continuous graph or a series of discrete values obtained by data logger. 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.

Arrangement of Records

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

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Records of surface-water quality at some National Water Quality Accounting (NAWQA) Sites include data collected by different government agencies as identified in the water-quality data tables under AGENCY COLLECTING SAMPLE (CODE NUMBER). Values for this code are given below:

1028 - U.S. Geological Survey
84823 - International Boundary & Water Commission

Procedures for on site measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" which appears at the end of the introductory text. Detailed information on collecting, treating, and shipping samples may be obtained from the Texas Office of the Central Region Office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (NASQAN) (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector. Information on the method used to collect the sample at National Stream Quality Accounting Network sites is given in the water-quality data tables under SAMPLING METHOD. Values for this code are given below:

10 - Equal Width Increment (EWI)
20 - Equal Discharge Increment (EDI)
25 - Timed Sampling Interval
30 - Single Vertical
40 - Multiple Verticals
50 - Point Sample
60 - Weighted Bottle
70 - Grab Sample (DIP)
90 - Discharge Integrated, Centroid
120 - Velocity Integrated
8010 - Other

Detailed information on sampling methods may be found in the following publications: OFR-90-127 "Guidelines for Collection and Analysis of Water-Quality Samples from Streams in Texas", OFR-94-455 "Field Guide for Collecting and Processing Stream-Water Samples for the National Water-Quality Assessment Program", and OFR-94-539 "U.S. Geological Survey protocol for the collection and processing of surface-water samples for the subsequent determination of inorganic constituents in filtered water". Specific questions pertaining to water-quality sample collection may be directed to the District

Water-Quality Specialist in Austin, Texas, or the Regional Water-Quality Specialist in Denver, Colorado.

Additional information about the NASQAN program is available through the world wide web at:

http://water.usgs.gov/public/nasqan/

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.

For chemical-quality stations equipped with water-quality monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly readings beginning at 0100 hours and ending at 2400 hours for the day of record.

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 Texas 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 sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge-weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily 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 were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the U.S. Geological Survey laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the U.S. Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Historical and current (1999) dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then those concentrations are reported in nanograms per liter. If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter and could reflect contamination introduced during some phase of the procedure.

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, radio-chemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of “daily values” of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

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

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

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

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. These 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 U.S. Geological Survey by a cooperating organization are identified here.

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

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

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

Remarks Codes

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

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).
&	Biological organism estimated as dominant.
V	Analyte was detected in both the environmental sample and the associated blanks.

Dissolved Trace-Element Concentrations

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

Change in National Trends Network Procedures

NOTE: Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (303-491-5643).

WATER QUALITY-CONTROL DATA

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 are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

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

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

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

Equipment blank - a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to 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 sample preservatives used for an environmental sample.

Reference Samples

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

Replicate Samples

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

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

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

Spike Samples

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

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with necessary telemetry and historic daily-mean and peak-flow discharge

data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

http://tx.usgs.gov

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

DEFINITION OF TERMS

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

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 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 325,851 gallons or 1,233 cubic meters.

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

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

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.

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

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

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

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

Fecal streptococcal bacteria are bacteria found in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria 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 ± 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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

Benthic organisms (invertebrates) are the group of animals inhabiting the bottom of an aquatic invironment. 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 the mass per unit area or volume of habitat.

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

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

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

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

Bottom material: See "Bed material".

Cells/volume refers to the number of plankton cells or natural units counted using a microscope and grid or counting cell. Results are generally reported as cells or units per milliliter.

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.

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

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

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

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

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

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic foot per second per 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, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,447 cubic meters.

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

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

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

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

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

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to reflect the change.

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

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

Extractable organic halides (EOX) are organic compounds which contain halogen atoms such as chlorine. These organic compounds are semi-volatile and extractable by ethyl acetate from air-dried stream bottom sediments. 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 th stream bottom sediments.

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

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

Supplementary gage is a gage used to obtain additional data. A supplementary gage may be used in place of the principal gage if the latter is isolated or cut

off from the channel, or registers only above (or below) a certain gage height. One or more supplementary gages may be used on bypass channels or overflow channels, or on streams that flow in several channels, each of which is rated independently.

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

High tide is the maximum height reached by each rising tide.

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

Low tide is the minimum height reached by each falling tide.

Mean high tide is the average of all high tides over a specified period.

Mean low tide is the average of all low tides over a specified period.

Mean water level is the average of all tides over a specified period.

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.

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

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

Microsiemens per centimeter (µS/cm, US/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 solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

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.

Organism is any living entity.

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

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

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

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

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

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

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

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

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

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

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

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

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

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL of sample).

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

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

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

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

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

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.

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 by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/(m^2/time)] for periphyton and macrophytes and [mg C/(m^3/time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg 0/(m^2/time)] for periphyton and macrophytes and [mg 0/(m^3/time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To

achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

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

Sea level was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports and refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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

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

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

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

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

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

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

Suspended-sediment load is a general term that refers to material in suspension. 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 discharge or concentration.

Suspended total residue at 105 ºC concentration is the concentration of suspended sediment in the sampled zone expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). A small aliquot of the sample is used for the analysis.

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

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. 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 total-sediment discharge.

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

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 ºC. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 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.

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

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

Substrate is the physical surface upon which an organism lives.

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

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with

clean streamside rocks) and multiplate samplers (made of hard-board) for benthic organism collection, and plexiglass strips for periphyton collection.

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

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

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

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

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

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

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

Synoptic Studies 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.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchal 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

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

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

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

Tons per day (T/DAY) is the rate representing a mass of 1 ton of a constituent in streamflow passing a cross section in 1 day. It is equivalent to 2,000 poinds per day, or 0.9072 metric tons per day.

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

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

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

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

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 man-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 toxid and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1990, is called the "1990 water year."

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

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

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

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

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, Chapter D1. 1975. 65 pages.

1-D2. ***Guidelines for collection and field analysis of ground-water samples for selected unstable constituents***, by W.W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

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, Chapter D1. 1974. 116 pages.

2-D2. ***Application of seismic-refraction techniques to hydrologic studies***, by F.P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.

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 11.0

2-E2. ***Borehole geophysics applied to ground-water investigations***, by W.S. Scott Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.

Section F. Drilling and Sampling Methods

2-F1. ***Application of drilling, coring, and sampling techniques to test holes and wells***, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.

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, Chapter A1. 1967. 30 pages.

3-A2. ***Measurement of peak discharge by the slope-area method***, by Tate Dalrymple and M.A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. ***Measurement of peak discharge at culverts by indirect methods***, by G.L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. ***Measurement of peak discharge at width contractions by indirect methods***, by H.F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. ***Measurement of peak discharge at dams by indirect methods***, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. ***General procedure for gaging streams***, by R.W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. ***Stage measurements at gaging stations***, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. ***Discharge measurements at gaging stations***, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. ***Measurement of time of travel in streams by dye tracing***, by F.A. Kilpatrick, and J.F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. ***Discharge ratings at gaging stations***, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. ***Measurement of discharge by moving-boat method***, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-A12. ***Fluorometric procedures for dye tracing***, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS--TWRI Book 3, Chapter A12, 1986. 41 pages.

3-A13. ***Computations of continuous records of streamflow***, by E.J. Kennedy: USGS-- TWRI Book 3, Chapter A13, 1983. 53 pages.

3-A14. ***Use of flumes in measuring discharge***, by F.A. Kilpatrick and V.R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. ***Computation of water-surface profiles in open channels***, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

3-A16. ***Measurement of discharge using tracers***, by F.A. Kilpatrick and E.D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.

3-A17. ***Acoustic velocity meter systems***, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.

3-A18. ***Determination of stream reaeration coefficients by use of tracers***, by F.A. Kilpatrick, R.E. Rathbun, N. Yotsukura, G.W. Parker, and L.L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.

3-A19. ***Levels of streamflow gaging stations***, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 27 pages.

3-A20. ***Simulation of soluble waste transport and buildup in surface waters using tracers***, by F.A. Kilpatrick: USGS --TWRI Book 3, Chapter A20. 1993. 38 pages.

3-A21. ***Stream-gaging cableways***, by C. Russell Wagner: USGS--TWRI Book 3, Chapter A21. 1995. 56 pages.

Section B. Ground-Water Techniques

3-B1. ***Aquifer-test design, observation, and data analysis***, by R.W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. ***Introduction to ground-water hydraulics, a programmed text for self instruction***, by G.D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. ***Type curves for selected problems of flow to wells in confined aquifers***, by J.E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

3-B4. ***Regression modeling of ground-water flow***, by Richard L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.

3-B4. ***Supplement 1. Regression modeling of ground-water flow-Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems***, by R.L. Cooley. USGS--TWRI Book 3, Chapter B4. 1993. 8 pages.

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

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

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, Chapter B7. 1992. 190 pages.

Section C. Sedimentation and Erosion Techniques

3-C1. ***Fluvial sediment concepts***, by H.P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. ***Field methods for measurement of fluvial sediment***, by H.P. Guy and V.W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. ***Computation of fluvial-sediment discharge***, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

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, Chapter A1. 1968. 39 pages.

4-A2. ***Frequency curves***, by H.C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

Section B. Surface Water

4-B1. ***Low-flow investigations***, by H.C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. ***Storage analyses for water supply***, by H.C. Riggs and C.H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. ***Regional analyses of streamflow characteristics***, by H.C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

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,Chapter D1. 1970. 17 pages.

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: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.

5-A2. ***Determination of minor elements in water by emission spectroscopy***, by P.R. Barnett and E.C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

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

5-A4. ***Methods for collection and analysis of aquatic biological and microbiological samples***, by L.J. Britton and P.E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.

5-A5. ***Methods for determination of radioactive substances in water and fluvial sediments***, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. ***Quality assurance practices for the chemical and biological analyses of water and fluvial sediments***, by L.C. Friedman and D.E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

Section A. Sediment Analysis

5-C1. ***Laboratory theory and methods for sediment analysis***, by H.P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

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, Chapter A1. 1988. 586 pages.

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

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

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

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

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. 1995. 125 pages.

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 pages.C. Trescott, G.F. Pinder, and S.P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

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

7-C3. ***A model for simulation of flow in singular and interconnected channels***, by R.W. Schaffrannek, R.A. Baltzer, and D.E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1983. 110 pages.

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, Chapter A1. 1968. 23 pages.

8-A2. ***Installation and service manual for U.S. Geological Survey manometers***, by J.D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

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, Chapter B2. 1968. 15 pages.

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, Chapter A1. 1998. 47 pages.

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, Chapter A2. 1998. 94 pages.

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, Chapter A3. 1998. 75 pages.

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, Chapter A5. 1999. 149 pages.

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, Chapter 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, Chapter A7. 1997. 49 pages.

9-A7. ***National Field Manual for the Collection of Water-Quality Data: Five-Day Biochemical Oxygen Demand,*** by G.C. Delzer and S.W. McKenzie: USGS-TWRI Book 9, Chapter A7.2. 1999. 28 pages.

9-A8. ***National Field Manual for the Collection of Water-Quality Data: Bottom Material Samples***, by D.B. Radtke: USGS--TWRI Book 9, Chapter A8. 1998. 48 pages.

9-A9. ***National Field Manual for the Collection of Water-Quality Data: Saafety in Field Activities***, by S.L. Lane and R.G. Fay: USGS--TWRI Book 9, Chapter A9. 1998. 60 pages.

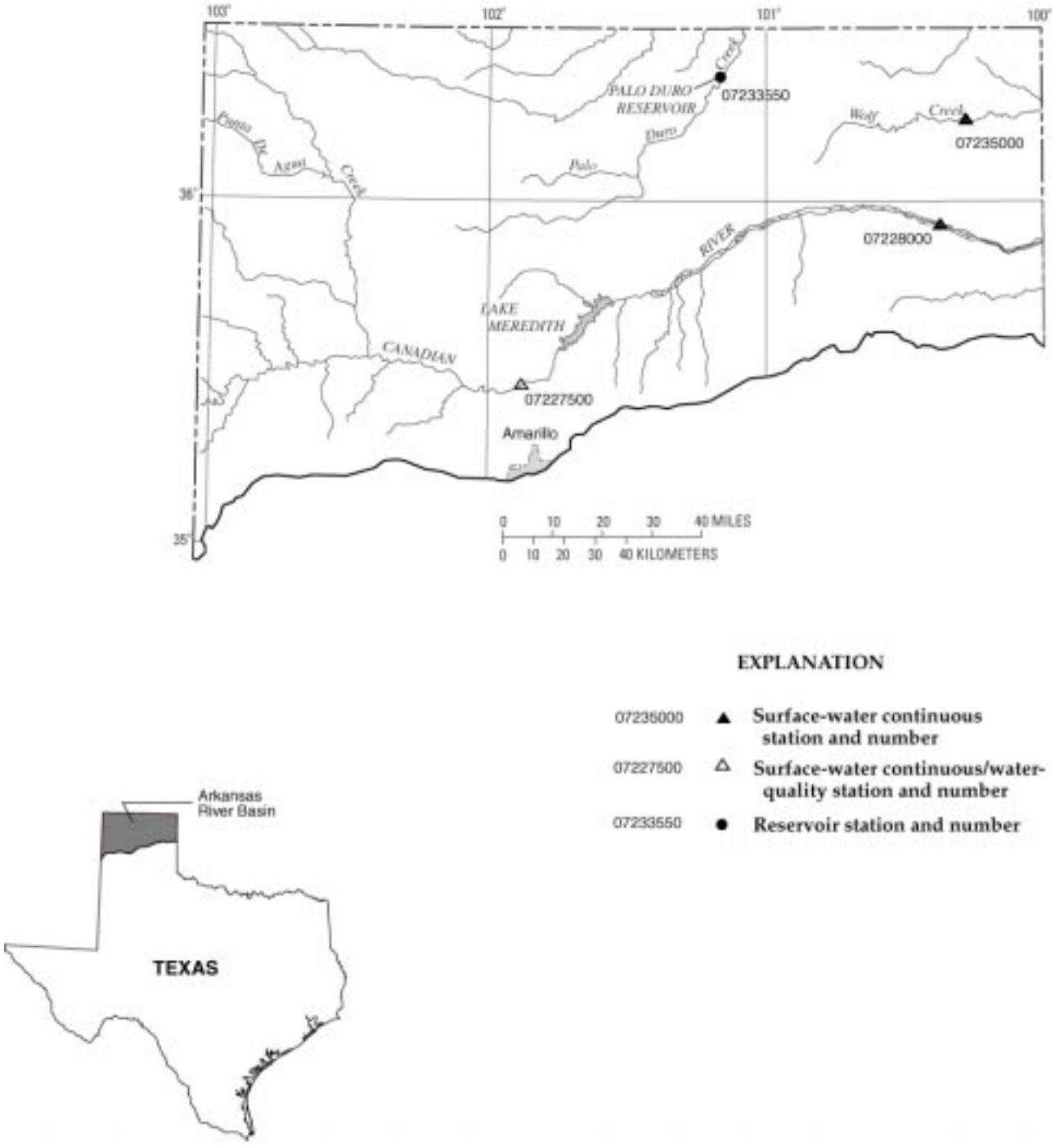


Figure 3.--Map showing location of gaging stations in the Arkansas River Basin

07227500 CANADIAN RIVER NEAR AMARILLO, TX

LOCATION.--Lat 35°28'13", long 101°52'45", Potter County, Hydrologic Unit 11090105, on left bank at downstream side of southbound lane of bridge on U.S. Highways 87 and 287, 1,500 ft downstream from Pitcher Creek, 1.4 mi downstream from East Amarillo Creek, 1.7 mi downstream from Panhandle and Santa Fe Railway Co. bridge, 19 mi north of Amarillo, and 537.7 mi upstream from mouth.

DRAINAGE AREA.--19,445 mi^2, of which 4,069 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan 1924 to Dec 1925 (period no longer used in computation of average annual discharge), Jan 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,989.16 ft above sea level. Jan 16, 1924, to Dec 31, 1925, and Apr 3 to Jun 1, 1938, nonrecording gage at site of old bridge 20 ft upstream at same datum. Jun 2 to Dec 5, 1938, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage, at least 10% of contributing drainage area has been regulated by Conchas and Ute Reservoirs in New Mexico, total capacity 439,000 acre-feet. Conchas and Bell Ranch Canals divert water from Conchas Reservoir upstream for irrigation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of 24 ft; a higher stage probably occurred during a flood in Oct 1904, but stage is unknown; information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	2640	49	39	96	3.2	41	880	1690	304	8.2	181
2	463	951	47	37	161	2.6	29	2160	1850	219	6.3	156
3	704	352	51	34	185	2.4	27	1680	2480	146	6.5	143
4	341	244	56	31	216	2.0	25	811	1540	148	31	132
5	231	217	47	32	207	1.9	50	399	1180	100	441	123
6	236	157	44	31	179	1.9	57	282	1120	87	328	113
7	128	137	43	29	137	1.9	32	236	1280	78	286	100
8	79	108	43	29	109	6.0	23	199	361	98	271	92
9	62	94	38	26	92	5.5	18	165	499	102	1870	92
10	47	80	35	27	81	5.0	14	129	264	463	2750	83
11	34	70	34	26	74	4.1	12	102	259	234	2300	76
12	32	67	34	29	66	23	12	1000	259	161	2420	69
13	27	64	33	28	65	30	570	1420	259	123	1780	68
14	21	61	32	25	64	31	1390	1500	210	87	3000	66
15	18	55	32	22	50	18	394	1740	162	71	3000	581
16	26	51	33	21	47	10	269	1460	269	67	1970	246
17	29	48	31	20	48	6.1	213	1430	402	631	1640	e210
18	15	46	31	18	48	27	133	1520	353	153	776	e1400
19	13	51	30	19	44	190	120	1880	344	73	439	e1090
20	14	53	29	19	35	200	101	1690	268	63	349	e439
21	14	55	23	18	26	186	92	1300	251	73	299	e280
22	15	53	42	18	18	80	78	1090	493	72	269	223
23	15	50	35	17	16	68	70	964	261	63	238	188
24	18	52	32	19	13	e79	70	755	247	53	219	155
25	18	51	28	18	12	e89	79	988	256	43	583	121
26	15	47	27	18	9.4	e84	71	1690	452	35	514	95
27	22	49	28	18	5.7	e77	62	4100	463	34	386	81
28	372	49	29	20	3.6	e69	56	1240	698	32	309	76
29	142	50	39	25	---	e66	185	890	601	18	269	70
30	780	55	44	44	---	e60	156	1060	370	12	239	65
31	4560	---	39	59	---	e53	---	1060	---	8.8	208	---
TOTAL	8601	6057	1138	816	2107.7	1482.6	4449	35820	19141	3851.8	27205.0	6814
MEAN	277	202	36.7	26.3	75.3	47.8	148	1155	638	124	878	227
MAX	4560	2640	56	59	216	200	1390	4100	2480	631	3000	1400
MIN	13	46	23	17	3.6	1.9	12	102	162	8.8	6.3	65
AC-FT	17060	12010	2260	1620	4180	2940	8820	71050	37970	7640	53960	13520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1999, BY WATER YEAR (WY)

MEAN	311	79.9	50.9	56.4	46.0	43.3	179	445	512	569	535	527
MAX	5663	812	458	519	259	403	5988	6804	5288	4880	3007	8016
(WY)	1942	1942	1942	1943	1980	1961	1942	1941	1941	1941	1981	1941
MIN	.57	1.52	1.25	4.75	3.00	1.86	1.51	4.60	.95	.24	.11	.034
(WY)	1981	1978	1984	1978	1939	1940	1978	1945	1990	1998	1983	1983

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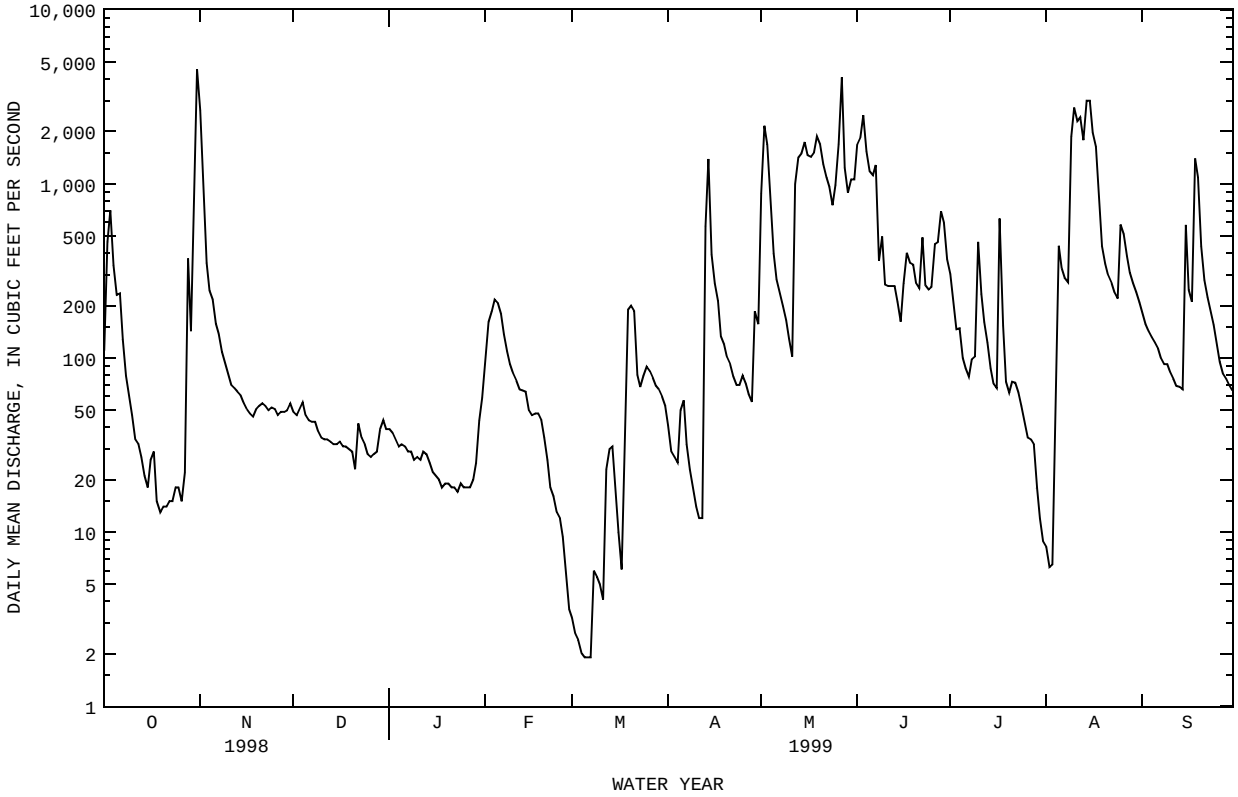
SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1939 - 1999	
ANNUAL TOTAL	28327.08		117483.1			
ANNUAL MEAN	77.6		322		281	
HIGHEST ANNUAL MEAN					2351	1941
LOWEST ANNUAL MEAN					37.7	1984
HIGHEST DAILY MEAN	4560	Oct 31	4560	Oct 31	79600	Sep 23 1941
LOWEST DAILY MEAN	.00	Jun 20	1.9	Mar 5	.00	Aug 7 1940
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 20	2.3	Mar 1	.00	Sep 3 1983
INSTANTANEOUS PEAK FLOW			11800	May 27	135000	Jul 25 1941
INSTANTANEOUS PEAK STAGE			6.64	May 27	15.70	Jul 25 1941
INSTANTANEOUS LOW FLOW					.00	Oct 1 1977
ANNUAL RUNOFF (AC-FT)	56190		233000		203400	
10 PERCENT EXCEEDS	131		1070		475	
50 PERCENT EXCEEDS	32		74		27	
90 PERCENT EXCEEDS	.00		18		4.0	

e Estimated



07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jul 1948 to Oct 1949, Feb 1950 to Sep 1997, Oct 1998 to Sep 1999.
BIOCHEMICAL DATA: Mar 1968 to Sep 1997.
PESTICIDE DATA: Mar 1968 to Jun 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1950 to current year.
WATER TEMPERATURE: Aug 1949 to current year.
SUSPENDED SEDIMENT DISCHARGE: Aug 1949 to Sep 1952.

INSTRUMENTATION.--Water-quality monitor since Oct 1995.

REMARKS.---Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1990 to 1999. The standard error of estimate for dissolved solids is 5%, chloride is 38%, sulfate is 22% and for hardness is 38%. 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 daily, 9,180 microsiemens, Jun 8, 1990; minimum daily, 346 microsiemens, Oct 29,1964.
WATER TEMPERATURE: Maximum daily, 39.0°C Jul 7, 1973; minimum, -0.5°C, on Jan 9-11, and 23, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 5,390 microsiemens, Jan 17; minimum, 440 microsiemens, Apr 14.
WATER TEMPERATURE: Maximum, 36.5°C, Aug 1; minimum, -.5°C, Jan 9-11, 23.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JAN											
06...	1045	30	4750	8.5	.5	14.5	100	610	400	140	62
FEB											
10...	1025	83	2960	8.5	9.0	12.0	104	400	210	93	40
APR											
14...	1045	328	818	8.6	10.5	10.2	91	63	--	15	6.4
MAY											
26...	1323	1340	346	8.1	19.5	7.7	93	79	--	18	8.1
JUN											
30...	1015	380	1180	8.4	23.5	7.4	99	260	100	55	31
AUG											
19...	1100	430	1130	8.4	23.0	7.4	97	280	110	56	33

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
JAN										
06...	747	13	6.4	220	530	1100	.61	13	2760	--
FEB										
10...	506	11	4.9	190	350	610	.59	9.9	1730	--
APR										
14...	143	8	2.2	95	84	140	.35	7.8	457	.582
MAY										
26...	56	3	3.2	96	58	33	.41	6.7	244	.501
JUN										
30...	154	4	5.7	160	280	120	.62	7.2	751	.057
AUG										
19...	143	4	5.9	160	290	88	.55	7.7	726	--

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
JAN 06...	<.010	.329	.035	.13	.16	--	--	<.050	<.010	--
FEB 10...	--	--	--	--	--	.45	.264	--	--	--
APR 14...	.012	.594	.024	.36	.38	--	--	<.050	.024	.07
MAY 26...	.019	.520	<.020	--	.44	--	--	.072	.051	.16
JUN 30...	.010	.067	.022	.28	.30	--	--	<.050	.017	.05
AUG 19...	<.010	<.050	<.020	--	.21	--	--	<.050	.014	.04

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	377.8	22030	14940	15240	6900	7040	2400	2480	2900
NOV.	1998	341.5	19780	13370	12330	6000	5560	2300	2140	2700
DEC.	1998	358	19880	13440	13000	6100	5870	2300	2250	2700
JAN.	1999	388	18830	12710	13320	5700	5950	2300	2370	2700
FEB.	1999	399	19800	13390	14420	6000	6510	2300	2500	2700
MAR.	1999	458	19910	13470	16650	6100	7520	2300	2880	2700
APR.	1999	689	13930	9390	17470	4100	7670	1700	3230	2000
MAY	1999	5366	2640	1760	25500	710	10340	380	5570	450
JUNE	1999	2487	5180	3440	23120	1400	9100	790	5320	930
JULY	1999	555	16480	11100	16630	4800	7240	2100	3140	2500
AUG.	1999	418	21140	14320	16160	6600	7400	2400	2690	2800
SEPT	1999	373	22670	15390	15500	7200	7200	2500	2480	2900
TOTAL		12210.3	**	**	199300	**	87400	**	37040	**
WTD.AVG.		33	8970	6050	**	2700	**	1100	**	1300

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2640	874	1380	956	484	670	3960	3650	3810	---	---	e5400
2	1700	489	809	777	618	675	3910	3690	3820	---	---	e5270
3	1840	1100	1450	799	644	710	3820	3620	3750	---	---	e5430
4	1130	1040	1100	955	799	876	3810	3000	3540	---	---	e5290
5	1070	997	1030	1180	955	1060	3930	3720	3810	---	---	e4790
6	1140	997	1050	1450	1180	1300	3850	3770	3810	---	---	e4900
7	1270	1140	1210	1750	1450	1600	3810	3730	3780	5300	5030	5170
8	1350	1210	1270	2110	1750	1920	3870	3670	3760	5260	5040	5160
9	1550	1350	1430	2390	2110	2280	4130	3820	3980	---	---	e5170
10	1860	1550	1700	2610	2380	2520	4150	4030	4090	---	---	e5130
11	2180	1860	2020	3070	2610	2850	4190	3920	4060	5140	5000	5070
12	2500	2150	2310	3080	2930	3000	4150	3880	3990	5110	4980	5030
13	2890	2500	2680	3300	3020	3160	4080	3860	3960	5140	4890	4980
14	3280	2890	3090	3480	3220	3350	4160	3840	3990	5200	4970	5070
15	3550	3260	3400	3640	3340	3480	4160	3810	4000	5350	5130	5210
16	3840	2250	3490	3840	3460	3650	4040	3820	3940	5380	5310	5350
17	3020	2090	2550	3980	3700	3840	4170	3830	3980	5390	5300	5360
18	3940	3020	3560	4080	3770	3910	4270	3930	4070	---	---	e5280
19	4160	3890	4000	3770	3660	3720	4060	3870	3960	5260	4930	5060
20	4030	3820	3910	3680	3530	3600	---	---	e3930	5100	4960	5040
21	4130	3840	3960	3720	3500	3590	---	---	e3540	5260	5070	5150
22	3910	3540	3650	4010	3630	3820	---	---	e4220	5270	5100	5190
23	3660	3580	3620	3980	3820	3890	---	---	e4520	5250	5190	5220
24	3760	2880	3470	3900	3640	3800	---	---	e4230	5240	4820	4920
25	3690	2950	3420	3870	3560	3710	---	---	e4180	5060	4950	5000
26	3970	3690	3860	3950	3620	3790	---	---	e4420	5160	4980	5050
27	4070	3030	3860	3710	3530	3600	---	---	e4520	5140	5040	5090
28	3120	866	1490	3840	3520	3650	---	---	e4340	5110	4800	4970
29	1350	1050	1240	3890	3810	3850	---	---	e3840	4850	3890	4230
30	1880	570	1350	3840	3300	3630	---	---	e3680	4190	3990	4120
31	797	498	615	---	---	---	---	---	e4260	4190	3750	3990
MONTH	4160	489	2390	4080	484	2850	---	---	3990	---	---	5040

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3790	3510	3680	4890	4850	4870	---	---	e3980	2530	664	1440
2	3860	2090	3180	4980	4840	4930	---	---	e4060	1970	665	1140
3	2720	1540	1930	5030	4920	4970	---	---	e4070	1460	940	1080
4	3720	1820	2470	5060	4950	5010	---	---	e4000	940	862	898
5	4120	3360	3690	---	---	e5030	---	---	e3480	1090	866	970
6	3360	2470	2820	---	---	e5010	---	---	e2530	1280	1090	1180
7	2500	2170	2270	---	---	e5030	---	---	e3330	1500	1280	1390
8	2530	2300	2400	---	---	e5060	---	---	e4960	1720	1500	1610
9	3090	2530	2790	---	---	e5060	---	---	e4970	2020	1720	1860
10	---	---	e2990	---	---	e5040	---	---	e4920	2190	1890	2050
11	---	---	e3120	---	---	e5030	---	---	e5070	2530	2180	2370
12	---	---	e3350	---	---	e4840	---	---	e4970	3500	1430	2160
13	---	---	e3500	---	---	e4740	---	---	e3010	1430	1190	1290
14	---	---	e3670	---	---	e4530	1430	440	773	1240	1170	1200
15	---	---	e3760	---	---	e4380	962	557	762	1200	1170	1180
16	---	---	e3770	---	---	e4160	3320	962	2300	1180	1150	1160
17	---	---	e3880	---	---	e4060	3030	1780	2410	1150	1100	1130
18	---	---	e3980	---	---	e2980	1780	1620	1660	1120	1090	1100
19	4040	3970	4010	---	---	e2480	1700	1610	1650	1120	1090	1110
20	4170	4010	4070	---	---	e2390	1960	1700	1830	1160	1120	1140
21	4270	4110	4190	---	---	e2490	2380	1960	2120	1190	1140	1160
22	4480	4270	4350	---	---	e3920	2580	2380	2500	1230	1180	1200
23	4620	4370	4470	---	---	e4090	2730	2550	2630	1240	1210	1220
24	4690	4620	4660	---	---	e4690	2900	2730	2800	1260	1230	1250
25	4720	4650	4680	---	---	e4560	3160	2510	2860	1280	570	1170
26	4780	4610	4690	---	---	e3020	3200	3050	3150	1110	600	806
27	4880	4750	4800	---	---	e3110	3420	3130	3220	1030	480	700
28	4890	4830	4860	---	---	e3090	3610	3190	3480	1080	876	979
29	---	---	---	---	---	e3340	3280	1480	2480	1090	1030	1050
30	---	---	---	---	---	e3810	2770	1670	2150	1150	1090	1130
31	---	---	---	---	---	e3910	---	---	---	1200	1150	1170
MONTH	---	---	3640	---	---	4180	---	---	3070	3500	480	1270

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1210	1050	1180	1430	1340	1380	3120	2730	2910	2290	1830	2020
2	1170	1130	1150	1700	1420	1550	3560	2900	3130	2310	2020	2150
3	1160	585	879	2000	1700	1860	3870	2130	3150	---	---	e2390
4	1080	994	1050	2220	1950	2020	2710	1000	2120	---	---	e2710
5	1150	1080	1130	4130	2220	3140	1990	520	876	---	---	e2850
6	1230	1120	1170	4140	3060	3610	2430	761	1160	---	---	e3000
7	1230	1130	1200	3060	2840	2920	2960	1940	2550	---	---	e3380
8	1360	1230	1300	3710	2930	3180	1940	1670	1740	---	---	e3430
9	1400	1340	1370	3810	711	3350	2130	1100	1400	---	---	e3560
10	1740	1400	1620	3470	752	1430	---	---	e1110	---	---	e3650
11	1720	1560	1650	2420	835	1680	1100	971	1040	---	---	e3740
12	2280	1720	2100	2090	1550	1760	1010	838	951	---	---	e3870
13	2440	2130	2320	2960	2090	2630	1010	946	988	---	---	e3960
14	2270	2080	2140	3690	2850	3300	1040	985	1020	---	---	e3930
15	3020	2130	2750	3630	3340	3450	1050	966	1030	---	---	e2400
16	4260	2950	3280	3340	844	2880	1060	941	1030	---	---	e1570
17	4390	1960	2950	2750	1020	1350	1090	1010	1060	---	---	e1890
18	---	---	e1760	1040	1010	1020	1140	1050	1100	---	---	e1290
19	---	---	e1640	---	---	e1100	1160	1100	1130	---	---	e1040
20	---	---	e1600	---	---	e1440	1250	1150	1200	---	---	e1080
21	---	---	e1590	---	---	e1840	1400	1240	1310	---	---	e1160
22	---	---	e1340	---	---	e2150	1620	1400	1510	1840	1220	1570
23	---	---	e1510	---	---	e2360	---	---	e1740	1720	1460	1530
24	---	---	e1500	---	---	e2530	1970	1810	1910	1650	1460	1540
25	---	---	e1870	---	---	e2630	2580	1880	2200	2020	1650	1840
26	---	---	e1890	---	---	e2790	2120	1370	1690	2340	874	2020
27	---	---	e1320	---	---	e2780	1370	1240	1280	1950	874	1150
28	---	---	e1180	---	---	e2940	1280	1230	1260	2530	1600	2130
29	---	---	e1060	3040	2940	2990	1350	1270	1310	3010	2510	2800
30	---	---	e1270	3080	2950	3000	1580	1350	1450	3430	3010	3160
31	---	---	---	3090	2840	3000	1830	1580	1710	---	---	---
MONTH	---	---	1630	---	---	2390	---	---	1550	---	---	2430

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	10.5	8.7	9.3	14.7	6.8	10.4	---	---	---
2	21.4	13.8	16.4	12.0	8.6	9.8	13.8	9.1	11.1	---	---	---
3	22.2	16.5	19.1	12.7	9.2	10.6	13.6	9.5	10.8	---	---	---
4	21.0	17.1	18.9	10.1	8.0	9.2	14.2	7.1	10.3	---	---	---
5	18.0	12.4	14.4	9.0	7.0	8.0	14.7	7.2	10.5	---	---	---
6	18.1	9.8	13.5	8.0	6.9	7.4	10.1	5.4	8.2	---	---	---
7	19.8	10.5	14.9	12.8	7.7	9.7	5.5	3.2	4.7	5.0	.3	2.1
8	19.8	11.9	15.6	12.2	6.6	9.4	8.1	.3	3.7	4.5	-.3	1.6
9	21.6	11.9	16.3	13.8	8.5	10.7	8.4	.3	4.1	5.1	-.5	1.5
10	21.5	13.1	16.9	11.0	5.6	8.1	6.3	2.3	4.3	7.3	-.5	2.3
11	20.3	13.0	16.0	11.7	4.0	7.8	8.4	.8	4.1	9.6	-.5	3.8
12	22.1	10.4	15.8	10.7	7.8	9.1	8.1	-.2	3.5	7.0	1.6	4.0
13	24.8	14.6	19.0	13.6	5.7	9.4	9.2	.4	4.3	9.6	.0	4.2
14	22.8	15.1	18.3	14.3	7.0	10.4	9.5	.4	4.5	10.6	2.8	5.8
15	22.2	14.7	17.9	14.6	6.9	10.5	9.7	.8	4.8	11.3	.8	5.5
16	22.7	16.0	18.5	15.0	7.7	10.9	9.0	1.1	4.7	11.9	2.9	6.8
17	19.9	12.3	15.6	14.9	6.6	10.6	9.5	.7	4.7	11.5	3.0	6.8
18	21.2	8.7	14.1	14.2	7.9	10.7	11.9	4.1	6.9	10.9	.7	5.3
19	20.7	9.6	14.1	9.6	6.3	8.1	5.3	1.6	3.0	13.9	3.7	8.0
20	14.4	12.2	13.1	10.3	3.7	6.8	9.0	1.0	3.8	12.7	4.3	8.1
21	20.3	9.7	14.1	11.8	3.9	7.6	2.5	-.4	.0	13.2	5.3	8.7
22	20.4	12.2	15.0	14.0	5.1	9.1	-.1	-.4	-.4	6.8	2.6	4.4
23	15.9	10.9	13.1	13.6	6.3	9.5	.0	-.4	-.3	10.3	-.5	4.2
24	20.5	10.7	14.7	13.4	4.7	8.9	1.7	-.4	.3	10.9	2.1	6.1
25	20.9	11.8	16.0	13.3	6.2	9.3	1.0	-.4	.1	7.3	2.8	4.6
26	21.3	13.9	16.8	13.8	5.3	9.1	1.1	-.4	.1	11.3	1.0	5.3
27	18.3	15.1	16.6	14.2	5.9	9.6	3.1	-.4	.5	9.2	1.6	4.9
28	16.2	11.9	13.9	13.8	7.0	10.4	5.2	-.4	1.1	5.1	.8	2.1
29	17.6	9.5	13.3	11.6	10.0	11.0	---	---	---	.9	-.4	-.2
30	13.0	11.6	12.3	14.4	7.1	10.4	---	---	---	.3	-.4	-.1
31	12.6	10.5	11.8	---	---	---	---	---	---	7.8	.2	3.2
MONTH	---	---	---	15.0	3.7	9.4	---	---	---	---	---	---

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.4	.8	4.5	17.0	4.3	10.1	19.8	9.0	13.7	12.2	10.7	11.3
2	7.3	1.5	4.2	14.4	5.1	9.2	---	---	---	16.6	9.9	13.0
3	8.3	2.1	4.7	14.4	2.3	7.9	---	---	---	17.1	12.1	14.5
4	8.4	1.8	5.1	15.3	3.6	9.1	---	---	---	16.7	12.6	14.6
5	10.9	5.8	8.1	---	---	---	---	---	---	15.2	10.4	12.9
6	11.3	7.6	8.9	---	---	---	---	---	---	17.7	9.2	13.2
7	11.5	4.2	7.7	---	---	---	---	---	---	21.3	10.3	15.6
8	14.3	5.6	9.4	---	---	---	---	---	---	24.3	13.5	18.7
9	14.6	6.3	10.2	---	---	---	---	---	---	22.9	16.4	19.2
10	---	---	---	---	---	---	---	---	---	24.6	13.8	18.6
11	---	---	---	---	---	---	17.9	4.9	11.2	18.7	12.0	14.4
12	---	---	---	---	---	---	15.2	5.7	10.8	20.1	11.7	15.5
13	---	---	---	---	---	---	13.6	10.9	12.2	20.3	14.5	17.2
14	---	---	---	---	---	---	13.0	7.8	10.7	23.1	16.6	19.7
15	---	---	---	---	---	---	11.0	5.4	8.0	23.5	16.9	20.1
16	---	---	---	---	---	---	10.4	5.4	8.1	23.5	16.3	19.8
17	---	---	---	---	---	---	14.6	5.5	9.6	21.3	16.5	18.9
18	---	---	---	---	---	---	18.5	7.3	12.6	22.5	15.2	18.7
19	12.1	2.7	6.6	---	---	---	21.5	10.6	15.8	22.7	15.8	19.1
20	12.7	2.4	7.0	---	---	---	22.4	12.8	17.3	25.5	17.1	20.8
21	12.1	2.1	6.6	---	---	---	17.5	12.9	15.2	25.7	17.6	21.4
22	12.6	2.2	6.4	---	---	---	23.1	12.8	17.1	26.6	19.6	23.1
23	13.3	.2	6.1	---	---	---	16.3	9.1	11.5	24.7	19.5	22.1
24	16.0	2.4	8.4	---	---	---	9.1	7.5	8.2	23.5	19.2	21.1
25	15.9	3.5	9.1	---	---	---	20.7	7.7	13.1	26.2	17.3	21.0
26	16.8	4.9	10.0	---	---	---	21.9	9.7	15.3	---	---	---
27	14.3	3.8	8.4	---	---	---	25.0	11.7	18.0	---	---	---
28	17.0	2.8	9.1	---	---	---	24.3	14.3	18.6	22.6	15.3	18.6
29	---	---	---	---	---	---	18.9	13.6	15.8	22.8	18.6	20.6
30	---	---	---	---	---	---	14.6	12.1	13.0	26.1	18.9	22.2
31	---	---	---	---	---	---	---	---	---	26.3	20.0	23.2
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	26.7	19.8	23.1	31.8	23.7	27.6	36.5	21.3	27.3	30.6	20.2	24.8
2	25.6	20.4	22.8	31.7	24.1	27.2	27.0	22.5	24.2	28.2	20.2	23.7
3	26.3	18.7	22.3	30.7	21.1	25.2	29.4	21.5	24.9	25.8	19.8	22.3
4	26.6	21.0	23.6	31.4	21.5	25.5	30.5	22.5	24.2	31.5	19.1	24.8
5	24.8	20.7	22.5	31.8	21.6	26.1	29.2	21.3	24.3	30.2	18.6	22.8
6	25.3	17.2	21.2	34.3	22.4	27.3	30.4	21.7	25.5	31.5	17.7	25.1
7	27.3	19.8	23.2	34.4	21.9	26.7	33.6	22.4	27.4	31.7	20.6	26.4
8	27.8	20.0	23.5	32.1	21.9	26.5	32.4	24.1	27.6	26.0	19.0	21.8
9	27.5	18.7	22.9	30.5	21.7	24.9	29.0	23.6	26.0	28.1	18.7	23.0
10	28.4	20.6	23.7	25.9	19.6	22.2	30.2	24.2	26.9	28.6	18.5	24.5
11	22.5	18.7	20.4	30.3	19.4	24.3	29.5	24.2	26.9	28.5	17.4	23.9
12	27.8	18.2	22.4	31.7	20.8	25.4	30.0	24.0	26.8	---	---	---
13	24.7	19.2	21.7	31.3	20.4	25.2	27.7	23.1	25.5	---	---	---
14	28.8	17.7	22.8	31.9	20.8	25.6	28.8	22.8	25.6	---	---	---
15	28.9	18.3	23.1	31.8	21.0	25.5	28.3	23.7	25.9	---	---	---
16	24.8	17.7	21.5	34.4	21.4	24.9	29.6	22.9	26.0	---	---	---
17	24.2	17.3	20.3	---	---	---	30.1	23.5	26.5	---	---	---
18	---	---	---	---	---	---	29.8	22.0	25.9	---	---	---
19	---	---	---	---	---	---	28.9	22.1	25.4	---	---	---
20	---	---	---	---	---	---	30.2	22.0	25.7	---	---	---
21	---	---	---	---	---	---	30.0	21.6	25.6	---	---	---
22	---	---	---	---	---	---	32.9	22.4	27.0	23.7	13.8	18.4
23	---	---	---	---	---	---	31.7	24.0	27.5	24.2	15.6	19.6
24	---	---	---	---	---	---	32.1	21.2	26.2	26.2	17.8	21.3
25	---	---	---	---	---	---	29.9	22.2	25.9	26.3	16.0	20.8
26	---	---	---	---	---	---	30.4	22.9	26.4	25.2	16.2	20.3
27	---	---	---	---	---	---	31.8	22.7	26.9	20.1	14.2	16.9
28	---	---	---	---	---	---	32.6	23.5	27.5	15.2	10.9	13.2
29	---	---	---	33.4	22.2	27.2	30.8	23.1	26.7	20.4	7.9	13.3
30	---	---	---	33.7	21.7	27.1	31.1	21.9	26.0	23.4	9.3	15.7
31	---	---	---	33.8	21.3	27.1	30.5	20.6	24.9	---	---	---
MONTH	---	---	---	---	---	---	36.5	20.6	26.1	---	---	---

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07228000 CANADIAN RIVER NEAR CANADIAN, TX

LOCATION.--Lat 35°56'06", long 100°22'13", Hemphill County, Hydrologic Unit 11090106, on left abutment at downstream side of upstream bridge on U.S. Highways 60 and 83, 600 ft downstream from Panhandle and Santa Fe Railway Co. bridge, 1.2 mi downstream from Red Deer Creek, 1.6 mi northeast of Canadian, and 433.9 mi upstream from mouth.

DRAINAGE AREA.--22,866 mi^2, of which 4,688 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Jul 1924 to Aug 1925 (gage heights only), Jan 1938 to current year. Prior to Apr 1938, monthly discharges only, published in WSP 1311.
Water-quality records.--Chemical data: Aug 1966 to Sep 1994. Biochemical data: Aug 1966 to Sep 1994. Pesticide data: Oct 1970 to Jun 1982. Specific conductance: Oct 1974 to Sep 1981. Water temperature: Oct 1974 to Sep 1981.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,301.50 ft above sea level. Jul 1, 1924, to Aug 31, 1925, and Apr 21 to Dec 15, 1938, nonrecording gage; Dec 16, 1938, to Sep 30, 1953, water-stage recorder and nonrecording gages; all at site 300 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in Jan 1938, at least 10% of contributing drainage area has been regulated by Lake Meredith (station 0722790, capacity 2,434,215 acre-ft) 75 mi upstream. Extreme low flow is maintained by springs that enter river about 600 ft upstream from the gage.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 20.0 ft Oct 2, 1904 from a local resident. Floods of May 2, 1914 and Oct 5, 1923, reached stages of 12 ft from information furnished by the Chief Engineer Office of the Panhandle and Sante Fe Railroad Co..

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	1130	e52	75	282	97	181	454	89	256	17	7.9
2	17	964	e51	73	261	92	179	676	77	462	19	7.6
3	20	395	e65	67	231	89	198	1430	134	715	29	8.2
4	18	288	98	64	194	91	176	646	146	188	47	8.2
5	17	216	100	65	187	90	281	592	110	99	47	8.3
6	17	165	91	65	237	88	265	573	87	70	53	8.5
7	17	148	88	65	219	89	236	604	70	62	46	8.0
8	16	130	92	67	206	136	220	632	60	71	46	7.8
9	15	119	90	67	181	144	196	399	53	56	48	7.8
10	15	107	84	68	176	153	171	221	52	101	39	7.8
11	14	96	81	67	158	143	154	217	64	114	31	8.0
12	14	86	78	70	141	205	145	214	105	129	26	8.1
13	15	81	76	69	136	262	160	201	72	92	23	8.6
14	14	76	72	71	134	254	251	191	60	76	22	10
15	13	68	71	70	133	236	455	170	55	62	20	18
16	15	65	69	69	135	220	456	150	53	53	18	25
17	17	61	68	69	135	194	512	132	50	48	16	23
18	16	59	71	66	131	239	425	121	48	45	14	22
19	17	56	67	67	125	445	354	111	51	38	13	20
20	17	53	66	67	121	399	338	104	44	37	13	20
21	19	53	64	68	117	322	197	117	47	32	13	20
22	19	53	56	81	111	273	242	160	49	30	12	19
23	19	51	57	87	103	288	239	112	46	28	12	17
24	21	50	148	83	101	252	283	98	41	24	11	16
25	21	50	354	80	100	238	467	87	39	22	11	20
26	21	50	136	84	100	227	394	87	35	20	10	17
27	22	50	74	85	97	220	310	99	32	19	9.5	16
28	30	51	70	96	97	221	280	122	37	18	9.3	17
29	26	e53	70	234	---	217	443	133	34	17	9.5	19
30	29	e52	72	307	---	198	499	125	53	17	9.9	18
31	542	---	71	314	---	189	---	104	---	16	8.6	---
TOTAL	1079.5	4876	2702	2880	4349	6311	8707	9082	1893	3017	702.8	421.8
MEAN	34.8	163	87.2	92.9	155	204	290	293	63.1	97.3	22.7	14.1
MAX	542	1130	354	314	282	445	512	1430	146	715	53	25
MIN	6.5	50	51	64	97	88	145	87	32	16	8.6	7.6
AC-FT	2140	9670	5360	5710	8630	12520	17270	18010	3750	5980	1390	837

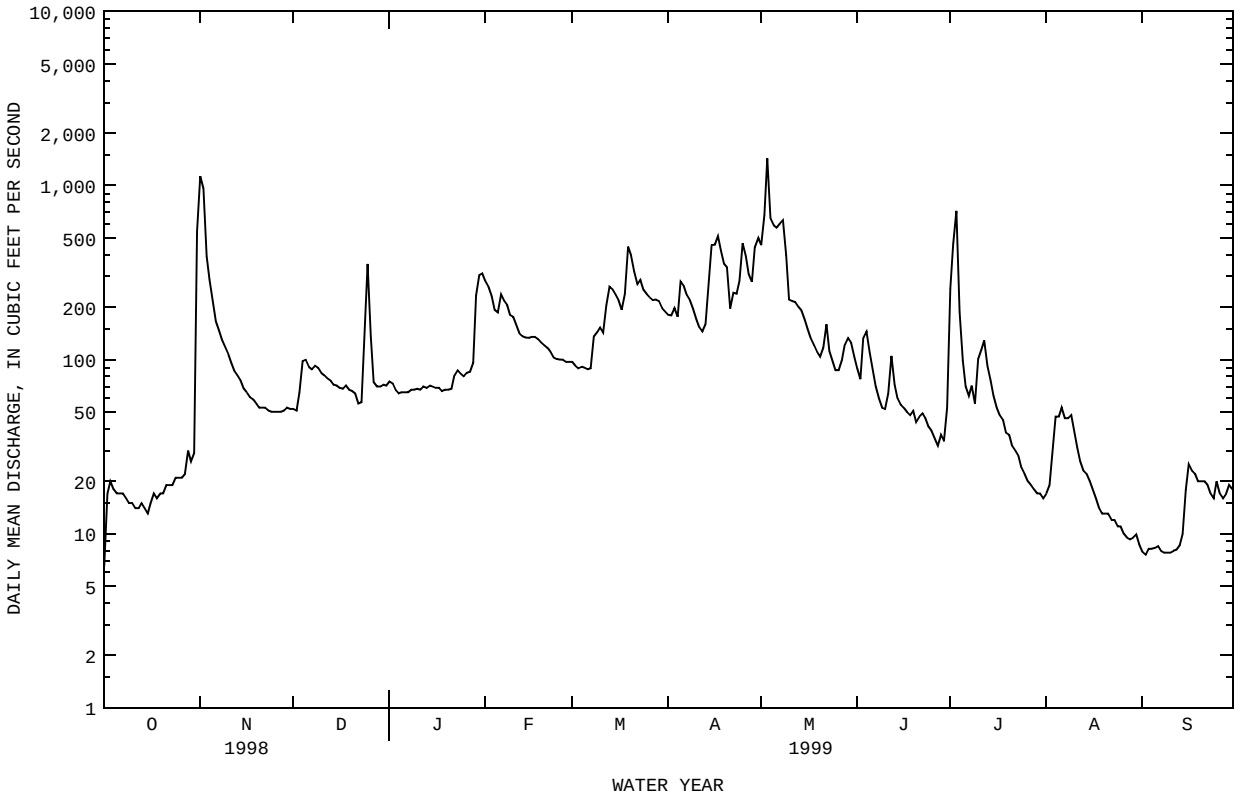
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1999z, BY WATER YEAR (WY)

MEAN	374	89.1	96.1	118	106	116	212	600	621	462	324	390
MAX	10210	1397	694	541	380	592	5979	8164	8976	6118	3524	7399
(WY)	1942	1942	1960	1943	1960	1961	1942	1941	1941	1941	1941	1941
MIN	.35	1.03	1.50	1.53	28.3	1.76	1.14	.46	.34	.019	.019	.000
(WY)	1976	1946	1940	1957	1959	1946	1964	1962	1966	1970	1980	1983

07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1938 - 1999z	
ANNUAL TOTAL	34659.1		46021.1			
ANNUAL MEAN	95.0		126		284	
HIGHEST ANNUAL MEAN					2963	1941
LOWEST ANNUAL MEAN					34.5	1964
HIGHEST DAILY MEAN	1130	Nov 1	1430	May 3	60600	Sep 24 1941
LOWEST DAILY MEAN	1.1	Jul 26	6.5	Oct 1	.00	Jan 4 1941
ANNUAL SEVEN-DAY MINIMUM	1.6	Jul 21	8.0	Sep 6	.00	Apr 8 1941
INSTANTANEOUS PEAK FLOW			2460	May 3	38900	Oct 9 1968
INSTANTANEOUS PEAK STAGE			5.17	May 3	9.83	Apr 15 1973
INSTANTANEOUS LOW FLOW					.00	Oct 11 1965
ANNUAL RUNOFF (AC-FT)	68750		91280		205600	
10 PERCENT EXCEEDS	215		281		336	
50 PERCENT EXCEEDS	66		71		40	
90 PERCENT EXCEEDS	7.0		15		.70	

e Estimated
z Period of regulated streamflow.



07233550 PALO DURO RESERVOIR NEAR SPEARMAN, TX

LOCATION.--Lat 36°21'42", long 101°09'48", Hansford County, Hydrologic Unit 11100104, on intake tower south of dam on Palo Duro Creek, 11 mi north of Spearman.

DRAINAGE AREA.--594 mi^2

PERIOD OF RECORD.--Jun 1999 to Sep 1999.

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemetry at station.

REMARKS.--The lake is formed by a rolled earthfill dam 3,800 ft long. The dam was completed Feb 11, 1991, and storage began May 22, 1991. The dam and lake are owned by the Palo Duro River Authority. The capacity curve was developed by Freese and Nichols, Inc.. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	2,943.0
Design flood (2-foot freeboard)	2,919.0
Crest of spillway	2,915.0
Lowest gated outlet (invert)	2,892.0

COOPERATION.--Capacity curve is provided by the Palo Duro River Authority.

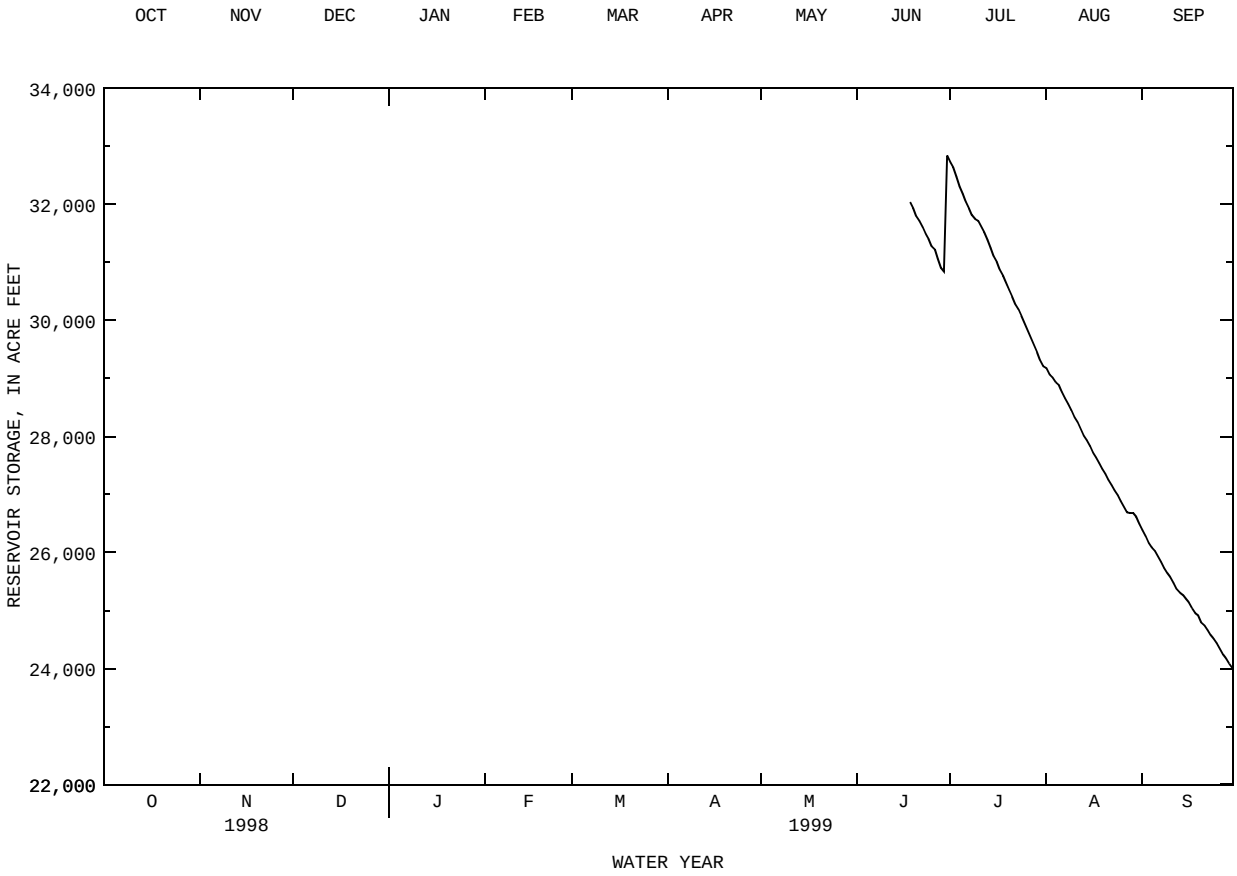
EXTREMES FOR CURRENT YEAR.--Maximum contents, 32,910 acre-ft, Jul 1 (elevation, 2,877.89 ft); minimum contents, 23,990 acre-ft, Sep 30 (elevation, 2,871.73 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	32730	29180	26390
2	---	---	---	---	---	---	---	---	---	32640	29070	26280
3	---	---	---	---	---	---	---	---	---	32480	29020	26170
4	---	---	---	---	---	---	---	---	---	32310	28940	26090
5	---	---	---	---	---	---	---	---	---	32180	28890	26030
6	---	---	---	---	---	---	---	---	---	32050	28770	25930
7	---	---	---	---	---	---	---	---	---	31930	28660	25840
8	---	---	---	---	---	---	---	---	---	31820	28560	25730
9	---	---	---	---	---	---	---	---	---	31750	28450	25640
10	---	---	---	---	---	---	---	---	---	31720	28340	25580
11	---	---	---	---	---	---	---	---	---	31610	28250	25480
12	---	---	---	---	---	---	---	---	---	31520	28140	25380
13	---	---	---	---	---	---	---	---	---	31390	28020	25310
14	---	---	---	---	---	---	---	---	---	31250	27940	25270
15	---	---	---	---	---	---	---	---	---	31110	27840	25200
16	---	---	---	---	---	---	---	---	---	31010	27730	25140
17	---	---	---	---	---	---	---	---	---	30880	27640	25040
18	---	---	---	---	---	---	---	---	32040	30770	27540	24960
19	---	---	---	---	---	---	---	---	31930	30650	27450	24920
20	---	---	---	---	---	---	---	---	31800	30520	27360	24790
21	---	---	---	---	---	---	---	---	31720	30410	27260	24740
22	---	---	---	---	---	---	---	---	31610	30280	27160	24660
23	---	---	---	---	---	---	---	---	31500	30190	27070	24580
24	---	---	---	---	---	---	---	---	31400	30080	26990	24510
25	---	---	---	---	---	---	---	---	31280	29940	26890	24440
26	---	---	---	---	---	---	---	---	31220	29810	26790	24340
27	---	---	---	---	---	---	---	---	31060	29680	26690	24240
28	---	---	---	---	---	---	---	---	30900	29570	26680	24170
29	---	---	---	---	---	---	---	---	30840	29450	26680	24090
30	---	---	---	---	---	---	---	---	32840	29320	26610	24010
31	---	---	---	---	---	---	---	---	---	29210	26490	---
MAX	---	---	---	---	---	---	---	---	---	32730	29180	26390
MIN	---	---	---	---	---	---	---	---	---	29210	26490	24010
(+)									2877.85	2875.55	2873.61	2871.74
(@)										-3630	-2720	-2480

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07233550 PALO DURO RESERVOIR NEAR SPEARMAN, TX--Continued



07235000 WOLF CREEK AT LIPSCOMB, TX

LOCATION.--Lat 36°14'19", long 100°16'31", Lipscomb County, Hydrologic Unit 11100203, on right bank at downstream side of State Highway 305, 0.3 mi north of Lipscomb, 0.6 mi downstream from Sand Creek, 2 mi upstream from Plum Creek, and 61.2 mi upstream from mouth.

DRAINAGE AREA.--697 mi^2, of which 222 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1937 to Sep 1942, Oct 1961 to current year. Prior to 1941, monthly discharges only, published in WSP 1311.
Water-quality records.--Chemical data: May 1980. Biochemical data: May 1980.

REVISED RECORDS.--WSP 1311: 1938-39, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,371.29 ft above sea level. Prior to Feb 25, 1938, nonrecording gage, Feb 25, 1938, to Sep 30, 1942, water-stage recorder at present site at datum 5.77 ft higher. Satellite telemetry at station.

REMARKS.--Records fair. There are small diversions upstream from station for irrigation and recreation. Since installation of the gage, at least 10% of contributing drainage area has been regulated by Lake Fryer (capacity 2,792 acre-ft) 30 miles upstream.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1938-42), 39.7 ft^3/s, 28,760 acre-feet/yr.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1938-42).--Maximum discharge, 20,000 ft^3/s Oct 21, 1941 (Gage-height, 11.57 ft, present datum), from rating curve extended above 14,000 ft^3/s on basis of velocity-area studies; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 15.5 ft Jun 23, 1957, present site and datum, from flood-marks. A flood in May 1955 reached a stage of 12.1 ft, present site and datum, from information by State Department of Highways and Public Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	10	3.7	4.0	9.6	6.0	9.8	41	16	20	4.5	1.9
2	1.1	8.9	3.8	4.0	9.5	6.1	9.2	76	15	17	4.6	1.9
3	.98	7.3	4.0	4.0	e9.1	6.2	9.3	485	25	14	4.5	1.9
4	1.0	5.9	4.1	3.8	e8.5	6.3	9.2	237	24	12	4.6	1.9
5	1.1	5.1	4.2	3.9	8.5	6.4	13	145	20	11	6.5	1.9
6	1.2	4.7	4.1	4.0	8.2	6.4	12	97	17	10	6.6	1.8
7	1.2	4.5	4.1	4.0	8.1	6.4	11	71	15	9.8	6.3	1.8
8	1.2	4.7	4.1	4.1	8.0	7.2	11	58	13	9.5	6.0	1.7
9	1.3	4.7	4.1	4.0	7.8	7.1	10	56	12	9.4	5.2	1.8
10	1.3	4.5	4.0	4.2	7.7	7.2	9.6	110	12	13	4.8	1.7
11	1.4	4.2	4.0	4.2	7.3	7.3	8.7	76	15	12	4.3	1.8
12	1.5	4.0	3.9	4.2	7.1	9.2	8.4	51	20	10	3.9	1.7
13	1.5	3.9	3.9	4.3	7.0	11	19	40	17	9.5	3.7	1.7
14	1.5	3.9	3.8	4.3	7.0	10	69	36	14	9.1	3.5	1.8
15	1.6	3.8	3.9	4.4	6.9	9.9	931	32	13	8.5	3.2	1.8
16	1.6	3.7	3.8	4.4	6.9	9.3	812	29	12	8.2	3.1	1.8
17	1.6	3.5	3.9	4.5	6.9	8.7	312	26	12	8.0	2.9	1.7
18	1.6	3.5	4.1	4.4	6.8	9.2	183	24	11	7.9	2.8	1.7
19	1.6	3.5	4.0	4.5	6.6	15	129	22	11	7.5	2.7	1.7
20	1.6	3.5	3.9	4.5	6.5	15	94	21	11	7.1	2.6	1.6
21	1.7	3.5	e3.9	4.6	6.4	15	76	21	10	6.9	2.5	1.6
22	1.6	3.5	e3.9	4.7	6.4	14	65	20	10	6.6	2.4	1.6
23	1.6	3.5	e3.9	4.9	6.5	13	56	21	10	6.4	2.3	1.6
24	1.6	3.5	e3.9	4.8	6.5	12	61	20	10	6.3	2.2	1.6
25	1.6	3.5	3.7	4.7	6.6	12	83	19	11	5.9	2.2	1.6
26	1.6	3.5	3.9	4.9	6.4	11	73	19	13	5.6	2.1	1.6
27	1.7	3.5	4.0	4.9	4.9	11	57	18	17	5.3	2.1	1.5
28	1.8	3.5	4.0	5.1	5.8	11	45	18	25	5.2	2.1	1.6
29	1.7	3.6	3.8	7.1	---	10	43	18	17	5.0	2.0	1.6
30	2.0	3.7	3.9	8.8	---	10	41	18	20	4.7	2.0	1.5
31	7.2	---	4.0	9.8	---	10	---	16	---	4.6	2.0	---
TOTAL	50.86	133.1	122.3	148.0	203.5	298.9	3270.2	1941	448	276.0	110.2	51.4
MEAN	1.64	4.44	3.95	4.77	7.27	9.64	109	62.6	14.9	8.90	3.55	1.71
MAX	7.2	10	4.2	9.8	9.6	15	931	485	25	20	6.6	1.9
MIN	.88	3.5	3.7	3.8	4.9	6.0	8.4	16	10	4.6	2.0	1.5
AC-FT	101	264	243	294	404	593	6490	3850	889	547	219	102
CFSM	.00	.01	.01	.01	.02	.02	.23	.13	.03	.02	.01	.00
IN.	.00	.01	.01	.01	.02	.02	.26	.15	.04	.02	.01	.00

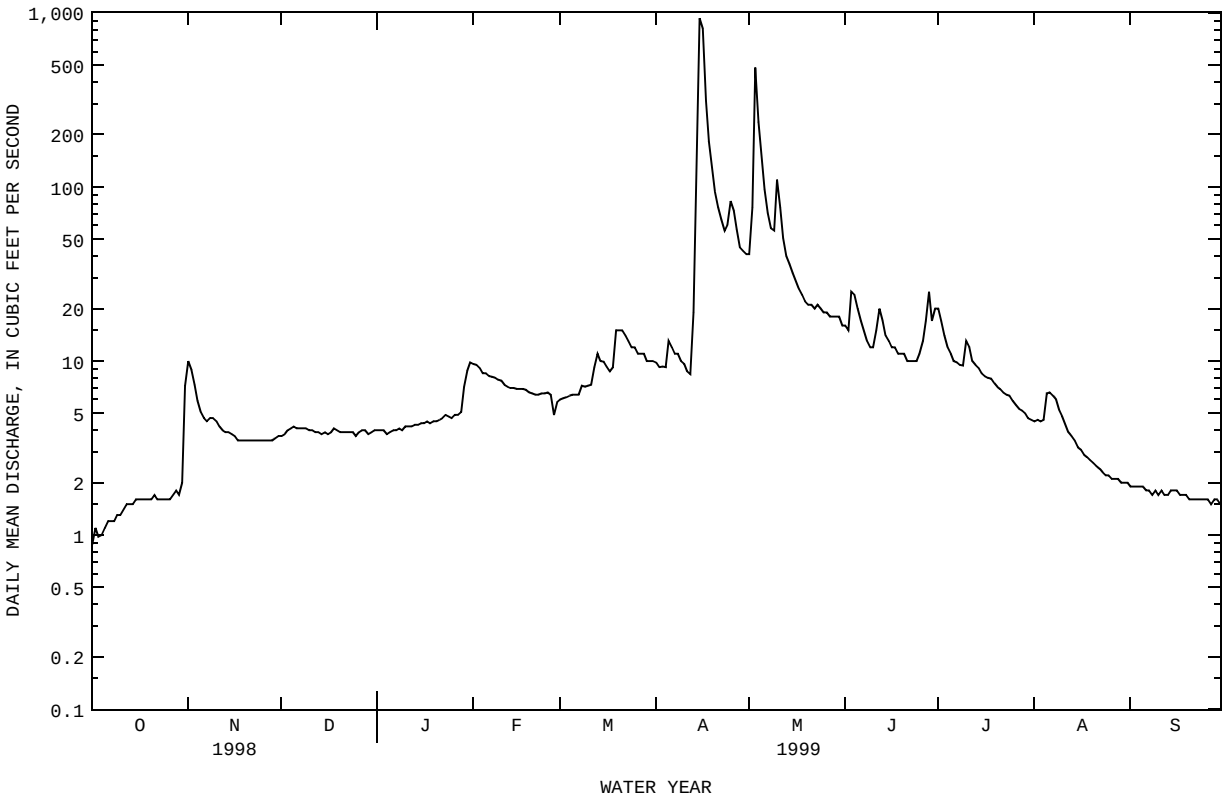
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999z, BY WATER YEAR (WY)

MEAN	6.86	5.86	3.76	3.96	4.80	7.38	11.5	19.3	17.6	8.22	8.21	14.2
MAX	167	112	14.6	11.8	11.0	53.0	109	124	206	82.7	77.6	323
(WY)	1969	1972	1997	1969	1997	1974	1999	1979	1965	1967	1965	1996
MIN	.10	.50	.60	.55	.60	1.10	.94	.65	.33	.30	.000	.21
(WY)	1965	1995	1995	1986	1986	1986	1986	1986	1996	1974	1964	1984

07235000 WOLF CREEK AT LIPSCOMB, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999z	
ANNUAL TOTAL	2545.75		7053.46			
ANNUAL MEAN	6.97		19.3		9.30	
HIGHEST ANNUAL MEAN					30.5	1965
LOWEST ANNUAL MEAN					1.44	1986
HIGHEST DAILY MEAN	157	Jul 2	931	Apr 15	5800	Sep 19 1996
LOWEST DAILY MEAN	.63	Sep 20	.88	Oct 1	.00	May 24 1964
ANNUAL SEVEN-DAY MINIMUM	.65	Sep 22	1.1	Oct 1	.00	Jul 22 1964
INSTANTANEOUS PEAK FLOW			1950	Apr 15	10300	Sep 19 1996
INSTANTANEOUS PEAK STAGE			8.92	Apr 15	12.44	Sep 19 1996
INSTANTANEOUS LOW FLOW					.00	Jul 22 1964
ANNUAL RUNOFF (AC-FT)	5050		13990		6740	
ANNUAL RUNOFF (CFSM)	.015		.041		.020	
ANNUAL RUNOFF (INCHES)	.20		.55		.27	
10 PERCENT EXCEEDS	12		24		12	
50 PERCENT EXCEEDS	4.0		6.0		2.6	
90 PERCENT EXCEEDS	.93		1.7		.51	

e Estimated
z Period of regulated streamflow.



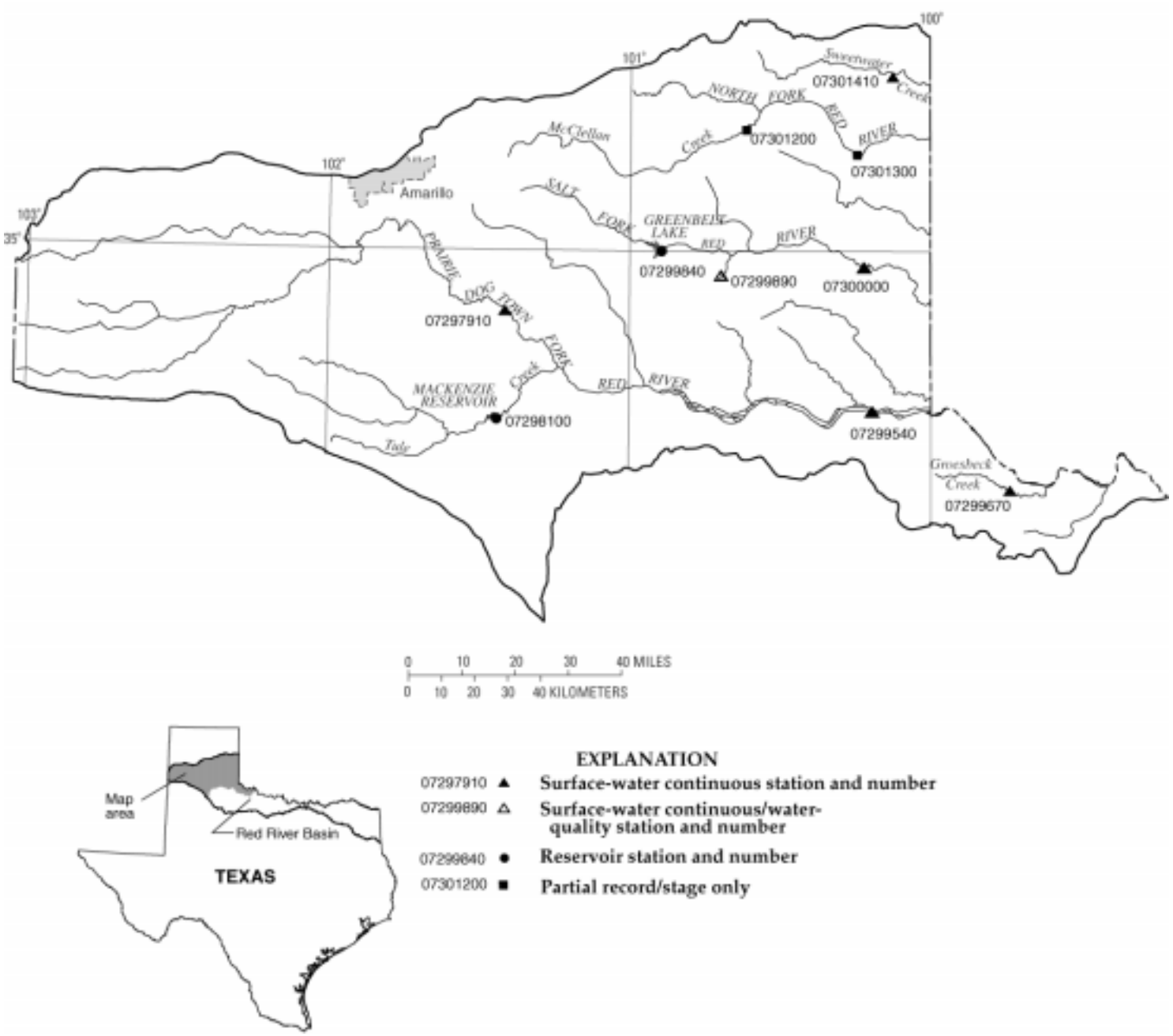


Figure 4.-- Map showing location of gaging stations in the first section of the Red River Basin

* Station is not located within the illustrated map area.

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX

LOCATION.--Lat 34°50'15", long 101°24'49", Armstrong County, Hydrologic Unit 11120103, on left bank at downstream side of bridge on Farm Road 284, 13 mi northeast of Wayside, 26 mi south of Claude, and at mile 1,145.

DRAINAGE AREA.--4,211 mi^2, of which 3,281 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1967 to current year.
Water-quality records.--Specific conductance: Oct 1969 to Sep 1981. Water temperature: Oct 1969 to Sep 1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,463.74 ft above sea level. Satellite telemetry at station.

REMARKS.--Records fair. No known regulation. There are several small diversions upstream from station. Wastewater effluent is released into river above station by the city of Amarillo.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 31	0030	11,400	10.07	May 1	2400	12,500	10.19
Apr 28	2330	7,890	9.66	Jul 17	0530	8,060	9.67

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.61	2960	15	16	48	7.9	12	6690	43	16	6.7	3.1
2	424	715	15	14	43	7.3	11	8120	41	14	13	2.6
3	16	196	18	13	32	8.1	10	1570	128	12	203	2.6
4	3.5	90	15	14	24	8.5	11	e451	30	9.9	17	2.6
5	1.8	53	15	13	25	7.5	10	e300	21	8.6	12	2.7
6	1.3	41	15	13	27	7.9	8.9	e180	17	7.5	6.7	2.6
7	1.0	28	16	13	26	9.6	9.4	e100	15	7.2	4.8	2.5
8	.78	23	15	13	25	15	8.1	116	13	8.2	5.1	2.5
9	.67	19	14	14	23	9.6	7.4	106	12	61	175	2.5
10	.58	18	15	14	21	9.3	6.5	100	12	108	7.0	2.6
11	.52	18	15	13	18	8.3	7.8	67	92	17	6.0	2.7
12	.46	17	15	12	20	20	8.0	50	32	9.7	6.4	2.5
13	.47	16	14	12	17	9.2	9.0	38	19	8.6	6.1	2.5
14	.40	14	14	12	16	8.1	13	45	14	7.5	6.2	2.6
15	.37	14	14	12	15	8.4	66	40	12	7.3	5.9	70
16	.58	13	13	12	15	11	24	36	11	125	5.3	649
17	.33	13	13	12	17	6.7	21	33	11	2090	4.9	55
18	.35	14	13	12	15	19	24	31	9.6	182	4.7	19
19	.36	13	13	12	15	32	25	26	8.8	40	4.6	12
20	1.1	14	14	11	12	18	21	26	9.0	25	4.2	9.5
21	.98	13	13	11	11	14	20	23	122	25	3.8	8.2
22	.58	13	16	12	11	13	19	24	380	25	3.4	7.9
23	.66	13	22	11	10	14	18	21	116	20	3.4	7.0
24	.56	13	19	12	11	15	107	22	74	13	3.4	6.0
25	.38	12	18	9.8	10	14	66	25	62	9.1	3.3	6.2
26	.37	13	16	9.4	8.8	15	37	36	51	9.4	3.0	5.9
27	1.4	14	15	11	7.8	17	28	69	38	8.3	2.8	5.5
28	7.5	14	14	14	7.8	16	244	70	31	7.1	2.7	6.6
29	4.6	16	14	86	---	15	1360	115	25	5.8	2.6	7.0
30	111	14	14	67	---	15	524	94	19	5.0	2.7	7.8
31	4840	---	14	52	---	13	---	54	---	4.0	2.8	---
TOTAL	5423.21	4424	466	552.2	531.4	392.4	2736.1	18678	1468.4	2896.2	538.5	919.2
MEAN	175	147	15.0	17.8	19.0	12.7	91.2	603	48.9	93.4	17.4	30.6
MAX	4840	2960	22	86	48	32	1360	8120	380	2090	203	649
MIN	.33	12	13	9.4	7.8	6.7	6.5	21	8.8	4.0	2.6	2.5
AC-FT	10760	8780	924	1100	1050	778	5430	37050	2910	5740	1070	1820

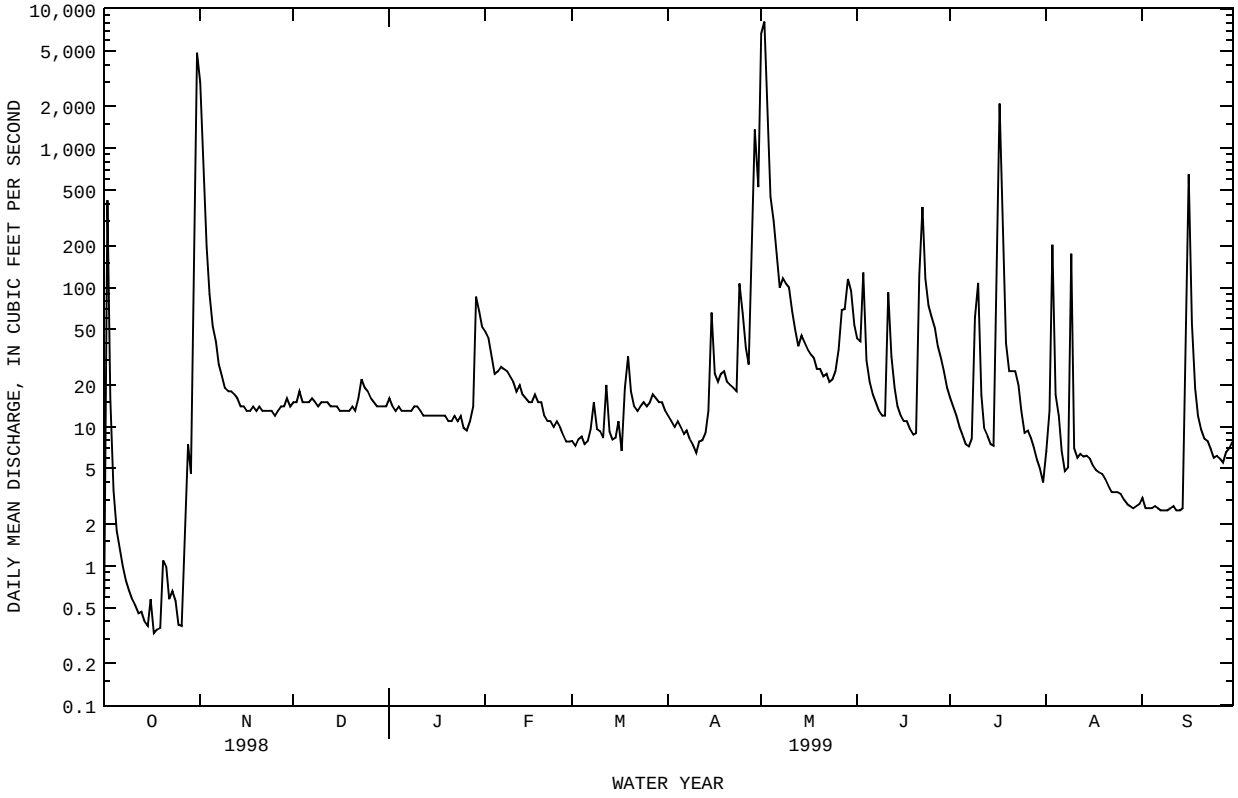
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	28.0	12.0	5.45	5.21	4.86	8.04	26.3	64.7	53.8	31.9	87.4	25.5
MAX	175	147	20.3	24.7	19.0	48.9	448	603	304	207	1410	110
(WY)	1999	1999	1988	1988	1999	1998	1997	1999	1984	1996	1968	1969
MIN	.000	.066	.099	.30	.16	.34	.17	.13	.47	.000	.39	.000
(WY)	1976	1971	1971	1971	1976	1971	1978	1984	1998	1974	1983	1975

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	13373.82		39025.61			
ANNUAL MEAN	36.6		107		29.6	
HIGHEST ANNUAL MEAN					137	1968
LOWEST ANNUAL MEAN					1.90	1983
HIGHEST DAILY MEAN	4840	Oct 31	8120	May 2	22700	Aug 29 1968
LOWEST DAILY MEAN	.02	Jul 25	.33	Oct 17	.00	Jul 30 1968
ANNUAL SEVEN-DAY MINIMUM	.04	Jul 21	.41	Oct 13	.00	Jul 30 1968
INSTANTANEOUS PEAK FLOW			12500	May 1	58000	Aug 28 1968
INSTANTANEOUS PEAK STAGE			10.19	May 1	13.00	Aug 28 1968
ANNUAL RUNOFF (AC-FT)	26530		77410		21460	
10 PERCENT EXCEEDS	18		79		24	
50 PERCENT EXCEEDS	8.8		13		2.2	
90 PERCENT EXCEEDS	.16		2.7		.08	

e Estimated

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued



07298100 MACKENZIE RESERVOIR NEAR SILVERTON, TX

LOCATION.--Lat 34°32'43", long 101°26'16", Briscoe County, Hydrologic Unit 11120104, at upstream side of dam on Tule Creek, 0.9 mi upstream from Rock Creek, 9.5 mi northwest of Silverton, and 22.7 mi upstream of mouth.

DRAINAGE AREA.--1,053 mi^2, of which 904 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1974 to Sep 1986, Apr 1999 to Sep 1999.

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--The reservoir is formed by a rolled earthfill dam 2,100 ft long. The dam was completed in Aug 1974, and storage began in Jun 1974. The uncontrolled spillway is an open cut channel just beyond the right end of the dam. The service spillway is an uncontrolled ogee-type weir across a concrete chute at the right end of the dam. A 30 in gated outlet concrete pipe discharges into a valve vault at the downstream toe of the dam and then into the creek bed downstream. Water is used for municipal, industrial, and recreational purposes by the cities of Floydada, Silverton, and Tulia. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam	3,127
Crest of spillway	3,111
Crest of spillway with ogee weir	3,100
Lowest gated outlet (invert)	2,961

COOPERATION.--Area-capacity curves developed by Freese and Nichols, Inc.. Record of diversions provided by the MacKenzie Municipal Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 23,950 acre-ft, Oct 15, 1986 (gage height, 3,065.08 ft); minimum since first appreciable storage, 598 acre-ft, Oct 1, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,270 acre-ft, Sep 30 (elevation, 3,036.08 ft); minimum contents, 7,590 acre-ft, Apr 17 (elevation, 3,024.39 ft).

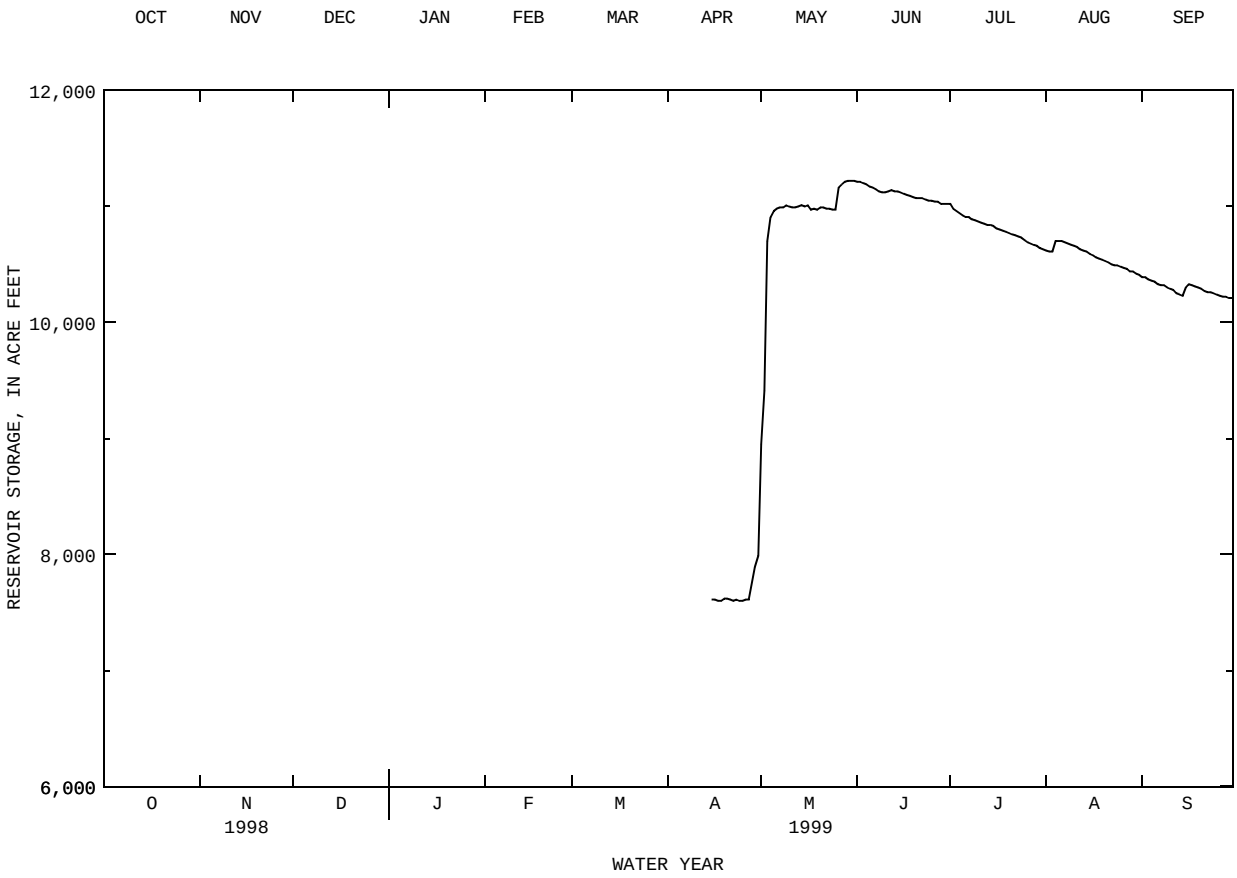
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	8950	e11210	11020	10620	10390
2	---	---	---	---	---	---	---	9410	e11210	10980	10610	10390
3	---	---	---	---	---	---	---	10700	e11200	10960	10610	10370
4	---	---	---	---	---	---	---	10910	e11190	10940	10700	10360
5	---	---	---	---	---	---	---	10960	e11170	10920	10700	10350
6	---	---	---	---	---	---	---	10980	e11160	10910	10700	10330
7	---	---	---	---	---	---	---	10990	e11150	10910	10690	10320
8	---	---	---	---	---	---	---	10990	e11130	10890	10680	10320
9	---	---	---	---	---	---	---	11010	e11120	10880	10670	10300
10	---	---	---	---	---	---	---	11000	e11120	10870	10660	10290
11	---	---	---	---	---	---	---	10990	e11130	10860	10650	10280
12	---	---	---	---	---	---	---	10990	e11140	10850	10630	10250
13	---	---	---	---	---	---	---	11000	e11130	10840	10620	10240
14	---	---	---	---	---	---	---	11010	e11130	10840	10610	10230
15	---	---	---	---	---	---	7610	11000	e11120	10830	10590	10300
16	---	---	---	---	---	---	7610	11010	e11110	10810	10580	10330
17	---	---	---	---	---	---	7600	10970	e11100	10800	10560	e10320
18	---	---	---	---	---	---	7600	10980	e11090	10790	10550	e10310
19	---	---	---	---	---	---	7620	10970	e11080	10780	10540	e10300
20	---	---	---	---	---	---	7620	10990	e11070	10770	10530	e10290
21	---	---	---	---	---	---	7610	10990	e11070	10760	10520	e10270
22	---	---	---	---	---	---	7600	10980	e11070	10750	10500	e10260
23	---	---	---	---	---	---	7610	10980	e11060	10740	10490	e10260
24	---	---	---	---	---	---	7600	10970	11050	10730	10490	e10250
25	---	---	---	---	---	---	7600	10970	11050	10710	10480	e10240
26	---	---	---	---	---	---	7610	e11160	11040	10690	10470	e10230
27	---	---	---	---	---	---	7610	e11190	11040	10680	10460	e10220
28	---	---	---	---	---	---	7760	e11210	11020	10670	10440	e10220
29	---	---	---	---	---	---	7890	e11220	11020	10660	10440	e10210
30	---	---	---	---	---	---	7990	e11220	11020	10640	10420	e10210
31	---	---	---	---	---	---	---	e11220	---	10630	10410	---
MAX	---	---	---	---	---	---	---	11220	11210	11020	10700	10390
MIN	---	---	---	---	---	---	---	8950	11020	10630	10410	10210
(+)							3025.79	3035.94	3035.39	3034.24	3033.56	3032.95
(@)							---	+3230	-200	-390	-220	-200
(++)							---	34.5	37.7	62.7	50.1	35.5

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the cities of Floydada, Silverton, and Tulia.

07298100 MACKENZIE RESERVOIR NEAR SILVERTON, TX--Continued



07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX

LOCATION.--Lat 34°34'09", long 100°11'37", Childress County, Hydrologic Unit 11120105, on left bank at downstream side of bridge on U.S. Highways 62 and 83, 3.1 mi downstream from Salt Creek, 10.0 mi north of Childress, and at mile 1,061.

DRAINAGE AREA.--7,725 mi^2, of which 4,767 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Dec 1964 to Mar 1965 (gage heights only), Apr 1965 to current year.
Water-quality records.--Chemical data: Oct 1968 to Sep 1982, Oct 1994 to Sep 1997. Pesticide data: Oct 1994 to Sep 1997. Specific conductance: Oct 1968 to Sep 1982, Oct 1994 to Sep 1997. Water temperature: Oct 1968 to Sep 1982, Oct 1994 to Sep 1997.

GAGE.--Water-stage recorder. Datum of gage is 1,628.4 ft above sea level (from Texas State Department of Highways and Public Transportation bench mark). Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1974, at least 10% of contributing drainage area has been regulated by MacKenzie Reservoir (station 07298100, normal storage 46,077 acre-ft), Baylor Lake, and Lake Childress. Flow is also affected by flood-detention pools of 23 floodwater-retarding structures with a combined detention capacity of 20,010 acre-ft. These structures control runoff from 95.2 mi^2 in the drainage basin above station. Many small diversions upstream from station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--8 years (water years 1966-73) 106 ft^3/s (76,800 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1965-73).--Maximum discharge, 58,800 ft^3/s Jun 26, 1965 (gage height, 12.00 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1899, 16.9 ft in May or Jun 1957, from information by local residents and State Department of Highways and Public Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	5730	18	17	192	3.8	26	5950	22	e15	e4.5	.97
2	667	2260	18	15	83	3.7	29	9160	17	e7.7	e4.5	.98
3	689	322	22	10	60	4.6	156	4240	25	e7.0	e7.5	1.2
4	195	100	42	9.2	56	3.7	37	244	52	e6.5	e70	1.8
5	20	51	26	11	54	3.9	104	119	64	e6.0	e200	1.6
6	5.9	48	27	13	70	3.8	24	105	51	e5.5	e160	1.5
7	2.1	95	24	13	72	7.2	15	e90	44	e4.8	e30	1.2
8	1.3	95	20	16	61	83	20	e95	51	e4.0	e8.0	1.2
9	1.1	114	16	14	56	37	12	e90	31	e4.0	e20	1.1
10	1.2	57	14	13	55	24	9.9	274	111	57	2140	1.0
11	1.7	52	13	15	31	25	12	280	281	165	809	1.2
12	1.9	45	13	14	24	148	10	240	626	e20	218	1.3
13	2.6	45	12	14	21	109	10	177	309	e10	100	.95
14	2.4	59	12	14	18	183	165	156	129	e7.0	e50	1.1
15	2.4	51	12	13	15	79	30	115	102	e3.2	e10	8.7
16	229	35	12	12	14	42	24	85	30	e3.4	e7.0	20
17	76	29	11	12	14	32	26	73	30	e30	e5.0	517
18	10	26	12	10	8.4	249	27	61	33	e2000	e3.5	92
19	7.1	22	14	8.7	6.9	308	27	57	61	e200	3.5	32
20	15	17	15	9.0	5.0	417	27	48	955	e110	2.7	18
21	22	13	16	8.9	5.3	165	24	e49	1490	e53	2.1	13
22	12	11	e16	19	7.3	98	26	e48	388	78	2.2	8.9
23	8.8	11	e16	30	7.8	56	29	e47	1030	e50	2.4	6.2
24	7.8	11	e16	16	9.4	47	453	e46	e140	e30	2.6	4.2
25	8.0	11	e15	13	9.7	42	782	e46	e110	e20	2.6	3.9
26	9.1	11	15	13	8.4	32	1200	115	e90	e11	2.4	3.5
27	14	11	13	13	3.8	35	485	2830	e70	e6.7	2.0	3.7
28	25	12	16	14	4.0	60	285	1240	e45	e6.2	1.7	6.1
29	89	33	13	373	---	57	2840	186	e30	e5.5	1.5	6.5
30	45	47	12	1080	---	45	3130	34	e22	e5.0	1.1	5.5
31	2470	---	12	609	---	39	---	23	---	e4.8	1.1	---
TOTAL	4694.4	9424	513	2441.8	972.0	2442.7	10044.9	26323	6439	2936.3	3874.9	766.30
MEAN	151	314	16.5	78.8	34.7	78.8	335	849	215	94.7	125	25.5
MAX	2470	5730	42	1080	192	417	3130	9160	1490	2000	2140	517
MIN	1.1	11	11	8.7	3.8	3.7	9.9	23	17	3.2	1.1	.95
AC-FT	9310	18690	1020	4840	1930	4850	19920	52210	12770	5820	7690	1520

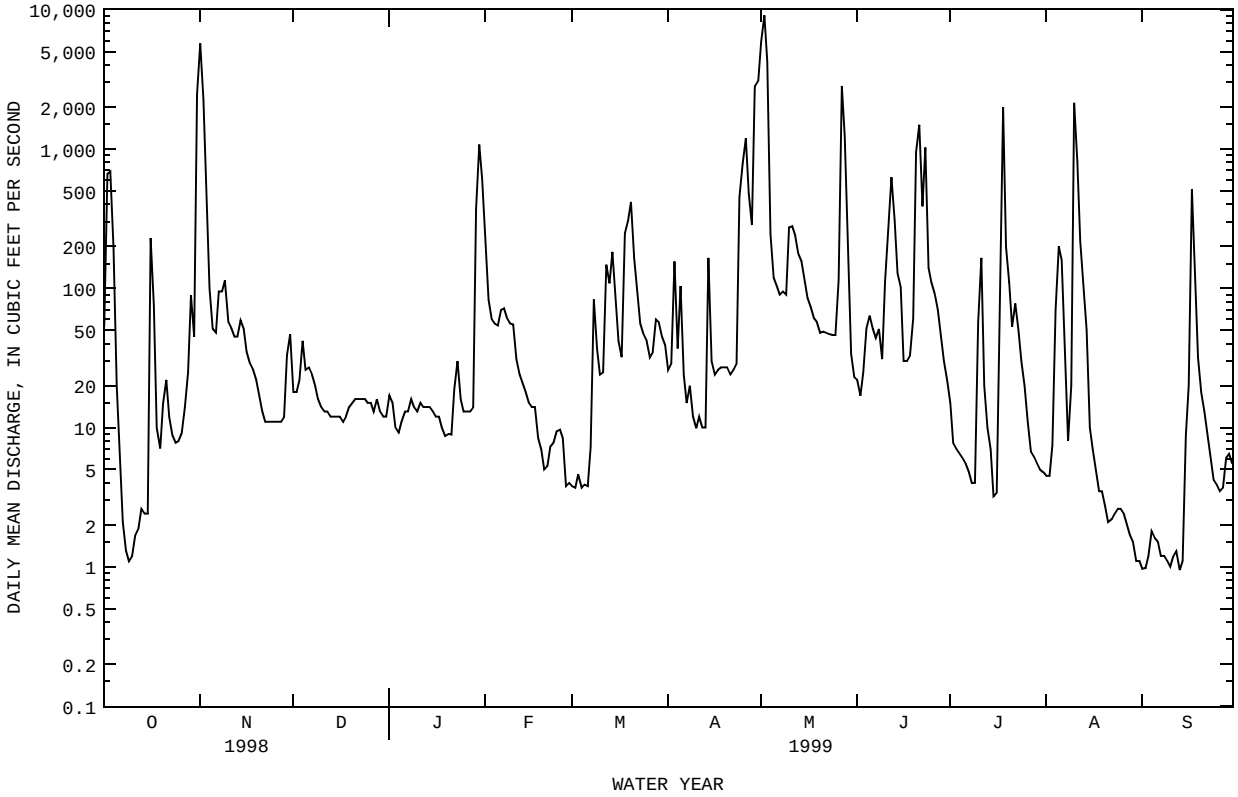
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1978z, BY WATER YEAR (WY)

MEAN	34.0	22.0	8.63	9.21	19.9	10.8	95.0	791	289	60.4	129	114
MAX	99.0	58.9	23.1	19.4	43.8	29.7	272	1835	875	157	261	264
(WY)	1975	1976	1976	1975	1975	1974	1977	1978	1978	1975	1977	1978
MIN	6.05	1.85	2.34	5.04	2.00	4.05	2.95	82.6	99.5	.66	35.8	7.16
(WY)	1978	1978	1978	1978	1974	1975	1978	1975	1974	1974	1978	1977

07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1974 - 1978z	
ANNUAL TOTAL	45825.6		70872.30			
ANNUAL MEAN	126		194		133	
HIGHEST ANNUAL MEAN					255	1978
LOWEST ANNUAL MEAN					63.1	1975
HIGHEST DAILY MEAN	5730	Nov 1	9160	May 2	34200	May 28 1978
LOWEST DAILY MEAN	1.1	Oct 9	.95	Sep 13	.01	Jun 18 1975
ANNUAL SEVEN-DAY MINIMUM	1.7	Oct 7	1.1	Sep 8	.01	Aug 3 1975
INSTANTANEOUS PEAK FLOW			27700	Oct 31	86400	May 28 1978
INSTANTANEOUS PEAK STAGE			11.06	Oct 31	13.94	May 21 1977
ANNUAL RUNOFF (AC-FT)	90900		140600		96220	
10 PERCENT EXCEEDS	201		259		190	
50 PERCENT EXCEEDS	14		21		4.7	
90 PERCENT EXCEEDS	4.8		3.3		.72	

e Estimated
z Period of regulated streamflow.



07299670 GROESBECK CREEK AT STATE HIGHWAY 6 NEAR QUANAH, TX

LOCATION.--Lat 34°21'16", long 99°44'24", Hardeman County, Hydrologic Unit 11130101, near left bank at downstream side of bridge on State Highway 6, 2 mi downstream from confluence of North and South Groesbeck Creeks, 4 mi north of Quanah, and 9 mi upstream from confluence with the Red River.

DRAINAGE AREA.--303 mi^2.

PERIOD OF RECORD.--Nov 1961 to current year. Prior to Oct 1974, published as "at State Highway 283".

GAGE.--Water-stage recorder. Datum of gage is 1,425.69 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. There are several diversions upstream from station for farm and ranch use and for a gypsum plant.

EXTREMES OUTSIDE PERIOD OF RECORD.--The highest stage known occurred in Jun 1891, and the highest stage since 1891 occurred in Sep 1929, stages unknown. Other large floods are reported to have occurred in 1912, 1936, 1946, 1951, 1955, and 1957, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 28	1500	2,970	17.10	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	55	20	19	30	25	20	37	e49	24	17	11
2	29	60	20	19	23	24	20	33	e43	31	18	10
3	23	28	21	19	21	24	21	28	38	21	18	9.9
4	24	18	21	18	20	25	20	34	33	20	50	11
5	23	17	21	20	20	26	20	26	29	19	97	11
6	22	19	21	21	21	26	20	22	28	18	59	11
7	22	20	20	20	25	26	20	21	27	18	38	11
8	22	19	20	19	25	27	21	19	27	18	31	10
9	21	20	20	18	25	25	20	27	25	17	31	10
10	21	19	20	18	25	25	20	95	34	75	30	9.9
11	21	17	20	18	24	25	20	56	58	88	27	10
12	21	16	20	18	23	28	20	39	43	54	24	12
13	21	18	20	18	23	27	20	27	37	27	23	9.9
14	22	18	20	18	24	25	20	23	29	21	23	10
15	21	17	20	18	24	24	20	21	24	19	24	14
16	22	17	20	18	23	24	20	19	22	19	22	14
17	23	17	20	18	24	24	20	20	22	18	21	12
18	22	17	20	18	23	27	20	18	24	17	20	12
19	22	17	20	18	23	47	20	19	22	17	20	15
20	22	18	19	18	24	44	20	19	31	17	19	12
21	22	18	19	19	23	30	20	19	74	17	18	11
22	20	18	19	19	23	25	20	19	55	18	16	11
23	19	18	19	19	23	23	20	18	35	18	20	12
24	19	18	19	19	23	23	20	18	37	18	17	12
25	19	18	19	18	23	22	23	20	286	18	15	12
26	20	19	19	19	24	22	30	101	e78	18	15	11
27	19	19	19	19	24	23	24	254	e49	18	15	12
28	25	20	19	19	24	23	22	2150	e38	18	14	13
29	22	20	19	31	---	22	30	e515	e32	18	12	13
30	22	21	19	43	---	22	35	e92	27	18	11	13
31	23	---	19	36	---	21	---	e59	---	18	12	---
TOTAL	675	636	612	632	657	804	646	3868	1356	755	777	345.7
MEAN	21.8	21.2	19.7	20.4	23.5	25.9	21.5	125	45.2	24.4	25.1	11.5
MAX	29	60	21	43	30	47	35	2150	286	88	97	15
MIN	19	16	19	18	20	21	20	18	22	17	11	9.9
AC-FT	1340	1260	1210	1250	1300	1590	1280	7670	2690	1500	1540	686

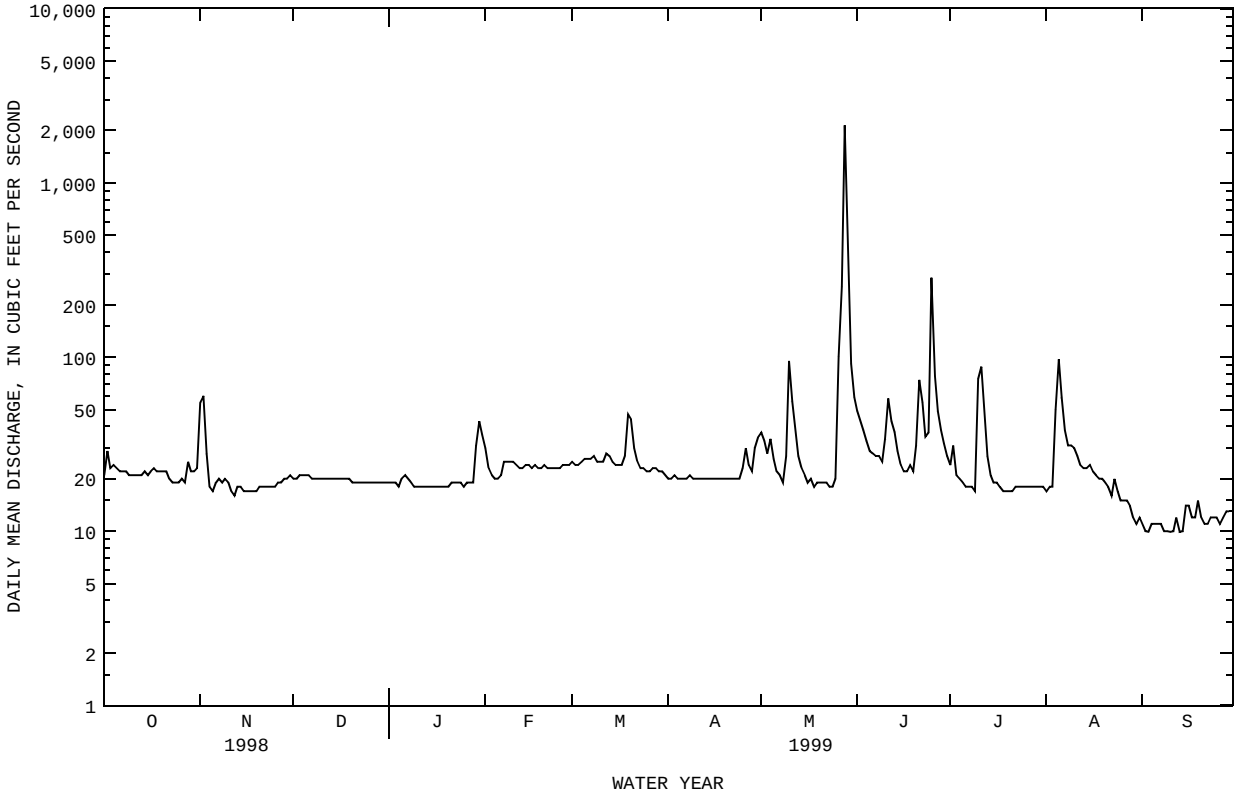
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

MEAN	33.5	10.9	10.4	8.94	10.8	12.9	21.5	30.9	55.2	21.1	26.5	47.8
MAX	393	31.3	43.0	24.3	62.0	91.2	271	163	502	228	545	286
(WY)	1984	1995	1992	1992	1997	1998	1997	1987	1995	1996	1995	1974
MIN	.68	1.33	1.48	1.33	1.35	1.18	1.12	1.74	1.54	.10	.000	.39
(WY)	1969	1969	1969	1971	1971	1971	1969	1967	1967	1964	1964	1968

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999	
ANNUAL TOTAL	11251		11763.7			
ANNUAL MEAN	30.8		32.2		23.8	
HIGHEST ANNUAL MEAN					112	1995
LOWEST ANNUAL MEAN					2.97	1964
HIGHEST DAILY MEAN	678	Mar 16	2150	May 28	9570	Oct 20 1983
LOWEST DAILY MEAN	16	Nov 12	9.9	Sep 3	.00	Jul 7 1964
ANNUAL SEVEN-DAY MINIMUM	17	Nov 11	10	Sep 8	.00	Jul 7 1964
INSTANTANEOUS PEAK FLOW			2970	May 28	18000	Oct 20 1983
INSTANTANEOUS PEAK STAGE			17.10	May 28	24.78	Oct 20 1983
ANNUAL RUNOFF (AC-FT)	22320		23330		17230	
10 PERCENT EXCEEDS	42		35		26	
50 PERCENT EXCEEDS	23		20		7.1	
90 PERCENT EXCEEDS	19		15		1.6	

e Estimated

07299670 GROESBECK CREEK AT STATE HIGHWAY 6 NEAR QUANAH, TX--Continued



07299840 GREENBELT LAKE NEAR CLARENDON, TX

LOCATION.--Lat 35°00'02", long 100°53'40", Donley County, Hydrologic Unit 11120201, on upstream side near right end of dam on Salt Fork Red River and 4.3 mi north of Clarendon.

DRAINAGE AREA.--457 mi^2, of which 191 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Aug 1967 to current year. Prior to Oct 1973, published as Greenbelt Reservoir.

GAGE.--Water-stage recorder. Datum of gage is sea level. Gage-height telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 5,800 ft long. Deliberate impoundment began Dec 5, 1966, and the dam was completed in Aug 1967. The dam is the property of Greenbelt Municipal and Industrial Water Authority and was built to impound water for municipal and industrial uses by the cities of Childress, Clarendon, Crowell, Hedley, and Quanah. The spillway is an uncontrolled open cut through natural ground, 1,450 ft wide and located at the left end of dam, designed to discharge 184,000 ft^3/s at an elevation of 2,684.0 ft. A morning-glory-type drop inlet with a 26-foot 8.5-inch-diameter opening at crest discharges into a 7- by 7-foot concrete conduit. The outlet works consists of a 36-inch pipe that is controlled by two 20-inch valves that control the discharge into a stilling basin and to a water treatment plant. The capacity table, dated Apr 1964, is based on Geological Survey topographic maps dated 1962. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	2,686.0
Design flood	2,683.0
Crest of spillway	2,674.0
Crest of morning-glory-type drop inlet	2,663.65
Lowest gated outlet (invert)	2,597.0

COOPERATION.--Records of diversion and capacity table provided by Greenbelt Municipal and Industrial Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,650 acre-ft, Jun 26-28, 1975 (elevation, 2,655.71 ft), minimum contents after initial filling, 10,940 acre-ft, Aug 11, 1968 (elevation, 2,625.16 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 81,620 acre-ft, Aug 12 (elevation, 2,673.94 ft); minimum contents, 17,930 acre-ft, Sep 25 (elevation, 2,634.30 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

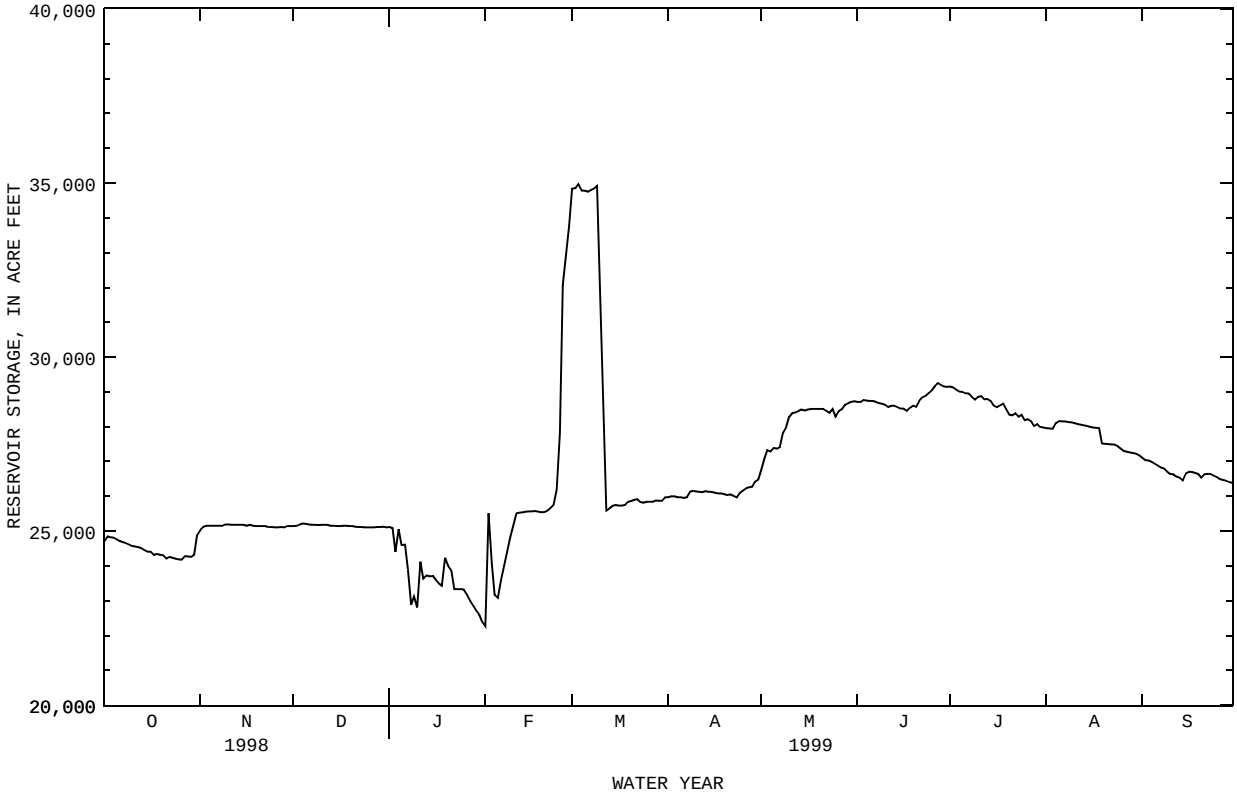
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24720	25030	25150	25120	22270	34840	25970	26760	28720	29160	e27960	e27110
2	24850	25130	25160	25090	25510	34850	26000	27090	28720	29130	e27950	e27040
3	24830	25160	25190	24410	e24100	34980	e26000	27320	28770	29060	27940	e27030
4	24810	25160	25220	25060	23170	34780	e25970	27290	28750	29010	e28110	e26990
5	24770	25160	25210	24600	23090	34780	25970	27390	28740	29000	28160	e26940
6	24720	25160	25190	24610	e23600	34760	25960	27370	28740	28960	e28150	e26880
7	24690	25160	25180	23900	e24000	e34800	25970	27420	28710	28950	e28150	26830
8	24660	25160	25180	22890	e24400	34840	26140	e27830	28680	28860	28140	26800
9	24620	25190	25170	23120	e24800	34920	26160	e28000	28660	28780	e28120	26710
10	24580	25190	25180	22810	e25150	e31000	e26140	28280	28630	28860	e28110	26650
11	24560	25180	25180	24120	25520	e28000	e26130	28390	28560	28880	28080	26630
12	24540	25180	25180	23640	e25530	25600	26120	28410	28600	28790	e28060	26570
13	24510	25180	25160	23730	e25540	e25660	26150	28450	28600	28800	e28040	26530
14	24450	25180	25160	23700	e25560	e25720	26130	28490	28560	28740	e28020	26460
15	24410	25180	25150	23710	e25570	25750	26130	e28470	28520	28610	e28000	26660
16	24410	25160	25150	e23600	25570	25740	26100	e28490	28520	28570	e27980	26710
17	24320	25180	25160	e23500	25580	25740	26080	28510	28460	28610	e27970	26700
18	24350	25160	25160	23440	e25560	25750	26080	28510	28550	28670	27960	26670
19	24320	25150	25140	24230	25540	25840	26070	28510	28610	28510	27520	26650
20	24310	25150	25140	24000	25550	e25860	26040	28510	28580	28340	e27510	26540
21	24220	25150	25130	23860	e25600	e25900	26050	28510	28750	28330	e27500	26630
22	24260	25140	25120	23340	25660	25920	26020	e28460	28850	28390	e27490	e26640
23	24240	25120	25120	e23330	25750	25830	25970	28400	28890	28290	27490	26640
24	24210	25120	25110	e23330	26200	25820	26090	28510	28960	28350	e27440	e26600
25	24190	25110	25110	23320	27830	25850	26170	28300	29030	28190	e27380	e26560
26	24180	25110	25110	23180	32080	25850	26230	28460	29170	28220	27310	26500
27	24280	25120	25110	e23000	e33000	25850	26260	28510	29250	28160	e27280	26470
28	24270	25110	25120	e22850	e33800	25880	26280	28630	29200	28030	e27260	26450
29	24260	25150	25120	22730	---	25870	26420	28680	29160	28080	e27240	26410
30	24330	25150	25130	e22600	---	25870	26490	28710	29150	e28000	27220	26390
31	24890	---	25110	e22400	---	e25970	---	28730	---	e27980	e27180	---
MAX	24890	25190	25220	25120	33800	34980	26490	28730	29250	29160	28160	27110
MIN	24180	25030	25110	22400	22270	25600	25960	26760	28460	27980	27180	26390
(+)	2641.37	2641.61	2641.57	2639.03	2648.59	2642.34	2642.80	2644.67	2645.01	2644.07	2643.39	2642.71
(@)	+170	+260	-40	-2710	+11400	-7830	+520	+2240	+420	-1170	-800	-790
(++)	369	309	312	230	271	303	325	323	361	499	550	415

CAL YR 1998 MAX 30220 MIN 24180 (@) -3380 (++) 4742
WTR YR 1999 MAX 34980 MIN 22270 (@) +1670 (++) 4357

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal and industrial use by the Greenbelt Municipal Authority.

07299840 GREENBELT LAKE NEAR CLARENDON, TX--Continued



07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX

LOCATION.--Lat 34°56'08", long 100°41'46", Donley County, Hydrologic Unit 11120202, right downstream middle of bridge of FM 2471 1.0 mi downsteam from Bell Creek. and 5 mi north of Hedley, Texas.

DRAINAGE AREA.--74 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug 1964 to Sep 1995 miscellaneous measurements, Aug 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage not determined. Satellite telemeter at site.

REMARKS.--Records good. No known regulation. There are several small diversions upstream from the station for farm and ranch use.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	e17	3.0	3.5	4.5	3.9	4.8	4.7	3.4	1.3	.45	.43
2	30	e4.5	2.9	3.4	4.0	3.7	4.7	9.3	2.8	1.2	.53	.44
3	8.1	e3.6	3.3	3.3	3.8	3.6	5.4	5.4	3.1	1.1	1.0	.47
4	3.8	e3.3	3.2	3.4	3.6	3.8	4.6	3.5	2.9	1.1	1.9	.50
5	3.3	e3.1	3.1	3.6	4.0	3.7	4.8	4.3	2.8	1.0	.76	.54
6	2.3	e3.0	3.1	3.5	5.7	3.7	4.8	3.5	2.7	.99	.61	.56
7	1.9	e3.0	3.1	3.5	4.5	3.8	4.9	3.5	2.6	.97	.50	.57
8	1.9	e3.0	3.1	3.6	4.3	4.3	6.3	3.5	2.6	.97	.42	.58
9	1.8	e2.9	3.2	3.5	3.9	3.9	5.0	3.1	2.3	.90	.51	.60
10	1.7	2.8	3.3	3.7	4.0	3.7	4.8	3.5	2.1	.91	.44	.57
11	1.7	2.8	3.3	3.7	3.9	3.6	4.1	3.2	2.3	.90	.40	.63
12	1.7	2.7	3.3	3.7	3.8	4.7	3.9	2.8	2.3	.89	.37	.68
13	1.7	2.7	3.2	3.5	3.8	4.7	4.2	2.9	2.2	.87	.36	.68
14	1.6	2.7	3.2	3.6	3.7	4.1	4.3	3.3	2.0	.82	.35	.69
15	1.5	2.7	3.1	3.7	3.8	3.9	4.1	3.0	1.9	.78	.35	1.0
16	1.6	2.8	3.1	3.7	3.7	3.9	3.8	2.9	1.9	.75	.32	1.3
17	1.5	2.6	3.1	3.8	3.8	4.0	4.0	3.4	1.8	.77	.31	1.0
18	1.5	2.6	3.2	3.7	3.8	4.6	3.9	2.9	1.8	.72	.30	.92
19	1.5	e2.7	3.1	3.8	3.8	4.9	3.9	3.0	1.7	.67	.30	.90
20	1.6	e2.8	3.1	4.1	3.8	4.2	3.7	3.1	1.7	.66	.30	.90
21	2.0	e2.7	3.3	4.1	3.8	4.1	3.7	3.3	2.0	.70	.33	.91
22	1.6	e2.8	3.3	4.2	3.8	4.1	3.6	3.5	2.5	.73	.43	.91
23	1.6	e2.6	3.4	4.0	3.7	4.1	3.5	3.3	2.1	.62	.49	.92
24	1.6	e2.6	3.4	3.3	3.8	4.3	3.6	3.9	1.8	.59	.48	.92
25	1.5	2.6	3.9	3.1	3.8	4.5	4.2	3.5	1.8	.55	.45	.92
26	1.6	2.8	4.1	3.1	3.9	e4.5	3.8	3.7	2.1	.52	.43	.94
27	1.8	2.8	4.2	3.2	3.9	e4.6	3.6	6.3	1.7	.50	.43	.96
28	1.8	2.9	4.2	3.2	3.8	e4.7	3.3	7.9	1.5	.49	.45	1.1
29	1.4	3.0	3.8	5.7	---	e4.9	4.2	5.9	1.4	.47	.45	1.1
30	1.5	3.1	3.5	6.1	---	e4.9	4.0	4.8	1.4	.48	.45	1.1
31	e11	---	3.5	4.6	---	4.8	---	4.5	---	.46	.44	---
TOTAL	100.7	101.2	103.6	116.9	110.7	130.2	127.5	125.4	65.2	24.38	15.31	23.74
MEAN	3.25	3.37	3.34	3.77	3.95	4.20	4.25	4.05	2.17	.79	.49	.79
MAX	30	17	4.2	6.1	5.7	4.9	6.3	9.3	3.4	1.3	1.9	1.3
MIN	1.4	2.6	2.9	3.1	3.6	3.6	3.3	2.8	1.4	.46	.30	.43
AC-FT	200	201	205	232	220	258	253	249	129	48	30	47

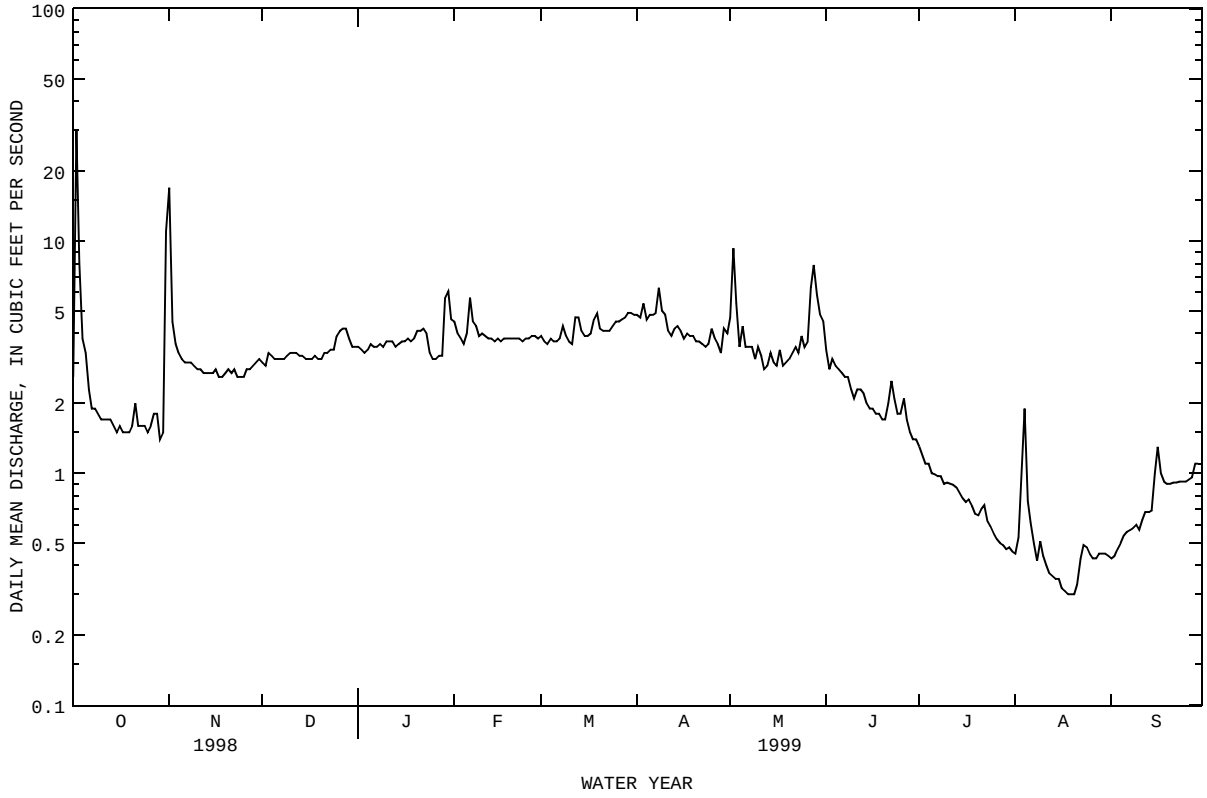
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999, BY WATER YEAR (WY)

MEAN	3.33	3.69	4.19	4.74	5.84	8.84	5.87	3.99	1.93	.78	1.78	1.90
MAX	3.41	4.00	5.04	5.70	7.72	13.5	7.48	4.05	2.17	.79	3.87	4.11
(WY)	1998	1998	1998	1998	1998	1998	1998	1999	1999	1999	1997	1997
MIN	3.25	3.37	3.34	3.77	3.95	4.20	4.25	3.93	1.69	.77	.49	.79
(WY)	1999	1999	1999	1999	1999	1999	1999	1998	1998	1998	1999	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1997 - 1999	
ANNUAL TOTAL	1591.40		1044.83			
ANNUAL MEAN	4.36		2.86		3.72	
HIGHEST ANNUAL MEAN					4.57	1998
LOWEST ANNUAL MEAN					2.86	1999
HIGHEST DAILY MEAN	68	Mar 17	30	Oct 2	68	Mar 17 1998
LOWEST DAILY MEAN	.58	Jul 30	.30	Aug 18	.30	Aug 18 1999
ANNUAL SEVEN-DAY MINIMUM	.64	Jul 25	.32	Aug 15	.32	Aug 15 1999
INSTANTANEOUS PEAK FLOW			126	Oct 2	134	Mar 17 1998
INSTANTANEOUS PEAK STAGE			5.33	Oct 2	5.33	Oct 2 1998
ANNUAL RUNOFF (AC-FT)	3160		2070		2690	
10 PERCENT EXCEEDS	8.3		4.5		7.0	
50 PERCENT EXCEEDS	3.0		3.1		3.3	
90 PERCENT EXCEEDS	.81		.53		.76	

e Estimated

07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued



07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Aug 1997 to current year.
TEMPERATURE: Aug 1997 to current year.

INSTRUMENTATION.--Water-quality monitor since Aug 1997.

REMARKS.--Interruption in the record was caused by malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 18,900 microsiemens, May 26, 1996; minimum, 166 microsiemens, Aug 3, 1999.
TEMPERATURE: Maximum, 36.5°C, Jul 13, 1998; minimum, 0.0°C, Dec 21-26, 1998, Jan 4, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,320 microsiemens, Mar 19; minimum, 166 microsiemens, Aug 3.
WATER TEMPERATURE: Maximum, 34.7°C, Jul 31; minimum, 0.0°C, Dec 21-26, 1998, Jan 4, 1999.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1160	336	926	---	---	e880	1130	1060	1100	1060	1010	1040
2	809	290	461	1010	910	975	1090	987	1050	1070	1030	1050
3	749	407	640	1030	987	1010	1160	1040	1090	1080	1020	1060
4	863	749	814	---	---	e1100	1180	1100	1150	1090	1040	1080
5	927	863	896	---	---	e1110	1180	1060	1130	1100	1030	1080
6	954	927	944	---	---	e1130	1130	1060	1100	1100	1030	1080
7	987	954	968	1160	1100	1140	1140	1110	1130	1110	1090	1100
8	1040	977	1000	---	---	e1140	1160	1080	1130	1150	1100	1120
9	1060	1020	1040	1170	1100	1130	1160	1090	1130	1170	1100	1140
10	1080	1020	1060	1190	1120	1150	1140	1030	1100	1170	1090	1140
11	1080	1010	1060	1210	1120	1160	1090	1030	1070	1170	1060	1130
12	1080	997	1050	1190	1100	1150	1110	1030	1070	1140	1070	1100
13	1080	973	1050	1180	1110	1140	1100	1020	1070	1140	1060	1110
14	1080	959	1040	1180	1020	1130	1100	1020	1070	1130	1030	1090
15	1080	944	1040	1190	1110	1160	1080	991	1040	1100	1030	1080
16	1080	974	1050	1170	1010	1120	1070	993	1040	1110	1030	1070
17	1090	961	1050	1180	1050	1150	1070	996	1040	1100	1020	1070
18	1100	976	1060	1180	998	1120	1070	982	1040	1120	1040	1080
19	1100	991	1070	---	---	e1140	1100	1070	1080	1100	994	1060
20	1100	1030	1070	---	---	e1130	1100	1070	1090	1100	1010	1060
21	1100	1010	1070	---	---	e1130	1160	1090	1130	1070	972	1040
22	1100	1000	1070	---	---	e1120	1150	1090	1120	1120	1060	1100
23	1110	1030	1080	---	---	e1110	1150	1090	1120	1140	1050	1100
24	1110	1000	1070	---	---	e1110	1150	1080	1120	1120	1030	1090
25	1110	996	1070	1140	1070	1110	1140	1070	1120	1110	1040	1080
26	1100	1000	1070	1150	1080	1120	1130	1070	1110	1120	1030	1080
27	1090	995	1060	1130	1050	1100	1120	1070	1100	1110	1040	1080
28	1050	975	1020	1110	1050	1080	1130	1060	1100	1180	1080	1120
29	1080	1000	1050	1110	1030	1080	1100	1020	1060	1180	1110	1140
30	1090	861	1040	1110	1030	1080	1070	996	1040	1180	1120	1140
31	---	---	e835	---	---	---	1070	1020	1040	1150	1090	1120
MONTH	---	---	991	---	---	1110	1180	982	1090	1180	972	1090

07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1140	1050	1110	1040	970	1010	---	---	e1070	1030	754	929
2	1140	1060	1100	1050	975	1020	---	---	e1060	1020	578	898
3	1130	1050	1090	1050	983	1020	---	---	e940	1050	1020	1040
4	1130	1060	1090	1050	977	1020	---	---	e1080	1040	984	1000
5	1090	1030	1060	1070	974	1030	---	---	e1060	1010	976	987
6	1060	1020	1040	1060	995	1040	---	---	e1060	1010	968	994
7	1070	984	1040	1080	1050	1060	---	---	e1050	1020	967	1010
8	1070	964	1020	1090	1030	1060	---	---	e920	1020	1010	1010
9	1050	1010	1030	1140	1080	1110	---	---	e990	1020	999	1010
10	1060	1000	1040	1080	996	1050	---	---	e1030	1010	983	994
11	1100	1020	1050	1080	1060	1070	---	---	e1020	1010	982	1000
12	1230	1030	1100	1080	1040	1050	---	---	e1030	992	962	977
13	1070	1030	1060	---	---	e1080	---	---	e1010	974	936	956
14	1070	972	1030	1140	1090	1120	---	---	e1040	955	908	939
15	1070	1010	1050	1130	1060	1110	---	---	e1060	944	902	931
16	1070	1010	1040	1110	1040	1090	---	---	e1060	950	855	928
17	1050	1000	1040	1100	1040	1070	---	---	e1050	917	841	881
18	1060	1020	1040	---	---	e1160	---	---	e1010	945	875	908
19	1060	1010	1040	1320	1150	1250	---	---	e1020	967	926	949
20	1050	1010	1040	1150	1060	1100	---	---	e1020	981	887	950
21	1060	987	1040	1090	1030	1070	---	---	e1030	977	900	944
22	1060	986	1040	1100	952	1040	1030	951	1000	951	888	932
23	1080	1010	1050	---	---	e1010	---	---	e1010	965	937	950
24	1080	1010	1060	---	---	e1030	---	---	e1040	979	952	968
25	1100	982	1060	---	---	e1020	---	---	e990	986	777	944
26	1040	943	1010	---	---	e1020	---	---	e1030	997	894	975
27	1040	978	1020	---	---	e1030	---	---	e1020	---	---	e890
28	1060	975	1020	---	---	e1040	1070	930	1020	---	---	e920
29	---	---	---	---	---	e1030	1040	942	995	---	---	e950
30	---	---	---	---	---	e1040	1120	1030	1070	---	---	e960
31	---	---	---	---	---	e1030	---	---	---	---	---	e980
MONTH	1230	943	1050	---	---	1060	---	---	1030	---	---	958

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e980	962	909	939	940	837	901	963	839	920
2	---	---	e990	973	923	954	922	851	896	949	842	912
3	1000	962	985	987	931	965	913	166	766	963	860	920
4	1010	790	984	993	927	969	807	471	633	957	887	929
5	1030	991	1010	993	923	968	661	525	577	958	864	925
6	1010	979	1000	986	906	961	884	661	777	950	870	922
7	1020	965	1010	987	910	963	935	876	903	949	868	918
8	1030	981	1010	976	889	946	958	895	944	948	905	930
9	1020	967	1000	988	898	959	960	925	941	958	863	926
10	1010	975	991	993	930	972	973	942	959	956	874	923
11	996	983	990	991	919	970	968	892	948	961	880	929
12	1000	964	986	981	912	956	980	919	958	954	888	930
13	997	958	983	978	907	956	980	885	947	952	889	929
14	1010	958	981	993	908	960	963	873	930	952	885	927
15	989	944	970	988	905	959	952	871	926	1140	830	990
16	962	919	948	993	907	961	953	878	926	1020	847	962
17	947	918	934	988	908	952	954	880	928	1000	958	985
18	953	922	942	969	895	940	951	879	926	999	892	940
19	964	920	949	945	882	923	949	879	924	1020	967	995
20	967	929	956	931	869	909	947	876	923	1030	984	1010
21	982	941	965	971	844	900	948	855	916	1020	961	997
22	1110	973	1000	971	866	908	913	855	890	998	943	978
23	1130	898	998	909	855	889	921	861	895	985	933	967
24	913	815	885	898	864	887	922	859	894	982	920	961
25	907	757	886	894	839	873	927	862	897	980	921	960
26	950	810	894	885	847	871	923	859	896	977	919	957
27	1010	902	953	895	842	876	931	864	903	974	910	949
28	1000	846	922	904	858	887	978	792	891	965	945	955
29	918	865	892	944	835	900	1030	830	938	968	922	951
30	938	892	921	966	850	919	970	854	914	967	937	955
31	---	---	---	956	833	911	986	866	944	---	---	---
MONTH	---	---	964	993	833	932	1030	166	891	1140	830	948

e Estimated

07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.8	18.8	24.7	---	---	---	16.3	9.2	12.0	8.0	3.4	5.2
2	20.9	18.4	19.8	14.9	10.0	11.9	16.2	10.8	13.1	5.5	1.8	3.4
3	27.4	20.9	23.5	15.8	11.1	12.5	15.7	11.9	13.8	5.5	.6	2.4
4	29.7	23.3	25.4	---	---	---	16.3	9.9	12.4	6.3	.0	2.2
5	24.6	19.0	20.9	---	---	---	17.3	10.8	13.2	8.0	.9	3.4
6	25.6	15.8	19.6	---	---	---	15.8	9.6	12.3	9.3	1.9	4.5
7	26.6	15.5	19.8	---	---	---	9.8	6.8	8.9	4.3	2.9	3.5
8	22.8	15.7	18.5	---	---	---	11.5	5.3	7.5	5.1	1.7	3.1
9	22.9	14.0	17.3	16.2	11.2	12.9	10.9	4.5	6.9	6.4	.2	2.5
10	23.4	13.7	17.5	---	---	---	9.4	6.4	7.3	7.7	.5	3.1
11	24.2	14.8	18.3	---	---	---	10.2	5.4	7.1	9.7	1.6	4.7
12	23.6	14.2	18.0	15.0	8.8	11.3	10.3	3.9	6.2	9.7	4.5	6.4
13	25.2	15.6	19.3	14.9	11.3	12.5	10.8	4.3	6.6	10.1	3.9	6.1
14	25.0	16.6	19.6	17.6	11.8	13.4	10.9	4.1	6.7	10.0	3.7	5.9
15	24.1	16.5	19.3	16.6	9.7	12.4	11.3	4.6	7.1	10.4	3.3	6.1
16	23.3	17.7	19.5	17.1	10.7	12.8	10.6	4.3	6.7	10.6	5.2	7.3
17	22.9	15.3	18.9	16.5	9.1	12.0	10.5	4.3	6.7	11.9	5.8	7.8
18	21.3	12.3	15.7	17.1	10.9	13.4	11.9	6.7	8.7	10.4	3.7	6.4
19	20.7	11.4	15.1	---	---	---	8.6	5.3	6.9	13.4	6.0	8.4
20	15.6	13.6	14.3	---	---	---	6.0	4.8	5.4	12.5	5.3	8.2
21	18.6	12.7	14.6	14.5	7.7	10.3	5.4	.0	1.8	13.2	7.1	9.6
22	19.2	12.5	15.0	16.0	8.6	11.3	3.0	.0	.7	8.5	4.9	6.4
23	15.9	11.8	13.6	16.1	9.6	11.9	3.6	.0	1.1	10.8	3.4	6.3
24	20.4	12.1	15.1	15.4	7.7	11.0	5.0	.0	1.2	11.3	5.1	7.5
25	20.8	12.6	16.0	15.8	9.2	11.5	5.4	.0	1.6	9.9	5.3	6.9
26	20.7	14.5	16.9	15.2	7.8	10.7	6.5	.0	2.4	10.9	3.6	6.6
27	20.6	16.1	17.9	16.5	8.8	11.9	7.5	2.0	4.0	10.9	4.9	7.6
28	17.6	15.4	16.4	16.6	11.0	13.5	7.8	1.9	4.1	7.5	4.7	6.1
29	16.2	12.4	14.2	14.9	12.4	13.6	9.8	3.2	5.4	4.7	3.7	4.0
30	15.6	14.3	14.7	17.1	10.9	13.1	9.4	3.0	5.5	4.6	1.9	3.5
31	---	---	---	---	---	---	8.0	3.3	5.1	7.6	4.1	5.6
MONTH	---	---	---	---	---	---	17.3	.0	6.7	13.4	.0	5.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.2	4.9	7.4	18.5	8.3	12.7	21.7	13.4	16.5	15.5	14.0	14.5
2	11.9	5.2	7.8	17.1	9.7	12.4	22.5	13.4	16.8	18.6	13.7	15.7
3	12.0	5.9	8.1	16.3	7.2	10.8	13.8	11.7	12.7	18.9	15.7	17.5
4	11.4	4.7	7.6	16.8	7.6	11.3	17.0	9.2	11.9	20.5	16.4	18.1
5	13.9	7.4	10.5	17.5	9.1	12.4	20.0	11.1	15.2	19.7	15.1	17.0
6	13.4	9.7	11.3	17.0	8.4	11.8	21.0	10.8	15.1	19.6	13.9	16.4
7	15.1	7.4	10.5	---	---	---	17.1	12.5	14.7	20.8	13.4	16.6
8	16.1	7.8	11.2	---	---	---	20.0	14.5	16.7	22.8	15.4	18.5
9	16.6	8.6	11.7	16.4	8.4	11.8	22.3	12.7	16.6	22.2	18.5	20.0
10	17.5	8.7	12.7	18.9	9.2	12.9	21.0	10.6	15.5	24.5	17.4	20.3
11	13.8	5.5	9.7	---	---	---	19.7	11.5	14.9	20.4	16.3	18.2
12	12.9	4.6	7.6	---	---	---	18.6	12.0	14.7	22.6	15.1	18.3
13	13.1	3.7	7.7	---	---	---	20.4	14.0	16.1	21.2	16.0	18.9
14	13.7	5.5	8.6	---	---	---	20.6	10.4	15.5	27.0	18.2	21.7
15	15.7	6.7	10.4	15.0	6.7	10.3	17.7	7.9	11.9	28.4	20.5	23.8
16	15.7	7.5	10.6	16.5	10.3	13.1	16.3	9.9	12.2	29.5	21.4	24.2
17	15.5	6.7	10.5	16.5	11.7	13.8	18.4	9.8	12.8	25.6	19.1	21.8
18	13.8	7.6	9.9	---	---	---	21.8	11.0	14.9	26.1	17.1	21.0
19	13.1	6.7	8.9	---	---	---	24.0	11.8	16.9	26.4	18.1	21.8
20	14.6	6.6	9.5	17.5	7.4	11.6	24.7	13.4	18.2	28.1	20.3	22.7
21	14.2	6.9	9.4	20.5	10.5	14.5	22.3	15.0	17.9	29.4	18.2	22.7
22	14.4	6.5	9.2	23.1	12.6	16.7	26.1	14.8	19.2	30.8	20.2	24.1
23	15.0	5.9	9.2	17.0	10.9	13.4	17.9	12.3	14.9	28.5	20.4	23.3
24	16.5	6.4	10.4	12.8	9.2	10.6	13.7	11.0	12.2	24.6	18.4	20.7
25	17.0	7.6	11.5	15.8	7.2	11.1	22.8	11.6	15.9	28.1	18.2	20.9
26	18.0	10.4	13.1	---	---	---	23.6	13.3	17.5	20.8	18.4	19.2
27	16.3	8.9	11.8	---	---	---	25.6	13.5	18.6	---	---	---
28	17.4	8.2	11.7	---	---	---	26.5	15.2	19.8	---	---	---
29	---	---	---	---	---	---	18.6	15.9	17.0	---	---	---
30	---	---	---	---	---	---	17.4	14.9	15.8	---	---	---
31	---	---	---	22.0	12.2	16.1	---	---	---	---	---	---
MONTH	18.0	3.7	9.9	---	---	---	26.5	7.9	15.6	---	---	---

07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	32.0	24.2	27.1	33.7	22.9	27.4	30.5	21.0	25.1
2	---	---	---	31.5	24.2	27.0	30.1	23.5	26.0	30.4	21.3	25.1
3	29.8	21.0	24.2	30.1	23.4	25.9	32.1	23.3	26.4	28.7	21.5	24.8
4	29.9	21.0	24.4	30.6	23.1	26.0	26.2	22.4	24.3	27.1	21.8	24.2
5	25.0	21.6	23.1	31.6	23.1	26.5	26.2	23.6	24.7	29.2	20.8	24.2
6	28.9	19.3	22.8	32.5	23.0	27.0	27.7	23.7	25.4	29.8	20.0	24.2
7	30.3	20.2	24.2	31.6	23.1	26.6	30.3	24.1	26.5	28.9	21.1	24.4
8	30.5	20.8	24.6	31.5	23.3	26.7	31.6	24.1	27.3	23.4	20.2	21.8
9	30.3	21.0	24.8	31.3	23.5	26.7	29.8	24.6	27.2	27.5	19.3	22.5
10	27.9	21.0	23.5	27.6	23.0	24.8	31.5	24.3	27.4	28.1	19.3	23.0
11	22.6	19.6	21.0	28.7	19.9	23.5	31.2	24.3	27.5	28.8	20.9	23.8
12	28.6	19.0	22.6	29.1	19.2	23.6	32.2	24.4	27.3	24.4	19.0	22.0
13	26.0	19.8	22.2	29.9	20.2	24.4	30.8	22.4	25.9	25.4	16.9	20.1
14	27.8	18.4	22.3	30.6	22.0	25.7	31.1	21.4	25.5	23.7	16.8	19.7
15	27.9	17.6	22.1	30.2	22.6	26.0	31.6	22.6	26.4	20.4	17.9	18.7
16	27.5	19.0	22.2	30.0	22.5	25.7	32.9	22.7	26.9	18.7	17.0	17.8
17	24.6	17.8	20.3	28.7	23.4	25.7	32.4	22.4	26.7	19.6	17.0	18.3
18	26.1	18.2	21.5	30.4	22.6	25.7	31.7	20.6	25.5	24.1	17.7	20.1
19	30.6	19.9	24.2	30.7	22.6	26.0	30.6	21.4	25.3	26.4	18.0	21.1
20	27.5	21.0	23.3	31.1	23.4	26.6	29.9	20.7	24.8	19.6	16.5	18.0
21	25.7	21.4	22.8	30.0	23.0	26.0	30.1	20.6	25.0	22.3	15.1	17.8
22	27.5	21.4	23.7	32.3	22.7	26.7	30.1	21.9	25.7	22.6	13.6	17.4
23	31.0	22.4	25.8	33.2	23.2	27.6	29.8	23.6	26.3	22.3	14.4	18.0
24	31.9	23.7	26.5	33.3	23.5	27.9	29.8	22.0	25.6	24.8	16.8	20.0
25	30.3	21.9	25.2	32.7	23.3	27.5	29.8	22.1	25.7	25.2	16.4	20.2
26	29.9	22.4	25.6	32.8	22.9	27.1	30.4	22.8	26.3	25.3	16.6	20.5
27	31.3	24.1	26.8	33.2	23.4	27.6	33.7	22.7	27.3	20.6	16.6	18.0
28	31.3	24.8	27.0	32.8	23.4	27.6	33.3	22.4	27.1	16.6	13.4	15.0
29	30.2	23.2	25.8	32.2	23.5	27.4	32.3	22.3	26.7	19.8	11.6	14.8
30	30.2	24.2	26.4	33.3	22.7	27.3	31.5	21.9	26.0	20.0	10.8	14.8
31	---	---	---	34.7	22.9	27.8	30.9	21.6	25.5	---	---	---
MONTH	---	---	---	34.7	19.2	26.4	33.7	20.6	26.2	30.5	10.8	20.5

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX

LOCATION.--Lat 34°57'27", long 100°13'14", Collingsworth County, Hydrologic Unit 11120202, near center of stream at downstream side of bridge on U.S. Highway 83, 4 mi downstream from Fort Worth and Denver (Burlington) Railway Co. bridge, 4.5 mi south of Lutie, and 7.2 mi north of Wellington.

DRAINAGE AREA.--1,222 mi^2, of which 209 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Jun 1952 to current year.
Water-quality records.--Chemical data: Feb 1951 to Oct 1954, Oct 1967 to Sep 1997. Biochemical data: Oct 1974 to Sep 1997. Specific conductance: Jun 1952 to Sepember 1954, Oct 1967 to Sep 1991. Water temperature: Jun 1952 to Sep 1954, Oct 1967 to Sep 1991.

GAGE.--Water-stage recorder. Datum of gage is 1,941.41 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Since water year 1967, at least 10% of contributing drainage area has been regulated by upstream reservoirs. There are several small diversions upstream from gage for irrigation.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--14 years (water years 1953-66) prior to completion of Greenbelt Lake, 72.6 ft^3/s (52,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1953-66).--Maximum discharge, 146,000 ft^3/s May 16, 1957 (gage height, 19.00 ft), from rating curve extended above 11,000 ft^3/s on basis of slope-area measurement of 63,400 ft^3/s; minimum, 0.1 ft^3/s Jun 19, 1952.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.5	569	40	27	167	12	47	477	34	7.8	2.8	2.8
2	97	135	30	22	90	13	42	667	22	6.2	4.9	2.8
3	17	89	41	12	60	10	65	321	45	5.9	3.7	3.0
4	6.3	49	130	10	57	10	56	233	95	5.5	23	3.5
5	5.1	39	61	18	48	10	116	60	38	5.4	16	3.3
6	4.8	33	44	22	51	9.3	81	41	24	5.4	8.8	3.3
7	4.7	37	37	24	50	10	50	28	18	5.2	5.0	3.2
8	4.4	35	34	22	40	90	330	25	13	4.9	3.1	3.4
9	4.1	35	31	14	29	77	212	33	9.6	4.8	225	3.5
10	3.9	29	29	18	26	47	93	216	8.8	6.4	45	3.7
11	4.0	24	29	22	21	43	35	121	9.8	5.8	18	4.5
12	4.3	21	29	29	16	126	23	39	13	5.6	8.9	3.9
13	4.7	21	30	29	15	171	27	28	12	5.2	6.8	4.0
14	4.6	22	30	33	15	96	58	27	9.3	4.4	5.9	3.8
15	4.6	20	29	32	16	77	43	26	8.3	4.1	5.3	15
16	6.3	18	28	32	13	62	27	19	7.7	3.8	4.8	14
17	5.7	16	27	33	13	56	22	21	7.2	3.9	4.3	9.9
18	5.4	18	27	28	12	143	22	14	7.8	4.0	3.9	8.2
19	5.7	20	26	26	9.6	310	21	8.5	7.9	4.1	3.6	7.8
20	7.9	21	29	23	10	167	19	7.4	8.0	3.9	3.6	8.4
21	9.1	21	30	23	11	136	15	61	18	3.5	3.5	6.7
22	7.4	21	59	25	12	80	13	54	125	3.4	3.1	6.3
23	6.9	18	27	26	12	50	11	64	80	3.3	3.0	5.8
24	6.6	17	22	29	13	41	34	26	28	3.2	2.9	5.7
25	6.5	18	25	29	13	44	244	19	24	3.0	3.2	5.7
26	6.7	19	24	30	13	42	203	37	44	2.9	3.1	5.5
27	7.3	20	33	31	12	42	68	261	48	2.9	3.0	5.5
28	22	21	58	30	11	57	38	431	29	2.9	2.9	6.1
29	10	29	52	210	---	70	249	238	13	2.8	2.9	6.2
30	9.5	61	39	370	---	70	343	115	9.4	3.0	2.8	5.9
31	915	---	31	221	---	61	---	55	---	3.7	2.8	---
TOTAL	1214.0	1496	1161	1500	855.6	2232.3	2607	3772.9	816.8	136.9	435.6	171.4
MEAN	39.2	49.9	37.5	48.4	30.6	72.0	86.9	122	27.2	4.42	14.1	5.71
MAX	915	569	130	370	167	310	343	667	125	7.8	225	15
MIN	3.9	16	22	10	9.6	9.3	11	7.4	7.2	2.8	2.8	2.8
AC-FT	2410	2970	2300	2980	1700	4430	5170	7480	1620	272	864	340

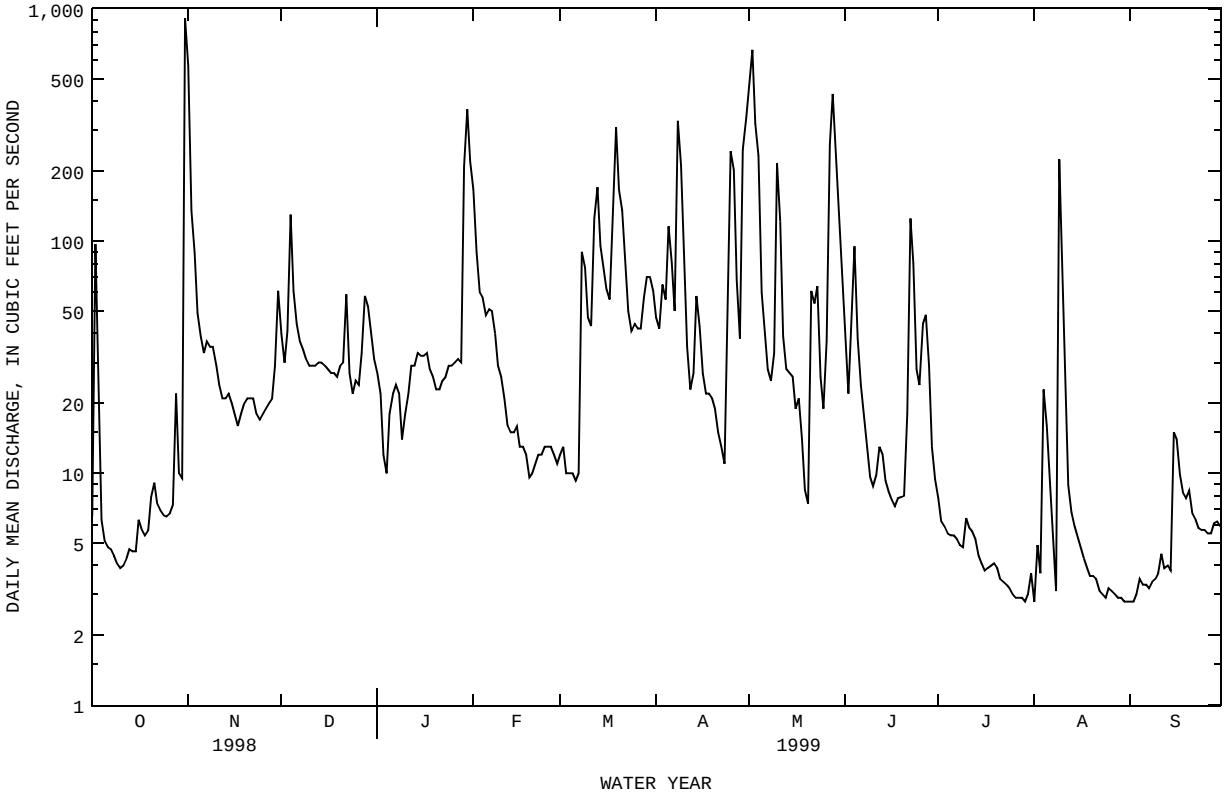
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999z, BY WATER YEAR (WY)

MEAN	31.9	29.1	28.6	31.5	38.4	44.3	94.4	111	149	30.3	28.7	31.6
MAX	279	213	92.4	86.0	117	165	1218	468	1006	155	301	113
(WY)	1987	1987	1992	1993	1998	1998	1997	1977	1995	1993	1968	1981
MIN	4.28	8.03	3.59	10.5	10.9	8.15	6.10	2.61	8.17	2.65	1.68	2.22
(WY)	1981	1981	1984	1971	1967	1972	1971	1971	1970	1970	1970	1984

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1967 - 1999z	
ANNUAL TOTAL	18453.4		16399.5			
ANNUAL MEAN	50.6		44.9		54.0	
HIGHEST ANNUAL MEAN					165	1997
LOWEST ANNUAL MEAN					10.5	1971
HIGHEST DAILY MEAN	915	Oct 31	915	Oct 31	17500	Apr 3 1997
LOWEST DAILY MEAN	2.4	Sep 8	2.8	Jul 29	.40	Jun 2 1985
ANNUAL SEVEN-DAY MINIMUM	2.8	Aug 25	2.9	Aug 27	.73	May 27 1985
INSTANTANEOUS PEAK FLOW			2100	Oct 31	81100	Apr 3 1997
INSTANTANEOUS PEAK STAGE			5.24	Oct 31	17.10	Apr 3 1997
ANNUAL RUNOFF (AC-FT)	36600		32530		39120	
10 PERCENT EXCEEDS	125		94		73	
50 PERCENT EXCEEDS	26		21		17	
90 PERCENT EXCEEDS	3.2		3.7		4.2	

z Period of regulated streamflow.

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued



07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51'30", long 99°30'30", in SW ¼ SE ¼ 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 good. No flow at times in most years.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	968	54	33	167	57	69	272	294	98	e1.1	.22
2	14	361	69	29	154	54	63	631	118	80	e6.0	.18
3	46	179	66	25	129	54	66	383	98	63	e2.7	.20
4	158	136	65	43	107	52	69	208	80	51	e2.1	.28
5	57	100	71	67	93	52	101	168	80	44	3.7	.46
6	25	81	92	96	86	50	74	121	107	39	97	.48
7	11	70	80	84	93	49	82	81	84	35	e58	.42
8	6.5	64	64	77	93	64	70	69	69	31	e24	.29
9	4.2	61	58	65	87	73	106	65	58	27	14	.26
10	3.2	54	54	58	76	106	196	112	50	30	e6.2	.24
11	3.0	49	51	56	68	95	114	127	44	171	80	.36
12	3.0	44	51	54	60	119	75	138	42	e120	81	.29
13	3.1	40	50	55	54	142	e50	90	38	e87	50	.24
14	2.9	39	49	60	48	190	e45	64	35	e63	25	.21
15	2.7	38	48	61	49	144	165	52	32	e50	20	1.3
16	4.2	37	48	58	49	104	91	44	28	e41	14	3.5
17	9.7	35	49	56	51	82	67	43	24	e32	11	3.3
18	49	35	50	53	49	74	51	52	23	e20	7.3	3.1
19	50	34	50	53	54	135	42	38	22	12	5.9	3.5
20	23	33	51	54	56	241	39	30	39	e9.3	4.4	3.3
21	21	33	53	52	56	189	34	25	98	e8.2	3.4	2.8
22	18	34	e59	52	56	140	31	32	231	e6.9	2.7	2.6
23	18	32	69	60	55	109	27	75	214	e5.4	2.2	2.4
24	17	32	67	57	56	81	66	46	160	e4.5	1.5	2.0
25	14	31	72	56	59	72	281	55	1260	e3.8	1.1	1.6
26	13	31	71	57	63	68	408	182	270	e3.1	.90	1.3
27	13	31	67	55	62	68	222	561	185	e2.7	.71	1.1
28	19	32	68	51	59	74	126	604	154	e2.3	.52	.78
29	18	37	61	73	---	75	156	407	124	e1.9	.46	.62
30	19	46	55	186	---	76	192	303	108	e1.5	.31	.58
31	51	---	36	192	---	76	---	223	---	e1.3	.26	---
TOTAL	696.96	2797	1848	2028	2089	2965	3178	5301	4169	1144.9	527.46	37.91
MEAN	22.5	93.2	59.6	65.4	74.6	95.6	106	171	139	36.9	17.0	1.26
MAX	158	968	92	192	167	241	408	631	1260	171	97	3.5
MIN	.46	31	36	25	48	49	27	25	22	1.3	.26	.18
AC-FT	1380	5550	3670	4020	4140	5880	6300	10510	8270	2270	1050	75

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1999, BY WATER YEAR (WY)

MEAN	78.9	32.5	38.9	47.8	57.1	54.6	105	264	240	65.3	40.8	51.7
MAX	919	196	148	199	263	344	1292	1389	1602	575	539	424
(WY)	1961	1987	1992	1960	1998	1998	1997	1957	1941	1953	1995	1995
MIN	.000	.000	.000	.000	.000	.12	.000	.000	.000	.000	.000	.000
(WY)	1941	1940	1940	1940	1953	1971	1955	1953	1952	1963	1943	1939

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

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1938 - 1999	
ANNUAL TOTAL	35589.24		26782.23			
ANNUAL MEAN	97.5		73.4		89.9	
HIGHEST ANNUAL MEAN					277	1941
LOWEST ANNUAL MEAN					12.3	1940
HIGHEST DAILY MEAN	1360	Mar 16	1260	Jun 25	22600	May 28 1978
LOWEST DAILY MEAN	.00	Sep 5	.18	Sep 2	.00	Oct 2 1937
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 5	.27	Sep 8	.00	Aug 14 1938
INSTANTANEOUS PEAK FLOW			3990	Jun 25	72000	May 16 1957
INSTANTANEOUS PEAK STAGE			8.93	Jun 25	14.70	Jun 16 1938
ANNUAL RUNOFF (AC-FT)	70590		53120		65100	
10 PERCENT EXCEEDS	246		155		130	
50 PERCENT EXCEEDS	51		52		18	
90 PERCENT EXCEEDS	.68		2.2		.00	

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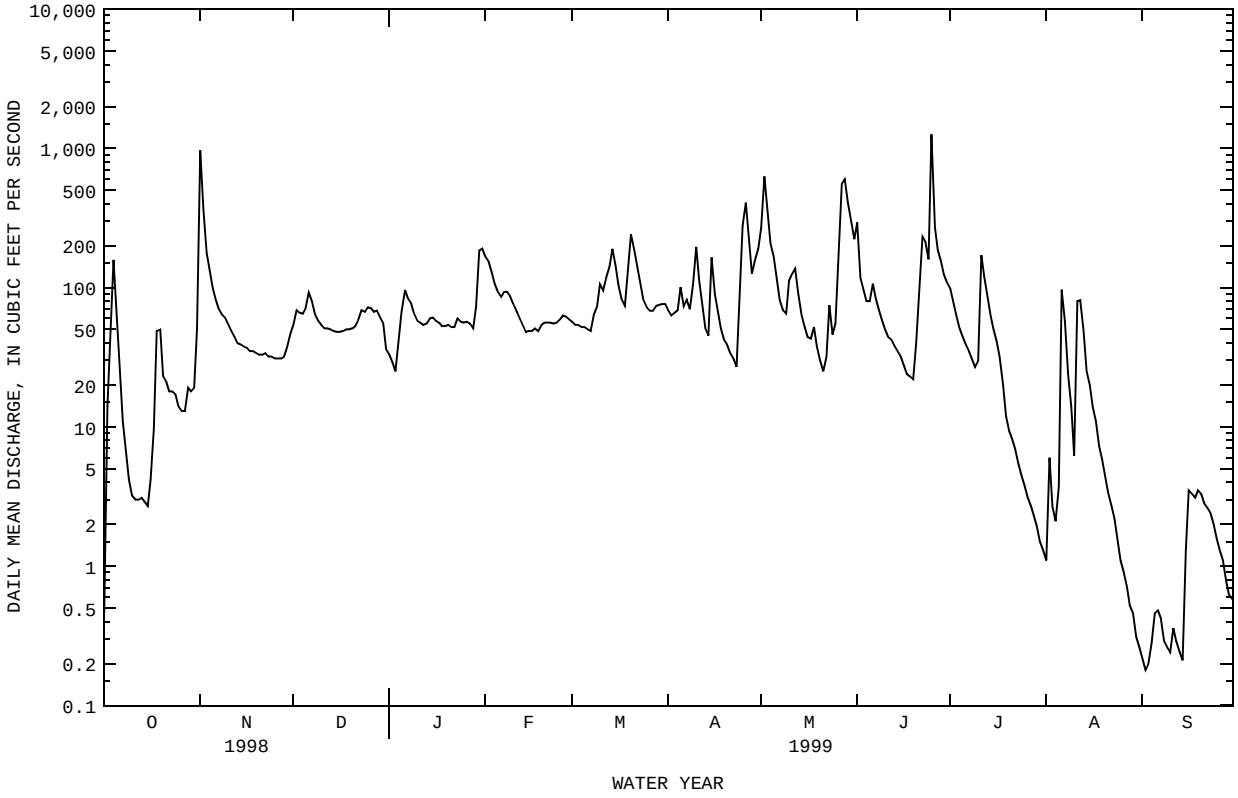

07301200 McCLELLAN CREEK NEAR McLEAN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 35°19'45", long 100°36'32", Gray County, Hydrologic Unit 11120301, on left bank at downstream side of bridge on State Highway 273, 5.0 mi upstream from mouth.

DRAINAGE AREA.--759.0 mi^2, of which 299 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1967 to Sep 1980 (continuous record), Oct 1981 to Sep 1992 (annual maximum), Oct 1992 to current year (peak discharge greater than base discharge).

REVISED RECORDS.--WDR TX-75-1: 1968-70, 1972, 1973(M), 1974.

GAGE.--Water-stage recorder. Datum of gage is 2,545.99 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in Oct 1967, at least 10% of contributing drainage area has been regulated by Lake McClellan (normal storage 5,000 acre-ft), 18 mi upstream. Flow is affected at times by discharge from flood-detention pool of a floodwater-retarding structure with detention capacity of 2,930 acre-ft. These structures control flow from 17.0 mi^2.

AVERAGE DISCHARGE.--13 years (water years 1967-80), 20.1 ft^3/s, 14,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft^3/s May 29, 1975 (gage height, 14.55 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1912, 21 ft in May 1957, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

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

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07301300 NORTH FORK RED RIVER NEAR SHAMROCK, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 35°15'51", long 100°14'29", Wheeler County, Hydrologic Unit 11120302, on left bank at downstream side of bridge on U.S. Highway 83, 2.5 mi north of Shamrock.

DRAINAGE AREA.--1,082 mi^2, of which 379 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1951 to Sep 1963 (miscellaneous measurements). Oct 1964 to Sep 1992 (annual maximum), Oct 1992 to current year (peak discharge greater than base discharge).

GAGE.--Water-stage recorder. Datum of gage is 2,165.55 ft above sea level.

REMARKS.--Records poor. Since installation of gage, at least 10% of contributing drainage area has been regulated by Lake McClellan (normal storage 5,000 acre-feet) 41 miles upstream. Flow is affected at times by discharge from flood-detention pools of eleven floodwater retarding structures with combined detention capacity of 18,290 acre-feet. These structures control runoff from 165 mi^2.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft^3/s Jun 3, 1995 (gage height, 8.49 ft).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 31	1100	2,130	2.99	May 2	2300	2,180	3.01
Apr 8	0215	3,730	3.55	May 21	2000	1,040	2.54
May 2	0430	1,680	2.82	Jun 3	0045	3,310	3.41

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07301410 SWEETWATER CREEK NEAR KELTON, TX

LOCATION.--Lat 35°28'23", long 100°07'14", Wheeler County, Hydrologic Unit 11120302, near center of stream at downstream side of bridge on Farm Road 592, 5 mi north of Kelton, 8 mi upstream from Texas-Oklahoma State line, and 8.5 mi northeast of Wheeler.

DRAINAGE AREA.--287 mi^2, of which 20 mi^2 probably is noncontributing.

PERIOD OF RECORD.--November 1961 to current year.
Water-quality records.--Chemical data: Oct 1969 to Jun 1985.

GAGE.--Water-stage recorder. Datum of gage is 2,230 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. There are many small diversions upstream from the station for ranch use. Satellite telemeter at site.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 20 ft May 16, 1957, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.60	42	12	9.5	24	15	21	36	16	8.8	1.8	e1.1
2	1.3	24	13	9.1	21	15	20	123	15	8.3	1.8	e1.1
3	.65	18	15	8.6	20	14	21	98	98	7.7	1.8	e1.0
4	.61	13	17	8.5	18	15	20	49	105	7.3	2.3	e1.0
5	.57	11	13	9.3	18	15	21	36	38	7.0	3.2	e1.0
6	.64	10	12	9.7	18	14	21	33	29	6.7	3.5	e.99
7	.67	10	11	9.8	19	14	20	29	26	6.5	3.4	e.98
8	.71	10	11	9.8	19	23	31	27	23	6.4	3.1	e.96
9	.76	10	11	9.2	19	22	28	26	21	6.0	2.9	e.95
10	.81	9.9	12	9.6	19	19	23	42	19	6.7	2.8	e.94
11	.93	9.4	12	9.7	17	17	20	39	18	7.3	2.6	e.93
12	1.0	9.6	13	9.9	16	24	19	29	18	6.7	2.5	e.93
13	1.1	9.9	13	9.4	16	28	19	28	16	6.4	2.2	e.92
14	1.2	10	12	9.3	16	24	22	28	15	5.9	2.1	e.92
15	1.4	10	12	9.3	16	22	22	28	14	5.6	1.8	2.0
16	1.6	10	13	9.3	16	20	20	28	13	5.4	1.8	2.2
17	1.7	10	13	9.3	16	18	18	28	13	5.1	1.7	2.3
18	1.5	9.8	13	8.8	16	23	17	24	12	4.7	1.7	2.4
19	1.4	11	11	9.0	15	71	17	19	12	4.4	1.7	2.4
20	1.7	11	11	9.1	15	41	17	18	11	4.1	1.6	2.3
21	2.2	12	10	9.3	14	32	16	18	12	3.9	1.6	2.4
22	3.5	12	9.6	9.1	16	28	16	17	13	3.6	1.5	2.5
23	5.1	13	9.6	9.2	15	25	15	16	14	3.4	1.4	2.5
24	6.3	12	9.7	9.1	15	24	31	16	12	3.2	1.4	2.4
25	7.4	11	11	9.0	15	24	76	16	11	2.8	1.4	2.4
26	8.5	10	11	9.5	15	23	42	24	11	2.6	e1.3	2.4
27	9.8	10	10	9.5	14	22	29	24	10	2.4	e1.3	2.3
28	11	12	9.7	9.2	14	23	25	25	9.4	2.3	e1.3	2.3
29	14	12	9.7	22	---	22	34	22	9.2	2.2	e1.2	2.4
30	16	13	9.5	33	---	22	35	20	8.9	2.1	e1.2	2.5
31	35	---	9.4	29	---	22	---	18	---	2.0	e1.1	---
TOTAL	139.65	375.6	359.2	344.1	472	721	736	984	642.5	157.5	61.0	51.42
MEAN	4.50	12.5	11.6	11.1	16.9	23.3	24.5	31.7	21.4	5.08	1.97	1.71
MAX	35	42	17	33	24	71	76	123	105	8.8	3.5	2.5
MIN	.57	9.4	9.4	8.5	14	14	15	16	8.9	2.0	1.1	.92
AC-FT	277	745	712	683	936	1430	1460	1950	1270	312	121	102

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999, BY WATER YEAR (WY)

MEAN	8.30	10.6	12.2	13.3	16.2	18.6	22.5	26.6	23.1	6.05	5.45	7.58
MAX	42.1	34.5	27.1	27.6	29.6	42.2	100	196	86.3	32.3	42.7	40.9
(WY)	1987	1975	1998	1998	1987	1998	1997	1977	1965	1967	1963	1988
MIN	.30	1.05	3.11	5.78	6.82	9.09	8.72	3.38	2.80	.44	.000	.027
(WY)	1985	1985	1984	1995	1995	1977	1971	1971	1966	1974	1964	1984

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999	
ANNUAL TOTAL	5446.60		5043.97			
ANNUAL MEAN	14.9		13.8		14.0	
HIGHEST ANNUAL MEAN					33.5	1997
LOWEST ANNUAL MEAN					4.89	1984
HIGHEST DAILY MEAN	143	Mar 16	123	May 2	1820	May 21 1977
LOWEST DAILY MEAN	.19	Sep 5	.57	Oct 5	.00	Jul 29 1964
ANNUAL SEVEN-DAY MINIMUM	.21	Sep 2	.66	Oct 3	.00	Jul 29 1964
INSTANTANEOUS PEAK FLOW			194	May 2	2890	May 20 1977
INSTANTANEOUS PEAK STAGE			10.03	May 2	15.73	May 20 1977
INSTANTANEOUS LOW FLOW					.00	Jul 29 1964
ANNUAL RUNOFF (AC-FT)	10800		10000		10150	
10 PERCENT EXCEEDS	29		27		23	
50 PERCENT EXCEEDS	11		11		10	
90 PERCENT EXCEEDS	.44		1.4		.90	

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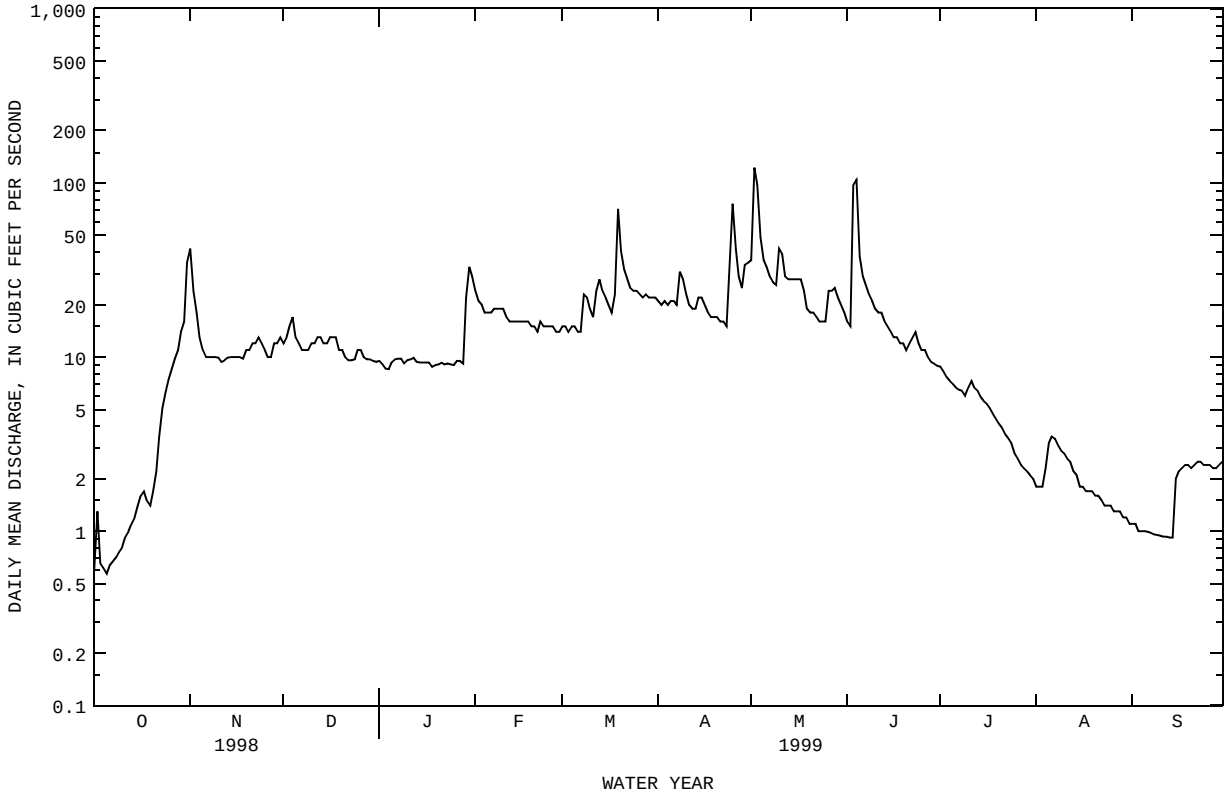
07301410 SWEETWATER CREEK NEAR KELTON, TX--Continued



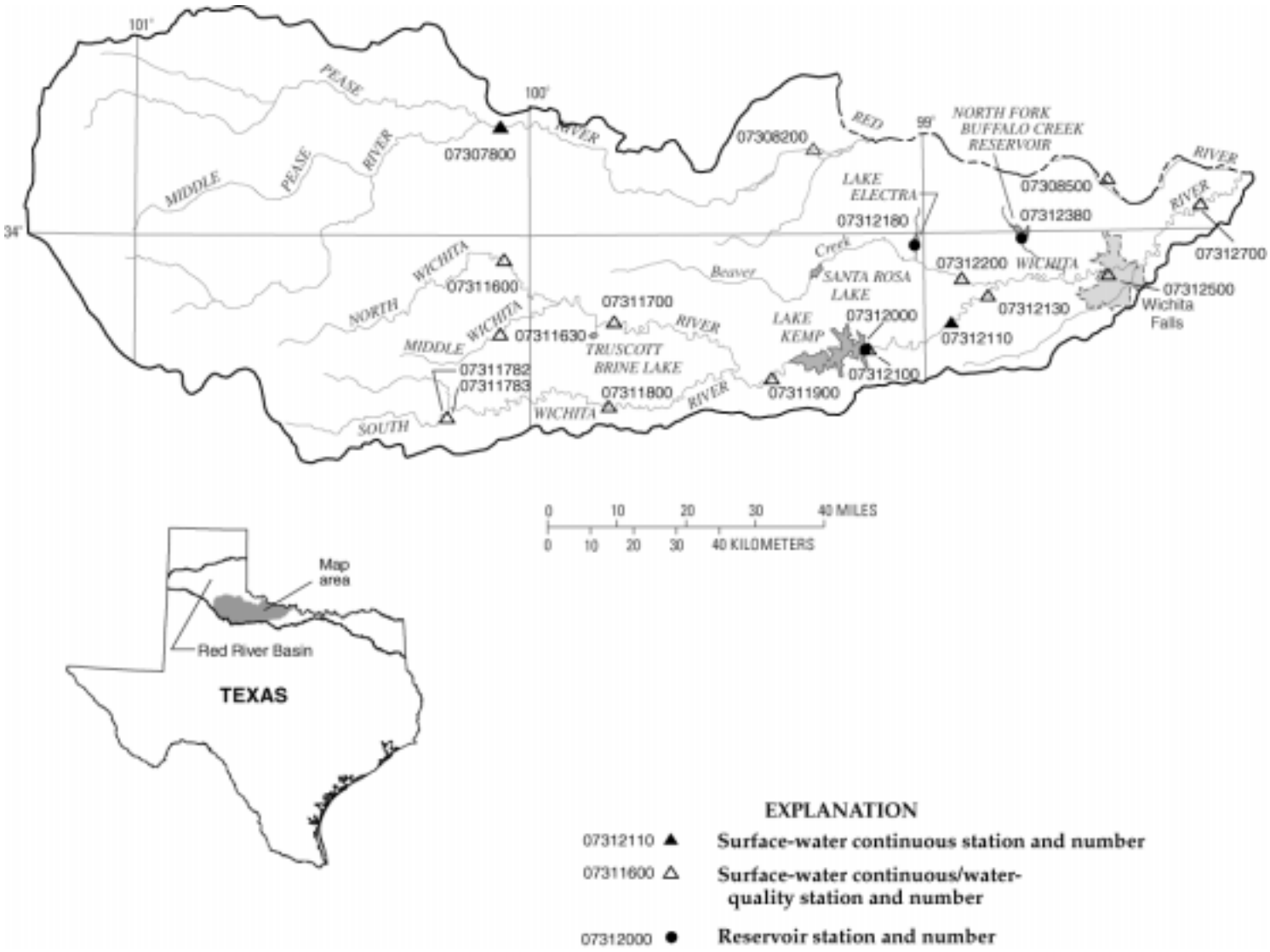


Figure 5.-- Map showing location of gaging stations in the second section of the Red River Basin

07307800 PEASE RIVER NEAR CHILDRESS, TX

LOCATION.--Lat 34°13'39", long 100°04'24", Cottle County, Hydrologic Unit 11130105, near right bank at downstream side of bridge on Farm Road 104, 0.8 mi upstream from Catfish Creek, 4.4 mi downstream from confluence of North and Middle Forks, 17 mi southeast of Childress, and 71.0 mi upstream from mouth.

DRAINAGE AREA.--2,754 mi^2, of which 559 mi^2 probably is noncontributing

PERIOD OF RECORD.--Dec 1959 to Sep 1962 and Oct 1967 to current year.
Water-quality records.--Chemical data: Jul 1968 to Sep 1982, Oct 1994 to Sep 1997. Pesticide data: Oct 1994 to Sep 1997. Specific conductance: Oct 1994 to Sep 1997. Water temperature: Oct 1994 to Sep 1997.

GAGE.--Water-stage recorder. Datum of gage is 1,492.98 ft above sea level. Prior to Dec 21, 1959, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are three small diversions for irrigation above station. Flow is affected at times by discharge from the flood-detention pools of six flood-water-retarding structures with a combined detention capacity of 1,360 acre-ft. These structures control runoff from 6.27 mi^2 in the Kent Creek drainage basin.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1909, 22 ft Jun 1, 1957; flood in May 1935 reached a stage of 18 ft and was the second highest, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 27	2000	2,590	9.86	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.77	157	9.6	10	34	9.0	13	349	116	e35	e.90	.64
2	7.9	48	8.0	10	22	8.9	12	646	61	e28	e.92	.64
3	5.7	23	8.1	8.0	18	8.8	27	436	49	e25	e9.2	1.7
4	2.9	17	8.3	8.3	14	9.0	20	227	e45	e19	30	1.4
5	1.2	13	7.2	9.2	14	8.5	22	125	e41	e16	217	.77
6	1.1	12	6.7	9.3	14	8.8	25	93	e36	e14	103	.83
7	1.6	12	5.8	9.2	15	9.5	17	77	e25	e13	45	.72
8	1.8	10	6.8	10	13	14	15	60	e20	e11	17	.65
9	1.5	10	6.9	9.6	11	13	12	42	e9.0	e30	8.9	.66
10	1.7	7.4	6.7	9.9	12	12	11	84	11	164	6.0	.69
11	1.4	6.4	6.9	9.8	9.3	12	9.5	97	240	60	4.2	2.7
12	1.7	6.5	7.3	9.6	8.2	33	10	58	469	15	2.4	.84
13	1.9	7.6	6.7	9.0	8.6	52	11	33	341	8.1	1.8	.78
14	2.1	8.3	6.6	9.3	8.8	29	11	25	190	e7.5	1.5	.88
15	2.1	7.0	6.8	10	8.3	20	9.1	19	135	e6.5	1.3	4.7
16	12	5.8	6.9	8.8	7.5	15	8.9	23	77	e5.6	1.3	4.8
17	55	5.3	6.9	9.2	8.0	13	8.6	165	41	e4.8	1.4	3.8
18	7.7	5.5	7.9	8.4	7.3	38	8.7	51	27	e3.8	1.4	3.0
19	4.7	4.9	8.6	8.7	7.2	78	8.1	26	36	e3.0	1.4	5.1
20	8.0	5.1	8.8	8.7	7.8	38	7.9	23	157	e2.5	1.1	2.9
21	15	5.4	11	8.8	7.9	30	7.0	19	172	e2.2	1.1	2.9
22	7.6	4.9	5.4	10	8.5	21	6.7	15	170	e1.7	1.0	3.0
23	6.2	3.8	11	16	8.1	14	6.5	14	107	e1.5	1.0	2.6
24	5.4	3.7	9.9	14	8.2	13	12	12	75	e1.4	.92	2.2
25	5.1	4.0	9.6	11	8.7	13	56	19	166	e1.2	1.0	2.2
26	5.0	3.7	11	12	8.6	12	43	362	321	e1.0	.90	2.1
27	5.2	4.2	11	11	8.2	14	30	1220	366	e.98	.93	1.8
28	73	4.8	11	11	8.3	23	26	975	245	e.96	1.0	2.8
29	27	7.4	9.8	82	---	19	224	355	139	e.92	.88	3.3
30	38	13	9.9	130	---	17	329	222	55	e.92	.69	3.4
31	49	---	9.4	64	---	16	---	158	---	e.92	.63	---
TOTAL	359.27	426.7	256.5	554.8	314.5	621.5	1007.0	6030	3942.0	485.50	465.77	64.50
MEAN	11.6	14.2	8.27	17.9	11.2	20.0	33.6	195	131	15.7	15.0	2.15
MAX	73	157	11	130	34	78	329	1220	469	164	217	5.1
MIN	.77	3.7	5.4	8.0	7.2	8.5	6.5	12	9.0	.92	.63	.64
AC-FT	713	846	509	1100	624	1230	2000	11960	7820	963	924	128
CFSM	.01	.01	.00	.01	.01	.01	.02	.09	.06	.01	.01	.00
IN.	.01	.01	.00	.01	.01	.01	.02	.10	.07	.01	.01	.00

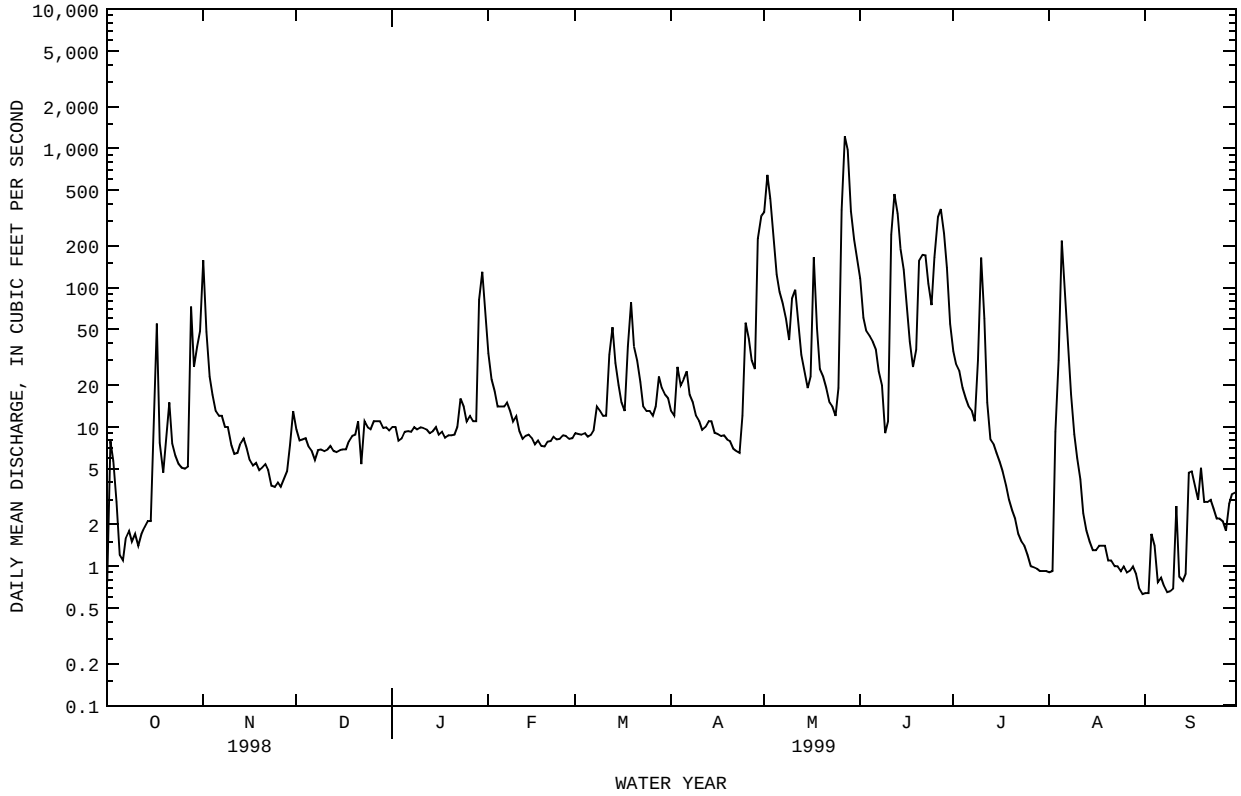
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999h, BY WATER YEAR (WY)

MEAN	98.6	22.4	18.5	20.8	26.5	33.4	60.7	94.8	208	48.3	65.2	92.2
MAX	895	154	132	158	170	181	750	424	858	248	723	683
(WY)	1984	1987	1992	1992	1992	1973	1997	1997	1995	1961	1995	1995
MIN	1.68	3.04	3.74	2.70	2.83	2.78	3.32	3.67	4.08	.28	.13	.61
(WY)	1981	1978	1979	1971	1971	1971	1974	1961	1970	1980	1980	1998

07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999h	
ANNUAL TOTAL	13315.67		14528.04			
ANNUAL MEAN	36.5		39.8		65.7	
HIGHEST ANNUAL MEAN					204	1995
LOWEST ANNUAL MEAN					15.8	1994
HIGHEST DAILY MEAN	728	Mar 17	1220	May 27	14800	Oct 20 1983
LOWEST DAILY MEAN	.38	Sep 10	.63	Aug 31	.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	.41	Sep 5	.77	Aug 27	.00	Aug 10 1969
INSTANTANEOUS PEAK FLOW			2590	May 27	28500	Jun 5 1995
INSTANTANEOUS PEAK STAGE			9.86	May 27	17.12	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	26410		28820		47610	
ANNUAL RUNOFF (CFSM)	.017		.018		.030	
ANNUAL RUNOFF (INCHES)	.23		.25		.41	
10 PERCENT EXCEEDS	85		88		97	
50 PERCENT EXCEEDS	9.9		9.2		9.2	
90 PERCENT EXCEEDS	.62		1.3		1.7	

e Estimated
h See PERIOD OF RECORD paragraph



07308200 PEASE RIVER NEAR VERNON, TX

LOCATION.--Lat 34°10'45", long 99°16'40", Wilbarger County, Hydrologic Unit 11130105, near left bank at downstream side of bridge on U.S. Highway 283, 1.9 mi north of Vernon, and 10 mi upstream from mouth.

DRAINAGE AREA.--3,488 mi^2, of which 559 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Dec 1959 to Sep 1982, Oct 1982 to Sep 1987 (annual maximums), Mar 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,166.03 ft above sea level.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are four small diversions for irrigation above station. Flow is affected at times by discharge from the flood-detention pools of six flood-retarding structures with a combined detention capacity of 1,360 acre-ft. These structures control runoff from 6.27 mi^2 in the Kent Creek drainage basin.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 24 ft in 1891. The flood in Sep 1936 reached a stage of 23.5 ft, and the flood of Jun 2, 1957, reached a stage of 22.0 ft, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 17	0400	3,310	11.16	Jun 20	1600	3,990	11.55
May 28	1030	4,060	11.58	Jun 25	1030	3,810	11.45
Jun 11	0800	2,520	10.67	Jul 11	0830	26,300	18.39

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	82	6.8	9.6	260	13	79	268	331	441	1.3	.00
2	.19	102	7.2	8.4	156	11	75	379	251	363	1.5	.00
3	.07	287	10	5.7	116	11	75	1080	195	307	2.5	.96
4	.01	180	13	8.0	84	12	63	1050	160	279	2.7	1.5
5	.00	131	13	9.3	67	11	63	609	139	291	91	.49
6	.00	110	11	9.5	51	10	58	379	117	355	5.7	.16
7	.00	101	9.3	8.6	38	11	60	246	96	554	29	.03
8	.00	33	9.1	7.1	36	34	54	169	75	1220	107	.00
9	.00	9.4	8.6	7.3	30	36	60	128	50	3350	48	.00
10	.00	e8.2	8.1	12	32	21	56	187	39	11600	31	.00
11	.00	e7.2	8.0	12	22	18	47	214	1080	20900	13	.00
12	.00	e6.3	8.4	11	18	79	43	108	315	12300	4.6	.01
13	.00	e5.9	7.5	9.3	15	151	45	122	286	e3640	1.7	.00
14	.00	e5.6	7.8	10	15	65	49	88	639	e570	.95	.00
15	.00	e5.2	7.8	10	14	52	35	55	376	e172	.66	1.9
16	.13	5.0	7.8	10	13	55	30	69	252	e61	.33	2.5
17	.00	4.5	7.7	10	13	35	21	2070	193	e32	.08	.99
18	.00	4.6	9.2	11	12	83	25	616	149	e32	.03	.55
19	.00	3.9	8.9	11	12	395	25	327	141	e29	.00	.33
20	.02	3.4	8.7	11	12	373	24	180	2410	20	.00	.17
21	.00	3.4	8.3	12	12	195	22	129	1070	19	.00	.01
22	.00	3.2	7.2	14	13	143	23	96	975	17	.00	.03
23	.06	2.8	7.7	20	14	103	19	68	687	13	.00	.14
24	.00	3.4	6.2	19	14	89	21	107	388	12	.00	.13
25	.14	3.2	7.7	17	15	79	55	91	2030	8.7	.00	.07
26	.01	2.6	7.5	18	14	70	69	422	1400	6.8	.00	.05
27	.19	3.0	9.1	20	13	80	46	1750	793	5.7	.00	.00
28	.20	3.7	13	20	13	102	48	2760	687	4.6	.00	.00
29	.02	4.8	15	186	---	98	39	1310	603	3.2	.00	.14
30	.00	7.1	11	660	---	91	130	838	542	2.1	.00	.21
31	1.8	---	9.5	403	---	87	---	505	---	1.5	.00	---
TOTAL	2.84	1132.4	280.1	1579.8	1124	2613	1459	16420	16469	56609.6	341.05	10.37
MEAN	.092	37.7	9.04	51.0	40.1	84.3	48.6	530	549	1826	11.0	.35
MAX	1.8	287	15	660	260	395	130	2760	2410	20900	107	2.5
MIN	.00	2.6	6.2	5.7	12	10	19	55	39	1.5	.00	.00
AC-FT	5.6	2250	556	3130	2230	5180	2890	32570	32670	112300	676	21

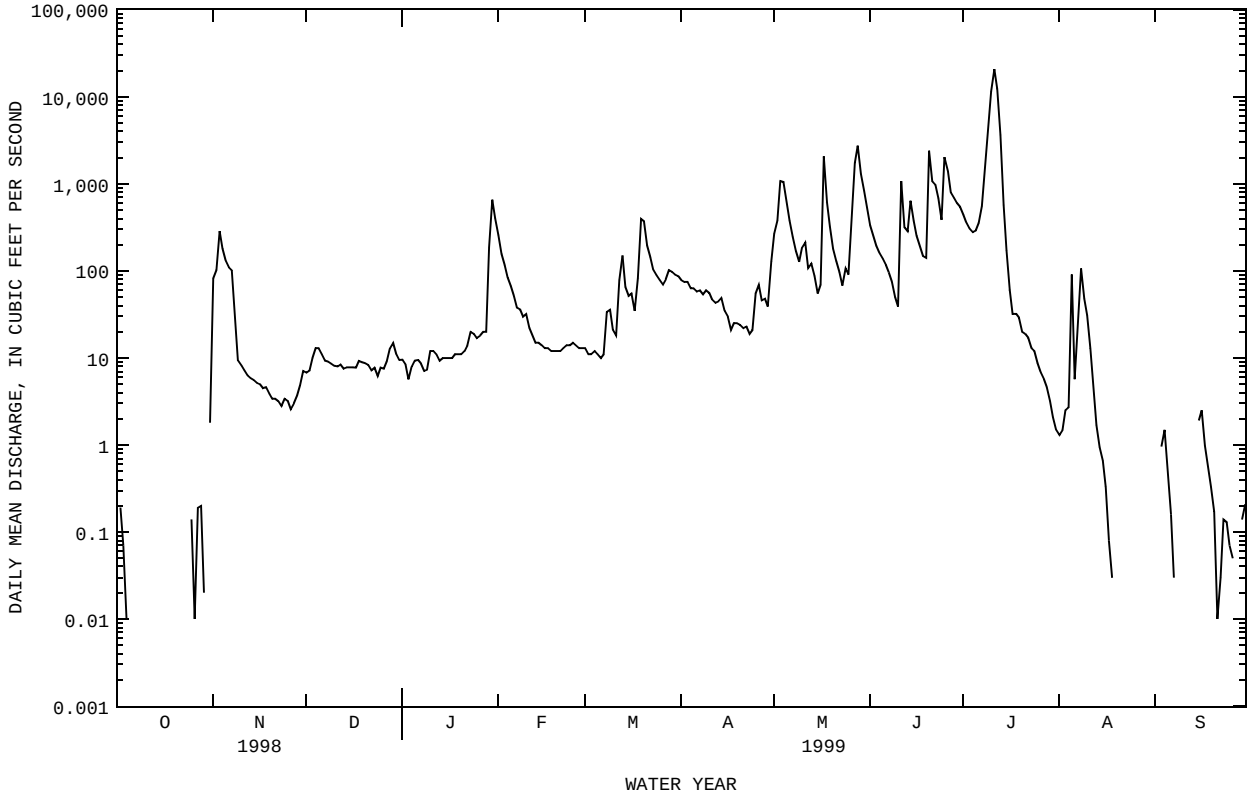
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999h, BY WATER YEAR (WY)

MEAN	114	44.7	29.4	27.8	47.3	70.0	107	230	362	179	123	206
MAX	1057	206	163	116	364	662	1009	777	2196	1826	1657	895
(WY)	1961	1993	1960	1973	1998	1998	1997	1977	1995	1999	1995	1965
MIN	.000	.000	.000	.000	.000	.000	.000	6.12	4.99	.000	.000	.13
(WY)	1964	1971	1971	1971	1971	1971	1971	1961	1998	1964	1980	1998

07308200 PEASE RIVER NEAR VERNON, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999h	
ANNUAL TOTAL	40950.73		98041.16			
ANNUAL MEAN	112		269		128	
HIGHEST ANNUAL MEAN					441	1995
LOWEST ANNUAL MEAN					12.6	1964
HIGHEST DAILY MEAN	7220	Mar 16	20900	Jul 11	20900	Jul 11 1999
LOWEST DAILY MEAN	.00	Jul 28	.00	Oct 1	.00	Aug 7 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 27	.00	Oct 5	.00	Aug 7 1960
INSTANTANEOUS PEAK FLOW			26300	Jul 11	40500	Oct 2 1983
INSTANTANEOUS PEAK STAGE			18.39	Jul 11	20.15	Oct 2 1983
ANNUAL RUNOFF (AC-FT)	81230		194500		92420	
10 PERCENT EXCEEDS	224		383		204	
50 PERCENT EXCEEDS	8.2		13		16	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
h See PERIOD OF RECORD paragraph



07308200 PEASE RIVER NEAR VERNON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Nov 1967 to Sep 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1998 to Sep 1999.
TEMPERATURE: Oct 1998 to Sep 1999.

INSTRUMENTATION.--Water-quality monitor since Oct 1998.

REMARKS.--Interruption in record was caused by malfunctions of the instrument. No flow Oct 30, Aug 19 to Sep 2, Sep 8-11, 27 and 28.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 16,900 microsiemens, Feb 13; minimum, 306 microsiemens, May 17.
WATER TEMPERATURE: Maximum, 33.8°C, Jul 14; minimum, 0.0°C, Dec 21, Jan 3, 5, 8.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	5540	2510	4660	10900	9870	10300	13800	13600	13700
2	---	---	---	11200	1890	3790	10900	10500	10800	14100	13700	13800
3	---	---	---	12700	9040	10300	11600	10900	11500	14300	13800	14100
4	---	---	---	9950	8650	9380	11800	11200	11600	14400	13800	14100
5	---	---	---	9710	8690	9090	12600	11800	12200	14100	13900	14000
6	---	---	---	10100	8800	9370	12800	11900	12600	14100	13600	13900
7	---	---	---	11200	10100	10500	14100	12700	13300	13900	13700	13800
8	---	---	---	12300	11200	11800	14300	12800	13500	13800	13700	13700
9	---	---	---	12600	12100	12400	13700	12600	13000	13900	13100	13600
10	---	---	---	12100	11900	12000	12900	12000	12500	13300	12900	13100
11	---	---	---	12000	11800	11900	12700	12200	12400	13100	12400	12800
12	---	---	---	---	---	e12000	12600	12100	12200	12900	12700	12800
13	---	---	---	---	---	e12000	12700	12200	12500	13000	12500	12900
14	---	---	---	---	---	e12000	12700	11800	12400	13400	12500	12900
15	---	---	---	---	---	e12000	12400	11800	12000	13600	13100	13400
16	---	---	---	---	---	e12000	12300	11800	12000	13500	12600	13100
17	---	---	---	12300	11800	12000	12400	11900	12200	13700	12900	13300
18	---	---	---	12000	11600	11800	12200	11600	12000	13800	13400	13600
19	---	---	---	12200	11700	11900	12000	11600	11800	13800	13300	13600
20	---	---	---	12200	11500	11800	12300	12000	12200	13900	13500	13700
21	---	---	---	12000	11500	11700	12800	12300	12500	13800	13500	13700
22	---	---	---	11800	11200	11500	13300	12800	13100	14000	11900	13200
23	---	---	---	11600	11000	11300	13500	13200	13400	12400	11100	12200
24	---	---	---	11500	10600	10900	13600	13000	13400	12700	11900	12200
25	---	---	---	11000	10500	10700	13100	12400	12800	13200	12300	12700
26	---	---	---	11100	10400	10800	12400	11500	12000	13600	12600	13100
27	---	---	---	11200	10400	10900	11600	11200	11300	13200	12300	12800
28	---	---	---	10600	10300	10400	12100	11300	11600	14000	12900	13400
29	7490	6460	6940	10600	9710	10300	13400	12100	12700	14000	3950	9300
30	---	---	---	9990	9720	9870	13700	13400	13600	3950	2160	2580
31	7570	5450	7240	---	---	---	13600	13400	13500	3480	2530	2860
MONTH	---	---	---	---	---	10700	14300	9870	12400	14400	2160	12500

07308200 PEASE RIVER NEAR VERNON, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7380	3480	5510	13200	13100	13100	14600	14000	14200	15000	14500	14700
2	8320	7380	7730	13300	13200	13200	15300	14600	14800	14600	13000	13800
3	9820	8320	8780	13500	13300	13400	15300	14100	14500	---	---	e7080
4	12400	9630	11400	13700	13500	13600	14100	10200	12800	---	---	e4250
5	13700	12400	12900	13700	13600	13600	10900	8580	9860	---	---	e3760
6	14200	13300	13600	13700	13600	13600	12400	9470	11000	---	---	e4050
7	14700	13500	14000	13600	12900	13500	14700	12200	13500	---	---	e5160
8	15100	14400	14700	12900	11200	11600	15100	11700	14300	---	---	e6880
9	15200	14800	15000	11600	9320	10700	15300	14700	15100	---	---	e8520
10	15500	15000	15300	10500	9290	9830	15800	14800	15100	---	---	e9180
11	16500	15400	15900	11200	10500	10800	16400	14900	15700	---	---	e7770
12	16800	16400	16600	11400	3330	10500	15600	14800	15100	---	---	e8730
13	16900	16300	16600	7990	2510	4600	14800	14300	14500	---	---	e11600
14	16500	16000	16100	11200	6330	7770	14400	13200	13900	10100	8580	9320
15	16100	15900	16000	12800	11200	12100	13700	12700	13300	9120	8340	8540
16	16200	15400	15900	13600	11900	12700	14200	13500	13800	10000	---	e9610
17	15800	13100	13900	16300	13600	14800	14500	14200	14300	---	306	e1000
18	13200	13100	13200	16300	8500	13000	14400	13500	14100	3130	1380	2190
19	13100	12900	13000	9680	2840	5850	13600	13000	13300	9270	3130	6640
20	13100	12900	13000	6170	2960	4020	13500	13100	13300	7600	5840	6630
21	13500	13400	13500	8090	5960	6700	14200	13500	13900	6570	5830	6080
22	13600	13500	13600	11100	7780	8860	14200	13800	14100	8640	6570	7530
23	13700	13600	13700	12500	11100	11500	13900	13800	13900	9840	8640	9250
24	13700	13600	13600	13300	12500	13000	13900	13000	13500	11200	8010	10200
25	13100	13000	13000	14100	13300	13700	13000	11900	12300	8010	5740	6510
26	13000	13000	13000	14400	13900	14100	11900	9630	10800	7530	---	e3000
27	13200	13000	13100	14300	12400	13600	10500	9710	10100	---	---	e2300
28	13300	13100	13200	13200	11200	12700	11800	10500	11300	---	---	e2980
29	---	---	---	13300	12000	13000	12000	10400	11100	2210	2110	2170
30	---	---	---	13500	13300	13400	15000	10500	13100	2430	2210	2270
31	---	---	---	14000	13300	13500	---	---	---	2870	2430	2610
MONTH	16900	3480	13400	16300	2510	11500	16400	8580	13400	---	---	6590

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3000	2850	2920	4350	3400	3980	8520	8290	8390	---	---	---
2	3720	2840	3080	5600	4350	4970	8330	7710	8040	---	---	---
3	5330	3470	4370	6990	5600	6270	---	---	e6690	7320	5660	7070
4	8290	4860	6070	7910	6990	7410	6560	4570	6140	---	---	e5630
5	9470	8290	8980	8650	7910	8230	7950	694	1850	---	---	e5800
6	10100	9450	9690	9020	8650	8870	1550	1110	1400	---	---	e6100
7	---	---	e10100	9380	9020	9180	12300	1450	3180	---	---	e6400
8	---	---	e10800	9560	9170	9370	12300	8160	9250	---	---	e6590
9	---	---	e11200	9870	9500	9670	8160	7090	7390	---	---	---
10	---	---	e11600	9870	3210	6250	7170	6770	6910	---	---	---
11	11600	1650	3890	5580	1930	3410	7350	6880	7150	---	---	---
12	2890	2030	2400	5600	1880	2820	7440	7290	7370	6710	6620	6660
13	11400	2790	6710	7520	5270	6340	7390	7190	7290	---	---	---
14	6990	3940	5130	6640	5260	5720	7370	7210	7300	---	---	---
15	3940	3660	3710	8220	6640	7360	7300	7140	7230	6830	5880	6190
16	4400	3720	4020	9700	8220	8870	7250	7070	7170	5990	5640	5740
17	5520	4400	4900	10500	9660	10000	7190	7020	7110	5720	5670	5700
18	6480	5520	6000	10900	10500	10700	7130	6960	7060	5720	5660	5690
19	7300	4700	6760	10600	10000	10200	---	---	---	5720	5650	5680
20	5420	862	1700	10100	9580	9940	---	---	---	5740	5670	5700
21	---	---	e1850	10300	9590	9870	---	---	---	5810	5710	5760
22	---	---	e2500	9720	9200	9520	---	---	---	5810	5750	5780
23	---	---	e3000	9600	9060	9300	---	---	---	5830	5770	5800
24	---	---	e4300	9900	8970	9470	---	---	---	5860	5780	5820
25	---	---	e3100	10000	9200	9500	---	---	---	5880	5780	5840
26	---	---	e2000	9370	9010	9210	---	---	---	5840	5730	5790
27	---	---	e3500	9060	8740	8910	---	---	---	---	---	---
28	---	---	e4000	8800	8520	8650	---	---	---	---	---	---
29	4160	3190	3610	8550	8350	8470	---	---	---	5940	5870	5910
30	3400	2600	2940	8560	8400	8510	---	---	---	5940	5890	5920
31	---	---	---	8610	8420	8530	---	---	---	---	---	---
MONTH	---	---	5160	10900	1880	8050	---	---	---	---	---	---

e Estimated

07308200 PEASE RIVER NEAR VERNON, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	15.4	10.2	13.4	19.7	9.3	13.9	8.1	4.6	6.0
2	---	---	---	17.8	9.9	13.1	19.2	11.7	15.1	7.6	.9	3.8
3	---	---	---	14.5	11.2	12.8	17.3	13.4	15.3	4.8	.0	1.3
4	---	---	---	13.3	10.0	11.6	20.0	12.3	15.2	5.9	.0	1.6
5	---	---	---	11.3	8.5	9.8	20.2	11.5	15.4	8.0	.0	2.8
6	---	---	---	10.3	8.0	9.0	20.8	11.6	16.4	11.3	.4	5.1
7	---	---	---	16.0	8.9	11.4	11.6	6.3	9.5	5.1	3.2	3.8
8	---	---	---	12.7	10.8	11.9	13.7	3.3	7.7	3.2	.0	2.1
9	---	---	---	22.3	11.8	16.1	10.3	3.0	6.9	5.8	.0	1.4
10	---	---	---	17.4	9.2	13.2	9.9	7.2	8.1	7.3	.0	2.5
11	---	---	---	---	---	---	9.7	6.1	7.7	11.1	.0	4.8
12	---	---	---	---	---	---	13.8	5.4	8.7	11.2	5.0	7.7
13	---	---	---	---	---	---	13.8	3.9	8.1	8.4	2.9	5.2
14	---	---	---	---	---	---	14.4	3.9	8.4	10.8	.5	4.9
15	---	---	---	---	---	---	14.5	4.3	8.7	12.5	2.0	6.7
16	---	---	---	---	---	---	14.4	4.5	8.7	13.6	3.4	7.9
17	---	---	---	19.9	9.5	14.4	13.9	4.2	8.2	14.7	5.1	9.0
18	---	---	---	23.0	12.8	17.1	11.4	6.2	8.3	13.0	3.2	7.5
19	---	---	---	19.0	9.6	14.3	9.5	5.5	7.8	15.5	5.5	9.4
20	---	---	---	15.4	7.4	11.0	6.8	4.8	5.8	16.1	4.9	10.0
21	---	---	---	17.3	8.2	11.9	6.4	.0	2.3	15.6	7.3	10.9
22	---	---	---	19.6	8.2	13.2	.6	.0	.2	9.5	3.7	6.3
23	---	---	---	19.4	10.4	14.2	.2	.0	.1	13.4	2.2	7.0
24	---	---	---	19.7	8.7	13.6	.9	.0	.2	16.2	4.5	9.5
25	---	---	---	18.9	10.4	13.9	1.8	.0	.6	13.6	4.7	8.5
26	---	---	---	18.5	7.2	12.2	7.9	.1	2.8	15.5	4.3	9.5
27	---	---	---	20.3	9.0	14.0	7.9	1.7	4.3	18.9	8.0	12.6
28	---	---	---	21.8	12.6	16.6	8.7	.5	4.3	13.1	6.6	9.8
29	24.2	18.2	21.2	18.7	13.1	15.9	11.5	2.6	6.1	6.6	4.2	5.0
30	---	---	---	20.7	10.3	14.6	10.9	1.3	5.5	4.6	4.0	4.3
31	20.9	15.4	19.7	---	---	---	8.6	2.0	5.2	6.4	3.9	5.0
MONTH	---	---	---	---	---	---	20.8	.0	7.6	18.9	.0	6.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.9	3.8	5.8	19.4	9.8	14.2	25.0	14.8	19.6	20.0	17.7	18.4
2	11.2	3.8	7.2	17.6	11.4	14.2	27.7	17.0	21.4	20.6	17.1	18.5
3	12.8	5.0	8.6	16.7	8.5	12.3	20.7	15.9	18.3	23.7	19.2	21.4
4	13.6	5.7	9.4	16.6	7.7	12.1	17.8	14.5	16.3	21.9	18.8	20.8
5	17.4	8.5	12.7	18.1	11.4	14.5	18.7	15.7	17.3	21.2	16.6	18.7
6	15.1	11.5	14.0	16.3	10.1	13.0	21.1	14.1	17.2	20.8	14.8	17.5
7	17.4	8.3	12.4	11.6	8.8	10.0	22.7	14.9	18.5	24.3	14.2	19.0
8	15.9	9.1	12.3	17.1	9.3	12.5	24.2	18.6	20.6	27.9	17.5	22.4
9	15.5	9.5	12.1	16.8	9.3	12.7	20.9	15.6	18.1	27.8	19.6	23.0
10	20.8	10.0	14.8	19.9	10.7	14.6	22.4	14.9	18.4	28.5	18.8	23.2
11	16.5	7.0	12.0	15.6	10.1	12.1	23.9	12.4	17.7	23.7	19.8	21.7
12	13.3	3.2	7.8	10.1	7.1	9.2	19.6	14.3	17.2	27.0	16.4	21.3
13	15.2	4.3	9.2	7.1	3.8	5.6	21.4	15.8	18.4	26.3	17.8	22.1
14	13.1	6.1	9.5	13.6	1.6	7.1	21.5	13.5	18.0	29.5	18.8	23.7
15	14.8	7.1	10.9	17.8	4.9	10.9	18.2	9.9	13.5	33.6	22.1	26.5
16	16.5	8.8	12.0	19.1	8.9	13.6	16.7	10.1	13.3	31.8	22.2	26.0
17	16.4	7.0	11.4	19.4	11.3	15.4	18.4	8.9	13.2	24.8	18.6	20.6
18	14.4	8.3	11.0	15.5	8.9	11.2	21.0	10.1	15.1	26.4	19.1	22.4
19	13.9	6.9	10.1	10.5	8.1	9.2	24.5	13.6	18.5	27.9	20.0	23.6
20	14.6	7.5	10.6	15.8	7.1	11.2	24.9	16.1	20.4	26.4	20.5	23.2
21	14.3	7.1	10.4	20.8	10.0	15.0	23.8	17.6	20.7	31.3	21.2	25.7
22	11.6	6.5	8.9	23.7	12.2	17.6	27.4	19.0	22.5	32.3	23.8	27.5
23	14.8	5.9	10.0	20.0	11.4	15.6	23.6	15.3	19.3	30.9	22.5	26.4
24	16.5	7.8	11.9	14.1	9.9	12.1	15.3	13.6	14.1	28.4	21.7	24.9
25	19.5	11.1	14.9	20.0	8.4	13.5	19.4	13.7	15.8	32.3	21.1	26.0
26	17.6	14.0	15.6	20.1	9.4	14.3	24.0	17.3	19.9	---	---	---
27	17.0	10.8	13.7	14.6	11.4	12.9	25.6	17.6	21.3	---	---	---
28	17.2	8.4	12.5	14.8	10.6	12.6	25.5	19.9	22.6	---	---	---
29	---	---	---	17.3	12.3	14.5	23.0	18.7	20.3	23.8	20.8	22.1
30	---	---	---	18.0	14.1	15.7	20.7	17.4	19.1	28.3	21.4	24.5
31	---	---	---	23.8	13.6	17.7	---	---	---	30.3	24.6	27.2
MONTH	20.8	3.2	11.1	23.8	1.6	12.8	27.7	8.9	18.2	---	---	---

07308200 PEASE RIVER NEAR VERNON, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	31.0	24.3	27.4	32.7	25.8	29.0	29.5	25.5	27.5	---	---	---
2	31.9	24.7	27.9	33.3	26.1	29.3	30.7	26.3	28.2	---	---	---
3	29.2	24.2	26.8	33.2	24.9	28.6	29.9	26.2	27.8	28.8	24.0	26.0
4	29.7	22.8	25.9	33.6	24.9	28.7	30.2	26.5	27.8	---	---	---
5	27.0	22.5	24.7	32.5	24.8	28.4	28.1	24.2	26.6	---	---	---
6	27.9	21.8	24.6	32.4	25.3	28.5	29.1	25.7	27.5	---	---	---
7	29.2	22.1	25.0	33.7	26.9	29.8	33.0	25.3	28.2	---	---	---
8	30.7	22.0	26.1	32.2	25.9	28.7	30.7	26.5	28.5	---	---	---
9	30.2	22.1	26.0	32.6	25.8	28.7	30.0	27.4	28.8	---	---	---
10	30.2	21.6	25.3	30.1	25.1	26.8	30.1	27.9	29.2	---	---	---
11	26.4	20.6	23.5	27.7	23.3	25.4	30.3	27.6	28.9	---	---	---
12	29.0	23.6	25.8	31.5	24.0	27.2	28.9	25.3	27.4	26.3	23.4	24.8
13	28.4	24.5	26.0	33.7	23.7	28.5	30.0	26.3	27.9	---	---	---
14	27.0	23.0	24.9	33.8	25.7	29.2	29.2	24.5	27.0	---	---	---
15	29.3	22.0	25.4	33.0	24.0	27.8	30.1	25.4	27.7	22.5	19.8	20.9
16	29.4	23.3	25.9	29.5	23.1	25.9	30.1	25.1	27.6	21.1	19.8	20.4
17	25.6	19.7	22.2	29.8	23.1	25.9	29.7	24.9	27.1	22.4	19.1	20.5
18	28.9	20.4	24.6	29.3	24.4	26.7	29.3	24.2	26.8	24.5	20.3	22.3
19	31.9	22.4	26.3	29.3	25.1	27.0	---	---	---	25.8	20.7	23.3
20	24.3	21.9	22.7	29.1	26.0	27.6	---	---	---	23.8	20.2	22.2
21	---	---	---	29.8	26.4	27.9	---	---	---	21.8	17.3	19.7
22	---	---	---	29.7	26.2	28.0	---	---	---	21.3	16.3	19.0
23	---	---	---	29.5	26.0	28.0	---	---	---	21.6	16.5	19.3
24	---	---	---	29.6	26.4	28.2	---	---	---	21.0	18.1	19.6
25	---	---	---	29.8	26.2	28.2	---	---	---	23.1	18.0	20.6
26	---	---	---	30.0	26.0	28.1	---	---	---	25.7	20.0	22.8
27	---	---	---	30.2	26.4	28.3	---	---	---	---	---	---
28	---	---	---	30.1	26.6	28.4	---	---	---	---	---	---
29	31.2	26.1	28.4	30.1	26.4	28.4	---	---	---	18.6	13.3	16.1
30	30.8	26.4	28.4	29.8	25.7	27.8	---	---	---	19.2	13.8	16.8
31	---	---	---	29.5	25.0	27.2	---	---	---	---	---	---
MONTH	---	---	---	33.8	23.1	27.9	---	---	---	---	---	---

07308500 RED RIVER NEAR BURKBURNETT, TX

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Okla., 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.--Jul 1924 to Aug 1925 (monthly discharge only), Dec 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft above sea level. Jul 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. No known regulation. There are many small diversions upstream from station for irrigation, but total amounts are unknown.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 3	1300	11,900	6.92	May 29	0400	19,000	7.86
May 4	1500	10,200	6.62	Jun 26	1230	16,600	7.55

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	232	311	331	1870	341	491	1540	3740	5440	278	175
2	62	927	307	316	1760	332	463	2320	2890	3930	270	161
3	59	4890	373	293	1430	334	458	7170	5620	2890	282	145
4	63	2740	427	278	1110	338	417	8230	4730	2740	330	145
5	64	1940	422	274	947	322	373	4160	3600	1990	316	191
6	99	1610	e416	262	844	299	334	2700	2580	1540	393	193
7	150	1250	401	274	891	312	343	2190	2410	1280	381	162
8	327	1050	374	278	940	376	695	1640	2070	1090	685	140
9	290	935	356	278	769	389	681	1260	1720	1020	792	136
10	218	832	358	301	775	392	558	1270	1510	841	1050	125
11	169	700	383	295	662	368	468	1220	1290	895	712	104
12	135	562	390	303	565	458	389	1740	2590	2140	506	103
13	115	501	361	287	522	632	385	1690	2870	1990	833	135
14	101	443	342	293	504	1040	1030	1580	2330	1640	554	138
15	91	382	324	307	490	1050	830	1170	1700	1650	575	106
16	89	360	310	286	465	1040	499	941	1450	1380	481	97
17	135	353	300	278	450	1060	376	1430	1030	902	404	132
18	149	350	303	277	429	e1320	335	5210	814	731	359	120
19	115	338	298	268	403	e2210	425	2310	667	638	322	116
20	114	314	294	258	393	e1860	407	1310	680	574	293	99
21	144	297	288	256	381	1810	329	969	2240	580	263	93
22	179	287	202	260	384	1850	283	801	2060	860	239	166
23	180	275	121	283	373	1210	274	703	2170	622	217	150
24	184	264	133	303	369	1020	e300	599	2680	545	203	129
25	166	260	162	278	365	811	e340	636	6690	511	197	102
26	138	247	210	287	361	636	e390	911	12100	451	184	91
27	121	252	331	279	353	586	418	1950	8910	410	170	81
28	114	258	358	267	343	619	1140	8230	7450	371	169	72
29	103	273	366	385	---	570	3170	17100	4920	350	170	67
30	96	329	353	942	---	543	2200	11600	4210	323	179	65
31	99	---	342	1510	---	530	---	5340	---	305	187	---
TOTAL	4106	23451	9916	10787	19148	24658	18801	99920	99721	40629	11994	3739
MEAN	132	782	320	348	684	795	627	3223	3324	1311	387	125
MAX	327	4890	427	1510	1870	2210	3170	17100	12100	5440	1050	193
MIN	37	232	121	256	343	299	274	599	667	305	169	65
AC-FT	8140	46520	19670	21400	37980	48910	37290	198200	197800	80590	23790	7420

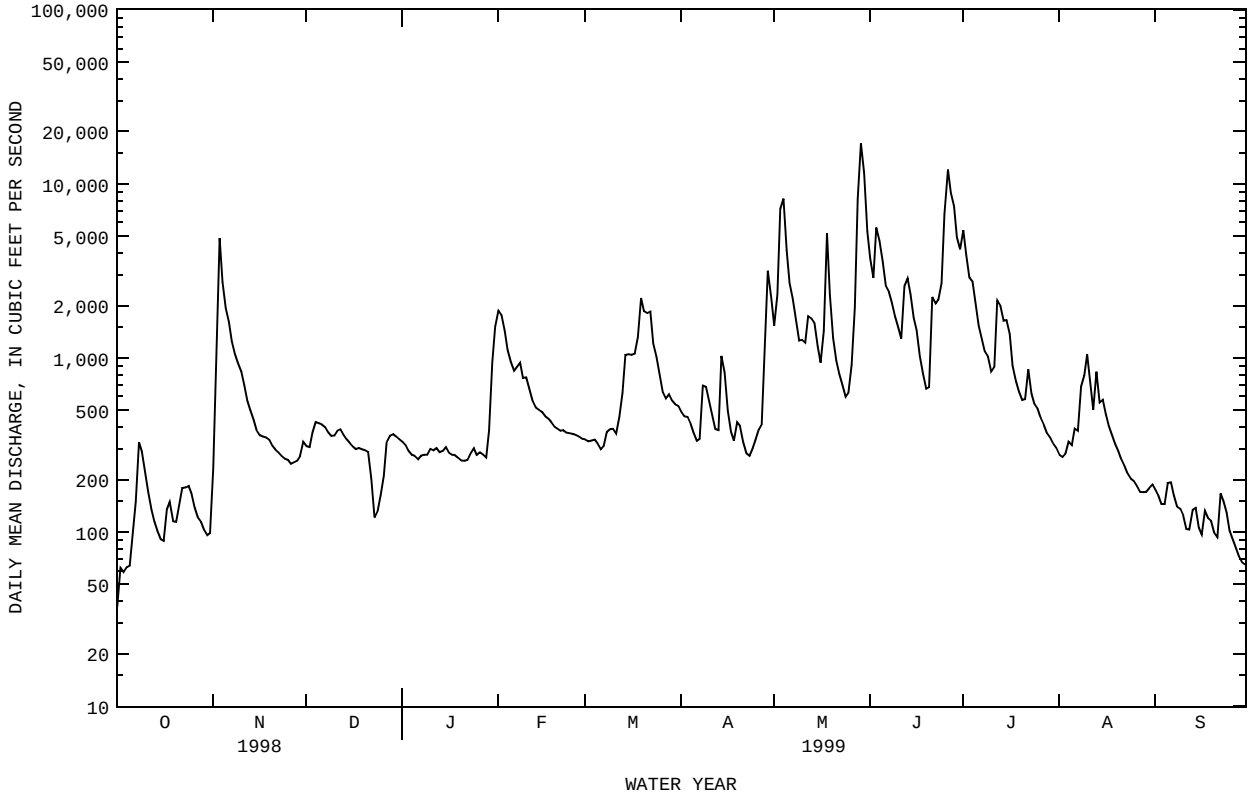
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

MEAN	1544	694	588	513	733	961	1137	2402	3501	885	904	1394
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	.96	2.98	5.53	8.37	7.97	.15	11.4	148	.058	1.29	32.2
(WY)	1971	1971	1971	1971	1971	1971	1971	1971	1970	1970	1964	1983

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	680650		366870			
ANNUAL MEAN	1865		1005		1276	
HIGHEST ANNUAL MEAN					4424	1987
LOWEST ANNUAL MEAN					178	1964
HIGHEST DAILY MEAN	53000	Mar 17	17100	May 29	144000	Jun 6 1995
LOWEST DAILY MEAN	37	Oct 1	37	Oct 1	.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	47	Sep 9	76	Oct 1	.00	Jul 19 1964
INSTANTANEOUS PEAK FLOW			19000	May 29	174000	Jun 6 1995
INSTANTANEOUS PEAK STAGE			7.86	May 29	16.90	Oct 21 1983
INSTANTANEOUS LOW FLOW					.00	Jul 19 1964
ANNUAL RUNOFF (AC-FT)	1350000		727700		924200	
10 PERCENT EXCEEDS	3650		2220		2530	
50 PERCENT EXCEEDS	381		384		313	
90 PERCENT EXCEEDS	94		134		53	

e Estimated



07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: May 1968 to current year.
BIOCHEMICAL DATA: Oct 1974 to Aug 1994.
PESTICIDE DATA: Oct 1973 to Sep 1982, Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jul 1968 to Sep 1981, Oct 1994 to current year.
WATER TEMPERATURE: Jul 1968 to Sep 1981, Oct 1994 to current year.

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

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1990 to 1999. The standard error of estimate for dissolved solids is 3%, chloride is 8%, sulfate is 18% and for hardness is 11%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 17,400 microsiemens, Jul 30, 1972; minimum, 462 microsiemens, Feb 24, 1997.
WATER TEMPERATURE: Maximum, 36.5°C, Jul 14 and 18, 1998; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 13,200 microsiemens, Nov 3; minimum, 1,220 microsiemens, Jun 26.
WATER TEMPERATURE: Maximum, 35.4°C, Aug 9; minimum, 0.3°C, Dec 21, Jan 10.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC											
29...	1310	376	7680	8.3	6.0	9.1	77	1600	1500	440	128
JAN											
13...	1310	284	8380	7.9	4.5	13.4	110	1700	1500	450	134
FEB											
22...	1530	394	8370	8.3	10.0	13.9	131	1700	1600	450	140
MAR											
16...	1135	1010	7100	8.1	11.0	13.2	126	1400	1300	380	107
APR											
26...	1420	394	6410	8.1	22.5	7.5	92	1300	1200	340	112
MAY											
04...	1250	9640	8120	7.9	21.0	7.4	90	1200	1100	360	82
17...	1400	1290	5480	7.7	24.5	9.6	122	1200	1100	350	76
JUN											
09...	1420	1640	4410	8.0	28.5	8.2	111	1000	930	280	84
22...	1500	1990	2450	8.0	24.5	7.8	97	540	470	150	40
JUL											
21...	1450	521	5450	8.0	31.0	3.6	51	1200	1100	320	100
AUG											
09...	1425	663	3940	8.1	32.9	6.9	101	750	650	200	58
SEP											
09...	1450	130	5700	8.2	27.8	--	--	1200	1100	290	118

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
DEC											
29...	1240	13	8.6	130	1200	1900	.43	11	5070	67	1.69
JAN											
13...	1260	13	7.7	170	1300	2000	.42	9.0	5320	32	1.69
FEB											
22...	1370	15	8.8	120	1300	2100	.41	4.7	5440	44	.375
MAR											
16...	1160	13	7.4	130	1100	1800	.42	8.0	4660	242	1.03
APR											
26...	985	12	7.7	98	1100	1500	.36	4.0	4080	61	--
MAY											
04...	1560	19	12	100	1100	2300	.63	10	5530	10960	.484
17...	770	10	9.3	110	930	1200	.52	10	3420	820	.384
JUN											
09...	585	8	8.5	110	890	870	.49	12	2790	256	--
22...	322	6	6.6	70	440	480	.34	8.6	1490	307	--
JUL											
21...	734	9	9.6	97	1000	1100	.40	13	3420	51	--
AUG											
09...	557	9	9.5	99	850	750	.46	8.5	2500	165	.907
SEP											
09...	781	10	9.6	89	1100	1300	.50	12	3650	59	--

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
DEC											
29...	.036	1.73	.085	2.3	.53	.62	.089	.028	.030	.09	3
JAN											
13...	.043	1.74	.086	2.3	.44	.52	.055	.050	.025	.08	4
FEB											
22...	.012	.387	.031	1.3	.89	.92	.083	<.050	<.010	--	3
MAR											
16...	.016	1.05	.062	2.3	1.2	1.2	.284	<.050	<.010	--	4
APR											
26...	<.010	.096	<.020	1.1	--	.97	.125	<.050	.013	.04	3
MAY											
04...	.029	.513	.209	12	11	12	6.94	<.050	.019	.06	28
17...	.011	.395	.030	2.3	1.8	1.9	.661	E.044	.020	.06	9
JUN											
09...	<.010	<.050	.038	--	1.3	1.3	.325	E.032	.013	.04	8
22...	<.010	.175	<.020	2.5	--	2.4	.920	<.050	<.010	--	10
JUL											
21...	<.010	<.050	<.020	--	--	.71	.136	<.050	<.010	--	3
AUG											
09...	.013	.920	<.020	2.5	--	1.6	.380	<.050	.013	.04	8
SEP											
09...	<.010	<.050	<.020	--	--	1.1	.101	<.050	<.010	--	6

DATE	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)
DEC											
29...	3	<100	52	<1	<8.0	2	<1.0	1	<10	620	<10
JAN											
13...	3	<100	59	<1	<80	2	<1.0	1	<100	250	E51
FEB											
22...	3	<100	73	<1	<40	2	2.1	1	<50	190	E25
MAR											
16...	2	100	88	<1	<40	7	<1.0	6	<50	3900	<50
APR											
26...	<1	100	65	<1	<32	1	<1.0	6	<40	620	<40
MAY											
04...	3	600	127	<1	<80	80	<1.0	310	<100	40000	<100
17...	3	900	103	<1	<24	14	<1.0	21	<30	23000	<30
JUN											
09...	6	200	163	<1	<24	5	<1.0	8	<30	3600	<30
22...	2	400	87	<1	<24	22	<1.0	21	<30	15000	E22
JUL											
21...	3	200	136	<2	<24	1	<5.0	3	<30	1100	<30
AUG											
09...	6	200	93	<1	<24	14	<1.0	12	<30	8800	<30
SEP											
09...	4	100	95	<1	<24	2	<1.0	2	<30	710	<30

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
DEC											
29...	<1	<100	38	8.5	<.10	.2	<100	<40	7	7	<1
JAN											
13...	<1	<.00	31	<30	<.10	<.1	<100	<400	9	6	<1
FEB											
22...	<1	<500	25	E11	<.10	<.1	<100	<200	4	5	<1
MAR											
16...	<1	<500	160	<15	<.10	<.1	<50	<200	2	4	<1
APR											
26...	<1	<400	53	E11	<.10	<.1	<50	<160	2	2	<2
MAY											
04...	<2	<1000	4200	<30	<.10	<.1	70	<400	<1	2	<2
17...	9	<100	1400	<9.0	<.10	<.1	<150	<120	2	2	<1
JUN											
09...	3	<300	200	<9.0	<.10	<.1	<150	<120	3	3	<1
22...	15	<300	600	<9.0	<.10	<.1	E28	<120	<1	2	<1
JUL											
21...	<2	<300	76	E7.4	<.10	<.1	<50	<120	2	2	<2
AUG											
09...	6	<300	410	<9.0	<.10	<.1	<50	<120	5	5	<1
SEP											
09...	<1	<300	54	E4.2	<.10	<.1	<39	<120	2	2	<1

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
DEC										
29...	<1.0	<10	<20	--	--	--	--	--	--	--
JAN										
13...	<1.0	<10	<200	--	--	--	--	--	--	--
FEB										
22...	<1.0	<10	E40	--	--	--	--	--	--	--
MAR										
16...	<1.0	<40	<100	--	--	--	--	--	--	--
APR										
26...	<1.0	<40	<80	--	--	--	--	--	--	--
MAY										
04...	<2.0	180	<200	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
17...	<2.0	130	<60	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
JUN										
09...	<1.0	<120	<60	--	--	--	--	--	--	--
22...	<1.0	60	<60	--	--	--	--	--	--	--
JUL										
21...	<2.0	<40	<60	--	--	--	--	--	--	--
AUG										
09...	<1.0	E20	E32	--	--	--	--	--	--	--
SEP										
09...	<1.0	<30	<60	--	--	--	--	--	--	--

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
13...	--	--	--	--	--	--	--	--	--	--
FEB										
22...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
26...	--	--	--	--	--	--	--	--	--	--
MAY										
04...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
17...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
JUN										
09...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
JUL										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	--	--	--	--	--	--	--	--	--
SEP										
09...	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
13...	--	--	--	--	--	--	--	--	--	--
FEB										
22...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
26...	--	--	--	--	--	--	--	--	--	--
MAY										
04...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
17...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN										
09...	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--
JUL										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	--	--	--	--	--	--	--	--	--
SEP										
09...	--	--	--	--	--	--	--	--	--	--

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	4106	7300	4610	51100	1800	19460	1200	12770	1400
NOV.	1998	23451	6840	4320	273700	1600	103100	1100	69650	1300
DEC.	1998	9916	7740	4880	130800	1900	50200	1200	32250	1400
JAN.	1999	10787	7140	4510	131300	1700	49780	1100	33080	1300
FEB.	1999	19148	8250	5200	269100	2000	105800	1200	63540	1500
MAR.	1999	24658	6430	4060	270300	1500	99550	1100	71340	1300
APR.	1999	18801	5760	3640	184800	1300	66330	1000	50720	1200
MAY	1999	99920	4460	2820	760300	1000	270900	780	210700	910
JUNE	1999	99721	2620	1660	447400	530	141800	530	143600	610
JULY	1999	40629	4470	2830	310200	970	106200	830	90810	960
AUG.	1999	11994	6020	3800	123200	1400	44820	1000	33120	1200
SEPT	1999	3739	6880	4340	43850	1600	16490	1100	11190	1300
TOTAL		366870	**	**	2996100	**	1074400	**	822800	**
WTD.AVG.		1010	4780	3020	**	1100	**	830	**	970

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7130	6810	6940	---	---	e6800	7190	6970	7080	8420	7420	7720
2	7180	6300	6620	---	---	e6600	6970	6740	6860	8430	7970	8280
3	6510	6320	6460	13200	6490	9490	6970	6630	6780	8490	8110	8320
4	6470	6350	6410	6490	5220	5530	---	---	e6850	8530	8260	8420
5	6760	6250	6470	5360	5010	5220	---	---	e7280	8260	7710	8060
6	6840	6650	6750	5010	4780	4850	---	---	e7890	7920	7430	7720
7	6650	5740	6170	4970	4800	4870	---	---	e8530	7960	7370	7660
8	12100	5970	9430	5160	4970	5060	---	---	e8500	8980	7960	8580
9	12400	9110	11100	5340	5160	5230	8530	8430	8490	8420	7980	8280
10	9110	7310	7990	5840	5270	5570	8460	8400	8430	7990	7670	7850
11	7310	6550	6890	6400	5840	6090	8400	8240	8290	7670	7450	7540
12	6560	6310	6400	6920	6400	6680	8270	8080	8170	8070	7510	7800
13	6310	6230	6260	7310	6920	7100	8270	7820	8030	8380	8070	8280
14	6340	6210	6260	7640	7310	7480	7910	7820	7850	8310	8200	8270
15	6640	6320	6440	7710	7640	7690	7980	7910	7940	8240	8150	8200
16	6710	6410	6590	7800	7700	7740	7940	7760	7860	8150	8030	8100
17	6890	5900	6280	7880	7800	7840	7760	7600	7690	8030	7960	8000
18	6570	5520	6030	7910	7880	7890	8130	7500	7680	7990	7940	7970
19	6650	5580	5920	8050	7910	7960	7860	7820	7840	7950	7870	7910
20	7000	6210	6820	8100	8040	8060	7830	7740	7800	7900	7860	7870
21	6850	6360	6760	8150	8050	8100	7950	7740	7780	---	---	e7640
22	6390	6000	6210	8150	8040	8090	8580	7950	8430	---	---	e7620
23	8060	6110	6640	8090	7960	8040	8420	7750	7930	---	---	e7610
24	8130	7200	7490	8090	7790	7920	8080	7950	8020	---	---	e7600
25	7380	7060	7170	7820	7690	7760	8070	7740	7910	---	---	e7580
26	7940	7380	7650	7800	7630	7730	7740	7280	7500	---	---	e7570
27	7980	7750	7890	7630	7400	7510	7280	7090	7180	---	---	e7660
28	7750	6970	7320	7400	7210	7300	7120	6990	7070	---	---	e7700
29	6970	6550	6710	7280	7100	7170	7770	6980	7360	---	---	e7100
30	6740	6580	6640	7190	7060	7120	7790	7470	7640	---	---	e5400
31	7000	6740	6880	---	---	---	7680	7580	7630	---	---	e4100
MONTH	12400	5520	6950	---	---	7020	---	---	7750	---	---	7690

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e5420	7240	6980	7110	6180	5730	6000	4600	4120	4440
2	---	---	e9000	7560	7000	7290	6310	6180	6210	9570	4480	5780
3	---	---	e9900	7410	7070	7220	6580	6310	6510	9930	7930	9330
4	11000	9490	10200	7510	7150	7320	6620	6510	6580	---	---	e7730
5	9490	8970	9160	7370	7090	7220	6680	6620	6660	---	---	e6790
6	8980	8680	8870	7120	6830	6990	6740	6680	6720	5990	5790	5840
7	8970	7730	8660	7050	6610	6890	6780	6590	6730	6020	5820	5930
8	7730	6420	6990	8310	6610	7560	7110	6490	6700	---	---	e5850
9	7780	7480	7630	8220	6940	7570	7420	6020	6940	---	---	e5900
10	7910	7150	7620	6940	6590	6790	7070	6310	6620	---	---	e5950
11	8210	7160	7620	7450	6690	6810	6990	6590	6880	---	---	e6000
12	8910	8210	8610	7990	7100	7580	6980	6780	6890	---	---	e5830
13	9190	8910	9060	---	---	e7900	7120	6770	6870	5920	5110	5420
14	9280	8940	9130	---	---	e7200	---	---	e3200	6990	5920	6710
15	9220	8770	8990	8090	5900	6950	---	---	e3800	6870	4640	5290
16	9060	8660	8920	7140	6100	6670	5920	4530	5120	---	---	e5000
17	8750	8330	8560	8470	6070	6880	6880	5920	6560	---	---	e5300
18	8600	8330	8520	---	---	e6930	6810	6100	6430	5280	1490	2450
19	8570	8340	8440	---	---	e4500	6530	6110	6360	3550	2320	2850
20	8400	8190	8290	4860	3140	4150	7120	6430	6870	4990	3550	4360
21	8270	8060	8170	5600	4860	5320	7190	6510	6920	6530	4990	5650
22	8090	7850	7990	6060	5180	5630	6830	6150	6470	6520	6360	6410
23	7980	7650	7830	7240	6030	6780	6320	5420	5770	6710	6080	6440
24	7710	7360	7550	8660	7200	8100	6790	5940	6400	6960	6540	6740
25	7500	7180	7350	8660	8240	8400	7070	6670	6840	6610	6270	6430
26	7350	7050	7210	8540	7990	8330	6980	6010	6400	6340	5690	6100
27	7560	7130	7360	8150	6710	7590	6620	6320	6450	6680	5100	5760
28	7390	7140	7260	6710	6210	6480	7850	4200	6550	5130	1470	3080
29	---	---	---	6270	6120	6200	7740	4380	5400	4130	1440	2340
30	---	---	---	6290	5630	5990	4510	4100	4200	---	---	e1480
31	---	---	---	5740	5670	5710	---	---	---	---	---	e1800
MONTH	---	---	8230	---	---	6840	---	---	6200	---	---	5320

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e2050	3700	2990	3470	6160	6050	6100	5450	5300	5360
2	2590	2040	2390	3020	2670	2790	6100	5930	6020	5410	5240	5310
3	3120	2030	2420	3520	2780	3140	6040	5800	5940	5370	5200	5300
4	---	---	e1990	4060	3520	3850	5800	4940	5370	5490	5360	5430
5	---	---	e2500	4140	3580	3830	5590	5420	5510	5620	4970	5410
6	---	---	e3100	4630	4140	4370	5590	4360	5190	5540	5190	5320
7	---	---	e3600	5150	4630	4880	5060	4280	4650	5560	5310	5440
8	---	---	e3950	5470	5150	5300	5960	4650	5190	5570	5120	5460
9	---	---	e4350	5670	5470	5580	6370	3340	4290	5710	5490	5620
10	---	---	e4600	5950	5570	5710	4980	3790	4440	5900	5460	5650
11	---	---	e4800	6010	5820	5910	5950	3700	5060	---	---	e5500
12	---	---	e3000	6080	4710	5440	6470	5920	6120	---	---	e5900
13	---	---	e2200	5030	3670	4210	10900	6470	8180	---	---	e6400
14	2470	2080	2280	5150	3700	4270	10900	8830	9990	---	---	e6900
15	4400	2470	3440	5760	4700	5240	8830	6980	7850	---	---	e7200
16	6250	4360	5430	5710	4180	5090	8130	6980	7600	---	---	e7400
17	6250	5760	6080	4180	3670	3830	7220	6040	6480	---	---	e7550
18	5760	5300	5490	4220	3770	3960	6040	5710	5810	---	---	e7700
19	5300	5050	5210	4880	4220	4520	5710	5570	5630	---	---	e7900
20	5340	4340	4920	5350	4860	5090	5750	5640	5710	---	---	e8100
21	5160	1360	3740	5480	5350	5440	5850	5750	5800	---	---	e8300
22	2690	2200	2380	8590	5400	6610	5870	5720	5820	---	---	e8500
23	3130	2530	2860	8590	7660	8110	5940	5700	5890	---	---	e8650
24	3090	2290	2840	7660	7100	7290	5970	5880	5910	---	---	e8800
25	3190	1450	2400	7100	6550	6800	6010	5950	5980	---	---	e8950
26	2360	1220	1910	6550	6330	6420	6110	5920	6000	---	---	e9100
27	1960	1660	1810	6370	6270	6320	6240	6100	6180	---	---	e9300
28	1820	1660	1760	6370	6050	6220	6150	6040	6090	---	---	e9770
29	2470	1820	2090	6130	6000	6060	6160	5610	6010	---	---	e9710
30	3550	2470	3090	6190	5720	6070	5910	5270	5710	9580	9100	9320
31	---	---	---	6220	6030	6130	5780	5450	5580	---	---	---
MONTH	---	---	3290	8590	2670	5220	10900	3340	6000	---	---	7180

e Estimated

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	30.3	22.8	25.8	15.9	11.5	13.9	17.5	15.7	16.7	6.2	4.1	4.9
2	25.0	20.4	22.3	14.3	10.0	12.2	17.7	16.1	16.8	5.1	2.2	3.6
3	28.3	21.9	24.2	13.0	12.1	12.7	18.1	17.2	17.6	2.3	.7	1.4
4	28.3	22.7	24.6	12.6	11.1	11.9	18.0	15.3	17.2	2.1	.7	1.2
5	23.4	17.7	20.7	11.1	9.7	10.3	18.3	13.4	15.9	3.4	.7	1.8
6	22.5	15.7	18.7	9.7	8.7	9.0	18.6	14.5	17.0	5.8	1.7	3.6
7	23.3	15.1	19.0	10.2	8.5	9.2	---	---	---	5.0	3.6	4.0
8	23.1	16.4	19.5	11.1	10.2	10.6	---	---	---	3.7	1.3	2.8
9	23.4	16.3	19.5	17.3	10.8	13.7	9.1	5.9	7.8	2.2	.8	1.5
10	23.8	15.9	19.5	15.8	11.6	13.4	8.7	7.6	8.1	3.4	.3	1.8
11	25.0	16.2	20.4	13.3	9.8	11.6	7.9	6.8	7.4	6.0	1.7	3.6
12	26.9	18.5	22.4	11.5	10.1	10.9	---	---	---	8.1	5.1	6.4
13	26.7	19.5	22.8	12.1	11.0	11.5	10.7	6.1	8.3	7.6	4.4	5.5
14	25.9	18.5	21.8	14.0	12.1	12.8	11.4	6.5	8.9	5.5	2.8	4.1
15	24.7	18.2	20.8	15.1	10.9	13.0	11.9	6.9	9.3	7.3	3.6	5.3
16	21.2	19.2	20.3	15.7	11.9	13.8	11.9	7.6	9.6	8.1	5.4	6.8
17	22.6	19.4	21.0	15.6	12.2	14.1	11.3	6.9	9.0	9.3	6.6	7.9
18	21.6	15.0	18.2	18.2	14.4	16.1	8.9	7.3	8.0	8.7	6.4	7.7
19	22.0	14.6	18.0	17.4	12.2	15.6	9.1	6.3	8.0	9.7	6.7	8.1
20	17.7	14.1	15.5	13.4	10.1	11.8	6.5	5.6	6.1	10.6	7.7	9.1
21	17.6	13.6	15.2	13.8	10.1	11.9	6.4	.3	3.2	11.1	9.0	10.1
22	18.5	11.9	15.3	15.1	9.6	12.4	1.9	.4	.8	10.8	7.0	8.8
23	19.0	12.8	15.5	16.0	13.1	14.5	2.3	1.8	2.1	8.4	5.5	6.9
24	20.0	12.8	15.8	15.9	13.8	14.9	4.1	2.2	2.8	9.9	6.3	7.9
25	21.6	13.4	17.3	15.6	14.3	15.0	7.3	1.6	3.7	9.6	6.9	8.3
26	23.1	16.3	19.5	15.1	13.1	14.2	4.7	.4	2.3	14.1	7.0	10.3
27	23.5	17.2	20.2	15.9	13.6	14.7	4.6	1.8	3.3	16.3	9.9	12.9
28	25.0	19.4	21.6	17.7	15.6	16.4	5.5	1.6	3.6	13.8	6.7	10.7
29	25.6	18.7	21.8	18.2	17.2	17.6	8.0	2.9	5.2	8.2	5.5	6.2
30	24.4	19.7	21.7	17.9	15.9	16.9	7.1	2.3	4.7	6.1	5.2	5.7
31	20.9	15.9	20.3	---	---	---	5.8	2.9	4.6	6.0	4.9	5.5
MONTH	30.3	11.9	20.0	18.2	8.5	13.2	---	---	---	16.3	.3	5.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.9	4.7	5.8	19.9	10.6	15.0	21.7	15.3	18.4	20.5	17.6	19.1
2	9.0	5.2	7.0	17.9	12.9	15.1	22.6	18.0	20.1	21.3	17.0	19.1
3	10.5	6.2	8.3	17.2	9.5	13.0	20.9	17.6	19.2	23.6	20.3	21.7
4	11.6	7.2	9.3	16.6	8.4	12.5	18.0	15.4	16.9	23.3	20.0	21.6
5	15.5	8.7	11.8	18.9	13.0	15.4	18.3	16.3	17.6	20.5	17.2	19.0
6	16.1	13.7	14.8	16.3	10.5	13.3	19.5	15.1	17.2	18.7	18.0	18.3
7	15.6	10.9	13.2	12.1	8.8	10.3	20.8	16.2	18.3	20.0	16.6	18.3
8	14.6	11.3	13.0	17.1	8.8	12.4	22.8	19.6	20.8	21.5	18.5	19.8
9	13.6	11.5	12.6	17.5	9.3	13.1	20.2	17.0	18.8	21.9	20.2	21.0
10	18.8	11.7	14.9	20.1	11.3	15.4	22.0	15.4	18.5	21.9	20.6	21.2
11	17.3	9.1	13.2	16.7	11.7	13.1	21.4	14.4	18.1	22.1	21.0	21.6
12	11.4	5.8	8.7	11.7	7.2	9.4	21.3	14.9	18.2	24.4	20.0	22.4
13	12.8	6.2	9.5	7.2	4.4	6.1	22.5	16.5	19.1	25.4	20.4	22.7
14	13.7	7.4	10.4	10.0	2.6	6.3	20.8	11.3	18.5	25.4	20.8	23.1
15	15.5	8.2	11.7	13.0	5.7	9.2	16.0	10.1	12.8	30.0	23.3	26.2
16	15.6	10.3	12.8	15.2	9.0	12.0	15.7	9.9	12.7	27.2	25.2	25.5
17	15.3	9.4	12.2	16.6	12.0	14.3	17.0	9.3	13.1	25.4	21.9	24.3
18	14.2	9.0	11.3	---	---	---	20.8	10.8	15.4	23.5	19.5	21.5
19	14.1	8.1	11.0	---	---	---	24.6	14.4	19.0	25.4	20.3	22.6
20	15.1	8.7	11.4	13.3	8.5	10.7	26.0	17.5	21.4	24.4	20.7	22.5
21	14.6	7.8	11.1	16.5	10.9	13.6	24.9	18.0	21.3	29.3	21.7	24.9
22	10.9	6.6	8.8	18.9	13.5	16.0	29.4	18.8	23.4	30.1	24.8	27.1
23	14.5	6.1	10.2	17.4	13.0	15.3	25.5	15.4	20.4	28.9	23.0	26.0
24	17.6	8.2	12.9	15.6	11.6	13.5	15.4	13.0	13.8	29.5	22.6	25.6
25	21.1	13.0	16.8	16.9	10.7	13.6	18.7	13.5	15.4	30.5	22.4	25.9
26	20.6	16.2	18.0	17.4	10.9	14.0	24.8	16.1	19.7	25.9	21.6	23.5
27	17.9	13.7	15.8	14.5	10.9	12.6	28.5	18.0	22.8	23.1	21.0	21.8
28	17.1	10.1	13.6	14.8	10.4	12.3	26.9	20.5	23.7	23.7	20.5	21.6
29	---	---	---	17.0	12.4	14.5	23.6	20.0	21.1	23.7	21.3	22.4
30	---	---	---	17.9	14.7	16.1	21.8	18.1	19.8	---	---	---
31	---	---	---	19.6	14.4	16.6	---	---	---	---	---	---
MONTH	21.1	4.7	11.8	---	---	---	29.4	9.3	18.5	---	---	---

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	29.5	26.1	27.7	32.8	24.8	28.3	30.5	23.7	26.7
2	30.2	26.6	28.2	30.1	26.7	28.3	34.3	26.1	29.9	31.8	22.9	26.5
3	28.7	26.8	28.0	30.0	25.7	27.7	34.4	25.9	29.9	33.3	23.5	27.5
4	28.4	25.6	26.9	30.2	25.8	27.8	33.8	26.3	29.4	29.6	24.4	27.0
5	27.6	25.3	26.3	31.0	25.9	28.3	33.1	26.6	29.3	29.2	25.1	26.9
6	---	---	---	34.0	26.4	29.7	33.0	26.4	29.5	33.1	24.0	28.1
7	28.2	24.8	26.4	34.8	28.1	31.0	33.2	26.5	29.7	31.8	25.2	28.0
8	30.8	26.5	28.5	33.2	26.9	29.8	33.6	27.1	30.2	29.8	22.5	25.8
9	29.6	26.9	28.3	32.6	26.3	29.3	35.4	28.2	31.7	29.8	20.9	24.7
10	28.9	27.1	27.7	29.6	25.2	26.7	34.8	29.8	32.4	28.9	21.3	24.8
11	27.9	26.6	27.2	27.8	22.1	24.9	33.5	28.8	31.2	29.9	21.6	25.3
12	29.3	27.4	28.1	28.8	23.9	26.1	32.1	25.6	28.9	27.7	21.8	24.3
13	29.0	26.6	27.7	29.9	24.1	26.8	32.1	27.8	29.5	26.9	18.8	22.3
14	28.0	24.9	26.6	30.3	25.7	27.9	31.8	24.9	28.1	28.5	18.8	23.1
15	29.5	23.7	26.4	29.3	24.9	26.9	32.7	25.7	28.7	22.7	19.3	21.0
16	29.9	26.0	27.6	26.8	23.3	25.1	33.1	25.6	29.0	24.6	18.9	21.1
17	26.4	22.1	23.8	30.3	23.4	26.4	32.9	25.3	28.8	27.2	18.5	22.2
18	27.6	22.0	24.5	31.3	25.0	27.8	33.6	25.3	29.3	27.4	20.4	23.3
19	28.3	23.2	25.5	32.0	25.5	28.5	32.8	26.8	29.5	28.7	19.8	23.7
20	28.0	23.8	25.6	32.2	25.6	28.5	31.7	23.2	27.4	27.3	18.3	22.8
21	25.9	24.2	25.0	32.7	25.5	28.5	32.4	23.6	27.6	23.2	14.5	18.4
22	26.0	24.1	24.8	31.1	25.6	28.2	31.2	24.6	27.6	25.1	14.5	19.4
23	28.4	24.1	26.1	31.3	25.0	28.1	32.9	25.0	28.2	23.9	16.0	19.8
24	30.3	26.2	28.0	32.1	25.5	28.6	33.5	26.4	29.5	22.8	16.6	19.1
25	29.0	25.9	27.5	32.4	25.4	28.6	35.0	25.0	29.7	27.6	16.3	21.4
26	29.3	25.8	27.5	33.0	25.7	28.9	34.0	26.0	30.0	28.9	19.7	23.7
27	30.1	26.7	28.4	33.5	25.9	29.4	33.0	26.1	28.3	29.3	20.6	24.0
28	30.3	27.3	28.7	33.7	26.2	29.7	34.0	24.0	28.2	21.0	15.2	18.2
29	29.4	26.5	27.8	33.0	25.9	29.2	32.8	25.4	28.8	22.6	12.0	16.8
30	29.2	26.4	27.7	32.1	24.8	28.2	32.4	24.8	28.1	23.2	13.1	17.9
31	---	---	---	33.2	24.3	28.1	31.6	24.7	27.7	---	---	---
MONTH	---	---	---	34.8	22.1	28.1	35.4	23.2	29.2	33.3	12.0	23.1

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX

LOCATION.--Lat 33°57'02", long 100°03'52", Cottle County, Hydrologic Unit 11130204, right downstream end of old abandoned county bridge, 4.0 mi downsteam from Cottonwood Creek, 7 mi downstream from Salt Creek, 10 mi upstream from Middle Fork, 14 mi southeast of Paducah, and 211.3 mi upstream from mouth of the Wichita River.

DRAINAGE AREA.--540 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1951-54 (occasional low-flow measurements), Jul 1961 to Sep 1982, Oct 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,530 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. One small diversion for irrigation above station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 27	1500	6,860	13.31	Jun 21	0030	1,780	7.98

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	28	13	12	16	16	14	35	22	e17	13	e11
2	15	18	13	12	15	17	14	43	19	e16	13	e11
3	12	13	13	12	14	21	15	41	17	e16	12	e11
4	11	10	13	12	14	20	14	20	16	e15	16	e12
5	9.6	9.3	12	12	14	15	14	15	14	e15	18	11
6	10	9.4	11	13	14	16	12	14	14	e14	14	12
7	9.9	9.3	11	13	14	13	12	14	14	e14	15	13
8	9.6	8.8	11	12	14	13	12	14	13	e13	17	10
9	9.6	9.7	11	13	14	14	12	15	12	e75	13	11
10	9.1	8.6	11	13	15	11	13	84	80	e35	12	11
11	10	8.7	11	13	14	12	12	30	154	e20	13	12
12	10	8.5	11	12	14	14	14	18	20	e17	14	12
13	10	9.1	11	12	15	14	15	19	13	e16	12	12
14	12	9.5	11	12	14	13	14	19	12	e16	15	14
15	14	9.8	11	11	14	14	13	16	e12	e15	14	14
16	14	9.8	11	11	13	14	13	16	e11	e15	13	14
17	13	10	11	10	14	14	14	17	e11	e15	12	14
18	12	10	11	11	14	17	14	17	e11	e14	13	14
19	13	10	e11	10	15	18	14	18	11	14	11	14
20	13	10	e11	11	15	15	14	17	835	15	e11	13
21	14	11	e11	10	15	15	14	17	480	17	e12	13
22	13	12	e11	10	15	15	14	18	62	18	e13	14
23	13	11	e11	11	15	13	14	16	30	15	e12	14
24	13	11	e12	11	15	14	14	15	26	15	e13	14
25	13	12	e12	10	14	14	17	17	e400	15	12	13
26	14	12	e12	12	13	14	15	267	e75	15	13	12
27	14	12	e12	12	13	15	14	3800	e40	14	16	11
28	14	13	e12	12	13	15	14	608	e25	14	16	11
29	14	14	12	22	---	14	227	63	e20	14	15	12
30	14	14	12	23	---	14	77	36	e18	17	e13	13
31	14	---	12	18	---	14	---	27	---	14	e12	---
TOTAL	377.8	341.5	358	388	399	458	689	5366	2487	555	418	373
MEAN	12.2	11.4	11.5	12.5	14.3	14.8	23.0	173	82.9	17.9	13.5	12.4
MAX	15	28	13	23	16	21	227	3800	835	75	18	14
MIN	9.1	8.5	11	10	13	11	12	14	11	13	11	10
AC-FT	749	677	710	770	791	908	1370	10640	4930	1100	829	740

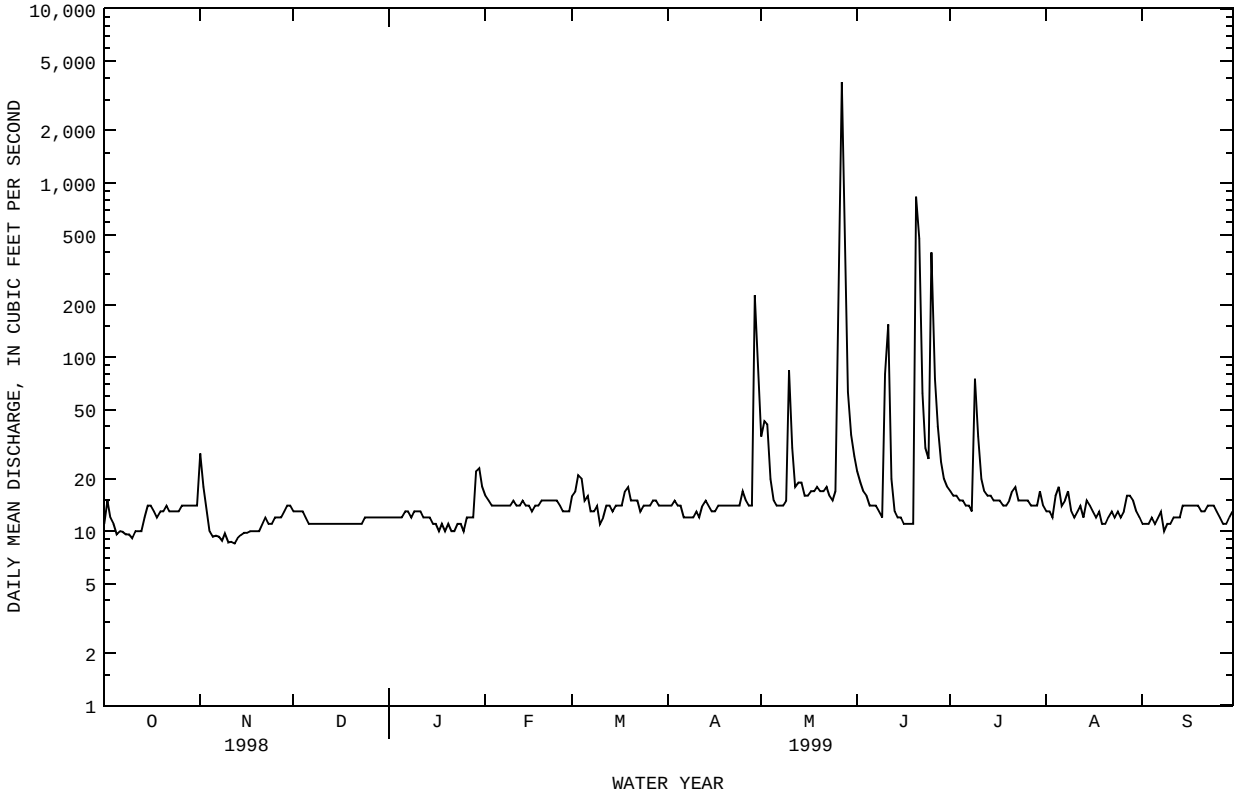
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999h, BY WATER YEAR (WY)

MEAN	19.1	12.7	11.9	11.0	11.3	13.4	27.2	44.8	67.6	15.4	36.5	34.4
MAX	62.4	26.8	24.8	19.9	19.7	49.7	265	186	452	80.4	239	141
(WY)	1966	1998	1998	1996	1996	1998	1997	1982	1995	1975	1995	1974
MIN	3.08	3.94	4.58	4.84	4.77	4.93	5.30	3.63	10.1	2.12	1.98	2.06
(WY)	1964	1965	1965	1965	1965	1965	1964	1966	1964	1966	1964	1964

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999h	
ANNUAL TOTAL	6367.2		12210.3			
ANNUAL MEAN	17.4		33.5		25.6	
HIGHEST ANNUAL MEAN					75.5	1995
LOWEST ANNUAL MEAN					6.10	1964
HIGHEST DAILY MEAN	695	Mar 16	3800	May 27	8930	Jun 5 1995
LOWEST DAILY MEAN	8.5	Nov 12	8.5	Nov 12	.50	Sep 2 1964
ANNUAL SEVEN-DAY MINIMUM	9.0	Nov 7	9.0	Nov 7	.74	Aug 31 1964
INSTANTANEOUS PEAK FLOW			6860	May 27	18100	Jun 5 1995
INSTANTANEOUS PEAK STAGE			13.31	May 27	19.76	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	12630		24220		18550	
10 PERCENT EXCEEDS	19		19		22	
50 PERCENT EXCEEDS	14		14		11	
90 PERCENT EXCEEDS	11		11		5.0	

e Estimated
h See PERIOD OF RECORD paragraph.

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued



07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1994 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1994 to current year.
WATER TEMPERATURE: Oct 1994 to current year.

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

REMARKS.--Interruption in the record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1995 to 1999. The standard error of estimate for dissolved solids is 5%, chloride is 8%, sulfate is 5% and for hardness is 9%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 28,600 microsiemens, May 25, 1995; minimum, 318 microsiemens, May 27, 1999.
WATER TEMPERATURE: Maximum, 34.5°C, Jul 15, 1997; minimum, 0.0°C, several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 25,100 microsiemens, Nov 3; minimum, 318 microsiemens, May 27.
WATER TEMPERATURE: Maximum, 34.1°C, Aug 10; minimum, 1.8°C, Jan 9.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC											
28...	1705	12	19900	8.0	8.2	12.0	115	3400	3200	990	214
JAN											
21...	0925	10	20200	7.9	10.5	9.1	94	3200	3000	930	206
FEB											
24...	0940	15	20100	8.0	9.5	10.0	99	3200	3000	930	204
MAR											
16...	1540	15	20000	8.0	17.0	11.6	135	3400	3300	1000	220
APR											
22...	0945	14	20700	7.8	19.5	7.0	88	3600	3500	1100	228
MAY											
20...	1230	18	19700	7.7	23.0	8.4	108	3200	3100	980	172
JUN											
10...	0957	12	16300	7.9	25.5	7.7	105	2800	2700	810	188
24...	0920	21	8980	7.9	26.5	6.4	86	1500	1400	450	101
JUL											
22...	0843	17	17200	7.6	26.5	6.0	83	3000	2900	890	200
AUG											
12...	0935	15	20500	7.6	27.5	5.4	77	2900	2800	850	192
24...	1200	11	22500	7.6	28.0	9.6	138	2700	2600	800	177
SEP											
13...	1230	12	22800	7.8	22.0	9.2	117	2800	2700	830	180

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
DEC											
28...	4840	36	14	130	2300	6200	.63	34	14700	<1	1.73
JAN											
21...	4820	37	14	160	2400	6400	.61	11	14900	13	1.45
FEB											
24...	4650	36	15	150	2400	6200	.57	8.4	14500	13	1.28
MAR											
16...	5200	39	15	150	2400	6700	.56	12	15600	18	1.14
APR											
22...	5310	38	15	130	2400	6600	.67	3.6	15700	3	--
MAY											
20...	3860	30	14	110	2200	5900	.53	4.1	13200	29	.247
JUN											
10...	3420	28	14	140	2000	3400	.54	8.0	9860	17	.385
24...	1710	19	11	160	1200	2500	.43	13	6140	67	.467
JUL											
22...	4080	32	14	130	2200	5600	.55	4.6	13000	17	.369
AUG											
12...	4210	34	15	120	2500	6600	.62	5.8	14400	20	.362
24...	4020	34	19	74	2300	6300	.60	4.3	13700	28	.369
SEP											
13...	4370	36	16	130	2700	7600	.61	13	15800	37	--

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
DEC											
28...	.036	1.77	.207	1.9	--	.12	<.050	<.050	.015	.05	2
JAN											
21...	.021	1.47	.181	1.8	.12	.30	<.050	<.050	.015	.05	3
FEB											
24...	.014	1.29	.073	1.5	.10	.18	<.050	<.050	<.010	--	1
MAR											
16...	.015	1.16	.082	1.4	.19	.27	<.050	<.050	<.010	--	2
APR											
22...	<.010	.590	.070	.94	.28	.35	<.050	<.050	.014	.04	2
MAY											
20...	.011	.258	.058	.73	.41	.47	<.050	<.050	.018	.06	3
JUN											
10...	.013	.398	.186	.80	.21	.40	<.050	<.050	.013	.04	4
24...	.013	.480	.105	.99	.41	.51	.090	<.050	.035	.11	3
JUL											
22...	.013	.382	.058	.71	.27	.33	E.039	<.050	<.010	--	2
AUG											
12...	.010	.372	.084	.59	.13	.22	<.050	<.050	<.010	--	<1
24...	.013	.382	.101	.55	.07	.17	<.050	<.050	<.010	--	3
SEP											
13...	<.010	.542	.232	.70	--	.16	<.050	<.050	.231	.71	3

DATE	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)
DEC											
28...	2	<100	24	2	<160	1	<1.0	<1	<100	60	<100
JAN											
21...	3	<100	28	<5	<160	<1	<1.0	<1	<200	70	<200
FEB											
24...	1	<100	26	<1	<160	1	2.4	<1	<200	40	<200
MAR											
16...	2	0	27	<1	<160	2	<1.0	<1	<200	30	<200
APR											
22...	3	0	30	<1	<160	<1	<1.0	3	<200	170	<200
MAY											
20...	2	1000	101	<4	<80	<1	<1.0	<4	<100	3200	<100
JUN											
10...	4	100	85	<4	<80	<1	<1.0	<4	<100	240	E62
24...	3	200	190	<2	<40	2	<1.0	3	<50	1200	<50
JUL											
22...	<1	100	63	<4	<80	<1	<10	<4	<100	230	<100
AUG											
12...	3	100	48	<5	<96	<1	<1.0	<5	<120	180	<120
24...	3	0	40	<5	<96	<1	<1.0	<5	<120	E130	<120
SEP											
13...	1	0	37	<5	<96	4	2.3	<5	<120	E90	<120

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
DEC											
28...	<5	<2000	43	E32	<.10	.3	<100	<800	12	12	<1
JAN											
21...	<5	<2000	53	50	<.20	<.1	110	<800	10	10	<1
FEB											
24...	7	<2000	36	E33	<.10	<.1	<100	<880	7	9	<1
MAR											
16...	<1	<2000	27	<60	<.10	<.1	<50	<800	10	9	<1
APR											
22...	<1	<2000	65	E50	<.10	<.1	<500	<800	7	7	<4
MAY											
20...	<4	<1000	850	57	<.10	<.1	<500	<400	7	5	<4
JUN											
10...	<4	<1000	83	61	<.10	.3	<500	<400	6	5	<4
24...	<2	<500	160	137	<.10	<.1	<50	<200	2	4	<1
JUL											
22...	<4	<1000	46	41	<.10	<.1	<500	<400	3	3	<4
AUG											
12...	<5	<1200	78	56	<.10	<.1	<500	<480	3	4	<5
24...	<5	<1200	50	E24	<.10	<.1	<500	<480	6	5	<1
SEP											
13...	<5	<1200	42	33	<.10	<.1	<500	<480	4	2	<4

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
DEC										
28...	<5.0	<10	<.40	--	--	--	--	--	--	--
JAN										
21...	<1.0	<10	<400	--	--	--	--	--	--	--
FEB										
24...	<1.0	<10	<400	--	--	--	--	--	--	--
MAR										
16...	<1.0	<40	<400	--	--	--	--	--	--	--
APR										
22...	<5.0	<500	<400	--	--	--	--	--	--	--
MAY										
20...	<4.0	890	<200	--	--	--	--	--	--	--
JUN										
10...	<4.0	<400	<200	--	--	--	--	--	--	--
24...	<2.0	<40	<100	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
JUL										
22...	<4.0	<400	E114	--	--	--	--	--	--	--
AUG										
12...	<5.0	<400	<240	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
24...	<5.0	<400	<240	--	--	--	--	--	--	--
SEP										
13...	<4.0	<400	<240	--	--	--	--	--	--	--

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLORDANE, TECHNICAL TOTAL (UG/L) (39350)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDEHYDE TOTAL (UG/L) (34366)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOXAPHENE, TOTAL (UG/L) (39400)
DEC										
28...	--	--	--	--	--	--	--	--	--	--
JAN										
21...	--	--	--	--	--	--	--	--	--	--
FEB										
24...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
22...	--	--	--	--	--	--	--	--	--	--
MAY										
20...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	--	--	--	--	--	--	--	--	--	--
24...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
JUL										
22...	--	--	--	--	--	--	--	--	--	--
AUG										
12...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
24...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	--	--	--	--	--	--	--	--	--	--

DATE	ENDOSULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDOSULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXACHLORIDE TOTAL (UG/L) (39338)	CHLORDANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXACHLORIDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLORDANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC										
28...	--	--	--	--	--	--	--	--	--	--
JAN										
21...	--	--	--	--	--	--	--	--	--	--
FEB										
24...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
22...	--	--	--	--	--	--	--	--	--	--
MAY										
20...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	--	--	--	--	--	--	--	--	--	--
24...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUL										
22...	--	--	--	--	--	--	--	--	--	--
AUG										
12...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
24...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	--	--	--	--	--	--	--	--	--	--

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	377.8	22030	14940	15240	6900	7040	2400	2480	2900
NOV.	1998	341.5	19780	13370	12330	6000	5560	2300	2140	2700
DEC.	1998	358	19880	13440	13000	6100	5870	2300	2250	2700
JAN.	1999	388	18830	12710	13320	5700	5950	2300	2370	2700
FEB.	1999	399	19800	13390	14420	6000	6510	2300	2500	2700
MAR.	1999	458	19910	13470	16650	6100	7520	2300	2880	2700
APR.	1999	689	13930	9390	17470	4100	7670	1700	3230	2000
MAY	1999	5366	2640	1760	25500	710	10340	380	5570	450
JUNE	1999	2487	5180	3440	23120	1400	9100	790	5320	930
JULY	1999	555	16480	11100	16630	4800	7240	2100	3140	2500
AUG.	1999	418	21140	14320	16160	6600	7400	2400	2690	2800
SEPT	1999	373	22670	15390	15500	7200	7200	2500	2480	2900
TOTAL		12210.3	**	**	199300	**	87400	**	37040	**
WTD.AVG.		33	8970	6050	**	2700	**	1100	**	1300

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23200	22600	23000	21100	15000	19000	20600	20200	20400	---	---	e19700
2	22800	20800	21600	24800	15600	19600	20600	20300	20400	---	---	e19700
3	23500	21900	22900	25100	16200	20500	20700	20200	20400	---	---	e19800
4	23500	21000	22300	16200	15300	15500	20600	20200	20300	---	---	e19800
5	22200	21000	21700	16400	15300	15900	20500	20200	20300	---	---	e20000
6	22200	21800	22100	17600	16400	17100	20500	20300	20400	20200	16800	18200
7	22200	21800	22000	18300	17600	17800	20500	20000	20500	18500	17500	18000
8	22500	22100	22300	18700	18300	18500	20500	20100	20400	18500	17000	17800
9	22900	22500	22700	19200	18700	18900	20600	20300	20500	18400	15700	17100
10	22900	22200	22600	20000	19200	19800	20600	20100	20500	16900	15400	16200
11	22600	22200	22300	20100	19700	19900	20500	19500	20000	17400	14700	16000
12	22500	22100	22200	20200	20000	20100	20000	18300	19500	19500	15100	16900
13	22200	21800	22000	20600	19900	20300	20200	17800	19500	21500	19300	20600
14	22400	21900	22200	20400	20000	20200	20100	17100	19300	20600	14500	18200
15	22800	22000	22400	20400	20200	20300	19800	16900	18900	19600	15600	18100
16	22500	22000	22300	20500	20300	20400	20000	18900	19700	20200	11100	16600
17	22300	22000	22100	20600	20200	20500	19700	18500	19300	20400	17700	19600
18	22400	22000	22300	20600	20300	20500	19600	18300	19300	20400	18200	19900
19	22300	22200	22300	20700	20400	20500	---	---	e19600	20600	19400	20400
20	22500	21900	22200	20800	20600	20700	---	---	e19700	20400	18900	19900
21	22200	21700	22000	20800	20500	20600	---	---	e19700	21000	19900	20500
22	22200	22000	22100	20800	20500	20600	---	---	e19700	21200	20200	21000
23	22100	21700	21900	21200	20700	20900	---	---	e19800	21100	15100	18300
24	21900	21500	21700	21000	20400	20600	---	---	e19800	21200	14300	16900
25	22200	21500	21800	20900	20400	20700	---	---	e19800	21400	18900	20500
26	21900	21400	21600	21200	20800	20900	---	---	e19800	21000	18100	20200
27	21900	21400	21600	21000	20500	20800	---	---	e19900	21100	17200	20400
28	21900	21300	21600	20800	20400	20600	---	---	e19900	21200	19400	20800
29	21900	21400	21600	20700	20000	20400	---	---	e19500	21000	14700	18400
30	21600	21400	21500	20400	20100	20200	---	---	e19600	19400	17400	18800
31	21600	17700	21000	---	---	---	---	---	e19700	19400	16300	17900
MONTH	23500	17700	22100	25100	15000	19700	---	---	19900	---	---	18900

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	19300	15400	16800	21300	20500	21100	19900	19000	19700	8410	4330	6020
2	17100	15300	16300	21700	21000	21300	19900	18600	19600	9160	5530	6970
3	17900	15500	16700	21800	18800	21100	19600	17900	19200	8640	5650	6770
4	18800	16800	18200	21500	19200	21100	20000	18300	19500	8940	6730	7620
5	19400	17800	18800	21900	20700	21400	19800	17700	19500	12100	8940	10600
6	19900	18000	19200	22000	20700	21300	20100	18200	19600	14100	12100	13200
7	20000	18400	19400	21400	20600	21100	19900	17700	19600	16100	14100	15200
8	20400	17800	19700	21200	17700	20400	20200	19800	20000	16900	16100	16500
9	20500	17600	19800	21000	20100	20700	20300	19400	20000	17400	13900	16800
10	20500	19200	20200	20800	17600	20400	20100	19800	20000	17700	1820	10300
11	20800	19400	20400	21000	18200	20400	20300	19700	20000	7310	2770	5120
12	21200	19200	20500	21000	18800	19900	20200	19900	20100	11100	7310	9280
13	21000	19300	20300	20200	18900	19700	20100	19800	19900	14000	11100	12700
14	21300	19100	20800	20100	17600	19300	20300	19800	20000	15900	14000	15100
15	21200	19100	20500	19900	18600	19500	20000	19300	19800	17200	15900	16700
16	20900	18900	20400	20400	18900	20000	20200	19600	20000	17900	15700	17400
17	21200	19100	20500	20500	18800	19800	20100	19900	20000	18300	16300	17700
18	21100	18500	20700	19800	15300	18000	20400	20000	20200	19100	18300	18800
19	21400	19700	20600	19300	16800	18500	20300	19400	20000	19500	19100	19300
20	21000	18900	20600	19700	18200	19400	20300	19900	20100	19900	19400	19700
21	21200	19400	20500	19500	17500	18900	20200	19900	20100	20200	19600	20000
22	21200	19700	20700	19800	18900	19300	20400	20100	20300	19600	18800	19200
23	21400	17200	19800	20100	19700	19800	20700	20300	20500	20200	19100	19700
24	21100	18900	20400	19800	19600	19700	20900	20200	20600	20600	20200	20400
25	21200	18600	20500	19900	17700	19400	20600	19500	20200	20400	19900	20100
26	21200	20900	21000	20000	18700	19600	20500	20200	20400	20700	1090	11400
27	21200	19900	21000	19800	17700	19200	20600	20000	20300	1170	318	573
28	21200	19700	20800	19400	16700	18800	20300	19500	20000	---	---	e1730
29	---	---	---	19400	17900	18900	20700	1100	7410	---	---	e4000
30	---	---	---	19700	17700	19200	4330	1580	2960	---	---	e6000
31	---	---	---	19800	17800	19600	---	---	---	---	---	e8000
MONTH	21400	15300	19800	22000	15300	19900	20900	1100	19000	---	---	12700

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e10100	12900	11700	12400	19500	18700	19200	22900	22500	22700
2	---	---	e12800	14000	12800	13400	19500	19000	19300	23200	22300	22700
3	---	---	e14200	14500	14000	14400	19600	19100	19300	22800	22300	22600
4	14900	14400	14600	15100	14500	14900	19600	19200	19500	23100	22400	22800
5	15300	14900	15200	15500	15100	15400	20000	19200	19500	23000	22400	22700
6	15600	15300	15400	15500	15200	15400	19600	19400	19500	22800	21900	22400
7	15900	15600	15800	15400	15000	15200	19600	19000	19400	22800	22200	22600
8	16100	15900	16000	15600	14700	15300	20700	18900	19700	23300	22800	23000
9	16500	16000	16200	15700	15400	15600	20400	19400	20000	23500	22700	23100
10	16400	5550	15200	15900	15000	15600	20300	19700	20000	23200	22700	23000
11	10200	3330	6130	16700	15900	16200	20600	20100	20300	23200	22600	22900
12	13400	8630	10100	17900	16700	17200	20800	20400	20500	23100	22500	22800
13	11100	9480	10200	18800	17900	18600	21300	20800	21100	23300	22800	23100
14	13000	11100	12100	18600	17300	17700	21200	21000	21100	23600	22600	23100
15	14000	13000	13400	17400	16900	17100	21600	21000	21300	22900	22500	22700
16	14900	14000	14500	17500	17100	17300	22100	21600	21900	23200	22400	22800
17	15400	14900	15200	17800	17300	17500	21900	21600	21600	23200	22700	22900
18	15900	15400	15700	18200	17700	17900	21600	20800	21200	23000	22800	22900
19	16500	7710	15600	18500	16200	17900	21900	21100	21500	23000	22600	22800
20	12200	512	4380	18000	17300	17600	---	---	e22000	23200	22800	22800
21	2130	493	1320	17700	17000	17300	---	---	e22100	23200	22400	22800
22	4660	2130	2920	17700	17200	17500	---	---	e22300	22500	22100	22300
23	8250	4660	6710	17300	16200	16500	---	---	e22400	22400	22200	22300
24	9870	8250	9120	16700	16300	16500	---	---	e22500	22600	22300	22400
25	9630	602	3740	16900	16400	16600	23200	22300	22700	22800	22300	22600
26	5710	1290	3310	17600	16700	17300	23500	22500	23000	22900	22300	22600
27	5930	1680	4010	18300	17500	17900	23600	22600	23200	22900	21700	22200
28	9790	5930	8020	18400	17600	18100	23100	22600	22900	22500	22100	22300
29	10700	8430	9680	18600	17900	18300	23000	22000	22700	22800	21600	22200
30	11700	10100	11000	18900	18000	18600	22800	22000	22400	22300	21700	22100
31	---	---	---	19300	18500	18900	22700	22200	22400	---	---	---
MONTH	---	---	10800	19300	11700	16600	---	---	21200	23600	21600	22700

e Estimated

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.0	24.4	26.1	17.7	13.4	15.7	16.5	12.4	14.5	---	---	---
2	25.2	22.2	23.5	16.7	12.2	14.3	17.5	13.3	15.3	---	---	---
3	28.1	23.2	25.2	14.9	13.7	14.3	16.9	15.6	16.1	---	---	---
4	28.0	23.7	25.7	14.4	12.5	13.5	17.2	13.5	15.4	---	---	---
5	25.4	20.8	22.7	13.1	11.4	12.1	17.3	13.5	15.4	---	---	---
6	23.2	18.0	20.6	11.4	10.3	10.8	17.2	13.7	15.9	9.1	4.0	6.4
7	23.4	17.3	20.4	14.3	10.2	11.9	13.7	9.5	11.9	6.6	5.4	5.9
8	23.3	17.4	20.4	13.7	12.4	13.0	11.2	7.3	9.2	5.4	3.6	4.8
9	23.4	18.1	20.7	18.2	12.9	15.3	9.9	6.5	8.4	5.8	1.8	3.7
10	23.5	18.0	20.7	16.1	12.2	14.0	9.6	8.4	8.9	7.3	2.1	4.4
11	24.8	18.3	21.4	15.1	10.5	12.7	9.2	7.8	8.6	9.4	3.1	6.1
12	25.4	19.8	22.5	13.7	11.4	12.6	10.9	6.9	8.8	9.9	7.0	8.2
13	25.6	20.8	23.0	13.8	12.6	13.2	11.2	6.8	8.9	9.1	6.3	7.6
14	25.4	20.6	22.9	17.1	13.3	14.9	11.5	6.9	9.1	9.6	4.7	7.0
15	24.7	20.2	22.3	17.4	12.9	15.1	11.5	7.2	9.2	11.1	5.7	8.2
16	23.2	20.6	21.6	17.3	13.0	15.0	11.7	7.3	9.4	11.4	7.1	9.3
17	23.9	20.2	21.7	17.1	12.7	14.8	11.4	7.2	9.2	12.6	8.1	10.1
18	21.3	16.8	19.1	18.4	13.6	15.9	11.6	8.7	10.0	11.8	7.3	9.5
19	20.9	15.7	18.4	16.0	12.2	14.4	---	---	---	12.4	8.2	10.0
20	18.6	15.9	16.8	13.0	10.6	11.9	---	---	---	13.3	8.0	10.6
21	17.2	15.3	16.1	14.6	10.8	12.6	---	---	---	12.9	10.1	11.5
22	18.9	14.6	16.7	16.1	11.5	13.7	---	---	---	10.9	7.0	8.9
23	18.9	14.7	16.7	16.2	12.9	14.4	---	---	---	10.5	5.2	7.8
24	19.9	15.2	17.4	16.1	11.7	13.9	---	---	---	13.3	7.1	9.9
25	20.6	15.3	18.0	16.0	12.6	14.2	---	---	---	12.1	8.6	10.1
26	20.8	17.5	19.0	15.3	10.9	13.1	---	---	---	12.3	7.2	9.7
27	21.2	18.4	19.8	16.7	11.6	14.0	---	---	---	14.7	9.5	11.9
28	23.4	19.5	21.2	18.6	14.5	16.5	---	---	---	12.7	8.6	11.0
29	23.0	18.6	20.8	17.4	14.9	16.6	---	---	---	8.6	5.9	6.8
30	22.5	19.6	20.9	17.0	13.4	15.0	---	---	---	6.5	5.7	6.1
31	20.8	17.7	20.1	---	---	---	---	---	---	9.0	5.8	7.0
MONTH	28.1	14.6	20.7	18.6	10.2	14.0	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.1	6.4	7.6	18.6	11.3	14.9	22.0	16.9	19.5	19.2	16.6	17.3
2	11.8	6.4	8.8	17.4	12.5	14.8	24.3	17.7	20.8	22.6	15.8	18.9
3	12.5	7.4	9.7	16.4	10.4	13.3	22.0	17.6	19.9	22.7	18.7	21.0
4	13.2	7.8	10.3	16.7	10.1	13.3	20.6	14.8	17.6	21.5	18.2	20.1
5	15.1	9.9	12.5	17.9	12.2	14.8	20.8	15.0	18.1	21.8	16.1	18.7
6	15.0	12.7	14.0	16.4	12.0	14.1	22.1	14.5	18.2	21.9	15.9	18.5
7	16.0	10.6	13.1	13.2	10.4	11.5	21.9	16.1	18.8	24.4	15.8	19.9
8	15.8	11.1	13.3	16.7	10.0	12.9	22.3	19.4	20.5	26.9	18.8	22.5
9	17.2	11.8	14.2	17.6	10.9	14.1	22.3	17.0	19.4	26.2	21.4	23.2
10	18.7	12.3	15.4	19.2	12.2	15.3	22.3	15.9	19.0	22.6	20.3	21.6
11	16.5	9.9	13.5	15.6	10.4	12.9	21.3	14.8	18.1	21.6	18.9	20.0
12	12.5	7.2	9.8	10.4	9.0	9.9	19.1	16.0	17.3	24.9	17.6	20.9
13	13.5	7.1	10.1	9.0	6.0	7.7	21.5	16.2	18.6	22.6	19.4	21.1
14	13.6	7.5	10.5	12.4	4.4	8.2	20.7	14.3	18.5	28.4	19.7	23.6
15	15.4	9.3	12.1	15.9	7.5	11.5	17.2	10.4	13.7	31.1	23.4	26.7
16	15.6	10.4	12.8	17.5	10.8	14.2	17.6	11.8	14.4	31.0	24.1	27.0
17	15.6	10.0	12.7	17.0	13.0	15.1	17.8	11.2	14.1	26.3	23.3	24.9
18	14.7	10.4	12.3	15.0	10.3	12.4	20.6	10.9	15.6	27.5	20.1	23.6
19	14.1	8.8	11.2	13.4	9.7	11.1	24.4	14.9	19.4	28.1	21.0	24.2
20	14.8	9.1	11.6	17.4	9.3	13.0	25.0	17.8	21.3	26.7	21.9	23.9
21	14.8	8.8	11.5	20.0	11.8	15.6	23.7	18.5	21.1	29.6	22.0	25.6
22	12.8	8.8	10.4	22.3	14.2	17.9	27.4	19.1	22.7	30.8	24.7	27.6
23	14.4	7.1	10.6	19.9	14.5	17.1	23.8	16.1	19.8	29.9	25.1	27.3
24	15.8	8.6	12.1	15.7	12.7	14.1	16.1	13.6	14.3	26.9	24.3	25.5
25	18.6	11.4	14.7	18.3	10.9	14.4	20.7	13.3	16.3	29.9	22.3	25.7
26	17.5	13.8	15.4	18.6	12.2	15.2	24.4	18.2	20.8	26.2	18.9	21.6
27	16.6	11.6	13.9	15.3	13.9	14.6	26.9	18.1	22.2	---	---	---
28	17.1	9.8	13.3	15.7	13.4	14.6	27.1	19.9	23.5	---	---	---
29	---	---	---	15.9	14.2	15.0	23.8	13.3	16.7	---	---	---
30	---	---	---	16.9	14.6	15.7	20.0	16.5	18.2	---	---	---
31	---	---	---	21.7	14.9	17.8	---	---	---	---	---	---
MONTH	18.7	6.4	12.1	22.3	4.4	13.8	27.4	10.4	18.6	---	---	---

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	32.4	27.2	29.7	32.6	26.5	29.6	30.4	25.4	27.9
2	---	---	---	32.5	28.0	29.9	32.8	27.1	29.6	30.4	25.0	27.6
3	---	---	---	31.5	26.8	28.8	33.0	26.9	29.8	29.9	25.5	27.7
4	29.8	24.8	26.9	31.4	26.3	28.5	32.7	27.5	29.9	29.2	25.7	27.4
5	26.9	24.8	25.8	31.9	26.5	28.9	30.3	26.8	28.3	28.7	25.3	27.0
6	28.7	23.7	26.0	32.9	27.0	29.7	32.2	26.3	29.1	29.9	24.6	27.2
7	29.5	24.5	26.5	34.0	28.0	30.8	32.5	27.1	29.8	30.4	25.6	28.1
8	30.4	24.8	27.2	33.6	28.1	30.6	33.3	27.4	30.2	28.9	25.5	27.4
9	29.8	24.8	27.1	33.6	27.6	30.4	33.9	27.7	30.7	29.1	24.0	26.5
10	29.9	17.2	25.8	30.3	25.3	27.3	34.1	28.6	31.3	28.8	24.0	26.6
11	23.8	16.5	20.3	28.8	23.2	25.8	33.1	28.0	30.7	30.5	24.8	27.6
12	26.8	21.1	23.8	30.2	24.5	26.9	33.0	27.2	30.3	28.4	24.8	26.8
13	27.6	23.5	25.4	31.8	24.9	28.2	32.3	27.6	30.1	26.8	22.2	24.4
14	27.9	22.8	25.2	31.9	26.9	29.2	32.4	26.4	29.4	26.7	21.2	24.1
15	29.0	22.8	25.8	30.8	25.9	28.2	32.3	27.2	29.9	24.8	21.7	23.2
16	29.2	23.5	26.0	30.3	25.0	27.4	33.3	27.0	30.0	23.2	21.4	22.3
17	26.3	22.2	23.9	31.0	24.9	27.7	32.5	27.0	30.0	25.7	20.5	23.0
18	27.9	21.9	24.7	31.9	26.0	28.7	32.8	26.1	29.5	26.3	22.4	24.4
19	30.5	23.4	26.6	32.0	26.9	29.3	31.9	26.7	29.4	27.0	22.4	24.8
20	24.8	21.6	22.5	30.7	26.8	28.8	---	---	---	25.1	20.8	22.5
21	---	---	---	31.1	26.2	28.5	---	---	---	23.2	18.0	20.6
22	---	---	---	31.7	26.3	28.7	---	---	---	23.6	17.4	20.8
23	---	---	---	33.1	26.6	29.7	---	---	---	23.6	18.3	21.3
24	30.8	26.0	28.3	33.7	27.5	30.5	---	---	---	25.1	20.1	22.6
25	27.1	21.9	24.1	33.3	27.4	30.3	31.7	26.2	29.2	26.3	20.7	23.6
26	26.7	24.0	25.3	33.4	27.3	30.3	31.9	27.1	29.7	26.6	21.4	24.2
27	31.2	24.9	27.7	32.9	27.5	30.2	32.7	26.9	29.5	25.0	21.7	23.3
28	31.0	27.2	28.9	33.1	27.5	30.2	32.9	26.8	29.8	21.7	16.7	19.0
29	30.4	26.5	28.3	33.1	27.1	30.1	33.1	27.3	30.2	19.8	14.4	17.1
30	30.8	26.9	28.7	32.9	27.5	30.2	31.8	27.0	29.4	20.5	14.6	17.7
31	---	---	---	33.3	27.0	30.0	30.9	25.9	28.5	---	---	---
MONTH	---	---	---	34.0	23.2	29.1	---	---	---	30.5	14.4	24.2

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX

LOCATION.--Lat 33°47'45", long 100°04'29", King County, Hydrologic Unit 11130204, on right bank 100 ft (32 m) downstream from inflatable dam. One mile downstream from ranch road crossing, 0.71 miles upstream from Forrer Creek, 12 miles upstream from confluence with North Wichita River and 19 miles northeast of Guthrie.

DRAINAGE AREA.-- 50.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.-- Jun 1994 to Sep 1996 (discharges below 30 ft^3/s). Oct 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,583.90 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. Low flow is maintained by springs that enter river in the vicinity of gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	e5.2	3.9	4.4	5.0	5.2	6.0	6.3	e5.9	6.3	6.7	2.5
2	18	5.3	4.0	4.4	4.9	5.4	10	65	e5.8	6.1	6.8	3.7
3	6.6	4.9	4.2	4.5	4.9	5.6	11	6.4	e5.6	6.0	7.1	4.1
4	5.2	4.8	4.1	4.6	4.9	5.6	5.4	5.6	e5.5	6.2	6.7	4.4
5	5.0	4.7	4.1	4.6	5.1	5.6	5.6	5.2	e5.5	6.3	7.1	4.4
6	5.1	15	4.3	4.6	5.4	5.6	5.5	5.2	e5.4	6.5	6.9	4.2
7	5.1	4.3	4.3	4.6	5.2	5.7	5.8	5.0	e5.4	6.6	6.6	4.2
8	5.1	4.4	4.3	4.7	5.2	6.3	5.9	4.7	e5.3	6.9	6.3	4.1
9	5.1	4.6	4.5	4.7	5.4	5.6	6.1	27	e5.3	6.6	6.0	3.8
10	5.1	4.4	9.3	4.7	5.5	5.7	6.1	102	e12	51	6.0	3.8
11	5.1	4.4	4.1	4.8	5.3	5.8	6.1	7.1	e6.0	6.2	5.7	3.6
12	5.2	4.5	4.2	4.8	e5.3	13	6.5	8.4	e5.5	6.3	5.7	4.0
13	12	4.6	4.3	4.7	e5.3	6.5	17	4.1	e5.5	6.4	5.5	4.1
14	4.3	4.5	4.3	4.8	e5.3	5.9	16	e4.3	e5.4	6.6	5.6	4.1
15	4.4	4.4	4.4	4.8	e5.3	5.7	4.8	e4.8	e5.3	6.7	5.6	4.4
16	4.6	9.9	4.4	4.7	e5.3	5.8	4.7	e5.1	e5.3	6.8	5.6	4.7
17	4.7	3.9	4.4	4.8	5.2	6.0	4.7	e5.3	e5.2	6.9	5.5	4.4
18	4.7	4.0	4.6	4.9	5.1	17	4.7	5.3	e5.1	7.0	5.5	3.4
19	4.6	3.9	4.6	4.9	5.3	16	4.8	5.2	e5.0	7.2	5.5	1.8
20	5.1	4.0	4.8	14	5.4	5.6	5.0	e5.1	e10	7.4	5.5	3.5
21	5.2	4.0	4.8	4.5	5.4	5.5	5.0	e5.0	e6.0	7.6	5.5	3.8
22	4.9	3.9	4.8	4.9	5.6	5.6	5.3	e5.0	e5.9	7.6	5.4	3.9
23	4.7	3.8	4.9	4.9	5.5	5.6	5.5	e5.1	e5.8	7.5	5.3	4.0
24	4.8	4.0	4.9	4.8	5.5	5.7	14	e5.2	e5.6	7.6	3.5	4.1
25	4.9	3.9	4.8	5.0	5.6	6.5	5.5	e5.2	e5.4	7.6	3.7	4.2
26	4.8	3.8	4.8	5.1	8.2	5.6	8.0	e5.2	e5.2	7.6	4.6	4.0
27	4.7	3.9	4.8	5.1	5.2	6.4	4.9	e14	e5.0	7.2	4.8	2.0
28	4.9	4.0	4.8	5.2	5.2	6.4	4.9	e6.0	e5.0	6.9	5.0	3.2
29	4.8	4.3	4.7	30	---	6.1	32	e6.0	e8.0	6.9	5.0	3.7
30	4.9	4.1	4.7	6.9	---	6.0	6.3	e6.0	6.2	6.8	4.9	3.7
31	e12	---	9.3	5.0	---	6.0	---	e6.0	---	6.6	4.8	---
TOTAL	180.6	145.4	148.4	184.4	150.5	209.0	233.1	355.8	178.1	255.9	174.4	113.8
MEAN	5.83	4.85	4.79	5.95	5.38	6.74	7.77	11.5	5.94	8.25	5.63	3.79
MAX	18	15	9.3	30	8.2	17	32	102	12	51	7.1	4.7
MIN	4.3	3.8	3.9	4.4	4.9	5.2	4.7	4.1	5.0	6.0	3.5	1.8
AC-FT	358	288	294	366	299	415	462	706	353	508	346	226

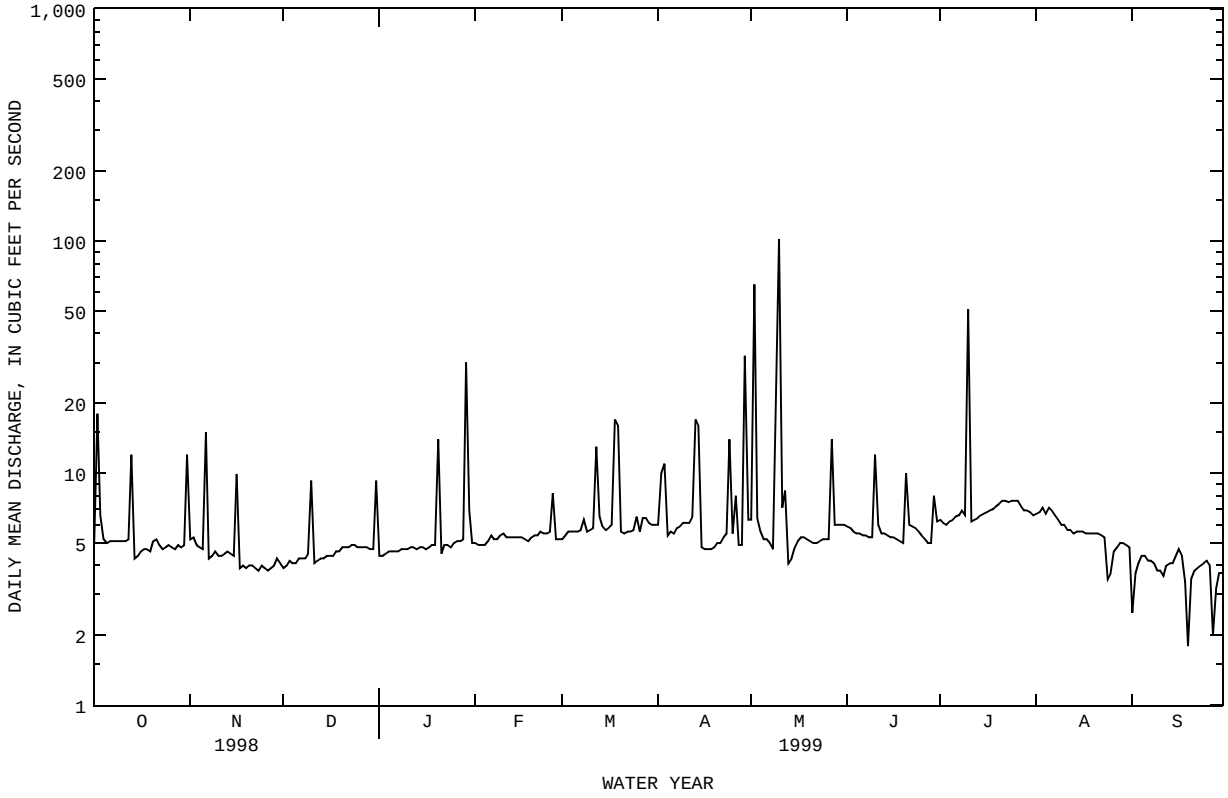
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 1999, BY WATER YEAR (WY)

MEAN	6.84	6.23	6.18	6.14	6.27	6.24	6.79	7.70	6.01	6.76	6.77	6.51
MAX	7.71	7.44	8.22	7.26	7.58	7.06	7.77	11.5	7.59	8.25	9.65	8.57
(WY)	1996	1996	1998	1998	1997	1998	1999	1999	1997	1999	1994	1995
MIN	5.83	4.85	4.79	4.70	4.73	4.61	5.76	5.55	4.31	5.01	4.71	3.79
(WY)	1999	1999	1999	1995	1995	1995	1998	1998	1998	1998	1998	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1994 - 1999	
ANNUAL TOTAL	2041.1		2329.4			
ANNUAL MEAN	5.59		6.38		6.38	
HIGHEST ANNUAL MEAN					6.54	1997
LOWEST ANNUAL MEAN					6.20	1998
HIGHEST DAILY MEAN	24	Mar 15	102	May 10	102	May 10 1999
LOWEST DAILY MEAN	3.4	Jun 2	1.8	Sep 19	1.8	Sep 19 1999
ANNUAL SEVEN-DAY MINIMUM	3.8	Jun 12	3.5	Sep 18	3.5	Sep 18 1999
INSTANTANEOUS PEAK FLOW			490	May 10	5630	Aug 2 1995
INSTANTANEOUS PEAK STAGE			11.17	May 10	16.02	Aug 2 1995
ANNUAL RUNOFF (AC-FT)	4050		4620		4620	
10 PERCENT EXCEEDS	7.2		7.3		8.6	
50 PERCENT EXCEEDS	4.9		5.2		6.1	
90 PERCENT EXCEEDS	3.9		4.1		4.4	

e Estimated

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued



07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1993 to current year.
PESTICIDE DATA: Oct 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1994 to current year.
TEMPERATURE: Oct 1994 to current year.

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

REMARKS.--Interruption in record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1993 to 1999. The standard error of estimate for dissolved solids is 4%, chloride is 5%, sulfate is 3% and for hardness is 7%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 18,900 microsiemens, May 26, 1996; minimum, 210 microsiemens, May 10, 1999.
TEMPERATURE: Maximum, 35.0°C, Jul 9, 10, 1995; minimum, 0.0°C, Dec 22, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 14,100 microsiemens, Sep 27-28; minimum, 210 microsiemens, May 10.
WATER TEMPERATURE: Maximum, 34.8°C, Jul 9, 24, 28; minimum, 0.0°C, Dec 22.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC											
29...	1340	4.8	12400	8.1	10.0	12.0	116	2900	2700	890	164
JAN											
20...	1215	4.9	12200	8.1	11.5	11.3	115	2900	2700	890	166
FEB											
23...	1530	5.6	12200	8.1	15.5	12.4	135	2800	2600	860	161
MAR											
16...	1315	5.7	12300	8.0	17.5	11.4	130	3000	2800	910	167
APR											
21...	1420	4.9	12200	8.0	23.5	10.8	140	2900	2700	890	166
MAY											
18...	1505	5.4	12700	7.9	26.5	15.3	203	3300	3100	1100	149
JUN											
09...	1430	5.3	12000	8.0	29.0	12.5	177	2900	2700	890	161
30...	1345	6.3	12700	8.0	29.0	17.1	242	2800	2700	870	160
JUL											
21...	1410	7.8	11800	8.0	30.5	14.7	212	2600	2400	780	152
28...	1420	7.1	13300	7.9	31.5	--	--	2800	2700	850	164
AUG											
11...	1653	5.4	12500	8.1	32.5	18.6	278	2700	2600	820	162
SEP											
15...	1310	4.8	12800	8.2	22.5	12.2	152	2400	2300	740	144

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
DEC											
29...	2220	18	13	190	2200	3200	.53	23	8860	2	1.04
JAN											
20...	2370	19	12	180	2200	3200	.51	13	9040	13	.958
FEB											
23...	2240	18	14	180	2200	3300	.53	31	8910	14	.997
MAR											
16...	2400	19	12	180	2300	3400	.51	14	9330	7	.813
APR											
21...	2350	19	11	170	2400	3400	.71	2.3	9350	11	.673
MAY											
18...	2010	15	11	160	2300	3200	.51	6.0	8800	10	.577
JUN											
09...	2230	18	12	160	2300	3300	.47	9.1	9030	29	.618
30...	2170	18	11	160	2200	3200	.48	7.2	8720	17	.443
JUL											
21...	2130	18	11	150	2300	3300	.50	15	8830	19	.325
28...	2410	20	13	130	2300	3600	.47	7.0	9460	28	.281
AUG											
11...	2300	19	12	130	2300	3400	.50	11	9150	26	.308
SEP											
15...	2090	18	12	140	2300	3400	.52	8.6	8790	21	--

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
DEC											
29...	.031	1.08	.167	1.2	--	.15	<.050	<.050	<.010	--	2
JAN											
20...	.014	.972	.153	1.1	.01	.17	<.050	<.050	.011	.03	1
FEB											
23...	.011	1.01	.101	1.2	.05	.15	<.050	<.050	<.010	--	1
MAR											
16...	.012	.825	.087	1.0	.10	.19	<.050	<.050	<.010	--	<1
APR											
21...	.015	.688	.081	.90	.13	.21	<.050	<.050	.011	.03	<1
MAY											
18...	.014	.591	.085	.78	.10	.19	<.050	<.050	.010	.03	1
JUN											
09...	.021	.639	.199	.83	--	.19	<.050	<.050	<.010	--	4
30...	.026	.469	.227	.70	.01	.24	<.050	<.050	.021	.06	<2
JUL											
21...	.028	.353	.069	.72	.30	.37	<.050	<.050	<.010	--	2
28...	.023	.304	.069	.55	.18	.25	<.050	<.050	<.010	--	1
AUG											
11...	.019	.327	.081	.58	.17	.25	<.050	<.050	<.010	--	<1
SEP											
15...	<.010	.351	.156	.50	--	.14	<.050	<.050	.176	.54	2

DATE	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)
DEC											
29...	2	<100	19	<1	<80	<1	<1.0	<1	<100	70	<100
JAN											
20...	3	<100	18	<1	<80	<1	<1.0	<1	<100	90	<100
FEB											
23...	2	<100	19	<1	<80	1	1.4	<1	<1000	20	<100
MAR											
16...	1	21	24	<1	<80	1	<1.0	<1	<100	50	<100
APR											
21...	2	21	24	<1	<80	<1	<1.0	2	<100	190	<100
MAY											
18...	<1	100	35	<4	<80	<1	<1.0	<4	<100	420	<100
JUN											
09...	2	29	26	<1	<80	<1	<1.0	2	<100	250	<100
30...	1	36	31	<4	<80	<1	<1.0	<4	<100	<140	140
JUL											
21...	<1	26	25	<4	<80	<1	<10	<4	<100	130	<100
28...	<1	23	20	<4	<80	<1	<10	<4	<100	130	<100
AUG											
11...	1	20	20	<4	<80	2	<1.0	<4	<100	90	<100
SEP											
15...	<1	19	19	<4	<80	5	2.9	<4	<100	<140	<100

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
DEC											
29...	<1	<.00	24	<30	<.10	<.1	<100	<400	15	14	<1
JAN											
20...	<5	<1000	28	<30	<.20	<.1	<100	<400	11	11	<1
FEB											
23...	7	<1000	20	<30	<.10	<.1	<100	<400	11	11	<1
MAR											
16...	<1	<1000	15	<30	<.10	<.1	<50	<400	9	9	<1
APR											
21...	4	<1000	17	<30	<.10	<.1	<250	<400	6	8	<4
MAY											
18...	<4	<1000	110	E27	<.10	<.1	E140	<400	9	8	<4
JUN											
09...	<1	<1000	E22	<30	<.10	<.1	<500	<400	9	6	<4
30...	<4	<1000	E22	E22	<.10	<.1	<500	<400	7	6	<4
JUL											
21...	<4	<1000	13	E25	<.10	<.1	<500	<400	4	4	<4
28...	<4	<1000	E13	E26	<.10	<.1	<250	<400	6	4	<4
AUG											
11...	<4	<1000	E10	E15	<.10	<.1	<250	<400	5	6	<4
SEP											
15...	<4	<1000	11	E13	<.10	<.1	<500	<400	6	4	<4

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
DEC										
29...	<4.0	<10	<200	--	--	--	--	--	--	--
JAN										
20...	<1.0	<10	<200	--	--	--	--	--	--	--
FEB										
23...	<1.0	<10	<200	--	--	--	--	--	--	--
MAR										
16...	<1.0	<40	<200	--	--	--	--	--	--	--
APR										
21...	<4.0	140	<200	--	--	--	--	--	--	--
MAY										
18...	<4.0	300	<200	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
JUN										
09...	<4.0	<400	<200	--	--	--	--	--	--	--
30...	<2.0	<400	<200	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
JUL										
21...	<4.0	60	<200	--	--	--	--	--	--	--
28...	<4.0	<200	<200	--	--	--	--	--	--	--
AUG										
11...	<4.0	<200	<200	--	--	--	--	--	--	--
SEP										
15...	<2.0	<400	<200	--	--	--	--	--	--	--

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
20...	--	--	--	--	--	--	--	--	--	--
FEB										
23...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
18...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
JUN										
09...	--	--	--	--	--	--	--	--	--	--
30...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
JUL										
21...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
AUG										
11...	--	--	--	--	--	--	--	--	--	--
SEP										
15...	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
20...	--	--	--	--	--	--	--	--	--	--
FEB										
23...	--	--	--	--	--	--	--	--	--	--
MAR										
16...	--	--	--	--	--	--	--	--	--	--
APR										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
18...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN										
09...	--	--	--	--	--	--	--	--	--	--
30...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUL										
21...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
AUG										
11...	--	--	--	--	--	--	--	--	--	--
SEP										
15...	--	--	--	--	--	--	--	--	--	--

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	180.6	10900	7760	3780	2700	1330	2300	1100	2400
NOV.	1998	145.4	11080	7860	3090	2800	1090	2300	887	2400
DEC.	1998	148.4	11620	8180	3280	2900	1180	2300	914	2500
JAN.	1999	184.4	11330	7990	3980	2900	1420	2200	1110	2500
FEB.	1999	150.5	12590	8730	3550	3200	1320	2300	922	2600
MAR.	1999	209	11400	8040	4530	2900	1630	2300	1270	2500
APR.	1999	233.1	10280	7310	4600	2600	1620	2100	1340	2300
MAY	1999	355.8	7890	5710	5480	1900	1850	1800	1710	1800
JUNE	1999	178.1	11260	7960	3830	2800	1360	2300	1080	2500
JULY	1999	255.9	10970	7730	5340	2800	1920	2200	1490	2400
AUG.	1999	174.4	12940	8930	4200	3400	1580	2300	1070	2700
SEPT	1999	113.8	13250	9100	2790	3500	1060	2200	691	2700
TOTAL		2329.4	**	**	48450	**	17350	**	13590	**
WTD.AVG.		6.4	10920	7700	**	2800	**	2200	**	2400

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11800	11600	11700	7360	5370	6210	11900	11600	11800	12500	12200	12400
2	11700	6090	9880	10100	6560	8810	12100	11900	12000	12500	12300	12400
3	9910	5590	8400	11100	10000	10900	12100	12000	12000	12400	11000	12200
4	12300	8970	11000	11300	11100	11200	12100	11900	12000	12400	12100	12300
5	12300	12100	12200	11200	11200	11200	12300	12100	12200	12300	12200	12200
6	12100	12000	12000	11300	11000	11100	12300	12200	12300	12500	12200	12300
7	12000	11900	12000	11100	11000	11100	12400	12300	12300	12500	12300	12400
8	12000	11900	11900	11100	11000	11100	12500	12200	12400	12400	12200	12300
9	12000	11400	11800	11100	11000	11000	12300	11400	11900	12300	11700	12100
10	11400	11100	11200	11200	11100	11200	11500	9990	10800	12400	12100	12200
11	11200	10900	11100	11400	11100	11200	10800	10600	10700	12400	12200	12300
12	11100	11000	11100	11400	11300	11300	10800	10600	10700	12500	12000	12400
13	11000	10700	10900	11400	11200	11300	10800	10600	10700	12600	12300	12500
14	10900	10800	10800	11300	11200	11300	10900	10700	10800	12500	12300	12400
15	10900	10800	10900	11400	11300	11300	10900	10700	10800	12500	10800	12000
16	10900	10800	10900	11400	11200	11300	11000	10800	10900	12600	12400	12500
17	10900	10800	10900	11500	11400	11400	11200	10900	11100	12600	11100	12300
18	11000	10800	10900	11500	11400	11400	11400	11100	11300	12600	12400	12500
19	11100	10900	11000	11500	11400	11400	11600	11300	11500	12600	12400	12500
20	11100	10900	11000	11500	11400	11500	11600	11500	11500	12500	12000	12200
21	10900	10600	10800	11600	11500	11500	11700	11500	11600	12600	11900	12400
22	11000	10600	10800	11600	11500	11600	11700	11400	11600	12300	10800	11800
23	11100	10900	11000	11700	11600	11600	11700	11500	11600	12100	11700	11800
24	11200	11100	11100	11700	11600	11600	11800	11600	11700	11900	11800	11800
25	11300	11100	11200	11800	11700	11700	11900	11700	11700	11900	11700	11800
26	11200	11100	11200	11800	11600	11700	11900	11700	11800	11700	11600	11600
27	11200	11100	11200	11900	11700	11800	12200	11800	12000	11700	11500	11600
28	11200	11100	11200	11900	11700	11800	12200	12100	12100	11700	11400	11500
29	11300	11100	11200	11900	11800	11800	12400	12100	12200	11400	6150	8840
30	11200	11000	11100	11800	11700	11800	12400	12200	12300	8500	4470	6250
31	11100	5580	10100	---	---	---	12400	11800	12200	10200	8150	9430
MONTH	12300	5580	11000	11900	5370	11100	12500	9990	11600	12600	4470	11800

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e9990	12200	12100	12100	12200	12100	12200	---	---	e12000
2	---	---	e11000	12200	12100	12100	12300	12000	12200	---	---	e6000
3	---	---	e12500	12300	12100	12200	12200	1310	7790	---	---	e10500
4	---	---	e12800	12400	12100	12300	12000	11800	11900	---	---	e11000
5	---	---	e12800	12300	12200	12300	12500	12000	12300	---	---	e11500
6	---	---	e12800	12300	12200	12300	12700	12400	12600	---	---	e12000
7	---	---	e12900	12400	12200	12300	12800	12500	12600	---	---	12500
8	---	---	e12900	12300	11900	12100	12600	12500	12600	12800	12600	12700
9	---	---	e12900	12200	12000	12100	12800	12500	12700	12900	2640	11900
10	---	---	e13000	12600	12100	12400	13000	12600	12800	6110	210	2920
11	---	---	e13000	12500	12300	12400	12900	12700	12800	6820	3530	5220
12	---	---	e13100	12400	8860	10800	13000	12700	12900	10400	437	6480
13	---	---	e12900	10500	8860	9810	12800	3590	12500	11500	10400	11000
14	---	---	e13000	11800	10300	11200	12600	722	3630	---	---	11500
15	---	---	e13000	12500	11400	12200	11900	470	8890	---	---	e11800
16	---	---	e13000	12300	12200	12300	12200	11600	11900	---	---	e12000
17	---	---	e12800	12400	12200	12300	12000	11800	11900	---	---	e12300
18	---	---	e12900	12200	6550	11300	12100	11600	11900	---	---	12400
19	---	---	e12900	10400	4350	6870	12100	11800	12000	---	---	12800
20	13100	12700	12900	11600	9520	11100	12200	12000	12100	---	---	e12700
21	12900	12600	12800	12100	11600	12000	12300	12100	12200	---	---	e12700
22	12700	12600	12600	12200	12000	12100	12300	12200	12200	---	---	e12700
23	12600	12500	12600	12300	12200	12300	12400	12100	12300	---	---	e12700
24	12600	12400	12500	12200	12200	12200	12400	846	8350	---	---	e12800
25	12500	12100	12500	12200	4560	10800	11600	824	10000	---	---	e12800
26	12500	11900	12200	12000	12000	12000	---	---	e9000	---	---	e12800
27	12100	12000	12000	12100	11500	11900	---	---	e11500	---	---	e9000
28	12200	12000	12100	11600	11200	11400	---	---	e11800	---	---	e10000
29	---	---	---	11800	11300	11600	---	---	e7000	---	---	e10500
30	---	---	---	12000	11800	11900	---	---	e11500	---	---	e11500
31	---	---	---	12100	12000	12100	---	---	---	---	---	e12000
MONTH	---	---	12600	12600	4350	11700	---	---	11200	---	---	11000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e12400	12700	12300	12500	13400	13200	13300	13300	13000	13200
2	---	---	e12600	12600	12300	12500	13400	13100	13200	13300	13200	13300
3	---	---	e12700	12600	12300	12500	13200	12900	13100	13300	13200	13200
4	---	---	e12800	12600	12300	12400	13100	12900	13000	13300	13200	13200
5	---	---	e12900	12600	12200	12400	13100	12900	13000	13200	13000	13200
6	---	---	e13000	12500	11900	12300	12900	12700	12800	13200	13000	13100
7	---	---	e13100	12500	12000	12300	12900	12700	12800	13300	13100	13200
8	---	---	e13100	12500	12100	12300	12900	12700	12800	13400	13100	13200
9	---	---	e12000	12500	12000	12300	12900	12700	12800	13400	13100	13300
10	---	---	e8500	12500	3870	5780	12800	12500	12700	13500	13100	13300
11	---	---	e10000	11300	5680	9620	12800	12500	12700	13400	13100	13200
12	---	---	e10500	11700	11300	11500	12800	12600	12700	13300	13100	13200
13	---	---	e11000	11800	11500	11700	12900	12700	12800	13500	13000	13200
14	---	---	e11100	11900	11700	11800	13000	12700	12900	13600	12900	13300
15	---	---	e11200	12000	11700	11900	13000	12700	12900	13200	12600	12900
16	---	---	e11300	12000	11700	11900	13000	12700	12900	13000	12400	12700
17	---	---	e11400	12000	11700	11900	13000	12700	12900	12700	12300	12500
18	---	---	e11400	12000	11700	11800	13000	12800	12900	12700	12400	12600
19	---	---	e11500	11900	11700	11800	13000	12800	12900	13000	12600	12800
20	---	---	e8500	11900	11700	11800	13000	12800	12900	13300	12900	13100
21	---	---	e10500	11900	11700	11800	13100	12800	13000	13400	13200	13400
22	---	---	e11000	12100	11900	12000	13100	12800	13000	13500	13400	13400
23	---	---	e11100	12300	12100	12200	13000	12900	13000	13700	13300	13500
24	---	---	e11200	12600	12300	12400	13000	12900	13000	13700	13500	13600
25	---	---	e11400	12800	12600	12700	13200	13000	13100	13700	13400	13600
26	---	---	e11500	13100	12800	12900	13100	13000	13000	13800	13400	13600
27	---	---	e11500	13300	13000	13100	13000	13000	13000	14100	13600	13800
28	---	---	e11600	13500	13200	13300	13100	12900	13000	14100	13700	13800
29	---	---	e10500	13500	13200	13300	13000	12900	13000	13900	13700	13800
30	---	---	12400	13500	13200	13300	13100	12900	13000	13800	13700	13700
31	---	---	---	13500	13200	13300	13300	13100	13200	---	---	---
MONTH	---	---	11500	13500	3870	12000	13400	12500	12900	14100	12300	13300

e Estimated

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	26.5	24.5	25.8	---	---	---	14.5	12.8	13.9	8.4	7.4	8.1
2	27.2	20.7	23.5	14.7	12.8	13.7	16.6	13.5	14.7	7.8	5.7	7.2
3	25.9	22.5	23.8	14.9	13.4	14.2	16.9	16.0	16.4	5.9	3.4	5.1
4	26.1	24.2	25.3	13.8	12.3	13.3	16.1	14.1	15.3	3.6	2.4	3.2
5	25.7	21.2	23.8	12.7	10.8	11.9	15.8	14.4	14.9	5.0	2.9	4.2
6	21.2	19.1	20.0	10.9	9.4	10.2	16.4	14.9	15.9	7.7	4.8	6.4
7	19.4	18.5	19.0	12.3	9.5	10.8	14.9	10.1	12.8	7.7	5.6	6.7
8	19.8	18.5	19.0	13.3	12.2	12.8	10.1	7.3	8.9	6.1	4.5	5.5
9	20.1	18.7	19.4	15.9	12.9	14.4	8.0	7.0	7.5	4.6	2.8	3.9
10	20.6	19.3	19.8	15.9	12.3	14.6	9.8	7.1	8.6	4.6	2.8	3.9
11	21.4	19.7	20.5	12.6	10.9	12.0	8.9	8.2	8.7	7.0	4.2	5.6
12	22.0	20.4	21.3	12.4	11.6	11.9	9.5	7.9	8.6	9.0	7.0	8.3
13	24.0	20.4	21.9	13.4	12.4	12.9	8.9	7.7	8.4	9.1	7.0	8.6
14	23.0	20.3	22.4	15.4	13.4	14.4	9.1	7.8	8.5	7.5	5.9	6.9
15	22.6	21.3	22.0	16.0	13.7	14.9	9.2	8.0	8.6	8.6	6.3	7.6
16	21.9	21.2	21.6	17.5	12.9	14.7	9.4	8.3	8.9	9.9	8.6	9.3
17	22.3	20.5	21.6	15.3	13.0	14.3	9.3	8.0	8.9	10.9	9.6	10.3
18	20.5	17.4	19.2	15.8	13.7	14.7	10.4	8.5	9.5	10.7	8.2	9.8
19	17.4	16.5	17.0	16.0	13.0	14.8	11.0	9.0	10.1	11.2	8.6	9.9
20	16.9	14.5	16.0	13.2	11.0	12.1	9.0	7.3	8.0	13.0	10.4	11.6
21	15.1	14.4	14.7	12.6	11.0	11.9	7.4	3.5	6.2	12.6	9.7	11.9
22	16.1	15.0	15.6	14.0	12.5	13.2	3.5	.0	1.1	11.8	8.3	10.3
23	15.9	15.0	15.4	14.7	13.6	14.1	1.0	.1	.5	8.6	6.7	7.5
24	17.1	15.6	16.3	13.9	12.5	13.4	2.5	1.0	1.8	11.2	7.8	9.4
25	18.1	16.7	17.3	14.2	13.0	13.6	2.9	1.8	2.4	11.3	9.4	10.8
26	19.0	18.1	18.4	13.2	11.4	12.6	4.3	1.9	3.4	10.6	9.3	9.8
27	20.2	19.0	19.4	15.3	12.0	13.1	6.9	4.3	6.2	13.5	10.6	11.9
28	21.6	20.1	20.8	17.6	15.2	16.2	7.1	5.6	6.7	14.4	10.7	12.7
29	21.4	20.0	20.7	17.7	16.1	17.1	7.6	6.0	7.0	10.7	5.6	7.7
30	21.3	20.3	20.8	16.1	14.3	15.2	8.3	7.1	7.7	7.2	5.5	6.3
31	---	---	---	---	---	---	8.7	6.0	7.6	8.3	6.6	7.5
MONTH	---	---	---	---	---	---	16.9	.0	8.6	14.4	2.4	8.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	16.0	13.4	14.3	20.6	19.4	20.0	21.7	17.8	19.6
2	---	---	---	16.3	14.1	15.3	22.4	20.0	21.2	24.9	14.9	19.1
3	---	---	---	14.7	12.1	13.9	22.4	16.2	19.0	23.2	16.0	21.0
4	---	---	---	14.3	12.5	13.3	18.9	17.0	17.9	23.1	20.5	21.9
5	---	---	---	15.9	14.3	15.0	18.8	16.7	17.8	20.5	18.2	19.6
6	---	---	---	15.5	12.7	14.5	19.5	17.2	17.9	20.2	17.9	19.2
7	---	---	---	13.6	10.7	12.3	21.4	17.7	19.0	21.8	18.2	19.7
8	---	---	---	14.7	10.4	12.2	21.8	20.5	21.1	24.8	20.3	22.2
9	---	---	---	15.6	13.9	14.6	21.2	19.1	20.1	24.8	18.7	23.5
10	---	---	---	16.3	14.5	15.4	19.9	18.2	19.0	25.3	16.9	20.7
11	---	---	---	16.8	12.3	15.0	18.4	17.4	18.0	23.9	20.6	21.8
12	---	---	---	12.3	9.6	10.6	18.7	17.3	17.8	---	---	---
13	---	---	---	9.7	7.5	8.6	22.4	17.3	19.2	23.9	20.7	22.0
14	---	---	---	10.1	6.0	7.6	21.5	8.1	15.7	---	---	---
15	---	---	---	13.9	10.1	11.5	14.6	5.4	12.0	---	---	---
16	---	---	---	16.2	13.6	14.6	16.0	13.5	14.8	---	---	---
17	---	---	---	16.3	15.2	15.7	15.6	13.8	14.4	---	---	---
18	---	---	---	15.9	10.0	13.8	17.8	13.9	15.4	---	---	---
19	---	---	---	15.3	9.2	11.2	21.8	17.0	18.8	---	---	---
20	12.7	11.0	11.9	14.7	11.2	13.0	22.2	20.1	21.3	---	---	---
21	12.5	10.5	11.9	17.7	13.9	15.7	22.6	21.1	21.9	---	---	---
22	11.7	10.1	11.2	19.2	16.2	17.8	24.9	21.7	23.1	---	---	---
23	11.9	10.2	10.9	19.3	16.5	18.0	25.0	18.4	22.1	---	---	---
24	13.9	10.9	12.0	16.9	12.7	15.2	18.4	11.0	14.7	---	---	---
25	16.9	13.8	15.1	21.0	11.7	15.0	19.3	11.8	15.5	---	---	---
26	17.4	15.7	16.5	16.4	15.0	15.5	21.9	14.0	19.2	---	---	---
27	15.9	13.2	15.0	16.7	14.6	15.6	23.3	13.1	21.5	---	---	---
28	13.8	12.5	13.4	15.5	14.2	14.7	23.9	21.9	22.9	---	---	---
29	---	---	---	15.9	15.4	15.6	23.7	15.7	19.5	---	---	---
30	---	---	---	16.5	15.5	16.1	21.9	20.1	20.8	---	---	---
31	---	---	---	20.1	16.5	17.9	---	---	---	---	---	---
MONTH	---	---	---	21.0	6.0	14.2	25.0	5.4	18.7	---	---	---

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	34.5	25.4	29.6	33.5	25.0	28.8	32.0	23.9	27.3
2	---	---	---	34.5	26.3	29.7	33.0	25.7	28.6	27.9	26.8	27.2
3	---	---	---	33.3	25.5	28.8	34.6	25.5	29.3	28.0	26.8	27.4
4	---	---	---	33.2	25.0	28.3	33.7	25.9	28.8	27.8	26.5	27.3
5	---	---	---	33.8	24.7	28.5	30.8	25.0	27.0	28.5	25.5	27.2
6	---	---	---	34.0	25.0	29.1	33.3	24.6	28.3	29.0	24.2	26.8
7	---	---	---	34.5	25.8	29.6	33.5	25.1	28.8	30.2	24.8	27.7
8	---	---	---	34.2	25.4	29.2	33.3	25.7	29.1	30.1	24.4	27.3
9	---	---	---	34.8	25.5	29.3	33.8	26.3	29.7	30.4	23.2	26.3
10	---	---	---	28.6	23.4	24.8	34.6	25.7	29.5	30.0	22.5	26.0
11	---	---	---	30.8	20.5	25.0	34.0	25.4	29.2	32.2	23.5	27.1
12	---	---	---	32.1	22.0	26.4	33.6	25.2	29.1	29.3	23.2	26.0
13	---	---	---	33.4	23.0	27.7	33.7	25.3	29.0	28.5	20.3	23.7
14	---	---	---	32.5	25.1	28.3	33.9	24.6	28.6	26.8	19.1	22.9
15	---	---	---	33.0	24.3	27.9	33.5	25.6	29.1	26.3	20.6	22.7
16	---	---	---	31.6	23.7	26.8	34.7	25.4	29.3	23.8	20.3	21.8
17	---	---	---	32.7	23.8	27.5	33.4	24.3	28.6	26.7	19.2	22.7
18	---	---	---	33.5	24.8	28.5	33.1	23.8	28.0	28.6	21.3	24.0
19	---	---	---	33.5	25.4	28.7	32.8	24.2	28.0	25.6	18.7	22.8
20	---	---	---	31.2	25.2	27.9	32.1	23.6	27.4	24.7	20.9	23.4
21	---	---	---	32.8	24.6	28.1	32.3	22.7	27.1	20.9	19.5	20.1
22	---	---	---	33.8	25.0	28.7	32.4	23.7	27.6	20.7	19.0	20.0
23	---	---	---	34.7	25.1	29.1	31.5	24.5	27.7	22.0	18.7	20.3
24	---	---	---	34.8	25.1	29.3	33.6	25.1	28.2	24.2	19.6	21.9
25	---	---	---	34.3	25.0	29.0	29.8	24.5	28.6	26.4	20.2	23.3
26	---	---	---	34.0	25.2	29.1	30.1	28.3	29.3	27.9	19.8	23.9
27	---	---	---	33.4	25.7	29.2	30.0	28.1	29.3	27.3	18.8	23.0
28	---	---	---	34.8	25.6	29.7	31.0	26.8	29.1	22.1	16.6	19.5
29	---	---	---	34.5	25.4	29.5	30.9	26.6	29.1	17.5	14.3	15.9
30	---	---	---	34.1	25.8	29.4	30.7	25.5	28.4	19.0	15.4	17.0
31	---	---	---	34.4	25.6	29.2	30.9	24.3	27.6	---	---	---
MONTH	---	---	---	34.8	20.5	28.4	34.7	22.7	28.6	32.2	14.3	23.8

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX

LOCATION.--Lat 33°49'14", long 99°47'10", Foard-Knox County line, Hydrologic Unit 11130204, near right bank at downstream side of bridge on State Highway 6, 4.5 mi north of Truscott, about 47.6 mi upstream from confluence with South Wichita River, and 188.4 mi upstream from mouth.

DRAINAGE AREA.--937 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements), Dec 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,351.78 ft above sea level. Prior to Jan 2, 1960, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There is one small diversion for irrigation upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred in Sep 1919; the next highest flood occurred in May 1954, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 27	0930	5,080	18.34	Jun 21	0930	1,680	13.94
Jun 11	1130	1,230	12.43	Jun 25	1130	1,560	13.60

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

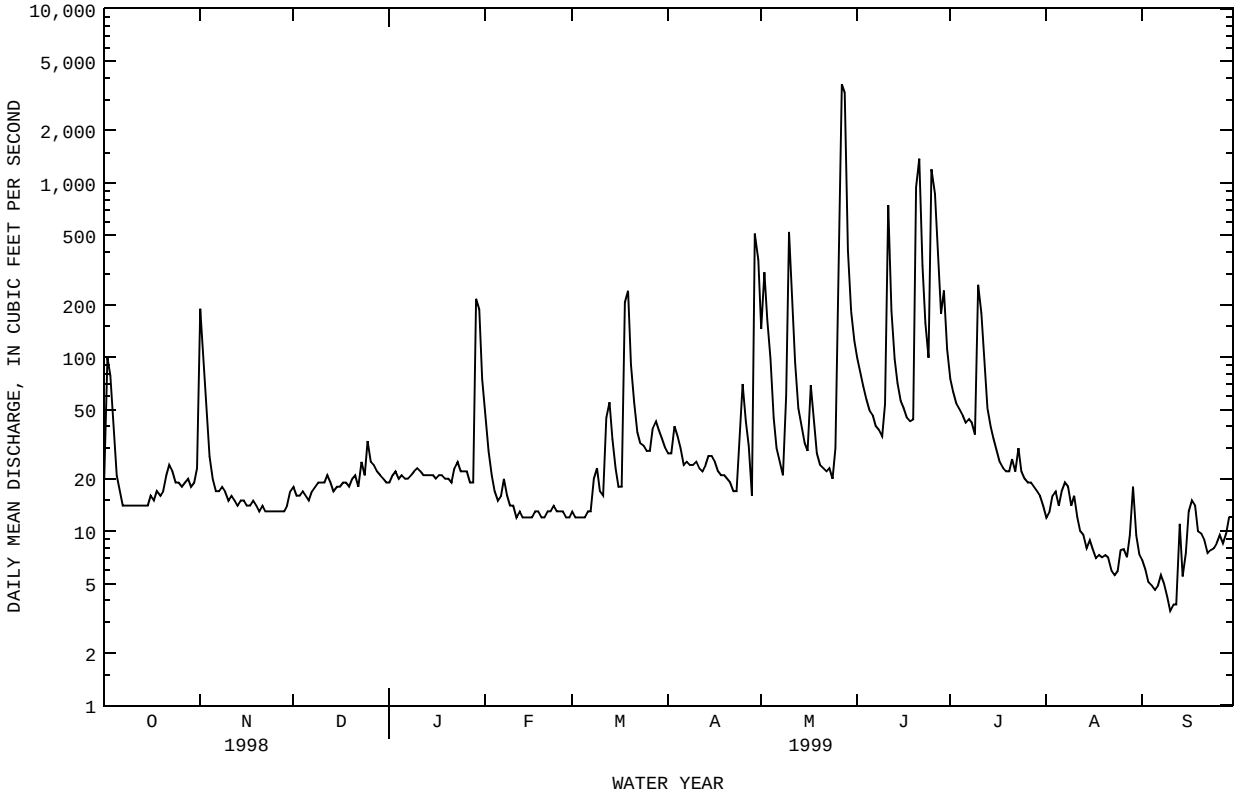
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	190	18	19	47	13	28	145	99	75	12	6.8
2	99	107	16	21	29	12	28	307	82	63	13	6.0
3	79	53	16	22	21	12	40	164	68	54	16	5.1
4	40	27	17	20	17	12	35	98	57	50	17	4.9
5	21	20	16	21	15	12	30	45	49	46	14	4.6
6	17	17	15	20	16	13	24	30	46	42	17	4.9
7	14	17	17	20	20	13	25	25	40	44	19	5.6
8	14	18	18	21	16	20	24	21	38	42	18	5.0
9	14	17	19	22	14	23	24	60	35	36	14	4.2
10	14	15	19	23	14	17	25	523	54	261	16	3.5
11	14	16	19	22	12	16	23	203	747	179	12	3.8
12	14	15	21	21	13	45	22	93	185	95	10	3.8
13	14	14	19	21	12	55	24	51	98	51	9.5	11
14	14	15	17	21	12	34	27	40	71	40	8.0	5.5
15	14	15	18	21	12	23	27	32	56	34	8.9	7.5
16	16	14	18	20	12	18	25	29	51	29	7.9	13
17	15	14	19	21	13	18	22	69	45	25	7.0	15
18	17	15	19	21	13	206	21	42	43	23	7.3	14
19	16	14	18	20	12	240	21	28	44	22	7.1	10
20	17	13	20	20	12	91	20	24	947	22	7.3	9.7
21	21	14	21	19	13	55	19	23	1380	26	7.1	8.9
22	24	13	18	23	13	37	17	22	336	22	5.9	7.5
23	22	13	25	25	14	32	17	23	158	30	5.6	7.8
24	19	13	21	22	13	31	36	20	99	22	5.9	8.0
25	19	13	33	22	13	29	70	30	1200	20	7.8	8.5
26	18	13	25	22	13	29	43	153	872	19	7.9	9.5
27	19	13	24	19	12	39	31	3680	461	19	7.1	8.5
28	20	13	22	19	12	43	16	3300	178	18	9.5	9.7
29	18	14	21	216	---	38	513	410	242	17	18	12
30	19	17	20	188	---	34	362	184	111	16	9.5	12
31	23	---	19	75	---	30	---	125	---	14	7.3	---
TOTAL	705	762	608	1067	435	1290	1639	9999	7892	1456	332.6	236.3
MEAN	22.7	25.4	19.6	34.4	15.5	41.6	54.6	323	263	47.0	10.7	7.88
MAX	99	190	33	216	47	240	513	3680	1380	261	19	15
MIN	14	13	15	19	12	12	16	20	35	14	5.6	3.5
AC-FT	1400	1510	1210	2120	863	2560	3250	19830	15650	2890	660	469

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

MEAN	103	30.9	27.6	24.9	29.5	34.3	52.6	118	154	47.9	81.6	103
MAX	1170	76.2	120	68.5	149	151	340	771	737	317	1266	818
(WY)	1984	1995	1992	1992	1992	1998	1997	1987	1995	1975	1966	1965
MIN	3.90	10.4	11.8	8.23	6.16	5.49	7.61	16.4	11.9	.72	1.17	3.51
(WY)	1964	1968	1964	1965	1965	1965	1964	1965	1970	1964	1964	1968

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	13432.2		26421.9			
ANNUAL MEAN	36.8		72.4		67.1	
HIGHEST ANNUAL MEAN					193	1966
LOWEST ANNUAL MEAN					17.2	1983
HIGHEST DAILY MEAN	1430	Mar 16	3680	May 27	19400	Sep 19 1965
LOWEST DAILY MEAN	5.7	Aug 1	3.5	Sep 10	.02	Aug 22 1974
ANNUAL SEVEN-DAY MINIMUM	6.6	Jul 27	4.4	Sep 6	.13	Jul 30 1965
INSTANTANEOUS PEAK FLOW			5080	May 27	28900	Sep 19 1965
INSTANTANEOUS PEAK STAGE			18.34	May 27	21.96	Sep 19 1965
ANNUAL RUNOFF (AC-FT)	26640		52410		48600	
10 PERCENT EXCEEDS	58		98		68	
50 PERCENT EXCEEDS	20		20		20	
90 PERCENT EXCEEDS	11		9.5		7.7	

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued



07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Feb 1954 to Mar 1959, Jul 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year.
BIOCHEMICAL DATA: Sep 1990 to current year.
PESTICIDE DATA: Sep 1996 to current year.
SEDIMENT DATA: Apr 1978 to Dec 1989.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jul 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year.
WATER TEMPERATURE: Jul 1968 to Dec 1989 (local observer), Sep 1990 to Jun 1992, Oct 1994 to current year.

INSTRUMENTATION.--Water-quality monitor Jul 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year.

REMARKS.--Interruption in the record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1989 to 1999. The standard error of estimate for dissolved solids is 5%, chloride is 10%, sulfate is 9% and for hardness is 13%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 35,800 microsiemens, Oct 9, 1982; minimum, 400 microsiemens, Jun 7, 8, 1985.
WATER TEMPERATURE: Maximum, 39.0°C, Aug 21, 23, 1969, Aug 22, 1973; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 23,300 microsiemens, Oct 2; minimum, 1,230 microsiemens, Jun 21.
WATER TEMPERATURE: Maximum, 36.1°C, Aug 10; minimum, 0.1°C, Dec 21, Jan 4-5, 10.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC											
28...	1415	23	17100	8.2	5.0	13.0	114	3300	3200	960	219
JAN											
20...	1450	19	17400	8.1	12.5	11.2	119	3400	3300	990	226
FEB											
25...	1325	11	17400	8.2	18.0	10.4	122	3100	3000	890	204
MAR											
17...	1415	19	13700	8.2	17.0	10.4	118	1500	1400	280	189
APR											
21...	1640	19	18000	8.1	26.5	8.4	118	3700	3600	1100	254
MAY											
05...	1335	42	5970	8.1	21.0	8.7	105	1200	1100	350	82
20...	1550	22	10700	7.9	26.5	8.0	106	2200	2100	660	122
JUN											
09...	1710	35	12000	7.9	29.5	8.2	117	2500	2300	690	185
23...	1450	139	3600	7.8	28.5	6.8	93	850	740	250	53
AUG											
11...	1422	12	17000	7.9	34.0	7.8	121	3000	2900	850	212
24...	1355	5.1	20500	7.8	32.7	10.7	165	3000	2900	850	203
SEP											
08...	1225	6.0	20700	8.0	29.2	7.7	111	3000	2900	850	204

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
DEC											
28...	3890	30	15	110	2400	5200	.50	25	12700	11	.915
JAN											
20...	4140	31	15	140	2300	6200	.50	7.5	13900	16	.906
FEB											
25...	3630	29	16	110	2400	5400	.46	35	12600	27	--
MAR											
17...	2790	31	13	100	2100	4100	.43	5.3	9520	16	--
APR											
21...	4530	32	16	90	2600	5600	.57	17	14200	10	--
MAY											
05...	940	12	8.9	130	1000	1500	.33	8.7	3950	100	.407
20...	1790	17	10	80	1500	2800	.35	2.1	6970	22	--
JUN											
09...	2300	20	14	150	1900	3400	.35	6.7	8580	35	--
23...	499	7	9.5	100	700	810	.29	9.7	2400	263	.169
AUG											
11...	3350	27	16	92	2600	5200	.44	4.6	12300	33	--
24...	3420	27	18	74	2800	6000	.46	3.1	13300	37	--
SEP											
08...	3720	30	18	56	2800	6000	.45	10	13600	25	--

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
DEC											
28...	.048	.963	.256	1.3	.12	.37	<.050	<.050	.012	.04	4
JAN											
20...	.023	.929	.153	1.2	.14	.29	<.050	<.050	.012	.04	3
FEB											
25...	<.010	.146	.052	.40	.21	.26	<.050	<.050	<.010	--	3
MAR											
17...	<.010	.115	.033	.38	.23	.27	<.050	<.050	<.010	--	2
APR											
21...	<.010	.065	.047	.41	.29	.34	E.035	<.050	.013	.04	3
MAY											
05...	.019	.426	.122	1.0	.50	.62	.086	<.050	.010	.03	4
20...	<.010	<.050	.038	--	.33	.37	<.050	<.050	<.010	--	6
JUN											
09...	<.010	<.050	.123	--	.29	.41	E.038	<.050	.011	.03	8
23...	.010	.179	.055	1.0	.79	.84	.292	<.050	.019	.06	8
AUG											
11...	<.010	<.050	.070	--	.03	.10	<.050	<.050	<.010	--	2
24...	<.010	<.050	.087	--	.03	.12	<.050	<.050	<.010	--	4
SEP											
08...	<.010	<.050	.204	--	--	.12	<.050	<.050	.267	.82	3

DATE	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)
DEC											
28...	3	<100	33	<1	<60	2	<1.0	<1	<100	260	<100
JAN											
20...	3	<100	30	<5	<160	2	<1.0	<1	<200	100	<200
FEB											
25...	2	<100	39	<1	<160	1	1.2	<1	<200	160	<200
MAR											
17...	2	0	48	<1	<80	2	<1.0	<1	<100	220	<100
APR											
21...	4	0	47	<1	<160	1	<1.0	2	<200	460	<200
MAY											
05...	5	200	153	<1	<40	4	<1.0	2	<50	1600	<50
20...	4	1800	173	<2	<80	1	<1.0	<2	<100	5700	<100
JUN											
09...	6	100	112	<4	<80	<1	<1.0	<4	<100	480	<100
23...	5	300	194	<1	<24	12	<1.0	7	<30	5700	<30
AUG											
11...	4	100	64	<4	<80	<1	<1.0	12	<100	290	<100
24...	4	100	55	<5	<80	<1	<1.0	<5	<100	E110	<100
SEP											
08...	2	100	54	<4	<96	6	1.6	<4	<120	<140	<120

DATE	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)
DEC											
28...	<1	<2000	34	<30	<.10	<.1	<100	<400	12	13	<1
JAN											
20...	<5	<2000	39	<60	<.20	<.1	110	<800	11	14	<1
FEB											
25...	7	<2000	34	<60	<.10	<.1	<100	<800	7	6	<1
MAR											
17...	<1	<1000	24	E16	<.10	<.1	E29	<400	6	6	<1
APR											
21...	<1	<2000	13	<60	<.10	<.1	<500	<800	5	6	<4
MAY											
05...	<2	<500	37	<15	<.10	<.1	<50	<200	3	5	<2
20...	<2	<1000	250	<30	<.10	<.1	<500	<400	3	3	<2
JUN											
09...	<4	<1000	170	<30	<.10	<.1	<500	<400	9	4	<4
23...	3	<300	200	E7.3	<.10	<.1	<50	<120	2	1	<1
AUG											
11...	<4	<1000	30	<30	<.10	<.1	<500	<400	<1	2	<4
24...	<5	<1000	E16	<30	<.10	<.1	<500	<400	2	<2	<1
SEP											
08...	<4	<1200	<30	<26	<.10	<.1	<500	<480	2	2	<4

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
DEC										
28...	<4.0	<10	<200	--	--	--	--	--	--	--
JAN										
20...	<1.0	<10	<400	--	--	--	--	--	--	--
FEB										
25...	<1.0	<10	E181	--	--	--	--	--	--	--
MAR										
17...	<1.0	<40	<200	--	--	--	--	--	--	--
APR										
21...	<4.0	40	<400	--	--	--	--	--	--	--
MAY										
05...	<2.0	<40	<100	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
20...	<2.0	E340	<200	--	--	--	--	--	--	--
JUN										
09...	<4.0	<400	<200	--	--	--	--	--	--	--
23...	<1.0	E30	<60	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
AUG										
11...	<4.0	<400	<200	--	--	--	--	--	--	--
24...	<5.0	<400	<200	--	--	--	--	--	--	--
SEP										
08...	<4.0	<400	<240	--	--	--	--	--	--	--

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC										
28...	--	--	--	--	--	--	--	--	--	--
JAN										
20...	--	--	--	--	--	--	--	--	--	--
FEB										
25...	--	--	--	--	--	--	--	--	--	--
MAR										
17...	--	--	--	--	--	--	--	--	--	--
APR										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
05...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
20...	--	--	--	--	--	--	--	--	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
23...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
AUG										
11...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC										
28...	--	--	--	--	--	--	--	--	--	--
JAN										
20...	--	--	--	--	--	--	--	--	--	--
FEB										
25...	--	--	--	--	--	--	--	--	--	--
MAR										
17...	--	--	--	--	--	--	--	--	--	--
APR										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
05...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
20...	--	--	--	--	--	--	--	--	--	--
JUN										
09...	--	--	--	--	--	--	--	--	--	--
23...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
AUG										
11...	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--
SEP										
08...	--	--	--	--	--	--	--	--	--	--

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	705	17570	11960	22770	5100	9760	2500	4720	2800
NOV.	1998	762	13260	8950	18420	3600	7470	2100	4260	2300
DEC.	1998	608	17770	12100	19860	5200	8500	2500	4120	2800
JAN.	1999	1067	13280	8980	25870	3700	10580	2000	5900	2300
FEB.	1999	435	14610	9890	11610	4100	4800	2200	2600	2500
MAR.	1999	1290	11730	7900	27530	3200	11020	1900	6530	2100
APR.	1999	1639	9460	6380	28230	2600	11350	1500	6650	1700
MAY	1999	9999	2910	1920	51850	660	17790	570	15420	640
JUNE	1999	7892	3720	2460	52410	860	18300	720	15260	800
JULY	1999	1456	6200	4120	16200	1500	5830	1200	4530	1300
AUG.	1999	332.6	16870	11470	10300	4900	4380	2400	2170	2700
SEPT	1999	236.3	20390	13960	8910	6200	3960	2700	1700	3000
TOTAL		26421.9	**	**	294000	**	113700	**	73890	**
WTD.AVG.		72	6140	4120	**	1600	**	1000	**	1200

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23200	22500	22800	17000	4570	9950	17900	17000	17700	17200	17000	17100
2	23300	4200	15300	10500	6370	9560	17900	17200	17700	17200	17000	17100
3	17600	12600	16000	10400	9830	10100	17900	17100	17700	17200	17100	17100
4	13400	12400	12700	12200	9850	10900	17700	17600	17700	17200	16800	17000
5	16900	13300	15400	15200	12200	13700	17900	17200	17600	17600	16900	17300
6	17000	16400	16700	16600	15200	16000	17800	17600	17700	17500	17200	17300
7	17700	16600	17100	17000	16100	16600	18100	17000	17500	17200	17100	17200
8	18000	17200	17600	16100	15100	15400	18000	17200	17900	17200	17200	17200
9	17400	17100	17200	16100	15100	15500	18400	18000	18200	17400	16900	17200
10	17900	17100	17400	16900	15900	16400	18500	18300	18300	17300	16900	17100
11	19000	17900	18500	15900	15600	15800	18400	18200	18300	17100	16900	17000
12	19600	19000	19300	15600	14700	15000	18300	18100	18200	17300	17000	17100
13	19900	19600	19800	14800	14600	14700	18300	18100	18200	17200	17100	17100
14	20000	19600	19800	15200	14800	15000	18200	17500	17800	17200	17000	17100
15	19700	19400	19600	15700	15100	15500	18500	17700	18100	17100	17000	17100
16	19700	19200	19400	16300	15700	16000	18400	18000	18200	17100	17000	17100
17	19300	19000	19200	16700	16200	16500	18100	18000	18100	17300	17000	17100
18	19300	18700	18900	17000	16700	16900	18100	17700	17900	17200	17100	17100
19	19900	18800	19500	17300	17000	17200	17800	17600	17700	17300	17100	17200
20	20100	18600	19500	17400	16600	17100	17800	17600	17700	17400	17200	17300
21	19100	18500	18800	17900	16700	17400	17700	17600	17600	17400	17200	17300
22	19100	18800	19000	18100	17000	17700	18100	17500	17900	17500	16700	17100
23	19300	18900	18900	17900	17600	17700	18200	17800	18000	17000	16900	17000
24	19000	18800	18900	18000	17800	17900	18200	17600	17900	17000	16300	16600
25	19200	18500	18700	18100	17900	18000	18400	17600	18100	17200	16700	17100
26	18600	18500	18500	18200	17800	18100	17900	17200	17600	17100	16600	16800
27	18600	18500	18500	18200	18000	18100	17400	16900	17200	16700	16400	16600
28	18700	18400	18500	18100	17900	18000	17400	17100	17200	16900	16500	16600
29	18800	18600	18600	18100	17700	17900	17400	17000	17100	16600	2880	9530
30	18700	18600	18700	18100	17800	17900	17100	16900	17000	9710	5990	7820
31	18700	16300	18300	---	---	---	17100	16900	17000	8360	7920	8110
MONTH	23300	4200	18300	18200	4570	15800	18500	16900	17800	17600	2880	16200

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8020	7010	7560	18200	17700	17900	15200	15000	15100	2710	2480	2560
2	12200	8020	10600	18100	17700	17900	15400	11000	15100	2550	2080	2280
3	14200	12200	13300	18600	18000	18200	15100	9760	12700	3120	2360	2760
4	14700	14200	14500	18500	17800	18300	16000	14300	15300	4700	3110	3760
5	14900	14500	14700	18800	18400	18500	16700	16000	16600	6460	4700	5660
6	14500	13900	14200	18800	18000	18600	17000	16100	16500	7770	6460	7100
7	14500	12500	13800	18900	18600	18800	16800	16200	16500	8580	7770	8200
8	13600	13300	13500	18700	16500	17900	16900	15500	16400	8470	8160	8250
9	13500	13100	13300	18500	18200	18400	16500	15300	15800	8980	1370	7990
10	14100	13100	13600	18500	18000	18200	17100	16500	16800	3940	1820	2860
11	15100	14100	14700	18700	17900	18200	17600	16800	17200	8850	3720	5950
12	15600	15100	15400	18100	7380	14900	17600	17300	17400	9060	5630	7320
13	16200	15600	15900	16500	10900	14400	17700	17300	17500	6060	5330	5710
14	16500	16200	16300	16600	13900	14700	17800	17300	17500	6360	5860	6110
15	17000	16500	16700	15200	14500	14800	18100	17800	17900	6910	6360	6610
16	17100	16700	16900	16200	14900	15600	18400	17900	18000	7520	6910	7170
17	17400	17000	17100	15700	13800	14600	18100	17300	17800	7600	4850	6620
18	17500	17200	17300	15400	1980	11000	17800	17300	17500	7940	6240	7300
19	17700	17400	17600	6620	3090	5430	18300	17800	17900	9450	7940	8600
20	17600	17300	17500	8670	6250	7750	18600	18100	18400	10800	9450	10400
21	17700	17400	17600	8850	8280	8540	18500	18200	18400	11500	10800	11100
22	17800	17500	17700	9250	8680	9050	18600	18200	18400	11700	11500	11600
23	17800	17400	17600	11600	9110	10000	18700	18400	18600	12100	11100	11500
24	17700	17300	17500	14000	11600	13200	18900	5700	17200	13900	11500	12700
25	17700	17400	17500	15000	14000	14500	14800	5340	9810	16000	10600	14500
26	17700	17500	17600	15700	14800	15400	15600	9480	13100	16000	3150	7420
27	17800	17500	17600	16000	12600	15100	15800	15300	15600	5060	1650	2420
28	18000	17700	17800	14200	8290	12500	17000	14600	16000	2230	1340	1520
29	---	---	---	15100	14200	14700	17100	2130	4170	7680	2230	3930
30	---	---	---	14800	14400	14700	3930	2700	3550	7180	5140	6220
31	---	---	---	15000	14800	14900	---	---	---	8560	7180	7900
MONTH	18000	7010	15500	18900	1980	14700	18900	2130	15600	16000	1340	6900

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9440	8110	9000	4830	4120	4520	12400	11800	12100	---	---	e19600
2	9860	9430	9680	5330	4830	5070	---	---	e12800	---	---	e19700
3	10500	9750	10300	5620	5330	5480	12000	2940	e13400	20500	20000	20200
4	10900	10500	10700	5900	5620	5770	---	---	e13800	20700	19800	20300
5	11200	10900	11100	6130	5900	6020	---	---	e14200	19900	19000	19300
6	11400	10400	11200	6390	6130	6260	12700	2990	e14600	19900	19400	19600
7	11600	11300	11400	6670	6390	6530	12700	2960	e15000	20900	19900	20400
8	12000	11400	11700	7030	6670	6840	---	---	e15600	21100	20700	20900
9	12300	12000	12100	7360	7030	7210	---	---	e16000	21200	20700	21000
10	12500	8180	12100	7360	3360	4950	14400	2920	e16500	21100	20800	20900
11	8180	2190	4850	4200	3280	4000	---	---	e17000	21100	20400	20800
12	4720	2660	4160	4400	3980	4190	---	---	e17300	21000	20600	20700
13	5180	4720	4940	5580	4400	4960	---	---	e17500	21200	20500	20900
14	6390	5150	5680	6630	5580	6090	---	---	e17800	21000	13200	18900
15	7550	6390	7010	7600	6630	7160	---	---	e18000	19700	13100	17200
16	8940	7550	8160	7990	7600	7790	---	---	e18300	20100	19600	19800
17	9580	8940	9320	8270	7990	8130	---	---	e18500	20100	19700	19900
18	9840	9570	9680	8730	8270	8470	---	---	e18800	20200	19900	20100
19	10100	2690	8700	9230	8730	8990	---	---	e19000	20400	19300	20000
20	9270	2000	3820	9470	9230	9380	---	---	e19300	20500	20100	20300
21	6190	1230	2170	9410	8320	9060	---	---	e19600	20700	20100	20400
22	2890	1660	2270	9110	8600	8940	---	---	e19900	20900	20400	20600
23	4110	2890	3460	9520	9100	9350	---	---	e20200	20900	20600	20700
24	4510	4080	4340	9990	9520	9770	---	---	e20500	21300	20800	20900
25	4370	1430	2380	10100	9570	9980	---	---	e20600	21700	21200	21400
26	4610	1580	2180	10300	9640	10000	---	---	e20700	21200	20500	20900
27	3780	2190	2840	10500	9550	10100	---	---	e20800	21300	20900	21000
28	3390	2560	2940	11000	9650	10200	---	---	e19000	21600	21300	21400
29	3620	1570	2690	11600	10300	11300	---	---	e19200	21700	21400	21500
30	4120	2680	3610	12100	10600	11600	---	---	e19400	21500	21100	21300
31	---	---	---	12300	11400	12000	---	---	e19500	---	---	---
MONTH	12500	1230	6820	12300	3280	7750	---	---	17600	---	---	20400

e Estimated

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	29.6	24.8	26.8	18.0	13.5	15.6	15.2	10.9	13.2	7.8	5.2	6.3
2	25.3	20.8	23.1	16.1	12.0	14.0	16.8	13.0	14.8	5.8	3.2	4.5
3	27.4	23.1	24.8	15.0	12.6	14.1	16.1	14.5	15.5	3.5	.4	2.1
4	29.4	23.8	26.3	14.2	11.9	13.1	16.0	12.0	14.1	3.4	.1	1.3
5	26.4	20.3	23.5	11.9	10.4	11.1	16.5	12.3	14.4	5.0	.1	2.4
6	23.8	17.4	20.4	10.5	9.4	9.8	16.8	13.1	15.4	6.7	1.6	4.1
7	23.8	16.4	20.1	13.5	9.4	11.1	13.1	8.2	10.8	4.6	3.2	3.8
8	23.9	16.5	20.3	12.7	11.7	12.2	9.3	5.4	7.4	3.2	1.0	2.6
9	24.3	17.6	20.9	18.5	12.2	15.0	7.7	4.0	6.2	2.9	.2	1.2
10	24.3	17.5	20.9	15.3	11.4	13.4	8.2	6.9	7.4	4.1	.1	1.7
11	25.6	18.3	21.8	14.1	9.0	11.5	7.7	6.1	7.0	6.7	.2	3.5
12	26.0	19.4	22.7	13.3	10.9	12.1	9.1	5.1	7.1	8.7	5.4	6.9
13	26.4	20.8	23.5	13.5	12.0	12.7	9.3	4.6	6.9	7.4	4.4	6.0
14	26.6	20.9	23.5	16.5	12.8	14.2	9.4	4.7	7.1	7.0	2.1	4.6
15	25.6	20.3	22.7	16.2	11.4	13.8	9.6	4.9	7.3	9.1	3.3	6.2
16	23.6	21.0	21.9	16.8	12.1	14.3	9.9	5.3	7.5	9.9	5.4	7.7
17	24.1	19.8	21.8	16.0	11.7	14.0	9.6	5.2	7.4	11.3	6.6	8.7
18	21.0	15.8	18.4	18.0	12.8	15.3	10.5	7.4	8.6	9.9	5.3	7.8
19	21.0	14.6	17.8	15.7	11.6	14.2	9.1	6.3	8.0	12.3	6.6	9.1
20	17.5	15.1	15.9	12.3	9.5	11.1	6.3	5.3	5.9	12.3	6.7	9.6
21	17.0	14.2	15.4	13.9	9.9	11.7	6.1	.1	3.5	13.1	9.0	10.9
22	18.1	13.8	15.9	15.6	10.4	12.9	---	---	---	10.5	6.2	8.1
23	18.9	13.8	16.0	16.1	12.2	14.0	---	---	---	9.4	3.8	6.6
24	20.5	14.5	17.2	15.3	10.6	13.1	---	---	---	12.1	5.8	8.9
25	21.0	14.8	18.0	15.7	12.1	13.8	---	---	---	10.3	7.3	8.8
26	21.8	18.0	19.6	14.0	9.3	11.7	---	---	---	12.1	5.6	8.8
27	22.7	18.9	20.6	16.0	10.4	13.2	4.5	.6	2.4	14.9	9.1	12.0
28	24.5	20.0	22.0	18.6	14.0	16.1	5.3	.8	3.0	13.4	8.0	11.0
29	23.9	19.5	21.7	17.1	14.6	16.2	6.9	2.6	4.7	8.0	3.8	5.1
30	24.0	20.5	22.0	16.3	12.3	14.2	7.2	2.7	5.1	5.5	4.3	4.9
31	21.7	18.0	20.7	---	---	---	6.7	4.1	5.5	7.3	4.4	5.7
MONTH	29.6	13.8	20.8	18.6	9.0	13.3	---	---	---	14.9	.1	6.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.7	4.1	6.1	19.6	11.4	15.5	23.0	16.6	19.9	19.5	17.2	18.1
2	9.4	4.8	7.1	18.8	12.8	15.7	25.8	17.9	21.6	21.4	15.8	18.4
3	10.9	5.8	8.4	17.0	9.8	13.4	22.1	16.9	19.3	25.0	19.4	22.0
4	11.6	6.3	9.1	17.8	9.6	13.7	20.0	13.6	16.7	23.7	20.1	22.0
5	15.9	9.5	12.6	18.9	12.8	15.7	21.3	15.1	18.3	23.6	16.2	19.8
6	15.2	12.5	14.2	17.0	11.8	14.4	22.6	13.6	18.1	23.1	15.5	19.2
7	15.0	9.7	12.4	13.2	10.4	11.2	22.8	15.7	19.1	25.1	15.5	20.2
8	14.8	10.1	12.7	17.4	10.0	13.4	24.3	20.0	21.7	28.2	18.6	23.1
9	16.6	11.0	13.7	16.8	11.0	14.0	21.9	17.4	19.5	27.3	18.2	23.4
10	18.5	11.4	15.1	19.3	12.0	15.5	23.1	15.4	19.2	24.4	17.7	20.5
11	17.1	9.5	13.5	16.5	9.8	12.8	21.7	14.2	18.0	23.6	21.1	22.3
12	11.5	5.3	8.6	9.8	8.1	9.2	19.4	15.7	17.6	25.8	18.5	21.9
13	12.4	5.5	8.9	8.1	5.2	6.8	24.3	17.1	20.3	23.5	19.2	21.6
14	13.2	6.4	9.9	11.8	3.1	7.3	21.7	14.2	18.9	29.5	20.3	24.4
15	15.4	8.3	11.8	15.3	6.6	10.9	18.3	9.9	14.0	33.0	23.6	27.5
16	15.5	10.1	12.7	17.6	10.5	14.0	18.0	11.8	14.6	32.2	24.7	27.9
17	15.3	8.8	12.1	17.2	13.0	15.0	17.7	10.1	13.7	27.6	23.6	25.3
18	14.9	10.0	12.2	15.5	7.7	11.8	22.0	10.8	16.2	28.5	19.7	23.9
19	13.9	7.6	10.7	11.2	7.8	9.2	25.9	15.0	20.1	29.8	20.7	25.0
20	15.1	8.6	11.6	15.4	7.6	11.3	26.9	17.6	22.0	27.1	22.1	24.4
21	14.3	7.8	11.0	18.8	10.1	14.5	26.3	18.6	22.2	31.8	21.9	26.5
22	13.1	8.0	10.2	22.2	13.4	17.7	29.3	19.7	24.0	32.9	25.6	28.9
23	14.4	6.5	10.4	19.4	14.1	16.9	24.9	15.8	20.5	31.1	24.7	27.8
24	16.4	7.9	12.2	15.4	11.4	12.9	15.8	11.8	13.8	27.5	23.7	25.4
25	20.2	12.2	16.1	17.9	9.3	13.4	19.6	12.2	15.2	30.5	21.8	25.7
26	19.6	15.4	17.3	18.2	11.5	14.8	25.1	17.4	20.7	26.6	19.1	22.7
27	17.9	12.4	15.0	15.6	12.9	14.0	27.5	17.3	22.3	23.1	18.3	19.6
28	17.6	9.1	13.5	14.7	11.8	13.2	29.2	19.8	24.2	21.8	18.5	19.8
29	---	---	---	15.6	13.1	14.3	24.2	13.5	18.0	23.5	20.6	21.8
30	---	---	---	16.8	14.2	15.5	20.8	18.0	19.4	27.9	21.5	24.3
31	---	---	---	22.7	14.6	18.1	---	---	---	30.0	24.5	27.0
MONTH	20.2	4.1	11.8	22.7	3.1	13.4	29.3	9.9	19.0	33.0	15.5	23.2

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.0	24.2	27.1	32.7	26.1	29.3	34.2	26.1	30.1	---	---	---
2	30.6	24.8	27.7	32.6	27.0	29.8	34.5	27.3	30.4	---	---	---
3	28.8	24.4	26.6	31.7	25.4	28.5	35.2	26.8	30.6	32.3	25.5	28.5
4	28.9	23.6	25.9	31.7	25.4	28.3	34.7	27.8	30.9	30.3	25.7	27.6
5	25.9	23.5	24.6	32.7	25.7	29.0	31.6	27.2	28.9	31.4	24.9	27.7
6	28.1	22.5	25.1	33.8	26.1	29.8	34.2	26.2	30.0	32.1	24.9	28.1
7	29.7	23.2	26.1	33.7	27.5	30.6	34.7	26.9	30.8	32.2	25.9	28.9
8	30.6	23.9	27.0	34.2	27.4	30.5	34.5	27.5	30.5	30.4	25.7	27.8
9	30.1	24.2	27.0	34.2	27.0	30.5	35.3	27.3	30.9	30.4	23.3	26.6
10	30.8	20.2	26.2	31.4	25.2	26.4	36.1	28.3	32.1	30.4	23.9	27.0
11	23.9	19.7	21.4	28.8	23.4	25.8	35.0	27.9	31.5	32.3	24.5	28.0
12	26.3	22.0	24.0	31.4	24.4	27.6	34.3	27.1	30.7	28.3	23.8	26.5
13	27.1	23.5	25.1	33.2	25.0	29.0	34.0	27.2	30.5	27.9	21.5	24.3
14	27.8	22.3	25.0	33.0	26.8	29.7	34.0	25.3	29.6	27.8	20.7	24.3
15	29.5	22.3	25.8	32.4	25.0	28.4	35.2	27.3	31.0	25.2	21.1	23.1
16	29.6	23.0	26.0	30.0	24.2	26.9	35.2	27.1	30.9	24.3	20.9	22.4
17	26.0	21.4	23.5	32.4	24.3	28.0	34.3	26.6	30.5	27.0	20.2	23.4
18	28.7	21.0	24.7	33.1	25.7	29.2	34.4	25.8	30.0	28.2	22.2	25.0
19	31.3	23.4	27.0	33.2	26.6	29.8	33.5	26.4	29.8	29.3	21.8	25.2
20	27.1	21.4	23.2	32.3	26.7	29.5	32.9	24.8	28.7	25.2	20.0	22.5
21	24.7	22.4	23.4	33.2	26.7	29.6	33.0	24.7	28.7	23.8	17.2	20.3
22	26.9	23.9	25.1	33.5	26.6	30.1	33.0	25.2	28.9	24.6	16.3	20.5
23	30.2	25.1	27.4	34.5	26.6	30.5	33.4	26.0	29.6	25.0	17.0	21.1
24	31.6	26.5	28.9	35.2	27.1	31.1	---	---	---	25.0	19.7	22.1
25	28.1	20.8	24.2	35.2	27.1	31.0	---	---	---	27.2	19.8	23.5
26	29.3	23.9	26.4	35.3	27.1	31.0	---	---	---	28.3	21.2	24.6
27	31.3	27.6	29.4	34.8	27.4	31.1	---	---	---	25.3	20.9	23.4
28	31.0	28.2	29.6	35.1	27.7	31.3	---	---	---	20.9	15.8	18.4
29	29.9	22.5	27.3	34.6	27.0	30.9	---	---	---	20.7	13.1	16.8
30	30.6	26.6	28.6	34.2	26.9	30.6	---	---	---	21.4	13.7	17.6
31	---	---	---	34.7	26.5	30.1	---	---	---	---	---	---
MONTH	31.6	19.7	26.0	35.3	23.4	29.5	---	---	---	---	---	---

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07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX

LOCATION.--Lat 33°37'19", long 100°12'31", King County, Hydrologic Unit 11130205, on right bank 1.0 mi downstream from ranch road crossing, 2.9 mi upstream from Willow Creek, 6.6 mi east of Guthrie, and 91.5 mi upstream from confluence with North Wichita River.

DRAINAGE AREA.--223 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1984 to Sep 1985, May 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,590.0 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Discharge represents flow diverted by pumping from South Wichita River at Low Flow Dam near Guthrie (station 07311782) via pipeline to Truscott Brine Lake near Truscott (station 07311669). Flow is determined from digital recorder monitoring flowmeter in pipeline.

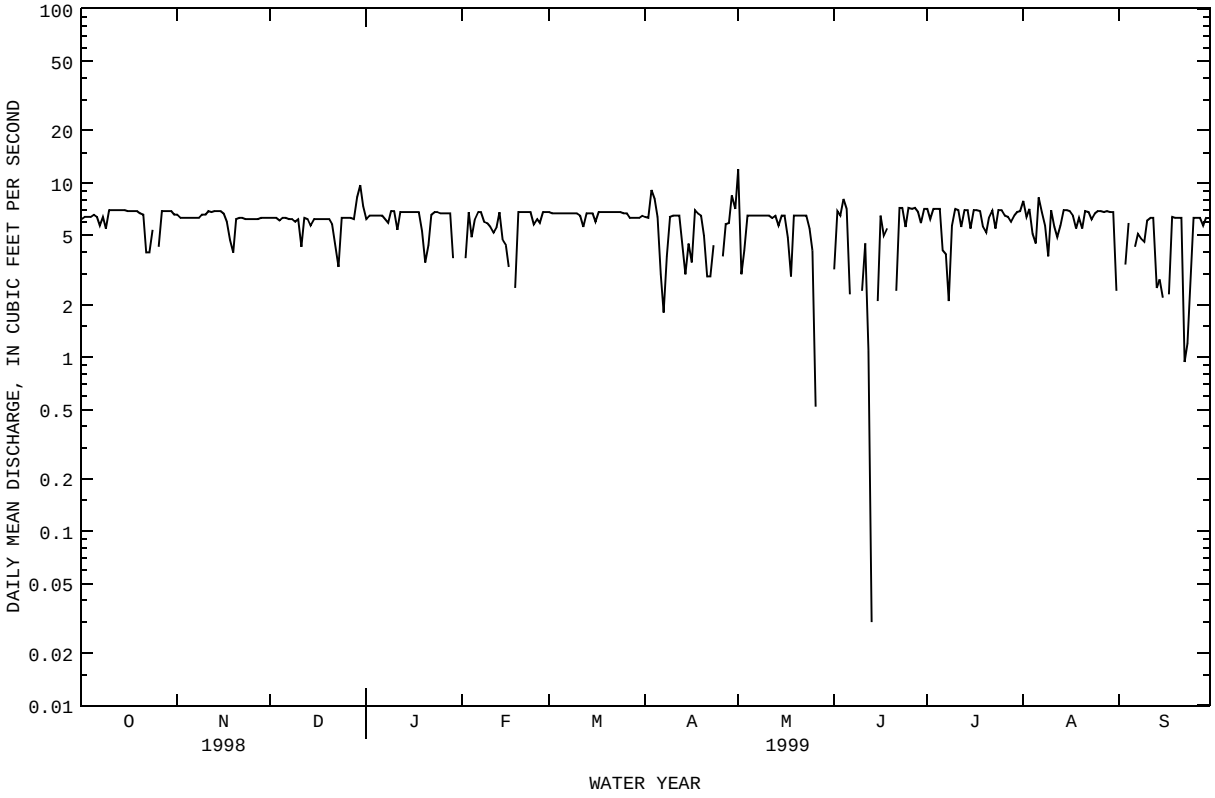
COOPERATION.--Discharge data furnished by the U.S. Army Corps of Engineers, Tulsa District.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	e6.6	6.3	6.2	.00	6.8	6.4	12	3.2	7.1	7.9	.00
2	6.4	e6.3	6.3	6.5	3.7	6.7	6.3	3.0	6.9	6.2	6.4	.00
3	6.4	6.3	6.3	6.5	6.8	6.7	9.1	4.1	6.5	7.1	7.1	3.4
4	6.4	6.3	6.1	6.5	4.9	6.7	8.1	6.5	8.1	7.1	5.1	5.9
5	6.6	6.3	6.3	6.5	6.2	6.7	6.4	6.5	7.1	7.1	4.5	.00
6	6.4	e6.3	6.3	6.5	6.8	6.7	3.0	6.5	2.3	4.1	8.3	4.3
7	5.7	e6.3	6.2	6.2	6.8	6.7	1.8	6.5	.00	3.9	6.8	5.1
8	6.4	e6.3	6.2	5.9	6.0	6.7	3.8	6.5	.00	2.1	5.7	4.8
9	5.5	e6.6	6.0	6.9	5.9	6.7	6.4	6.5	.00	5.7	3.8	4.6
10	7.0	6.6	6.2	6.9	5.6	6.7	6.5	6.5	2.4	7.1	7.0	6.1
11	7.0	6.9	4.3	5.4	5.2	6.5	6.5	6.5	4.5	7.0	5.6	e6.3
12	7.0	6.8	6.3	6.8	5.6	5.6	6.5	6.3	1.1	5.6	4.9	6.3
13	7.0	6.9	6.2	6.8	6.8	6.7	4.4	6.5	.03	7.0	5.7	2.5
14	7.0	6.9	5.7	6.8	4.7	6.7	3.0	5.7	.00	7.0	7.0	2.8
15	7.0	6.9	6.2	6.8	4.4	6.7	4.5	6.5	2.1	5.5	7.0	2.2
16	6.9	6.7	6.2	6.8	3.3	6.0	3.5	6.5	6.5	7.0	6.9	.00
17	6.9	6.0	6.2	6.8	.00	6.8	7.0	4.9	5.0	7.0	6.5	2.3
18	6.9	4.7	6.2	6.8	2.5	6.8	6.7	2.9	5.5	6.9	5.5	6.4
19	6.9	4.0	6.2	5.3	6.8	6.8	6.5	6.5	e.00	5.6	6.3	6.3
20	6.7	6.2	6.2	3.5	6.8	6.8	5.0	6.5	e.00	5.2	5.5	6.3
21	6.6	6.3	5.8	4.4	6.8	6.8	2.9	6.5	2.4	6.4	6.9	6.3
22	4.0	6.3	4.3	6.6	6.8	6.8	2.9	6.5	7.2	7.0	6.8	.94
23	4.0	6.2	3.3	6.8	6.8	6.8	4.4	6.5	7.2	5.5	6.2	1.2
24	5.4	6.2	6.3	6.8	5.8	6.8	.00	5.5	5.6	7.0	6.7	3.2
25	.00	6.2	6.3	6.7	6.2	6.7	.00	4.1	7.2	7.0	6.9	6.3
26	4.3	6.2	6.3	6.7	5.9	6.7	3.8	.52	7.1	6.5	6.9	6.3
27	6.9	6.2	6.3	6.7	6.8	6.3	5.8	.00	7.2	6.4	6.8	6.3
28	6.9	6.3	6.2	6.7	6.8	6.3	5.9	.21	6.8	6.0	6.9	5.7
29	6.9	6.3	8.3	3.7	---	6.3	8.5	.00	5.9	6.5	6.8	6.3
30	e6.9	6.3	9.7	.00	---	6.3	7.1	.00	7.1	6.8	6.8	6.3
31	e6.6	---	7.4	.00	---	6.5	---	.00	---	6.9	2.4	---
TOTAL	190.80	188.4	192.1	181.50	150.70	204.8	152.70	153.23	124.93	193.3	193.6	124.44
MEAN	6.15	6.28	6.20	5.85	5.38	6.61	5.09	4.94	4.16	6.24	6.25	4.15
MAX	7.0	6.9	9.7	6.9	6.8	6.8	9.1	12	8.1	7.1	8.3	6.4
MIN	.00	4.0	3.3	.00	.00	5.6	.00	.00	.00	2.1	2.4	.00
AC-FT	378	374	381	360	299	406	303	304	248	383	384	247

e Estimated

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued



07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1984 to current year.
PESTICIDE DATA: Sep 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1984 to current year. Oct 1986 to Apr 1987, published as South Wichita River at Low Flow Dam near Guthrie (station 07311783).
WATER TEMPERATURE: Oct 1984 to current year. Oct 1986 to Apr 1987, published as South Wichita River at Low Flow Dam near Guthrie (station 07311783).

INSTRUMENTATION.--Water-quality monitor since Oct 1984.

REMARKS.--Interruption in the record was caused by malfunction of the instrument or when the pumps were not running. Where maximum and minimum specific conductance values are not shown, mean values are sometimes estimated. Temperature and specific conductance values for days of zero flow through the pipeline are published if water is present behind the low flow dam. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1990 to 1999. The standard error of estimate for dissolved solids is 7%, chloride is 9%, sulfate is 9% and for hardness is 9%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request. Samples for chemical analyses are collected a half a mile upstream from the collection pool. No flow through the pipeline Oct 25, Apr 24,25, May 27,29-31, Jun 7-9,14,19,20, Sep 1,2,5 and 16.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 47,000 microsiemens, Jul 16, 1998; minimum, 200 microsiemens, Jul 3, 1986.
WATER TEMPERATURE: Maximum, 36.0°C, Jul 5, 11-13, 21, 1996; minimum, 0.0°C, Dec 23, 1989, Dec 22, 1990.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 46,800 microsiemens, Sep 6-7; minimum, 1,200 microsiemens, May 27.
WATER TEMPERATURE: Maximum, 31.8°C, Jul 8; minimum, 1.3°C, Dec 24.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC											
29...	1025	10	44900	7.8	8.0	9.6	102	5100	4900	1400	358
JAN											
21...	1425	6.8	44300	7.9	13.0	11.3	138	4800	4700	1400	344
FEB											
24...	1230	5.7	45200	8.0	12.0	12.4	144	4900	4800	1400	349
MAR											
17...	0925	6.8	43300	8.0	14.5	7.8	96	4900	4800	1400	340
APR											
22...	1218	.24	45700	8.0	22.0	11.3	164	5300	5200	1500	375
MAY											
18...	1118	6.5	45500	7.4	21.5	13.4	185	4800	4700	1400	295
JUN											
10...	1240	1.8	37400	7.7	26.0	8.4	125	4500	4400	1300	313
24...	1300	7.2	34500	7.7	27.5	9.5	143	4000	3800	1200	217
JUL											
22...	1120	7.0	42300	7.4	26.5	6.0	91	4700	4600	1300	336
AUG											
12...	1235	1.7	44900	7.6	27.5	7.3	115	4900	4800	1400	354
SEP											
15...	1030	6.4	50700	7.8	21.9	5.8	83	4400	4300	1200	312

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
DEC											
29...	12300	75	40	120	3000	17000	.48	13	34100	20	.242
JAN											
21...	12400	77	38	120	3700	13000	.46	11	31400	40	.207
FEB											
24...	12500	78	41	120	3200	17000	.44	7.3	34000	31	.168
MAR											
17...	11800	73	38	120	3100	17000	.46	17	34100	29	.135
APR											
22...	13300	80	41	100	3100	18000	.61	2.6	36100	<1	--
MAY											
18...	12400	78	39	98	3100	17000	.49	2.4	34700	11	--
JUN											
10...	10200	66	38	110	2700	19000	.54	2.9	34100	71	--
24...	9310	64	36	110	2600	13000	.54	5.3	26600	47	--
JUL											
22...	11200	71	36	100	3000	17000	.46	5.5	32900	39	.041
AUG											
12...	11800	74	30	100	3200	17000	.47	11	34200	52	.082
SEP											
15...	11000	72	41	100	3000	17000	.49	36	32900	84	.195

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
DEC											
29...	.129	.371	.296	.82	.15	.45	<.050	<.050	.023	.07	2
JAN											
21...	.093	.300	.288	.65	.06	.35	<.050	<.050	.032	.10	3
FEB											
24...	.088	.256	.188	.47	.02	.21	<.050	<.050	.012	.04	3
MAR											
17...	.082	.217	.154	.47	.10	.26	<.050	<.050	<.010	--	<2
APR											
22...	<.010	.073	.156	.34	.11	.27	<.050	<.050	.014	.04	<4
MAY											
18...	<.010	.053	.162	.30	.08	.25	<.050	<.050	.016	.05	5
JUN											
10...	<.010	<.050	.278	--	.08	.36	<.050	<.050	.019	.06	8
24...	<.010	<.050	.264	--	--	.15	<.050	<.050	.017	.05	<1
JUL											
22...	.045	.086	.268	.48	.13	.40	<.050	<.050	<.010	--	12
AUG											
12...	.045	.127	.373	.25	--	.12	<.050	<.050	<.010	--	<1
SEP											
15...	.023	.218	.283	.41	--	.20	<.050	<.050	.205	.63	7

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC											
29...	<2	<100	E31	<5	<400	<4	<4.0	<5	<500	90	<500
JAN											
21...	<2	<100	32	<5	<160	<2	<2.0	<1	<200	90	<200
FEB											
24...	4	<100	E34	<10	<400	<2	2.7	<1	<500	40	<500
MAR											
17...	<2	0	<50	<10	<400	<2	<2.0	<1	<500	<10	<500
APR											
22...	3	0	29	<1	<200	<2	<4.0	18	<250	<240	<250
MAY											
18...	<1	1100	41	<10	<200	<2	<1.0	<10	<250	720	<250
JUN											
10...	5	100	78	<1	<200	<2	<1.0	<1	<250	E200	<250
24...	<1	100	68	<10	<200	<2	<1.0	<10	<250	90	410
JUL											
22...	<10	100	47	<10	<240	<1	<10	<10	<300	E140	<300
AUG											
12...	7	0	41	<10	<240	4	<1.0	<10	<300	E180	<300
SEP											
15...	12	0	47	<10	<240	6	6.0	<10	<300	<350	<300

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
DEC											
29...	<5	<.00	110	<150	<.10	<.1	<100	<.00	<4	<4	<1
JAN											
21...	<5	<2000	140	99	<.20	<.1	300	<800	4	7	<1
FEB											
24...	15	<5000	96	E83	<.10	<.1	<25	<2000	4	6	<1
MAR											
17...	<10	<5000	61	<150	<.10	<.1	<50	<2000	<2	2	<1
APR											
22...	5	<2500	76	95	1.8	<.1	<100	<1000	<4	<4	<10
MAY											
18...	<10	<2500	880	E62	<.10	<.1	<0	<1000	6	1	<10
JUN											
10...	3	<2500	100	E70	<.10	2.3	<500	<1000	3	5	<10
24...	<10	<2500	76	116	<.10	<.1	<50	<1000	<1	4	<10
JUL											
22...	<10	<3000	160	208	<.10	<.1	<500	<1200	13	<10	<10
AUG											
12...	<10	<3000	130	133	<.10	<.1	<500	<1200	<1	9	<10
SEP											
15...	<10	<3000	50	E54	<.10	<.1	<0	<1200	8	26	<10

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
DEC										
29...	<10	<10	<.00	--	--	--	--	--	--	--
JAN										
21...	<1.0	<10	E152	--	--	--	--	--	--	--
FEB										
24...	<1.0	<10	<1000	--	--	--	--	--	--	--
MAR										
17...	<1.0	<40	<1000	--	--	--	--	--	--	--
APR										
22...	<10	E30	<500	--	--	--	--	--	--	--
MAY										
18...	<10	5600	<500	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
JUN										
10...	<10	<800	<500	--	--	--	--	--	--	--
24...	<10	E30	<500	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
JUL										
22...	<10	<800	<600	--	--	--	--	--	--	--
AUG										
12...	<10	<800	<600	--	--	--	--	--	--	--
SEP										
15...	<10	<0	<600	--	--	--	--	--	--	--

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
21...	--	--	--	--	--	--	--	--	--	--
FEB										
24...	--	--	--	--	--	--	--	--	--	--
MAR										
17...	--	--	--	--	--	--	--	--	--	--
APR										
22...	--	--	--	--	--	--	--	--	--	--
MAY										
18...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
JUN										
10...	--	--	--	--	--	--	--	--	--	--
24...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
JUL										
22...	--	--	--	--	--	--	--	--	--	--
AUG										
12...	--	--	--	--	--	--	--	--	--	--
SEP										
15...	--	--	--	--	--	--	--	--	--	--

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC										
29...	--	--	--	--	--	--	--	--	--	--
JAN										
21...	--	--	--	--	--	--	--	--	--	--
FEB										
24...	--	--	--	--	--	--	--	--	--	--
MAR										
17...	--	--	--	--	--	--	--	--	--	--
APR										
22...	--	--	--	--	--	--	--	--	--	--
MAY										
18...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN										
10...	--	--	--	--	--	--	--	--	--	--
24...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUL										
22...	--	--	--	--	--	--	--	--	--	--
AUG										
12...	--	--	--	--	--	--	--	--	--	--
SEP										
15...	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	190.8	40810	28830	14850	14700	7600	3000	1540	4200
NOV.	1998	188.4	40400	28450	14470	14500	7400	3000	1520	4100
DEC.	1998	192.1	40330	28390	14730	14500	7520	3000	1550	4100
JAN.	1999	181.5	41200	29140	14280	14900	7310	3000	1480	4200
FEB.	1999	150.7	41200	29170	11870	14900	6070	3000	1230	4200
MAR.	1999	204.8	42480	30270	16740	15500	8590	3100	1690	4300
APR.	1999	152.7	44140	31740	13090	16300	6730	3100	1280	4400
MAY	1999	153.23	36010	24930	10310	12700	5240	2800	1150	3800
JUNE	1999	124.93	31880	21470	7240	10800	3640	2600	878	3400
JULY	1999	193.3	38260	26700	13930	13600	7100	2900	1510	4000
AUG.	1999	193.6	42270	30110	15740	15400	8070	3000	1590	4300
SEPT	1999	124.44	45490	32950	11070	17000	5710	3100	1050	4500
TOTAL		2050.5	**	**	158300	**	80980	**	16470	**
WTD.AVG.		5.6	40480	28600	**	14600	**	3000	**	4100

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	45100	44500	44800	40400	39400	39900	40900	39700	40700	42800	39500	40300
2	45200	42700	43500	41300	40200	40900	40600	39700	40400	42000	40000	40800
3	43800	42200	43300	41000	37900	38800	40700	39200	40000	41300	40200	40700
4	42300	32700	37400	39400	38700	39200	40500	39000	40000	41600	40400	40900
5	33100	31800	32300	40500	39400	39900	40700	39900	40300	41400	40400	40900
6	34800	31900	33200	40600	40300	40400	40600	40000	40300	41400	40200	40800
7	37700	34400	35700	40400	39400	40100	40500	40000	40200	42300	39900	40800
8	41400	37700	39600	40400	38100	39400	40600	40300	40500	41400	38600	40100
9	41600	39500	40800	40900	40300	40600	40600	40100	40300	41400	39400	40800
10	41700	40100	41000	40800	40300	40500	41100	40000	40300	42000	39400	40600
11	42000	41300	41700	41000	40400	40700	41600	40800	41200	41900	40000	40800
12	41900	40300	41300	41000	40400	40800	41800	39000	40400	42800	39900	41200
13	42500	41800	42100	41200	39200	40400	41900	40400	40900	42100	40100	41300
14	42700	41700	42200	41200	38800	40200	41300	40100	40900	42100	39800	40500
15	42100	41800	41900	41400	40000	40900	40600	39700	40300	42400	40800	41600
16	41900	41400	41600	41100	40600	40800	40000	38700	39500	42700	41400	42000
17	41500	41200	41400	40800	40400	40600	40700	39900	40200	41600	40400	41100
18	41800	41400	41700	40400	39800	40100	40500	38600	40200	41800	41000	41400
19	42000	41600	41800	40600	40300	40500	40500	39000	40000	42000	41400	41700
20	42200	40700	41500	40600	40200	40400	41500	40300	40800	41800	40700	41200
21	42200	41000	41500	41000	40600	40700	41200	39500	40300	41800	41100	41400
22	42200	41800	42100	41000	40600	40800	41400	40400	41100	43200	41700	42100
23	42300	41300	41900	40700	40100	40500	41100	40300	40700	43200	41300	42400
24	41600	41100	41400	40900	40400	40700	40900	39600	40500	42900	40500	42200
25	42000	41500	41800	40800	39700	40400	41100	39800	40500	42700	41200	41900
26	41900	41500	41700	40900	40500	40700	41900	39200	40300	42900	41900	42200
27	42100	41800	42000	41400	40500	40900	42100	37200	39000	42000	40900	41300
28	42200	39900	41200	41400	41000	41200	42000	39200	40400	42200	40300	41200
29	41600	40300	41000	41300	40100	40800	40600	39900	40300	42200	36200	39600
30	41800	41400	41500	40700	39600	40100	41500	38900	40100	39800	37400	38500
31	41800	39200	41200	---	---	---	41200	40100	40500	39800	37800	38800
MONTH	45200	31800	40800	41400	37900	40400	42100	37200	40400	43200	36200	41000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	38900	34700	37900	43200	42700	42800	42900	41700	42000	43300	40700	42400
2	35500	33100	34100	43800	42700	43200	42400	41800	42000	42300	26500	35200
3	36800	34200	35600	43700	43000	43300	42500	40100	41800	26700	21100	24500
4	38800	36700	37800	43400	42900	43100	43900	42500	43400	22600	19700	20200
5	39700	38700	39200	43400	42900	43200	43400	42800	43100	23900	20900	22500
6	39800	37500	39100	43900	42800	43300	43300	42900	43000	27600	23900	25600
7	41300	37600	39900	44200	43600	43900	43700	43000	43400	32700	27600	30700
8	41600	41000	41200	43800	42300	42900	44200	43500	43900	38000	32000	35200
9	41600	41200	41300	44200	43100	43800	45100	44000	44500	39200	33600	37100
10	41600	40000	40800	43900	42500	43200	45100	44600	44800	39800	33600	35800
11	42100	41400	41800	43400	42200	42900	45100	44800	44900	39800	35300	36800
12	42200	41800	42100	43400	41000	42700	45100	44800	45000	40500	39500	39900
13	42400	41800	42100	44500	42100	43200	45500	45000	45400	40900	40400	40700
14	42800	41900	42300	43400	41600	42400	45600	44800	45300	41000	40200	40500
15	43500	42800	43100	42900	41500	41800	46100	45000	45400	40400	39100	39800
16	43500	43200	43300	42700	41800	42200	46400	45600	46000	40300	39400	39800
17	43400	40600	42700	42600	39900	42000	45800	45000	45400	41100	40300	40800
18	41400	40900	41200	42600	35900	39400	45500	45000	45200	41500	41100	41300
19	42200	41200	41500	42800	41400	42200	46100	45100	45400	42000	41500	41900
20	42700	41900	42300	42400	40200	41100	45400	44500	45200	42500	42000	42300
21	42800	41800	42400	41000	39600	40400	45500	45100	45300	42800	42100	42500
22	43400	42600	43200	40900	40100	40600	45500	44600	45100	42700	30200	40500
23	43000	42500	42700	42000	40200	41400	44900	44300	44500	---	---	e36000
24	42800	42000	42300	42400	41900	42300	44800	44300	44600	---	---	e38000
25	42800	41500	42400	44200	41900	42700	45200	44800	45000	---	---	e24000
26	42800	41800	42400	44700	42300	43500	45200	43100	44400	1150	---	e9500
27	43100	42600	42800	45100	42900	44100	44700	44100	44500	3320	1200	2040
28	43100	42600	42800	44000	40100	42100	44600	43200	43900	7230	2160	3970
29	---	---	---	42900	40100	41700	44200	43200	43500	9310	7160	8150
30	---	---	---	43700	42200	43100	43600	43200	43400	11100	9240	10300
31	---	---	---	43100	42200	42600	---	---	---	14900	11000	13500
MONTH	43500	33100	41100	45100	35900	42500	46400	40100	44300	---	---	30400

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14300	---	e20000	27900	24500	25800	44000	43400	43800	44800	44000	44600
2	---	---	e27000	30900	27900	29800	43900	43300	43600	45100	44200	45000
3	34700	---	e33900	33000	29500	31600	43700	43000	43400	46100	44200	45400
4	36500	34700	35400	35700	31000	33000	43900	43400	43700	46600	45900	46300
5	37400	36500	36900	35600	32000	33900	45200	43700	44200	46600	46300	46500
6	37900	37400	37700	36000	32000	34700	45400	34700	41300	46800	46300	46500
7	38600	37900	38200	37800	35500	36600	36300	32400	33600	46800	46400	46600
8	38600	38300	38400	39100	37800	38500	37900	32300	33500	46600	46000	46400
9	39100	38400	38600	39400	37100	38500	39800	35900	38300	46400	46000	46300
10	39600	37700	39300	38900	35100	37400	41000	37200	38700	46200	45100	45700
11	37700	33400	36700	39400	36900	38100	42400	38900	40800	45700	43700	44600
12	33400	32200	32400	37600	35900	36500	42000	41300	41500	44200	43700	43900
13	32500	31100	32200	36100	35400	35700	42100	41500	41800	45000	44200	44700
14	31200	28100	29900	37400	35500	36400	43100	42100	42800	45500	44800	45100
15	28100	27000	27600	38100	37100	37300	43400	43100	43300	45600	45300	45400
16	29600	27100	27900	38700	38100	38300	43800	43100	43500	45800	45400	45700
17	34400	28300	32100	39300	38700	38900	43600	43200	43400	46200	45700	46000
18	36400	32400	34800	39800	38100	39400	43800	43200	43500	46000	44800	45500
19	37700	36400	37200	40700	39600	40000	43600	43300	43500	45500	43900	44600
20	38700	37700	38200	41200	40400	40800	44100	43600	43900	44900	43900	44400
21	39400	37600	38800	41800	39800	40900	44200	43500	43900	45300	44700	45000
22	37800	36800	37400	41800	40800	41300	44300	43800	44100	45500	44300	45100
23	37000	36100	36600	41800	41100	41600	44200	43300	43700	45500	44900	45200
24	36200	32800	35900	41900	41400	41700	43500	42900	43200	45800	45100	45600
25	34500	31500	33400	42200	41700	42000	43800	43400	43600	46100	45200	45700
26	31800	28800	30200	42500	42100	42300	43900	43200	43600	45800	45200	45500
27	28800	26500	27600	42800	42100	42500	43300	42500	42900	45800	45200	45600
28	34800	25300	29700	43100	42400	42900	42800	42200	42600	46200	44800	45800
29	33600	20500	24500	43400	43100	43300	43000	42300	42800	46400	45800	46100
30	25200	20600	22800	43700	43300	43500	43500	42800	43100	46000	45400	45800
31	---	---	---	43900	43500	43700	44000	43400	43600	---	---	---
MONTH	---	---	33000	43900	24500	38300	45400	32300	42200	46800	43700	45500

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	27.2	25.4	26.4	19.4	15.6	17.6	16.2	14.3	15.4	11.3	8.4	9.9
2	25.9	23.4	24.9	18.8	15.2	16.5	17.5	14.9	16.4	9.2	7.2	8.3
3	26.1	23.8	25.0	16.0	12.9	14.8	17.1	15.8	16.5	8.4	5.7	7.1
4	27.7	23.7	25.6	15.7	14.8	15.2	17.0	14.0	15.8	8.0	3.2	6.8
5	25.6	21.8	23.5	15.0	14.0	14.6	17.9	15.4	16.6	8.9	5.3	7.1
6	23.7	19.9	22.2	14.0	11.6	12.4	17.4	15.0	16.4	9.6	6.4	8.0
7	23.5	19.7	21.7	14.8	11.5	12.8	15.0	11.9	13.4	9.5	8.1	8.5
8	24.5	21.0	22.9	14.6	12.2	13.6	12.4	10.4	11.5	8.4	6.3	7.1
9	23.9	19.0	21.9	17.0	13.9	15.3	11.2	10.1	10.8	7.5	5.2	6.4
10	23.6	19.1	21.9	16.0	13.4	14.7	11.3	10.1	10.7	9.4	5.4	7.9
11	24.2	20.6	22.3	15.0	12.4	13.9	10.6	9.0	9.5	10.5	6.3	8.2
12	25.0	21.3	23.5	14.4	13.2	13.9	11.9	8.3	10.0	10.8	8.7	9.5
13	25.5	22.7	24.0	15.5	13.8	14.5	11.6	8.5	10.2	9.8	8.1	9.0
14	25.2	22.3	23.9	17.8	13.4	15.8	11.7	9.2	10.5	11.5	6.1	9.1
15	24.9	21.8	23.3	16.9	14.3	16.0	12.3	10.2	11.3	12.2	8.5	10.3
16	23.9	22.1	22.9	17.6	14.8	16.2	12.6	9.4	11.2	12.6	8.8	10.9
17	24.3	22.1	22.9	16.4	14.5	15.4	11.4	9.6	10.7	13.4	9.2	11.6
18	23.1	19.2	21.2	18.8	14.4	16.5	12.0	10.4	11.1	13.3	10.0	11.7
19	22.3	18.3	20.3	16.9	14.3	15.7	11.5	9.7	10.5	14.3	10.8	12.1
20	20.3	17.1	18.0	14.4	13.0	13.8	9.7	8.9	9.1	14.2	10.5	11.9
21	18.2	17.0	17.6	15.3	13.2	14.3	9.4	4.9	7.2	13.8	12.0	13.0
22	17.7	15.8	16.8	15.7	13.6	14.7	4.9	3.5	4.1	12.5	8.8	10.6
23	18.1	15.9	17.1	16.1	13.9	15.1	3.8	2.9	3.4	11.6	8.3	9.9
24	19.5	16.0	17.8	15.8	13.4	14.8	5.2	1.3	3.6	13.7	8.9	11.4
25	19.0	17.1	17.7	16.1	13.1	15.1	7.6	3.8	5.3	12.8	10.3	11.8
26	20.7	18.0	19.4	15.3	13.2	14.5	9.1	5.5	7.0	14.3	8.5	12.4
27	21.1	19.8	20.4	17.0	14.4	15.6	9.0	4.9	7.3	15.4	11.6	13.7
28	23.7	20.3	21.7	17.9	15.9	16.8	9.2	5.9	8.0	15.1	11.4	13.2
29	23.5	20.7	22.1	17.5	15.4	16.9	10.9	7.5	9.2	11.4	8.0	9.2
30	23.4	21.9	22.7	17.1	14.5	15.8	11.4	6.9	9.7	9.3	8.8	9.1
31	22.5	19.2	21.5	---	---	---	11.3	8.9	10.2	9.6	8.8	9.1
MONTH	27.7	15.8	21.7	19.4	11.5	15.1	17.9	1.3	10.4	15.4	3.2	9.8

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.9	8.9	9.3	17.9	13.6	15.9	21.7	17.3	19.8	21.8	19.0	20.1
2	11.3	7.7	9.2	17.3	13.9	15.6	22.6	19.3	20.8	21.9	17.6	19.1
3	13.3	8.4	10.8	16.9	13.0	15.0	21.7	18.9	20.4	24.5	20.4	22.4
4	13.0	9.5	11.5	17.1	12.3	14.7	20.8	17.5	19.1	23.0	20.5	21.8
5	16.0	12.0	13.8	17.8	13.8	15.7	20.2	16.4	18.7	22.1	18.4	20.5
6	15.6	12.3	15.0	17.1	13.8	15.3	19.0	15.5	16.4	21.6	17.2	20.2
7	16.1	11.5	14.1	15.0	12.4	13.4	21.2	16.3	18.2	24.3	18.7	21.6
8	15.8	13.2	14.6	16.3	11.3	13.9	22.3	20.3	20.9	25.1	20.2	22.7
9	17.7	13.5	15.3	17.5	12.5	14.9	21.5	19.2	20.4	25.1	21.7	23.5
10	17.6	13.2	15.3	19.4	14.4	16.6	22.1	18.1	20.1	27.3	21.8	24.5
11	17.2	11.5	14.2	17.5	13.5	15.1	21.6	17.8	19.9	25.7	21.6	23.1
12	13.4	9.4	11.4	13.5	10.8	12.6	20.6	18.3	19.5	26.0	21.5	23.6
13	13.1	9.4	11.5	10.8	7.6	9.3	21.1	19.3	20.3	24.3	21.9	22.6
14	13.1	9.5	11.6	13.0	5.4	9.3	21.1	16.0	19.7	26.3	21.5	23.5
15	14.0	11.1	12.5	15.6	9.0	12.5	16.0	14.1	14.8	30.6	24.0	26.6
16	13.3	11.6	12.2	17.0	12.2	14.7	17.8	15.3	16.1	28.4	25.8	27.1
17	12.8	12.1	12.3	16.6	14.3	15.5	17.7	14.0	15.7	27.6	25.6	26.2
18	13.8	11.9	12.9	16.2	12.6	13.8	20.4	14.3	17.2	27.0	23.5	25.3
19	14.0	10.4	12.1	14.8	11.4	13.0	23.7	17.1	20.0	27.0	23.5	25.2
20	14.8	10.8	13.0	17.4	10.0	13.8	23.5	19.3	20.9	26.4	23.3	24.8
21	14.9	11.0	13.0	18.8	13.6	16.3	22.0	20.6	21.0	29.2	23.8	26.5
22	13.8	10.8	12.1	21.3	16.0	18.5	26.6	20.7	22.9	---	---	---
23	14.6	9.6	12.2	20.4	16.4	18.6	24.5	18.9	21.8	---	---	---
24	15.3	10.7	12.9	18.7	15.6	16.6	18.9	16.9	17.4	---	---	---
25	17.3	13.4	15.4	19.5	14.3	16.6	17.4	16.8	17.1	---	---	---
26	17.9	15.1	16.3	18.2	13.8	16.4	23.8	17.3	20.0	---	---	---
27	17.0	13.9	15.5	17.3	15.4	16.0	23.4	19.1	21.2	---	---	---
28	17.6	12.3	15.1	17.6	13.9	15.7	25.3	21.5	23.3	---	---	---
29	---	---	---	16.9	15.1	16.1	24.4	21.4	23.0	---	---	---
30	---	---	---	17.9	16.2	17.0	23.3	20.7	22.0	---	---	---
31	---	---	---	20.6	15.8	17.9	---	---	---	---	---	---
MONTH	17.9	7.7	13.0	21.3	5.4	15.0	26.6	14.0	19.6	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	31.7	27.7	29.3	30.1	25.9	27.9	26.2	25.7	25.9
2	---	---	---	30.6	28.5	29.4	30.6	26.5	28.1	26.2	25.3	25.6
3	---	---	---	30.3	27.6	28.8	30.0	25.9	27.9	27.3	25.2	26.2
4	28.5	24.6	26.2	30.0	26.3	28.4	31.0	26.3	28.1	27.9	25.6	26.7
5	26.8	24.9	25.8	30.9	25.6	28.3	28.1	25.9	26.7	27.3	25.8	26.2
6	25.8	24.2	24.6	31.7	26.7	29.1	29.3	24.8	27.1	28.6	25.4	26.8
7	25.3	24.6	25.0	31.1	28.8	29.5	30.0	24.9	27.4	28.8	25.8	27.0
8	25.4	24.9	25.1	31.8	28.9	29.6	31.7	26.5	28.6	29.0	26.0	27.2
9	27.4	25.0	25.5	31.7	26.8	29.4	30.9	28.0	29.7	28.2	25.0	26.3
10	28.3	25.5	26.8	29.9	25.8	28.1	31.1	28.0	29.8	27.7	25.2	26.5
11	26.0	24.0	25.0	28.0	25.0	26.7	30.8	27.3	29.4	28.9	24.3	26.3
12	24.8	24.2	24.3	27.9	23.9	26.2	31.1	27.1	28.7	27.2	24.4	25.9
13	25.5	24.3	24.5	29.1	24.9	26.9	31.5	28.2	29.6	24.4	22.6	23.1
14	25.0	23.5	24.2	29.6	26.5	28.0	30.6	27.3	29.0	24.9	22.8	23.8
15	30.0	23.9	25.8	29.7	25.6	27.3	30.6	27.4	28.9	24.1	21.9	22.6
16	28.5	24.3	26.2	27.8	24.7	26.2	31.5	26.9	29.1	22.9	21.8	22.5
17	27.6	23.6	25.7	27.8	24.6	26.3	30.6	26.8	28.7	26.0	22.8	24.2
18	26.5	25.0	25.6	28.9	25.4	27.1	30.9	26.0	28.1	25.8	22.5	24.4
19	26.6	25.4	25.8	28.8	25.8	27.4	30.3	26.4	28.4	26.7	22.4	24.5
20	26.8	26.2	26.4	28.7	26.1	27.5	29.9	25.9	27.7	24.9	21.5	22.7
21	26.8	25.9	26.3	29.3	25.4	27.6	29.7	25.1	27.3	24.0	19.6	21.6
22	27.9	24.5	26.0	29.5	25.3	27.4	29.5	25.3	27.2	23.6	19.8	21.2
23	29.1	25.7	27.3	29.9	25.7	27.8	30.0	25.3	27.5	21.7	19.7	20.8
24	29.8	27.0	28.1	30.5	27.0	28.5	29.5	25.6	27.3	23.4	20.7	22.0
25	29.4	25.3	27.5	29.9	26.7	28.3	30.4	25.6	27.9	25.2	21.2	23.2
26	30.7	25.9	28.4	29.8	26.4	28.2	30.4	26.5	28.4	25.1	21.8	23.5
27	30.6	27.4	29.3	30.3	26.4	28.3	30.7	26.6	28.4	24.5	22.5	23.4
28	30.8	28.6	29.4	30.6	27.1	28.7	31.5	26.3	28.4	22.5	18.2	20.2
29	30.5	27.2	28.8	30.4	26.9	28.5	29.9	26.1	27.7	21.1	17.1	18.9
30	29.8	27.1	28.4	30.3	27.0	28.6	29.4	25.7	27.1	19.9	16.4	18.3
31	---	---	---	30.4	26.3	28.2	26.1	25.0	25.4	---	---	---
MONTH	---	---	---	31.8	23.9	28.1	31.7	24.8	28.1	29.0	16.4	23.9

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07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX

LOCATION.--Lat 33°37'19", long 100°12'31", King County, Hydrologic Unit 11130205, on right bank 1.1 mi downstream from ranch road crossing, 2.8 mi upstream from Willow Creek, 6.6 mi east of Guthrie, and 91.4 mi upstream from confluence with North Wichita River.

DRAINAGE AREA.--223 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,590.0 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. Low-flow diversions from South Wichita River at low-flow dam near Guthrie (station 07311782) via pipeline to Truscott Brine Lake near Truscott (station 07311669) began in May 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1950, 20.8 ft in May 1954, at South Fork Wichita River near Guthrie (station 07311780) located about 1.1 mi upstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	0600	541	6.88	May 26	0200	1,200	8.31

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.04	.22	e.08	e.10	1.4	.01	.02	e.05	3.1	1.4	e.03	e.02
2	e.04	.18	e.07	e.08	.04	.02	.02	46	e.15	.92	e.03	1.9
3	1.4	e.10	e.06	e.07	.04	.01	.01	4.7	e.10	.16	e.03	2.4
4	.27	e.08	e.05	e.06	.04	.02	.03	4.5	e.08	e.10	e.03	.13
5	e.20	e.08	e.05	e.06	.04	.02	.02	2.5	e.06	e.08	.71	3.3
6	e.15	e.07	e.05	e.06	.04	.01	.02	.20	e.05	1.3	.50	1.8
7	e.10	e.06	e.05	e.06	.04	.02	.33	e.15	19	2.0	e.08	.15
8	e.08	e.06	e.05	e.06	.04	.02	.91	e.10	14	4.1	e.06	.52
9	e.07	e.06	e.05	e.06	.03	.01	.02	e.08	3.9	.78	e.08	.65
10	e.06	e.06	e.05	e.06	.03	.02	.02	1.4	.20	2.6	e.06	16
11	e.05	e.06	.62	e.06	.04	.02	.02	.21	7.3	.33	e.04	e.08
12	e.04	e.06	e.15	e.06	.05	.03	.02	.72	15	1.2	e.03	e.06
13	e.03	e.06	e.10	e.06	.04	.03	.02	e.10	9.9	e.08	e.03	e.04
14	.02	e.06	.50	e.06	.04	.03	1.8	.90	6.8	e.06	e.02	e.03
15	e.02	e.05	e.15	e.06	.41	.03	.02	e.15	.14	.91	e.02	1.0
16	e.02	e.05	e.10	e.06	11	.04	1.4	e.10	1.3	e.08	e.02	2.9
17	e.02	e.05	e.09	e.06	1.9	.03	.09	.32	2.5	e.06	e.02	3.2
18	e.02	e.05	e.08	e.06	.03	.05	e.05	4.6	1.3	e.04	e.02	e.10
19	e.02	.48	e.07	e.06	.03	.04	e.04	e.15	6.4	e.03	e.02	e.08
20	e.02	e.15	e.06	e.06	.03	.05	e.04	e.10	7.2	.30	e.02	e.06
21	e.02	e.10	.39	.06	.03	.05	1.4	e.08	6.1	e.10	e.02	e.04
22	e.02	e.09	.83	.06	.03	.05	4.3	e.06	2.3	e.08	e.02	1.7
23	e.02	e.08	.90	.06	.03	.05	2.0	e.05	1.2	e.06	e.04	3.5
24	e.02	e.07	e.10	.06	.03	.05	7.0	e.04	2.3	e.04	e.03	2.4
25	.63	e.06	e.08	.11	.03	.05	7.4	e.03	10	e.03	e.03	e.10
26	.46	e.05	e.07	.14	.03	.10	4.8	316	5.4	e.03	e.02	e.08
27	e.12	2.4	.20	.13	.02	6.3	e.10	286	1.5	e.03	e.02	e.06
28	e.10	e.15	.66	.14	.01	.03	e.08	42	13	e.03	e.02	e.04
29	e.08	e.10	.72	18	---	.03	e.07	19	6.4	e.03	e.02	e.03
30	e.08	e.09	e.20	5.0	---	.02	e.06	11	3.3	e.03	e.02	e.02
31	e.08	---	e.15	4.0	---	.01	---	9.2	---	e.03	e.02	---
MEAN	.14	.17	.22	.94	.55	.23	1.07	24.2	5.00	.55	.068	1.41
MAX	1.4	2.4	.90	18	11	6.3	7.4	316	19	4.1	.71	16
MIN	.02	.05	.05	.06	.01	.01	.01	.03	.05	.03	.02	.02
AC-FT	8.5	10	13	58	31	14	64	1490	297	34	4.2	84

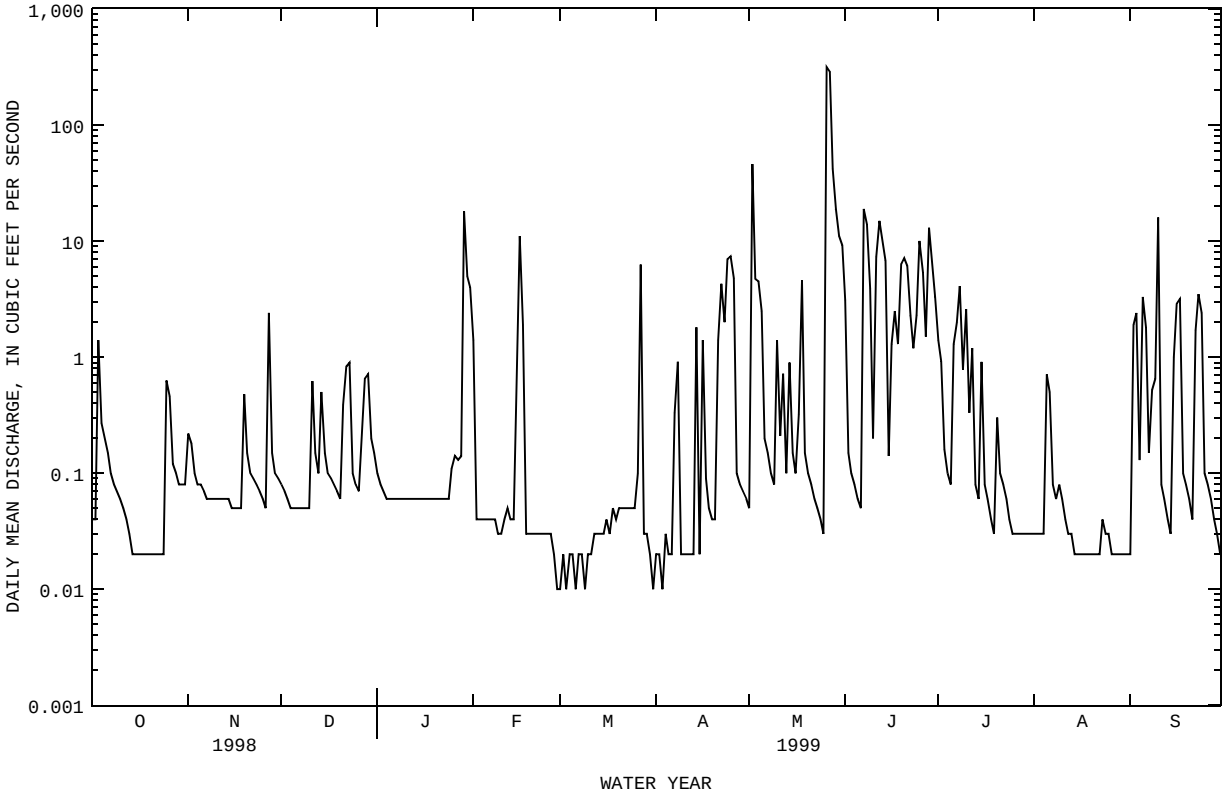
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1999, BY WATER YEAR (WY)

MEAN	4.85	1.34	2.33	2.65	3.00	1.59	2.27	8.58	4.05	12.9	3.43	13.3
MAX	30.6	8.51	9.34	9.16	17.8	5.20	10.4	53.2	13.8	154	15.7	90.1
(WY)	1987	1987	1992	1990	1992	1992	1997	1987	1991	1986	1995	1996
MIN	.030	.018	.028	.073	.038	.016	.011	.043	.097	.025	.021	.016
(WY)	1989	1997	1989	1989	1995	1991	1996	1988	1998	1993	1994	1990

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1986 - 1999	
ANNUAL MEAN	.58		2.91		5.04	
HIGHEST ANNUAL MEAN					20.8	1986
LOWEST ANNUAL MEAN					.75	1988
HIGHEST DAILY MEAN	11	Aug 23	316	May 26	3520	Jul 3 1986
LOWEST DAILY MEAN	.01	Sep 1	.01	Feb 28	.00	Jan 4 1986
ANNUAL SEVEN-DAY MINIMUM	.01	Aug 31	.01	Feb 28	.01	Sep 15 1990
INSTANTANEOUS PEAK FLOW			1200	May 26	13100	Jul 3 1989
INSTANTANEOUS PEAK STAGE			8.31	May 26	19.01	Jul 3 1989
ANNUAL RUNOFF (AC-FT)	422		2110		3650	
10 PERCENT EXCEEDS	1.7		3.4		7.3	
50 PERCENT EXCEEDS	.08		.06		.06	
90 PERCENT EXCEEDS	.02		.02		.02	

e Estimated

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued



07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: May 1987 to Sep 1989, Oct 1990 to Sep 1991, Oct 1996 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1987 to Sep 1989.
WATER TEMPERATURE: May 1987 to Sep 1989.

INSTRUMENTATION.--Water-quality monitor May 1987 to Sep 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 41,600 microsiemens, Aug 17, 1989; minimum, 350 microsiemens, May 28, 1987.
WATER TEMPERATURE: Maximum, 34.5°C, Jun 8, 1988; minimum, 0.0°C, Feb 5-8, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
JAN												
21...	1310	.06	38600	8.0	13.0	15.9	189	5100	4900	1400	348	10000
FEB												
24...	1440	.03	38000	8.1	14.5	14.1	167	4700	4600	1400	325	9560
MAR												
17...	1005	.03	37100	8.0	13.5	11.0	129	4700	4600	1300	333	9510
APR												
22...	1350	5.5	39900	8.1	23.5	8.7	127	5000	4900	1400	355	11400
MAY												
18...	1010	6.5	41300	7.6	23.5	8.7	122	4800	4700	1400	306	9590
JUN												
10...	1425	.20	33800	7.8	30.5	8.7	137	4300	4100	1200	296	8700
24...	1435	5.8	31600	7.8	29.0	7.4	113	4100	4000	1200	293	8240
JUL												
22...	1235	.08	36000	7.6	29.0	7.9	122	4700	4500	1300	326	9540
AUG												
12...	1415	.03	34900	7.9	30.5	11.0	174	4200	4100	1200	294	8110
SEP												
15...	1005	.13	43600	8.1	23.0	8.0	113	4100	4000	1200	278	8260

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
JAN												
21...	61	37	130	3300	15000	.43	7.7	29700	33	<.010	<.050	.133
FEB												
24...	61	39	120	3200	14000	.45	6.1	28800	34	<.010	<.050	.144
MAR												
17...	60	33	120	3200	14000	.41	15	28600	23	<.010	<.050	.197
APR												
22...	71	35	98	3000	15000	.88	4.0	31700	4	<.010	.069	.143
MAY												
18...	60	34	94	3300	15000	.49	3.7	29200	43	<.010	<.050	.133
JUN												
10...	58	34	130	2800	13000	.47	5.7	26000	58	<.010	<.050	.248
24...	56	30	120	2600	12000	.51	7.2	24300	37	<.010	<.050	.224
JUL												
22...	61	34	120	3000	14000	.47	7.5	28000	67	<.010	<.050	.184
AUG												
12...	54	34	130	3100	13000	.47	16	25800	52	<.010	<.050	.193
SEP												
15...	56	35	140	3100	14000	.50	19	27300	72	<.010	.068	.246

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
JAN												
21...	--	.50	.63	.035	<.050	.028	.09	5	3	<100	37	<5
FEB												
24...	--	.06	.21	<.050	<.050	<.010	--	3	2	<100	E31	<10
MAR												
17...	--	--	.19	<.050	<.050	<.010	--	<2	<2	29	E36	<10
APR												
22...	.35	.14	.29	<.050	<.050	.011	.03	3	3	35	28	<1
MAY												
18...	--	.14	.28	<.050	<.050	.015	.05	4	4	1100	53	<10
JUN												
10...	--	.30	.55	E.032	<.050	.020	.06	7	5	100	76	<10
24...	--	.13	.35	E.031	<.050	.015	.05	3	2	100	57	<10
JUL												
22...	--	.26	.44	E.037	<.050	<.010	--	6	2	100	46	<10
AUG												
12...	--	.14	.34	<.050	<.050	<.010	--	<10	5	38	38	<10
SEP												
15...	.26	--	.19	<.050	<.050	.162	.50	7	11	28	44	<10

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
JAN												
21...	<160	3	<2.0	<1	<200	450	<200	<5	<2000	250	397	<.20
FEB												
24...	<400	<2	2.2	<1	<500	200	<500	12	<5000	120	165	<.10
MAR												
17...	<400	<2	<2.0	<1	<500	70	<500	<10	<5000	170	196	<.10
APR												
22...	<200	<2	<2.0	1	<250	170	<250	2	<2500	79	E39	<.10
MAY												
18...	<200	<2	<1.0	<10	<250	10000	E210	<10	<2500	2700	119	<.10
JUN												
10...	<200	<2	<1.0	<10	<250	590	E130	<10	<2500	130	183	<.10
24...	<200	<2	<1.0	<10	<250	190	E240	<10	<2500	79	84	<.10
JUL												
22...	<200	<1	<10	<10	<250	540	E230	<10	<2500	350	2020	<.10
AUG												
12...	<160	<1	<1.0	<10	<200	770	<200	<10	<2000	340	256	<.10
SEP												
15...	<200	6	9.2	<10	<250	E350	<250	<10	<2500	170	168	<.10

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)
JAN												
21...	<.1	240	<800	5	6	<1	<1.0	<10	<400	--	--	--
FEB												
24...	<.1	190	<2000	4	4	<1	<1.0	<10	E583	--	--	--
MAR												
17...	<.1	<50	<2000	<2	<2	<1	<1.0	<40	<1000	--	--	--
APR												
22...	<.1	<1000	<1000	<4	<4	<10	<10	E30	<500	--	--	--
MAY												
18...	<.1	<0	<1000	5	4	<10	<10	3700	<500	<.040	<.100	<1.00
JUN												
10...	<.1	<500	<1000	4	4	<10	<10	<800	<500	--	--	--
24...	.3	<50	<1000	<1	<1	<10	<10	<40	<500	<.040	<.100	<1.00
JUL												
22...	<.1	<500	<1000	4	1	<10	<10	<800	<500	--	--	--
AUG												
12...	<.1	<500	<800	<10	4	<10	<10	<800	<400	--	--	--
SEP												
15...	<.1	<10	<1000	7	7	<10	<10	<0	<500	--	--	--

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLORDANE, TECHNICAL TOTAL (UG/L) (39350)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDEHYDE TOTAL (UG/L) (34366)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)
JAN												
21...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
18...	<.100	<.100	<.100	<.100	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
24...	<.100	<.100	<.100	<.100	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800
JUL												
22...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
15...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	LINDANE TOTAL (UG/L) (39340)	TOXAPHENE, TOTAL (UG/L) (39400)	ENDOSULFAN I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDOSULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXACHLORIDE TOTAL (UG/L) (39338)	CHLORDANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXACHLORIDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLORDANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
JAN												
21...	--	--	--	--	--	--	--	--	--	--	--	--
FEB												
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
17...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
22...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
18...	<.030	<2.00	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
24...	<.030	<2.00	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUL												
22...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
15...	--	--	--	--	--	--	--	--	--	--	--	--

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07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX

LOCATION.--Lat 33°38'39", long 99°48'02", Knox County, Hydrologic Unit 11130205, on right bank at upstream side of bridge on State Highway 6, 2 mi downstream from Panhandle and Santa Fe Railway Co. bridge, 4 mi north of Benjamin, and 41 mi upstream from confluence with North Wichita River.

DRAINAGE AREA.--584 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements), Dec 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,334.23 ft above sea level. Prior to Jan 2, 1960, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation. There are low flow diversions upstream on the South Wichita River at Low Flow Dam near Guthrie (station 07311782) to evaporation lake Truscott Brine Lake near Truscott (station 07311669). There were other minor diversions upstream from station during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903 occurred in Sep 1919 (stage and discharge unknown), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 29	1700	1,090	11.28	May 26	1400	1,920	13.73
Mar 18	2130	2,480	14.74	May 27	1130	2,390	14.63
May 2	0700	1,440	12.43				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

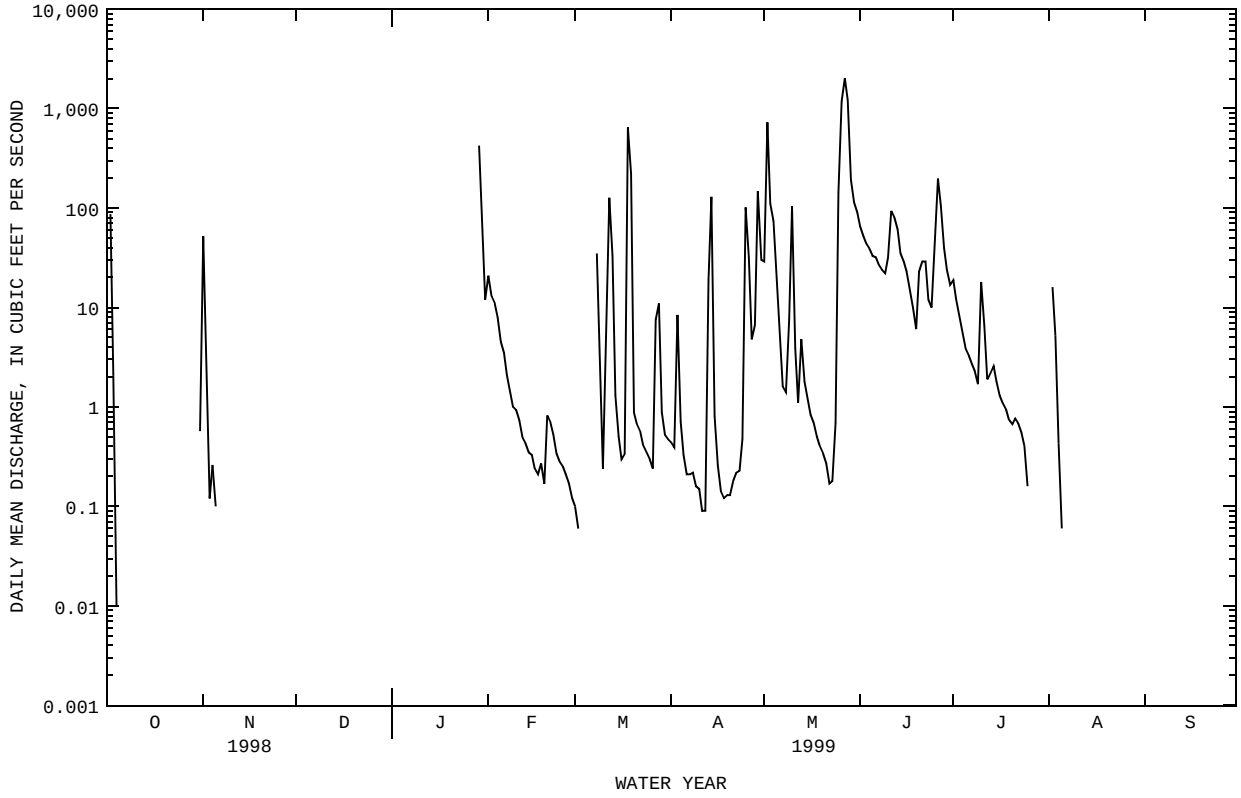
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	52	.00	.00	21	.10	.44	29	65	19	.00	.00
2	87	1.9	.00	.00	13	.06	.39	729	52	12	16	.00
3	2.1	.12	.00	.00	11	.00	8.4	111	44	8.1	5.2	.00
4	.01	.26	.00	.00	8.0	.00	.71	74	39	5.5	.43	.00
5	.00	.10	.00	.00	4.5	.00	.33	20	33	3.8	.06	.00
6	.00	.00	.00	.00	3.5	.00	.21	5.7	32	3.3	.00	.00
7	.00	.00	.00	.00	2.1	.00	.21	1.6	27	2.7	.00	.00
8	.00	.00	.00	.00	1.4	35	.22	1.4	24	2.3	.00	.00
9	.00	.00	.00	.00	1.0	3.3	.16	7.5	22	1.7	.00	.00
10	.00	.00	.00	.00	.93	.24	.15	104	32	18	.00	.00
11	.00	.00	.00	.00	.73	3.8	.09	3.9	94	6.5	.00	.00
12	.00	.00	.00	.00	.49	127	.09	1.1	80	1.9	.00	.00
13	.00	.00	.00	.00	.43	33	19	4.8	61	2.2	.00	.00
14	.00	.00	.00	.00	.35	1.3	129	1.8	35	2.6	.00	.00
15	.00	.00	.00	.00	.33	.51	.81	1.2	29	1.8	.00	.00
16	.00	.00	.00	.00	.24	.30	.26	.83	23	1.3	.00	.00
17	.00	.00	.00	.00	.21	.34	.14	.69	15	1.1	.00	.00
18	.00	.00	.00	.00	.27	649	.12	.50	10	.94	.00	.00
19	.00	.00	.00	.00	.17	221	.13	.40	6.1	.74	.00	.00
20	.00	.00	.00	.00	.82	.88	.13	.34	23	.67	.00	.00
21	.00	.00	.00	.00	.70	.66	.18	.27	29	.77	.00	.00
22	.00	.00	.00	.00	.53	.56	.22	.17	29	.68	.00	.00
23	.00	.00	.00	.00	.34	.41	.23	.18	12	.55	.00	.00
24	.00	.00	.00	.00	.28	.35	.48	.69	10	.41	.00	.00
25	.00	.00	.00	.00	.25	.30	101	144	48	.16	.00	.00
26	.00	.00	.00	.00	.21	.24	32	1190	198	.00	.00	.00
27	.00	.00	.00	.00	.17	7.6	4.8	2030	106	.00	.00	.00
28	.00	.00	.00	.00	.12	11	6.7	1220	40	.00	.00	.00
29	.00	.00	.00	424	---	.89	148	194	24	.00	.00	.00
30	.00	.00	.00	88	---	.52	30	113	17	.00	.00	.00
31	.57	---	.00	12	---	.47	---	90	---	.00	.00	---
TOTAL	89.68	54.38	0.00	524.00	73.07	1098.83	484.60	6081.07	1259.1	98.72	21.69	0.00
MEAN	2.89	1.81	.000	16.9	2.61	35.4	16.2	196	42.0	3.18	.70	.000
MAX	87	52	.00	424	21	649	148	2030	198	19	16	.00
MIN	.00	.00	.00	.00	.12	.00	.09	.17	6.1	.00	.00	.00
AC-FT	178	108	.00	1040	145	2180	961	12060	2500	196	43	.00
IN.	.01	.00	.00	.03	.00	.07	.03	.39	.08	.01	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

MEAN	72.8	18.0	12.2	11.7	18.5	21.7	30.3	78.4	82.2	23.5	47.0	78.5
MAX	656	65.1	77.5	60.3	172	88.7	187	256	458	162	578	502
(WY)	1984	1987	1992	1992	1992	1970	1990	1989	1990	1986	1995	1966
MIN	.17	1.14	.000	.68	1.39	.97	.073	.92	1.49	.013	.000	.000
(WY)	1980	1988	1999	1989	1989	1989	1989	1988	1976	1965	1963	1998

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	6252.02		9785.14			
ANNUAL MEAN	17.1		26.8		41.7	
HIGHEST ANNUAL MEAN					107	1966
LOWEST ANNUAL MEAN					11.2	1988
HIGHEST DAILY MEAN	735	Feb 19	2030	May 27	8260	Oct 20 1983
LOWEST DAILY MEAN	.00	Jun 17	.00	Oct 1	.00	May 24 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 17	.00	Oct 5	.00	Jun 27 1960
INSTANTANEOUS PEAK FLOW			2480	Mar 18	14900	Jun 1 1990
INSTANTANEOUS PEAK STAGE			14.74	Mar 18	17.07	Jun 1 1990
INSTANTANEOUS LOW FLOW					.00	May 24 1960
ANNUAL RUNOFF (AC-FT)	12400		19410		30230	
ANNUAL RUNOFF (INCHES)	.40		.62		.97	
10 PERCENT EXCEEDS	38		32		46	
50 PERCENT EXCEEDS	.03		.09		6.9	
90 PERCENT EXCEEDS	.00		.00		.08	



07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jul 1949 to Mar 1959, Jul 1966 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1967 to current year.
WATER TEMPERATURE: Oct 1967 to current year.

INSTRUMENTATION.--Water-quality monitor since Aug 1968.

REMARKS.--Interruption in the record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1990 to 1999. The standard error of estimate for dissolved solids is 5%, chloride is 23%, sulfate is 15% and for hardness is 13%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request. No flow Oct 1, 5-30, Nov 6-Jan 28, Mar 3-7, Jul 26-Aug 1, and Aug 6-Sep 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 48,900 microsiemens, May 13, 1971; minimum, 384 microsiemens, Sep 18, 1996.
WATER TEMPERATURE: Maximum, 39.0°C, Jul 31, 1989; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 19,600 microsiemens, Feb 22-23; minimum, 419 microsiemens, Aug 2.
WATER TEMPERATURE: Maximum, 36.5°C, May 22; minimum, 2.2°C, Jan 29.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
FEB												
23...	1315	.37	19100	8.1	16.5	9.9	113	4400	4300	1200	364	4690
MAR												
16...	1050	.32	4920	8.1	14.5	10.0	104	1600	1500	470	99	630
APR												
21...	1135	.18	7750	8.2	25.5	7.6	101	2500	2400	690	194	1190
MAY												
05...	1140	23	10800	7.9	18.5	9.3	108	2100	2100	640	132	2090
19...	1250	.43	14800	7.7	29.5	7.5	106	3200	3100	890	240	2630
JUN												
09...	1230	23	10500	8.0	29.5	7.6	108	2600	2400	720	182	1920
30...	1430	15	10500	7.8	30.5	13.8	199	2300	2200	680	139	1740
JUL												
21...	1150	.80	13700	7.9	33.5	5.6	85	3400	3200	890	275	2360

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
FEB												
23...	31	22	110	2700	6100	.25	14	15100	36	<.010	<.050	.081
MAR												
16...	7	9.6	78	1200	1000	.19	8.4	3450	20	<.010	.321	.041
APR												
21...	10	16	140	1900	1900	.21	7.1	5930	24	<.010	.106	.040
MAY												
05...	20	12	75	1600	3000	.27	5.6	7580	199	<.010	.143	.051
19...	20	17	120	2300	3900	.26	6.2	10100	48	<.010	<.050	.064
JUN												
09...	16	15	140	1900	2900	.19	7.7	7710	49	<.010	<.050	.151
30...	16	13	84	1600	2800	.33	5.2	7050	2	<.010	<.050	.120
JUL												
21...	18	21	150	2700	4100	<.10	14	10400	14	<.010	<.050	.093

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
FEB												
23...	--	.13	.21	<.050	<.050	<.010	--	5	4	<100	52	<1
MAR												
16...	.55	.19	.23	<.050	<.050	<.010	--	5	4	100	95	<1
APR												
21...	--	--	E.09	<.050	<.050	.011	.03	8	8	109	108	<1
MAY												
05...	.58	.39	.44	.109	<.050	.010	.03	6	6	190	178	<1
19...	--	.33	.39	E.045	<.050	.015	.05	10	6	1200	117	<4
JUN												
09...	--	.16	.31	E.046	<.050	.011	.03	10	9	136	148	<2
30...	--	.25	.37	.086	<.050	.018	.06	5	5	168	144	<4
JUL												
21...	--	.24	.33	<.050	<.050	<.010	--	8	6	100	91	<4

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)
FEB												
23...	<160	1	2.2	<1	<200	110	<200	6	<2000	31	<60	<.10
MAR												
16...	<24	4	<1.0	1	<30	870	<30	<1	<300	17	E5.3	<.10
APR												
21...	<40	3	<1.0	2	<50	940	<50	<1	<500	38	18	<.10
MAY												
05...	<80	7	<1.0	<1	<100	3500	<100	<2	<1000	42	<30	<.10
19...	<80	3	2.6	<4	<100	12000	<100	<4	<1000	270	<30	<.10
JUN												
09...	<80	2	<1.0	2	<100	540	<100	<2	<1000	E18	<30	<.10
30...	<80	3	<1.0	9	<100	1800	100	<4	<1000	43	<30	<.10
JUL												
21...	<80	<1	<10	<4	<100	180	<100	<4	<1000	23	E21	<.10

DATE	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)
FEB												
23...	<.1	<100	<800	3	2	<1	<1.0	<10	<400	--	--	--
MAR												
16...	<.1	<50	<120	<1	1	<1	<1.0	<40	<60	--	--	--
APR												
21...	<.1	<50	<200	1	<1	<2	<2.0	<120	<100	--	--	--
MAY												
05...	<.1	<0	<400	<1	2	<2	<5.0	<40	<200	<.040	<.100	<1.00
19...	<.1	<500	<400	3	<1	<4	<4.0	E310	<200	--	--	--
JUN												
09...	<.1	<500	<400	<1	1	<2	<4.0	<400	<200	<.040	<.100	<1.00
30...	<.1	<500	E192	<2	<1	<2	<2.0	<400	<200	--	--	--
JUL												
21...	<.1	<250	<400	<1	<1	<4	<4.0	<200	<200	--	--	--

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)
FEB												
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
21...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
05...	<.100	<.100	<.100	<.100	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	<.100	<.100	<.100	<.100	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800
30...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
21...	--	--	--	--	--	--	--	--	--	--	--	--

DATE	LINDANE TOTAL (UG/L) (39340)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
FEB												
23...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
16...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
21...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
05...	<.030	<2.00	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
19...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
09...	<.030	<2.00	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
30...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
21...	--	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	89.68	1650	1200	291	320	77.4	470	114	540
NOV.	1998	54.38	1580	1150	169	310	44.9	450	66.3	520
DEC.	1998	0	--	--	--	--	--	--	--	--
JAN.	1999	524	811	592	838	150	217	240	335	270
FEB.	1999	73.07	8020	5660	1120	2000	386	1700	338	2000
MAR.	1999	1098.83	4080	2940	8710	860	2550	1100	3160	1200
APR.	1999	484.6	4770	3420	4480	1000	1350	1200	1580	1400
MAY	1999	6081.07	2630	1900	31270	530	8770	720	11760	830
JUNE	1999	1259.1	8040	5710	19410	1900	6400	1800	6230	2200
JULY	1999	98.72	11910	8370	2230	3000	790	2500	655	2900
AUG.	1999	21.69	2000	1450	84.8	400	23.7	550	32.0	630
SEPT	1999	0	--	--	--	--	--	--	--	--
TOTAL		9785.14	**	**	68610	**	20600	**	24270	**
WTD.AVG.		27	3620	2600	**	780	**	920	**	1100

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	1990	1090	1570	---	---	---	---	---	---
2	3790	1110	1640	1820	1630	1730	---	---	---	---	---	---
3	2340	1750	2120	1920	1820	1870	---	---	---	---	---	---
4	2380	2290	2320	2260	1900	2060	---	---	---	---	---	---
5	---	---	---	2710	2260	2480	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	1100	652	801
30	---	---	---	---	---	---	---	---	---	951	705	855
31	---	---	e1400	---	---	---	---	---	---	1600	526	845
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3260	1600	2350	18200	17600	18000	8240	7830	8110	10900	2870	7630
2	---	2580	e5000	18200	16700	17400	8150	7740	8010	4490	942	2140
3	---	---	e8500	---	---	---	13000	4350	8420	7960	2650	6000
4	---	---	e14400	---	---	---	13700	9190	11800	11600	6800	8430
5	13900	12500	s13100	---	---	---	9190	8650	8780	12000	10700	11200
6	12500	10300	11600	---	---	---	9190	8760	8900	10800	7540	9120
7	11400	11000	11200	---	---	---	9180	8970	9090	9030	5080	7420
8	11500	11200	11400	17200	1710	9320	9080	8820	8960	5130	5040	5070
9	11600	11300	11500	7850	5570	6620	9140	8830	9000	5370	2420	5110
10	11500	11100	11300	10800	7710	10100	9020	8620	8810	6190	1780	3190
11	11800	11300	11600	11300	1040	9850	8620	8330	8500	7710	5260	6500
12	11900	11700	11800	5850	762	2430	8330	7890	8080	7470	5170	6290
13	12100	11700	11900	3790	2230	3000	8270	914	7630	10000	7400	9320
14	12300	11800	12000	3020	2550	2740	11200	1990	5630	13000	10000	11800
15	12500	12000	12300	4740	3010	3670	6790	6110	6550	13400	12600	13000
16	12900	12500	12700	5320	4510	4810	6990	6790	6870	13900	13100	13400
17	13400	12800	13100	8640	5320	6960	7180	6990	7080	14200	13600	13900
18	14200	13400	13800	8710	776	4820	7360	7170	7250	14600	13100	14100
19	14600	14100	14300	2290	1030	1810	7540	7350	7420	15100	14000	14600
20	17800	14600	15900	3060	1850	2130	7840	7500	7640	15300	14800	15000
21	19200	17700	18600	2990	1840	2070	8230	7730	7930	15300	14800	15100
22	19600	18900	19200	3070	2000	2870	8720	8210	8400	14900	14600	14800
23	19600	19100	19400	2800	2630	2710	9490	8720	9110	15000	14100	14700
24	19500	19000	19300	2700	2080	2530	9800	5480	7940	14900	14000	14400
25	19100	18600	18900	2330	2090	2220	11000	1520	4770	14500	2540	5660
26	18800	18500	18700	3810	2330	2670	1770	1440	1630	4190	931	1710
27	19100	18600	18700	8060	2520	3340	2690	1760	2200	4300	1440	2640
28	18700	17700	18200	14300	4570	8810	4440	2530	3410	2950	1600	2020
29	---	---	---	7640	5010	6240	7650	1560	2980	3060	1610	2230
30	---	---	---	8350	7640	8160	11800	5350	10400	4980	3060	3990
31	---	---	---	8360	8110	8270	---	---	---	6700	4980	5950
MONTH	---	---	13600	---	---	---	13700	914	7380	15300	931	8590

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7710	6700	7200	11100	10900	11000	---	---	---	---	---	---
2	8540	7710	8220	11000	11000	11000	5000	419	1070	---	---	---
3	9020	8510	8770	11200	10900	11000	4870	2940	4570	---	---	---
4	9390	9020	9260	11500	11200	11400	5170	4810	4960	---	---	---
5	9810	9380	9570	12500	11500	11800	5810	5170	5500	---	---	---
6	10000	9630	9810	12600	12300	12500	---	---	---	---	---	---
7	9900	9670	9770	12300	11900	12200	---	---	---	---	---	---
8	10300	9900	10100	12000	11300	11600	---	---	---	---	---	---
9	10600	10300	10500	12800	12000	12600	---	---	---	---	---	---
10	10900	1680	9930	12700	12600	12700	---	---	---	---	---	---
11	12000	3190	5460	12900	12700	12800	---	---	---	---	---	---
12	12800	4770	9250	13000	12900	12900	---	---	---	---	---	---
13	11100	5170	6780	13300	13000	13100	---	---	---	---	---	---
14	6790	4850	5300	13200	12900	13100	---	---	---	---	---	---
15	15000	6790	11200	12900	12800	12900	---	---	---	---	---	---
16	16700	15000	16100	13000	12600	12900	---	---	---	---	---	---
17	16900	16400	16700	12600	12100	12400	---	---	---	---	---	---
18	16400	15700	15900	12100	12000	12000	---	---	---	---	---	---
19	15700	15200	15300	12400	12000	12200	---	---	---	---	---	---
20	15400	2600	11400	12700	12400	12600	---	---	---	---	---	---
21	12700	2920	8570	14200	12700	13400	---	---	---	---	---	---
22	8210	2100	4960	14000	13400	13600	---	---	---	---	---	---
23	13900	8210	12300	13600	13000	13200	---	---	---	---	---	---
24	16700	13300	15500	13200	12800	e12800	---	---	---	---	---	---
25	16700	2720	10400	---	---	e12500	---	---	---	---	---	---
26	6610	1740	3540	---	---	---	---	---	---	---	---	---
27	12200	3160	8720	---	---	---	---	---	---	---	---	---
28	7940	6540	7100	---	---	---	---	---	---	---	---	---
29	9490	7680	8660	---	---	---	---	---	---	---	---	---
30	11100	9490	10300	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	16900	1680	9890	---	---	---	---	---	---	---	---	---

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	14.4	11.3	13.1	---	---	---	---	---	---
2	22.7	18.0	20.4	18.4	9.5	12.8	---	---	---	---	---	---
3	29.9	21.8	24.3	15.9	9.0	12.3	---	---	---	---	---	---
4	29.5	21.1	24.4	14.8	9.4	11.3	---	---	---	---	---	---
5	---	---	---	12.6	8.4	9.8	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	3.9	2.2	3.2
30	---	---	---	---	---	---	---	---	---	5.1	3.5	4.3
31	22.2	13.6	19.7	---	---	---	---	---	---	7.4	3.6	5.4
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.0	3.6	5.6	24.0	8.9	15.2	23.1	17.6	20.5	20.7	17.1	18.3
2	10.0	4.7	7.4	20.1	10.1	13.8	24.6	20.0	22.1	22.1	15.8	18.4
3	11.0	5.4	8.4	---	---	---	24.5	19.1	21.7	24.8	19.3	21.8
4	13.1	5.8	9.2	---	---	---	25.4	15.0	19.7	23.6	19.2	21.6
5	17.6	9.6	13.3	---	---	---	20.9	14.7	18.3	23.7	15.3	19.4
6	15.8	11.5	14.4	---	---	---	21.9	12.5	17.4	23.2	14.5	19.1
7	17.9	9.5	12.6	---	---	---	23.3	15.8	19.6	24.5	15.1	20.4
8	16.2	9.5	12.0	16.9	9.8	13.1	25.7	19.9	22.3	27.5	19.3	23.6
9	19.8	9.7	13.5	17.1	9.9	13.5	20.5	17.8	19.4	28.0	19.1	24.3
10	22.2	9.8	15.1	18.7	12.4	15.5	23.8	15.4	19.1	28.1	18.1	22.7
11	16.6	6.9	12.3	---	---	---	23.7	13.4	18.3	25.9	20.9	22.7
12	16.0	4.1	8.6	---	---	---	20.1	15.8	18.0	27.6	17.9	22.7
13	16.7	3.5	8.7	---	---	---	25.8	18.2	21.4	24.8	19.5	22.4
14	17.0	4.0	9.3	---	---	---	24.2	16.4	20.6	31.2	21.0	25.9
15	19.5	6.2	11.6	---	---	---	19.8	12.3	15.6	34.9	25.0	28.8
16	19.2	7.7	11.9	19.0	11.0	15.4	19.3	12.5	15.3	34.0	26.2	29.4
17	19.3	6.3	11.4	17.6	14.4	16.4	16.2	10.4	13.4	31.5	23.1	27.3
18	18.5	8.1	11.5	17.3	10.5	13.7	19.1	10.1	14.8	33.5	20.3	25.9
19	18.8	5.3	10.5	16.1	10.1	12.6	22.3	13.7	18.1	33.3	21.1	26.2
20	15.5	7.1	10.6	17.0	10.4	13.9	25.5	16.5	20.4	31.8	22.9	26.0
21	16.2	7.7	10.8	19.7	14.0	16.8	26.2	19.0	22.3	36.0	22.8	28.7
22	14.9	7.4	9.8	22.1	16.8	19.3	28.5	20.9	23.9	36.5	25.5	29.7
23	18.0	5.3	10.4	20.5	16.9	18.6	23.2	15.7	20.1	35.5	24.8	28.9
24	20.1	6.3	12.1	17.3	14.4	15.6	15.7	13.5	14.1	30.0	23.7	26.3
25	23.5	10.5	15.9	17.4	12.4	15.0	19.3	13.4	15.9	26.1	19.4	23.0
26	22.5	13.4	16.5	15.9	10.9	13.8	22.0	17.3	19.4	25.0	18.6	21.5
27	20.8	10.0	14.2	16.1	15.0	15.2	22.8	16.2	19.9	24.4	19.8	21.1
28	20.4	7.1	13.2	17.5	14.7	16.1	24.5	18.3	21.6	22.3	20.0	21.0
29	---	---	---	18.0	15.3	16.6	22.3	16.5	19.3	25.6	22.2	23.5
30	---	---	---	18.4	15.8	17.2	23.5	18.1	20.7	31.1	23.0	26.6
31	---	---	---	21.5	16.3	18.9	---	---	---	34.0	27.1	30.2
MONTH	23.5	3.5	11.5	---	---	---	28.5	10.1	19.1	36.5	14.5	24.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	34.5	26.9	30.6	32.6	28.9	30.7	---	---	---	---	---	---
2	32.5	27.6	30.3	31.9	29.3	30.6	34.1	23.0	27.8	---	---	---
3	31.4	27.8	29.4	30.5	28.2	29.4	30.0	24.0	26.6	---	---	---
4	29.9	27.0	28.4	29.9	27.6	28.8	30.2	24.2	26.9	---	---	---
5	29.0	26.6	27.4	29.5	27.1	28.3	26.9	24.3	25.3	---	---	---
6	28.4	25.6	27.0	29.4	26.5	28.0	---	---	---	---	---	---
7	29.5	26.2	27.9	29.2	26.7	28.0	---	---	---	---	---	---
8	31.3	27.0	29.2	28.5	26.7	27.7	---	---	---	---	---	---
9	31.7	27.2	29.6	28.9	27.0	28.0	---	---	---	---	---	---
10	31.8	24.8	28.5	28.0	26.5	27.0	---	---	---	---	---	---
11	31.6	22.7	27.3	26.8	24.6	25.8	---	---	---	---	---	---
12	31.4	25.7	28.3	26.1	23.3	24.9	---	---	---	---	---	---
13	29.5	25.6	27.7	26.3	23.2	25.1	---	---	---	---	---	---
14	30.8	23.1	26.9	26.8	24.5	25.8	---	---	---	---	---	---
15	32.8	23.2	27.9	26.4	24.3	25.5	---	---	---	---	---	---
16	31.6	23.6	27.5	25.3	23.6	24.5	---	---	---	---	---	---
17	27.8	20.9	24.3	25.9	23.5	24.8	---	---	---	---	---	---
18	29.3	21.8	25.9	25.9	23.8	25.0	---	---	---	---	---	---
19	32.6	24.1	28.3	26.6	24.0	25.4	---	---	---	---	---	---
20	28.4	24.3	26.2	26.5	24.2	25.4	---	---	---	---	---	---
21	28.6	23.8	25.8	---	---	---	---	---	---	---	---	---
22	30.1	23.2	26.2	---	---	---	---	---	---	---	---	---
23	31.7	25.0	28.3	---	---	---	---	---	---	---	---	---
24	32.8	25.6	29.1	33.9	21.5	27.3	---	---	---	---	---	---
25	31.6	22.3	27.1	31.8	21.8	26.7	---	---	---	---	---	---
26	29.7	22.4	26.2	---	---	---	---	---	---	---	---	---
27	34.4	28.4	31.0	---	---	---	---	---	---	---	---	---
28	32.7	28.7	31.0	---	---	---	---	---	---	---	---	---
29	32.0	29.1	30.6	---	---	---	---	---	---	---	---	---
30	31.6	29.1	30.5	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	34.5	20.9	28.1	---	---	---	---	---	---	---	---	---

07311900 WICHITA RIVER NEAR SEYMOUR, TX

LOCATION.--Lat 33°42'01", long 99°23'18", Baylor County, Hydrologic Unit 11130206, on left bank at downstream side of bridge on farm road 1919, 6 mi upstream from the head of Lake Kemp (07312000), 10 mi downstream from the confluence of the North and South Forks of the Wichita River, and 10.5 mi northwest of Seymour.

DRAINAGE AREA.--1,874 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1952 to Sep 57 (occasional low-flow measurements made 4 mi downstream), Nov 1959 to Sep 1979, Oct 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,152.7 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan 30	0100	4,360	13.72	May 28	1800	5,650	14.86
May 15	2200	3,460	12.75				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	653	17	16	155	14	30	375	453	256	17	6.0
2	69	397	17	16	92	13	29	673	334	177	17	5.4
3	177	167	18	15	64	12	81	877	249	142	97	5.4
4	114	95	18	15	43	13	52	624	199	120	135	5.2
5	33	57	18	15	34	13	34	317	162	103	34	5.9
6	20	40	17	15	30	12	25	154	190	89	28	5.3
7	15	33	15	15	79	12	21	112	188	76	20	5.1
8	12	27	15	15	31	81	17	84	114	67	16	4.6
9	10	26	16	14	24	98	16	69	93	60	18	4.6
10	8.8	22	16	16	22	41	15	702	112	161	16	4.5
11	8.2	20	16	16	20	22	15	547	492	308	13	4.8
12	8.0	18	16	15	18	419	15	252	807	222	11	4.1
13	7.8	19	15	14	18	690	70	144	335	131	11	4.6
14	7.5	19	16	14	18	223	846	105	223	87	10	6.5
15	7.1	18	16	15	17	78	268	599	160	66	9.5	6.0
16	8.1	18	15	14	17	39	77	1030	132	54	9.1	8.6
17	12	18	15	14	16	27	40	153	112	49	8.5	8.8
18	8.6	18	16	14	16	66	30	102	100	44	8.3	7.5
19	7.6	17	16	14	15	1040	24	86	88	40	8.1	7.0
20	9.0	16	17	14	15	745	22	61	101	36	7.6	6.6
21	16	17	20	14	15	225	18	50	1060	50	7.3	6.1
22	14	18	16	16	15	106	18	39	1290	40	7.0	5.8
23	11	16	e16	18	15	69	17	32	516	50	6.8	5.7
24	11	16	e16	17	15	52	18	30	307	32	14	5.2
25	11	16	e17	16	15	42	109	115	279	28	12	4.6
26	10	15	e19	16	15	35	260	1470	1940	25	6.8	4.5
27	10	16	20	16	14	49	139	3030	1070	23	6.1	4.2
28	10	16	20	15	14	134	58	5240	690	22	5.9	4.5
29	9.8	17	18	1310	---	86	303	4160	453	21	7.0	4.9
30	9.7	21	16	2120	---	52	625	1950	533	19	6.7	5.0
31	19	---	16	615	---	37	---	928	---	18	6.3	---
TOTAL	677.3	1866	519	4469	862	4545	3292	24110	12782	2616	580.0	167.0
MEAN	21.8	62.2	16.7	144	30.8	147	110	778	426	84.4	18.7	5.57
MAX	177	653	20	2120	155	1040	846	5240	1940	308	135	8.8
MIN	3.1	15	15	14	12	15	15	30	88	18	5.9	4.1
AC-FT	1340	3700	1030	8860	1710	9020	6530	47820	25350	5190	1150	331

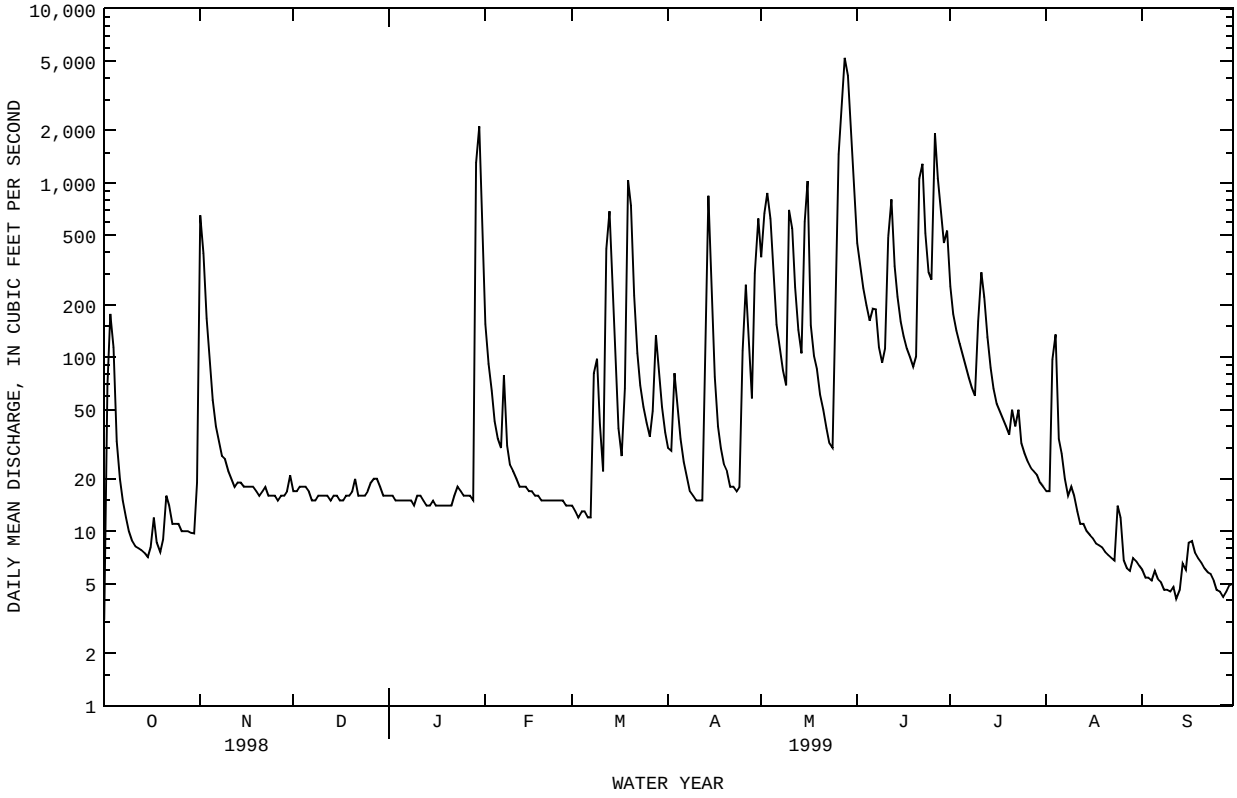
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999h, BY WATER YEAR (WY)

MEAN	221	86.9	48.8	54.3	63.0	103	158	272	277	139	173	332
MAX	1464	262	222	375	299	464	664	778	979	726	1353	1492
(WY)	1961	1973	1960	1968	1998	1998	1967	1999	1967	1967	1966	1966
MIN	2.89	9.29	13.5	11.5	12.5	8.10	7.36	32.3	18.4	1.11	1.46	4.23
(WY)	1964	1971	1971	1964	1971	1965	1964	1962	1970	1964	1970	1968

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999h	
ANNUAL TOTAL	36956.4		56485.3			
ANNUAL MEAN	101		155		160	
HIGHEST ANNUAL MEAN					389	1966
LOWEST ANNUAL MEAN					71.6	1976
HIGHEST DAILY MEAN	3570	Mar 16	5240	May 28	16100	Oct 19 1965
LOWEST DAILY MEAN	1.7	Sep 11	3.1	Oct 1	.00	Jul 18 1964
ANNUAL SEVEN-DAY MINIMUM	2.0	Sep 7	4.6	Sep 7	.00	Jul 18 1964
INSTANTANEOUS PEAK FLOW			5650	May 28	23100	Sep 20 1965
INSTANTANEOUS PEAK STAGE			14.86	May 28	17.75	Sep 20 1965
ANNUAL RUNOFF (AC-FT)	73300		112000		116300	
10 PERCENT EXCEEDS	198		351		230	
50 PERCENT EXCEEDS	28		18		31	
90 PERCENT EXCEEDS	3.8		7.1		6.5	

e Estimated
h See PERIOD OF RECORD paragraph.

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued



07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1967 to Sep 1979, Oct 1996 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1979, Oct 1996 to current year.
WATER TEMPERATURE: Oct 1967 to Sep 1979, Oct 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Aug 1968 to Sep 1979, Oct 1996 to current year.

REMARKS.--Interruption in the record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1997 to 1999. The standard error of estimate for dissolved solids is 4%, chloride is 19%, sulfate is 12% and for hardness is 11%. Regression equations developed for this station may be obtained from the U.S. Geological Survey District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 30,800 microsiemens, Feb 12, 1969; minimum, 329 microsiemens, May 15, 1999.
WATER TEMPERATURE: Maximum, 39.4°C, Jul 13-14, 1998; minimum, 0.0°C, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 21,300 microsiemens, Oct 1-2; minimum, 329 microsiemens, May 15.
WATER TEMPERATURE: Maximum, 37.1°C, Aug 8; minimum, 0.1°C, Jan 3, 5, 9-11.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC											
16...	1430	16	15900	8.2	14.0	12.0	125	3200	3100	920	225
JAN											
14...	1220	14	17200	7.6	4.0	12.3	102	3000	2900	850	207
FEB											
25...	1545	15	14800	8.1	22.0	11.5	145	2900	2800	820	208
MAR											
15...	1245	73	5470	7.7	11.5	16.8	161	1000	950	300	66
APR											
27...	1605	110	4480	7.9	25.0	8.0	102	1000	940	290	66
MAY											
05...	1525	260	3420	7.9	21.0	8.2	98	900	840	270	55
19...	1430	86	6620	7.8	28.0	8.3	112	1500	1400	460	79
JUN											
08...	1605	110	6780	8.1	32.0	6.8	99	1400	1300	390	97
23...	1150	500	2550	8.0	26.5	7.2	94	650	570	190	39
JUL											
20...	1505	40	9310	8.0	32.5	6.8	99	2000	1900	550	148
AUG											
11...	1035	14	12200	8.0	28.0	7.6	105	2300	2200	650	173
SEP											
10...	1620	4.6	18700	8.1	30.9	7.6	112	3000	2900	830	226

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
DEC											
16...	3880	30	13	120	2300	5100	.29	4.5	12400	5	--
JAN											
14...	3340	27	11	110	2200	4700	.40	8.0	11400	16	.799
FEB											
25...	3300	27	13	120	2100	4400	.37	39	10900	14	--
MAR											
15...	930	13	6.2	69	770	1400	.30	5.9	3520	221	.477
APR											
27...	666	9	7.6	62	840	1000	.26	7.1	2930	3380	--
MAY											
05...	417	6	8.3	63	790	670	.26	8.2	2260	3840	--
19...	859	10	9.2	110	1100	1500	.37	7.4	4110	123	--
JUN											
08...	1050	12	11	110	1100	1700	.32	9.2	4450	505	--
23...	313	5	7.8	76	550	490	.28	8.9	1650	1440	--
JUL											
20...	1680	16	12	120	1600	2600	.30	8.5	6630	26	--
AUG											
11...	2290	21	13	100	1900	3400	.32	7.4	8470	49	--
SEP											
10...	3270	26	18	80	2700	5200	.38	16	12300	29	--

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
DEC											
16...	<.010	.108	.059	.58	.41	.47	<.050	.010	.019	.06	3
JAN											
14...	.015	.814	.131	1.0	.06	.19	<.050	<.050	.010	.03	4
FEB											
25...	<.010	.135	.072	.30	.09	.17	<.050	<.050	<.010	--	4
MAR											
15...	.010	.487	.036	1.5	.97	1.0	.580	<.050	<.010	--	10
APR											
27...	<.010	.321	<.020	3.5	--	3.2	1.86	<.050	.013	.04	27
MAY											
05...	<.010	.324	.049	3.6	3.2	3.3	2.02	<.050	.010	.03	25
19...	<.010	<.050	.027	--	.40	.43	.080	<.050	.011	.03	7
JUN											
08...	<.010	.067	.058	.84	.72	.77	.404	<.050	.017	.05	16
23...	<.010	.227	.027	2.4	2.1	2.2	1.18	<.050	.017	.05	16
JUL											
20...	<.010	<.050	.037	--	.90	.94	E.040	<.050	<.010	--	5
AUG											
11...	<.010	<.050	.042	--	.15	.19	<.050	<.050	<.010	--	4
SEP											
10...	<.010	<.050	.032	--	.07	.10	<.050	<.050	<.010	--	6

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC											
16...	4	<100	42	<1	<160	1	<1.0	<1	<200	60	<200
JAN											
14...	2	<100	29	<1	<160	<1	<1.0	<1	<200	40	<200
FEB											
25...	3	<100	54	<1	<80	<1	<1.0	<1	<100	30	<100
MAR											
15...	4	300	162	<1	<24	35	<1.0	9	<30	18000	<30
APR											
27...	4	600	105	<1	<24	51	<1.0	29	<30	28000	<30
MAY											
05...	4	600	161	<1	<24	60	<1.0	19	<30	25000	<30
19...	4	700	221	<1	<32	4	<1.0	2	<40	5400	<40
JUN											
08...	6	300	166	<2	<32	18	<1.0	7	<40	13000	<40
23...	4	500	95	<1	<24	36	<1.0	20	<30	22000	<30
JUL											
20...	3	100	116	<2	<80	1	<5.0	<2	<100	280	<100
AUG											
11...	5	100	123	<4	<80	1	<1.0	<4	<100	850	<100
SEP											
10...	3	100	60	<4	<80	5	4.3	<4	<100	<140	<100

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
DEC											
16...	<5	<.01	49	E55	<.10	<.1	<100	<800	6	6	<1
JAN											
14...	<1	<.01	54	E58	<.10	<.1	<100	<800	10	6	<1
FEB											
25...	9	<1000	44	60	<.10	<.1	<100	<400	5	4	<1
MAR											
15...	<1	<300	270	E5.3	<.10	<.1	E50	<120	2	1	<1
APR											
27...	21	<300	960	<9.0	<.10	<.1	80	<120	<1	<1	<1
MAY											
05...	13	<200	1100	<9.0	<.10	<.1	71	<120	1	1	<1
19...	<1	<400	200	15	<.10	<.1	<150	<160	2	2	<1
JUN											
08...	5	<400	260	<12	<.10	<.1	<150	<160	1	<1	<2
23...	14	<300	710	<9.0	<.10	<.1	E39	<120	<1	<1	<1
JUL											
20...	<2	<1000	31	<30	<.10	<.1	<50	<400	<1	<1	<2
AUG											
11...	<4	<1000	88	45	<.10	<.1	<250	<400	<1	<1	<4
SEP											
10...	<4	<1000	71	64	<.10	<.1	<500	<400	1	<1	<4

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
DEC										
16...	<1.0	<10	<400	--	--	--	--	--	--	--
JAN										
14...	<1.0	<10	<400	--	--	--	--	--	--	--
FEB										
25...	<1.0	<10	<200	--	--	--	--	--	--	--
MAR										
15...	<1.0	70	<60	--	--	--	--	--	--	--
APR										
27...	<1.0	130	<60	--	--	--	--	--	--	--
MAY										
05...	<1.0	120	<60	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
19...	<2.0	<120	<80	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
JUN										
08...	<2.0	E60	<80	--	--	--	--	--	--	--
23...	<1.0	90	<60	--	--	--	--	--	--	--
JUL										
20...	<2.0	<40	<200	--	--	--	--	--	--	--
AUG										
11...	<4.0	<200	<200	--	--	--	--	--	--	--
SEP										
10...	<4.0	<400	<200	--	--	--	--	--	--	--

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC										
16...	--	--	--	--	--	--	--	--	--	--
JAN										
14...	--	--	--	--	--	--	--	--	--	--
FEB										
25...	--	--	--	--	--	--	--	--	--	--
MAR										
15...	--	--	--	--	--	--	--	--	--	--
APR										
27...	--	--	--	--	--	--	--	--	--	--
MAY										
05...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
19...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
JUN										
08...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
JUL										
20...	--	--	--	--	--	--	--	--	--	--
AUG										
11...	--	--	--	--	--	--	--	--	--	--
SEP										
10...	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC										
16...	--	--	--	--	--	--	--	--	--	--
JAN										
14...	--	--	--	--	--	--	--	--	--	--
FEB										
25...	--	--	--	--	--	--	--	--	--	--
MAR										
15...	--	--	--	--	--	--	--	--	--	--
APR										
27...	--	--	--	--	--	--	--	--	--	--
MAY										
05...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
19...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN										
08...	--	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--
JUL										
20...	--	--	--	--	--	--	--	--	--	--
AUG										
11...	--	--	--	--	--	--	--	--	--	--
SEP										
10...	--	--	--	--	--	--	--	--	--	--

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	677.3	12750	8740	15990	3500	6490	2000	3650	2300
NOV.	1998	1866	5630	3830	19300	1400	7300	1000	5090	1200
DEC.	1998	519	15550	10700	14990	4400	6230	2300	3240	2700
JAN.	1999	4469	3400	2310	27840	860	10400	620	7510	710
FEB.	1999	862	7510	5110	11900	1900	4520	1300	3120	1500
MAR.	1999	4545	3740	2530	31080	910	11210	730	8900	830
APR.	1999	3292	4450	3010	26770	1100	9730	850	7580	970
MAY	1999	24110	2030	1370	88960	470	30620	420	27400	480
JUNE	1999	12782	3220	2170	75000	770	26520	640	22170	730
JULY	1999	2616	5190	3520	24830	1300	9090	980	6950	1100
AUG.	1999	580	9480	6480	10140	2500	3980	1600	2490	1800
SEPT	1999	167	17480	12070	5440	5100	2320	2400	1100	2900
TOTAL		56485.3	**	**	352300	**	128400	**	99200	**
WTD.AVG.		155	3410	2310	**	840	**	650	**	740

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21300	20700	21000	4840	1210	2180	15100	14300	14700	15800	15000	15400
2	21300	8170	15300	5810	642	3220	15200	15100	15100	15400	14600	15000
3	9260	7220	8330	6970	4420	5970	15200	14500	15000	15400	13800	14700
4	11800	8170	9900	6080	4360	5040	14900	14500	14600	15600	13900	14800
5	12500	10400	11400	7340	6080	6830	15000	14900	14900	15900	14000	14900
6	14300	12500	13300	7860	7340	7660	16800	15000	15900	16100	14300	15000
7	15400	14300	14800	8230	7850	8060	16900	16500	16700	15000	14600	14800
8	16000	15400	15800	8390	8230	8290	16800	16400	16600	14600	13400	14400
9	16000	15300	15600	9070	8390	8660	16600	16400	16500	15100	12900	14300
10	15400	15100	15300	10300	9070	9610	16500	16300	16400	15600	12900	14400
11	15500	15300	15400	11300	10300	10900	16300	16200	16300	16300	13900	15100
12	16100	15500	15700	12000	11300	11700	16500	16100	16200	16000	15000	15600
13	16800	16100	16500	12000	11900	12000	16400	15900	16200	15900	14800	15300
14	17000	16400	16800	12100	11800	11900	16400	15900	16200	17100	14400	15700
15	17500	16700	17000	12700	12100	12300	16400	15900	16100	16600	15600	16000
16	17500	16200	16900	12900	12700	12800	16200	15700	15900	16500	15700	16000
17	16600	10000	14500	13000	12800	12900	16200	15600	15900	16600	15500	16000
18	16900	13300	15700	12900	12700	12800	16000	15600	15800	16300	15400	15800
19	18000	16900	17600	13300	12800	13100	15800	15300	15600	16500	15500	15900
20	---	---	e17800	13500	13200	13300	15400	15200	15300	16200	15300	15700
21	---	---	e17500	13900	13500	13700	15500	14900	15100	16100	15400	15700
22	16800	9910	12200	14400	13900	14100	16100	15300	15700	15400	11700	14400
23	16300	13900	15100	14800	14300	14500	15600	14800	15300	14300	11300	13100
24	17800	15100	16300	15100	14800	15000	15900	14600	15300	15000	13700	14200
25	18300	17800	18000	15400	15100	15200	15800	14200	15000	14700	14000	14300
26	18500	18100	18300	15500	15400	15500	15400	13400	14700	15000	13700	14300
27	18100	17800	17900	15600	15300	15500	15200	13600	14700	15100	14200	14600
28	18000	17700	17800	15600	15200	15400	16000	14400	15200	14500	13600	14100
29	18000	17700	17900	15400	14500	15000	15800	15000	15400	13600	797	4030
30	17900	17700	17800	14500	13600	14000	16100	15000	15500	1300	691	1030
31	18600	2620	16600	---	---	---	15700	15000	15400	3840	1220	2240
MONTH	---	---	15800	15600	642	11200	16900	13400	15600	17100	691	13800

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4080	3430	3760	15100	13600	14300	10900	9610	10300	8790	6570	7830
2	5460	4080	4970	15000	13800	14300	11200	7830	10800	8230	1400	3770
3	5840	5280	5580	14900	13400	14000	9200	5260	7180	2520	1370	1660
4	6170	5780	6000	15000	13200	14100	8500	6090	7010	2890	1240	1780
5	6550	6160	6350	15200	14100	14500	9350	6670	7730	4400	2870	3740
6	6280	5960	6140	14700	13800	14100	10800	9350	10000	4480	3920	4120
7	7900	4930	6240	14100	13500	13800	11200	9870	10800	5340	4480	4900
8	5380	4440	4810	13500	4980	9660	10700	10100	10400	5520	5340	5450
9	7960	4340	5540	8420	3420	5900	11400	10600	11000	5550	5440	5490
10	10400	7960	9720	8240	4210	6010	12000	10900	11400	5560	1040	2760
11	10300	9750	9990	10500	8240	9680	11900	11000	11500	2870	1730	2410
12	10700	9640	10100	9980	1380	5050	11700	11100	11300	2640	1850	2160
13	10600	9660	10100	2000	1040	1380	12100	555	10100	3840	2640	3280
14	11000	9910	10400	3640	1060	2040	2340	792	1600	4400	3840	4200
15	11200	10200	10700	6540	3640	5210	2700	1500	2240	4390	329	3400
16	11500	10500	11000	8740	6540	7630	3760	2700	3280	1570	690	996
17	11900	10800	11400	10600	8720	9790	4530	3620	3950	2430	1110	1770
18	12300	11300	11700	10800	3960	9130	6880	4530	5560	3180	2190	2650
19	12600	11300	12000	5420	1430	2480	8660	6880	7840	6580	2640	4810
20	13000	11700	12300	2300	1510	1790	9430	8660	9040	6910	6510	6670
21	13200	11800	12500	3560	2300	2990	10100	9390	9760	7120	6410	6770
22	13000	11900	12400	5010	3560	4340	10600	10000	10300	7830	7100	7390
23	13700	11800	12700	6460	5010	5840	10700	10600	10700	8150	7770	7920
24	14200	12400	13300	7290	6460	6830	10700	10500	10600	8310	8120	8240
25	14900	13300	14100	7520	7290	7410	10600	4980	9180	8290	2770	4810
26	14700	13900	14200	7910	7480	7650	5320	3510	4400	3710	630	1360
27	14700	13600	14000	8000	3850	6970	4710	4020	4460	3370	957	1550
28	14800	13200	14000	7100	4220	6050	5640	4360	4860	1840	1140	1570
29	---	---	---	8410	4580	6290	5650	3060	4670	1760	1090	1260
30	---	---	---	8910	6880	7610	6830	2170	4240	2500	1670	2030
31	---	---	---	10700	8910	9860	---	---	---	3640	2240	2970
MONTH	14900	3430	9860	15200	1040	7960	12100	555	7870	8790	329	3860

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5060	3640	4320	---	---	e1700	12500	12300	12400	18500	17700	18000
2	6220	5060	5820	---	---	e1790	12700	11700	12400	18500	17900	18200
3	7240	6220	6740	---	---	e2250	12300	4350	6860	18300	17800	18100
4	7840	7190	7400	---	---	e2580	6210	3680	4250	18300	17600	18000
5	8470	7810	8120	---	---	e2940	8080	4360	6220	17600	15800	16400
6	8620	6150	7830	---	---	e4350	9130	6830	7850	17100	16300	16600
7	8420	7160	7770	---	---	e5900	10000	7570	8450	17400	16900	17200
8	8570	6600	7690	---	---	e6700	12200	10000	11200	18000	17200	17500
9	7000	6770	6890	---	---	e7560	13600	12200	12900	18500	17900	18100
10	6960	2620	6230	8430	3800	7010	13900	11900	13400	18600	18200	18400
11	5340	2330	3840	6860	2580	4830	13700	11700	12600	18700	17300	18000
12	3940	3330	3650	6600	4190	4670	14700	10100	13700	18300	17200	17600
13	3950	3640	3820	5410	4620	5120	14900	14500	14700	17600	16300	17000
14	4730	3640	3980	5480	5220	5330	14700	14000	14300	18100	17500	17800
15	5050	4730	4960	5330	5090	5240	14200	13900	14000	18300	17600	18000
16	5010	4880	4940	6330	5180	5350	14500	13900	14100	18400	16100	17700
17	5080	4970	5020	7620	6330	6980	14600	14100	14400	18400	16200	17000
18	5490	5080	5230	8610	7620	8050	14600	14200	14400	16200	13400	13800
19	5700	5340	5520	9240	8610	8920	14600	14100	14400	14000	13600	13900
20	6270	5440	5820	9610	9240	9400	16700	14300	15800	18000	14000	15800
21	6270	3600	4350	9940	9610	9760	16700	16100	16300	18900	17800	18400
22	3720	2110	2490	9990	5820	8030	17000	16200	16500	19100	18600	18900
23	2620	2260	2410	11100	8980	10200	16900	16100	16600	19100	17800	18300
24	2310	2000	2110	11200	9210	10200	18800	15400	16500	18300	17800	18000
25	2000	1810	1890	10300	7590	9560	17600	7400	10200	18600	18200	18300
26	1810	896	1070	10600	7590	9090	11100	7830	9550	18900	18500	18700
27	1070	785	876	11300	10600	10900	14100	11100	12800	18900	18500	18700
28	---	---	e3280	11600	11200	11300	13800	12700	13100	18900	18500	18700
29	---	---	e1400	12000	11600	11800	16800	13400	14900	18800	18400	18600
30	---	---	e1600	12200	11800	12000	17700	16700	17200	18800	18400	18500
31	---	---	---	12300	12000	12300	17800	17100	17500	---	---	---
MONTH	---	---	4570	---	---	7160	18800	3680	12900	19100	13400	17600

e Estimated

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	32.2	22.6	26.0	15.4	12.3	14.1	20.1	11.1	15.3	11.4	5.8	7.9
2	27.2	20.2	23.1	15.9	11.4	13.5	20.5	13.8	17.0	7.7	1.4	4.5
3	26.3	22.6	24.0	15.2	12.1	13.9	18.5	14.6	16.7	4.9	.1	1.9
4	29.1	22.6	25.2	14.6	11.0	12.7	20.0	12.3	15.9	6.1	.4	2.5
5	24.6	17.6	21.3	12.0	9.4	10.6	21.1	13.2	17.0	8.4	.1	3.7
6	25.5	15.6	19.7	10.6	9.0	9.7	19.4	12.4	16.8	10.7	.9	5.3
7	26.2	14.4	19.6	16.8	9.5	12.3	12.4	6.9	10.3	5.0	3.5	4.2
8	26.8	14.6	19.9	13.7	12.5	12.9	13.5	4.5	8.2	3.5	.2	2.1
9	27.2	15.2	20.0	22.5	12.7	16.9	9.7	3.5	7.2	5.3	.1	1.9
10	27.2	15.1	20.1	18.1	10.4	13.8	9.3	7.5	8.2	8.1	.1	3.2
11	28.6	15.7	21.3	18.1	9.1	12.7	8.5	6.5	7.5	11.1	.1	5.3
12	29.8	17.5	22.8	14.1	10.6	12.6	13.5	5.6	8.7	11.3	5.8	8.3
13	29.4	19.0	23.1	15.6	12.3	13.8	13.2	4.2	8.1	9.1	3.1	5.8
14	28.5	18.1	22.3	19.4	12.9	15.3	13.7	4.3	8.4	10.1	.8	5.0
15	27.7	17.8	21.6	20.6	11.1	15.4	14.1	4.8	8.9	12.2	2.6	6.9
16	23.4	19.4	20.5	20.6	12.2	15.8	14.3	5.3	9.0	12.5	4.2	8.2
17	24.6	17.9	21.2	19.5	11.3	15.5	13.2	4.6	8.4	13.9	5.7	9.2
18	23.6	13.2	17.7	22.9	14.2	18.1	11.9	7.2	9.1	12.6	4.0	8.2
19	24.0	13.3	17.8	21.0	11.6	16.4	9.5	5.8	8.0	15.1	5.9	9.7
20	---	---	---	15.8	9.9	12.7	7.1	5.3	6.3	15.1	5.7	10.3
21	---	---	---	18.4	11.3	14.1	---	---	---	14.9	8.6	11.3
22	20.4	12.1	15.7	20.2	10.9	15.1	---	---	---	9.2	4.8	6.8
23	22.2	12.3	16.2	20.6	13.1	16.2	---	---	---	12.5	2.7	7.2
24	23.4	12.5	16.9	20.4	11.6	15.6	---	---	---	16.0	5.4	10.0
25	24.5	13.2	18.2	19.5	11.8	15.5	---	---	---	13.0	6.1	9.0
26	24.7	16.7	19.9	19.1	8.9	13.8	---	---	---	15.8	4.8	10.0
27	25.3	17.6	21.0	21.4	12.1	16.5	8.1	2.2	4.8	18.3	8.9	13.2
28	27.2	19.6	22.3	22.5	15.4	18.6	8.3	1.0	4.3	12.9	6.8	10.3
29	26.6	18.5	22.4	20.5	13.4	17.7	10.2	2.4	5.8	6.8	4.0	4.6
30	26.4	20.2	22.4	20.5	12.4	15.9	11.1	2.1	6.3	4.3	3.9	4.1
31	22.3	15.4	20.5	---	---	---	9.3	3.1	6.0	5.4	3.7	4.5
MONTH	---	---	---	22.9	8.9	14.6	---	---	---	18.3	.1	6.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.3	3.6	5.4	20.6	9.7	14.8	24.0	14.9	19.4	19.2	15.5	18.0
2	10.5	4.2	7.2	18.8	10.6	13.9	27.3	17.3	21.4	20.6	16.3	18.7
3	11.9	5.2	8.4	17.9	7.8	12.2	21.1	14.5	18.0	22.9	18.8	21.0
4	12.8	5.6	9.1	18.1	7.1	12.3	20.4	12.1	16.0	22.6	19.2	21.1
5	17.8	9.0	13.3	19.3	11.4	14.5	20.7	13.4	16.8	21.6	16.8	19.1
6	15.0	11.1	13.9	15.8	9.6	12.3	23.9	11.8	17.4	22.7	15.2	18.8
7	15.4	9.0	12.1	11.2	8.3	9.7	24.2	14.1	18.9	25.2	14.6	20.0
8	14.2	9.9	12.1	16.5	9.4	12.7	24.8	18.1	20.9	28.6	12.0	22.6
9	15.6	9.7	12.3	15.3	9.5	12.3	21.7	15.4	18.2	28.9	16.9	23.5
10	20.1	9.7	14.8	19.0	10.5	14.4	24.5	13.8	18.6	22.2	18.7	20.7
11	15.8	6.6	11.9	14.6	8.9	11.1	22.1	12.3	17.2	21.6	19.6	21.0
12	12.8	4.2	8.1	9.1	7.3	8.4	20.9	13.9	17.2	24.8	17.7	21.1
13	14.1	4.9	9.2	7.3	4.2	5.4	24.1	16.0	19.5	24.4	18.5	21.6
14	15.0	5.8	9.9	9.6	2.7	6.2	19.3	14.0	17.2	28.5	19.3	23.6
15	17.0	7.2	11.8	13.9	4.7	9.2	16.3	10.9	13.3	32.2	16.3	24.6
16	16.5	8.9	12.1	16.8	8.4	12.5	17.3	10.8	13.5	28.1	19.0	23.6
17	16.8	7.7	11.8	17.2	11.3	14.0	19.3	9.1	13.7	25.2	20.6	23.2
18	15.9	8.4	11.3	14.6	9.7	11.8	22.5	10.4	16.0	28.3	17.6	22.8
19	15.6	6.3	10.5	10.0	8.4	9.3	27.1	13.5	19.6	28.8	19.3	23.4
20	16.2	7.3	11.2	12.7	7.4	10.2	28.2	16.2	21.4	27.0	19.8	22.6
21	15.9	6.7	10.7	17.9	9.6	13.7	27.1	17.2	21.4	32.9	20.2	26.0
22	12.9	6.4	9.0	21.6	12.2	16.8	31.5	18.4	23.8	32.9	23.4	27.2
23	16.3	5.1	10.3	18.9	12.2	15.3	22.0	13.4	18.4	31.4	21.4	25.6
24	18.4	7.0	12.8	13.5	10.2	11.8	13.9	12.3	13.1	26.9	21.7	23.8
25	22.2	11.6	16.5	18.9	8.5	13.5	19.0	13.0	15.6	28.3	19.1	23.9
26	20.5	14.6	16.9	20.3	10.2	14.9	22.4	15.3	18.6	23.8	17.9	20.5
27	18.6	10.7	14.2	14.6	11.6	13.1	25.3	15.8	20.5	22.1	19.6	20.4
28	18.7	8.1	13.1	13.8	11.1	12.6	29.0	18.1	22.8	21.4	19.2	20.3
29	---	---	---	16.0	12.3	14.0	21.1	17.1	18.9	23.0	20.2	21.2
30	---	---	---	16.9	13.5	15.0	20.6	11.8	18.5	26.2	21.9	24.1
31	---	---	---	23.4	13.6	17.9	---	---	---	30.1	25.4	27.4
MONTH	22.2	3.6	11.4	23.4	2.7	12.4	31.5	9.1	18.2	32.9	12.0	22.3

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.4	24.6	27.5	---	---	---	34.0	22.1	26.8	33.6	20.7	25.6
2	32.0	25.8	28.6	---	---	---	34.3	23.4	27.4	33.9	21.4	26.1
3	29.5	25.2	26.9	---	---	---	32.0	23.1	27.2	34.9	22.4	27.0
4	30.2	23.9	26.6	---	---	---	30.2	24.9	26.6	34.0	22.4	27.1
5	27.2	23.6	25.2	---	---	---	28.0	23.6	25.4	33.2	23.5	27.1
6	27.8	22.5	25.1	---	---	---	33.4	22.8	27.0	35.0	23.7	28.0
7	29.9	23.5	26.4	---	---	---	33.5	22.1	27.1	34.3	24.0	28.2
8	31.9	23.8	27.4	---	---	---	37.1	22.7	27.8	33.0	23.0	26.7
9	31.7	24.0	27.3	---	---	---	36.2	23.7	28.9	34.3	21.4	26.7
10	30.1	21.2	25.7	27.2	23.4	25.3	35.9	24.0	28.8	32.9	22.6	26.9
11	28.1	20.3	24.1	26.4	21.3	23.9	33.7	22.8	27.1	35.9	23.6	28.5
12	26.1	22.8	24.6	29.4	22.6	25.8	33.2	21.8	26.9	31.7	21.5	26.4
13	27.4	23.5	25.1	31.9	22.9	27.2	33.8	23.2	27.5	31.7	20.4	24.6
14	27.6	22.2	24.7	31.3	24.0	27.0	32.3	20.2	25.1	32.5	19.0	24.9
15	29.9	21.8	25.7	31.4	22.4	26.1	33.9	21.1	25.9	25.9	20.2	22.4
16	30.1	22.6	25.7	28.7	21.2	24.4	35.1	20.4	25.6	27.4	20.4	23.0
17	26.6	20.1	22.9	31.4	21.3	25.9	35.9	21.8	27.7	31.8	19.6	25.2
18	29.5	20.6	24.8	31.9	22.8	26.7	36.3	22.4	28.6	31.7	21.3	25.5
19	31.1	21.9	26.3	33.0	22.9	27.3	35.1	23.9	28.3	32.7	20.1	25.6
20	27.0	23.6	24.9	32.5	23.0	26.8	28.9	17.9	22.5	28.9	18.2	23.1
21	25.1	22.5	24.0	32.0	23.1	26.4	31.9	18.1	23.3	27.9	15.1	20.5
22	25.7	22.1	24.0	31.9	22.6	26.7	31.6	18.7	23.6	30.5	13.6	20.8
23	29.2	23.9	26.4	32.6	22.7	27.2	31.6	20.1	24.6	29.9	15.2	21.7
24	31.6	25.3	28.0	34.2	20.0	27.1	34.7	21.5	26.2	28.2	17.6	21.8
25	33.1	23.8	28.1	33.7	22.7	27.2	34.6	21.5	26.9	33.0	18.3	24.7
26	28.0	23.1	25.8	33.8	22.4	27.3	34.3	21.5	26.8	33.3	20.1	25.6
27	30.5	26.2	28.4	35.3	23.0	28.0	35.8	21.7	26.1	30.9	19.9	24.5
28	---	---	---	34.1	23.6	27.8	35.5	21.1	26.9	20.0	15.1	18.1
29	---	---	---	33.8	22.6	27.4	35.7	22.6	27.4	27.5	11.4	18.1
30	---	---	---	33.7	22.3	27.0	33.5	21.5	26.2	27.9	12.1	18.8
31	---	---	---	34.2	21.9	26.4	33.4	21.9	26.1	---	---	---
MONTH	---	---	---	---	---	---	37.1	17.9	26.5	35.9	11.4	24.4

07312000 LAKE KEMP NEAR MABELLE, TX

LOCATION.--Lat 33°45'30", long 99°09'03", Baylor County, Hydrologic Unit 11130206, in outlet gate tower near center of dam on Wichita River, 6.2 mi north of Mabelle, 13 mi northeast of Seymour, and 126.7 mi upstream from mouth.

DRAINAGE AREA.--2,086 mi^2.

PERIOD OF RECORD.--Oct 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Oct 1, 1972, nonrecording gage at different site and at datum 2.40 ft higher. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 8,890 ft long. The original dam was completed Aug 25, 1923, but deliberate impoundment had begun Oct 1, 1922. Enlargement of the dam was completed in Nov 1973. The 3,000-foot-wide uncontrolled spillway is located approximately 600 ft to right and slightly upstream from right end of dam. The controlled outlet works near center of dam consist of two hydraulically operated slide gates 5 ft 8-in by 13 ft with a 13-foot-diameter conduit and spillway basin. The dam and lake are owned by the city of Wichita Falls and the Wichita County Water Improvement District No. 2. Water is used for irrigation in the Wichita River Valley, oil field operation, municipal, and industrial uses. The capacity table is based on a resurvey made in 1973. Figures given herein represents total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,183.0
Crest of spillway	1,160.0
Top of flood-control pool	1,156.0
Top of conservation pool	1,144.0
Lowest gated outlet (invert)	1,090.0

COOPERATION.--Capacity table No. 4-C was provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 420,900 acre-ft, Jun 30, 1941 (elevation, 1,152.0 ft), present datum; minimum since first appreciable storage, 26,160 acre-ft, Jun 30, 1953 (elevation, 1,108.0 ft), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 244,900 acre-ft, Jun 29 (elevation, 1,142.46 ft); minimum contents, 143,500 acre-ft, Jan 28 (elevation, 1,133.30 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

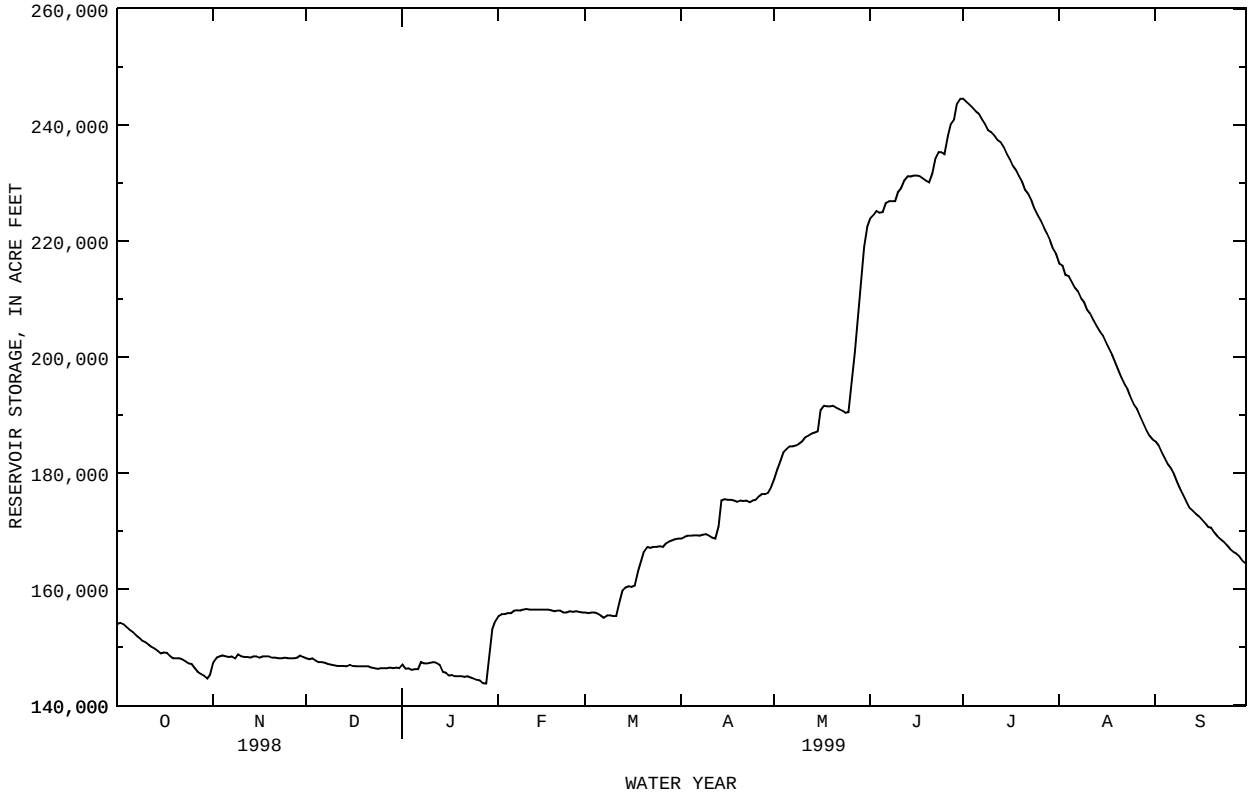
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154000	147400	148100	147000	155400	156000	168700	179000	223900	244500	216100	185500
2	154200	148200	147900	146300	155700	155900	169000	180700	224500	244000	215800	184800
3	154000	148400	148100	146400	155700	156000	169200	182000	225200	243500	214200	183700
4	153500	148600	147700	146100	155900	156000	169200	183600	224900	243000	214000	182600
5	153000	148400	147400	146200	155900	155800	169300	184200	225000	242400	212900	181500
6	152600	148300	147400	146200	156300	155500	169300	184600	226600	242000	212000	180800
7	152100	148400	147300	147400	156400	155100	169200	e184600	226900	241000	211300	179900
8	151700	148100	147100	147200	156300	155500	169400	e184800	226900	240200	210100	178500
9	151200	148800	147000	147200	156500	155500	169500	e185100	226900	239100	209400	177200
10	150900	148400	146900	147300	156600	155400	169200	e185500	228500	238800	208100	176200
11	150500	148300	146800	147400	156500	155400	168900	e186200	229200	238200	207400	175100
12	150100	148300	146800	147300	156500	157700	168700	186500	230500	237500	206400	174100
13	149800	148200	146800	147000	156500	159800	170800	186800	231200	237100	205400	173500
14	149400	148400	146700	145800	156500	160300	175300	187000	231100	236200	204500	173000
15	148900	148400	147000	145600	156500	160500	175500	187200	231300	235100	203700	172600
16	149100	148200	146800	145100	156500	160400	175400	190900	231300	234100	202600	172000
17	149000	148400	146700	145200	156500	160600	175400	191600	231200	233000	201500	171400
18	148500	148400	146700	145000	156400	163000	175300	191500	230800	232200	200400	170700
19	148100	148400	146700	145000	156200	164800	175100	191500	230400	231200	199200	170600
20	148100	148200	146700	145000	156300	166500	175300	191600	230100	230200	197800	169800
21	148100	148200	146700	144900	156300	167300	175200	191300	231600	228800	196600	169100
22	147900	148100	146500	145000	156000	167100	175300	191000	234300	228100	195300	168600
23	147600	148100	146400	144800	156000	167300	175000	190800	235300	227000	194500	168200
24	147200	148200	146300	144600	156200	167300	175300	190400	235300	225600	193000	167600
25	147100	148100	146400	144400	156100	167400	175400	190500	235000	224500	191900	167000
26	146400	148100	146400	144300	156200	167300	176000	195700	238200	223500	191100	166500
27	145700	148100	146400	143800	156100	167900	176400	200800	240200	222300	189800	166200
28	145400	148200	146500	143700	156000	168200	176400	206600	241000	221300	188700	165700
29	145100	148600	146400	147800	---	168400	176600	212600	243700	220100	187500	165000
30	144600	148300	146500	153100	---	168600	177700	219000	244500	218700	186500	164500
31	145300	---	146400	154500	---	168700	---	222500	---	217800	185800	---
MAX	154200	148800	148100	154500	156600	168700	177700	222500	244500	244500	216100	185500
MIN	144600	147400	146300	143700	155400	155100	168700	179000	223900	217800	185800	164500
(+)	1133.53	1133.92	1133.68	1134.68	1134.86	1136.26	1137.16	1140.87	1142.43	1140.52	1137.92	1135.81
(@)	-9400	+3000	-1900	+8100	+1500	+12700	+9000	+44800	+22000	-26700	-32000	-21300

CAL YR 1998 MAX 294700 MIN 144600 (@) -102800
WTR YR 1999 MAX 244500 MIN 143700 (@) +9800

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07312000 LAKE KEMP NEAR MABELLE, TX--Continued



07312100 WICHITA RIVER NEAR MABELLE, TX

LOCATION.--Lat 33°45'36", long 99°08'33", Baylor County, Hydrologic Unit 11130206, near left bank at downstream side of bridge on U.S. Highways 183 and 283, 0.3 mi downstream from Lake Kemp Dam, 6.2 mi north of Mabelle, and 13 mi northeast of Seymour.

DRAINAGE AREA.--2,086 mi^2, all of which is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-58 (occasional discharge measurements), Oct 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,062.72 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Oct 1959, at least 10% of contributing drainage area has been regulated by Lake Kemp (station 07312000, capacity 603,000 acre-ft). Water is released from Lake Kemp to supply Lake Diversion, 12.5 mi downstream. Water from Lake Diversion is released for mining, recreation, and for irrigation in the vicinity of Wichita Falls.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	241	76	114	.68	.62	.52	.92	.77	.91	e154	338	1.2
2	243	.57	113	.71	.58	.61	.89	.89	.80	e154	336	125
3	243	.51	113	.69	.57	.52	.93	.75	.72	e154	337	337
4	245	.48	112	.64	.58	.48	.92	.70	.70	e154	338	336
5	182	.45	113	.58	.56	.52	.88	.73	.66	e154	338	338
6	120	.40	113	.61	.57	69	.91	.76	1.0	e230	339	337
7	120	.39	46	.64	.58	115	.96	.76	.75	e297	339	336
8	121	.38	.49	.66	.56	114	.97	.74	.70	e297	339	338
9	122	.39	.42	.64	.57	114	.96	.76	.71	e297	338	340
10	121	.39	.41	.64	.53	113	.98	.80	3.3	e297	257	341
11	121	.37	.38	.61	.55	115	.99	.81	1.0	e297	208	341
12	121	.41	.37	.58	.53	54	.96	.81	.84	e297	210	341
13	120	.42	.35	77	.56	1.4	2.1	.76	.84	e297	e210	211
14	120	.42	.34	117	.55	1.0	11	.78	.83	e297	e210	127
15	120	.42	.34	117	.55	.90	1.2	.80	.76	e297	e210	127
16	120	.42	.34	77	.58	.89	1.0	.79	.81	e297	e299	127
17	120	.42	.33	46	.55	.92	1.0	.81	.83	e297	e343	126
18	121	.42	.34	46	.55	9.2	.97	.84	151	e297	e338	124
19	120	.47	.38	46	.53	2.0	.97	.78	260	e320	e338	122
20	80	.47	.37	46	.58	1.0	.94	.76	260	e327	e338	123
21	.90	.47	.40	45	.57	.93	.74	35	261	e329	339	123
22	.72	.45	.37	47	.52	.90	.75	124	249	e329	407	121
23	73	.47	.37	45	.52	.98	.83	124	e154	e331	415	120
24	120	.47	.37	66	.51	.93	.84	126	e154	e331	336	120
25	120	.47	.40	115	.50	.94	.86	127	e154	e334	336	119
26	241	.47	.38	115	.47	.92	.83	141	e154	e334	336	119
27	341	.47	.35	115	.52	1.1	.80	129	e154	e336	336	120
28	113	.50	.34	116	.48	1.1	.79	129	e154	e338	336	120
29	65	.60	.35	63	---	1.0	.82	130	e154	e340	336	120
30	214	44	1.6	1.6	---	.94	.76	131	e154	e340	337	120
31	216	---	.70	.69	---	.91	---	46	---	338	131	---
TOTAL	4425.62	132.57	734.49	1308.97	15.34	724.61	38.47	1257.60	2429.16	8891	9648	5800.2
MEAN	143	4.42	23.7	42.2	.55	23.4	1.28	40.6	81.0	287	311	193
MAX	341	76	114	117	.62	115	11	141	261	340	415	341
MIN	.72	.37	.33	.58	.47	.48	.74	.70	.66	154	131	1.2
AC-FT	8780	263	1460	2600	30	1440	76	2490	4820	17640	19140	11500

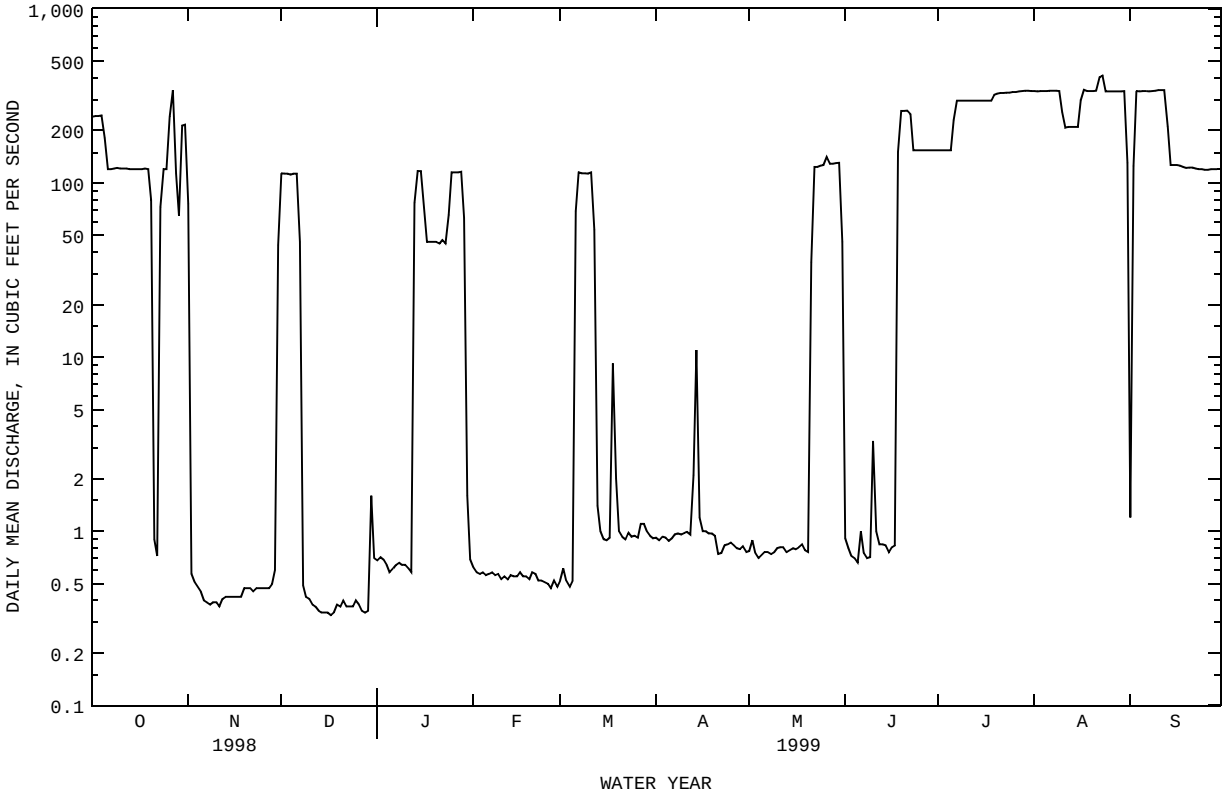
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

MEAN	134	102	40.6	61.3	67.3	143	166	172	302	317	284	177
MAX	952	1271	247	648	769	659	659	1246	1810	923	1742	915
(WY)	1987	1987	1987	1992	1992	1968	1968	1990	1992	1967	1995	1986
MIN	.66	.39	.24	.60	.51	.50	.89	6.53	2.59	140	30.9	1.66
(WY)	1985	1974	1997	1979	1979	1989	1981	1977	1989	1975	1978	1974

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	65979.90		35406.03			
ANNUAL MEAN	181		97.0		164	
HIGHEST ANNUAL MEAN					522	1987
LOWEST ANNUAL MEAN					59.9	1981
HIGHEST DAILY MEAN	1700	Feb 21	415	Aug 23	3530	Jun 24 1992
LOWEST DAILY MEAN	.33	Dec 17	.33	Dec 17	.09	May 8 1989
ANNUAL SEVEN-DAY MINIMUM	.34	Dec 12	.34	Dec 12	.14	May 7 1989
INSTANTANEOUS PEAK FLOW			473	Aug 22	4290	Mar 24 1976
INSTANTANEOUS PEAK STAGE			3.57	Aug 22	10.47	Mar 24 1976
ANNUAL RUNOFF (AC-FT)	130900		70230		119100	
10 PERCENT EXCEEDS	352		336		399	
50 PERCENT EXCEEDS	125		1.6		13	
90 PERCENT EXCEEDS	.46		.46		.70	

e Estimated

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued



07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Dec 1965 to May 1993, Oct 1994 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jul 1968 to May 1993(local observer), Oct 1994 to current year.
WATER TEMPERATURE: Jul 1968 to May 1993(local observer), Oct 1994 to current year.

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

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1990 to 1999. The standard error of estimate for dissolved solids is 3%, chloride is 4%, sulfate is 12% and for hardness is 5%. 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 daily, 7,110 microsiemens, May 13, 14, 1980; minimum daily, 561 microsiemens, May 28, 1975.
WATER TEMPERATURE: Maximum, 34.8°C, Jun 2, 1999; minimum daily, 0.0°C, Dec 20, 1973, Feb 9, 17, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 5,730 microsiemens, Mar 2; minimum, 1,060 microsiemens, Jan 29.
WATER TEMPERATURE: Maximum, 34.8°C, Jun 2; minimum, 0.7°C, Dec 22.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC											
16...	1130	.34	4990	8.2	12.5	14.0	136	1000	840	270	85
JAN											
14...	1340	177	5700	8.1	5.5	13.5	111	1100	980	280	88
FEB											
25...	1430	.50	5370	8.0	20.5	13.6	159	990	870	260	85
MAR											
15...	1100	.90	4960	7.5	13.5	11.8	118	1000	850	270	85
APR											
19...	1545	.97	5370	8.0	24.5	7.6	96	1100	940	280	89
MAY											
19...	1610	.78	5250	7.4	29.0	9.2	125	1000	810	260	82
JUN											
09...	1300	.71	5170	7.7	31.0	8.5	121	970	800	260	80
23...	1300	154	4820	8.2	25.5	19.6	253	930	840	250	71
JUL											
21...	1315	329	4720	8.1	27.0	5.3	70	860	780	240	67
AUG											
04...	1500	338	4820	7.9	28.5	9.5	128	900	820	240	71
09...	1300	338	4670	8.3	29.0	7.5	103	890	810	240	71
SEP											
09...	1145	340	4930	8.1	27.0	--	--	940	850	250	75

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
DEC											
16...	799	11	7.3	190	730	1200	.28	11	3210	11	--
JAN											
14...	794	11	8.8	92	950	1300	.33	7.9	3470	8	.046
FEB											
25...	788	11	7.5	120	840	1300	.34	12	3320	32	--
MAR											
15...	784	11	6.2	170	740	1200	.35	9.3	3170	44	--
APR											
19...	828	11	7.6	120	870	1200	.40	5.7	3370	62	--
MAY											
19...	795	11	6.0	180	750	1200	.37	13	3180	39	--
JUN											
09...	754	11	6.2	180	740	1100	.36	12	3100	202	--
23...	687	10	8.1	84	810	1100	.34	7.5	2960	12	.040
JUL											
21...	653	10	8.2	84	780	1100	.35	9.5	2860	2	--
AUG											
04...	685	10	8.0	82	790	1000	.30	7.5	2900	7	--
09...	698	10	8.4	80	810	1100	.31	7.0	2940	8	--
SEP											
09...	705	10	8.3	90	840	1100	.36	8.6	3060	4	--

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)
DEC											
16...	<.010	.051	.280	.48	.15	.43	<.050	<.050	.010	.03	5
JAN											
14...	.011	.057	.087	.51	.36	.45	<.050	<.050	.011	.03	4
FEB											
25...	<.010	<.050	.101	--	.42	.52	E.039	<.050	<.010	--	5
MAR											
15...	<.010	.070	.221	.54	.25	.47	<.050	<.050	<.010	--	3
APR											
19...	<.010	.073	.071	.66	.52	.59	.057	<.050	.012	.04	5
MAY											
19...	<.010	<.050	.273	--	.32	.59	E.031	<.050	.011	.03	6
JUN											
09...	<.010	<.050	.139	--	.53	.67	.113	<.050	.011	.03	9
23...	.010	.050	.035	.42	.34	.37	E.030	<.050	.015	.05	2
JUL											
21...	<.010	<.050	<.020	--	--	.40	E.042	<.050	<.010	--	3
AUG											
04...	<.010	<.050	<.020	--	--	.41	E.031	<.050	<.010	--	3
09...	<.010	<.050	<.020	--	--	.36	<.050	<.050	<.010	--	3
SEP											
09...	<.010	<.050	.025	--	.34	.36	<.050	<.050	<.010	--	3

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
DEC											
16...	5	<100	20	<1	<8.0	<1	<1.0	<1	<10	340	22
JAN											
14...	3	<100	125	<1	<40	<1	<1.0	1	<50	80	<50
FEB											
25...	3	<100	73	<1	<24	1	1.1	2	<30	170	E15
MAR											
15...	3	41	42	<1	<24	2	<1.0	1	<30	590	<30
APR											
19...	3	100	70	<1	<24	1	<1.0	3	<30	830	<30
MAY											
19...	3	100	26	<1	<24	<1	<1.0	1	<30	2300	31
JUN											
09...	4	100	29	<2	<24	2	<1.0	4	<30	2600	E19
23...	2	100	120	1	<24	1	<1.0	2	<30	50	<30
JUL											
21...	2	100	121	<1	<24	<1	<5.0	<1	<30	50	<30
AUG											
04...	4	100	126	<1	<24	<1	<1.0	1	<30	40	<30
09...	4	100	126	<1	<24	<1	<1.0	2	<30	20	<30
SEP											
09...	4	100	122	<1	<24	<1	<1.0	1	<30	30	<30

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
DEC											
16...	<1	<100	210	272	<.10	<.1	<100	<40	1	2	<1
JAN											
14...	<1	<500	21	<15	<.10	<.1	<100	<200	2	<1	<1
FEB											
25...	<1	<300	100	96	<.10	<.1	<100	<120	<1	<1	<1
MAR											
15...	<1	<300	270	244	<.10	<.1	<50	<120	<1	<1	<1
APR											
19...	<1	<300	220	66	<.10	.1	<150	<120	1	<1	<1
MAY											
19...	<1	<300	780	44	<.10	<.1	<150	<120	<1	<1	<1
JUN											
09...	<2	<300	550	10	<.10	<.1	<150	<120	2	<1	<2
23...	<1	<300	20	E4.8	<.10	<.1	<50	<120	<1	1	<1
JUL											
21...	<1	<300	28	<9.0	<.10	<.1	<50	<120	<1	<1	<1
AUG											
04...	<1	<300	26	<9.0	<.10	<.1	<50	<120	<1	1	<1
09...	<1	<300	18	<9.0	<.10	<.1	<50	<120	<1	<1	<1
SEP											
09...	<1	<300	49	E4.2	<.10	<.1	<39	<120	<1	<1	<1

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
DEC										
16...	<1.0	<10	<20	--	--	--	--	--	--	--
JAN										
14...	<1.0	<10	<100	--	--	--	--	--	--	--
FEB										
25...	<1.0	<10	E26	--	--	--	--	--	--	--
MAR										
15...	<1.0	<40	<60	--	--	--	--	--	--	--
APR										
19...	<2.0	70	<60	--	--	--	--	--	--	--
MAY										
19...	<2.0	<120	<60	--	--	--	--	--	--	--
JUN										
09...	<2.0	<120	<60	<.040	<.100	<1.00	<.100	<.100	<.100	<.100
23...	<1.0	<40	<60	--	--	--	--	--	--	--
JUL										
21...	<1.0	<40	<60	--	--	--	--	--	--	--
AUG										
04...	<1.0	<40	<60	--	--	--	--	--	--	--
09...	<1.0	<40	<60	--	--	--	--	--	--	--
SEP										
09...	<1.0	<30	<60	--	--	--	--	--	--	--

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOX-APHENE, TOTAL (UG/L) (39400)
DEC										
16...	--	--	--	--	--	--	--	--	--	--
JAN										
14...	--	--	--	--	--	--	--	--	--	--
FEB										
25...	--	--	--	--	--	--	--	--	--	--
MAR										
15...	--	--	--	--	--	--	--	--	--	--
APR										
19...	--	--	--	--	--	--	--	--	--	--
MAY										
19...	--	--	--	--	--	--	--	--	--	--
JUN										
09...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	<2.00
23...	--	--	--	--	--	--	--	--	--	--
JUL										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
04...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
SEP										
09...	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
DEC										
16...	--	--	--	--	--	--	--	--	--	--
JAN										
14...	--	--	--	--	--	--	--	--	--	--
FEB										
25...	--	--	--	--	--	--	--	--	--	--
MAR										
15...	--	--	--	--	--	--	--	--	--	--
APR										
19...	--	--	--	--	--	--	--	--	--	--
MAY										
19...	--	--	--	--	--	--	--	--	--	--
JUN										
09...	<.100	<.030	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
23...	--	--	--	--	--	--	--	--	--	--
JUL										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
04...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
SEP										
09...	--	--	--	--	--	--	--	--	--	--

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1998 TO SEPTEMBER 1999

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1998	4425.62	5050	3120	37240	1100	13620	800	9580	960
NOV.	1998	132.57	4690	2880	1030	1000	373	760	273	900
DEC.	1998	734.49	5250	3240	6430	1200	2370	820	1630	1000
JAN.	1999	1308.97	5530	3430	12120	1300	4510	850	3000	1000
FEB.	1999	15.34	5320	3290	136	1200	50.3	830	34.3	1000
MAR.	1999	724.61	5310	3290	6430	1200	2380	830	1620	1000
APR.	1999	38.47	4590	2830	294	1000	107	740	76.5	880
MAY	1999	1257.6	5110	3160	10710	1200	3930	810	2740	970
JUNE	1999	2429.16	4850	2990	19580	1100	7120	780	5110	930
JULY	1999	8891	4690	2880	69120	1000	24970	760	18280	900
AUG.	1999	9648	4570	2800	72970	1000	26270	750	19450	880
SEPT	1999	5800.2	4940	3040	47650	1100	17370	790	12360	940
TOTAL		35406.03	**	**	283700	**	103100	**	74160	**
WTD.AVG.		97	4820	2970	**	1100	**	780	**	920

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	5020	4970	5000	4770	4300	4550	5270	5220	5240	5510	5360	5440
2	5030	4850	4980	4900	4570	4760	5340	5230	5270	5520	5350	5440
3	5010	4980	5000	4980	4850	4910	5330	5210	5270	5530	5360	5440
4	5020	4970	5000	4990	4870	4920	5300	5240	5260	5530	5400	5460
5	5090	5000	5050	5020	4890	4940	5290	5220	5250	5520	5390	5470
6	5120	5060	5100	5090	4910	4970	5300	5230	5250	5530	5430	5490
7	5140	5100	5120	5030	4800	4930	5270	5090	5190	5580	5420	5490
8	5140	5100	5130	5100	4970	5030	5170	5010	5090	5550	5400	5480
9	5180	5120	5140	5030	3560	4560	5150	5030	5090	5570	5420	5500
10	5190	5130	5160	4690	4000	4490	5110	4970	5020	5540	5430	5480
11	5170	5100	5140	4790	4680	4740	5010	4950	4980	5600	5440	5530
12	5140	5110	5130	4880	4750	4810	5060	4930	5000	5640	5520	5580
13	5140	5130	5130	4970	4830	4910	5130	4950	5030	5700	5560	5650
14	5160	5140	5140	4980	4810	4920	5090	4970	5030	5710	5620	5680
15	5160	5140	5150	5030	4780	4930	5110	4940	5040	5700	5670	5690
16	5160	5130	5140	5010	4820	4900	5080	4940	5010	5690	5670	5680
17	5140	5050	5120	5050	4880	4970	5070	4960	5020	5690	5660	5670
18	5150	5090	5110	5050	4790	4950	5070	4960	5000	5680	5650	5660
19	5180	5150	5160	5110	4890	4990	5120	5000	5050	5670	5640	5650
20	5160	5020	5120	5090	4960	5020	5100	5010	5040	5660	5630	5640
21	5300	5100	5230	5060	4880	4980	5080	4980	5010	5640	5610	5620
22	5330	5210	5280	5030	4890	4980	5110	4950	5010	5620	5590	5610
23	5380	5250	5290	5020	4910	4970	5120	5010	5050	5620	5600	5610
24	5260	5210	5240	5030	4830	4940	5190	5040	5100	5610	5570	5600
25	5240	5200	5220	5020	4930	4970	5190	5090	5140	5620	5600	5610
26	5210	5070	5160	5070	4880	4990	5270	5120	5190	5620	5580	5600
27	5080	4890	4980	5050	4840	4960	5230	5100	5140	5600	5570	5590
28	4920	4540	4710	5070	4870	4970	5190	5050	5100	5590	5570	5580
29	4910	4650	4760	5060	4010	4800	5170	5090	5120	5580	1060	3670
30	4980	4730	4880	5290	4300	4870	5520	5090	5280	3910	2230	3140
31	4890	4720	4830	---	---	---	5500	5380	5440	4730	3830	4390
MONTH	5380	4540	5080	5290	3560	4890	5520	4930	5120	5710	1060	5390

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5050	4730	4930	5530	5310	5410	5460	5320	5380	5250	5070	5170
2	5210	5020	5110	5730	5330	5400	5440	5280	5370	5140	4600	4890
3	5300	5040	5170	5470	5320	5380	5470	5250	5370	5090	5010	5060
4	5300	5140	5200	5460	5310	5390	5470	5390	5430	5350	5050	5210
5	5290	5040	5170	5470	5290	5390	5570	5400	5510	5330	5150	5240
6	5250	4990	5150	5550	5360	5450	5580	5450	5510	5250	5160	5210
7	5250	5090	5150	5490	5440	5470	5600	5440	5500	5280	5140	5210
8	5300	5160	5210	5500	5410	5450	5560	5390	5490	5270	5150	5190
9	5310	5130	5230	5500	5440	5460	5590	5440	5520	5220	5070	5130
10	5310	5110	5230	5470	5390	5430	5610	5440	5530	5160	5050	5090
11	5350	5210	5290	5440	5400	5420	5620	5480	5550	5170	5030	5090
12	5440	5270	5350	5430	2280	4220	5590	5480	5550	5080	5000	5050
13	5460	5230	5350	4660	3600	4320	5570	2980	5410	5100	5010	5070
14	5410	5230	5350	4910	4650	4820	3940	1890	2810	5120	5040	5080
15	5430	5280	5360	5180	4890	5030	4660	3940	4280	5220	5060	5140
16	5450	5290	5370	5280	5180	5230	5110	4340	4840	5170	4900	5130
17	5470	5320	5370	5300	5190	5260	5340	5100	5230	5260	4960	5190
18	5490	5370	5420	5260	1110	3490	5420	5290	5360	5280	5180	5230
19	5510	5370	5440	3890	2430	3300	5400	5260	5340	5290	5150	5230
20	5480	5380	5440	4530	3580	4220	5450	5270	5370	5280	5180	5230
21	5570	5360	5460	4800	4320	4610	5390	5210	5290	5310	5120	5260
22	5600	5410	5500	5130	4730	4990	5350	5210	5260	5310	5180	5250
23	5550	5440	5490	5240	5100	5170	5290	5170	5240	5230	5120	5200
24	5610	5230	5500	5310	5180	5240	5250	5160	5190	5190	5070	5150
25	5560	5360	5450	5370	5230	5290	5280	5020	5180	5140	5090	5110
26	5650	5370	5480	5350	5240	5300	5350	5200	5270	5120	4730	5050
27	5660	5410	5520	5400	4570	5150	5350	5240	5300	5100	5040	5070
28	5500	5350	5440	5140	4820	5090	5340	5170	5240	5060	5020	5030
29	---	---	---	5250	5130	5200	5240	5170	5200	5080	5020	5050
30	---	---	---	5360	5250	5320	5240	5150	5210	5140	4950	5080
31	---	---	---	5460	5310	5360	---	---	---	5190	5100	5150
MONTH	5660	4730	5330	5730	1110	5040	5620	1890	5220	5350	4600	5140

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5200	5140	5170	4620	4580	4600	4790	4770	4780	5200	4040	4160
2	5260	5070	5170	4590	4560	4570	4810	4780	4790	5160	4010	4560
3	5220	5070	5140	4580	4540	4560	4840	4800	4820	5180	5150	5160
4	5220	5070	5140	4570	4490	4540	4840	4820	4830	5200	5160	5190
5	5200	5090	5150	4550	4520	4530	4820	4790	4800	5220	5200	5210
6	5230	3680	4580	4780	4540	4650	4800	4760	4780	5220	4970	5110
7	5140	4520	4970	4770	4720	4740	4770	4700	4740	5020	4350	4760
8	5180	5090	5150	4730	4650	4700	4720	4660	4690	5100	4550	4880
9	5210	5100	5160	4730	4680	4700	4670	4610	4640	5050	4890	4960
10	5240	1620	4050	4730	4690	4720	4630	4600	4620	4940	4910	4910
11	5190	2600	4620	4720	4620	4690	4650	4600	4630	4920	4880	4900
12	5300	5140	5240	4690	4650	4670	---	---	e4620	4900	4870	4890
13	5390	5280	5330	4670	4480	4630	---	---	e4630	4900	4860	4880
14	5490	5340	5400	4670	4530	4620	---	---	e4650	4890	4850	4880
15	5520	5400	5470	4700	4460	4610	---	---	e4680	4900	4860	4880
16	5520	5420	5490	4750	4530	4630	---	---	e4700	4890	4840	4870
17	5630	5500	5540	4740	4650	4710	---	---	e4730	4880	4840	4870
18	5660	5230	5420	4740	4610	4700	---	---	e4840	4880	4820	4860
19	5250	5040	5150	4760	4460	4670	---	---	e4860	4870	4820	4840
20	5130	4840	4990	4790	4740	4760	---	---	e4870	4850	4800	4830
21	4910	4780	4850	4780	4660	4730	4700	3900	4300	4860	4810	4840
22	4810	4700	4770	4780	4510	4730	4740	3790	4270	4860	4810	4840
23	4820	4790	4810	4770	4560	4690	4780	4080	4530	4880	4830	4860
24	4820	4760	4790	4750	4470	4690	4400	3920	4120	4900	4870	4890
25	4780	4740	4760	4770	4520	4720	4550	3980	4250	4900	4870	4890
26	4750	4700	4720	4780	4590	4740	4630	4030	4420	4890	4860	4880
27	4700	4660	4690	4750	4490	4670	4720	3570	4320	4920	4880	4900
28	4690	4630	4660	4790	4490	4710	4690	3620	3990	4940	4920	4930
29	4660	4550	4620	4810	4600	4770	4710	3690	4150	4960	4910	4940
30	4610	4580	4590	4810	4500	4740	4790	3910	4320	4950	4930	4940
31	---	---	---	4770	4740	4760	4660	3940	4130	---	---	---
MONTH	5660	1620	4990	4810	4460	4680	---	---	4560	5220	4010	4880

e Estimated

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	26.7	25.8	26.2	19.3	13.2	17.3	15.6	14.7	15.2	11.4	8.1	9.5
2	25.8	24.8	25.1	20.9	12.8	15.8	15.9	15.2	15.4	9.3	4.9	6.9
3	25.1	24.7	24.9	18.0	13.8	15.7	15.7	15.4	15.5	7.4	1.9	4.2
4	25.4	24.6	25.0	16.8	13.1	14.4	16.0	15.2	15.6	8.8	2.4	5.1
5	24.9	23.9	24.5	13.8	11.9	12.7	16.2	15.4	15.9	9.5	2.8	6.1
6	24.3	23.6	23.9	12.5	11.3	11.9	16.5	15.8	16.1	11.5	5.1	7.9
7	23.8	23.1	23.4	18.2	11.6	13.7	15.8	11.8	14.6	8.4	6.3	7.3
8	23.8	22.9	23.3	14.9	13.6	14.1	17.8	9.4	12.4	6.9	3.2	5.2
9	23.5	22.8	23.2	21.8	13.9	17.0	13.0	8.8	11.0	7.7	1.8	4.1
10	23.3	22.3	22.8	19.5	11.6	14.6	12.1	11.1	11.7	10.5	3.3	5.9
11	23.0	22.0	22.6	18.0	10.2	13.2	12.5	10.9	11.5	11.9	4.4	7.6
12	22.7	22.2	22.4	14.8	11.8	13.3	17.7	10.4	12.9	12.4	8.2	9.8
13	22.8	22.1	22.5	15.4	13.3	14.3	17.5	9.2	12.4	9.6	5.2	6.3
14	22.7	22.0	22.4	18.2	14.0	15.5	17.3	9.8	12.9	5.6	5.0	5.2
15	22.5	21.8	22.0	21.2	12.5	15.6	18.9	9.8	13.2	6.0	5.0	5.4
16	21.9	21.6	21.7	20.3	12.7	15.8	18.6	10.0	13.1	6.2	5.2	5.5
17	21.9	21.5	21.7	19.0	12.7	15.4	17.5	10.2	13.0	6.5	5.2	5.7
18	21.6	21.0	21.3	22.6	14.6	17.4	14.7	11.4	12.6	6.3	5.0	5.6
19	21.3	20.7	21.0	20.7	13.4	16.4	13.6	10.9	12.4	7.2	5.7	6.1
20	20.9	17.3	19.9	15.9	11.3	13.2	11.8	10.1	10.8	6.9	5.6	6.1
21	18.1	16.3	17.2	18.2	12.4	14.3	11.2	2.1	7.1	8.0	6.3	7.0
22	20.8	14.9	17.6	19.0	11.7	14.8	5.7	.7	3.0	6.8	5.9	6.3
23	19.9	15.2	18.3	19.4	13.6	15.9	6.1	4.9	5.4	7.0	5.7	6.2
24	19.5	18.8	19.2	20.0	12.6	15.4	11.2	4.2	6.4	8.0	6.4	6.9
25	19.5	18.5	19.1	18.7	13.4	15.3	12.9	4.3	7.6	6.8	6.3	6.4
26	19.4	18.9	19.1	18.5	10.9	13.9	14.4	5.3	9.0	7.5	6.2	6.7
27	19.5	18.9	19.2	21.2	12.9	15.9	12.8	9.0	10.2	7.8	6.7	7.2
28	24.2	19.1	20.9	22.0	15.1	17.7	14.3	7.3	10.3	7.3	7.0	7.2
29	25.8	18.7	20.7	19.8	16.0	17.7	13.5	8.7	10.6	7.2	5.5	6.6
30	20.4	19.9	20.2	19.0	12.7	14.7	11.9	7.5	9.3	8.6	6.4	7.4
31	19.9	19.3	19.7	---	---	---	10.2	6.2	8.4	11.1	6.5	8.3
MONTH	26.7	14.9	21.6	22.6	10.2	15.1	18.9	.7	11.5	12.4	1.8	6.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.2	6.7	9.1	21.4	10.6	15.4	22.7	14.1	18.4	18.8	15.5	17.2
2	15.2	7.0	10.2	18.7	12.0	14.8	25.3	16.4	19.7	26.5	15.6	19.8
3	15.1	7.4	10.5	20.3	9.9	14.1	20.3	14.8	17.5	26.6	17.7	21.5
4	15.6	8.2	11.2	19.8	9.7	14.0	18.3	11.7	14.9	21.8	17.1	19.9
5	18.8	10.0	13.6	21.7	13.6	16.5	19.6	12.9	16.2	25.3	13.9	18.5
6	16.0	12.3	14.5	15.5	11.7	12.9	22.6	11.7	16.4	23.9	13.1	17.9
7	18.3	9.7	13.1	12.9	12.4	12.6	22.1	13.6	17.7	25.7	13.4	19.0
8	16.3	9.8	12.6	14.1	12.7	13.2	22.4	17.3	19.5	27.2	15.7	21.1
9	15.5	10.5	12.3	13.8	13.0	13.3	20.1	14.1	16.9	27.1	18.6	22.4
10	20.3	9.8	14.4	14.8	13.3	14.0	22.8	13.2	17.2	28.4	18.3	22.4
11	15.9	8.8	12.9	14.8	13.6	13.8	20.5	12.4	16.3	24.0	18.7	21.6
12	13.6	5.5	9.0	13.8	11.1	12.7	18.6	13.1	15.9	27.7	16.5	21.3
13	15.9	6.6	10.3	11.1	7.6	10.0	21.9	15.0	17.8	26.6	16.4	21.1
14	15.7	7.5	10.9	18.4	5.9	11.3	21.1	13.3	16.7	28.0	18.4	22.6
15	17.1	8.9	12.4	19.4	9.6	13.5	17.9	9.1	13.2	32.1	21.4	25.7
16	17.0	9.9	12.7	19.2	10.2	14.3	18.0	9.8	13.4	31.1	22.1	25.9
17	17.7	9.3	12.5	19.2	12.3	15.0	18.4	9.4	13.3	25.9	21.2	23.6
18	16.0	9.1	11.8	15.5	9.9	12.1	20.8	9.4	14.5	29.2	17.0	22.3
19	16.3	8.4	11.6	15.7	9.6	11.7	24.3	12.2	17.8	29.6	17.1	22.7
20	16.4	8.8	11.8	20.8	8.2	13.5	25.1	14.4	19.3	27.6	19.6	23.1
21	17.2	8.4	11.7	23.4	10.5	15.9	24.2	16.1	19.5	32.4	20.7	24.1
22	13.1	7.7	9.9	23.6	12.4	17.1	28.5	17.2	21.5	25.7	23.3	24.5
23	17.7	6.8	11.2	18.9	11.9	14.9	20.6	14.1	17.8	25.0	23.3	24.3
24	18.6	8.6	13.0	14.4	11.4	12.7	14.5	12.5	13.4	25.4	24.3	24.9
25	22.7	12.1	16.5	19.1	9.7	13.6	19.5	13.3	15.5	25.7	24.6	25.1
26	20.4	15.4	17.0	20.4	10.5	14.8	24.5	14.8	18.7	24.7	23.8	24.4
27	19.4	12.3	15.0	14.7	11.4	13.3	27.3	14.3	19.8	25.2	24.5	24.8
28	20.0	9.4	14.2	15.5	11.4	13.1	27.7	15.8	20.8	25.9	25.1	25.4
29	---	---	---	16.7	12.6	14.2	22.5	16.2	18.9	25.7	24.8	25.2
30	---	---	---	16.7	13.7	14.9	23.0	15.4	18.7	26.1	24.7	25.4
31	---	---	---	23.1	13.5	17.0	---	---	---	33.2	24.5	28.0
MONTH	22.7	5.5	12.4	23.6	5.9	13.9	28.5	9.1	17.2	33.2	13.1	22.8

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	34.7	23.4	28.2	27.6	26.8	27.2	28.9	27.8	28.2	30.4	21.3	25.0
2	34.8	23.1	28.3	27.8	26.9	27.3	28.3	27.7	27.9	30.2	21.5	25.2
3	32.0	23.4	27.1	27.7	26.7	27.2	29.1	27.7	28.8	28.7	27.2	27.7
4	32.5	22.8	27.1	28.0	26.9	27.4	29.2	27.8	28.3	28.1	27.5	27.7
5	30.2	23.2	26.2	28.1	27.0	27.6	28.5	27.7	28.2	27.8	27.3	27.5
6	31.2	22.7	26.2	27.9	27.3	27.6	29.2	28.0	28.5	28.7	27.3	27.7
7	34.4	22.8	27.7	28.0	27.3	27.6	29.2	28.3	28.8	28.5	27.7	28.0
8	34.6	23.4	28.3	28.0	27.4	27.7	28.9	28.3	28.5	27.8	27.2	27.6
9	33.7	23.7	28.4	28.7	27.4	27.9	29.6	28.1	28.7	27.4	26.8	27.1
10	30.6	23.3	26.4	27.9	27.3	27.5	29.0	28.4	28.7	27.4	26.7	27.1
11	33.8	21.7	27.1	27.4	27.0	27.2	29.7	28.6	29.0	27.6	26.7	27.1
12	31.3	23.4	26.7	27.5	26.9	27.1	---	---	---	27.2	26.4	26.8
13	30.1	22.6	25.8	27.7	27.0	27.2	---	---	---	26.7	26.1	26.4
14	29.5	20.4	24.4	28.3	26.9	27.6	---	---	---	26.6	25.2	26.1
15	31.9	20.0	25.4	27.8	26.8	27.3	---	---	---	26.0	25.2	25.5
16	31.0	21.1	25.4	27.2	26.4	26.8	---	---	---	25.5	25.0	25.2
17	28.0	18.8	22.5	27.6	26.4	26.9	---	---	---	25.5	24.7	25.0
18	26.6	18.9	23.9	27.6	26.7	27.1	---	---	---	25.2	24.7	25.0
19	26.8	25.4	26.2	27.5	26.9	27.1	29.0	28.1	28.6	25.3	24.3	24.9
20	26.0	25.3	25.7	27.4	26.8	27.1	28.5	28.1	28.3	25.0	24.0	24.6
21	25.8	25.0	25.5	27.8	26.7	27.0	28.8	27.9	28.3	24.2	23.1	23.8
22	25.5	24.7	25.0	28.1	27.2	27.6	28.9	27.9	28.3	24.0	23.1	23.5
23	25.9	25.0	25.4	28.0	27.3	27.7	28.8	27.7	28.2	23.7	22.9	23.4
24	26.5	25.4	25.9	28.2	27.3	27.7	28.5	26.7	28.3	23.5	22.8	23.1
25	26.4	25.5	25.9	27.6	27.1	27.3	28.8	28.2	28.5	23.2	22.5	22.8
26	26.6	25.4	26.0	27.5	27.1	27.3	29.4	28.5	28.9	23.6	22.5	23.1
27	27.2	25.9	26.6	27.8	27.1	27.4	29.5	28.8	29.3	23.4	22.5	23.0
28	27.5	26.2	26.9	28.0	27.3	27.6	28.8	28.3	28.6	22.6	22.0	22.3
29	27.1	26.2	26.6	29.0	27.6	28.2	29.2	28.5	28.7	27.5	21.3	21.8
30	27.5	26.8	27.1	28.5	27.6	28.1	28.9	28.2	28.5	21.8	20.9	21.5
31	---	---	---	28.8	27.2	27.8	30.5	24.0	27.9	---	---	---
MONTH	34.8	18.8	26.3	29.0	26.4	27.4	---	---	---	30.4	20.9	25.2

07312110 SOUTH SIDE CANAL NEAR DUNDEE, TX

LOCATION.--Lat 33°48'50", long 98°55'57", Archer County, Hydrologic Unit 11130206, on left bank, 125 ft downstream from Lake Diversion headgates, and 5.3 mi northwest of Dundee.

DRAINAGE AREA.--2,194 mi^2 (for Lake Diversion on Wichita River, provided by Wichita County Water Improvement District No. 2).

PERIOD OF RECORD.--Oct 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,039.70 ft above sea level (Wichita County Water Improvement District benchmark). Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Records of discharge are of water released from Lake Diversion into a canal system for mining, industrial, recreation, and irrigation use.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	125	2.5	.05	1.4	41	2.4	2.2	53	129	221	201
2	185	90	2.7	.05	1.5	84	2.3	2.0	54	146	218	174
3	171	18	2.9	.05	1.5	97	2.2	1.9	55	154	215	171
4	140	3.6	2.7	.05	1.5	97	2.1	1.6	67	156	213	170
5	139	3.7	2.7	.05	1.5	93	2.1	1.6	83	154	188	172
6	140	3.7	2.5	.14	1.7	95	2.1	1.8	103	154	168	172
7	139	3.4	2.2	.36	1.7	96	2.1	1.8	103	161	168	172
8	139	3.4	2.1	.45	1.9	77	2.0	1.9	104	169	169	161
9	138	3.7	2.0	.54	1.9	66	2.0	18	103	170	169	119
10	137	3.4	2.1	.54	2.1	66	2.2	25	109	171	169	137
11	136	3.0	2.2	.62	1.7	68	1.9	2.8	119	172	170	153
12	135	2.6	2.2	.54	1.4	35	2.0	2.6	120	172	170	153
13	134	2.3	2.2	.37	1.5	4.2	2.1	2.0	121	173	169	154
14	134	2.2	2.2	.43	1.5	4.3	2.1	2.0	122	174	169	138
15	134	2.1	2.2	.41	1.6	3.9	1.8	2.2	119	179	167	136
16	134	2.2	2.2	.38	1.7	e4.0	1.9	20	119	181	166	133
17	124	2.1	2.1	.26	1.7	4.1	1.8	61	120	181	184	113
18	96	2.0	2.1	.15	1.8	4.3	2.0	62	131	180	199	112
19	95	2.2	2.1	.10	1.9	4.6	1.9	63	140	181	211	112
20	94	2.6	2.2	.04	1.9	4.4	1.8	63	141	188	222	111
21	94	2.7	2.2	.04	2.1	4.2	1.7	74	143	205	224	112
22	94	2.8	2.0	.07	2.2	3.0	1.5	85	128	203	227	111
23	93	2.9	1.8	.07	1.9	2.0	1.6	86	93	203	226	112
24	94	3.0	.40	47	1.7	2.0	1.6	91	91	204	230	133
25	94	3.0	.26	100	2.0	1.9	1.6	96	92	205	237	132
26	96	3.0	.25	99	2.2	2.0	1.7	84	91	206	241	131
27	109	2.8	.15	99	2.3	1.9	1.8	70	92	208	240	130
28	126	2.8	.10	99	2.4	2.0	1.9	60	102	210	207	130
29	127	2.5	.05	73	---	2.0	1.9	51	115	214	206	127
30	129	2.5	.05	1.2	---	2.1	2.1	52	118	222	210	128
31	132	---	.05	1.4	---	2.3	---	54	---	221	210	---
TOTAL	3912	309.2	53.41	525.36	50.2	974.2	58.2	1141.4	3151	5646	6183	4210
MEAN	126	10.3	1.72	16.9	1.79	31.4	1.94	36.8	105	182	199	140
MAX	185	125	2.9	100	2.4	97	2.4	96	143	222	241	201
MIN	93	2.0	.05	.04	1.4	1.9	1.5	1.6	53	129	166	111
AC-FT	7760	613	106	1040	100	1930	115	2260	6250	11200	12260	8350

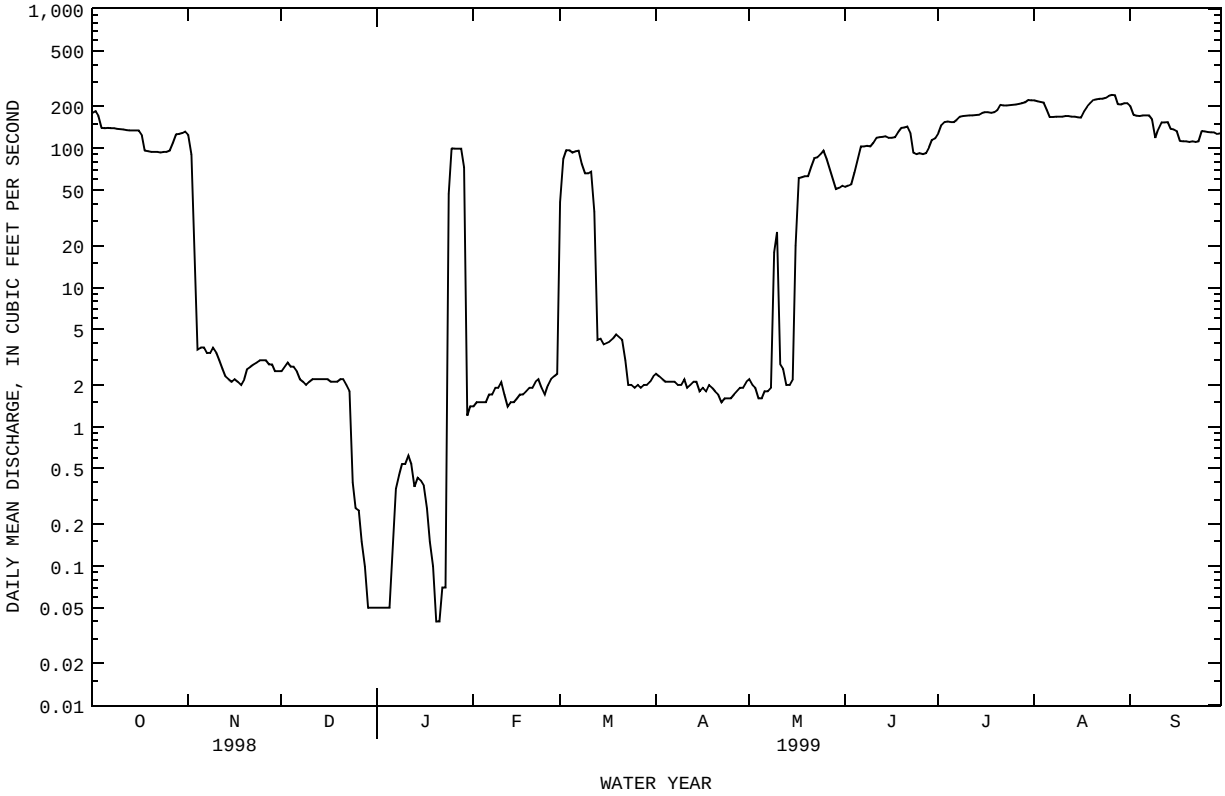
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1999, BY WATER YEAR (WY)

MEAN	76.0	11.0	14.4	19.7	11.8	27.7	63.4	80.5	127	203	183	120
MAX	141	41.0	76.3	66.1	52.2	127	150	218	240	344	282	219
(WY)	1978	1978	1978	1989	1975	1996	1972	1984	1984	1974	1980	1983
MIN	3.10	.000	.000	.000	.000	.000	1.94	17.6	20.1	124	50.8	3.39
(WY)	1977	1985	1985	1985	1985	1985	1999	1982	1982	1992	1989	1996

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1972 - 1999	
ANNUAL TOTAL	37316.55		26213.97			
ANNUAL MEAN	102		71.8		78.6	
HIGHEST ANNUAL MEAN					120	1984
LOWEST ANNUAL MEAN					46.6	1989
HIGHEST DAILY MEAN	261	Jul 2	241	Aug 26	374	Jul 22 1974
LOWEST DAILY MEAN	.05	Dec 29	.04	Jan 20	.00	Oct 20 1973
ANNUAL SEVEN-DAY MINIMUM	.13	Dec 25	.05	Dec 29	.00	Oct 20 1973
INSTANTANEOUS PEAK FLOW			261	Aug 27	374	Jul 22 1974
INSTANTANEOUS PEAK STAGE			7.40	Aug 27	8.31	Jul 22 1974
ANNUAL RUNOFF (AC-FT)	74020		52000		56960	
10 PERCENT EXCEEDS	210		181		203	
50 PERCENT EXCEEDS	129		53		54	
90 PERCENT EXCEEDS	1.0		1.5		.23	

e Estimated

07312110 SOUTH SIDE CANAL NEAR DUNDEE, TX--Continued



07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX

LOCATION.--Lat 33°52'09", long 98°50'20", Wichita County, Hydrologic Unit 11130206, near center of stream at upstream side of bridge on State Highway 25, 1 mile north of intersection with State Highway 258 at Kadane Corner, and 4.1 miles upstream from the confluence with Beaver Creek.

DRAINAGE AREA.--2,182 mi^2, of which 2,086 mi^2 is above Lake Kemp.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 923.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good, except those for estimated daily discharges which are fair. Since installation of gage in Jun 1996, at least 10% of contributing drainage area has been regulated by Lake Kemp (station 07312000, capacity 603,000 acre-ft) 43 mi upstream. Since completion of Lake Kemp in 1923, no outflow has been permitted to pass over the spillway. Water is diverted from Lake Diversion (normal storage 40,000 acre-ft) 13 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. During the current water year, the Wichita County Water Improvement District No. 2 diverted 52,000 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	40	7.2	3.8	e8.0	2.7	7.7	4.1	10	7.7	6.2	6.5
2	15	15	6.5	3.5	e6.0	3.2	7.4	5.9	9.7	6.6	6.2	6.4
3	13	7.4	8.6	3.3	5.2	3.8	8.0	5.2	11	6.4	7.9	6.0
4	12	6.4	9.1	3.3	4.9	4.7	11	7.4	8.2	6.9	12	5.7
5	11	6.8	6.3	3.5	4.6	5.2	8.1	12	7.6	7.7	14	5.7
6	12	6.3	5.0	3.6	4.6	4.3	19	7.1	12	8.7	13	5.7
7	9.7	5.6	4.5	3.7	5.1	4.3	8.8	5.0	12	9.4	12	6.1
8	11	5.4	4.4	3.8	5.6	11	8.4	3.7	7.5	9.2	9.4	6.9
9	11	5.6	5.3	3.5	4.4	8.5	13	3.9	6.9	10	7.3	e6.8
10	10	5.8	4.2	3.4	4.6	5.2	8.8	10	24	11	7.6	e6.7
11	9.7	5.6	4.2	3.7	4.5	4.1	7.1	4.1	45	11	6.8	e6.6
12	11	5.7	5.2	3.9	5.7	78	6.8	3.3	34	12	6.1	e6.5
13	12	5.0	4.5	3.7	4.4	139	6.9	2.9	18	14	6.0	e6.4
14	11	5.0	3.9	3.8	3.4	34	60	3.1	12	12	6.8	e6.2
15	12	5.2	3.7	e3.8	3.2	12	37	2.8	9.7	12	6.6	e6.0
16	12	5.3	3.8	e5.1	3.0	7.5	16	2.3	7.7	11	6.5	5.9
17	13	6.0	4.0	e4.2	3.7	6.2	10	2.1	6.6	11	4.9	6.0
18	12	5.0	4.0	e3.7	3.5	101	6.7	2.1	5.8	12	5.2	5.9
19	9.6	4.8	4.0	e3.5	3.2	501	6.3	2.0	5.7	e11	6.8	5.9
20	9.0	3.9	4.0	3.3	2.9	125	5.8	2.1	5.5	e11	7.2	5.6
21	e9.7	3.8	3.9	3.3	2.6	24	5.1	3.2	6.0	e10	9.2	6.0
22	e10	3.7	3.6	3.7	2.8	e15	5.9	2.9	7.1	e10	10	6.7
23	9.7	4.1	3.8	4.0	3.4	11	5.6	2.1	10	e10	11	7.0
24	8.7	5.8	3.9	3.7	2.9	8.8	5.0	3.2	10	e9.9	12	6.6
25	6.8	6.1	3.7	3.3	3.0	8.2	5.2	7.1	8.4	e9.5	15	5.8
26	7.1	3.9	3.9	6.4	3.1	7.8	5.4	19	8.4	e9.1	10	6.0
27	7.2	3.9	4.0	6.6	2.8	9.1	5.7	25	6.6	e8.7	7.1	6.0
28	7.1	4.7	4.0	6.9	2.7	10	5.3	27	5.7	8.3	6.8	5.5
29	7.2	5.4	3.9	28	---	8.3	4.5	13	10	7.5	6.7	7.0
30	8.5	7.9	3.7	34	---	7.7	4.2	8.6	11	6.4	6.7	6.2
31	7.7	---	3.6	14	---	7.5	---	9.2	---	6.4	6.6	---
TOTAL	318.7	205.1	144.4	188.0	113.8	1178.1	314.7	211.4	342.1	296.4	259.6	186.3
MEAN	10.3	6.84	4.66	6.06	4.06	38.0	10.5	6.82	11.4	9.56	8.37	6.21
MAX	15	40	9.1	34	8.0	501	60	27	45	14	15	7.0
MIN	6.8	3.7	3.6	3.3	2.6	2.7	4.2	2.0	5.5	6.4	4.9	5.5
AC-FT	632	407	286	373	226	2340	624	419	679	588	515	370

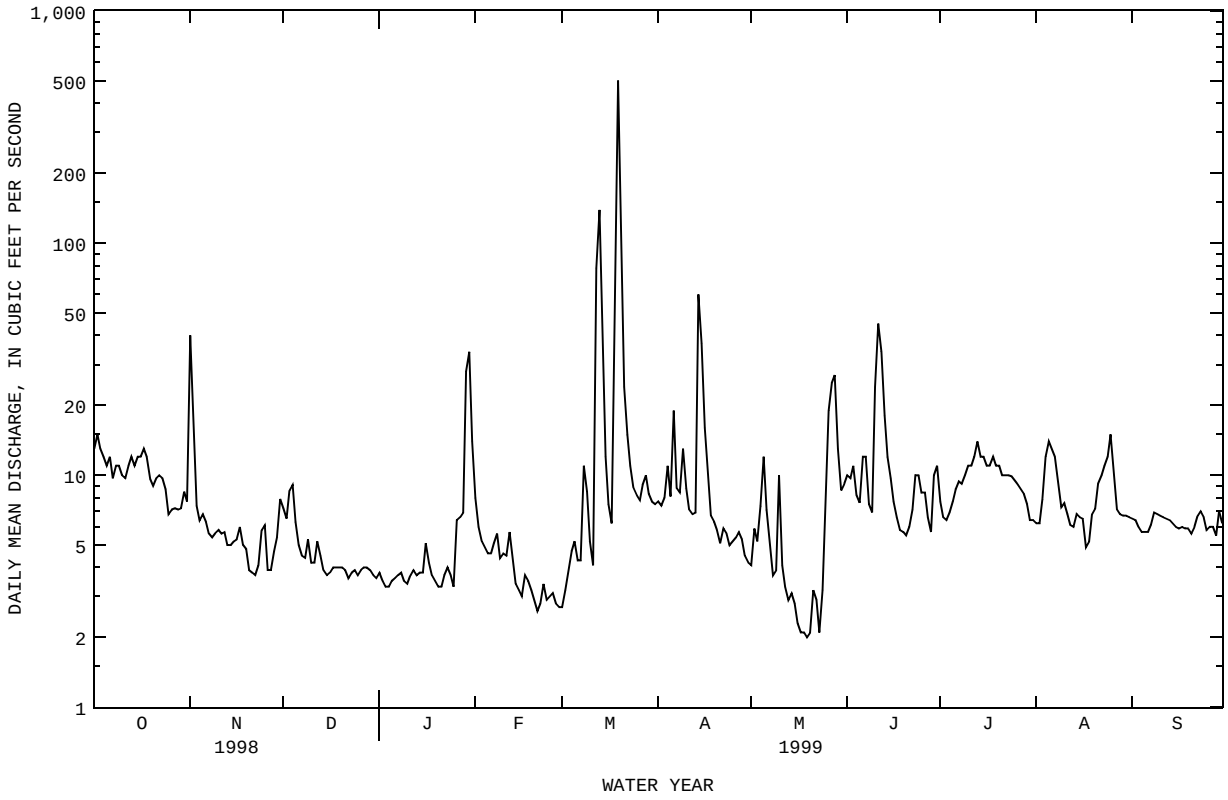
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1999, BY WATER YEAR (WY)

MEAN	10.1	9.22	6.55	6.05	66.0	103	109	206	21.1	11.3	12.1	16.6
MAX	11.2	13.3	7.70	7.60	182	265	304	598	41.5	14.2	15.3	36.9
(WY)	1997	1997	1998	1998	1998	1998	1998	1997	1997	1997	1996	1996
MIN	8.67	6.84	4.66	4.47	4.06	4.49	10.5	6.82	11.4	8.96	8.37	6.21
(WY)	1998	1999	1999	1997	1999	1997	1999	1999	1999	1996	1999	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1996 - 1999	
ANNUAL TOTAL	25355.3		3758.6			
ANNUAL MEAN	69.5		10.3		47.5	
HIGHEST ANNUAL MEAN					69.6	1998
LOWEST ANNUAL MEAN					10.3	1999
HIGHEST DAILY MEAN	1340	Mar 17	501	Mar 19	1960	May 21 1997
LOWEST DAILY MEAN	3.6	Dec 22	2.0	May 19	2.0	May 19 1999
ANNUAL SEVEN-DAY MINIMUM	3.8	Dec 20	2.4	May 14	2.4	May 14 1999
INSTANTANEOUS PEAK FLOW			597	Mar 19	1510	Mar 17 1998
INSTANTANEOUS PEAK STAGE			8.84	Mar 19	12.04	Mar 17 1998
ANNUAL RUNOFF (AC-FT)	50290		7460		34420	
10 PERCENT EXCEEDS	153		12		34	
50 PERCENT EXCEEDS	11		6.5		9.0	
90 PERCENT EXCEEDS	4.9		3.5		4.2	

e Estimated

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued



07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical data: Jun 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jun 1996 to current year.
WATER TEMPERATURE: Jun 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Jun 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 9,350 microsiemens, Mar 31, 1997; minimum, 570 microsiemens, Mar 19, 1999.
WATER TEMPERATURE: Maximum, 37.2°C, Aug 9, 1999; minimum, 0.0°C, Jan 11-14, 1997, Dec 22, 25, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 8,880 microsiemens, May 17; minimum, 570 microsiemens, Mar 19.
WATER TEMPERATURE: Maximum, 37.2°C, Aug 9; minimum, 0.0°C, Dec 22, 25.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6850	6100	6370	5750	842	3620	6230	5980	6080	7960	7680	7790
2	6400	5190	5930	5160	4400	4660	6450	6230	6360	8070	7940	8030
3	6140	5710	5860	5100	4320	4600	6330	4880	6140	8120	7950	8020
4	6120	5380	5680	5690	5100	5530	7500	4220	6430	8120	7920	8010
5	6030	5380	5680	5880	5560	5660	7210	6720	6920	8080	7950	8020
6	6030	5460	5680	6250	5880	6040	7470	7160	7320	8190	8000	8080
7	6370	5820	6060	6790	6250	6540	7500	7350	7420	8020	7850	7940
8	6460	5930	6160	6950	6790	6890	7450	7280	7390	7960	7880	7930
9	6230	5900	6000	7240	6790	6970	7340	7040	7150	8040	7860	7940
10	6330	6060	6130	7190	6190	6870	7620	7140	7380	8130	7910	8010
11	6450	6120	6250	7140	6820	7020	7690	7490	7640	8150	8000	8070
12	6590	6260	6470	7040	6870	6960	7510	7160	7410	8080	7970	8040
13	6540	6230	6370	7270	6930	7090	7940	7210	7690	8140	8020	8080
14	6390	6090	6280	7470	7270	7400	8060	7800	7940	8080	7860	7930
15	6340	6050	6190	7410	7320	7360	8160	8000	8090	8030	7760	7860
16	6440	6200	6330	7450	7330	7390	8140	8030	8090	8120	7290	7660
17	6780	5700	6310	7370	6950	7140	8030	7890	7940	8650	7930	8350
18	7000	6210	6780	7380	7030	7230	7960	7580	7770	8190	7810	8000
19	7080	6550	6900	7430	7310	7370	7640	7480	7550	7940	7620	7820
20	7230	6920	7070	7680	7430	7570	7540	7460	7510	7760	7140	7520
21	7260	6900	7040	7830	7680	7770	7570	7480	7510	7490	7240	7350
22	7210	6120	6680	7850	7760	7810	7650	7460	7540	7350	7030	7220
23	6380	5610	6060	7890	7740	7820	7790	7520	7670	7170	6970	7070
24	6790	6130	6290	7760	7120	7500	7860	7760	7810	7100	6930	7010
25	7000	6600	6790	7120	6620	6850	7930	7750	7850	7130	7000	7060
26	7290	6870	7060	7510	6890	7220	7950	7840	7890	7150	5820	6450
27	7220	6850	7010	7680	7510	7590	7900	7750	7840	6860	6400	6580
28	7100	6870	6980	7510	7080	7290	7770	7590	7710	7040	6270	6640
29	7070	6730	6920	7080	6720	6930	7740	7590	7650	7110	2080	4860
30	6730	6080	6330	6860	5860	6200	7850	7670	7770	5210	2840	4480
31	6710	5490	6350	---	---	---	7790	7650	7720	4340	3830	3980
MONTH	7290	5190	6390	7890	842	6760	8160	4220	7460	8650	2080	7350

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e5500	8810	8400	8610	7570	7020	7360	6840	6710	6790
2	---	---	e6300	8800	8040	8590	7500	7020	7280	6900	5140	6150
3	---	---	e6940	8040	7810	7880	7610	6870	7160	6250	5760	5960
4	7110	6940	7020	8090	7620	7870	6870	5470	6030	7190	6170	6630
5	7230	6930	7100	8150	7560	7800	7080	5560	6360	7290	5630	6320
6	7460	7190	7370	8070	7680	7920	7050	4410	4820	6790	5830	6330
7	7520	6880	7340	8610	7980	8290	6310	4920	5710	7510	6790	7050
8	6940	6630	6780	7980	5250	6910	6680	6190	6420	8130	7510	7770
9	7440	6940	7230	6950	6240	6630	6300	4800	5340	8670	6220	8200
10	7480	7370	7440	7640	6950	7290	6330	5220	5860	6940	1760	5040
11	7550	7300	7410	7890	7640	7830	6920	6330	6620	7950	5920	7380
12	7300	6560	6800	7840	1650	4700	7060	6850	6990	8300	7950	8100
13	7060	6560	6850	2440	1040	1400	7000	5910	6850	8490	8130	8320
14	7540	7050	7330	2090	1180	1790	5910	689	2950	8390	8070	8230
15	7800	7510	7680	3300	2090	2590	3560	2330	2630	8340	8070	8230
16	8070	7760	7930	5000	3300	4140	2930	2190	2470	8660	8270	8450
17	8650	8060	8340	6520	5000	5730	4200	2930	3490	8880	8480	8710
18	8390	7710	8030	6750	1280	3830	6160	4200	5440	8870	8440	8620
19	7880	7610	7750	1470	570	822	6250	5700	6000	8830	8500	8690
20	8480	7730	7980	1930	670	1340	6650	5890	6350	8850	8560	8720
21	8730	8480	8620	3420	1930	2630	6720	6570	6680	8670	7360	7980
22	8750	8160	8490	5460	3420	4450	6680	5710	6260	8180	7410	7720
23	8300	7380	8010	6430	5460	6120	6110	5720	5870	8640	8180	8400
24	8190	8010	8080	7070	6440	6810	6610	6110	6400	8710	7170	8150
25	8390	8070	8300	7340	7070	7250	6670	6540	6640	7170	1890	5340
26	8270	8140	8200	7430	7310	7360	6670	6240	6530	6000	---	e3490
27	8800	8150	8480	7350	6200	7040	6610	6360	6520	---	---	e3430
28	8670	8470	8550	7140	4570	6410	6520	6240	6410	1860	742	1340
29	---	---	---	7270	7080	7180	6780	6360	6620	2630	1860	2240
30	---	---	---	7560	7270	7440	6930	6650	6830	4020	2630	3280
31	---	---	---	7560	7360	7520	---	---	---	4340	3970	4140
MONTH	---	---	7570	8810	570	5880	7610	689	5900	---	---	6620

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4740	3700	4300	5720	5280	5480	6120	5990	6040	5520	5360	5460
2	4790	4620	4690	6070	5720	5900	6150	5850	6010	5580	5430	5490
3	4880	4530	4650	6290	6070	6200	6010	5520	5760	5650	5480	5540
4	5150	4880	5050	6420	6240	6320	5520	4670	5240	5740	5570	5660
5	5520	5150	5250	6450	6300	6380	5080	4870	4970	5770	5560	5650
6	5730	2920	4610	6340	5920	6150	4870	4720	4780	5720	5530	5610
7	---	---	e4100	5950	5670	5830	4790	4650	4720	5650	5390	5540
8	---	---	e4800	5870	5640	5750	5080	4780	4900	5420	5190	5300
9	---	---	e5400	5740	5570	5660	5360	5080	5250	5280	5110	5190
10	---	---	e5350	5570	4740	5200	5380	5200	5290	5300	5130	5220
11	---	---	e3500	5380	5200	5290	5590	5270	5420	5340	4820	5220
12	---	---	e4600	5470	5370	5420	5860	5590	5730	4830	944	2850
13	---	---	e5600	5480	5150	5320	5990	5830	5900	4400	1320	3400
14	---	---	e6000	5250	5080	5150	5980	5770	5880	5490	4230	5080
15	---	---	e6100	5440	5250	5330	---	---	e5870	5690	5450	5580
16	---	---	e6140	5680	5440	5560	---	---	e5900	5780	5640	5710
17	7090	6630	6840	5740	5640	5700	---	---	e5820	5840	5730	5770
18	7460	7090	7280	5720	5610	5670	6230	5700	5860	6010	5830	5930
19	7610	7190	7430	5730	5570	5660	6160	5770	5970	6190	5970	6090
20	7770	7470	7600	5740	5550	5650	5970	5720	5860	6450	6150	6240
21	7540	7000	7390	5740	5610	5670	5750	5450	5590	6580	6410	6490
22	7360	6740	7080	5770	5640	5710	5540	5380	5450	6500	6370	6440
23	6930	5690	6200	5830	5690	5750	5420	5140	5270	6670	6420	6540
24	5800	5590	5690	5760	5620	5700	5220	5040	5130	6690	6360	6600
25	6040	5790	5900	5840	5720	5790	5090	4960	5020	6800	6550	6680
26	6310	5850	5970	5830	5640	5720	5270	5030	5130	7030	6570	6850
27	6650	6260	6420	5680	5570	5620	5690	5260	5470	6940	6730	6870
28	6810	6650	6750	5820	5510	5650	5740	5610	5690	6890	6740	6820
29	6830	5510	6110	5830	5650	5740	5650	5400	5530	6810	6370	6530
30	5530	5140	5290	5980	5830	5900	5440	5300	5380	6470	6370	6420
31	---	---	---	6010	5790	5930	5480	5330	5410	---	---	---
MONTH	---	---	5740	6450	4740	5700	---	---	5490	7030	944	5760

e Estimated

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	29.3	25.4	26.9	18.8	13.3	14.9	17.7	12.6	14.6	9.7	6.7	7.8
2	25.7	23.1	24.1	15.8	12.4	13.8	17.9	13.3	15.2	8.1	3.5	5.7
3	26.8	23.1	24.5	15.6	12.7	14.1	17.8	15.3	16.2	5.2	.8	2.7
4	29.0	23.7	25.7	15.1	12.3	13.6	18.2	14.0	15.5	6.6	.1	2.7
5	25.4	20.1	23.2	12.6	11.1	11.8	19.4	13.9	16.1	7.9	.9	3.9
6	23.4	18.2	20.3	11.6	10.3	10.9	20.0	14.2	17.1	10.6	2.4	5.9
7	24.4	17.2	20.1	13.9	10.5	11.6	14.2	9.9	12.4	7.0	5.0	5.9
8	23.8	17.2	20.0	13.4	11.7	12.7	12.9	7.4	9.5	5.5	2.3	4.3
9	24.4	17.6	20.5	20.6	12.6	16.0	10.0	6.3	8.1	6.3	.4	2.9
10	25.0	18.1	20.9	18.0	11.8	14.6	9.9	8.4	8.9	8.3	.2	3.6
11	25.7	18.5	21.5	16.7	10.9	12.8	9.5	8.1	8.7	10.9	1.4	5.8
12	25.6	19.8	22.3	13.6	11.6	12.5	12.5	7.8	9.3	12.3	6.1	9.0
13	26.0	20.0	22.5	14.0	12.5	13.1	12.5	6.6	8.8	9.0	5.1	7.3
14	26.2	20.2	22.6	16.1	12.8	14.2	13.0	6.1	9.0	10.0	2.9	6.0
15	25.5	20.4	22.3	18.3	11.8	14.2	13.2	6.2	9.1	12.1	3.8	7.5
16	21.5	20.6	21.0	18.7	12.8	14.8	13.3	6.5	9.3	12.5	5.6	8.7
17	21.7	19.2	20.9	18.6	12.9	15.2	13.0	6.8	9.4	13.2	6.8	9.5
18	21.6	16.1	18.5	21.1	15.0	17.2	10.6	8.1	9.4	12.2	5.9	9.0
19	22.4	16.3	18.6	19.8	13.4	16.5	9.9	7.9	9.4	13.6	7.1	10.1
20	17.7	15.5	16.9	15.3	11.9	13.3	8.5	7.4	7.9	13.6	7.2	10.7
21	17.1	15.0	15.9	16.6	11.1	13.2	8.1	1.1	5.3	14.3	9.7	12.1
22	19.5	13.9	16.2	18.4	10.8	14.0	2.2	.0	1.0	12.6	7.2	9.3
23	19.5	14.3	16.3	19.2	13.1	15.4	1.7	.7	1.0	10.7	5.4	8.2
24	21.3	14.9	17.2	18.2	13.0	14.9	4.9	.1	1.8	13.0	6.4	9.8
25	23.1	15.9	18.6	18.0	12.6	15.0	6.1	.0	2.2	11.9	7.4	9.9
26	24.4	17.7	20.3	17.4	10.7	13.4	8.4	.4	3.7	13.4	7.4	10.4
27	25.1	19.1	21.4	18.8	10.8	14.2	8.8	4.2	5.9	15.6	10.0	12.7
28	26.4	20.8	22.7	20.4	14.0	16.7	9.6	3.3	5.9	13.6	9.4	11.4
29	28.3	20.6	23.3	19.2	15.8	17.4	11.1	4.5	7.1	9.4	5.7	7.1
30	25.5	21.8	23.0	18.6	13.9	15.6	10.8	3.8	6.9	6.8	5.7	6.2
31	21.8	18.7	21.1	---	---	---	8.9	4.5	6.7	7.4	5.7	6.4
MONTH	29.3	13.9	20.9	21.1	10.3	14.3	20.0	.0	8.8	15.6	.1	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	20.8	10.1	15.2	23.9	15.8	19.6	23.7	17.8	20.2
2	---	---	---	19.4	11.2	14.8	26.4	18.3	21.4	28.3	17.2	21.7
3	---	---	---	18.3	9.5	13.3	23.5	16.9	19.8	29.7	20.4	24.5
4	14.9	7.1	10.4	18.4	8.7	13.1	20.0	14.0	17.0	26.4	19.5	22.9
5	17.3	9.2	12.9	20.2	13.2	15.8	23.1	16.0	19.2	23.5	16.6	19.9
6	16.8	12.8	14.6	17.5	11.0	13.9	23.2	16.0	19.1	23.3	15.1	18.9
7	18.0	10.4	13.4	12.9	10.0	11.3	24.8	16.3	20.3	27.2	14.4	20.2
8	16.8	11.0	13.4	17.1	10.1	13.1	26.2	20.2	22.6	29.6	17.7	22.8
9	15.8	11.1	13.0	17.8	10.0	13.4	21.9	17.7	19.8	28.9	19.9	23.7
10	20.5	10.8	14.9	22.1	12.1	16.3	25.0	16.2	20.1	28.5	18.9	23.0
11	16.1	9.1	13.8	16.9	12.2	13.8	23.3	14.8	19.0	26.2	20.2	22.9
12	13.6	7.0	9.4	12.2	8.0	9.9	22.4	15.4	18.8	29.4	17.5	22.7
13	15.2	6.3	9.8	8.0	5.2	6.7	24.6	17.6	20.5	29.9	18.2	23.4
14	15.8	6.5	10.5	10.9	4.0	7.2	21.6	16.5	19.1	27.2	19.2	23.0
15	17.5	8.0	12.2	15.4	6.2	10.5	18.6	12.0	15.3	33.8	21.7	26.7
16	17.3	9.8	13.0	18.3	9.5	13.6	18.3	12.4	15.1	31.7	23.2	26.7
17	17.3	8.3	12.1	18.6	12.5	15.3	19.6	10.9	14.9	27.5	20.9	23.8
18	16.4	9.3	12.1	16.0	9.8	12.1	23.5	11.8	17.1	30.5	17.3	23.0
19	15.9	7.5	11.1	11.5	9.3	10.3	27.2	15.6	20.6	31.4	18.1	24.0
20	17.0	8.5	12.0	15.0	9.5	12.0	29.2	18.1	22.9	27.5	20.0	23.5
21	16.0	7.4	11.2	18.4	10.5	14.4	27.8	19.0	22.8	31.8	20.8	25.8
22	12.1	7.2	9.4	21.7	13.5	17.2	31.5	19.9	24.8	33.2	23.2	27.4
23	16.1	6.0	10.4	19.0	11.5	16.1	25.7	17.2	21.9	30.9	21.9	26.1
24	18.6	7.0	12.5	15.4	12.1	13.7	17.2	14.9	15.7	29.5	21.0	24.3
25	21.9	11.1	16.2	19.4	10.7	14.5	19.9	15.0	16.8	31.9	20.5	25.3
26	19.8	15.2	17.1	20.0	11.6	15.4	28.1	17.0	21.2	25.1	19.6	23.0
27	19.1	12.8	15.6	15.6	11.5	13.9	29.0	17.5	22.7	24.2	21.6	23.0
28	19.4	8.7	13.8	16.0	10.9	13.3	31.0	19.8	24.7	27.1	22.0	24.1
29	---	---	---	17.2	13.3	15.1	26.5	19.0	22.2	27.9	22.7	24.8
30	---	---	---	17.9	14.9	16.2	26.9	17.9	21.5	33.4	21.9	27.1
31	---	---	---	22.7	14.5	17.7	---	---	---	34.0	25.0	29.0
MONTH	---	---	---	22.7	4.0	13.5	31.5	10.9	19.9	34.0	14.4	23.8

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	34.5	25.8	29.5	34.8	25.2	29.3	35.7	25.5	29.7	31.5	24.1	27.5
2	34.4	26.0	29.7	35.0	25.2	29.2	36.7	26.9	30.8	32.3	23.9	27.4
3	31.8	26.3	28.7	34.4	24.4	28.7	34.6	26.9	30.2	33.8	24.6	28.4
4	32.4	24.3	27.7	34.7	24.7	28.9	33.2	27.0	29.4	32.3	25.1	28.3
5	28.4	24.0	25.9	33.8	25.0	28.7	31.1	27.0	28.6	32.7	25.6	28.3
6	26.9	22.6	24.7	36.0	25.2	29.9	33.3	26.3	29.6	33.7	24.3	28.3
7	---	---	---	36.6	26.5	30.8	34.1	26.9	30.0	33.3	25.4	28.7
8	---	---	---	35.9	25.9	30.0	35.6	27.3	30.9	30.6	24.8	27.4
9	---	---	---	34.4	25.7	29.3	37.2	27.9	32.0	30.3	22.9	26.1
10	---	---	---	28.4	24.5	26.5	36.4	28.2	31.7	30.1	23.1	26.3
11	---	---	---	29.9	21.6	25.3	35.8	27.3	30.7	31.5	23.5	27.0
12	---	---	---	31.8	22.9	26.7	35.5	25.4	29.8	29.4	23.2	26.0
13	---	---	---	33.3	23.4	28.0	36.1	27.0	30.5	28.9	20.7	24.1
14	---	---	---	33.4	25.8	29.1	35.3	24.8	29.2	30.3	20.4	24.5
15	---	---	---	33.4	24.5	28.1	---	---	---	24.0	21.3	22.5
16	---	---	---	30.8	23.3	26.6	---	---	---	26.4	20.2	22.6
17	26.6	20.5	23.2	34.6	23.8	28.4	---	---	---	29.3	20.2	24.0
18	30.8	20.6	25.2	33.4	25.4	29.1	35.3	24.9	29.3	28.5	22.3	24.9
19	32.8	22.5	26.9	35.0	25.6	29.6	34.8	25.8	29.4	30.6	21.2	25.0
20	30.3	24.3	26.5	34.4	26.0	29.5	33.3	24.0	28.2	29.2	21.0	24.6
21	28.5	23.8	25.6	33.9	25.8	29.2	32.8	24.1	28.0	25.7	17.3	20.8
22	29.5	23.3	25.5	34.2	25.2	29.2	32.7	25.1	28.5	26.2	16.1	20.5
23	31.9	24.0	27.7	35.0	25.4	29.7	33.3	26.4	29.4	26.0	16.5	20.8
24	34.2	25.9	29.4	35.2	26.1	30.1	34.5	27.4	30.3	25.5	18.8	21.5
25	35.3	24.9	29.4	35.5	26.2	30.2	33.4	26.4	29.9	28.8	18.7	22.9
26	36.1	25.1	29.9	35.2	26.7	30.4	34.7	27.0	30.4	30.3	21.3	25.0
27	36.2	26.5	30.5	34.2	27.1	30.5	34.2	26.8	29.1	30.6	22.2	25.3
28	34.2	25.9	29.7	34.9	27.4	30.6	35.5	24.8	29.4	23.9	18.3	21.0
29	31.6	26.3	28.4	35.5	26.7	30.4	34.9	26.7	30.1	---	---	---
30	32.5	26.3	28.7	35.5	25.7	29.8	33.5	25.4	28.9	---	---	---
31	---	---	---	35.9	24.9	29.5	33.3	24.8	28.4	---	---	---
MONTH	---	---	---	36.6	21.6	29.1	---	---	---	---	---	---

07312180 LAKE ELECTRA NEAR ELECTRA, TX

LOCATION.--Lat 33°58'30", long 99°01'24", Wilbarger County, Hydrologic Unit 11130207, on northern bank near left end of dam on Camp Creek, 8.0 mi west of Electra.

DRAINAGE AREA.--14.5 mi^2.

PERIOD OF RECORD.--Oct 1998 to Sep 1999.

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam. The dam was completed in 1950, and storage began shortly thereafter. The lake is owned by the city of Electra, which uses the water for their municipal supply. The capacity curve, dated July 31, 1998, was entitled "Original Lake Electra Area Capacity Elevation Table" and developed by Don Rauschuber and Associates Inc.. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1121
Lowest gated outlet (invert)	1110

COOPERATION.--Capacity curve and diversions for municipal use are provided by the city of Electra.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,960 acre-ft, Oct 2 (elevation, 1,103.52 ft); minimum contents, 1,140 acre-ft, Sep 30 (elevation, 1,100.47 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

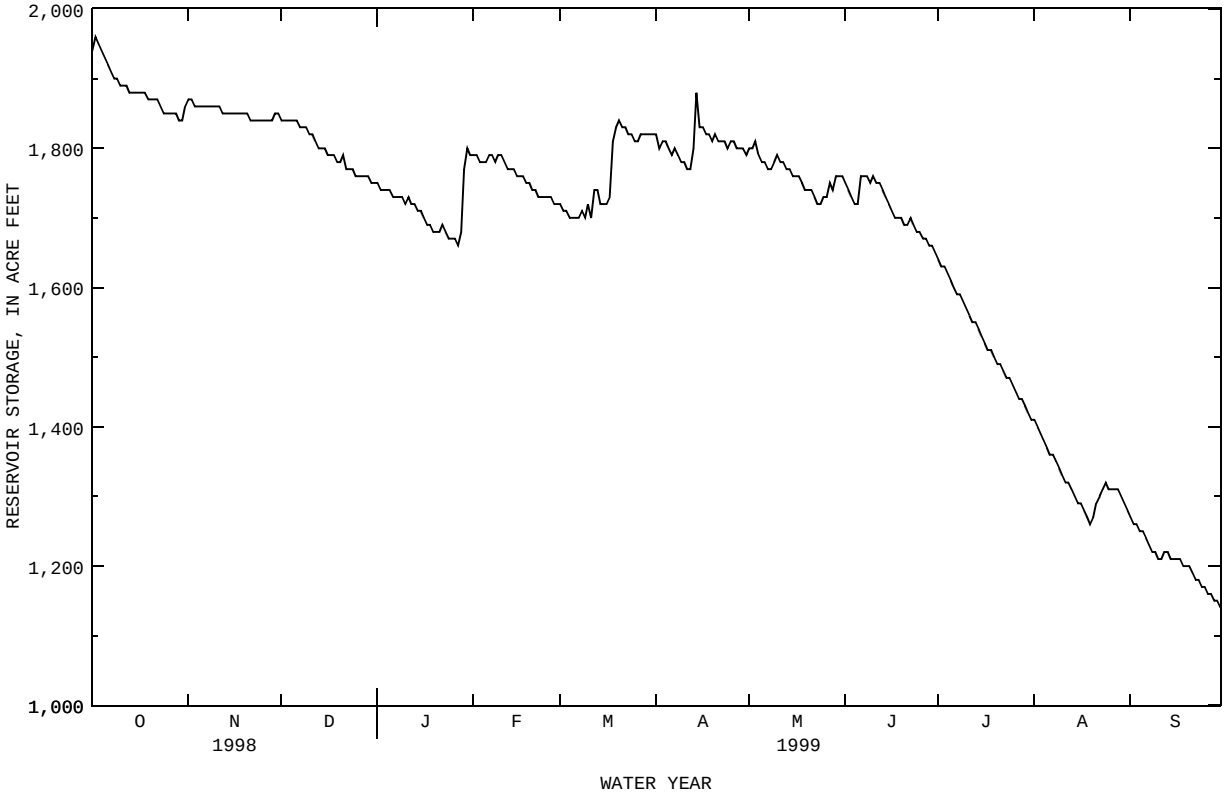
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1940	e1870	1840	1750	1790	1720	1820	1800	1750	1640	e1410	1270
2	1960	e1870	1840	1740	1790	1710	1800	1800	1740	1630	e1400	1260
3	1950	e1860	e1840	1740	1780	1710	1810	1810	1730	e1630	e1390	1260
4	1940	e1860	e1840	1740	1780	1700	1810	1790	1720	e1620	e1380	1250
5	1930	e1860	e1840	1740	1780	1700	1800	1780	1720	e1610	e1370	1250
6	1920	e1860	e1840	1730	1790	1700	1790	1780	1760	e1600	e1360	1240
7	1910	e1860	e1830	1730	1790	1700	1800	1770	1760	e1590	e1360	1230
8	1900	e1860	e1830	1730	1780	1710	1790	1770	1760	e1590	e1350	1220
9	1900	e1860	e1830	1730	1790	1700	1780	1780	1750	e1580	e1340	1220
10	e1890	e1860	e1820	1720	1790	1720	1780	1790	1760	e1570	e1330	1210
11	e1890	e1860	e1820	1730	1780	1700	1770	1780	1750	e1560	e1320	1210
12	e1890	e1850	e1810	1720	1770	1740	1770	1780	1750	e1550	e1320	1220
13	e1880	e1850	e1800	1720	1770	1740	1800	1770	1740	e1550	e1310	1220
14	e1880	e1850	e1800	1710	1770	1720	1880	1770	1730	e1540	e1300	1210
15	e1880	e1850	e1800	1710	1760	1720	1830	1760	1720	e1530	e1290	1210
16	e1880	e1850	e1790	1700	1760	1720	1830	1760	1710	e1520	e1290	1210
17	e1880	e1850	e1790	1690	1760	1730	1820	1760	1700	e1510	e1280	1210
18	e1880	e1850	e1790	1690	1750	1810	1820	1750	1700	e1510	e1270	1200
19	e1870	e1850	1780	1680	1750	1830	1810	1740	1700	e1500	e1260	1200
20	e1870	e1850	1780	1680	1740	1840	1820	1740	1690	e1490	e1270	1200
21	e1870	e1840	1790	1680	1740	1830	1810	1740	1690	e1490	e1290	1190
22	e1870	e1840	1770	1690	1730	1830	1810	1730	1700	e1480	e1300	1180
23	e1860	e1840	1770	1680	1730	1820	1810	1720	1690	e1470	e1310	1180
24	1850	e1840	1770	1670	1730	1820	1800	1720	1680	e1470	e1320	1170
25	1850	e1840	1760	1670	1730	1810	1810	1730	1680	e1460	e1310	1170
26	1850	1840	1760	1670	1730	1810	1810	1730	1670	e1450	1310	1160
27	1850	1840	1760	1660	1720	1820	1800	1750	1670	e1440	1310	1160
28	1850	1840	1760	1680	1720	1820	1800	1740	1660	e1440	1310	1150
29	1840	1850	1760	1770	---	1820	1800	1760	1660	e1430	1300	1150
30	1840	1850	1750	1800	---	1820	1790	1760	1650	e1420	1290	1140
31	1860	---	1750	1790	---	1820	---	1760	---	e1410	1280	---
MAX	1960	1870	1840	1800	1790	1840	1880	1810	1760	1640	1410	1270
MIN	1840	1840	1750	1660	1720	1700	1770	1720	1650	1410	1260	1140
(+)	1103.21	1103.17	1102.86	1102.99	1102.74	1103.07	1103.00	1102.87	1102.50	1101.62	1101.09	1100.47
(@)	-90	-10	-100	+40	-70	+100	-30	-30	-110	-240	-130	-140
(++)	36.4	27.0	28.1	31.8	24.2	17.9	11.9	15.2	29.7	35.2	49.4	28.7

WTR YR 1999 MAX 1960 MIN 1140 (@) -800

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the City of Electra.

07312180 LAKE ELECTRA NEAR ELECTRA, TX--Continued



07312200 BEAVER CREEK NEAR ELECTRA, TX

LOCATION.--Lat 33°54'21", long 98°54'17", Wichita County, Hydrologic Unit 11130207, near right bank at downstream side of bridge on Farm Road 2326, 6.5 mi northwest of Kamay, 8 mi upstream from Wichita River, and 9 mi south of Electra.

DRAINAGE AREA.--652 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 991.3 ft above sea level (Texas Department of Transportation reference point). Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Feb 1960, at least 10% of contributing drainage area has been regulated by Santa Rosa Lake (normal storage 11,570 acre-ft) about 30 miles upstream. There are several diversions above station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	121	1.9	.23	14	3.7	3.9	6.4	8.2	67	.02	.15
2	.06	61	.45	.30	7.9	3.8	3.7	13	5.2	50	.01	.07
3	.15	8.3	.60	.37	5.6	4.3	4.8	26	3.6	36	.37	.07
4	.59	1.2	14	.31	4.4	4.5	7.5	9.5	3.0	25	.20	.06
5	.76	.24	7.1	.23	3.8	4.5	4.9	4.8	3.1	18	4.2	.03
6	.43	.08	2.2	.15	3.2	4.6	2.9	2.3	19	14	3.5	.00
7	.23	.02	1.9	.11	3.2	4.8	2.3	1.3	82	11	1.3	.00
8	.11	.02	2.4	.09	8.8	7.2	2.4	.84	13	24	.36	.02
9	.07	.01	1.0	.10	7.7	8.7	2.2	.80	6.1	11	.20	.05
10	.07	.12	.49	.12	5.3	7.1	2.2	43	9.4	8.0	.13	.08
11	.03	.24	.34	.92	4.1	5.4	1.7	15	535	12	.05	.10
12	.02	.16	.35	1.4	2.8	19	1.7	8.1	362	8.2	.05	3.5
13	.01	.18	.30	.93	2.1	175	2.0	4.0	23	6.1	.00	28
14	.02	.19	.33	.82	2.3	35	465	2.9	13	5.5	.00	7.7
15	.04	.15	.30	.81	2.1	11	302	1.8	10	3.6	.00	1.9
16	.02	.07	.28	.46	2.1	7.5	23	2.4	8.6	2.5	.10	.98
17	1.6	.26	.23	.20	2.3	5.6	10	65	7.6	2.6	.00	.87
18	5.1	.29	.26	.09	2.4	94	7.0	326	6.9	2.3	.04	.96
19	3.3	.37	.32	.10	2.7	555	5.1	91	6.1	1.8	.05	.65
20	1.3	.78	.37	.10	3.2	92	14	13	15	1.1	.00	.57
21	.42	.87	.42	.11	3.1	19	3.3	7.3	13	.55	.00	.51
22	.20	.99	.44	.22	2.9	10	2.7	4.7	17	e.50	.00	.40
23	.17	1.4	.46	.30	3.4	7.2	2.3	2.2	15	e.45	.00	.27
24	.13	1.4	.41	.38	3.8	5.3	2.1	1.4	9.9	e.40	8.7	.14
25	.08	1.5	.40	.50	3.4	4.1	2.6	2.6	6.8	e.35	18	.11
26	.05	1.3	.37	.47	3.0	3.6	6.5	27	8.8	e.30	5.4	.12
27	.06	1.3	.34	.45	3.4	3.6	6.4	57	17	e.25	2.8	.09
28	.01	1.6	.30	.59	3.7	9.1	4.9	61	16	e.20	1.4	.10
29	.06	2.2	.25	77	---	11	3.7	36	17	.14	.76	.08
30	.06	13	.25	607	---	7.0	9.7	353	32	.04	.46	.08
31	.04	---	.24	88	---	4.8	---	25	---	.05	.28	---
TOTAL	15.21	220.24	39.00	782.86	116.7	1137.4	912.5	1214.34	1292.3	312.93	48.38	47.66
MEAN	.49	7.34	1.26	25.3	4.17	36.7	30.4	39.2	43.1	10.1	1.56	1.59
MAX	5.1	121	14	607	14	555	465	353	535	67	18	28
MIN	.01	.01	.23	.09	2.1	3.6	1.7	.80	3.0	.04	.00	.00
AC-FT	30	437	77	1550	231	2260	1810	2410	2560	621	96	95

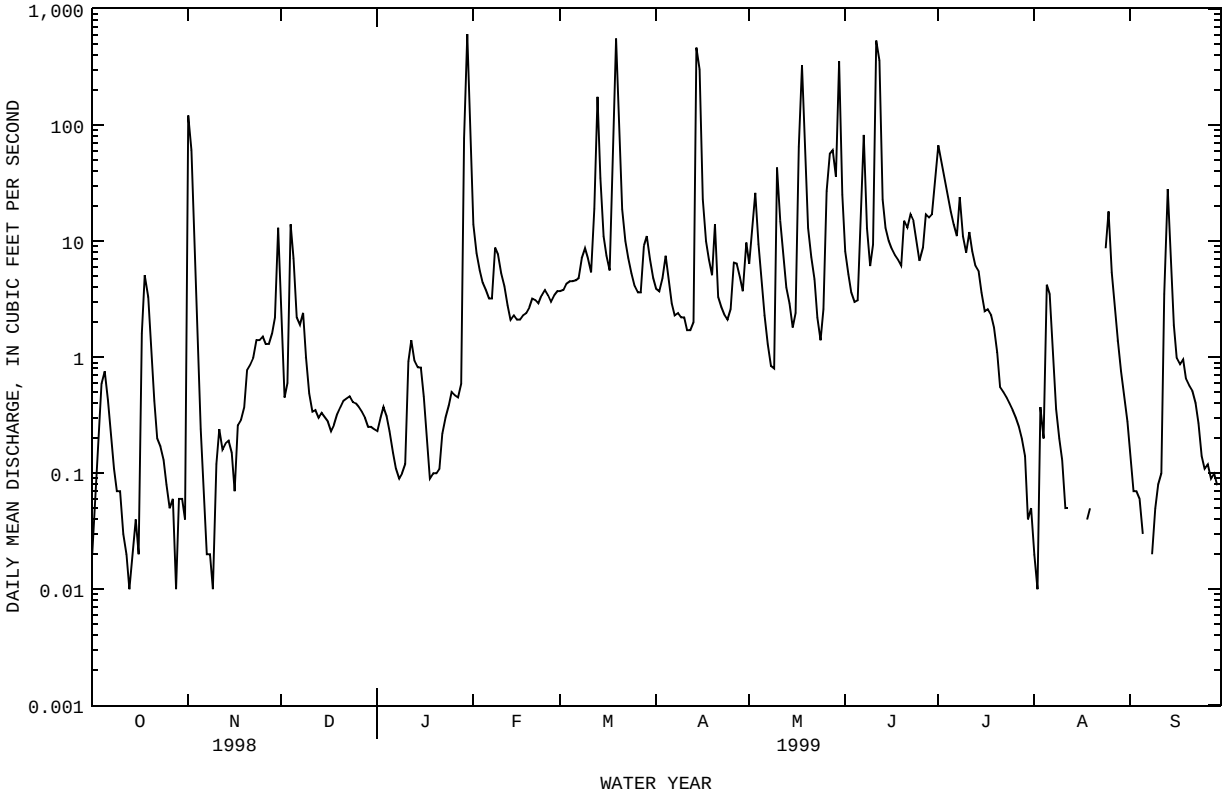
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

MEAN	110	36.9	28.8	21.6	54.8	82.2	61.3	142	146	59.8	69.7	108
MAX	1108	319	385	185	553	592	760	921	1435	727	1324	1108
(WY)	1987	1973	1992	1985	1993	1961	1990	1987	1995	1975	1995	1986
MIN	.14	.82	.71	.27	.84	.65	.89	2.26	3.37	1.84	.87	1.06
(WY)	1964	1966	1971	1966	1963	1965	1982	1996	1966	1964	1998	1998

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	21861.17		6139.52			
ANNUAL MEAN	59.9		16.8		77.5	
HIGHEST ANNUAL MEAN					300	1995
LOWEST ANNUAL MEAN					11.4	1983
HIGHEST DAILY MEAN	3120	Mar 17	607	Jan 30	11000	May 29 1987
LOWEST DAILY MEAN	.00	Sep 28	.00	Aug 13	.00	Jun 23 1960
ANNUAL SEVEN-DAY MINIMUM	.03	Sep 26	.01	Aug 17	.00	May 11 1962
INSTANTANEOUS PEAK FLOW			936	Apr 14	11700	Mar 17 1961
INSTANTANEOUS PEAK STAGE			20.01	Apr 14	34.94	May 29 1987
ANNUAL RUNOFF (AC-FT)	43360		12180		56180	
10 PERCENT EXCEEDS	115		19		112	
50 PERCENT EXCEEDS	2.3		2.1		5.6	
90 PERCENT EXCEEDS	.14		.06		.68	

e Estimated

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued



07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1968 to Jun 1970, Jun 1996 to current year.
SEDIMENT DATA: Apr 1966 to Sep 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1968 to Jun 1970 (local observer), Jun 1996 to current year.
WATER TEMPERATURE: Oct 1968 to Jun 1970 (local observer), Jun 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Jun 1996 to current year.

REMARKS.--Interruption in the record was caused by malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 29,600 microsiemens, Apr 19, 1970; minimum recorded, 192 microsiemens, Aug 24, 1999.
WATER TEMPERATURE: Maximum recorded, 37.3°C, Aug 10, 1999; minimum recorded, 0.0°C, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 8,310 microsiemens, Oct 1; minimum, 192 microsiemens, Aug 24.
WATER TEMPERATURE: Maximum, 37.3°C, Aug 10; minimum, 0.2°C, Dec 24-25.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8310	7910	8170	4510	881	2530	2490	1980	2240	3430	3220	3310
2	8140	7760	7910	2430	1170	1540	2670	2490	2610	3640	3370	3500
3	7800	7440	7690	1870	1430	1560	2630	2370	2570	3710	3640	3670
4	7570	7450	7500	1440	1410	1420	2500	1330	2060	3920	3710	3810
5	7800	7520	7710	1450	1420	1440	2440	1880	2170	3980	3910	3950
6	7720	6920	7320	1560	1450	1460	2590	2200	2410	4050	3920	3980
7	6940	6610	6740	1520	1470	1500	2200	1790	2060	4190	3990	4070
8	6640	6440	6540	1560	1510	1530	1790	1530	1610	4200	4060	4100
9	6440	6290	6370	1620	1340	1580	2080	1540	1760	4350	4080	4230
10	6330	6120	6260	1550	1410	1520	2380	2080	2260	4430	4320	4360
11	6250	6090	6190	1450	1360	1400	2450	2370	2420	4740	4150	4470
12	6130	5980	6070	1540	1360	1450	2480	2310	2390	4290	4010	4130
13	6030	5890	5980	1360	1310	1330	2310	2150	2230	4300	4090	4230
14	5950	5830	5900	1350	1320	1330	2190	2100	2140	4310	4180	4230
15	5850	5740	5810	1330	1300	1320	2350	2190	2290	4290	4190	4250
16	5750	5540	5670	1340	1320	1330	2590	2350	2480	4290	4250	4280
17	5600	2500	5360	1340	1310	1330	2800	2590	2720	4370	4260	4290
18	4490	1960	2940	1410	1340	1360	2900	2730	2850	4330	4280	4300
19	4620	4310	4450	1500	1410	1440	3090	2890	3000	4430	4330	4370
20	4410	4190	4350	1650	1490	1580	3230	3070	3180	4600	4430	4520
21	4190	3920	4050	1670	1620	1650	3280	3210	3250	4780	4550	4660
22	4390	3960	4140	1730	1650	1690	3220	3160	3180	5080	4780	4960
23	4690	4380	4540	1770	1680	1710	3160	3050	3110	5020	4710	4880
24	4690	4620	4640	1850	1770	1810	3060	3030	3040	4710	4570	4650
25	4660	4600	4630	1790	1690	1750	3090	2960	3040	4610	4500	4560
26	4680	4590	4640	1790	1740	1760	2960	2880	2930	4560	4460	4500
27	4680	4560	4620	1740	1690	1720	2920	2800	2860	4560	4450	4490
28	4610	4470	4540	1790	1690	1740	2880	2800	2840	4650	4310	4490
29	4520	4400	4480	1990	1540	1770	2980	2830	2940	4640	970	3510
30	4580	4440	4510	3040	1430	2050	3130	2970	3050	1700	410	752
31	4730	3650	4630	---	---	---	3230	3110	3170	610	490	574
MONTH	8310	1960	5620	4510	881	1590	3280	1330	2610	5080	410	4000

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	700	610	663	3830	3680	3770	1220	1190	1200	1960	1570	1710
2	750	700	724	3870	3800	3820	1270	1220	1240	2620	1710	2030
3	800	750	777	3870	3680	3810	1750	1260	1360	3940	2620	3520
4	850	800	829	3810	3630	3720	1900	1610	1700	4060	2980	3680
5	920	850	879	3750	3530	3710	2320	1800	2050	2980	2440	2640
6	1010	920	956	3830	3560	3750	2540	2320	2440	2440	2390	2410
7	1050	1010	1030	3880	3630	3820	2720	2530	2620	2440	2400	2420
8	1050	830	946	3910	2130	3210	2650	2540	2580	2500	2440	2470
9	1190	890	1010	3540	2390	3300	2600	2540	2570	2590	2440	2520
10	1320	1190	1270	3410	3170	3300	2640	2590	2620	2570	1820	2250
11	1220	1110	1140	3530	3220	3380	2680	2640	2660	2330	1820	2140
12	1180	1110	1140	3910	1110	2950	2770	2680	2720	2210	1650	1790
13	1290	1180	1230	3790	640	1650	2790	2630	2760	1990	1760	1880
14	1390	1290	1340	640	530	553	2680	610	1710	2020	1920	1970
15	1470	1390	1440	570	560	562	610	340	385	1920	1860	1900
16	1660	1460	1530	600	570	583	520	391	455	1930	1740	1860
17	1700	1600	1640	660	600	629	648	520	583	4480	733	2010
18	1690	1600	1650	770	510	663	804	648	726	880	372	570
19	1750	1630	1700	760	410	508	896	804	853	834	686	786
20	1800	1750	1780	450	410	432	978	896	932	848	816	827
21	1890	1760	1800	540	450	496	1040	978	1010	900	848	877
22	1860	1780	1830	610	540	573	1110	1040	1080	981	900	938
23	1930	1820	1900	690	610	648	1190	1110	1160	1110	981	1050
24	2070	1930	2020	780	690	731	1260	1190	1230	1330	1110	1220
25	2190	2040	2120	850	780	815	1330	1260	1300	1300	1070	1240
26	2520	2180	2340	910	850	879	1310	1200	1250	3660	910	1330
27	3050	2520	2730	1000	910	949	1450	1250	1330	3020	1260	2170
28	3690	3050	3450	1270	910	1020	1750	1450	1610	2050	990	1330
29	---	---	---	1220	950	1100	1900	1750	1850	1310	630	795
30	---	---	---	1190	1090	1120	1890	1600	1830	1260	260	466
31	---	---	---	1190	1160	1180	---	---	---	890	440	697
MONTH	3690	610	1500	3910	410	1860	2790	340	1590	4480	260	1730

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	910	870	878	1140	991	1070	3070	1060	2530	3630	3530	3580
2	1000	910	970	992	921	948	2420	1010	1140	3700	3630	3650
3	1030	970	996	923	903	911	3780	2020	2800	3790	3700	3740
4	1100	1030	1060	934	906	921	2680	2530	2580	3890	3790	3830
5	1140	1100	1130	951	934	939	4100	2010	2830	3900	3830	3870
6	3090	1140	1450	968	951	963	2450	2090	2290	---	---	---
7	1880	490	915	1010	968	990	2560	2450	2520	---	---	---
8	1100	650	880	1150	1010	1050	2480	2100	2230	4060	1480	3280
9	1850	1100	1460	1350	1150	1270	2120	1720	1940	4530	4060	4260
10	2150	380	1860	1650	1310	1420	1770	1510	1650	4440	4120	4270
11	1600	250	660	1890	1620	1770	1540	1510	1520	4230	3250	4080
12	360	240	280	1620	1560	1600	1660	1490	1540	4110	2530	3140
13	630	360	521	1560	1380	1450	---	---	---	4070	2280	3090
14	860	630	765	1410	1380	1390	---	---	---	2280	1920	2060
15	950	860	911	1620	1410	1510	---	---	---	2320	2210	2270
16	960	930	946	1670	1620	1660	2710	801	1960	2380	2320	2350
17	960	920	936	1780	1670	1720	---	---	---	2470	2380	2430
18	1120	960	1040	1780	1500	1660	2110	723	1340	2490	2450	2470
19	1240	1120	1180	1500	1450	1470	2160	2110	2140	2450	2300	2410
20	3330	1240	2370	1550	1470	1510	---	---	---	2330	2170	2250
21	1780	1520	1570	1710	1550	1630	---	---	---	2170	2080	2130
22	1830	1560	1740	1940	1710	1830	---	---	---	2080	2020	2050
23	1860	1610	1710	2120	1940	2010	---	---	---	2030	1980	2010
24	1890	1500	1690	2250	2120	2170	5970	192	1500	2000	1970	1990
25	1810	1510	1650	2370	2250	2310	4300	1480	3420	2000	1970	1990
26	2020	1810	1920	2480	2370	2410	3200	1720	2090	2010	1960	1990
27	2020	1930	1970	2660	2480	2560	2740	1810	2260	1990	1830	1930
28	1990	1450	1720	2830	2660	2750	3270	2740	3060	2080	1930	2050
29	1450	1170	1290	3010	2830	2910	3420	3270	3350	2140	2080	2110
30	1320	1090	1210	3130	1060	2620	3490	3420	3450	2180	2140	2150
31	---	---	---	3220	768	2580	3530	3490	3510	---	---	---
MONTH	3330	240	1260	3220	768	1680	---	---	---	---	---	---

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.5	25.8	27.0	19.5	13.5	15.7	14.3	11.9	13.0	6.6	4.2	5.2
2	26.6	24.3	25.1	14.8	13.0	13.6	14.9	12.1	13.5	5.7	3.3	4.5
3	25.8	23.8	24.5	13.8	12.8	13.4	15.5	14.2	14.8	3.3	1.6	2.2
4	28.0	23.9	25.6	13.5	12.1	12.8	15.5	13.4	14.4	2.7	1.3	1.9
5	26.1	22.5	24.5	12.1	11.1	11.6	15.8	13.3	14.5	3.4	1.7	2.4
6	22.5	20.0	21.2	11.1	10.4	10.7	15.9	14.3	15.0	3.7	1.9	2.8
7	21.7	17.6	19.5	12.1	10.3	11.0	14.3	10.5	12.2	3.6	2.4	3.0
8	21.2	16.9	19.0	12.1	11.1	11.6	10.5	8.5	9.3	3.1	2.0	2.6
9	22.0	17.4	19.4	16.1	11.8	13.7	8.5	6.3	7.5	2.9	1.4	2.1
10	22.1	17.9	19.7	14.3	12.3	13.3	8.9	7.8	8.4	3.5	2.0	2.6
11	23.3	18.6	20.6	12.3	10.7	11.4	8.7	7.8	8.3	3.1	1.2	2.2
12	23.1	19.5	21.1	11.6	10.6	11.2	8.8	7.4	8.0	7.2	3.1	5.4
13	23.8	20.0	21.7	12.2	11.4	11.9	7.6	5.4	6.6	6.7	4.3	5.7
14	24.6	20.4	22.1	13.5	12.2	12.7	7.3	5.1	6.2	4.3	2.3	3.4
15	24.1	20.7	22.2	13.0	11.5	12.2	7.2	4.8	6.1	6.1	2.7	4.2
16	22.0	21.1	21.4	13.3	11.1	12.2	7.4	5.0	6.2	7.2	4.4	5.7
17	21.5	19.6	21.0	13.4	11.3	12.3	6.9	4.8	5.9	8.0	5.3	6.7
18	19.6	17.0	18.1	15.3	12.8	13.9	8.0	5.8	6.8	7.3	4.8	6.1
19	18.8	16.6	17.9	15.4	13.6	14.3	8.5	7.4	8.1	8.9	5.0	6.9
20	18.4	16.0	16.6	13.6	12.2	12.7	7.4	6.5	6.8	9.3	6.0	7.7
21	16.5	15.4	15.9	12.4	11.3	11.8	6.9	2.4	5.2	10.6	7.4	8.9
22	16.6	14.6	15.7	12.6	10.6	11.5	2.4	.7	1.3	9.4	6.0	7.6
23	16.3	14.2	15.1	13.3	11.6	12.3	1.0	.5	.7	7.1	4.3	5.8
24	17.4	14.5	15.7	13.4	11.9	12.5	1.5	.2	.7	8.2	5.0	6.7
25	18.3	14.8	16.4	13.2	11.9	12.6	1.5	.2	.7	8.2	6.1	7.2
26	19.6	16.3	17.9	11.9	10.4	11.1	1.9	.3	1.0	10.2	6.0	8.0
27	20.9	18.1	19.4	12.4	10.3	11.2	3.2	1.2	2.1	12.4	9.0	10.6
28	23.0	19.7	21.2	14.5	11.9	13.0	3.8	1.8	2.8	11.8	9.5	10.6
29	22.7	20.4	21.4	16.0	14.2	14.8	4.7	2.7	3.7	9.5	5.0	7.2
30	22.5	20.6	21.4	16.1	13.2	14.8	4.6	3.0	3.8	5.8	4.9	5.1
31	21.3	18.6	20.8	---	---	---	4.4	3.4	4.0	5.6	4.8	5.1
MONTH	28.5	14.2	20.3	19.5	10.3	12.6	15.9	.2	7.0	12.4	1.2	5.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.7	4.6	5.6	16.9	11.3	13.8	22.2	16.6	19.2	21.7	19.0	20.4
2	---	---	---	16.4	12.3	14.3	24.6	19.2	21.4	24.0	18.3	20.5
3	---	---	---	14.9	10.7	12.8	22.8	18.4	20.6	25.2	20.8	23.0
4	9.3	6.1	7.6	15.6	9.6	12.7	19.9	14.9	17.7	25.1	22.4	23.6
5	12.1	7.5	9.5	17.4	12.8	14.8	21.8	17.3	19.4	23.8	18.3	21.1
6	13.3	11.4	12.1	15.4	12.0	13.8	23.2	15.8	19.2	23.3	17.3	20.0
7	12.9	9.9	11.4	13.9	11.0	12.0	22.7	17.5	20.0	26.1	16.0	20.8
8	12.4	9.3	10.8	14.9	10.7	12.7	25.3	20.4	22.4	29.4	19.1	23.6
9	12.2	9.8	10.9	15.2	10.3	12.8	22.3	18.8	20.3	27.7	22.0	24.7
10	14.6	10.3	12.3	17.3	11.4	14.3	23.8	16.9	20.0	24.1	18.5	21.9
11	14.6	10.2	13.1	16.4	12.5	13.9	21.9	16.1	19.2	24.1	22.0	23.0
12	10.4	7.2	8.9	12.5	8.2	10.8	20.0	16.7	18.6	26.2	20.2	22.9
13	10.2	5.6	7.7	9.8	6.6	7.9	22.0	17.8	19.8	26.4	19.8	23.1
14	10.9	6.4	8.4	8.7	5.5	6.9	21.0	17.6	18.9	26.0	21.6	23.8
15	13.0	8.0	10.1	12.2	6.3	8.9	17.6	15.5	16.5	32.1	23.0	26.9
16	13.7	9.7	11.4	14.0	8.2	11.0	17.0	14.0	15.3	30.4	25.6	27.9
17	13.2	8.9	10.8	14.9	11.6	13.3	17.3	12.5	14.7	27.2	20.7	25.3
18	13.5	9.7	11.3	14.6	9.8	12.2	18.8	11.8	15.4	21.6	19.0	20.2
19	11.7	8.4	9.9	10.2	9.4	9.8	22.8	16.3	19.2	24.2	20.2	22.0
20	12.8	8.8	10.5	11.8	8.8	10.2	26.0	18.5	21.7	25.4	22.1	23.6
21	11.7	8.0	9.8	15.2	10.1	12.4	25.4	20.4	22.8	28.3	22.9	25.5
22	10.0	7.8	8.9	18.8	12.7	15.4	29.3	20.9	24.4	30.9	24.6	27.5
23	11.9	6.9	9.1	17.3	13.9	15.6	25.4	19.4	22.6	30.1	25.3	27.7
24	13.7	7.2	10.2	15.2	12.8	13.7	19.4	15.9	17.1	27.6	23.9	25.7
25	17.4	10.8	13.5	17.2	11.3	13.9	17.9	15.1	16.3	30.4	23.0	26.4
26	17.2	14.3	15.7	17.7	11.9	14.6	22.9	16.5	19.1	28.1	22.9	24.8
27	17.4	13.9	15.4	15.6	12.4	14.1	24.5	17.4	20.9	24.1	22.7	23.3
28	15.6	10.6	13.0	14.5	11.3	12.7	27.0	20.4	23.5	24.1	22.1	23.1
29	---	---	---	15.9	13.2	14.4	24.5	20.6	22.5	24.5	22.7	23.5
30	---	---	---	16.4	14.2	15.3	23.6	19.4	21.4	24.9	20.9	22.7
31	---	---	---	20.2	14.8	17.0	---	---	---	30.5	24.1	26.7
MONTH	---	---	---	20.2	5.5	12.8	29.3	11.8	19.7	32.1	16.0	23.7

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	32.3	25.9	28.9	30.5	28.3	29.3	36.1	26.8	30.8	32.1	26.3	29.1
2	32.8	26.9	29.6	30.9	28.2	29.7	36.0	26.4	30.6	33.3	26.4	29.1
3	31.7	27.2	29.3	30.7	28.3	29.6	36.2	27.5	31.3	33.7	26.6	29.5
4	32.5	26.1	28.9	31.7	28.4	29.8	33.5	28.5	30.6	34.1	27.0	30.0
5	29.3	26.3	27.7	32.0	28.2	30.0	30.1	27.5	28.8	32.2	28.0	29.5
6	27.3	24.7	26.1	32.9	28.3	30.4	32.7	26.8	29.6	---	---	---
7	27.4	23.3	25.4	33.4	29.2	31.0	34.9	27.9	31.1	---	---	---
8	31.3	25.5	27.9	31.5	28.5	30.0	35.3	28.6	31.9	31.4	25.4	28.3
9	31.8	25.9	28.8	32.5	28.6	30.3	36.5	29.3	32.5	32.0	23.8	27.5
10	29.9	23.9	27.1	30.1	27.3	28.6	37.3	28.8	32.6	31.4	24.7	27.7
11	24.2	22.1	23.1	27.6	24.8	26.4	36.3	28.4	32.1	32.5	25.9	28.6
12	25.6	22.0	23.6	30.3	24.9	27.1	35.7	28.3	31.6	29.2	21.6	24.8
13	27.3	24.4	25.6	32.7	25.2	28.7	---	---	---	25.6	20.8	23.5
14	28.9	24.1	26.1	33.0	26.9	29.8	---	---	---	26.6	21.5	23.7
15	29.4	24.0	26.3	33.2	26.7	29.9	---	---	---	24.4	22.4	23.2
16	29.9	24.6	26.9	30.3	26.8	28.7	36.4	27.8	31.2	24.7	21.5	22.9
17	26.5	23.1	24.4	32.8	26.4	29.2	---	---	---	26.9	21.3	23.9
18	28.8	22.1	25.2	33.9	27.7	30.5	36.6	24.2	30.1	27.8	23.4	25.3
19	30.8	24.1	27.3	34.2	27.9	30.8	35.8	27.2	30.8	30.3	23.5	26.1
20	28.8	21.5	24.5	34.1	28.0	30.8	---	---	---	28.9	23.9	25.8
21	27.8	25.1	26.2	35.3	27.7	31.1	---	---	---	25.7	20.1	22.6
22	27.2	25.0	25.8	35.3	27.6	31.2	---	---	---	24.7	17.3	20.7
23	29.9	25.4	27.3	36.1	28.0	31.8	---	---	---	25.6	17.3	20.9
24	32.9	27.2	29.5	36.3	27.3	31.5	36.1	25.0	29.0	25.4	19.8	22.2
25	33.7	26.6	29.9	36.1	27.3	31.1	31.8	27.6	29.5	28.6	20.9	24.1
26	34.2	27.4	30.5	35.1	28.0	31.2	33.9	28.0	30.5	29.5	22.2	25.3
27	33.3	29.4	31.2	35.4	27.5	31.2	31.2	28.0	29.6	30.3	24.2	26.6
28	32.7	29.5	31.1	35.8	27.7	31.1	33.4	26.6	29.7	25.3	20.7	22.9
29	31.4	28.3	29.7	36.3	26.8	31.2	34.4	28.2	31.0	23.8	17.6	20.3
30	30.3	27.8	29.2	36.2	26.2	31.0	33.4	27.1	30.0	23.4	16.4	19.5
31	---	---	---	36.2	25.3	30.0	33.1	26.5	29.6	---	---	---
MONTH	34.2	21.5	27.4	36.3	24.8	30.1	---	---	---	---	---	---

07312380 NORTH FORK BUFFALO CREEK RESERVOIR NEAR IOWA PARK, TX

LOCATION.--Lat 33°59'12", long 98°45'06", Wichita County, Hydrologic Unit 11130206, on south bank near right end of dam on North Fork Buffalo Creek, 5.0 mi northwest of Iowa park.

DRAINAGE AREA.--33 mi^2

PERIOD OF RECORD.--Oct 1998 to Sep 1999.

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 4,452 feet long. The dam was completed in Nov 1964 and storage began shortly thereafter. The lake is owned by the city of Iowa park, which uses the water for their municipal supply. The capacity curve was developed by Freese and Nichols Inc.. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1056.3
Crest of spillway	1048.0
Emergency spillway	1051.7

COOPERATION.--Capacity curve and diversions for municipal use are provided by the city of Iowa Park.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,590 acre-ft, Oct 1 (elevation, 1,038.27 ft); minimum contents, 1,730 acre-ft, Sep 29-30 (elevation, 1,033.20 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

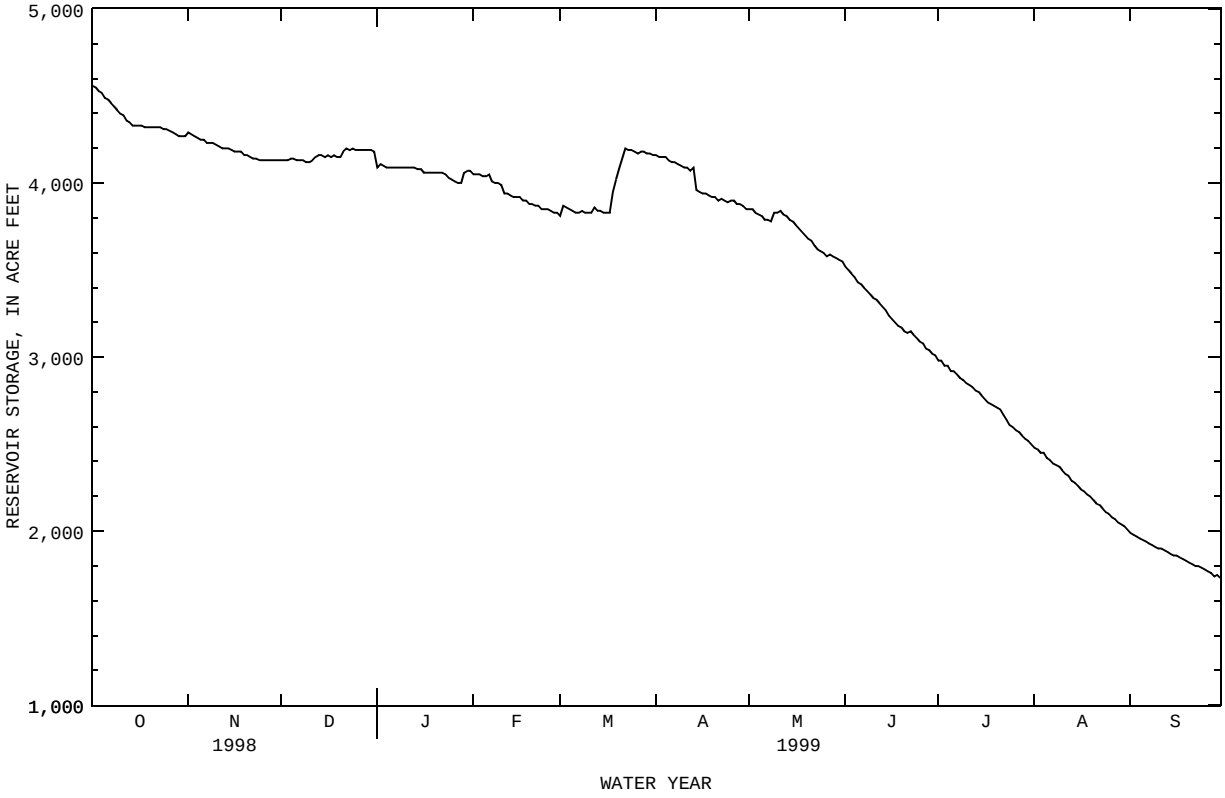
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4560	4290	e4130	4090	4050	3810	4160	3850	3520	2980	2480	1990
2	4550	4280	e4130	4110	4050	3870	4150	3850	3500	2980	2470	1980
3	4530	4270	e4130	4100	4050	3860	4150	3830	3480	2950	2450	1970
4	4520	4260	4140	4090	4040	3850	4150	3820	3460	2950	2450	1960
5	4490	4250	4140	4090	4040	3840	4130	3810	3430	2920	2420	1950
6	4480	4250	4130	4090	4050	3830	4120	3790	3420	2920	2410	1940
7	4460	4230	4130	e4090	4010	3830	4120	3790	3400	2900	2390	1930
8	4440	4230	4130	e4090	4000	3840	4110	3780	3380	2880	2380	1920
9	4420	4230	4120	e4090	4000	3830	4100	3830	3360	2870	2370	1910
10	4400	4220	4120	e4090	3990	3830	4090	3830	3340	2850	2350	1900
11	4390	4210	4130	4090	3940	3830	4090	3840	3330	2840	2330	1900
12	4360	4200	4150	4090	3940	3860	4070	3820	3310	2830	2320	1890
13	4350	4200	4160	4090	3930	3840	4090	3810	3290	2810	2290	1880
14	4330	4200	4160	4080	3920	3840	3960	3790	3270	2800	2280	1870
15	e4330	4190	4150	4080	3920	3830	3950	3780	3240	2780	2260	1860
16	e4330	4180	4160	4060	3920	3830	3940	3760	3220	2760	2240	1860
17	e4330	4180	4150	4060	3900	3830	3940	3740	3200	2740	2230	1850
18	e4320	4180	4160	4060	3900	3950	3930	3720	3180	2730	2210	1840
19	e4320	4160	4150	4060	3880	e4020	3920	3700	3170	2720	2200	1830
20	e4320	4160	4150	4060	3880	e4080	3920	3680	3150	2710	2180	1820
21	e4320	4150	4180	4060	3870	e4140	3900	3670	3140	2700	2160	1810
22	e4320	4140	4200	4060	3870	e4200	3910	3640	3150	2670	2150	1800
23	4320	4140	4190	4050	3850	4190	3900	3620	3130	2640	2130	1800
24	4310	4130	4200	4030	3850	4190	3890	3610	3110	2610	2110	1790
25	4310	4130	4190	4020	3850	4180	3900	3600	3090	2600	2100	1780
26	4300	4130	4190	4010	3840	4170	3900	3580	3080	2580	2080	1770
27	4290	4130	4190	4000	3830	4180	3880	3590	3050	2570	2070	1760
28	4280	e4130	4190	4000	3830	4180	3880	3580	3040	2550	2050	1740
29	4270	e4130	4190	4060	---	4170	3870	3570	3020	2530	2040	1750
30	4270	e4130	4190	4070	---	4170	3850	3560	3010	2520	2030	1730
31	4270	---	4180	4070	---	4160	---	3550	---	2500	2010	---
MEAN	4370	4190	4160	4070	3940	3980	4000	3720	3250	2750	2250	1860
MAX	4560	4290	4200	4110	4050	4200	4160	3850	3520	2980	2480	1990
MIN	4270	4130	4120	4000	3830	3810	3850	3550	3010	2500	2010	1730
(+)	1037.82	1037.61	1037.68	1037.53	1037.18	1037.66	1037.21	1036.78	1036.01	1035.00	1034.02	1033.20
(@)	-320	-140	+50	-110	-240	+330	-310	-300	-540	-510	-490	-280
(++)	136	96	78	84	77	84	91	99	114	152	146	82

WTR YR 1999 MEAN 3540 MAX 4560 MIN 1730 (@) -2860 (++) 1239

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the City of Iowa Park.

07312380 NORTH FORK BUFFALO CREEK RESERVOIR NEAR IOWA PARK, TX--Continued



07312500 WICHITA RIVER AT WICHITA FALLS, TX

LOCATION.--Lat 33°54'34", long 98°32'00", Wichita County, Hydrologic Unit 11130206, near center of stream at downstream side of bridge on Beverly Drive in Wichita Falls, 4 mi upstream from Fort Worth and Denver Railway Co. bridge, 8.4 mi upstream from Holliday Creek, and 55.3 mi upstream from mouth.

DRAINAGE AREA.--3,140 mi^2, of which 2,086 mi^2 is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Feb 1901 to Jan 1902 (monthly discharge only, published in WSP 1311), Oct 1910 to Dec 1911 (gage heights only), Mar 1938 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 924.26 ft above sea level. Feb 1900 to Feb 1902 and Oct 1, 1910, to Dec 31, 1911, nonrecording gages at site 4 mi downstream at different datum. Mar 30, 1938, to Dec 1, 1959, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Mar 1938, at least 10% of contributing drainage area has been regulated by Lake Kemp (station 0731200, capacity 603,000 acre-ft) 71 mi upstream. Since completion of Lake Kemp in 1923, no outflow has been permitted to pass over the spillway. Water is diverted from Lake Diversion (normal storage 40,000 acre-ft) 41 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. During the current water year, the Wichita County Water Improvement District No. 2 diverted 52,000 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s Jun 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

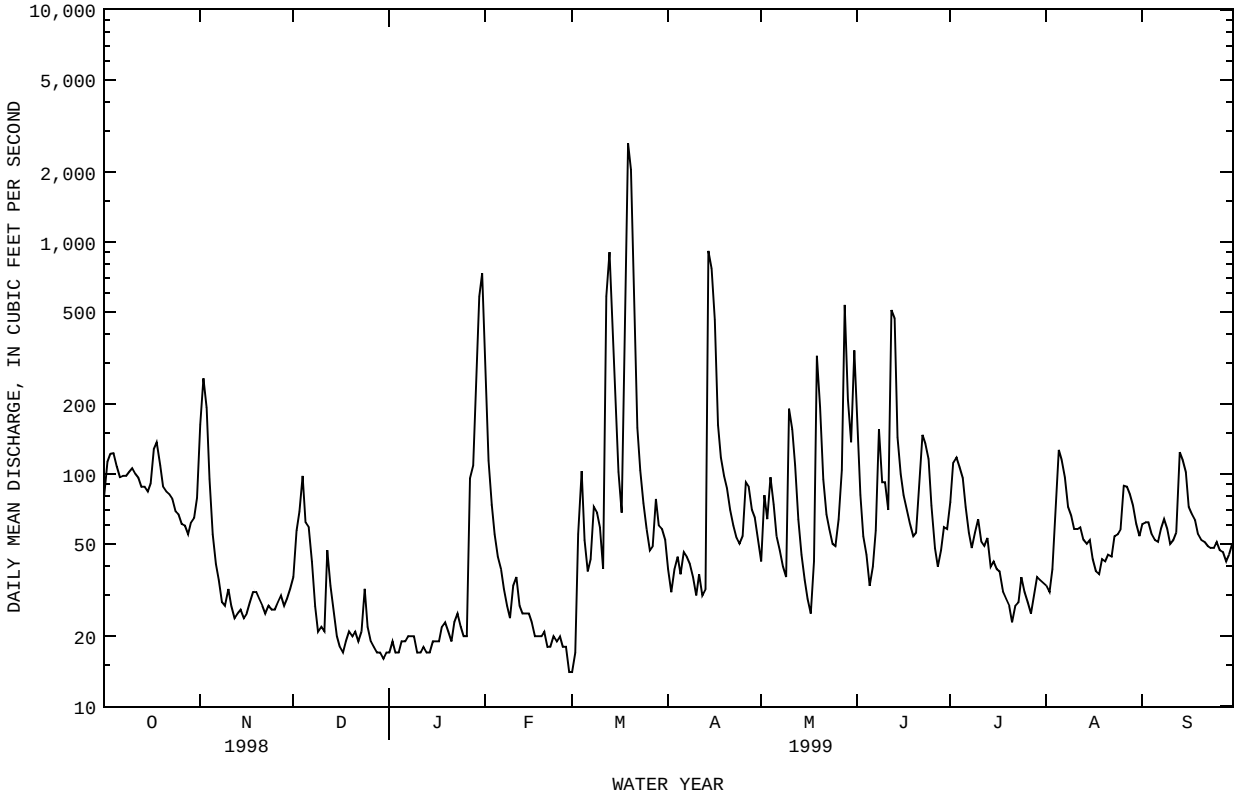
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	163	36	17	232	14	39	42	158	76	33	61
2	113	258	57	19	114	17	31	81	81	112	31	62
3	122	193	69	17	74	55	39	64	54	118	39	62
4	123	95	98	17	55	103	44	97	45	107	66	55
5	108	55	62	19	44	52	37	74	33	96	127	52
6	97	41	59	19	39	38	46	54	40	72	115	51
7	98	35	42	20	32	43	44	47	57	56	97	58
8	98	28	27	20	27	72	41	40	156	48	72	64
9	102	27	21	20	24	68	36	36	92	56	66	58
10	106	32	22	17	33	59	30	191	92	64	58	50
11	100	27	21	17	36	39	37	156	70	51	58	52
12	96	24	47	18	27	583	30	109	508	49	59	56
13	88	25	33	17	25	904	32	64	468	53	52	124
14	88	26	26	17	25	433	915	45	144	40	50	115
15	84	24	20	19	25	180	768	35	100	42	52	102
16	91	25	18	19	23	102	462	29	81	39	43	72
17	128	28	17	19	20	68	163	25	70	38	38	67
18	137	31	19	22	20	460	118	42	61	31	37	63
19	109	31	21	23	20	2660	98	323	54	29	43	55
20	88	29	20	21	21	2050	87	194	56	27	42	52
21	84	27	21	19	18	399	70	95	92	23	45	51
22	82	25	19	23	18	158	60	67	147	27	44	49
23	78	27	21	25	20	104	53	58	135	28	54	48
24	69	26	32	22	19	75	50	50	116	36	55	48
25	67	26	22	20	20	58	54	49	73	31	58	51
26	61	28	19	20	18	47	92	64	48	28	89	47
27	60	30	18	96	18	49	88	104	40	25	88	46
28	55	27	17	109	14	78	70	535	47	30	82	42
29	62	29	17	221	---	60	65	209	59	36	73	45
30	65	32	16	583	---	58	51	137	58	35	61	50
31	79	---	17	732	---	52	---	341	---	34	54	---
TOTAL	2819	1474	954	2247	1061	9138	3750	3457	3235	1537	1881	1808
MEAN	90.9	49.1	30.8	72.5	37.9	295	125	112	108	49.6	60.7	60.3
MAX	137	258	98	732	232	2660	915	535	508	118	127	124
MIN	55	24	16	17	14	14	30	25	33	23	31	42
AC-FT	5590	2920	1890	4460	2100	18130	7440	6860	6420	3050	3730	3590

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1999, BY WATER YEAR (WY)

MEAN	408	204	117	91.2	152	200	231	562	519	237	263	321
MAX	4017	1784	1091	859	1252	1412	1450	4105	4475	1201	2791	2619
(WY)	1942	1973	1992	1992	1992	1993	1990	1941	1941	1975	1950	1950
MIN	55.1	23.5	25.3	22.5	17.8	26.9	37.3	52.0	71.0	49.6	60.7	60.3
(WY)	1983	1998	1979	1974	1995	1975	1989	1988	1944	1999	1999	1999

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1938 - 1999	
ANNUAL TOTAL	70911		33361			
ANNUAL MEAN	194		91.4		273	
HIGHEST ANNUAL MEAN					977	1941
LOWEST ANNUAL MEAN					64.3	1983
HIGHEST DAILY MEAN	3420	Mar 19	2660	Mar 19	17300	Oct 3 1941
LOWEST DAILY MEAN	11	Jan 30	14	Feb 28	7.7	Apr 9 1978
ANNUAL SEVEN-DAY MINIMUM	14	Jan 24	17	Dec 28	11	Mar 6 1975
INSTANTANEOUS PEAK FLOW			2910	Mar 19	17800	Oct 3 1941
INSTANTANEOUS PEAK STAGE			12.78	Mar 19	24.00	Oct 3 1941
ANNUAL RUNOFF (AC-FT)	140700		66170		197500	
10 PERCENT EXCEEDS	464		131		566	
50 PERCENT EXCEEDS	82		51		83	
90 PERCENT EXCEEDS	26		20		36	



07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Apr 1966 to Jul 1975, Oct 1981 to Sep 1989, Jun 1996 to current year.
BIOCHEMICAL DATA: Nov 1981 to Aug 1989 and Jun 1996 to Sep 1997.
SEDIMENT DATA: Apr 1966 to Jul 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1981 to Sep 1989, Jun 1996 to current year.
WATER TEMPERATURE: Oct 1981 to Sep 1989, Jun 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Oct 1981 to Sep 1989, Jun 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 9,490 microsiemens, Mar 2, 1984; minimum daily, 245 microsiemens, Oct 24, 1983.
WATER TEMPERATURE: Maximum daily, 35.6°C, Aug 9, 1999; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 7,430 microsiemens, Jan 18; minimum, 483 microsiemens, Mar 19.
WATER TEMPERATURE: Maximum, 35.6°C, Aug 9; minimum, 0.0°C, Dec 23-25, Jan 4, 9.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6210	6040	6130	5990	3850	4510	6490	6260	6370	6930	6780	6890
2	6140	5240	5800	5580	2850	4050	6320	6240	6280	7020	6850	6930
3	5850	5550	5770	3060	2750	2960	6290	1900	5410	7040	6860	6980
4	5890	5710	5810	3060	2940	3000	4440	2320	3230	7130	6970	7050
5	5910	5710	5820	---	---	e3400	4930	3380	4250	7110	6960	7060
6	5980	5880	5940	---	---	e4400	5210	3950	4480	7060	6900	7010
7	6050	5930	5990	4600	4490	4530	4140	3050	3690	7060	6960	7020
8	6120	5990	6050	4740	4600	4660	3050	2670	2790	7090	6950	7020
9	6060	5920	6010	5160	4720	4830	2700	2640	2670	7160	6960	7080
10	6030	5970	5990	5220	4890	5010	2750	2700	2730	7180	6990	7110
11	6040	5960	6000	---	---	e5100	2830	2710	2740	7210	7100	7140
12	6050	5960	6020	---	---	e5250	5040	2790	3630	7130	6960	7070
13	6090	6000	6040	---	---	e5320	3350	2880	3000	7170	7010	7110
14	6100	5990	6050	---	---	e5330	---	---	e3600	7280	7080	7180
15	6170	6080	6120	---	---	e5320	---	---	e4300	7340	7030	7220
16	6170	6040	6120	---	---	e5530	---	---	e5000	7320	7220	7260
17	6090	4660	5740	---	---	e5820	---	---	e5600	7370	7180	7290
18	5800	4960	5390	---	---	e6080	---	---	e6200	7430	7240	7350
19	5840	5300	5610	---	---	e6270	---	---	e6300	7370	6960	7150
20	6090	5820	5990	---	---	e6450	---	---	e6380	7020	6870	6960
21	6060	5860	5940	---	---	e6610	---	---	e6460	7000	6790	6920
22	6190	6060	6130	---	---	e6680	---	---	e6530	7000	6870	6930
23	---	---	e6030	---	---	e6770	---	---	e6600	6940	6690	6820
24	---	---	e6020	6770	6660	6710	---	---	e6640	7020	6780	6880
25	---	---	e6020	6790	6660	6720	---	---	e6670	7170	7020	7100
26	---	---	e6010	6800	6760	6780	---	---	e6730	7150	6980	7070
27	---	---	e6010	6760	6680	6740	---	---	e6770	7170	5860	6800
28	---	---	e6000	6750	6660	6720	---	---	e6800	5960	5790	5850
29	---	---	e5990	6990	6700	6780	---	---	e6820	5810	3130	4410
30	---	---	e5990	6900	6490	6620	---	---	e6830	3130	2660	2840
31	---	---	e5980	---	---	---	6930	6800	6870	2660	2410	2530
MONTH	---	---	5950	---	---	5500	---	---	5240	7430	2410	6650

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG.C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2410	1550	1930	7260	6930	7090	5070	4040	4730	5380	5100	5210
2	2040	1660	1820	7270	7030	7160	4250	3810	3990	5110	4680	4920
3	2240	1880	2060	7300	6400	7040	4590	4250	4420	5250	4270	4810
4	2360	2010	2090	6400	5550	6010	4840	4510	4610	5850	4640	5300
5	2530	2090	2270	6010	5570	5780	5390	4840	5120	6020	3710	5120
6	2380	2050	2190	6910	6010	6500	5710	5390	5540	3820	3450	3580
7	2050	1770	1860	6960	6580	6810	5800	5560	5690	4940	3820	4370
8	2200	1720	1880	6720	4660	6040	5870	5690	5810	5360	4940	5210
9	2200	2050	2110	6390	4890	5850	5750	5270	5450	5680	4990	5450
10	5530	2180	3980	6820	6030	6520	5570	5260	5360	4990	1840	3210
11	5740	5340	5620	6030	5030	5350	5930	5470	5690	3850	2040	3060
12	5340	4520	4890	5590	637	2340	5680	5430	5530	3490	2530	3040
13	4940	4470	4620	1280	1240	1270	6030	5680	5810	3360	2830	2980
14	4710	4200	4460	1280	1270	1270	6030	710	1540	4080	3360	3810
15	5110	4500	4730	1540	1140	1290	2570	860	1750	4300	4010	4130
16	4920	4560	4810	1810	1540	1640	1230	790	1040	4800	4300	4550
17	5230	4660	4930	2220	1810	2000	1510	1230	1350	5200	4800	4990
18	5640	4930	5250	2340	634	1710	1930	1510	1710	6050	5200	5420
19	6040	5220	5550	915	483	635	2370	1930	2150	7380	1950	3410
20	6690	5840	6260	915	894	900	2870	2370	2600	1950	1270	1490
21	6860	6680	6730	894	813	863	3330	2870	3100	2180	1300	1590
22	7090	6830	6920	1480	893	1250	3680	3330	3520	3030	2180	2690
23	7240	7050	7150	1930	1480	1690	4030	3680	3840	3940	3030	3380
24	7250	6880	7090	2510	1930	2230	4330	4030	4170	4130	3890	3980
25	7240	7060	7170	2980	2510	2720	4530	4320	4430	4710	4130	4350
26	7240	6930	7070	3390	2980	3160	4620	3960	4320	5040	4580	4820
27	7290	7060	7150	3630	3040	3450	4710	3860	4170	5330	4790	5040
28	7370	7080	7220	3830	3130	3580	5070	4710	4970	6040	800	2090
29	---	---	---	4450	3480	4150	5230	4950	5020	1000	930	962
30	---	---	---	4930	4400	4610	5600	5230	5460	---	---	e1480
31	---	---	---	5200	4930	5040	---	---	---	---	---	e2750
MONTH	7370	1550	4640	7300	483	3740	6030	710	4100	---	---	3780

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e2750	4140	3930	4010	5480	5440	5460	5330	5210	5280
2	---	---	e3200	4110	2440	3180	5490	5400	5440	5320	5180	5250
3	---	---	e3500	2440	2270	2340	5510	5280	5480	5310	5220	5260
4	---	---	e3800	2500	2330	2400	5280	4330	4510	5360	5270	5330
5	---	---	e4100	2770	2500	2670	4990	4210	4830	5390	5270	5340
6	---	---	e4400	2900	2750	2840	4210	4040	4130	5660	5360	5500
7	---	---	e4710	3060	2890	2970	4430	4050	4220	5740	5660	5700
8	5990	2510	4100	3180	2950	3080	4800	4430	4600	5710	5610	5670
9	3040	2660	2930	3300	2770	3160	4850	4020	4650	5710	5650	5680
10	3200	1730	2760	3030	2770	2970	4530	4330	4420	5950	5710	5790
11	4720	2540	3350	2860	2590	2680	5280	4530	4960	6230	5950	6060
12	4930	887	2510	3260	2860	3050	5440	5250	5310	6240	5550	6070
13	1800	922	1250	3510	3260	3380	5530	5410	5440	5550	3930	4820
14	2090	1310	1710	3580	3470	3540	5780	5530	5690	5450	4360	4980
15	2730	2090	2430	3830	3480	3600	5850	5780	5820	4560	4350	4470
16	3360	2730	3070	4140	3830	3990	5980	5830	5880	4690	4420	4570
17	3800	3360	3590	4280	4140	4210	6140	5980	6040	5050	4680	4840
18	4150	3650	3900	4420	4280	4340	6260	6140	6180	5370	5050	5220
19	4370	4150	4250	4600	4420	4500	6440	6260	6350	5520	5360	5430
20	4500	4370	4430	4780	4600	4680	6280	6000	6150	5680	5520	5560
21	4580	3500	4340	4980	4780	4860	6060	5900	5970	5760	5680	5720
22	4150	3740	3990	5360	4980	5140	6140	6010	6090	5780	5670	5730
23	3740	3530	3580	5380	5240	5320	6080	5870	5930	5780	5670	5730
24	3750	3650	3710	5360	5130	5280	6120	5720	5950	5790	5720	5750
25	3860	3480	3590	5380	5180	5290	5980	5760	5900	5800	5630	5710
26	4240	3860	4090	5420	5320	5370	6270	5840	6010	5740	5640	5690
27	4530	4240	4400	5360	3640	5120	6140	4770	5250	5850	5730	5770
28	4740	4530	4600	5410	5320	5350	5230	4910	5080	6210	5850	5970
29	4930	4700	4830	5470	5390	5420	5210	4880	5050	6320	6000	6170
30	4700	4020	4190	5510	5440	5490	5350	5210	5270	6070	5940	6010
31	---	---	---	5470	5400	5430	5370	5270	5330	---	---	---
MONTH	---	---	3600	5510	2270	4050	6440	4020	5400	6320	3930	5500

e Estimated

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.3	25.7	26.9	21.4	15.9	17.7	16.7	12.7	15.0	7.7	5.6	6.5
2	26.2	23.4	24.2	15.9	15.1	15.4	17.0	13.9	15.5	7.0	3.8	5.4
3	25.7	23.1	24.2	15.1	14.0	14.6	17.2	15.8	16.4	4.0	.8	2.0
4	26.6	24.1	25.1	14.7	13.0	13.9	16.8	15.0	15.9	3.5	.0	1.2
5	25.4	21.6	23.8	13.0	10.7	11.9	17.6	14.6	16.1	4.7	.7	2.4
6	22.4	19.4	20.8	11.5	7.3	9.8	19.0	16.4	17.5	7.1	2.0	4.3
7	22.1	17.8	19.9	12.4	11.0	11.5	16.4	11.4	13.4	5.4	4.6	5.0
8	22.2	18.0	20.0	13.1	12.3	12.7	11.4	8.1	9.6	4.6	2.3	3.8
9	22.5	18.5	20.4	18.1	13.0	15.2	9.2	5.9	7.7	3.1	.0	1.4
10	22.8	18.8	20.7	17.5	14.0	15.6	9.3	8.6	9.0	4.4	.3	2.1
11	23.5	19.2	21.2	14.7	11.8	13.5	9.0	8.1	8.5	6.9	1.5	4.0
12	24.3	20.4	22.3	13.7	12.1	12.9	9.8	7.1	8.3	10.0	6.1	7.9
13	24.7	21.0	22.8	13.7	12.9	13.3	9.3	5.9	7.9	8.9	5.1	7.0
14	24.8	20.8	22.7	15.7	13.7	14.5	9.5	6.3	8.0	7.2	2.9	4.7
15	24.4	20.9	22.6	16.1	12.5	14.4	9.8	6.4	8.2	9.1	3.7	6.2
16	22.3	21.3	21.8	16.9	13.4	15.2	10.3	7.2	8.8	10.1	5.6	7.8
17	22.0	20.9	21.6	16.7	13.6	15.5	9.7	6.7	8.4	11.1	6.8	8.7
18	20.9	18.2	19.5	19.2	15.8	17.4	9.2	8.1	8.5	10.1	6.1	8.0
19	20.8	17.5	18.9	18.8	16.3	17.8	9.3	7.9	8.9	11.4	6.9	8.9
20	18.9	16.5	17.5	16.3	12.9	14.3	7.9	6.8	7.3	12.3	7.4	9.7
21	17.4	15.6	16.5	15.0	12.2	13.5	7.6	2.3	5.8	13.6	9.4	11.3
22	17.9	14.5	16.3	16.2	11.4	13.7	2.3	.1	.6	11.5	7.0	9.1
23	18.1	14.4	16.2	16.4	14.2	15.2	.4	.0	.2	10.3	5.2	7.4
24	19.1	14.9	16.8	15.7	12.9	14.1	1.1	.0	.4	11.5	6.4	8.7
25	21.0	15.2	18.0	16.0	12.9	14.3	1.4	.0	.5	11.0	7.1	8.9
26	22.3	17.6	19.8	14.4	10.4	12.5	3.2	.1	1.3	13.5	7.3	10.1
27	22.7	17.3	20.4	15.8	11.7	13.7	5.7	3.1	4.0	14.4	11.0	12.6
28	25.5	20.7	22.6	18.4	14.8	16.3	5.7	2.9	4.3	13.2	10.8	12.1
29	24.6	20.5	22.7	18.7	16.6	17.6	7.4	4.0	5.4	10.8	6.7	8.5
30	24.3	21.9	23.1	18.1	14.6	16.4	7.3	3.4	5.7	6.7	6.4	6.5
31	22.8	21.4	22.0	---	---	---	6.7	3.9	5.5	6.4	5.4	5.8
MONTH	28.3	14.4	21.0	21.4	7.3	14.5	19.0	.0	8.1	14.4	.0	6.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.8	5.1	5.9	19.7	11.7	15.1	22.3	16.9	19.7	23.9	19.8	21.6
2	9.0	5.9	7.2	19.7	13.6	15.8	23.8	19.4	21.2	23.9	19.0	21.4
3	10.5	6.5	8.3	16.5	10.7	13.5	22.9	19.5	21.0	25.9	20.8	23.3
4	11.1	6.8	8.9	16.3	10.7	13.5	20.6	16.5	18.9	25.7	22.1	23.6
5	14.1	8.8	11.3	18.8	13.9	15.8	22.8	17.9	20.4	24.6	19.5	22.0
6	15.5	13.1	14.2	17.0	12.7	14.9	23.3	16.9	20.1	22.8	17.5	20.1
7	15.2	10.9	13.2	14.5	11.6	12.7	23.8	18.1	21.1	24.4	16.7	20.6
8	15.9	11.0	13.3	17.3	11.0	13.8	25.5	21.2	23.2	27.2	19.8	23.1
9	14.8	12.3	13.2	16.7	11.2	14.0	23.3	19.7	21.3	26.5	21.9	23.9
10	17.8	11.7	14.4	19.3	12.9	15.8	24.2	18.5	21.1	24.1	20.7	22.2
11	16.9	11.5	14.9	17.6	14.4	15.5	22.1	17.6	20.1	23.8	21.5	22.6
12	12.1	7.1	9.9	14.4	9.1	11.1	22.6	17.5	20.0	25.4	20.3	22.6
13	12.4	6.5	9.5	9.2	7.6	8.4	24.0	19.3	21.1	26.4	20.1	23.1
14	13.3	7.5	10.4	9.2	6.7	7.8	21.8	18.0	18.9	26.0	21.2	23.7
15	15.0	9.1	11.8	11.5	7.2	9.1	18.7	16.3	17.4	30.8	23.1	26.5
16	15.6	10.9	13.1	15.0	10.0	12.3	17.5	15.6	16.5	29.9	25.1	26.9
17	14.9	9.3	12.0	16.8	12.8	14.7	17.8	13.5	15.6	27.7	23.2	25.2
18	15.1	10.0	12.1	16.2	10.6	13.3	20.0	13.7	16.6	28.1	20.0	23.8
19	13.8	8.3	11.0	10.6	9.9	10.2	23.7	16.3	19.7	25.3	22.3	23.0
20	15.3	9.7	11.6	12.1	10.2	10.8	25.9	19.3	22.4	24.6	21.6	22.9
21	14.4	8.5	11.1	14.6	11.1	12.6	25.6	20.5	23.0	28.1	22.9	25.0
22	11.1	7.9	9.4	18.5	13.6	15.8	28.3	21.0	24.4	30.6	24.9	27.4
23	14.4	6.9	9.9	17.5	14.9	16.2	26.0	19.9	23.6	29.5	24.3	26.9
24	17.0	8.6	12.3	16.2	13.3	14.7	19.9	16.6	17.5	28.3	23.6	25.8
25	20.6	13.2	16.2	17.9	12.6	15.2	18.4	16.0	17.0	30.1	23.0	26.3
26	19.2	16.3	17.4	18.3	12.9	15.6	23.4	17.1	19.5	27.1	23.4	25.1
27	19.9	14.4	16.7	16.5	13.0	14.8	26.2	18.7	22.2	24.6	22.7	23.4
28	17.7	10.9	14.0	15.2	12.4	13.7	27.7	21.0	24.3	22.7	19.3	21.2
29	---	---	---	16.8	13.8	15.2	25.1	21.2	23.2	25.1	22.6	23.5
30	---	---	---	17.9	15.5	16.6	24.9	19.9	22.1	28.4	23.1	25.3
31	---	---	---	20.5	15.7	17.7	---	---	---	27.6	25.5	26.5
MONTH	20.6	5.1	11.9	20.5	6.7	13.7	28.3	13.5	20.4	30.8	16.7	23.8

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.5	25.7	27.6	31.6	27.0	29.1	33.8	27.9	30.6	30.5	26.4	28.3
2	31.9	27.1	29.3	32.0	27.9	29.7	34.1	28.6	31.2	30.8	26.2	28.3
3	30.4	26.7	28.5	31.9	27.6	29.6	34.8	29.0	31.5	31.8	26.4	28.7
4	31.1	25.6	28.0	32.1	27.7	29.6	33.3	28.4	30.4	31.7	26.9	29.2
5	28.4	25.6	27.1	32.6	27.8	30.0	31.2	28.8	29.9	29.4	27.4	28.3
6	27.1	24.2	25.7	34.2	28.3	30.8	32.5	28.3	30.3	31.2	25.5	28.1
7	30.2	24.4	26.9	34.2	29.0	31.3	33.6	29.0	31.1	31.7	27.0	29.1
8	29.8	26.6	28.0	33.8	28.3	30.8	34.6	29.5	31.8	30.0	26.1	28.1
9	30.7	26.3	28.3	34.1	28.1	30.8	35.6	30.0	32.6	29.3	25.0	27.1
10	28.5	23.9	26.2	31.2	26.0	28.3	35.4	30.3	32.8	28.5	24.2	26.4
11	31.4	24.0	27.2	28.3	23.7	25.8	35.0	29.9	32.3	29.3	24.5	26.8
12	29.2	24.9	26.7	30.2	24.7	27.2	34.6	28.7	31.5	29.1	25.2	26.9
13	25.9	23.7	24.6	31.8	25.5	28.4	34.7	29.7	31.9	25.9	22.9	24.3
14	27.4	23.8	25.4	32.2	26.8	29.3	33.8	27.7	30.6	26.1	22.2	24.2
15	28.8	23.4	25.9	31.9	26.7	29.0	34.3	28.2	31.0	24.5	22.7	23.4
16	30.0	24.9	27.1	30.2	25.7	27.9	34.4	27.9	30.9	24.6	21.6	22.8
17	26.3	23.0	24.4	31.9	25.9	28.7	33.7	27.3	30.3	25.9	21.5	23.6
18	27.9	22.3	24.9	32.9	27.0	29.6	34.0	27.2	30.5	26.9	23.0	24.7
19	30.0	23.7	26.5	33.4	27.4	30.0	33.1	28.3	30.5	27.9	22.7	25.0
20	28.8	25.6	27.0	33.1	27.5	30.1	32.1	26.3	29.2	27.0	23.1	24.9
21	27.2	25.3	26.1	33.3	27.6	30.2	32.0	25.8	28.7	23.4	19.3	21.3
22	26.1	24.4	25.1	33.5	27.3	30.2	32.2	26.4	29.1	23.1	17.3	20.1
23	28.9	24.7	26.6	33.5	27.6	30.4	32.8	27.5	29.9	23.4	17.7	20.4
24	31.3	27.0	28.8	33.8	27.6	30.5	33.5	28.4	30.6	23.2	19.1	20.8
25	32.3	27.0	29.4	34.0	27.9	30.7	33.4	27.3	30.2	25.5	19.5	22.2
26	33.6	27.1	30.1	34.5	28.1	31.0	32.8	28.1	30.4	27.5	21.9	24.4
27	33.8	28.2	30.8	34.5	28.2	31.2	31.9	28.6	29.8	28.0	23.1	25.2
28	32.9	28.2	30.5	34.4	28.3	31.2	32.4	27.0	29.3	24.8	19.7	22.1
29	31.3	28.3	29.7	34.3	28.6	31.2	32.2	28.6	30.1	21.5	16.4	18.9
30	31.2	27.2	28.9	34.0	28.2	30.8	31.7	27.1	29.3	21.3	15.9	18.5
31	---	---	---	34.0	27.6	30.5	31.4	26.7	28.9	---	---	---
MONTH	33.8	22.3	27.4	34.5	23.7	29.8	35.6	25.8	30.6	31.8	15.9	24.7
YEAR	35.6	.0	19.4									

07312700 WICHITA RIVER NEAR CHARLIE, TX

LOCATION.--Lat 34°03'11", long 98°17'47", Clay County, Hydrologic Unit 11130206, on right bank at upstream side of bridge on Farm Road 810, 3.0 mi southeast of Charlie, and 5.7 mi northwest of Petrolia.

DRAINAGE AREA.--3,439 mi^2, of which 2,086 mi^2 is above Lake Kemp Dam and 143 mi^2 is above Lake Wichita Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 872.71 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Oct 1967, at least 10% of contributing drainage area has been regulated by Lake Kemp (capacity 603,000 acre-ft) 71 mi upstream. Records furnished by the city of Wichita Falls show that 13,646 acre-ft was returned to river above this station as wastewater effluent.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	262	67	48	725	51	135	74	463	e140	97	118
2	125	401	56	46	282	53	120	67	255	147	89	133
3	221	335	75	46	160	51	112	140	151	175	83	134
4	145	244	280	46	124	55	110	88	120	e170	177	127
5	157	149	161	45	98	117	96	101	103	e157	178	122
6	142	107	103	47	90	116	108	86	92	e140	172	145
7	123	91	89	46	88	103	98	71	163	e123	161	118
8	122	89	76	45	79	132	93	67	134	e111	121	123
9	124	72	65	44	70	220	96	63	216	e118	110	131
10	130	84	59	41	67	127	87	218	158	e129	110	126
11	129	94	57	43	65	115	81	278	609	e113	109	101
12	125	65	83	45	74	860	77	179	196	e111	101	100
13	121	63	163	45	62	2310	78	128	682	e116	99	243
14	114	62	82	46	58	1120	1520	89	515	e101	93	236
15	115	59	68	45	57	606	1960	76	226	e101	91	187
16	116	56	61	44	58	317	1170	69	178	e106	88	172
17	139	56	57	47	58	204	565	62	150	e99	80	148
18	358	55	56	44	54	301	249	61	141	e96	78	140
19	178	56	58	44	53	2110	173	93	148	e94	72	128
20	139	55	58	47	53	2980	133	370	150	83	77	114
21	135	52	54	46	52	2750	118	232	149	75	114	105
22	133	49	53	46	51	1200	108	142	328	75	131	96
23	121	50	52	52	51	672	97	117	370	89	96	101
24	117	53	52	67	52	384	82	111	246	83	113	95
25	111	49	52	50	52	249	78	107	205	89	121	86
26	109	49	50	48	53	191	93	155	181	86	119	87
27	107	49	51	47	53	161	204	251	134	80	147	86
28	107	49	50	77	51	318	111	968	122	74	148	88
29	107	52	50	199	---	190	87	747	127	76	156	94
30	110	55	50	1190	---	154	94	349	e137	80	133	84
31	109	---	47	861	---	139	---	252	---	87	115	---
TOTAL	4186	2962	2335	3587	2790	18356	8133	5811	6849	3324	3579	3768
MEAN	135	98.7	75.3	116	99.6	592	271	187	228	107	115	126
MAX	358	401	280	1190	725	2980	1960	968	682	175	178	243
MIN	97	49	47	41	51	51	77	61	92	74	72	84
AC-FT	8300	5880	4630	7110	5530	36410	16130	11530	13580	6590	7100	7470

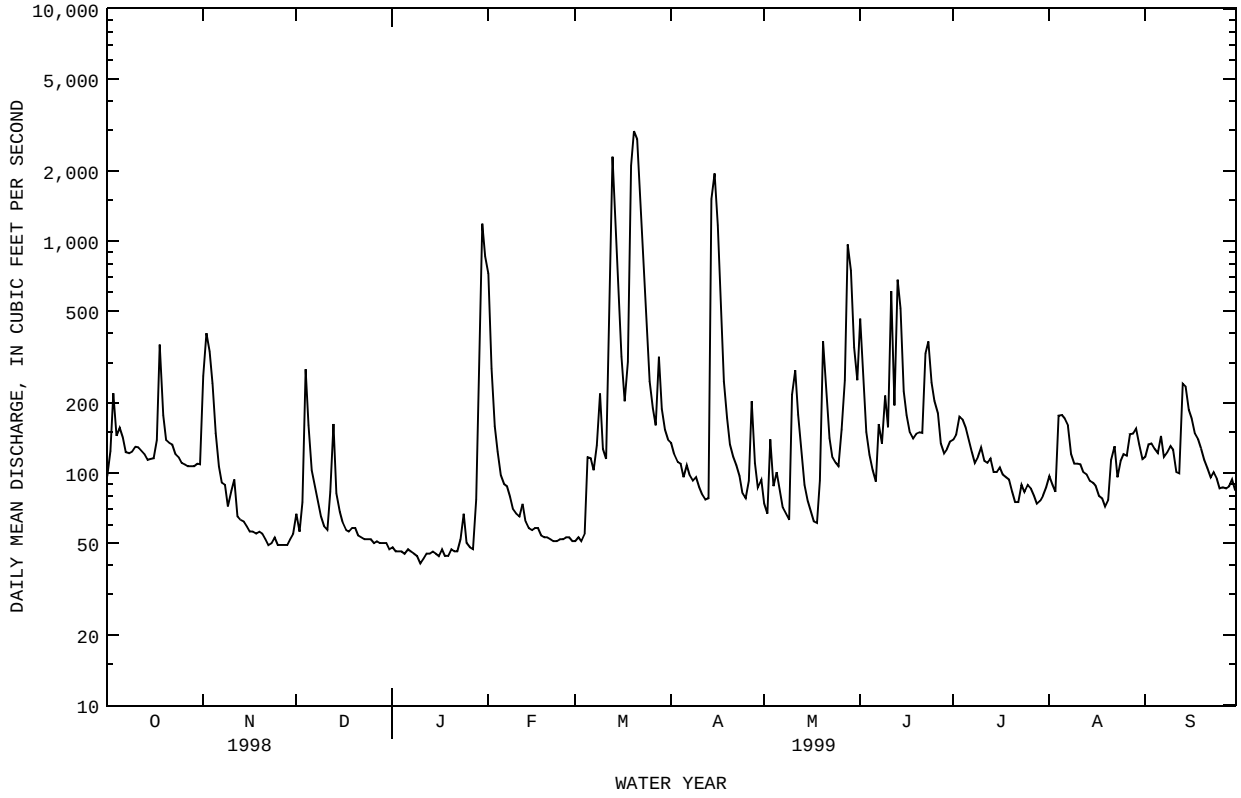
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	365	301	196	174	272	409	341	572	674	291	316	419
MAX	2032	2194	1556	1005	1411	1832	2377	3094	2815	1330	2766	2598
(WY)	1987	1973	1992	1992	1992	1993	1990	1990	1995	1992	1995	1986
MIN	101	50.3	51.5	46.1	45.6	70.2	61.2	103	135	92.5	111	111
(WY)	1971	1998	1979	1974	1995	1972	1989	1988	1994	1972	1994	1994

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	115904		65680			
ANNUAL MEAN	318		180		361	
HIGHEST ANNUAL MEAN					986	1987
LOWEST ANNUAL MEAN					125	1983
HIGHEST DAILY MEAN	4000	Mar 20	2980	Mar 20	7740	May 7 1990
LOWEST DAILY MEAN	37	Jan 30	41	Jan 10	21	Dec 19 1997
ANNUAL SEVEN-DAY MINIMUM	42	Jan 24	44	Jan 7	24	Dec 13 1997
INSTANTANEOUS PEAK FLOW			3140	Mar 21	7760	May 7 1990
INSTANTANEOUS PEAK STAGE			14.62	Mar 21	25.80	May 7 1990
ANNUAL RUNOFF (AC-FT)	229900		130300		261500	
10 PERCENT EXCEEDS	836		268		858	
50 PERCENT EXCEEDS	133		106		140	
90 PERCENT EXCEEDS	56		51		64	

e Estimated

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued



07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1967 to Sep 1981, Oct 1989 to current year.
BIOCHEMICAL DATA: Oct 1967 to Sep 1981, Oct 1989 to Sep 1997.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1981 (local observer), Jun 1996 to current year.
WATER TEMPERATURE: Oct 1967 to Sep 1981 (local observer), Jun 1996 to current year.

INSTRUMENTATION.--Water-quality monitor since Jun 1996.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 10,000 microsiemens, Apr 25, 1972; minimum daily, 213 microsiemens, Apr 15, 1997.
WATER TEMPERATURE: Maximum daily, 34.5°C, Jul 25, 1981; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 6,530 microsiemens, May 20; minimum, 717 microsiemens, Jan 30.
WATER TEMPERATURE: Maximum, 33.9°C, Aug 10; minimum, 0.0°C, Dec 26.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	5550	5150	5330	5440	4230	4690	5260	4660	4970	4940	4390	4620
2	5370	4830	5150	5140	2270	3130	5250	4570	4940	4860	4330	4530
3	5250	2360	3870	3780	2440	3080	5610	3730	4430	4780	4320	4530
4	5050	2640	3840	4670	2510	3860	4550	1420	3300	---	---	e4500
5	5300	5000	5130	4690	4580	4660	2090	1220	1760	---	---	e4420
6	5260	5140	5190	4890	4680	4820	2700	1900	2260	4730	4120	4450
7	5330	5010	5210	5010	4880	4950	4130	2380	3070	4680	4100	4350
8	5480	5220	5300	4960	4880	4910	5340	4130	4780	4750	4100	4330
9	5500	5080	5280	5120	4870	4960	5620	5180	5490	---	---	e4500
10	5490	5170	5330	5150	4870	4990	5560	4920	5170	---	---	e4240
11	5480	5250	5360	5370	5150	5270	5630	5090	5420	4480	4090	4260
12	5510	5150	5350	5310	4780	5120	5090	4630	4950	4510	3880	4260
13	5520	4990	5250	5020	4750	4890	5170	2740	3900	4670	4200	4400
14	5420	5130	5250	5160	5020	5110	3010	2380	2580	4760	4240	4460
15	5300	4990	5150	5200	5100	5150	4540	3010	3760	4600	4190	4380
16	5250	4980	5110	5220	5030	5150	5460	4540	5150	4540	4100	4260
17	5250	4360	4970	5200	5040	5120	5560	5030	5310	4500	4180	4350
18	4930	1530	3270	5100	4900	5020	6010	3950	5100	4650	4290	4440
19	4510	1640	2930	4930	4850	4880	4440	3750	4070	4680	4340	4470
20	4630	4140	4440	4960	4840	4910	4460	4010	4200	4640	4290	4430
21	4880	4510	4710	4930	4780	4870	4520	4050	4300	4720	4300	4510
22	4920	4210	4680	4790	4690	4760	4430	4340	4410	4860	4470	4600
23	4690	4210	4490	4830	4490	4680	---	---	e4450	4880	4470	4650
24	4900	4620	4750	4770	4400	4570	4670	4330	4470	4720	4180	4450
25	4960	4690	4830	4780	4350	4520	4750	4320	4510	4420	3810	4180
26	5020	4670	4840	4750	4300	4510	4910	4220	4490	3980	3490	3770
27	4920	4710	4810	4710	4290	4540	4890	4410	4560	4050	3540	3760
28	4850	4560	4750	4630	4220	4400	4870	4320	4550	6310	4050	4670
29	4700	4560	4640	4640	4210	4380	4960	4320	4620	6340	2440	4800
30	4740	4480	4610	5450	4410	4990	4900	4110	4400	3790	717	1510
31	4650	4490	4580	---	---	---	4940	4440	4640	2680	1480	2130
MONTH	5550	1530	4790	5450	2270	4700	---	---	4320	---	---	4230

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2470	1350	1740	4610	4030	4310	2350	1850	2250	2710	2580	2660
2	1790	1340	1570	4440	4170	4320	2390	2280	2340	2740	2520	2620
3	2100	1790	1950	4620	4090	4410	2500	2300	2440	2640	2540	2610
4	2260	2100	2170	4600	4200	4390	2560	2100	2460	2590	2220	2420
5	2540	2260	2420	4910	4200	4410	2500	2240	2350	2930	2250	2530
6	2530	2390	2450	6120	4400	5540	2380	2210	2290	2970	2780	2920
7	2720	2510	2570	5310	5160	5240	2390	2250	2320	2900	2800	2860
8	2950	2720	2850	5160	4170	4670	2330	2200	2270	3020	2770	2890
9	3000	2650	2890	4480	2100	3300	2420	2250	2360	3080	2780	2860
10	2920	2610	2800	3510	2410	2830	2510	2420	2460	2800	2540	2710
11	3250	2890	3100	4820	3510	4260	2590	2450	2530	2650	2220	2330
12	3490	3170	3390	5610	1710	2830	2590	2520	2550	2660	2450	2600
13	3830	3430	3670	2050	1790	1900	2590	2420	2540	3100	2620	2770
14	4130	3770	4010	2330	2050	2230	2510	1270	1850	2850	2730	2800
15	4120	3940	4020	2540	2330	2490	1730	1490	1620	2870	2760	2820
16	4350	3910	4080	2650	2380	2500	1870	1730	1830	2930	2800	2870
17	4380	4170	4280	2430	2360	2390	1830	1780	1800	2940	2840	2910
18	4370	3680	3890	2520	2090	2330	1900	1830	1860	3240	2910	3080
19	3740	3500	3590	---	---	e1850	1900	1820	1860	3330	3000	3190
20	3880	3500	3680	1990	1740	1860	1910	1820	1870	6530	1600	3950
21	3960	3670	3840	2060	1990	2030	1940	1860	1910	1610	1340	1440
22	4090	3890	3970	2060	1780	1930	2020	1940	1970	2300	1580	1940
23	4250	3920	4080	2270	1800	2110	2180	1960	2060	2800	2300	2570
24	4350	3890	4120	2290	1870	2170	2370	2180	2290	3320	2760	3060
25	4490	3900	4160	2190	1800	1910	2480	2370	2420	3990	3260	3590
26	4370	3950	4090	1980	1820	1900	2630	2470	2530	4050	3320	3810
27	4420	4000	4190	2260	1850	2140	2600	2330	2500	3820	2450	3250
28	4560	4160	4360	2320	1970	2220	2440	2220	2330	2900	1490	1990
29	---	---	---	2040	1840	1920	2540	2300	2440	5460	1800	2580
30	---	---	---	2330	2040	2210	2610	2530	2570	3070	1970	2440
31	---	---	---	2340	2200	2290	---	---	---	3370	2630	3050
MONTH	4560	1340	3350	---	---	2930	2630	1270	2230	6530	1340	2780

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2880	1440	2390	---	---	e4160	4260	4120	4180	3800	2630	2970
2	1630	1400	1520	4450	3910	4200	4290	4150	4210	3830	3730	3790
3	2940	1630	2350	---	---	e3860	4290	4030	4140	3920	3790	3870
4	3360	2740	3130	---	---	e2600	4290	3290	3980	3980	3900	3930
5	3200	2870	3090	---	---	e2700	3290	1730	2390	4060	3920	3990
6	3340	3080	3190	---	---	e2850	3500	1980	2700	4090	3680	3990
7	3810	3320	3550	---	---	e2910	4280	3500	4040	3890	3390	3700
8	3480	2550	2890	---	---	e2990	3830	3620	3750	3830	3360	3630
9	4800	3060	3930	---	---	e3050	3620	3390	3500	4150	3830	4020
10	5080	3180	4050	---	---	e3200	3600	2820	3440	4290	4150	4230
11	3500	792	1680	---	---	e3380	3230	2490	2940	4330	4230	4290
12	2400	1070	1620	---	---	e3510	2630	2500	2580	4290	4150	4230
13	4660	994	2420	---	---	e3700	2570	2430	2530	4150	3060	3930
14	1570	1110	1290	---	---	e3850	2480	2440	2460	3060	1830	2120
15	2030	1570	1800	---	---	e4060	2500	2450	2470	3670	2640	3250
16	2550	2030	2310	---	---	e4200	3170	2480	2840	4060	3670	3900
17	2920	2540	2750	---	---	e4350	3280	3170	3210	3870	3790	3830
18	3200	2920	3070	---	---	e4420	3440	3280	3350	3850	3710	3780
19	4320	3200	3510	---	---	e4500	3370	3110	3280	3930	3790	3870
20	3660	2970	3390	---	---	e4540	3460	3260	3330	4200	3930	4070
21	3970	3660	3880	4580	4270	4390	3470	3280	3380	4420	4200	4320
22	4120	1930	3460	4630	4300	4440	3520	3420	3470	4430	4350	4380
23	3100	1780	2480	4680	4380	4500	3570	3430	3500	4510	4350	4430
24	3370	2400	3040	4540	4300	4400	3460	3310	3380	4630	4490	4560
25	3760	3010	3250	4450	4270	4350	3380	3120	3250	4690	4580	4640
26	3900	2000	3490	4450	4260	4340	3150	2900	2970	4640	3950	4470
27	3200	1930	2860	4380	4250	4300	3000	2940	2970	4100	3520	3940
28	3290	2410	3170	4300	4050	4200	3140	2980	3080	3800	3520	3660
29	3690	3110	3500	4270	3920	4180	3250	2790	3100	4080	3750	3890
30	---	---	e3800	4240	4010	4100	2830	2750	2780	4300	4010	4170
31	---	---	---	4220	4020	4080	2760	2630	2730	---	---	---
MONTH	---	---	2900	---	---	3880	4290	1730	3220	4690	1830	3930

e Estimated

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.4	26.5	27.3	22.0	17.2	19.2	16.3	14.3	15.2	6.8	5.4	6.1
2	27.1	24.0	25.0	17.3	15.1	15.8	16.1	14.3	15.1	6.8	4.2	5.8
3	24.8	23.4	24.0	15.1	14.6	14.8	16.6	15.7	16.2	---	---	---
4	26.5	24.3	25.2	14.7	13.2	14.0	16.8	15.0	16.1	---	---	---
5	25.8	22.8	24.4	13.2	11.9	12.4	17.0	15.2	16.2	---	---	---
6	22.8	20.7	21.6	11.9	10.6	11.0	17.9	16.7	17.2	4.9	2.5	3.5
7	21.3	19.0	20.2	11.5	10.8	11.0	16.7	12.6	14.3	5.3	4.9	5.2
8	21.3	18.8	20.0	12.2	11.5	11.8	12.6	10.1	11.2	5.5	3.6	4.7
9	21.6	19.0	20.2	15.5	12.2	13.6	10.4	8.3	9.1	---	---	---
10	22.0	19.4	20.6	15.5	13.9	14.6	9.4	9.0	9.2	---	---	---
11	22.6	19.9	21.1	14.1	12.5	13.2	9.3	8.7	9.0	4.7	2.6	3.5
12	23.4	20.9	22.0	13.3	12.4	12.8	9.2	8.1	8.7	7.9	4.7	6.5
13	23.8	21.7	22.7	13.2	12.6	13.0	8.9	7.7	8.4	8.0	5.9	7.0
14	24.0	21.8	22.9	14.6	13.2	13.9	8.6	7.0	8.0	5.9	4.3	5.2
15	23.6	22.0	22.9	14.3	13.1	13.8	8.9	7.2	8.2	6.8	4.7	5.8
16	23.0	22.0	22.3	14.6	13.1	13.9	9.2	7.7	8.6	7.9	6.5	7.3
17	22.2	20.9	21.8	15.4	13.6	14.5	9.1	7.7	8.5	9.0	7.5	8.3
18	20.9	19.3	20.0	17.2	15.3	16.1	9.0	8.3	8.6	8.9	7.7	8.4
19	19.8	18.0	19.0	17.5	16.3	17.0	9.4	8.6	9.1	9.8	7.8	8.8
20	19.0	17.3	17.9	16.3	13.8	14.5	8.6	7.8	8.1	10.6	8.7	9.6
21	17.4	16.5	17.0	13.8	12.6	13.3	8.1	3.8	6.6	11.9	10.5	11.2
22	17.3	15.5	16.5	14.3	12.2	13.2	---	---	---	11.9	9.0	10.6
23	16.9	15.3	16.2	15.1	14.1	14.7	---	---	---	9.0	6.8	8.4
24	17.7	15.4	16.4	15.4	14.5	15.0	---	---	---	10.0	7.5	8.9
25	18.8	16.0	17.4	15.4	14.4	14.9	---	---	---	9.9	8.5	9.2
26	20.3	17.9	19.0	14.6	12.6	13.4	2.3	.0	.7	11.6	8.6	9.9
27	21.0	19.1	20.1	14.5	12.5	13.4	4.5	2.3	3.4	13.6	11.5	12.5
28	22.2	20.3	21.2	16.9	14.5	15.6	5.0	3.3	4.3	13.7	12.4	13.2
29	23.0	21.1	22.0	17.8	16.6	17.2	6.1	4.5	5.4	12.4	7.6	10.7
30	23.4	22.0	22.7	17.7	15.9	16.6	6.0	4.7	5.5	8.8	7.2	7.6
31	23.0	22.0	22.4	---	---	---	5.9	4.8	5.4	7.5	7.1	7.3
MONTH	28.4	15.3	21.0	22.0	10.6	14.3	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.1	6.3	6.6	15.7	13.2	14.7	20.1	16.4	18.3	22.8	20.6	21.9
2	8.1	6.4	7.2	16.4	14.7	15.6	21.5	19.0	20.1	22.4	20.2	21.5
3	9.7	7.1	8.2	15.5	13.1	14.3	21.3	19.5	20.4	24.9	21.2	22.9
4	10.4	7.7	9.0	14.9	12.6	13.9	19.9	17.4	18.9	24.9	22.8	23.8
5	13.0	9.4	10.8	16.9	14.1	15.6	20.9	18.7	19.8	23.7	21.2	22.5
6	14.5	12.8	13.6	16.5	14.2	15.3	21.5	17.6	19.6	22.5	19.6	21.2
7	14.5	12.6	13.7	15.1	12.7	13.4	22.3	18.6	20.5	23.0	19.0	21.1
8	14.3	12.3	13.5	15.1	11.4	13.2	23.7	21.0	22.3	25.2	20.6	22.8
9	14.1	13.0	13.6	15.0	13.1	14.0	22.6	20.2	21.2	25.5	22.9	24.2
10	16.5	13.0	14.5	16.5	12.6	14.3	22.1	19.1	20.7	24.8	22.3	23.5
11	16.6	13.5	15.4	16.2	14.5	14.9	21.5	18.6	20.2	24.1	22.2	23.0
12	13.5	10.6	11.7	14.6	9.9	11.9	21.0	18.2	19.8	24.4	21.1	22.8
13	11.3	9.1	10.4	9.9	8.0	8.5	21.6	19.5	20.6	25.1	21.2	23.1
14	11.7	9.3	10.6	8.6	7.3	7.9	21.5	17.9	18.9	25.5	22.0	23.8
15	13.2	10.2	11.6	10.1	7.7	8.8	18.1	16.6	17.3	28.6	24.1	26.2
16	13.6	12.0	12.9	12.3	9.3	10.7	16.7	15.4	16.1	28.4	26.0	27.2
17	13.2	11.2	12.4	14.4	12.1	13.2	16.4	14.6	15.5	27.3	25.3	26.2
18	13.0	11.4	12.4	14.3	11.7	13.0	17.5	13.9	15.6	25.9	22.6	24.5
19	12.6	10.7	11.7	11.7	10.3	10.8	20.6	16.3	18.1	26.8	22.9	24.7
20	12.5	10.8	11.8	10.9	10.1	10.5	23.4	18.8	20.8	25.6	23.6	24.5
21	12.3	10.3	11.4	12.6	10.7	11.5	23.9	20.9	22.4	26.3	23.4	24.7
22	11.5	9.4	10.0	15.9	12.5	14.1	25.9	21.6	23.6	28.7	24.9	26.5
23	10.8	8.3	9.7	15.8	14.0	15.2	25.4	21.2	23.6	28.5	25.6	27.1
24	13.3	9.6	11.2	14.8	13.4	14.2	21.2	17.4	18.7	27.6	24.8	26.4
25	16.3	12.9	14.5	15.7	13.1	14.4	17.5	16.6	17.1	28.3	24.6	26.4
26	17.4	16.3	16.8	16.2	13.4	14.7	21.0	16.9	18.6	27.4	24.5	25.4
27	17.4	16.0	16.8	15.3	13.3	14.3	23.3	19.7	21.2	25.0	21.2	23.2
28	16.3	13.6	14.8	13.8	12.6	13.2	25.1	20.6	22.7	21.5	19.7	20.5
29	---	---	---	15.1	13.0	13.9	24.4	21.7	22.7	22.8	21.4	22.3
30	---	---	---	16.2	14.6	15.4	23.4	20.3	21.9	26.8	22.7	24.5
31	---	---	---	17.9	15.4	16.4	---	---	---	29.5	25.7	27.4
MONTH	17.4	6.3	12.0	17.9	7.3	13.3	25.9	13.9	19.9	29.5	19.0	24.1

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.5	27.8	28.5	---	---	---	32.5	29.0	30.9	29.6	27.0	28.5
2	30.3	27.3	28.6	32.2	28.5	30.2	32.7	29.4	31.2	29.6	26.7	28.1
3	29.7	27.7	28.7	---	---	---	32.5	29.5	31.2	30.1	27.0	28.5
4	29.9	26.8	28.3	---	---	---	31.8	29.4	30.5	30.3	27.8	29.1
5	28.9	26.8	27.5	---	---	---	31.2	28.8	29.8	29.8	27.9	28.8
6	27.4	25.4	26.2	---	---	---	31.6	28.5	29.9	29.8	26.3	27.9
7	28.1	24.7	26.3	---	---	---	32.6	29.2	30.7	30.6	27.4	29.0
8	30.2	26.0	27.9	---	---	---	33.2	29.8	31.3	30.1	27.4	28.6
9	30.6	27.4	28.9	---	---	---	33.5	30.1	31.9	28.6	25.9	27.2
10	29.0	27.3	27.9	---	---	---	33.9	30.5	32.2	28.0	25.3	26.7
11	27.4	24.7	26.0	---	---	---	33.6	30.6	32.2	28.2	25.4	26.9
12	28.7	26.1	27.1	---	---	---	32.9	29.8	31.5	27.9	26.0	26.9
13	27.7	25.4	26.8	---	---	---	32.9	29.7	31.4	26.4	23.6	24.8
14	26.2	24.5	25.2	---	---	---	31.9	28.6	30.4	25.6	22.8	24.2
15	26.8	24.1	25.4	---	---	---	32.0	28.5	30.4	24.7	23.3	23.8
16	27.6	24.8	26.1	---	---	---	32.1	28.6	30.4	24.1	22.5	23.2
17	26.1	24.0	24.9	---	---	---	31.2	28.0	29.9	25.1	22.3	23.5
18	26.5	23.1	24.7	---	---	---	31.8	27.9	29.9	26.0	23.6	24.7
19	27.8	24.7	26.0	---	---	---	31.5	28.6	30.3	27.1	23.9	25.4
20	27.6	25.2	26.3	---	---	---	30.6	27.2	29.1	26.5	24.6	25.5
21	27.3	25.9	26.3	31.7	28.7	30.4	30.1	26.5	28.5	24.7	21.5	22.6
22	26.3	25.2	25.7	32.0	28.5	30.4	30.7	27.3	29.2	22.0	18.9	20.7
23	27.7	25.3	26.4	32.3	28.7	30.7	31.6	28.2	30.0	21.9	18.7	20.6
24	30.8	26.8	28.4	32.5	28.8	30.8	31.7	28.9	30.5	22.2	20.0	21.2
25	30.6	27.6	29.1	32.7	29.1	31.0	31.6	27.8	29.9	24.3	20.4	22.3
26	32.3	27.9	29.9	32.6	29.3	31.1	32.0	28.6	30.4	26.3	22.6	24.4
27	32.8	29.4	31.0	32.6	29.4	31.2	31.4	28.7	29.8	27.2	24.2	25.8
28	32.0	29.5	30.9	33.1	29.7	31.5	30.9	27.5	29.1	26.2	21.9	23.6
29	31.5	28.7	29.8	33.1	29.8	31.6	31.6	28.6	30.0	21.9	18.8	20.3
30	---	---	---	32.9	29.6	31.4	30.8	28.2	29.6	20.5	17.5	19.2
31	---	---	---	32.4	29.1	30.9	30.1	27.5	29.0	---	---	---
MONTH	---	---	---	---	---	---	33.9	26.5	30.4	30.6	17.5	25.1

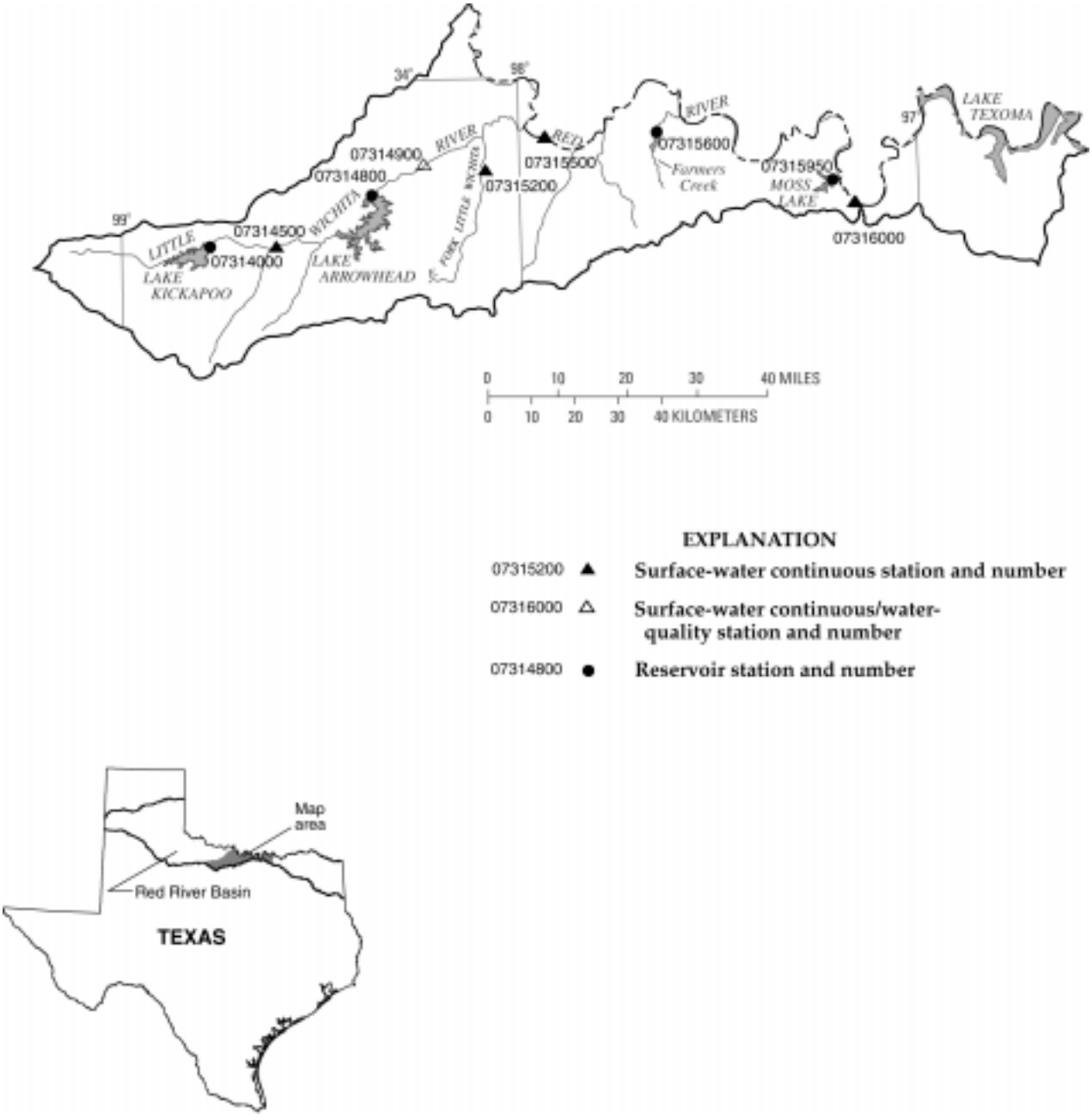


Figure 6.-- Map showing location of gaging stations in the third section of the Red River Basin

07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39'47", long 98°46'43", Archer County, Hydrologic Unit 11130209, on intake tower near left end of dam on North Fork Little Wichita River, 8.2 mi south of Mankins, and 9.2 mi northwest of Archer City.

DRAINAGE AREA.--275 mi^2

PERIOD OF RECORD.--Feb 1946 to current year. Prior to Oct 1965, end of month contents only.
Water-quality records.--Chemical data: Oct 1969 to Sep 1984.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by city of Wichita Falls). Prior to Oct 8, 1946, water-stage recorder at same site and datum. Non-recording gage read twice daily Oct 8, 1946 to Feb 17, 1974, once daily Feb 18, 1974 to Mar 3, 1999, continuous recording gage Mar 4, 1999 to current year. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 8,200 ft long, including a 483-foot-wide reinforced concrete ogee-type uncontrolled spillway near right end of dam. The dam was completed Dec 15, 1945, and storage began Feb 1, 1946. The service outlet consists of two gate-controlled 4- by 5-foot conduits. The dam and lake are owned by the city of Wichita Falls, which uses the water for their municipal supply. The capacity table is based on U.S. Geological Survey topographic maps, dated 1929. The capacity curve, dated Nov 1946, was entitled "Lake Kickapoo Area & Capacity Curve". Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,062.0
Design flood (2-foot freeboard)	1,060.0
Crest of spillway	1,045.0
Lowest gated outlet (invert)	1,000.92

COOPERATION.--Capacity curve, record of lake elevations, and diversions for municipal use are provided by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 134,300 acre-ft, Aug 2, 1950 (elevation, 1,049.2 ft); minimum observed since first filling in Jul 1950, 35,660 acre-ft, Jun 30, 1953 (elevation, 1,029.8 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 70,850 acre-ft, Jun 11 (elevation, 1,038.91 ft); minimum contents, 52,480 acre-ft, Mar 7 (elevation, 1,034.72 ft).

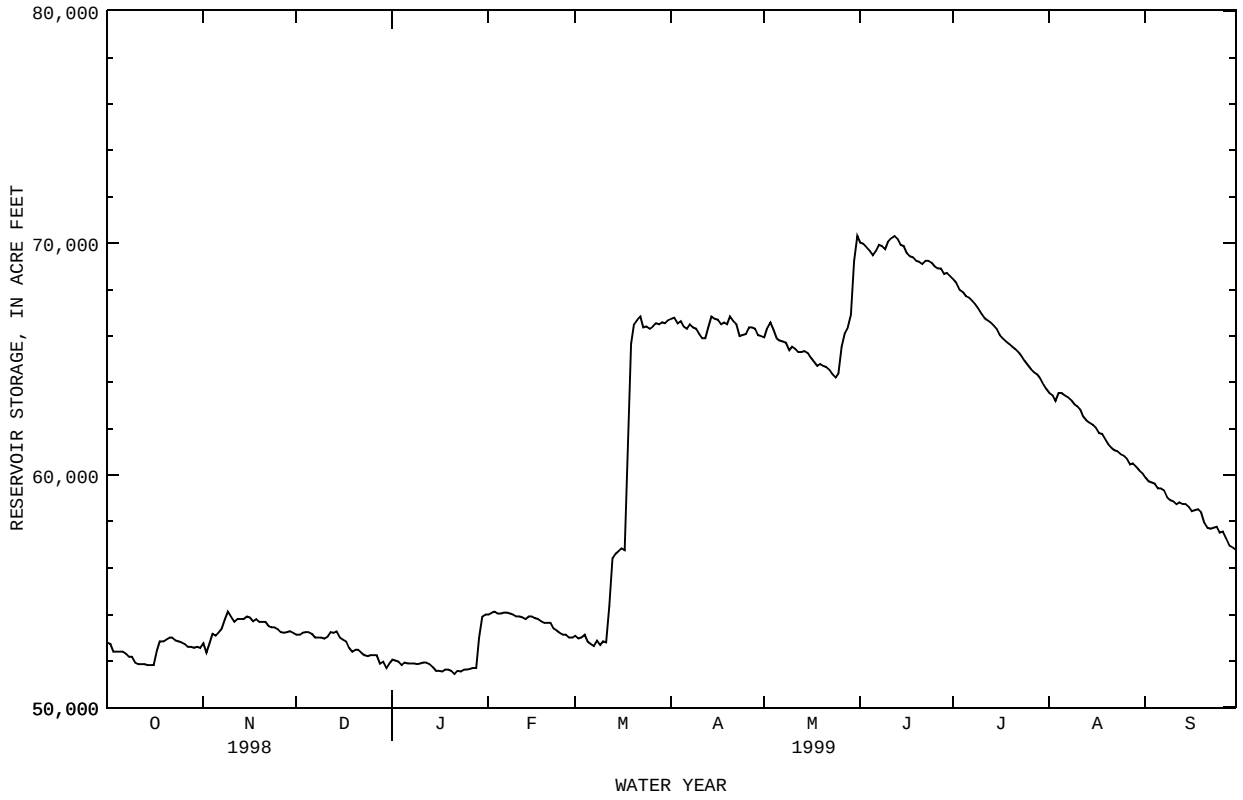
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52800	52760	53120	52040	54000	53080	66730	65940	70020	68430	63540	59900
2	52720	52360	53120	52010	54070	52960	66780	66360	69970	68280	63450	59730
3	52400	52760	53200	51970	54110	53000	66540	66590	69830	68000	63190	59690
4	52400	53160	53240	51810	54040	53120	66640	66270	69680	67900	63540	59640
5	52400	53080	53240	51930	54040	52840	66410	65900	69480	67720	63540	59430
6	52400	53240	53160	51890	54070	52720	66310	65810	69680	67670	63450	59430
7	52320	53400	53000	51890	54070	52640	66500	65760	69930	67530	63360	59340
8	52170	53800	53000	51890	54040	52880	66360	65710	69870	67390	63230	59040
9	52170	54110	53000	51850	54000	52680	66310	65390	69730	67200	63050	58920
10	51930	53870	52960	51890	53910	52840	66080	65530	70070	66970	62970	58870
11	51850	53680	53040	51930	53910	52800	65900	65440	70220	66780	62830	58750
12	51850	53800	53240	51930	53870	54360	65900	65300	70310	66680	62520	58830
13	51850	53800	53200	51850	53800	56440	66410	65300	70170	66590	62350	58750
14	51810	53800	53280	51730	53910	56610	66830	65350	69930	66450	62260	58750
15	51810	53910	53000	51570	53910	56730	66730	65260	69870	66310	62170	58620
16	51810	53870	52920	51570	53840	56850	66690	65070	69580	66040	62050	58450
17	52440	53710	52840	51540	53800	56770	66500	64890	69430	65900	61820	58490
18	52840	53800	52560	51620	53710	60110	66590	64710	69390	65760	61780	58530
19	52840	53680	52400	51620	53640	65670	66500	64800	69240	65670	61560	58410
20	52920	53680	52480	51570	53640	66500	66830	64710	69200	65530	61340	57950
21	53000	53680	52480	51420	53640	66690	66640	64660	69100	65440	61200	57740
22	53000	53520	52360	51570	53400	66830	66500	64530	69240	65300	61070	57700
23	52880	53440	52240	51540	53320	66360	65990	64350	69240	65120	61030	57740
24	52840	53440	52200	51620	53200	66410	66040	64210	69150	64930	60900	57780
25	52800	53360	52240	51620	53120	66310	66080	64390	69000	64750	60850	57530
26	52720	53240	52240	51650	53120	66410	66360	65530	68900	64570	60720	57570
27	52600	53200	52240	51690	53000	66540	66360	66130	68900	64440	60460	57280
28	52600	53240	51890	51690	53000	66500	66310	66360	68670	64350	60500	56980
29	52560	53280	51970	53000	---	66590	66040	66920	68710	64170	60370	56900
30	52600	53200	51690	53910	---	66540	65990	69240	68570	63940	60200	56810
31	52560	---	51890	54000	---	66680	---	70310	---	63720	60070	---
MAX	53000	54110	53280	54000	54110	66830	66830	70310	70310	68430	63540	59900
MIN	51810	52360	51690	51420	53000	52640	65900	64210	68570	63720	60070	56810
(+)	1034.79	1034.90	1034.57	1034.10	1034.85	1038.04	1037.89	1038.80	1038.44	1037.39	1036.56	1035.79
(@)	-260	+640	-1310	+2110	-1000	+13680	-690	+4320	-1740	-4850	-3650	-3260
(++)	605	529	572	86	71	131	581	547	995	1011	874	625

CAL YR 1998 MAX 71300 MIN 51690 (@) -6240 (++) 10707
WTR YR 1999 MAX 70310 MIN 51420 (@) +3990 (++) 6627

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal and industrial use by the City of Wichita Falls, and for wholesale customer use.

07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX--Continued



07314500 LITTLE WICHITA RIVER NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39'45", long 98°36'46", Archer County, Hydrologic Unit 11130209, on left bank at downstream side of bridge on State Highway 79, 1.5 mi downstream from confluence of North and Middle Forks, and 4.8 mi north of Archer City.

DRAINAGE AREA.--481 mi^2, of which 275 mi^2 is above Lake Kickapoo.

PERIOD OF RECORD.--May 1932 to Jan 1956, Aug 1966 to current year.
Water-quality records.--Chemical data: Jan 1953 to Jan 1956. Sediment data: May 1968 to Sep 1975. Water temperature: Jan 1953 to Jan 1956.

REVISED RECORDS.--WSP 827: 1932-35. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 934.72 ft above sea level. Aug 17, 1954, to Jan 6, 1956, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since water year 1946, at least 10% of contributing drainage area has been regulated by Lake Kickapoo (station 07314000, normal storage 106,000 acre-ft) on North Fork Little Wichita River. Records furnished by the city of Wichita Falls show that 6,627 acre-ft was diverted from Lake Kickapoo for municipal use and wholesale customers during the current year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1933-45) 110 ft^3/s (79,700 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1933-45).--Maximum discharge, 17,900 ft^3/s Oct 31, 1941 (gage height, 21.80 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 1930 reached a stage of about 28 ft, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.1	.04	.46	12	.06	1.1	1.2	64	3.7	.00	.00
2	.00	42	.04	.43	3.3	.05	.76	1.7	13	1.7	.00	.00
3	.00	18	.26	e.40	1.8	.04	.67	8.0	6.6	.96	.01	.00
4	.00	3.6	2.2	e.36	1.2	.03	.51	10	3.1	.72	.00	.00
5	.00	1.9	2.9	e.33	.81	.03	.40	3.9	1.5	.84	.00	.00
6	e.00	1.0	3.1	e.30	.54	.02	.30	2.5	2.4	.64	8.7	.00
7	.00	e.90	1.7	e.27	.46	.04	.29	1.3	25	.45	1.7	.00
8	.00	e.80	2.1	e.24	.40	.09	.26	.58	16	.36	.66	.00
9	.00	e.70	1.9	e.21	.33	.07	.21	.31	5.0	.29	.48	.00
10	.00	e.60	1.7	e.19	.31	.06	.13	.53	2.4	.24	.32	.00
11	.00	e.50	1.6	e.17	.26	.07	.09	.34	22	.16	.20	.00
12	.00	e.40	5.0	e.15	.20	5.2	.07	.18	133	.10	.06	.02
13	.00	.38	6.7	e.12	.10	61	.07	.09	14	.04	.00	.02
14	.00	.36	11	e.09	.12	21	74	.06	5.3	.00	.00	.00
15	.00	.24	5.2	e.07	.17	5.5	154	.06	2.6	.00	.00	.73
16	.00	.18	3.6	.05	.22	2.9	14	.03	1.7	.00	.00	1.2
17	.00	.09	2.4	.03	.23	2.0	4.8	.00	1.2	.00	.00	.95
18	5.9	.06	1.9	.02	.25	117	2.6	.00	.73	.00	.00	.50
19	7.0	.05	1.7	.02	.23	1120	1.8	.00	.50	.00	.00	.45
20	.63	.04	1.5	.01	.22	1500	1.2	.00	.54	.00	.00	.30
21	.53	.03	1.4	.01	.17	696	.67	.00	.35	.00	.00	.17
22	.61	.02	1.3	.01	.12	16	.46	.00	.75	.00	.00	.08
23	.56	.02	1.2	.02	.07	6.4	.34	.00	.73	.00	.00	.00
24	.55	.02	1.0	.02	.07	3.8	.20	.00	.73	.00	.00	.00
25	.48	.02	.87	.02	.06	2.6	.20	.00	47	.00	.00	.00
26	.38	.02	.75	.02	.05	1.9	2.0	30	247	.00	.00	.00
27	.33	.03	.71	.01	.06	1.7	7.5	174	16	.00	.00	.00
28	.29	.03	.67	.00	.06	5.5	3.4	92	6.3	.00	.00	.00
29	.24	.03	.60	12	---	6.4	2.0	46	9.2	.00	.00	.00
30	.20	.04	.57	311	---	2.9	1.5	173	13	.00	.00	.00
31	.10	---	.50	138	---	1.8	---	506	---	.00	.00	---
TOTAL	17.80	73.16	66.11	465.03	23.81	3580.16	275.53	1051.78	661.63	10.20	12.13	4.42
MEAN	.57	2.44	2.13	15.0	.85	115	9.18	33.9	22.1	.33	.39	.15
MAX	7.0	42	11	311	12	1500	154	506	247	3.7	8.7	1.2
MIN	.00	.02	.04	.00	.05	.02	.07	.00	.35	.00	.00	.00
AC-FT	35	145	131	922	47	7100	547	2090	1310	20	24	8.8

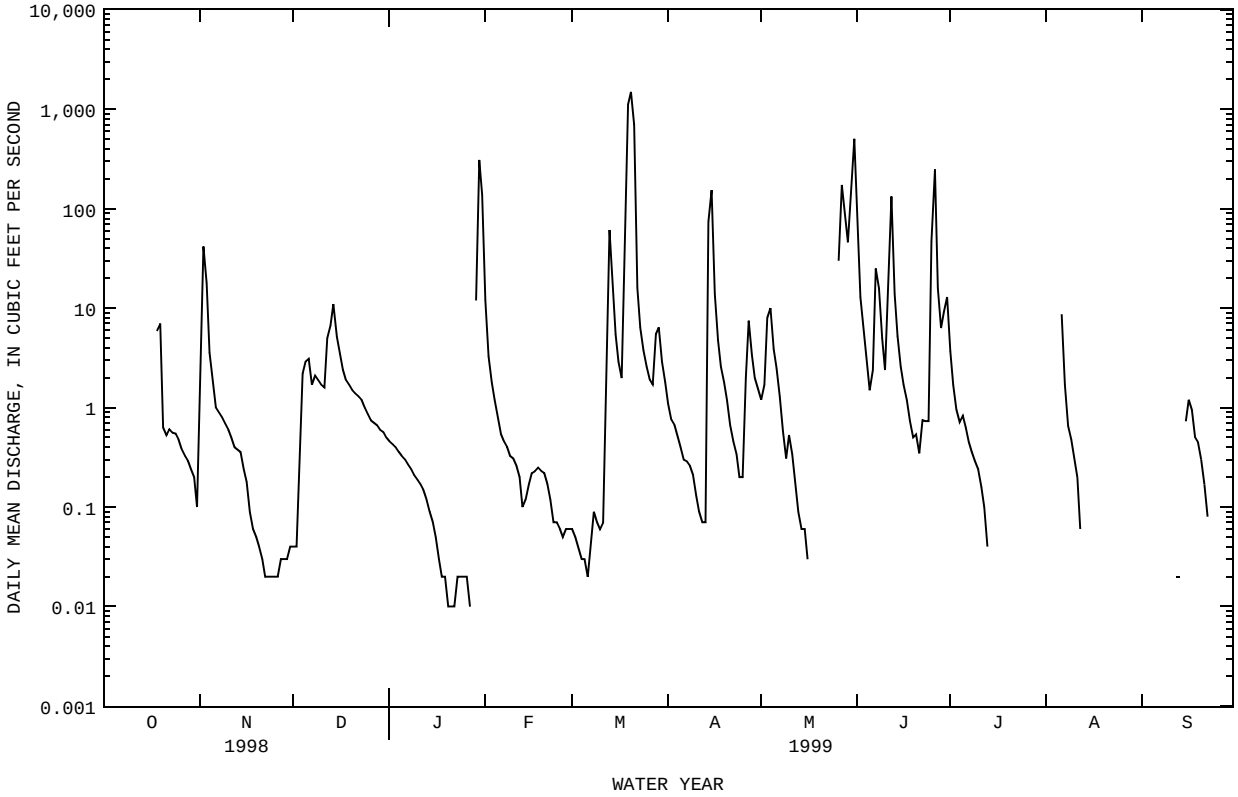
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1999h, BY WATER YEAR (WY)

MEAN	55.3	15.8	22.2	14.4	24.0	44.8	40.3	157	118	22.8	43.9	64.2
MAX	771	160	194	154	176	309	637	1224	944	282	1337	624
(WY)	1982	1987	1992	1990	1993	1990	1990	1982	1985	1950	1950	1989
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1946	1946	1953	1947	1950	1971	1984	1953	1974	1967	1954

07314500 LITTLE WICHITA RIVER NEAR ARCHER CITY, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1946 - 1999h	
ANNUAL TOTAL	5577.22		6241.76			
ANNUAL MEAN	15.3		17.1		51.7	
HIGHEST ANNUAL MEAN					252	1990
LOWEST ANNUAL MEAN					2.49	1984
HIGHEST DAILY MEAN	1350	Mar 17	1500	Mar 20	9550	Aug 2 1950
LOWEST DAILY MEAN	.00	Apr 22	.00	Oct 1	.00	Oct 31 1945
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 24	.00	Oct 1	.00	Oct 31 1945
INSTANTANEOUS PEAK FLOW			1560	Mar 20	20100	May 16 1989
INSTANTANEOUS PEAK STAGE			21.24	Mar 20	27.03	May 16 1989
ANNUAL RUNOFF (AC-FT)	11060		12380		37420	
10 PERCENT EXCEEDS	9.1		8.9		60	
50 PERCENT EXCEEDS	.51		.26		.31	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
h See PERIOD OF RECORD paragraph.



07314800 LAKE ARROWHEAD NEAR HENRIETTA, TX

LOCATION.--Lat 33°45'51", long 98°22'17", Clay County, Hydrologic Unit 11130209, at intake tower near center of dam on Little Wichita River, 2.3 mi upstream from Lake Creek, 11 mi southwest of Henrietta, and 12.3 mi southeast of Wichita Falls.

DRAINAGE AREA.--822 mi^2.

PERIOD OF RECORD.--Jun 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.40 ft below sea level. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 15,900 ft long, including an uncontrolled reinforced concrete ogee spillway 1,581 ft wide located near the left end of dam. The dam was completed in Dec 1966 and storage began in Jun 1967. The service outlet works, located in a cylindrical service tower at upstream side of dam, consist of two gated 5-foot-diameter inlets that can be used for controlled releases. The dam was built by the city of Wichita Falls to impound water for municipal, industrial, and recreational uses. The area-capacity curves are based on U.S. Geological Survey topographic maps. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam	944.4
Design flood	939.95
Crest of spillway (top of conservation pool)	926.4
Lowest gated outlet (invert)	874.1

COOPERATION.--Capacity table provided by Homer Hunter and Associates and Biggs and Mathews, Consulting Engineers, for the city of Wichita Falls. Area-capacity curves provided by Homer Hunter and Associates. Record of diversions provided by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 287,500 acre-ft, May 4, 1990 (gage height, 927.92 ft); minimum contents after initial filling, 74,600 acre-ft, Aug 11, 1971 (gage height, 909.63 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 183,500 acre-ft, Oct 4 (gage height, 920.97 ft); minimum contents, 144,300 acre-ft, Sep 28 (elevation, 917.66 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

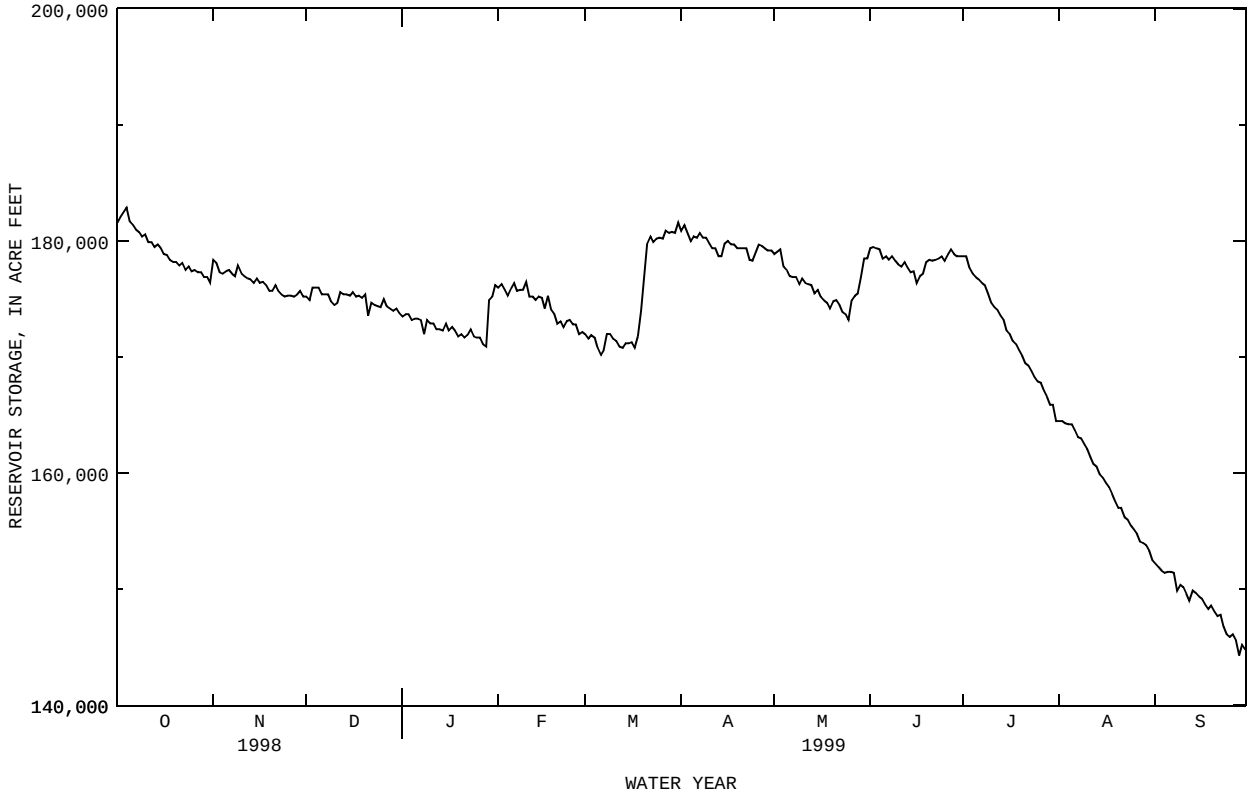
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	181600	178400	175200	173500	176000	172000	180900	e178900	179400	e178700	164500	152200
2	182100	178100	174900	173700	176300	171600	181400	e179100	179500	e178700	164500	151900
3	182500	177300	176000	173700	175800	171900	180700	e179300	179400	177700	164300	151600
4	182900	177200	176000	173200	175300	171700	180000	177800	179300	177200	164200	151400
5	181700	177400	176000	173300	175900	170800	180400	177500	178500	176900	164200	151500
6	181400	177500	175400	173300	176400	170200	180300	177000	178700	176700	163700	151500
7	181000	177200	175400	173200	175700	170600	180700	176900	178400	176400	163100	151400
8	180800	177000	175400	172000	175800	172000	180300	176900	178700	176200	163000	149900
9	180400	177900	174800	173200	175800	172000	180300	176300	178300	175500	162500	150400
10	180600	177200	174500	172900	176500	171600	179800	176800	178000	174700	162100	150200
11	179900	177000	174700	172900	175200	171400	179400	176400	177800	174300	161400	149600
12	179900	176800	175600	172400	175200	170900	179400	176300	178200	174100	160800	149000
13	179500	176700	175400	172400	174900	170800	178700	176200	e177700	173600	160600	149900
14	179700	176400	175400	172300	175200	171200	178700	175500	e177300	173200	159900	149700
15	179400	176800	175300	172900	175100	171200	179800	175800	177400	172300	159600	149400
16	178900	176400	175600	172300	174200	171300	180000	175200	176400	172000	159200	149200
17	178800	176500	175200	172600	175300	170800	179700	174900	177000	171400	158800	148700
18	178400	176200	175300	172300	174100	171800	179700	174700	177200	171100	158200	148300
19	178200	175700	175100	171800	173700	174000	179400	174200	178200	170600	157600	148600
20	178200	175700	175400	172000	172900	176700	179400	174800	178400	170100	157000	148100
21	177900	176200	173600	171700	173100	179800	e179400	174900	178300	169500	157000	147700
22	178100	175700	174700	171900	172600	180400	e179400	174500	178400	169300	156200	147800
23	177500	175400	174500	172400	173100	179900	178400	e173900	178500	168800	156000	146800
24	177800	175200	174400	171800	173200	180200	178300	e173700	178700	168300	155500	146100
25	177400	175300	174300	171700	172800	180300	179000	e173200	178300	167900	155200	145900
26	177500	175300	175000	171700	172800	180200	179700	174900	178900	167800	154800	146100
27	177300	175200	174400	171100	172000	180900	e179600	175300	179300	167100	154100	145600
28	177300	175400	174200	170900	172200	180700	e179400	175500	178900	166600	154000	144300
29	176900	175700	174000	174900	---	180800	179200	176900	e178700	165900	153800	145200
30	176900	175200	174200	175200	---	180700	179200	178500	e178700	165900	153300	144800
31	176400	---	173800	176200	---	181600	---	178500	---	164500	152500	---
MAX	182900	178400	176000	176200	176500	181600	181400	179300	179500	178700	164500	152200
MIN	176400	175200	173600	170900	172000	170200	178300	173200	176400	164500	152500	144300
(+)	920.41	920.31	920.20	920.39	920.07	920.82	920.63	920.58	920.59	919.43	918.40	917.71
(@)	-5500	-1200	-1400	+2400	-4000	+9400	-2400	-700	+200	-14200	-12000	-7700
(++)	1762	1574	1134	2054	1621	1594	1327	1496	1248	3323	3628	2309

CAL YR 1998 MAX 234800 MIN 173600 (@) -30600 (++) 13471
WTR YR 1999 MAX 182900 MIN 144300 (@) -37100 (++) 23069

e Estimated

(+) Gage height, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the City of Wichita Falls, and for wholesale customer use.

07314800 LAKE ARROWHEAD NEAR HENRIETTA, TX--Continued



07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX

LOCATION.--Lat 33°49'36", long 98°14'23", Clay County, Hydrologic Unit 11130209, on right bank at downstream side of bridge on U.S. Highways 822 and 287, 1.0 mi downstream from Duck Creek, 2.8 mi west of Henrietta, 6.6 mi upstream from Turkey Creek, and 7.6 mi upstream from Dry Fork Little Wichita River.

DRAINAGE AREA.--1,037 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan 1953 to current year. Prior to Oct 1974, published as "near Henrietta".

REVISED RECORDS.--WDR TX-93-1: Daily discharge.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 831.57 ft above sea level. Prior to Jun 26, 1953, nonrecording gage at site 2.6 mi downstream at same datum. Prior to Jul 11, 1975, at site 2.6 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1967, at least 10% of contributing drainage area has been regulated by Lake Arrowhead, (station 07314800, normal storage 262,100 acre-feet) 39 mi upstream. The city of Wichita Falls diverted 6,627 acre-ft from Lake Kickapoo and 23,069 acre-ft from Lake Arrowhead for municipal uses. The city returned 13,646 acre-ft of wastewater effluent/filter-plant wash water to the river below Wichita River at Wichita Falls station (07312500) and above Wichita River near Charlie station (07312700). The city of Henrietta diverted 569 acre-ft from pool at gage for municipal use. Records of diversions were furnished by the cities of Wichita Falls and Henrietta.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1954-66) prior to completion of Lake Arrowhead, 124 ft^3/s (89,840 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1954-66).--Maximum discharge, 6,390 ft^3/s May 2, 1957; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 21 ft at former site, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	.00	.00	.00	24	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	12	.00	.00	.00	.00	.00	.00	.00
3	.80	.00	.00	.00	6.7	.00	.00	.00	.00	.00	.00	.00
4	.10	.00	.00	.00	3.9	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	2.3	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.66	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	2.4	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	42	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.11	.00	12	7.4	.00	.00	.00	.00	.00
16	.00	.00	.00	.16	.00	3.0	31	.00	.00	.00	.00	.00
17	.00	.00	.00	.16	.00	.44	5.2	.00	.00	.00	.00	.00
18	.00	.00	.00	.16	.00	26	.77	.00	.00	.00	.00	.00
19	.00	1.3	.00	.23	.00	115	.52	.00	.00	.00	.00	.00
20	.00	6.6	.00	.27	.00	154	.20	.00	.00	.00	.00	.00
21	.00	13	.00	.41	.00	65	.00	.00	.00	.00	.03	.00
22	.00	15	.00	.45	.00	36	.00	.00	.00	.00	.06	.00
23	.00	14	.00	.60	.00	21	.00	.00	.00	.00	.46	.00
24	.00	4.3	.00	.75	.00	14	.00	.00	.00	.00	1.1	.00
25	.00	.11	.00	.41	.00	9.9	.00	.00	5.1	.00	.17	.00
26	.00	.00	.00	.10	.00	5.0	.06	.00	40	.00	.41	.00
27	.00	.00	.00	.04	.00	4.3	.00	1.5	9.6	.00	.00	.00
28	.00	.00	.00	.01	.00	7.1	.00	10	.18	.00	.00	.00
29	.00	.00	.00	4.4	---	2.3	.00	1.4	.00	.00	.00	.00
30	.00	.00	.00	83	---	.23	.00	2.2	.00	.00	.00	.00
31	.00	---	.00	84	---	.00	---	.01	---	.00	.00	---
TOTAL	6.50	54.31	0.00	175.26	51.04	519.67	45.15	15.11	54.88	0.00	2.23	0.00
MEAN	.21	1.81	.000	5.65	1.82	16.8	1.50	.49	1.83	.000	.072	.000
MAX	5.6	15	.00	84	24	154	31	10	40	.00	1.1	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	13	108	.00	348	101	1030	90	30	109	.00	4.4	.00

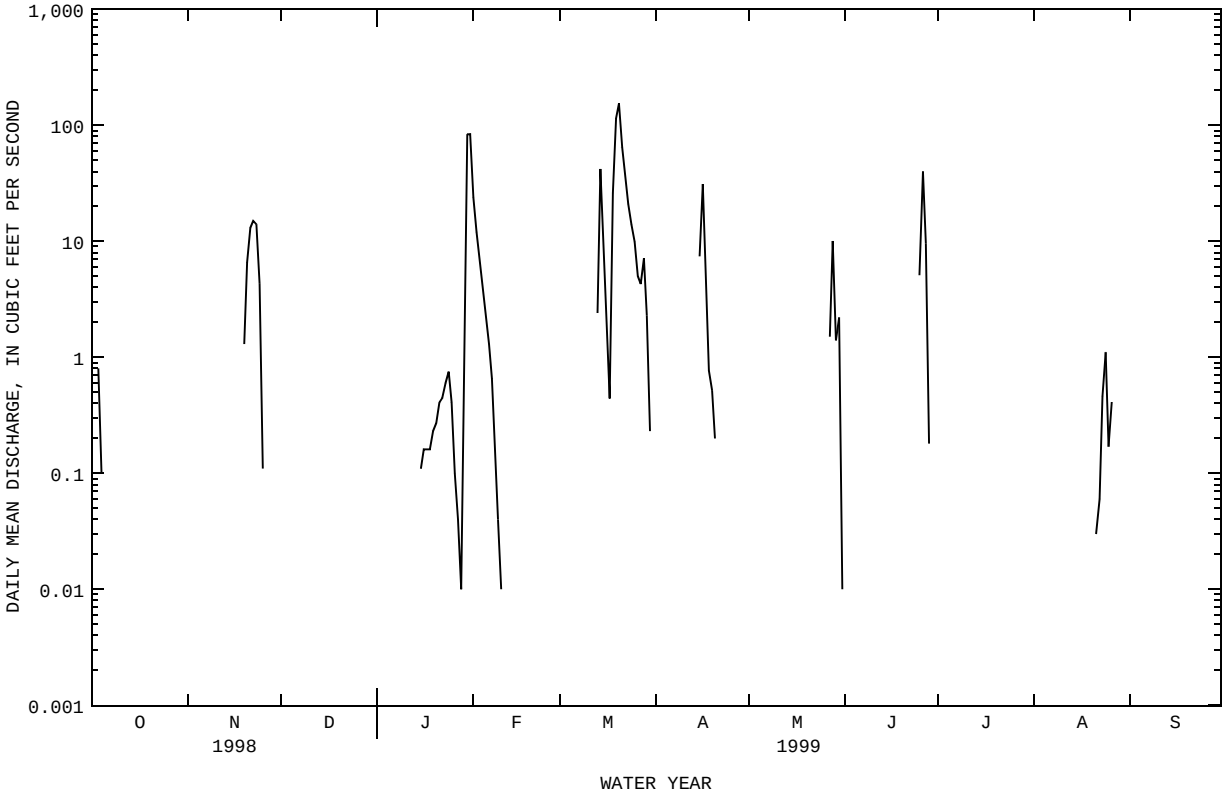
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1999z, BY WATER YEAR (WY)

MEAN	28.1	13.1	22.9	15.0	31.2	87.0	83.3	213	198	29.4	5.28	49.2
MAX	329	141	251	131	275	937	2169	2272	1652	549	76.6	549
(WY)	1982	1987	1992	1992	1987	1990	1990	1982	1992	1992	1995	1989
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1968	1967	1967	1967	1967	1967	1971	1971	1977	1968	1967	1967

07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1967 - 1999z	
ANNUAL TOTAL	6798.09		924.15			
ANNUAL MEAN	18.6		2.53		64.6	
HIGHEST ANNUAL MEAN					498	1990
LOWEST ANNUAL MEAN					1.00	1996
HIGHEST DAILY MEAN	1990	Mar 17	154	Mar 20	10500	May 3 1990
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 2	.00	Oct 16 1966
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 15	.00	Oct 5	.00	Oct 19 1966
INSTANTANEOUS PEAK FLOW			185	Mar 20	14200	May 3 1990
INSTANTANEOUS PEAK STAGE			10.68	Mar 20	24.96	May 3 1990
ANNUAL RUNOFF (AC-FT)	13480		1830		46830	
10 PERCENT EXCEEDS	15		2.3		46	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

z Period of regulated streamflow.



07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Dec 1952 to Jan 1956, Nov 1959 to Sep 1966, Jan 1968 to Sep 1985.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Apr 21, 1999 to Sep 1999 (discontinued).

INSTRUMENTATION.--Water-quality monitor since Jun 1996.

REMARKS.--No flow when monitor was in operation Apr 21 to Apr 25, Apr 27 to May 26, Jun 1 to Jun 24, Jun 29 to Aug 20, Aug 27 to Sep 30.

EXTREMES FOR CURRENT YEAR.--
DISSOLVED OXYGEN: Maximum, 4.49 mg/L, May 28; minimum, 0.71 mg/L, Jun 25.

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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	---	---	---	---	---	---	2.12	.13	.76	---	---	---
27	---	---	---	---	---	---	---	---	---	6.01	1.17	2.50
28	---	---	---	---	---	---	---	---	---	5.22	2.92	4.49
29	---	---	---	---	---	---	---	---	---	3.87	1.11	2.67
30	---	---	---	---	---	---	---	---	---	2.88	.87	1.94
31	---	---	---	---	---	---	---	---	---	2.39	.28	1.64
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

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	3.27	.22	.71	---	---	---	---	---	---	---	---	---
26	4.11	1.52	3.48	---	---	---	---	---	---	---	---	---
27	3.86	2.37	3.05	---	---	---	---	---	---	---	---	---
28	2.96	.88	2.00	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX

LOCATION.--Lat 33°48'46", long 98°05'05", Clay County, Hydrologic Unit 11130209, at downstream side of bridge on U.S. Highway 82, 5.8 mi upstream from Little Wichita River, 6.4 mi east of Henrietta, and 8.9 mi west of Ringgold.

DRAINAGE AREA.--178 mi^2.

PERIOD OF RECORD.--Nov 1963 to current year.

REVISED RECORDS.--WRD TX-72-1: 1966(M).

GAGE.--Water-stage recorder. Datum of gage is 825.32 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Oct 1941 reached a stage of 28.8 ft, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 27	1730	637	15.12	May 11	0030	643	15.17

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	e.00	1.2	.88	6.4	.02	.00	.00
2	.00	.00	.00	.00	e.08	e.00	.86	.70	2.2	.01	.00	.00
3	.00	.00	.04	.00	e.26	e.00	.72	.54	.89	.01	.00	.00
4	.00	.00	.01	.00	e.24	e.00	.58	.40	.60	.01	.00	.00
5	.00	.00	.00	.00	e.18	e.00	.56	.30	.49	.01	.00	.00
6	.00	.00	.00	.00	e.17	e.00	.52	.21	.34	.00	.00	.00
7	.00	.00	.00	.00	e.25	e.01	.54	.15	.28	.00	.00	.00
8	.00	.00	.00	.00	e.58	e.05	.60	.11	.27	.00	.00	.00
9	.00	.00	.00	.00	e.52	e.01	.60	.08	.24	.00	.00	.00
10	.00	.00	.00	.00	e.41	.00	.60	294	.19	.00	.00	.00
11	.00	.00	.00	.00	e.28	.00	.56	276	.13	.00	.00	.00
12	.00	.00	.00	e.01	e.24	.28	.54	9.3	.11	.00	.00	.00
13	.00	.00	.00	.00	e.25	.54	.56	1.3	.08	.00	.00	.00
14	.00	.00	.00	.00	e.20	.56	.75	.60	.06	.00	.00	.00
15	.00	.00	.00	.00	e.14	.58	.82	.38	.06	.00	.00	.00
16	.00	.00	.00	.00	e.06	.64	.80	.26	.04	.00	.00	.00
17	.00	.00	.00	e.00	.00	.64	.77	.17	.02	.00	.00	.00
18	.00	.00	.00	e.00	e.00	25	.75	.14	e.02	.00	.00	.00
19	.00	.00	.00	e.00	e.00	429	.73	.10	e.01	.00	.00	.00
20	.00	.00	.00	e.00	e.00	232	.73	.07	e.01	.00	.00	.00
21	.00	.00	.00	.00	e.00	13	.70	.10	.01	.00	.00	.00
22	.00	.00	.00	.00	e.00	3.1	.70	.10	.02	.00	.00	.00
23	.00	.00	.00	.00	e.00	1.3	.70	.07	.02	.00	.00	.00
24	.00	.00	.00	.00	e.00	.97	.66	.07	.01	.00	.00	.00
25	.00	.00	.00	.00	e.00	.86	.73	.10	.01	.00	.00	.00
26	.00	.00	.00	.00	e.00	.77	74	.13	.02	.00	.00	.00
27	.00	.00	.00	.00	e.00	.80	594	.21	.02	.00	.00	.00
28	.00	.00	.00	e.01	e.00	1.1	131	79	.02	.00	.00	.00
29	.00	.00	.00	e.13	---	4.9	6.1	12	.02	.00	.00	.00
30	.00	.00	.00	e.06	---	4.1	1.5	2.7	.02	.00	.00	.00
31	.00	---	.00	.00	---	2.0	---	1.5	---	.00	.00	---
TOTAL	0.00	0.00	0.05	0.21	3.86	722.21	823.88	681.67	12.61	0.06	0.00	0.00
MEAN	.000	.000	.002	.007	.14	23.3	27.5	22.0	.42	.002	.000	.000
MAX	.00	.00	.04	.13	.58	429	594	294	6.4	.02	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.52	.07	.01	.00	.00	.00
AC-FT	.00	.00	.1	.4	7.7	1430	1630	1350	25	.1	.00	.00

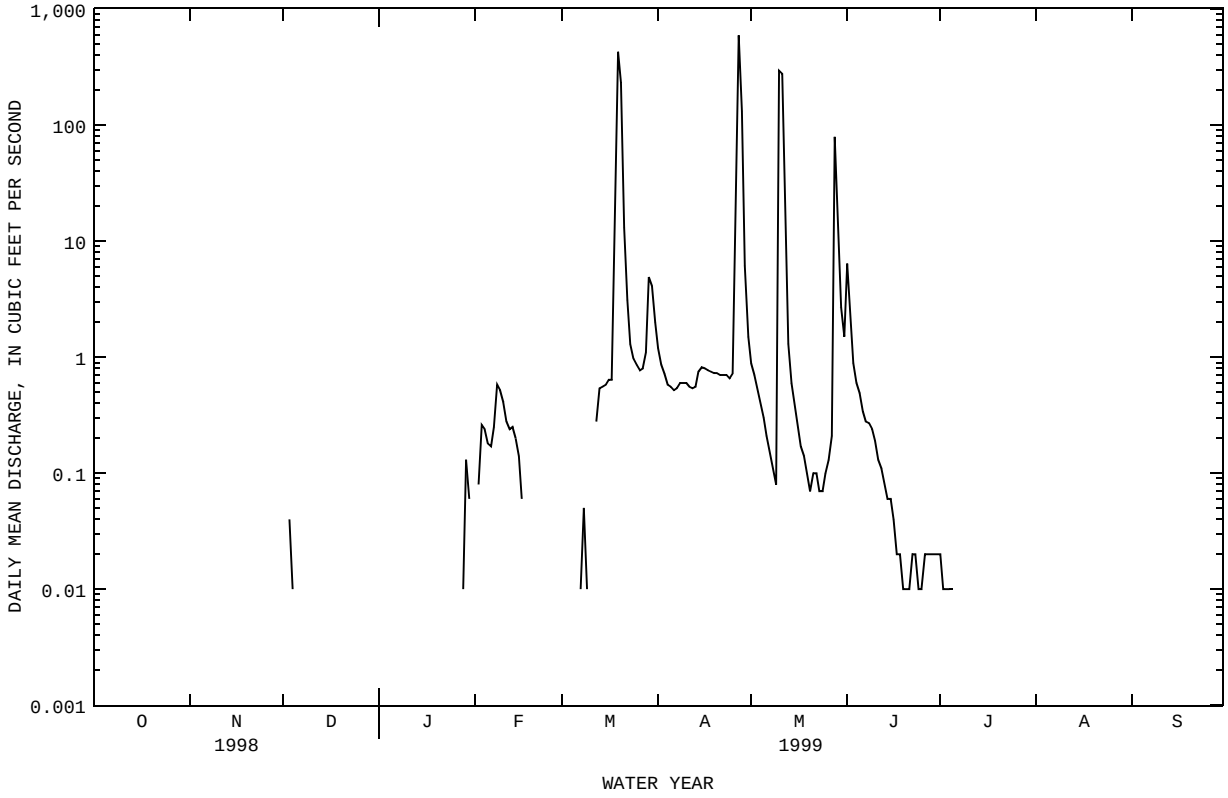
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1999, BY WATER YEAR (WY)

MEAN	36.2	11.9	20.7	11.9	27.7	50.8	40.7	107	64.2	5.98	5.40	12.3
MAX	902	97.3	303	139	411	295	686	453	508	123	48.7	102
(WY)	1982	1974	1992	1985	1997	1985	1990	1989	1992	1973	1995	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1979	1972	1966	1966	1966	1967	1971	1971	1971	1964	1969	1979

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1964 - 1999	
ANNUAL TOTAL	9262.92		2244.55			
ANNUAL MEAN	25.4		6.15		33.6	
HIGHEST ANNUAL MEAN					128	1982
LOWEST ANNUAL MEAN					.44	1996
HIGHEST DAILY MEAN	3900	Mar 17	594	Apr 27	16900	Oct 13 1981
LOWEST DAILY MEAN	.00	Jun 26	.00	Oct 1	.00	Dec 1 1963
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 26	.00	Oct 1	.00	Dec 1 1963
INSTANTANEOUS PEAK FLOW			643	May 11	32500	Oct 13 1981
INSTANTANEOUS PEAK STAGE			15.17	May 11	31.70	Oct 13 1981
ANNUAL RUNOFF (AC-FT)	18370		4450		24380	
10 PERCENT EXCEEDS	9.2		.76		18	
50 PERCENT EXCEEDS	.00		.00		.14	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX--Continued



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.

PERIOD OF RECORD.--Apr 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.
Water-quality records.--Chemical data: Oct 1967 to Sep 1997. Microbiological data: May 1997 to Sep 1997.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft above sea level. Prior to Jan 12, 1939, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Apr 1938, at least 10% of contributing drainage area has been regulated by upstream reservoirs. There are many small diversions upstream from station for irrigation, oil field operations, and for municipal uses.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	288	374	452	4810	379	1150	2880	5760	4710	622	e680
2	201	337	400	443	3720	367	1230	2490	4220	5320	610	e570
3	214	888	482	416	2760	365	1040	2190	4340	4990	990	e500
4	261	5180	565	402	2190	357	994	5760	4750	3280	1710	e530
5	276	4060	647	404	1650	357	955	7180	4460	2690	1870	e620
6	274	3010	842	406	1340	356	977	4880	3390	2280	2410	e700
7	300	2290	861	397	1110	416	854	3850	3000	1820	2860	e610
8	282	1710	686	384	1490	464	787	3290	2980	1650	3060	e500
9	279	1320	595	369	3250	497	807	2500	2810	1550	2960	e460
10	368	1070	542	377	1750	730	860	2180	2140	1460	2400	e420
11	416	928	507	396	1330	843	795	2610	1870	1390	1670	e330
12	376	869	525	400	1070	1220	746	2360	2410	1560	1570	e280
13	334	790	554	388	889	4490	709	2150	2440	3330	1240	e350
14	305	734	588	378	772	5840	1410	2310	4130	2910	764	e420
15	278	668	523	382	684	5390	5950	2200	4350	1960	824	e310
16	259	620	458	382	621	3640	5510	1760	3500	1640	792	e290
17	273	584	432	382	569	2560	3250	1310	2380	1700	923	e280
18	311	550	468	373	532	2540	1840	1140	1890	1450	732	e320
19	404	521	433	371	509	4580	1060	4570	1510	1150	680	e290
20	462	489	418	373	481	10700	770	2940	1950	1010	610	271
21	379	466	419	372	457	10000	694	1930	1660	954	544	244
22	348	445	365	386	438	6830	555	1270	3770	891	565	228
23	326	434	312	392	424	4810	421	938	7090	872	623	218
24	321	417	276	402	413	3670	371	841	6580	901	677	228
25	311	406	325	405	405	2790	368	694	7530	789	644	251
26	313	395	313	433	409	2100	608	913	9300	718	629	247
27	305	387	335	404	405	1950	2440	877	11600	690	579	227
28	285	377	385	426	388	2120	4010	2380	7420	656	540	219
29	266	381	411	467	---	2020	2390	9480	6590	629	644	207
30	250	377	432	907	---	1590	2530	11400	4840	619	581	202
31	236	---	443	4430	---	1330	---	8220	---	626	e600	---
TOTAL	9367	30991	14916	16899	34866	85301	46081	99493	130660	56195	35923	11002
MEAN	302	1033	481	545	1245	2752	1536	3209	4355	1813	1159	367
MAX	462	5180	861	4430	4810	10700	5950	11400	11600	5320	3060	700
MIN	154	288	276	369	388	356	368	694	1510	619	540	202
AC-FT	18580	61470	29590	33520	69160	169200	91400	197300	259200	111500	71250	21820

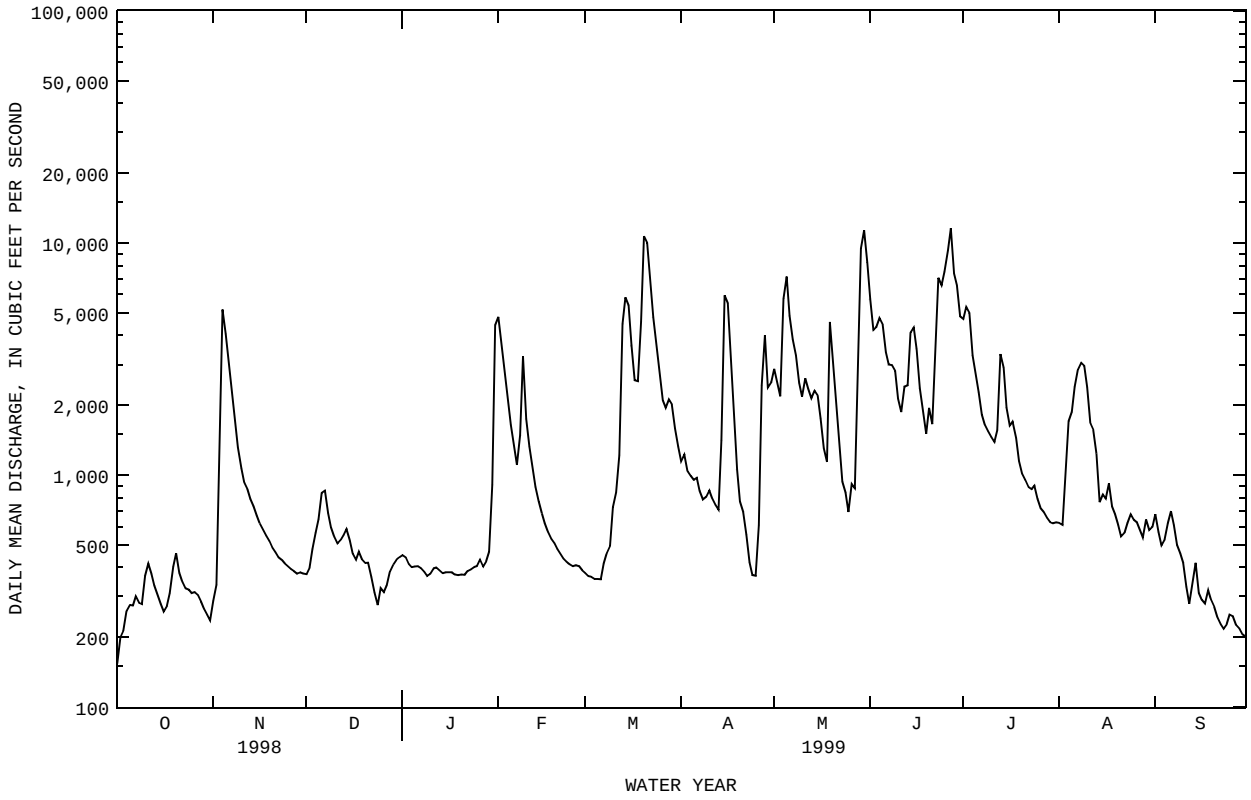
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1999, BY WATER YEAR (WY)

MEAN	3002	1509	1139	950	1371	2041	2646	6619	6319	1672	1353	2042
MAX	23900	9713	11810	5306	9320	14710	18080	43580	37460	8077	14730	9653
(WY)	1987	1987	1992	1992	1987	1998	1990	1957	1941	1950	1995	1986
MIN	108	102	91.2	76.5	136	66.1	142	134	517	158	155	109
(WY)	1953	1940	1939	1940	1953	1940	1971	1971	1966	1964	1970	1956

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1938 - 1999	
ANNUAL TOTAL	1076174		571694			
ANNUAL MEAN	2948		1566		2554	
HIGHEST ANNUAL MEAN					8925	1987
LOWEST ANNUAL MEAN					523	1953
HIGHEST DAILY MEAN	84000	Mar 18	11600	Jun 27	215000	Jun 7 1995
LOWEST DAILY MEAN	108	Aug 24	154	Oct 1	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	160	Aug 20	226	Sep 24	47	Mar 18 1940
INSTANTANEOUS PEAK FLOW			13800	Jun 27	236000	Jun 7 1995
INSTANTANEOUS PEAK STAGE			14.02	Jun 27	33.60	Oct 22 1983
ANNUAL RUNOFF (AC-FT)	2135000		1134000		1850000	
10 PERCENT EXCEEDS	6790		4270		5660	
50 PERCENT EXCEEDS	750		686		609	
90 PERCENT EXCEEDS	217		311		178	

e Estimated

07315500 RED RIVER NEAR TERRAL, OK--Continued



07315600 LAKE NOCONA NEAR NOCONA, TX

LOCATION.--Lat 33°52′57", long 97°39′09", Montague County, Hydrologic Unit 11130201, on western bank near left end of dam on Farmer's River, 6.0 mi northeast of Nocona.

DRAINAGE AREA.--94 mi^2

PERIOD OF RECORD.--Mar 1999 to Sep 1999.

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

REMARKS.--The lake is formed by an earthfill dam 3,720 ft long, including a 483-foot-wide reinforced concrete ogee-type uncontrolled spillway near right end of dam. The dam was completed Oct 1960, and storage began spring 1961. The service outlet consists of two gate-controlled 4- by 5-foot conduits. The dam and lake are owned by the North Montague County Water Supply District, which uses the water for their municipal supply. The capacity table is based on U.S. Geological Survey topographic maps, dated 1929. The capacity curve, was entitled "Initial Lake Nacona Area & Capacity Characteristics". Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	847.00
Crest of spillway	827.00
Lowest gated outlet (invert)	795.00

COOPERATION.--Capacity curve and record of diversions for municipal use are provided by the North Montague County Water Supply District.

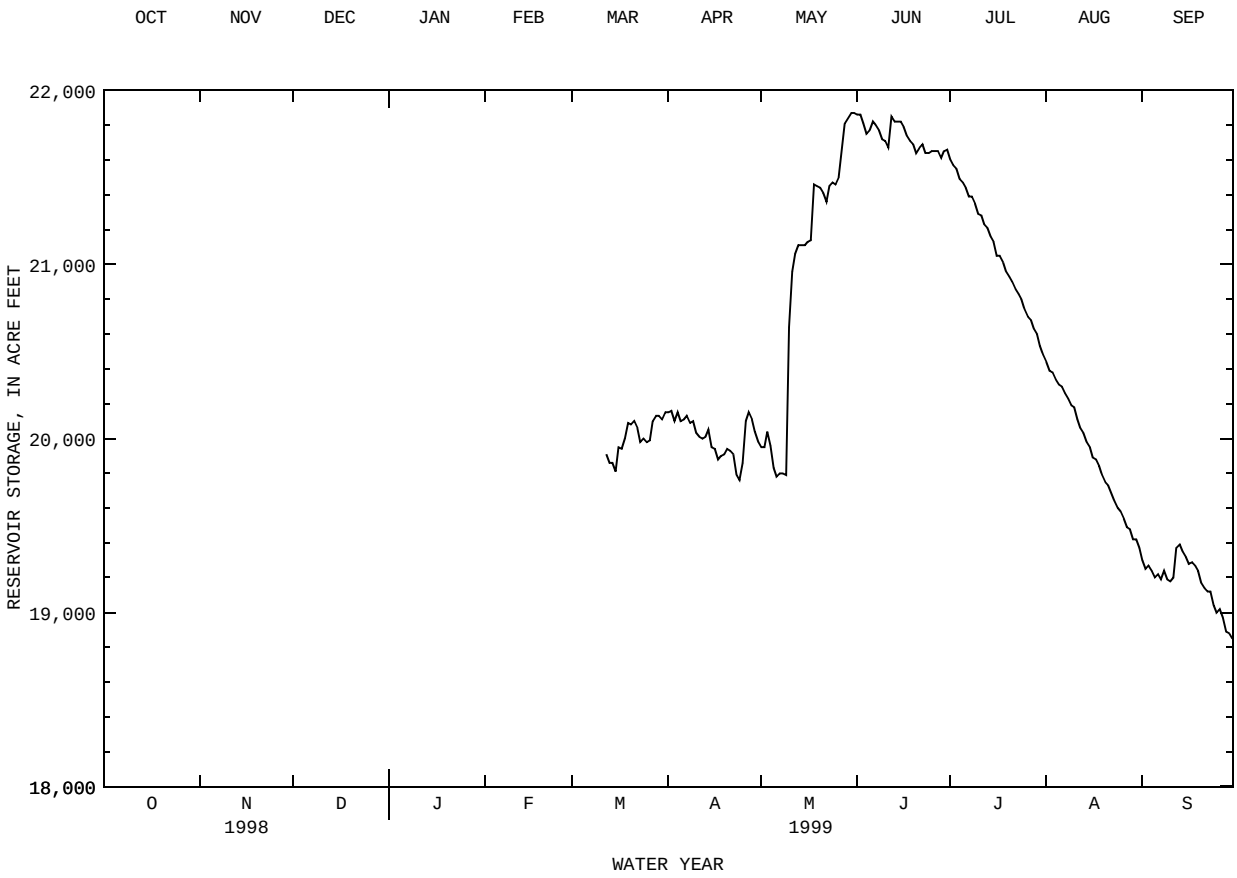
EXTREMES FOR CURRENT YEAR.--Maximum contents, 21,960 acre-ft, Jun 1 (elevation, 824.55 ft); minimum contents, 18,850 acre-ft, Sep 30 (elevation, 822.06 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	20150	19950	21860	21600	20440	19300
2	---	---	---	---	---	---	20160	19950	21860	21570	20390	19250
3	---	---	---	---	---	---	20100	20040	21810	21550	20380	19270
4	---	---	---	---	---	---	20150	19960	21750	21490	20340	19240
5	---	---	---	---	---	---	20100	19830	21770	21470	20310	19200
6	---	---	---	---	---	---	20110	19780	21820	21440	20300	19220
7	---	---	---	---	---	---	20130	19800	21800	21390	20260	19190
8	---	---	---	---	---	---	20090	19800	21770	21390	20230	19240
9	---	---	---	---	---	---	20100	19790	21720	21350	20190	19190
10	---	---	---	---	---	---	20030	20640	21710	21290	20180	19180
11	---	---	---	---	---	---	20010	20960	21670	21280	20110	19200
12	---	---	---	---	---	19910	20000	21060	21850	21230	20060	19370
13	---	---	---	---	---	19860	20010	21110	21820	21210	20030	19390
14	---	---	---	---	---	19860	20050	21110	21820	21160	19980	19350
15	---	---	---	---	---	19810	19950	21110	21820	21130	19950	19320
16	---	---	---	---	---	19950	19940	21130	21790	21050	19890	19280
17	---	---	---	---	---	19940	19880	21140	21740	21050	19880	19290
18	---	---	---	---	---	20000	19900	21460	21710	21010	19840	19270
19	---	---	---	---	---	20090	19910	21450	21690	20960	19790	19240
20	---	---	---	---	---	20080	19940	21440	21640	20930	19750	19170
21	---	---	---	---	---	20100	19930	21410	21670	20900	19730	19140
22	---	---	---	---	---	20060	19910	21360	21690	20860	19680	19120
23	---	---	---	---	---	19980	19790	21450	21640	20830	19640	19120
24	---	---	---	---	---	20000	19760	21470	21640	20800	19600	19040
25	---	---	---	---	---	19980	19860	21460	21650	20740	19580	19000
26	---	---	---	---	---	19990	20100	21500	21650	20700	19540	19020
27	---	---	---	---	---	20100	20150	21660	21650	20680	19490	18970
28	---	---	---	---	---	20130	20110	21810	21610	20630	19480	18890
29	---	---	---	---	---	20130	20040	21840	21650	20600	19420	18880
30	---	---	---	---	---	20110	19980	21870	21660	20530	19420	18850
31	---	---	---	---	---	20150	---	21870	---	20480	19370	---
MEAN	---	---	---	---	---	---	20010	20940	21730	21070	19910	19170
MAX	---	---	---	---	---	---	20160	21870	21860	21600	20440	19390
MIN	---	---	---	---	---	---	19760	19780	21610	20480	19370	18850
(+)						823.10	822.96	824.48	824.31	823.36	822.47	822.06
(@)						---	-170	+1890	-210	-1180	-1110	-520
(++)						---	38	43	54	123	123	68

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the North Montague County Water Supply District.

07315600 LAKE NOCONA NEAR NOCONA, TX--Continued



07315950 MOSS LAKE NEAR GAINESVILLE, TX

LOCATION.--Lat 33°46'26", long 97°12'50", Cooke County, Hydrologic Unit 11130201, on top of upstream side of dam adjacent to guardrail of roadway about 250 ft from right end of Fish Creek dam on Fish Creek, 1.6 mi upstream from Bearhead Creek, 3.7 mi upstream from mouth, and 10 mi northwest of Gainesville.

DRAINAGE AREA.--65.0 mi^2.

PERIOD OF RECORD.--Oct 1967 to current year.
Water-quality records.--Chemical data: Oct 1969 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Apr 20, 1979, recording gage at site about 150 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 1,460 ft long. The dam was completed and storage began Dec 2, 1966. An uncontrolled morning-glory-type spillway with a 7- by 7-foot opening is designed to discharge 2,500 ft^3/s at a 10-foot head. A 400-foot-wide spillway has been cut through natural ground, and is located about 100 ft to left of the left end of dam. The dam was built by the city of Gainesville to impound water for municipal use. Capacity table is based on a 1961 survey. There was no known diversion from the lake during the current water year. Data regarding the dam is given in the following table:

	Elevation (feet)
Top of dam	740.0
Top of design flood pool	736.0
Crest of spillway	725.0
Crest of spillway morning-glory type (top of conservation pool)	715.0
Lowest gated outlet (invert)	666.0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 50,990 acre-ft, Oct 13, 1981 (elevation, 733.72 ft); minimum contents since lake filled in May 1968, 11,490 acre-ft, Jan 18, 1990 (elevation, 702.08 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,630 acre-ft, May 10 (elevation, 718.68 ft); minimum contents, 20,770 acre-ft, Nov 28-29 (elevation, 712.74 ft).

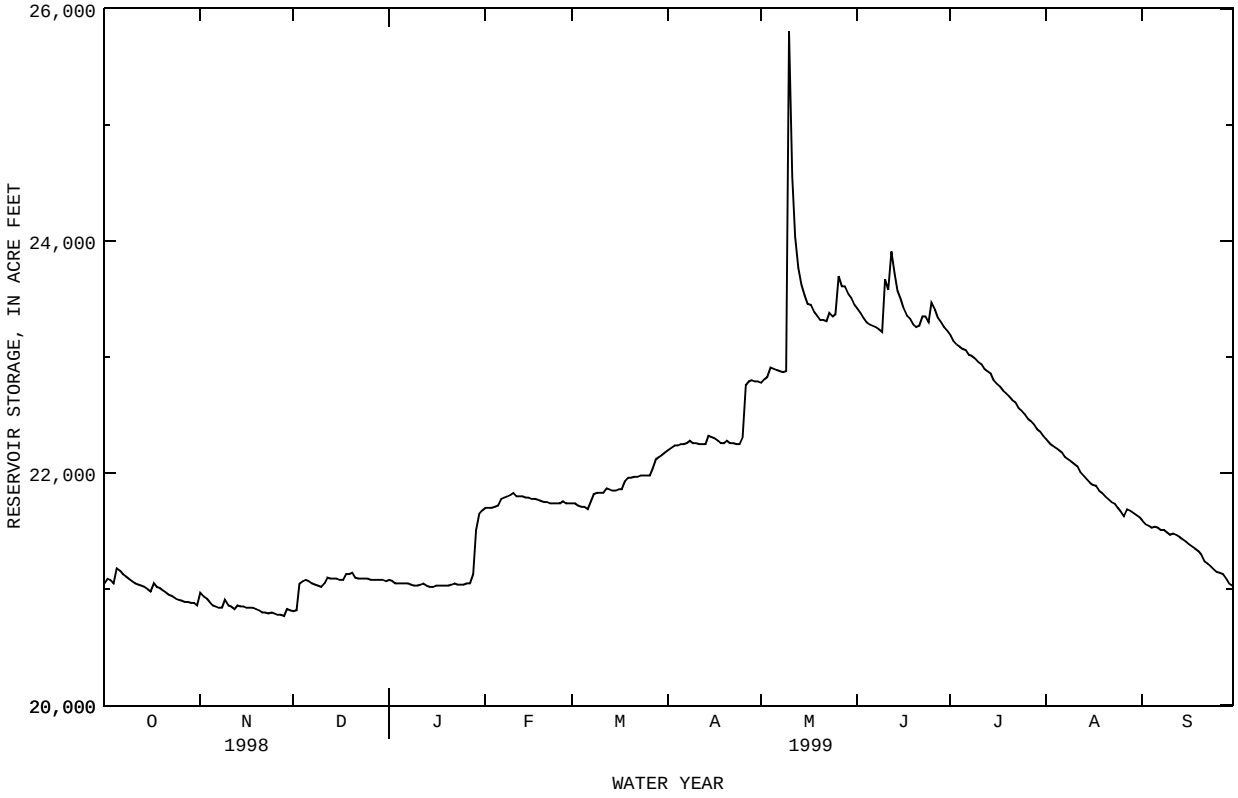
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21050	20970	20810	21080	21700	21740	22200	22780	23420	23190	22290	21590
2	21090	20940	20820	21070	21700	21740	22220	22810	23380	23140	22260	21560
3	21080	20920	21050	21050	21700	21720	22240	22830	23340	23110	22240	21550
4	21050	20890	21070	21050	21710	21710	22240	22910	23300	23090	22220	21530
5	21180	20860	21080	21050	21720	21710	22250	22900	23280	23070	22200	21540
6	21160	20850	21070	21050	21780	21690	22250	22890	23270	23060	22180	21530
7	21130	20840	21050	21050	21790	21750	22260	22880	23260	23020	22140	21510
8	21110	20840	21040	21040	21800	21820	22280	22870	23240	23010	22120	21510
9	21090	20910	21030	21030	21810	21830	22260	22880	23220	22990	22100	21490
10	21070	20860	21020	21030	21830	21830	22260	25810	23670	22960	22080	21470
11	21050	20850	21050	21040	21800	21830	22250	24560	23580	22940	22060	21480
12	21040	20830	21100	21050	21800	21870	22250	24040	23910	22900	22010	21470
13	21030	20860	21090	21030	21800	21860	22250	23770	23720	22880	21980	21450
14	21020	20850	21090	21020	21790	21850	22320	23620	23570	22860	21950	21430
15	21000	20850	21090	21020	21790	21850	22310	23530	23500	22800	21920	21410
16	20980	20840	21080	21030	21780	21860	22300	23460	23420	22770	21900	21390
17	21050	20840	21080	21030	21780	21860	22280	23450	23360	22750	21890	21370
18	21020	20840	21130	21030	21770	21930	22260	23390	23330	22710	21850	21350
19	21010	20830	21130	21030	21760	21960	22260	23360	23280	22690	21830	21330
20	20990	20820	21140	21030	21750	21960	22280	23320	23260	22660	21800	21300
21	20970	20800	21100	21040	21750	21970	22260	23320	23270	22630	21780	21240
22	20950	20800	21090	21050	21740	21970	22260	23310	23350	22610	21750	21220
23	20940	20790	21090	21040	21740	21980	22250	23380	23350	22560	21740	21200
24	20920	20800	21090	21040	21740	21980	22250	23350	23300	22540	21700	21170
25	20910	20790	21090	21040	21740	21980	22310	23370	23470	22510	21670	21150
26	20900	20780	21080	21050	21760	21980	22760	23700	23410	22470	21630	21140
27	20890	20780	21080	21050	21740	22040	22790	23610	23340	22450	21690	21130
28	20890	20770	21080	21130	21740	22120	22800	23610	23300	22420	21680	21090
29	20880	20830	21080	21510	---	22140	22790	23550	23260	22380	21660	21050
30	20880	20820	21080	21650	---	22160	22790	23510	23230	22360	21640	21030
31	20860	---	21070	21680	---	22180	---	23450	---	22320	21620	---
MAX	21180	20970	21140	21680	21830	22180	22800	25810	23910	23190	22290	21590
MIN	20860	20770	20810	21020	21700	21690	22200	22780	23220	22320	21620	21030
(+)	712.83	712.79	713.03	713.60	713.65	714.06	714.62	715.21	715.02	714.19	713.54	712.99
(@)	-210	-40	+250	+610	+60	+440	+610	+660	-220	-910	-700	-590

CAL YR 1998 MAX 26470 MIN 19150 (@) +1940
WTR YR 1999 MAX 25810 MIN 20770 (@) -40

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07315950 MOSS LAKE NEAR GAINESVILLE, TX--Continued



07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW ¼ 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.

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 poor. Since installation of gage in May 1936, at least 10% of contributing drainage area has been regulated by Lake Kemp (station 07312000) and five other reservoirs (total combined normal storage 363,100 acre-ft). U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 24,000 ft^3/s:

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	278	e349	452	453	984	496	1460	2210	14400	7850	e700	572
2	e275	e341	439	466	4180	492	1190	2510	10000	6350	e680	568
3	296	e337	454	477	4080	481	1050	2620	7330	6470	e650	573
4	301	328	560	470	2670	463	1030	2260	6040	7250	e629	554
5	300	820	497	462	1840	469	973	2760	6190	5720	e766	532
6	304	3800	534	456	1430	463	925	8830	7460	3860	1030	532
7	320	2830	554	450	1110	454	883	8150	5460	3290	1140	530
8	311	1950	661	449	974	501	869	4940	4640	2620	1390	554
9	306	1400	701	442	893	594	841	3580	3720	2150	1720	565
10	337	1110	656	435	1160	569	798	8980	4280	1900	1900	524
11	327	e903	599	428	2010	522	785	6640	3620	1720	1790	547
12	e350	833	601	428	1200	540	859	4400	3100	1560	1370	532
13	e370	784	584	435	949	912	844	3390	3040	1440	1030	664
14	e380	751	566	435	853	2720	829	2560	3250	1720	942	1240
15	e345	703	559	427	787	5860	864	2360	3750	3330	864	866
16	e341	667	570	433	742	5260	2390	2290	5300	2600	779	648
17	e337	633	570	430	703	3600	e9500	2150	5460	1820	818	564
18	e367	604	539	428	666	2200	e6630	1820	3550	1540	779	549
19	e407	580	543	431	637	1740	e3420	1490	2630	1520	e696	435
20	e380	552	537	432	612	2730	1560	2190	2120	1320	e635	368
21	337	529	515	431	598	10500	1190	5090	1910	1120	e600	325
22	393	510	489	428	578	11600	1000	3250	2650	1020	e559	315
23	397	500	469	430	563	7500	931	2530	2960	967	e600	310
24	e371	490	458	431	548	5240	868	2000	6960	919	e647	304
25	e371	478	434	439	538	3600	847	1580	9610	884	e659	293
26	e362	466	414	437	533	2520	1100	1430	9410	922	588	284
27	e358	452	408	448	523	1970	3240	1320	13500	881	565	284
28	e349	447	411	463	511	1980	4350	1450	19700	839	584	292
29	e354	450	403	576	---	2110	5760	1570	13100	799	576	281
30	e354	473	409	644	---	2250	4540	11800	9510	e780	570	273
31	e349	---	432	574	---	2000	---	21400	---	e760	570	---
TOTAL	10627	25070	16018	14168	32872	82336	61526	129550	194650	75921	26826	14878
MEAN	343	836	517	457	1174	2656	2051	4179	6488	2449	865	496
MAX	407	3800	701	644	4180	11600	9500	21400	19700	7850	1900	1240
MIN	275	328	403	427	511	454	785	1320	1910	760	559	273
AC-FT	21080	49730	31770	28100	65200	163300	122000	257000	386100	150600	53210	29510

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1999, BY WATER YEAR (WY)

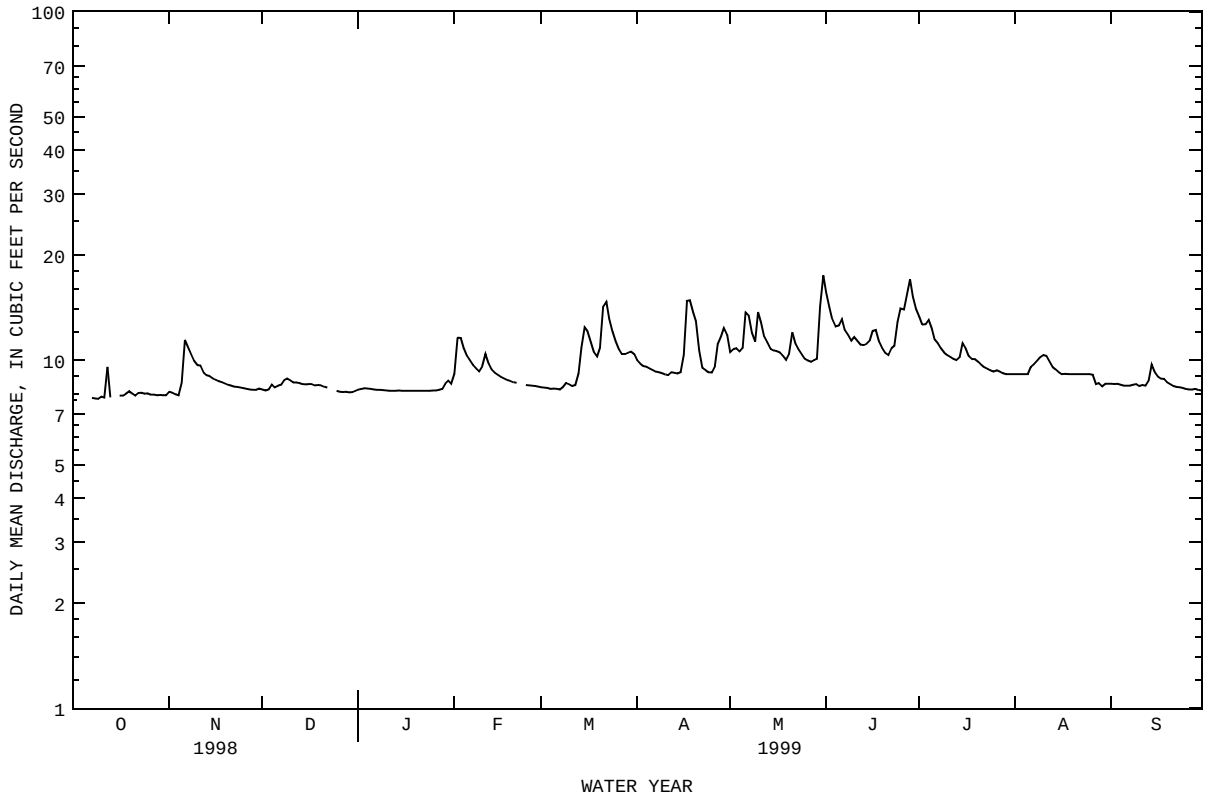
MEAN	3776	1972	1622	1282	1866	2895	3568	8103	8384	2188	1628	2519
MAX	31080	14020	14990	7258	9984	19590	27400	47780	43510	9857	20730	12880
(WY)	1942	1942	1992	1998	1987	1998	1990	1957	1941	1950	1995	1986
MIN	119	137	125	82.4	151	90.5	153	204	640	166	163	108
(WY)	1953	1955	1940	1940	1953	1940	1971	1971	1966	1964	1970	1956

RED RIVER BASIN

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1937 - 1999	
ANNUAL TOTAL	1392357		684442			
ANNUAL MEAN	3815		1875		3319	
HIGHEST ANNUAL MEAN					11890	1987
LOWEST ANNUAL MEAN					651	1953
HIGHEST DAILY MEAN	98800	Mar 19	21400	May 31	232000	May 31 1987
LOWEST DAILY MEAN	210	Sep 15	273	Sep 30	48	Jan 18 1940
ANNUAL SEVEN-DAY MINIMUM	234	Sep 10	287	Sep 24	48	Jan 18 1940
INSTANTANEOUS PEAK FLOW			22500	May 31	265000	May 31 1987
INSTANTANEOUS PEAK STAGE			17.79	May 31	40.08	May 31 1987
ANNUAL RUNOFF (AC-FT)	2762000		1358000		2405000	
10 PERCENT EXCEEDS	8770		5150		7340	
50 PERCENT EXCEEDS	833		742		866	
90 PERCENT EXCEEDS	316		365		218	

e Estimated



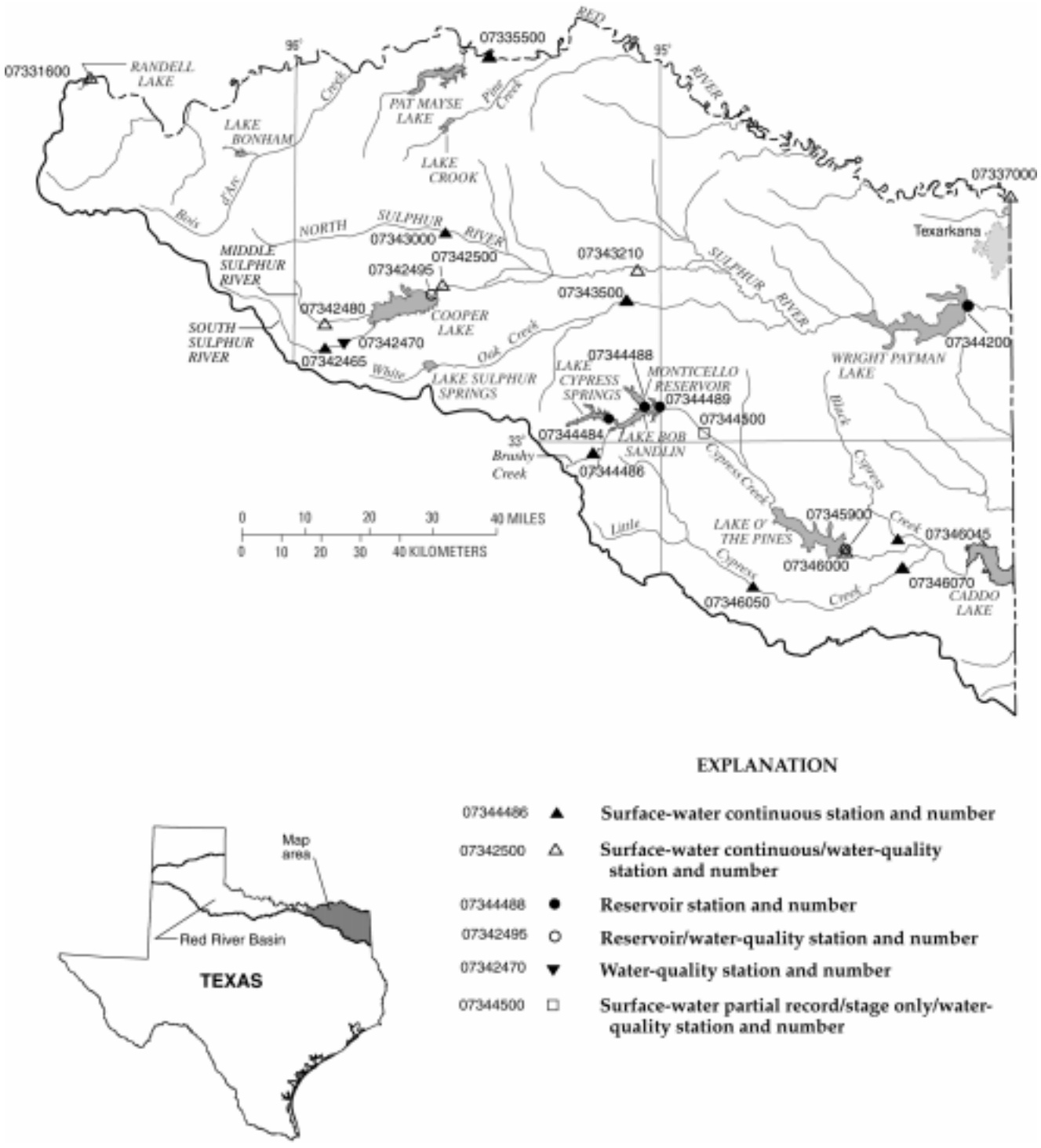


Figure 7.-- Map showing location of gaging stations in the fourth section of the Red River Basin

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

LOCATION.--Lat 33°49'08", long 96°33'47", Grayson County, Hydrologic Unit 11140101, on right bank 1,800 ft downstream from Denison Dam powerhouse, 0.4 mi upstream from Shawnee Creek (spillway flow return), 4.5 mi north of Denison, and at mile 725.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--39,720 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.--No estimated daily discharge. Records fair. Since water year 1944, at least 10% of contributing drainage area has been regulated by Lake Texoma (station 07331500) and six other reservoirs (total combined normal storage 635,300 acre-ft). 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 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2350	151	1730	2170	1900	1870	7820	6260	5770	10600	46	2250
2	2370	92	1910	361	2110	2090	7790	6290	12400	10600	5130	2070
3	704	75	2130	62	2120	2090	3330	7920	14000	10600	5410	2080
4	202	71	2360	1770	2120	2130	615	7930	14000	10600	5410	170
5	2100	66	395	2140	2110	2110	4940	7840	14000	10600	5390	36
6	382	73	63	2100	290	278	6170	7850	14000	10600	5410	1910
7	2060	78	1790	2130	69	63	8020	7830	10400	10600	346	2060
8	341	74	2080	2100	1890	1880	8040	4160	6540	10600	43	2090
9	99	1480	2110	381	2100	2090	8000	3720	3530	10700	5220	1990
10	99	1510	2130	72	2120	2100	859	7530	3520	8350	5580	2060
11	97	1730	2110	1700	2080	2110	48	7360	4000	8350	5630	610
12	2040	1740	482	455	2100	2160	7210	7810	8290	8360	5550	43
13	2240	1740	82	1780	282	306	7990	7830	8300	8380	5420	1160
14	2240	316	1760	2120	57	55	7980	7840	8240	8390	342	1210
15	2250	64	2110	2120	1880	1870	7850	5770	7870	8450	43	1220
16	2280	1130	2100	400	2080	2100	7940	5820	7640	8480	5120	1230
17	367	1700	2110	60	2080	2080	833	7800	8120	868	4440	1200
18	182	1700	2170	1810	2080	2080	46	7820	8170	50	4460	121
19	1970	1730	493	2130	2070	2060	7190	7810	6280	5290	4430	33
20	2230	1710	73	2120	282	261	7710	7850	5740	5390	4200	1120
21	2230	308	1780	2140	56	53	8050	7830	6030	5400	344	1170
22	2240	65	2130	2120	1880	1830	8000	3090	6270	5390	42	1170
23	2240	1440	2110	365	2080	3620	8200	2450	6160	5370	3880	1170
24	315	1690	2140	60	2100	3710	822	2800	6180	354	4200	1180
25	81	1660	2150	1800	2090	3730	47	2880	6350	46	4190	109
26	1970	1720	408	2130	2110	3740	4660	2910	10400	5100	4380	25
27	2270	1680	70	2150	278	402	7300	2860	10500	5380	4390	1100
28	2280	296	1810	2140	53	71	11100	2840	10400	5370	356	1170
29	2160	64	2120	2300	---	5750	11000	2500	10400	5400	42	1160
30	2160	1460	2150	762	---	7810	7560	1790	10400	5540	3940	1190
31	291	---	2160	107	---	7810	---	2200	---	354	4200	---
TOTAL	44840	27613	49216	44055	42467	70309	177120	175190	253900	209562	107584	34107
MEAN	1446	920	1588	1421	1517	2268	5904	5651	8463	6760	3470	1137
MAX	2370	1740	2360	2300	2120	7810	11100	7930	14000	10700	5630	2250
MIN	81	64	63	60	53	53	46	1790	3520	46	42	25
AC-FT	88940	54770	97620	87380	84230	139500	351300	347500	503600	415700	213400	67650

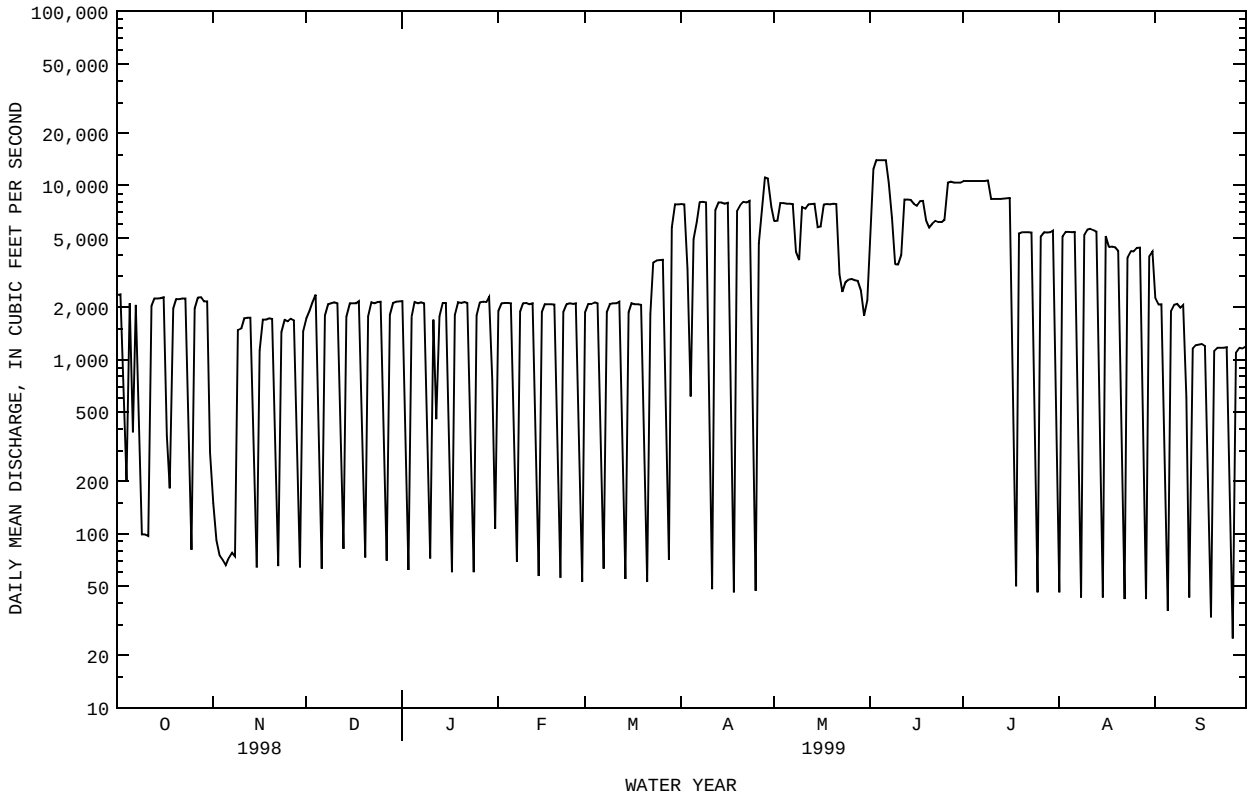
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1999, BY WATER YEAR (WY)

MEAN	5006	3611	3352	3575	3481	4464	4828	7670	11640	5494	3512	2662
MAX	27860	18880	13320	20630	13800	24760	20400	34710	66960	21820	25570	10330
(WY)	1987	1975	1997	1998	1987	1987	1945	1957	1957	1982	1950	1950
MIN	66.7	79.6	569	271	678	614	789	712	1449	1580	953	325
(WY)	1957	1957	1981	1945	1945	1976	1978	1959	1956	1956	1972	1984

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1945 - 1999	
ANNUAL TOTAL	2926705		1235963			
ANNUAL MEAN	8018		3386		a4886	
HIGHEST ANNUAL MEAN					16030	1987
LOWEST ANNUAL MEAN					1510	1964
HIGHEST DAILY MEAN	51900	Mar 25	14000	Jun 3	96200	Jun 5 1957
LOWEST DAILY MEAN	63	Dec 6	25	Sep 26	25	Sep 26 1999
ANNUAL SEVEN-DAY MINIMUM	76	Nov 2	76	Nov 2	46	Oct 23 1944
INSTANTANEOUS PEAK FLOW			14400	Jun 6	b102000	Jun 5 1957
INSTANTANEOUS PEAK STAGE			12.39	Jun 6	c26.26	Jun 5 1957
ANNUAL RUNOFF (AC-FT)	5805000		2452000		3539000	
10 PERCENT EXCEEDS	19100		8040		10600	
50 PERCENT EXCEEDS	3860		2110		2820	
90 PERCENT EXCEEDS	165		75		196	

a Prior to regulaton, 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 since February 1997.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,520 microsiemens Aug. 14, 1944; minimum daily, 656 microsiemens Oct. 16, 1945.
WATER TEMPERATURE: Maximum daily, 31.0°C July 17, 1969; minimum daily, 3.0°C Feb. 2-4, 7, 1966.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,680 microsiemens May 27; minimum, 710 microsiemens Oct. 17.
WATER TEMPERATURE: Maximum, 28.0°C Aug. 18, 19, 20, 24, 25, 26; minimum, 5.5°C Jan. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
SEP											
24...	0830	50.0	21.0	750	1028	1028	47	5.02	1930	7.6	8.0
24...	0836	70.0	23.0	750	1028	1028	47	5.02	1920	6.2	7.9
24...	0842	90.0	23.0	750	1028	1028	47	5.02	1930	5.9	7.9
24...	0848	110	23.0	750	1028	1028	47	5.02	1920	5.9	7.9
24...	0854	130	23.0	750	1028	1028	47	5.02	1920	5.8	7.9
24...	0900	150	23.0	750	1028	1028	47	5.02	1920	6.0	7.9
24...	0906	170	23.0	750	1028	1028	47	5.02	1930	5.6	7.8
24...	0912	190	23.0	750	1028	1028	47	5.02	1930	5.6	7.8
24...	0918	210	23.0	750	1028	1028	47	5.02	1920	5.7	7.8
24...	0924	230	23.0	750	1028	1028	47	5.02	1920	5.7	7.8

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
OCT												
21...	1710	1028	80020	7470	1760	8.1	21.0	22.5	764	8.8	102	450
NOV												
17...	1600	1028	80020	88	1780	8.4	18.0	17.5	755	9.3	99	440
DEC												
16...	1100	1028	80020	138	1890	8.1	14.0	13.0	763	12.3	118	450
JAN												
27...	1010	1028	80020	187	1880	8.3	23.5	10.5	752	15.9	145	470
FEB												
24...	0830	1028	80020	197	1890	8.4	2.5	10.0	760	15.6	139	480
MAR												
23...	1310	1028	80020	83	1920	8.4	15.0	11.5	755	14.2	132	470
APR												
21...	1430	1028	80020	10000	1950	8.2	24.5	14.5	747	11.4	115	530
MAY												
27...	0957	1028	80020	93	2300	8.0	22.0	19.0	758	6.6	72	530
JUN												
23...	1700	1028	80020	9850	2000	7.8	35.0	22.0	750	3.0	35	490
JUL												
20...	0930	1028	80020	197	2020	7.8	32.0	21.5	759	5.7	66	510
AUG												
27...	1215	1028	80020	88	1980	7.5	26.0	24.0	755	3.8	46	490
SEP												
15...	0910	1028	80020	57	1970	7.6	22.5	22.0	758	.1	1	470

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT												
21...	340	110	45	187	47	4	4.8	135	0	111	320	280
NOV												
17...	330	100	45	184	47	4	5.0	116	6	105	320	290
DEC												
16...	330	100	45	200	49	4	5.6	137	0	112	350	320
JAN												
27...	350	110	47	204	48	4	5.4	133	5	117	350	300
FEB												
24...	360	120	46	201	47	4	5.3	134	4	117	370	300
MAR												
23...	350	110	47	202	48	4	5.4	135	4	117	370	310
APR												
21...	410	130	50	215	46	4	6.6	146	0	120	360	310
MAY												
27...	400	130	48	286	54	5	5.6	151	0	124	400	430
JUN												
23...	370	120	46	235	51	5	5.5	150	0	123	360	340
JUL												
20...	360	130	47	246	51	5	5.6	182	0	149	350	350
AUG												
27...	340	120	46	223	49	4	5.8	189	0	155	350	340
SEP												
15...	340	110	44	223	51	4	6.0	156	0	128	340	330

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT												
21...	.67	6.9	1020	1.39	20600	11	--	--	<.010	--	.256	.034
NOV												
17...	.31	3.3	1000	1.37	239	6	--	--	<.010	--	.105	.060
DEC												
16...	.33	.90	1100	1.49	408	12	--	--	<.010	--	.135	.025
JAN												
27...	.32	.70	1090	1.48	551	5	--	--	<.010	--	.122	.030
FEB												
24...	.31	.38	1110	1.51	591	--	--	--	<.010	--	.127	.022
MAR												
23...	.32	1.6	1120	1.52	251	<1	--	--	<.010	--	.090	.020
APR												
21...	.31	2.1	1150	1.56	31100	<1	--	--	<.010	--	.132	.086
MAY												
27...	.31	3.4	1390	1.89	348	9	.242	1.1	.025	.08	.267	.117
JUN												
23...	.32	3.2	1190	1.61	31500	6	--	--	<.010	--	.248	.054
JUL												
20...	.29	6.0	1230	1.67	655	9	.041	.18	.010	.03	.051	.422
AUG												
27...	.30	6.5	1180	1.61	281	4	--	--	<.010	--	<.050	.852
SEP												
15...	.32	6.0	1150	1.56	176	<1	--	--	<.010	--	<.050	.811

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)
OCT												
21...	.04	.31	.35	.61	.049	.021	.027	.08	2	3	<100	146
NOV												
17...	.08	.32	.38	.49	.024	.016	.011	.03	2	1	<100	137
DEC												
16...	.03	.38	.41	.54	.025	.012	.012	.04	2	2	<100	146
JAN												
27...	.04	.33	.36	.48	<.050	<.050	.014	.04	1	<1	<100	156
FEB												
24...	.03	.68	.70	.83	E.037	<.050	.011	.03	2	2	<100	151
MAR												
23...	.03	.34	.36	.45	<.050	<.050	<.010	--	1	2	100	145
APR												
21...	.11	.70	.79	.92	.068	<.050	.043	.13	1	1	100	156
MAY												
27...	.15	.69	.80	1.1	<.050	<.050	.030	.09	2	2	200	162
JUN												
23...	.07	.33	.39	.64	E.041	E.037	.021	.06	2	<1	100	148
JUL												
20...	.54	.46	.88	.94	.186	.141	.141	.43	4	5	200	162
AUG												
27...	1.1	.22	1.1	--	.171	.131	.136	.42	5	5	200	139
SEP												
15...	1.0	.38	1.2	--	.166	.142	.112	.34	5	4	100	144

DATE	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
OCT											
21...	<1	<8.0	<1	<1.0	2	<10	130	<10	13	<100	34
NOV											
17...	<1	<8.0	<1	<1.0	1	<10	60	<10	11	<100	23
DEC											
16...	<1	<8.0	<1	<1.0	<1	<10	80	<10	2	<100	24
JAN											
27...	<1	E3.3	<1	<1.0	<1	<10	30	<10	2	<100	16
FEB											
24...	<1	<8.0	2	<1.0	4	<10	<10	<10	1	<100	11
MAR											
23...	<1	<8.0	1	<1.0	2	<10	30	<10	34	<100	15
APR											
21...	<1	<8.0	<1	<1.0	2	<10	60	<10	4	<100	19
MAY											
27...	<1	<24	<1	<1.0	2	<30	130	E18	77	<300	460
JUN											
23...	<1	<24	<1	<1.0	3	<30	70	<30	12	<300	160
JUL											
20...	<1	<24	<1	<1.0	1	<30	160	<30	32	<300	850
AUG											
27...	<1	<8.0	<2	<1.0	4	<10	90	<10	<1	<100	720
SEP											
15...	<1	<8.0	2	<1.0	<1	<10	90	E7.4	31	<100	500

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY DISSOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOVERABLE (UG/L AS NI) (01067)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT											
21...	<3.0	<.10	<.1	<100	<40	1	<1	<1	<1.0	10	<20
NOV											
17...	5.2	<.10	<.1	<100	<40	<1	<1	<1	<1.0	<10	<20
DEC											
16...	E1.6	<.10	<.1	<100	<40	1	<1	<1	<1.0	<10	<20
JAN											
27...	10	<.10	<.1	<100	<40	<1	<1	<1	<1.0	<10	<20
FEB											
24...	E2.3	<.10	--	<100	<40	1	<1	18	3.1	<10	<20
MAR											
23...	5.8	<.10	<.1	<50	<40	<1	<1	<1	<1.0	80	<20
APR											
21...	E2.6	<.10	<.1	--	<40	1	<1	1	<1.0	E30	<20
MAY											
27...	429	<.10	<.1	<50	<120	1	<1	<1	<1.0	<40	<60
JUN											
23...	142	<.10	<.1	<50	<120	<1	<1	<1	<1.0	<40	<60
JUL											
20...	827	<.10	<.1	<50	<120	<1	1	<1	<1.0	<40	<60
AUG											
27...	18	<.10	<.1	<50	<40	<1	<1	<1	<1.0	<40	<20
SEP											
15...	176	<.10	<.1	<39	<40	<1	1	<1	<1.0	<30	<20

DATE	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DELTA BENZENE HEXACHLORIDE TOTAL (UG/L) (34259)	ENDOSULFAN SULFATE TOTAL (UG/L) (34351)	ENDOSULFAN II TOTAL (UG/L) (34356)	ENDOSULFAN-I WATER WHOLE REC (UG/L) (34361)	ENDRIN ALDEHYDE TOTAL (UG/L) (34366)	P,P' DDT, TOTAL (UG/L) (39300)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)
MAR										
23...	1028	80020	<.090	<.600	<.040	<.100	<.200	<.100	<.100	<.040
SEP										
15...	1028	80020	<.090	<.600	<.040	<.100	<.200	<.100	<.100	<.040

DATE	ALPHA BHC TOTAL (UG/L) (39337)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	ALDRIN, TOTAL (UG/L) (39330)
MAR									
23...	<.030	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	<.040
SEP									
15...	<.030	<.100	<1.00	<.100	<.100	<.100	<.100	<.100	<.040

DATE	CHLORDANE CIS WATER WHOLE TOTAL (UG/L) (39062)	CHLORDANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	CHLORDANE, TECHNICAL TOTAL (UG/L) (39350)	DIELDRIN TOTAL (UG/L) (39380)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	TOXAPHENE, TOTAL (UG/L) (39400)
MAR									
23...	<.100	<.100	<.100	<.020	<.060	<.030	<.800	<.030	<2.00
SEP									
15...	<.100	<.100	<.100	<.020	<.060	<.030	<.800	<.030	<2.00

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1760	1730	1750	1740	1150	1600	2360	1880	2130	1880	1870	1880
2	1760	1650	1730	1740	1710	1730	2330	1940	2150	1890	1870	1880
3	1750	1660	1720	1750	1730	1740	2360	1810	2120	1880	1870	1880
4	1730	1720	1730	1760	1740	1750	2270	1900	2070	1900	1880	1880
5	1760	1510	1710	1760	1750	1760	2330	1940	2200	1890	1880	1890
6	1760	1660	1740	1770	1760	1760	2330	2090	2260	1900	1880	1890
7	1760	1740	1750	1770	1750	1760	2110	1900	2020	1890	1880	1890
8	1750	1680	1710	1770	1770	1770	1910	1880	1890	1890	1870	1880
9	1700	1670	1690	1780	1690	1770	1890	1870	1880	1890	1880	1880
10	1700	1660	1690	1790	1560	1750	1900	1860	1880	1890	1870	1880
11	1720	1670	1690	1790	1770	1780	1900	1870	1890	1890	1880	1880
12	1740	1700	1720	1790	1770	1780	1880	1760	1840	1890	1880	1880
13	1760	1740	1740	1780	1740	1770	1890	1880	1880	1900	1880	1880
14	1770	1750	1760	1780	1770	1780	1900	1880	1890	1900	1890	1890
15	1780	1760	1770	1780	1770	1780	1900	1870	1890	1900	1890	1900
16	1780	1760	1770	1790	1770	1780	1900	1880	1890	1910	1880	1890
17	1770	710	1700	1820	1770	1790	1900	1870	1890	1900	1890	1900
18	1760	795	1650	2050	1810	1940	1900	1570	1870	1900	1890	1900
19	1760	1750	1760	2540	1860	2200	1890	1870	1880	1900	1890	1900
20	1760	1750	1760	2220	1840	2020	1880	1860	1880	1900	1880	1890
21	1760	1750	1750	2430	1860	2240	1890	1870	1880	1900	1870	1880
22	1760	1750	1760	2440	2380	2410	1890	1860	1880	1880	1870	1870
23	1770	1740	1760	2490	1930	2350	1880	1860	1870	1870	1860	1860
24	1770	1750	1760	2460	1920	2200	1880	1850	1870	1860	1840	1850
25	1770	1750	1760	2460	1890	2220	1870	1850	1860	1850	1830	1840
26	1760	1750	1760	2450	1870	2220	1870	1850	1870	1850	1830	1840
27	1760	1740	1750	2450	1910	2210	1870	1860	1860	1860	1830	1840
28	1760	1730	1750	2510	2000	2360	1880	1860	1870	1860	1850	1860
29	1750	1730	1750	2540	1730	2470	1880	1870	1880	1860	1440	1780
30	1750	1730	1740	2470	1880	2310	1890	1860	1880	1850	1820	1840
31	1750	1730	1740	---	---	---	1890	1860	1880	1860	1840	1850
MONTH	1780	710	1740	2540	1150	1970	2360	1570	1940	1910	1440	1870

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1870	1850	1850	1910	1890	1900	2110	2000	2050	1950	1930	1940
2	1870	1850	1860	1910	1880	1900	2130	2080	2110	1990	1930	1960
3	1880	1850	1870	1910	1890	1900	2120	1440	1890	2010	1980	1990
4	1880	1850	1870	1900	1890	1900	2140	2010	2080	1990	1950	1970
5	1880	1870	1870	1910	1880	1900	2160	2000	2060	1970	1930	1950
6	1880	1780	1860	1910	1890	1900	2060	2000	2020	1940	1930	1930
7	1870	1810	1860	1910	1580	1870	2040	2010	2010	1940	1930	1930
8	1880	1860	1880	1910	1520	1820	2060	2010	2030	1940	1930	1930
9	1890	1870	1880	1910	1880	1900	2040	2000	2010	1940	1920	1930
10	1900	1880	1890	1920	1890	1910	2120	2000	2070	1930	1770	1900
11	1900	1870	1890	1930	1890	1910	2120	2090	2110	1920	1890	1920
12	1890	1870	1880	1920	1640	1900	2120	1990	2030	1930	1910	1910
13	1890	1870	1880	1920	1900	1910	2020	1990	2010	1930	1910	1920
14	1900	1880	1890	1920	1890	1910	2030	2000	2010	1930	1920	1920
15	1900	1890	1890	1920	1910	1920	2010	1980	1990	1960	1920	1940
16	1900	1860	1890	1930	1910	1920	2000	1980	1980	1960	1930	1950
17	1900	1870	1890	1930	1910	1920	1990	1950	1970	1940	1910	1930
18	1890	1880	1880	1940	1910	1920	1980	1960	1970	1930	1910	1920
19	1900	1870	1880	1940	1920	1930	1970	1960	1970	1920	1910	1910
20	1890	1870	1880	1930	1900	1920	1980	1960	1970	1950	1920	1930
21	1880	1860	1880	1930	1910	1920	1970	1960	1960	1960	1930	1950
22	1880	1860	1880	1930	1920	1920	1970	1960	1960	2460	1960	2110
23	1890	1860	1880	1930	1910	1920	1970	1960	1960	2370	1960	2150
24	1890	1880	1890	1940	1920	1940	1970	1940	1960	2670	1970	2260
25	1890	1870	1890	1950	1920	1940	2050	1960	2030	2410	1980	2140
26	1900	1880	1890	1960	1930	1950	2030	1710	1960	2510	1970	2190
27	1900	1880	1890	1960	1300	1860	1940	1940	1940	2680	1990	2230
28	1910	1900	1900	1950	1250	1850	1940	1940	1940	2580	2000	2250
29	---	---	---	2000	1940	1980	1940	1920	1930	2500	1990	2220
30	---	---	---	1980	1960	1970	1940	1920	1940	2460	2010	2240
31	---	---	---	2000	1980	1980	---	---	---	2510	2060	2230
MONTH	1910	1780	1880	2000	1250	1910	2160	1440	2000	2680	1770	2020

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2230	2030	2100	1920	1890	1910	2050	2030	2040	1990	1910	1950
2	2050	2010	2030	1920	1880	1900	2050	1800	1970	1990	1930	1970
3	2050	2010	2020	1890	1860	1880	2020	1900	1950	2000	1940	1970
4	2030	2000	2020	1870	1850	1860	2020	1900	1940	2020	1950	2000
5	2040	1980	2010	1860	1850	1860	2000	1890	1940	2020	2010	2020
6	2020	1960	1980	1850	1840	1850	2000	1910	1940	2030	1940	2000
7	2020	1980	2000	1860	1830	1840	2030	1930	2000	2010	1940	1980
8	2020	2000	2010	1860	1830	1830	2040	2030	2030	2000	1920	1960
9	2070	1980	2020	1830	1820	1820	2040	1900	1960	2000	1940	1970
10	2070	1980	2010	1890	1820	1850	2010	1910	1940	1990	1940	1970
11	2100	1980	2010	1910	1840	1870	2000	1920	1950	1980	1450	1850
12	2020	1910	1990	1910	1840	1870	2010	1920	1950	2000	1800	1980
13	2010	1930	1980	1920	1860	1880	2000	1920	1940	1980	1800	1920
14	1980	1900	1950	1930	1870	1890	2020	1920	1990	1980	1950	1960
15	1990	1880	1960	1960	1890	1930	2030	2010	2020	2010	1960	1970
16	2040	1960	2000	1980	1890	1920	2040	1920	1970	2040	1980	2000
17	2050	1950	1990	2030	1890	1980	2000	1910	1940	2040	1990	2010
18	2060	2010	2030	2040	2020	2030	1990	1900	1940	2080	2020	2060
19	2070	2040	2050	2040	1890	1950	1990	1890	1940	2110	2070	2090
20	2090	2010	2050	2020	1900	1940	2000	1900	1930	2110	2040	2080
21	2080	1980	2020	2050	1910	1950	2000	1920	1970	2080	1930	2030
22	2070	1980	2010	2030	1910	1950	2010	2000	2010	---	---	e2050
23	2090	1960	2020	2030	1900	1940	2020	1930	1980	---	---	e2050
24	2050	1980	2010	2050	1920	2010	1980	1880	1940	---	---	e2070
25	2080	1960	2000	2050	1960	2040	1980	1920	1940	---	---	e2080
26	2010	1960	1970	2060	1890	1980	1990	1920	1950	---	---	e2100
27	1970	1940	1960	2030	1910	1950	1980	1910	1950	---	---	e2100
28	1980	1900	1940	2030	1910	1950	1990	1920	1970	---	---	e2070
29	1920	1670	1890	2030	1880	1940	2010	1980	2000	---	---	e2050
30	1930	1900	1910	2020	1910	1940	2020	1910	1970	---	---	e2050
31	---	---	---	2060	1930	2020	2000	1900	1940	---	---	---
MONTH	2230	1670	2000	2060	1820	1920	2050	1800	1960	---	---	2010

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	26.0	22.5	24.0	20.5	18.5	20.0	18.0	15.0	16.0	10.0	9.5	9.5
2	25.5	22.0	23.5	19.0	17.5	18.5	17.0	15.0	16.0	9.5	6.5	8.5
3	24.5	22.5	23.5	21.5	17.5	19.5	17.0	16.0	16.0	8.0	5.5	6.5
4	24.5	22.5	23.0	19.0	18.0	18.5	17.5	15.5	16.5	9.0	6.0	7.5
5	25.5	22.5	23.5	19.5	17.5	18.0	17.5	16.0	16.5	9.0	7.0	8.0
6	24.5	22.0	23.5	19.0	16.5	17.5	18.0	15.5	16.5	9.5	7.5	8.0
7	26.0	21.0	23.0	17.5	16.5	17.0	16.0	15.0	15.5	8.5	8.0	8.0
8	25.5	22.0	23.5	17.0	16.5	17.0	16.0	14.5	15.5	8.0	7.0	7.5
9	25.5	21.5	23.0	18.5	16.5	17.5	15.5	14.0	15.0	8.0	6.0	7.0
10	25.5	21.5	23.0	18.5	15.5	17.0	15.5	14.5	14.5	9.0	6.0	7.0
11	26.0	21.5	23.5	18.5	16.0	17.0	15.0	14.0	14.5	9.0	6.0	7.5
12	26.0	22.0	23.5	17.5	16.0	16.5	14.5	13.5	14.0	9.5	7.5	8.5
13	26.0	22.0	23.5	17.5	16.0	17.0	15.5	12.5	14.0	8.5	7.5	8.0
14	25.0	22.0	23.0	18.5	16.5	17.5	15.5	13.0	14.0	9.0	7.0	8.0
15	25.0	22.0	23.0	19.0	16.5	17.0	15.0	13.0	14.0	9.0	7.0	8.0
16	24.5	22.5	23.0	19.0	16.5	17.0	15.5	13.0	14.0	10.0	7.0	8.5
17	23.5	20.5	23.0	17.5	16.0	16.5	15.0	12.5	13.5	10.5	7.5	8.5
18	23.5	20.5	22.0	18.0	16.5	17.0	14.0	12.5	13.5	9.5	7.0	8.0
19	24.0	21.0	22.0	17.5	16.0	16.5	13.5	12.5	13.5	10.0	7.0	8.0
20	22.5	21.0	21.5	16.5	15.0	16.0	13.0	12.5	13.0	10.5	7.5	8.5
21	23.0	21.0	22.0	17.0	15.0	16.0	13.0	10.5	12.5	10.0	8.0	9.0
22	23.0	20.5	21.5	17.5	14.5	15.5	12.0	10.0	11.0	9.0	8.5	8.5
23	22.0	19.5	21.0	17.0	15.0	16.0	11.5	10.5	11.0	10.5	8.0	9.0
24	22.5	20.0	21.0	16.5	16.0	16.0	11.5	10.0	11.0	10.5	7.5	9.0
25	22.5	19.5	21.0	18.0	15.5	16.5	11.5	10.0	10.5	10.5	8.0	9.0
26	23.0	20.0	21.0	17.5	14.5	16.0	11.5	9.5	10.5	11.0	8.0	9.0
27	23.0	20.0	21.0	17.0	15.0	15.5	11.5	9.5	10.0	10.5	8.5	9.5
28	22.0	20.5	21.0	17.0	15.5	16.5	11.5	9.5	10.5	10.0	8.5	9.0
29	22.0	20.5	21.0	16.5	16.0	16.5	12.0	9.5	10.5	9.5	8.5	8.5
30	23.0	20.5	21.0	18.0	14.5	16.0	11.0	9.0	10.0	9.0	8.0	8.5
31	23.0	20.5	21.5	---	---	---	11.0	9.0	10.0	8.5	8.0	8.0
MONTH	26.0	19.5	22.4	21.5	14.5	17.0	18.0	9.0	13.3	11.0	5.5	8.3

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.0	7.5	8.5	13.5	9.5	11.0	12.0	12.0	12.0	17.0	15.5	16.5
2	10.5	8.0	9.0	14.5	10.0	11.5	12.5	12.0	12.0	16.5	15.5	16.5
3	11.5	8.0	9.0	13.5	9.5	11.0	14.0	12.0	13.0	17.0	16.0	16.5
4	11.5	8.0	9.0	13.0	10.0	11.0	16.0	11.5	13.5	17.0	16.0	16.5
5	10.5	8.5	9.0	14.5	11.0	12.0	14.5	12.0	13.0	18.5	16.5	17.5
6	11.0	9.0	10.0	14.5	10.5	12.0	13.0	12.5	13.0	18.5	17.5	18.0
7	11.5	8.5	10.0	12.5	10.5	11.0	13.0	12.5	13.0	18.5	17.0	18.0
8	11.5	8.5	9.5	14.0	10.0	11.0	13.5	13.0	13.0	19.0	16.5	17.5
9	12.0	9.0	10.0	14.5	10.5	11.5	13.5	12.5	13.5	18.5	16.5	17.5
10	11.0	9.0	9.5	12.0	11.0	11.5	17.0	13.5	14.5	18.5	17.0	18.0
11	11.5	9.5	10.5	14.0	11.0	12.0	16.5	11.5	14.0	18.5	17.5	18.0
12	12.0	8.5	10.0	11.5	10.0	11.0	14.5	12.5	14.0	19.5	18.0	19.0
13	12.0	8.5	10.0	11.0	9.0	10.0	14.5	13.5	14.0	19.5	18.0	19.0
14	11.5	8.5	10.0	13.5	8.5	10.5	15.0	13.5	14.0	19.0	18.0	18.5
15	12.0	9.0	10.0	13.5	9.0	10.5	15.0	13.5	14.5	19.0	18.0	18.5
16	13.5	9.5	10.5	13.0	10.0	11.0	15.0	13.5	14.5	19.0	18.5	18.5
17	12.5	9.0	10.0	13.0	10.5	11.5	17.5	13.0	15.0	19.0	18.5	19.0
18	13.0	9.5	10.5	12.0	11.0	11.0	17.5	13.0	15.0	20.5	18.5	20.0
19	13.0	9.0	10.0	12.5	10.5	11.0	15.5	14.0	15.0	20.0	19.0	20.0
20	11.5	9.5	10.0	13.5	10.5	11.5	15.0	14.5	15.0	20.0	19.0	19.5
21	13.0	9.0	10.5	14.5	10.0	12.0	15.0	14.5	14.5	20.0	19.0	20.0
22	11.0	8.5	9.5	14.5	10.5	12.0	15.5	15.0	15.0	21.5	19.0	20.0
23	13.0	9.0	10.5	12.5	11.0	11.5	16.0	15.5	15.5	22.0	18.5	20.0
24	12.5	9.0	10.5	14.0	10.5	11.5	17.0	15.5	16.0	22.5	18.5	20.0
25	13.0	10.5	11.0	15.0	11.0	12.0	16.5	15.5	15.5	22.0	18.5	19.5
26	12.0	10.5	11.0	14.5	10.5	12.0	16.5	15.0	16.0	21.0	18.5	20.0
27	14.5	10.5	12.0	12.0	11.0	11.5	16.5	15.5	16.5	20.5	19.0	20.0
28	13.5	9.0	11.0	12.5	11.0	11.5	17.0	16.5	16.5	22.0	18.5	19.5
29	---	---	---	12.0	11.5	11.5	17.5	17.0	17.5	20.5	18.5	19.5
30	---	---	---	12.0	11.5	11.5	17.5	16.5	17.0	20.5	18.5	19.0
31	---	---	---	12.0	12.0	12.0	---	---	---	19.5	18.5	19.0
MONTH	14.5	7.5	10.0	15.0	8.5	11.4	17.5	11.5	14.5	22.5	15.5	18.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.5	19.0	19.0	23.5	22.5	23.0	26.0	21.5	23.5	27.0	23.5	25.5
2	20.5	19.5	20.0	23.5	23.0	23.0	26.5	21.5	24.0	27.0	23.5	25.5
3	20.5	19.5	20.0	24.0	23.0	23.5	26.5	22.5	25.0	27.0	24.0	25.5
4	20.5	19.5	20.0	24.5	23.5	24.0	26.5	22.5	25.5	27.0	23.5	25.0
5	20.0	19.5	20.0	24.0	24.0	24.0	27.5	23.0	25.5	24.5	23.0	23.5
6	21.0	20.0	20.5	24.5	24.0	24.5	27.0	23.0	25.5	27.0	22.5	24.5
7	21.0	20.0	20.5	25.0	24.0	24.5	26.0	23.0	24.5	27.0	23.5	25.0
8	20.5	20.0	20.0	24.5	24.0	24.5	27.0	22.0	24.0	27.0	23.0	25.0
9	20.0	19.5	20.0	24.5	24.5	24.5	27.5	22.5	25.0	27.5	23.0	25.5
10	20.5	19.5	20.0	26.0	22.5	24.5	27.0	23.0	25.5	26.5	23.0	25.0
11	20.5	19.0	20.5	26.0	23.0	25.0	26.5	23.5	25.5	26.0	22.5	24.0
12	22.0	20.0	21.0	25.5	23.0	25.0	27.0	23.0	25.5	25.0	23.0	23.5
13	22.5	20.5	21.5	25.5	22.5	25.0	27.5	23.5	26.0	26.5	22.5	24.5
14	23.5	21.0	22.0	25.0	23.0	24.5	27.0	23.5	25.0	26.5	22.5	24.5
15	22.0	21.0	21.5	25.0	22.5	24.5	27.0	22.0	24.0	26.5	22.5	24.5
16	22.0	20.0	21.5	25.0	22.5	24.5	27.0	22.0	25.0	26.0	23.0	24.5
17	23.5	21.0	22.5	25.0	22.0	23.5	27.5	23.0	25.5	26.5	23.0	24.5
18	22.5	21.0	22.0	24.0	20.5	22.5	28.0	23.5	26.0	26.5	23.0	24.5
19	22.0	20.0	21.5	25.5	20.5	23.5	28.0	24.0	26.0	26.0	22.5	24.0
20	22.5	19.5	21.5	25.5	22.0	24.5	28.0	23.5	26.0	27.5	22.5	24.5
21	22.5	20.0	21.5	25.5	21.5	24.0	27.5	23.5	25.5	26.5	22.5	24.5
22	22.5	20.0	22.0	25.5	21.5	24.0	26.0	22.5	24.0	27.0	22.0	24.0
23	22.5	20.0	21.5	26.0	21.5	24.5	27.0	22.5	25.0	26.0	22.0	24.0
24	22.5	20.5	22.0	25.5	22.0	23.5	28.0	24.0	26.5	26.5	22.5	24.0
25	23.0	20.5	22.0	25.0	21.0	23.0	28.0	24.0	26.5	24.5	23.0	23.5
26	23.0	21.5	22.5	26.0	21.0	24.0	28.0	24.0	26.5	27.0	23.0	25.0
27	22.5	22.5	22.5	26.0	22.0	24.5	27.5	23.5	26.0	27.5	23.5	24.5
28	23.5	22.0	23.0	26.0	22.0	25.0	27.5	24.0	26.0	28.0	23.5	24.5
29	24.0	23.0	23.5	26.0	22.0	25.0	27.5	22.5	24.5	25.0	21.5	23.0
30	23.5	22.5	23.0	26.0	22.0	24.5	27.5	22.5	25.0	25.5	21.0	23.0
31	---	---	---	25.5	22.5	24.0	27.5	24.0	26.0	---	---	---
MONTH	24.0	19.0	21.3	26.0	20.5	24.1	28.0	21.5	25.3	28.0	21.0	24.4
YEAR	28.0	5.5	17.6									

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07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'30", long 95°30'06", in NW ¼ 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. Satellite telemeter at station.

REMARKS.--Records fair. Flow regulated since October 1943 by Lake Texoma (station 07331500), 92.8 mi upstream from station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 42,800 ft^3/s, May 12 (gage height, 14.96 ft); minimum discharge, 862 ft^3/s, Aug 18, 24-25 (gage height, 2.45 ft).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2610	3390	1860	3320	9080	2590	14500	21200	6620	13600	5370	1800
2	3170	3710	1520	3380	7650	1580	11800	18200	8750	16200	2950	4170
3	3210	4240	2180	3360	6240	1270	10700	13100	14300	17700	1490	3430
4	4750	4780	4400	3140	5410	2310	18300	9410	21400	18500	3000	2630
5	6170	4030	10300	2300	4470	2630	25900	10300	21200	18100	5080	2530
6	3730	3040	11600	1890	4010	2650	16600	11100	18600	14200	5190	2310
7	5000	2450	8210	2860	4190	2650	14800	10600	17200	12200	5180	1300
8	5630	2040	5290	3130	4070	2550	14200	9860	16300	11900	5190	1200
9	3690	1750	4270	3110	3810	1800	12800	8890	10200	11500	2950	2070
10	3500	1780	4850	3110	4080	2980	11200	7390	7060	11100	1380	2460
11	2440	1830	4750	2910	4610	5660	10400	14700	5560	10700	2870	2570
12	2000	2680	5600	1930	4240	5120	6290	36500	7370	11800	5080	2670
13	1780	2980	9490	1620	3760	8190	4790	24400	12600	10600	5260	3200
14	1700	3040	11100	2390	3460	12200	8020	21400	13500	9390	5360	1810
15	2810	3020	7900	1830	3090	13000	9270	20200	10500	8890	5110	1700
16	3070	2890	6060	2690	2160	11400	8880	17000	9230	8630	2850	2800
17	3090	2110	5360	2920	1910	11100	8970	10500	8240	8520	1200	2480
18	3130	1690	4750	2770	2840	11700	8780	9320	8410	8150	2560	2110
19	2990	1910	5970	1750	2970	9450	4710	11300	8590	3840	4180	1920
20	2500	2510	8370	1400	2980	6280	2980	10800	8310	2430	4210	1760
21	2820	2550	7600	2510	2940	5240	6270	10300	7010	4330	4220	1300
22	3670	2600	5210	2900	2710	4590	8000	9920	6630	5540	4030	e1200
23	3460	2550	4740	2880	1760	3460	8180	9330	6920	5510	2660	1300
24	3300	1810	5120	2900	1460	3080	8110	6430	7350	5480	1060	1400
25	3210	1400	4710	2730	2520	4650	8140	5720	7950	5430	1580	1400
26	2910	1970	4050	1680	2770	5500	5830	5770	8800	3030	3700	1400
27	1940	2460	3750	1330	2790	5410	9570	5800	12100	1780	4060	1350
28	1600	2470	3410	2510	2770	5220	13100	5810	15000	3380	4420	e1300
29	2620	2540	2510	3260	---	5230	19900	5360	12900	5180	4660	e1250
30	2990	2560	2240	5650	---	7870	22600	4970	13000	5210	3300	e1200
31	3060	---	3150	8030	---	11700	---	5520	---	5240	1490	---
TOTAL	98550	78780	170320	88190	104750	179060	333590	371100	331600	278060	111640	60020
MEAN	3179	2626	5494	2845	3741	5776	11120	11970	11050	8970	3601	2001
MAX	6170	4780	11600	8030	9080	13000	25900	36500	21400	18500	5370	4170
MIN	1600	1400	1520	1330	1460	1270	2980	4970	5560	1780	1060	1200
AC-FT	195500	156300	337800	174900	207800	355200	661700	736100	657700	551500	221400	119000

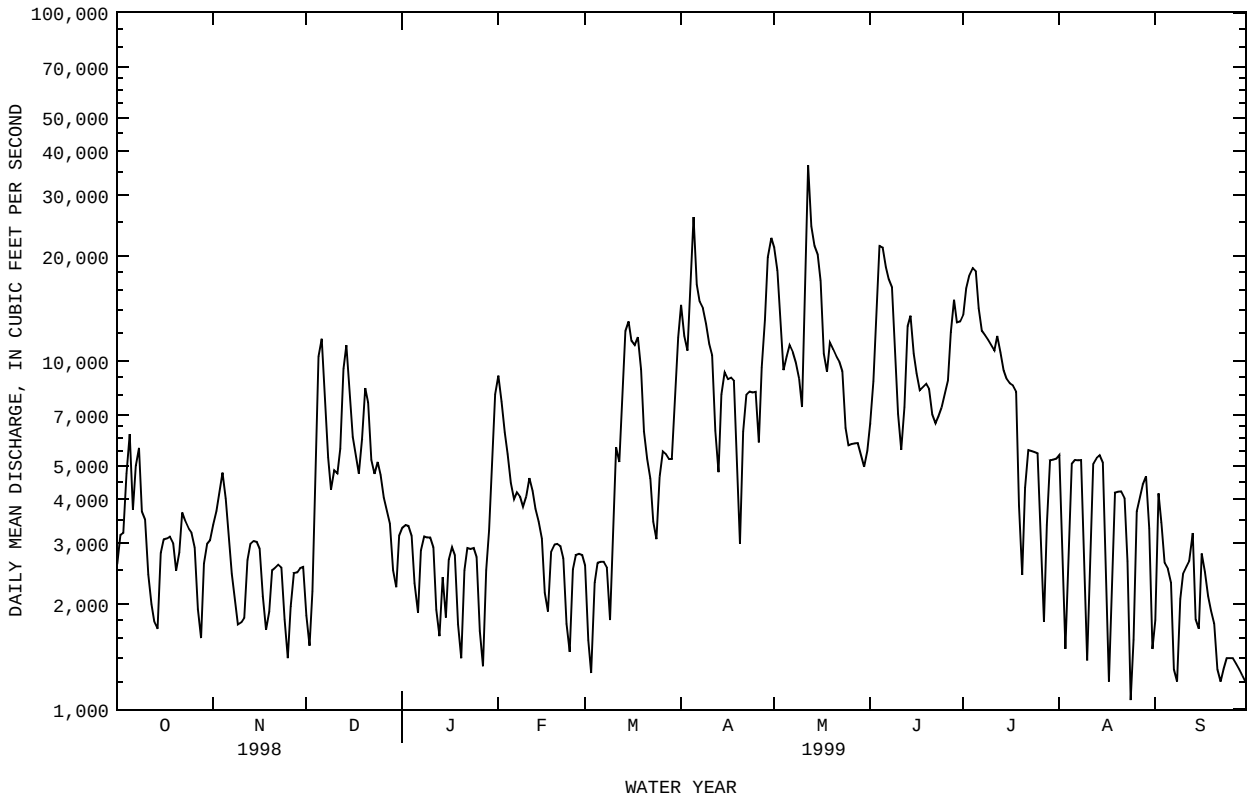
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1999, BY WATER YEAR (WY)

MEAN	6982	7445	7398	7007	8449	10840	11750	17230	18290	7881	4936	4853
MAX	40240	37170	32340	39930	24200	38610	55500	103900	83820	27700	34840	19010
(WY)	1982	1975	1992	1992	1946	1987	1990	1990	1957	1989	1950	1950
MIN	263	242	894	1126	1138	1118	1344	2837	2074	1586	1108	859
(WY)	1957	1957	1957	1964	1959	1967	1956	1980	1956	1956	1972	1988

07335500 RED RIVER AT ARTHUR CITY, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1945 - 1999	
ANNUAL TOTAL	4395637		2205660			
ANNUAL MEAN	12040		6043		a9416	
HIGHEST ANNUAL MEAN					23290	1990
LOWEST ANNUAL MEAN					2754	1964
HIGHEST DAILY MEAN	53100	Mar 24	36500	May 12	269000	May 4 1990
LOWEST DAILY MEAN	837	Jul 1	1060	Aug 24	134	bDec 11 1956
ANNUAL SEVEN-DAY MINIMUM	1900	Jun 26	1330	Sep 24	134	Dec 11 1956
INSTANTANEOUS PEAK FLOW			42800	May 12	c275000	May 4 1990
INSTANTANEOUS PEAK STAGE			14.96	May 12	d34.21	May 4 1990
ANNUAL RUNOFF (AC-FT)	8719000		4375000		6821000	
10 PERCENT EXCEEDS	41200		12700		24500	
50 PERCENT EXCEEDS	4410		4240		4320	
90 PERCENT EXCEEDS	1840		1780		1380	

e Estimated
a Prior to regulaton, water years 1906-11, 1937-43, 9,266 ft^3/s.
b Also occurred Dec 12, 1956.
b Maximum discharge for period of record, 400,000 ft^3/s May 28, 1908.
c Maximum gage height for period of record, 43.2 ft, May 28, 1908.



07337000 RED RIVER AT INDEX, AR

LOCATION.--Lat 33°33'07", long 94°02'28", in NW¼SW¼ sec.7, T.14 S., R.28 W., Miller County, Hydrologic Unit 11140106, near right bank on downstream side of southbound bridge on U.S. Highway 71 at Index, AR, 2.2 mi south of Ogden, 20.6 mi upstream from Little River, and at mile 485.3.

DRAINAGE AREA.--48,030 mi^2, of which 5,936 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1936 to current year. Gage-height records collected at same site since 1917 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 246.87 ft above sea level. Prior to Dec 12, 1939, nonrecording gage, and Dec 12, 1939, to Jul 19, 1979, water-stage recorder, at site 500 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. At least 10% of drainage has been regulated since Oct 31, 1943, by Lake Texoma (station 07331500),241 mi upstream, (capacity 5,392,900 acre-ft). Additional regulation since Sep 28, 1967, by Pat Mayse Lake (station 0733539,capacity 352,700 acre-ft), and since Jan 18, 1974, by Hugo Lake, OK (capacity 966,700 acre-ft).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2710	2400	2590	5360	14100	3310	9770	27400	6820	18600	4910	4370
2	2670	2840	2770	8830	14200	3410	14100	29100	6390	17200	5330	4020
3	2650	3070	2970	11800	16600	3390	19500	28300	7110	17700	5380	2820
4	3640	3720	3250	10400	17600	3420	21700	25700	10700	21300	5410	2220
5	4510	6830	5910	7660	15100	3150	19900	22500	14600	23100	4920	3020
6	6260	8950	13000	6470	12000	2810	27200	19000	21200	23900	4210	3750
7	14300	8680	15200	6650	9370	2830	34700	17900	24000	24100	4600	3070
8	22300	6220	17500	6060	7150	3060	30000	19900	22600	22100	6300	2690
9	20800	4320	17300	4710	6270	3440	26300	20000	20400	19700	6780	2610
10	19900	3670	17900	4250	6820	3700	24400	17800	19600	18000	6830	2240
11	16300	3380	18700	4310	9700	3800	22000	17000	16500	15700	6820	1830
12	12200	3540	17600	4230	10900	4570	19100	17700	11500	14700	5660	1770
13	10600	3610	15200	4140	10700	15600	17700	30800	8940	14400	4270	2320
14	9660	3600	12200	4000	8290	27100	15400	39500	8260	13900	4530	2690
15	9070	4800	11800	3530	6650	25700	12700	34600	11100	14200	5800	2630
16	8740	5050	16200	3140	5920	22300	11800	33500	15800	12700	6170	2790
17	8160	4520	18000	3050	5490	22900	13100	33400	15100	11400	6290	2620
18	6130	4380	15500	3020	5120	25500	13100	31200	12200	10300	6110	2100
19	4740	4260	13200	2960	5660	25200	12400	27100	11200	9550	4770	2110
20	4070	4170	11200	3310	5900	23100	12200	24800	11300	9210	3240	2420
21	3850	3450	10700	3390	4830	19200	10700	24800	11600	7760	2960	2290
22	4880	2740	10600	3150	4150	15000	7440	21500	11800	5180	4100	2110
23	5150	2670	12200	2880	3830	12700	5850	17500	11300	4010	4440	1990
24	5060	2800	13500	2930	3740	11700	7610	15900	10300	4630	4460	1860
25	4270	2820	11500	3320	3610	11100	9650	14800	10600	5770	4420	1660
26	3680	2820	8960	3450	3200	10200	10500	13400	11600	5830	3900	1530
27	3460	2660	8050	3420	2840	8860	11000	12000	12700	5750	2840	1570
28	3350	2300	7370	3550	2890	8140	12400	10600	12500	5570	2410	1700
29	3210	2000	6770	4620	---	7620	14500	9050	12800	4270	3300	1710
30	2790	2210	6400	8240	---	7130	22400	8140	16700	3200	4060	1680
31	2400	---	5910	12200	---	7340	---	7440	---	3370	4230	---
TOTAL	231510	118480	349950	159030	222630	347280	489120	672330	397220	387100	149450	72190
MEAN	7468	3949	11290	5130	7951	11200	16300	21690	13240	12490	4821	2406
MAX	22300	8950	18700	12200	17600	27100	34700	39500	24000	24100	6830	4370
MIN	2400	2000	2590	2880	2840	2810	5850	7440	6390	3200	2410	1530
AC-FT	459200	235000	694100	315400	441600	688800	970200	1334000	787900	767800	296400	143200

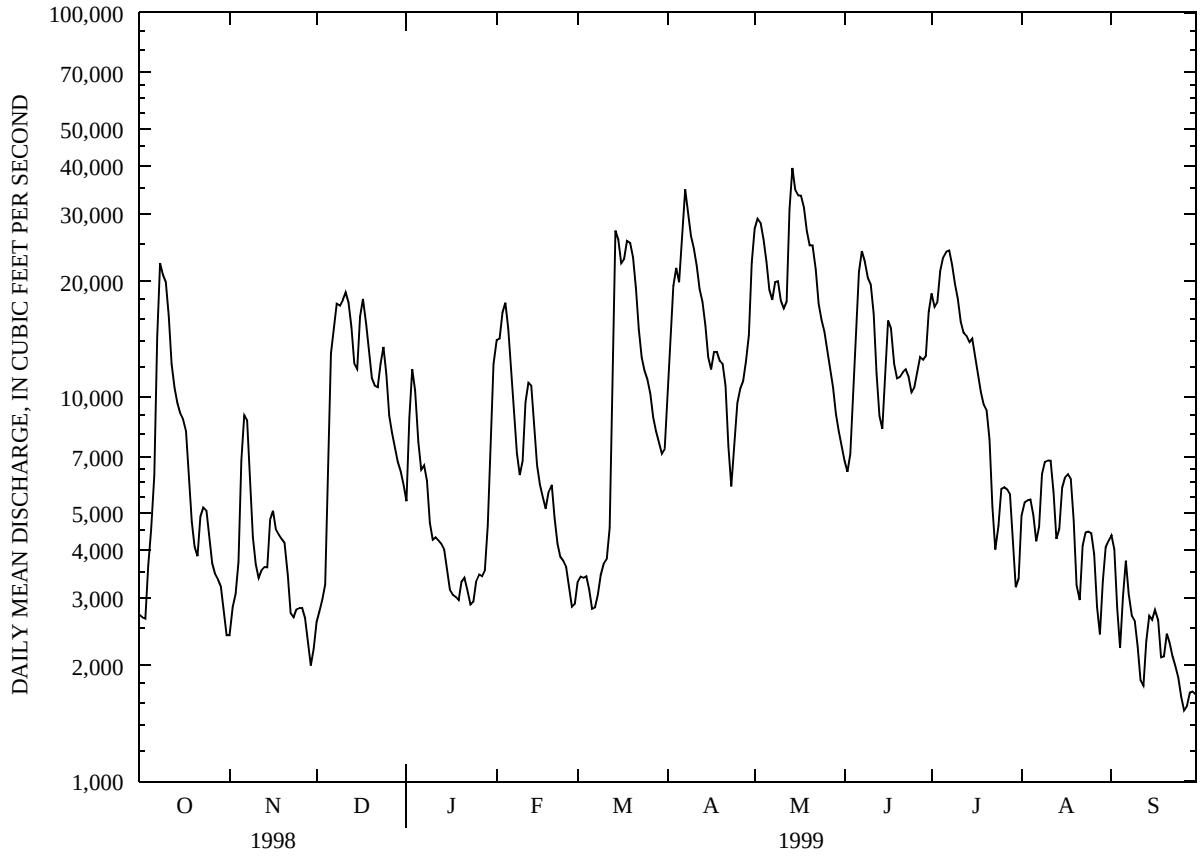
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1999, BY WATER YEAR (WY)

MEAN	8300	10810	12030	11250	14030	17000	17390	24240	22310	9910	5835	6006
MAX	41690	47140	47910	60160	38960	67730	61460	121000	94400	33990	39230	30340
(WY)	1946	1975	1992	1998	1946	1945	1990	1990	1957	1989	1950	1950
MIN	716	642	1206	1360	2127	2233	2096	4199	3098	1162	1025	909
(WY)	1957	1957	1957	1964	1964	1967	1956	1972	1988	1944	1944	1944

07337000 RED RIVER AT INDEX, AR--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1944 - 1999	
ANNUAL TOTAL	6009370		3596290			
ANNUAL MEAN	16460		9853		a13240	
HIGHEST ANNUAL MEAN					30420	1990
LOWEST ANNUAL MEAN					4383	1964
HIGHEST DAILY MEAN	86000	Jan 8	39500	May 14	268000	May 10 1990
LOWEST DAILY MEAN	2000	Nov 29	1530	Sep 26	384	Nov 28 1956
ANNUAL SEVEN-DAY MINIMUM	2480	Nov 26	1670	Sep 24	397	Oct 19 1956
INSTANTANEOUS PEAK FLOW			41000	May 14	b270000	May 10 1990
INSTANTANEOUS PEAK STAGE			10.31	May 14	c32.30	May 10 1990
INSTANTANEOUS LOW FLOW			1510	Sep 26,27	378	Nov 28 1956
ANNUAL RUNOFF (AC-FT)	11920000		7133000		9594000	
10 PERCENT EXCEEDS	51300		21600		35400	
50 PERCENT EXCEEDS	6190		6830		6010	
90 PERCENT EXCEEDS	2890		2760		2310	

a Prior to regulation, water years 1937-43, 11,970 ft^3/s
b Maximum discharge for period of record, 297,000 ft^3/s, Feb 23, 1938
c Maximum gage height for period of record, 34.25 ft Feb 23, 1938, from graph based on gage readings



07337000 RED RIVER AT INDEX, AR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water analyses 1947 to 1956, Apr 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	STREAM WIDTH (FT) (00004)	SAM-PLING DEPTH (FEET) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)
NOV							
04...	1335	80513	80513	440	1.00	2.00	642
04...	1336	80513	80513	440	1.00	9.00	686
04...	1337	80513	80513	440	2.50	5.00	730
04...	1338	80513	80513	440	1.60	6.00	774
04...	1339	80513	80513	440	1.60	10.0	818
04...	1340	80513	80513	440	1.30	17.0	862
04...	1341	80513	80513	440	1.60	17.0	906
04...	1342	80513	80513	440	1.70	24.0	950
04...	1343	80513	80513	440	2.00	18.0	994
04...	1344	80513	80513	440	2.20	11.0	1040
04...	1400	80513	81213	--	--	--	--

DATE	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	BARO-METRIC PRES-SURE (MM OF HG) (00025)
NOV						
04...	987	8.1	18.0	9.1	97	757
04...	990	8.1	18.0	9.1	98	757
04...	991	8.1	18.1	9.1	97	757
04...	993	8.2	18.1	9.1	97	757
04...	991	8.3	18.1	9.1	98	757
04...	990	8.1	18.1	9.1	98	757
04...	991	8.2	18.1	9.1	98	757
04...	987	8.2	18.1	9.1	98	757
04...	983	8.2	18.1	9.2	98	757
04...	981	8.2	18.1	9.1	98	757
04...	988	8.2	18.1	9.1	98	757

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
NOV										
04...	1400	3610	988	8.2	757	18.1	9.1	98	160	180

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV										
04...	280	270	70	24	94	42	2	4.3	160	130

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV									
04...	602	.008	.04	.012	.04	.020	.060	.08	.52

07337000 RED RIVER AT INDEX, AR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV									
04...	.58	.60	.030	<.020	.030	.09	98	955	96

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	BAROMETRIC PRESSURE (MM OF HG) (00025)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
JAN										
13...	1205	80513	81213	4170	911	8.1	760	11.1	10.0	91
MAR										
11...	1020	80513	81213	3950	1140	7.5	757	12.9	8.4	80
JUN										
09...	0645	80513	81213	20400	1370	8.0	760	28.0	7.0	90
JUL										
08...	1055	80513	81213	22600	969	8.1	760	30.3	6.5	87
AUG										
24...	1115	80513	81213	4750	1720	8.1	757	30.3	6.1	82

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)
JAN										
13...	58	38	K12	260	68	21	89	43	2	3.7
MAR										
11...	350	140	64	290	75	26	110	44	3	4.4
JUN										
09...	49	K27	78	350	88	31	160	50	4	4.8
JUL										
08...	70	K13	84	220	57	20	110	51	3	4.0
AUG										
24...	K8	K12	K240	410	100	38	210	52	5	5.9

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
JAN									
13...	130	110	548	<.010	--	.340	.210	.27	.44
MAR									
11...	180	150	679	.010	.03	<.020	.050	.06	1.1
JUN									
09...	260	230	912	<.010	--	.140	.030	.04	.76
JUL									
08...	160	150	632	<.010	--	.080	.040	.05	.90
AUG									
24...	310	280	1140	<.010	--	<.020	<.010	--	--

DATE	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN									
13...	.65	.99	.060	<.020	.020	.06	129	1450	96
MAR									
11...	1.2	--	.100	E.040	.010	.03	167	1780	95
JUN									
09...	.79	.93	.160	E.030	<.010	--	607	33400	63
JUL									
08...	.94	1.0	.190	<.020	<.010	--	724	44200	51
AUG									
24...	1.0	--	.100	<.020	<.010	--	224	2870	98

07342465 SOUTH SULPHUR RIVER AT COMMERCE, TX

LOCATION.--Lat 33°12'42", long 95°54'50", Hunt County, Hydrologic Unit 11140301, on right bank at downstream side of bridge on south-bound State Highway 50, 13 mi. upstream from Dunbar Creek, and 2.8 mi. south of Commerce.

DRAINAGE AREA.--150 mi^2.

PERIOD OF RECORD.--Oct 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 460.74 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 3	1530	6,350	23.36	Dec 19	0430	2,830	14.93
Nov 1	1745	4,330	18.78	Jan 30	0115	4,890	20.22
Nov 13	1030	3,480	16.57	May 30	1830	3,410	16.41
Dec 4	0800	14,900	29.44				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

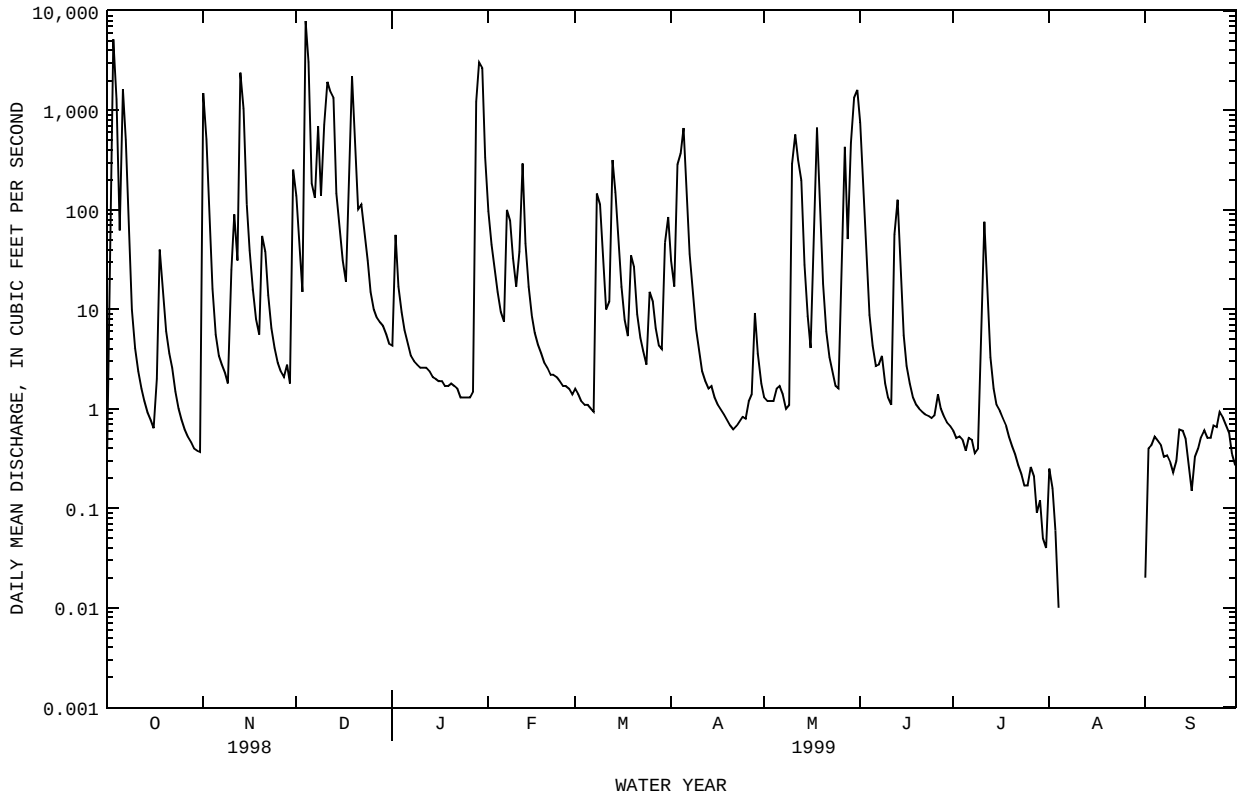
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	1500	139	4.3	98	1.6	31	1.3	758	.60	.25	.02
2	34	515	38	56	45	1.4	17	1.2	104	.51	.16	.40
3	5200	64	15	17	25	1.2	286	1.2	27	.53	.06	.43
4	1300	16	7920	9.4	15	1.1	371	1.2	8.9	.49	.01	.52
5	62	5.6	3080	6.2	9.4	1.1	667	1.6	4.3	.38	.00	.48
6	1630	3.4	185	4.4	7.5	1.0	180	1.7	2.7	.51	.00	.43
7	509	2.8	133	3.4	100	.93	36	1.4	2.8	.49	.00	.33
8	43	2.3	693	3.0	78	146	14	1.0	3.4	.36	.00	.34
9	10	1.8	138	2.8	33	113	6.4	1.1	1.8	.40	.00	.29
10	4.1	25	715	2.6	17	33	3.8	290	1.3	3.4	.00	.23
11	2.4	90	1940	2.6	38	10	2.4	572	1.1	76	.00	.30
12	1.6	31	1550	2.6	293	12	1.9	317	57	13	.00	.62
13	1.2	2400	1340	2.4	46	318	1.6	200	127	3.3	.00	.60
14	.92	1040	147	2.1	17	151	1.7	28	22	1.6	.00	.50
15	.77	114	59	2.0	8.6	42	1.3	8.6	5.5	1.1	.00	.26
16	.64	39	31	1.9	5.8	17	1.1	4.1	2.7	.96	.00	.15
17	2.0	16	19	1.9	4.4	7.9	.97	105	1.8	.81	.00	.33
18	40	8.0	212	1.7	3.6	5.4	.88	672	1.3	.67	.00	.40
19	15	5.6	2210	1.7	2.9	35	.77	87	1.1	.52	.00	.52
20	6.1	55	414	1.8	2.6	27	.68	18	1.0	.42	.00	.61
21	3.6	38	102	1.7	2.2	9.0	.62	6.0	.93	.35	.00	.51
22	2.6	14	114	1.6	2.2	5.2	.67	3.3	.88	.27	.00	.51
23	1.5	6.5	59	1.3	2.1	3.8	.75	2.4	.85	.22	.00	.68
24	1.0	4.1	31	1.3	1.9	2.8	.83	1.7	.81	.17	.00	.66
25	.78	2.9	15	1.3	1.7	15	.80	1.6	.86	.17	.00	.93
26	.62	2.4	10	1.3	1.7	12	1.2	22	1.4	.26	.00	.82
27	.52	2.1	8.3	1.5	1.6	6.5	1.4	429	1.0	.21	.00	.68
28	.46	2.8	7.4	1220	1.4	4.3	9.2	51	.83	.09	.00	.57
29	.40	1.8	6.8	3050	---	4.0	3.6	472	.73	.12	.00	.35
30	.38	254	5.6	2660	---	47	1.8	1350	.67	.05	.00	.27
31	.37	---	4.5	338	---	85	---	1610	---	.04	.00	---
TOTAL	8875.35	6263.1	21341.6	7407.8	864.6	1120.23	1646.37	6262.4	1143.66	108.00	0.48	13.74
MEAN	286	209	688	239	30.9	36.1	54.9	202	38.1	3.48	.015	.46
MAX	5200	2400	7920	3050	293	318	667	1610	758	76	.25	.93
MIN	.37	1.8	4.5	1.3	1.4	.93	.62	1.0	.67	.04	.00	.02
AC-FT	17600	12420	42330	14690	1710	2220	3270	12420	2270	214	1.0	27
CFSM	1.91	1.39	4.59	1.59	.21	.24	.37	1.35	.25	.02	.00	.00
IN.	2.20	1.55	5.29	1.84	.21	.28	.41	1.55	.28	.03	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999, BY WATER YEAR (WY)

MEAN	179	193	347	160	216	181	150	242	82.6	62.8	5.62	16.7
MAX	451	646	804	513	682	346	411	734	433	333	32.0	91.5
(WY)	1994	1997	1992	1998	1997	1992	1997	1992	1992	1994	1992	1994
MIN	.008	.093	.33	8.89	.12	8.01	10.4	2.53	.93	.000	.005	.002
(WY)	1993	1996	1996	1996	1996	1996	1996	1998	1996	1998	1993	1993

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1992 - 1999	
ANNUAL TOTAL	68158.81		55047.33			
ANNUAL MEAN	187		151		153	
HIGHEST ANNUAL MEAN					297	1992
LOWEST ANNUAL MEAN					7.81	1996
HIGHEST DAILY MEAN	7920	Dec 4	7920	Dec 4	8230	Oct 20 1993
LOWEST DAILY MEAN	.00	Jul 2	.00	Aug 5	.00	Oct 2 1991
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 2	.00	Aug 5	.00	Oct 7 1991
INSTANTANEOUS PEAK FLOW			14900	Dec 4	14900	Dec 4 1998
INSTANTANEOUS PEAK STAGE			29.44	Dec 4	29.44	Dec 4 1998
ANNUAL RUNOFF (AC-FT)	135200		109200		110800	
ANNUAL RUNOFF (CFSM)	1.24		1.01		1.02	
ANNUAL RUNOFF (INCHES)	16.90		13.65		13.85	
10 PERCENT EXCEEDS	392		229		251	
50 PERCENT EXCEEDS	3.9		2.4		2.9	
90 PERCENT EXCEEDS	.00		.17		.00	

07342465 SOUTH SULPHUR RIVER AT COMMERCE, TX--Continued



07342470 SOUTH SULPHUR RIVER NEAR COMMERCE, TX

LOCATION.--Lat 33°13'11", long 95°51'45", Hunt County, Hydrologic Unit 11140301, at State Highway 11, 0.7 mi upstream from St. Louis Southwestern Railroad bridge, 1.8 mi downstream from Dunbar Creek, and 3.0 mi southeast of Commerce.

DRAINAGE AREA.--189 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1987 to current year.
BIOCHEMICAL DATA: Oct 1987 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR											
11...	1715	22	497	7.9	15.3	39	9.3	94	2.0	160	18
JUN											
14...	1715	46	233	7.5	27.1	190	7.0	88	3.6	82	5
AUG											
24...	1635	2.0	716	9.2	33.6	11	2.6	37	3.8	71	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
11...	54	6.6	33	1	1.9	140	62	22	.25	6.3	309
JUN											
14...	28	2.9	12	.6	4.9	77	16	9.6	.25	9.2	161
AUG											
24...	24	2.8	116	6	7.4	170	63	56	.42	8.3	430

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
MAR											
11...	278	48	.959	.032	.991	.156	.90	1.1	.177	.146	.45
JUN											
14...	135	<1	.942	.019	.961	.039	.65	.69	.211	.179	.55
AUG											
24...	431	20	11.0	.116	11.1	<.020	--	.80	1.68	1.56	4.8

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
MAR										
11...	14	4.5	<1.0	3	78	<1.0	<1.0	<1.0	<1.0	2.9
JUN										
14...	13	4.7	<1.0	5	43	<1.0	<1.0	<1.0	<1.0	2.6
AUG										
24...	14	5.3	<1.0	4	33	<1.0	<1.0	<1.0	2.0	6.3

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
MAR										
11...	32	<1.0	23	<.1	4.7	4.1	<1	<1.0	8.1	2.7
JUN										
14...	30	<1.0	7.8	<.1	2.2	2.7	1	<1.0	1.6	<1.0
AUG										
24...	<10	<1.0	2.4	<.1	35	3.7	<1	<1.0	4.6	<1.0

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07342480 MIDDLE SULPHUR RIVER AT COMMERCE, TX

LOCATION.--Lat 33°15'59", long 95°54'55", Hunt County, Hydrologic Unit 11140301, at right end of bridge on State Highway 11 at downstream side of highway embankment, 1.5 mi upstream from Willow Creek and 1.5 mi northwest of post office in Commerce.

DRAINAGE AREA.--44.1 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage not determined. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 3	0930	1,710	14.17	Jan 28	2030	2,240	14.64
Nov 13	1900	1,110	13.24				
Dec 4	0900	6,870	16.68				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

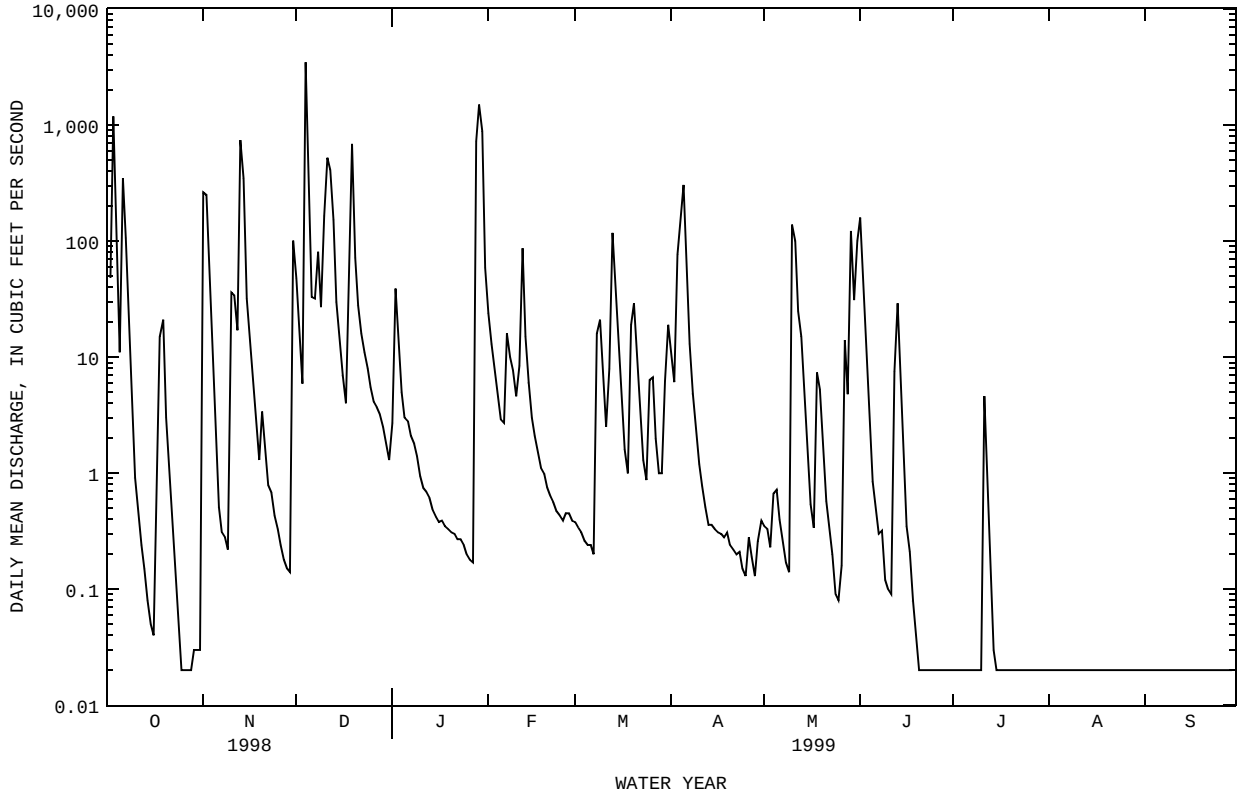
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	264	48	2.7	24	.38	11	.35	160	.02	.02	.02
2	48	250	15	39	13	.34	6.1	.33	18	.02	.02	.02
3	1190	24	5.9	14	7.8	.31	77	.23	5.3	.02	.02	.02
4	195	5.6	3460	5.0	4.8	.26	155	.67	1.9	.02	.02	.02
5	11	1.5	632	3.0	2.9	.24	305	.72	.85	.02	.02	.02
6	348	.51	33	2.8	2.7	.24	65	.40	.48	.02	.02	.02
7	106	.31	32	2.1	16	.20	13	.26	.30	.02	.02	.02
8	11	.28	81	1.8	10	16	4.9	.17	.32	.02	.02	.02
9	2.8	.22	27	1.4	7.7	21	2.3	.14	.12	.02	.02	.02
10	.92	36	165	.94	4.6	8.8	1.2	139	.10	.02	.02	.02
11	.47	34	524	.74	8.4	2.5	.78	100	.09	4.6	.02	.02
12	.24	17	410	.69	87	7.9	.51	25	7.5	.77	.02	.02
13	.15	741	153	.61	15	118	.36	15	29	.15	.02	.02
14	.08	349	30	.48	6.1	34	.36	4.1	4.3	.03	.02	.02
15	.05	32	14	.42	3.0	11	.33	1.3	1.0	.02	.02	.02
16	.04	14	7.0	.38	2.1	4.3	.31	.54	.35	.02	.02	.02
17	.35	6.2	4.0	.39	1.5	1.6	.30	.34	.21	.02	.02	.02
18	15	2.7	80	.35	1.1	1.0	.28	7.4	.08	.02	.02	.02
19	21	1.3	687	.33	.98	19	.31	5.3	.04	.02	.02	.02
20	3.0	3.4	72	.31	.75	29	.24	1.6	.02	.02	.02	.02
21	1.0	1.6	28	.30	.63	8.5	.22	.58	.02	.02	.02	.02
22	.34	.79	16	.27	.56	3.2	.20	.33	.02	.02	.02	.02
23	.10	.68	11	.27	.47	1.3	.21	.20	.02	.02	.02	.02
24	.04	.43	8.0	.24	.43	.87	.15	.09	.02	.02	.02	.02
25	.02	.33	5.5	.20	.39	6.4	.13	.08	.02	.02	.02	.02
26	.02	.24	4.1	.18	.45	6.7	.28	.16	.02	.02	.02	.02
27	.02	.18	3.7	.17	.45	2.0	.19	14	.02	.02	.02	.02
28	.02	.15	3.2	725	.39	1.0	.13	4.8	.02	.02	.02	.02
29	.03	.14	2.5	1500	---	1.0	.26	122	.02	.02	.02	.02
30	.03	101	1.8	890	---	6.2	.39	31	.02	.02	.02	.02
31	.03	---	1.3	59	---	19	---	100	---	.02	.02	---
TOTAL	1954.75	1888.56	6565.0	3253.07	223.20	332.24	646.44	576.09	230.16	6.09	0.62	0.60
MEAN	63.1	63.0	212	105	7.97	10.7	21.5	18.6	7.67	.20	.020	.020
MAX	1190	741	3460	1500	87	118	305	139	160	4.6	.02	.02
MIN	.00	.14	1.3	.17	.39	.20	.13	.08	.02	.02	.02	.02
AC-FT	3880	3750	13020	6450	443	659	1280	1140	457	12	1.2	1.2

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999, BY WATER YEAR (WY)

MEAN	49.2	64.9	118	57.0	79.8	64.3	61.9	77.7	37.3	25.9	4.36	3.11
MAX	179	212	257	144	290	130	171	247	126	119	31.6	11.5
(WY)	1994	1997	1992	1998	1997	1992	1993	1992	1992	1994	1992	1995
MIN	.001	.41	.000	3.45	.10	5.41	2.02	.83	.003	.000	.000	.000
(WY)	1993	1996	1996	1996	1996	1996	1992	1998	1998	1993	1993	1993

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1992 - 1999	
ANNUAL TOTAL	18989.55		15676.82			
ANNUAL MEAN	52.0		43.0		53.6	
HIGHEST ANNUAL MEAN					99.8	1992
LOWEST ANNUAL MEAN					2.37	1996
HIGHEST DAILY MEAN	3460	Dec 4	3460	Dec 4	3460	Dec 4 1998
LOWEST DAILY MEAN	.00	May 12	.00	Oct 1	.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	.00	May 12	.02	Jun 20	.00	Oct 1 1991
INSTANTANEOUS PEAK FLOW			6870	Dec 4	6870	Jun 14 1997
INSTANTANEOUS PEAK STAGE			16.68	Dec 4	16.68	Jun 14 1997
ANNUAL RUNOFF (AC-FT)	37670		31090		38790	
10 PERCENT EXCEEDS	78		43		73	
50 PERCENT EXCEEDS	.31		.39		.52	
90 PERCENT EXCEEDS	.00		.02		.00	

07342480 MIDDLE SULPHUR RIVER AT COMMERCE, TX--Continued



07342480 MIDDLE SULPHUR RIVER AT COMMERCE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1987 to current year.
BIOCHEMICAL DATA: Oct 1987 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR											
11...	1345	2.2	446	8.1	13.5	20	10.2	99	1.4	190	5
JUN											
14...	1315	4.0	249	7.7	24.6	90	7.6	92	--	96	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
11...	66	5.2	17	.6	3.7	180	31	11	.17	6.4	283
JUN											
14...	35	2.4	10	.5	5.1	--	18	9.4	.28	11	178

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
MAR											
11...	251	29	.147	.013	.160	.025	.53	.56	.050	.058	.18
JUN											
14...	--	148	1.32	.041	1.36	.027	.73	.76	.233	.217	.67

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
MAR										
11...	13	1.4	<1.0	3	92	<1.0	<1.0	9.4	<1.0	1.6
JUN										
14...	17	2.4	<1.0	6	48	<1.0	<1.0	<1.0	<1.0	3.2

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
MAR										
11...	18	<1.0	8.4	<.1	<1.0	3.7	<1	<1.0	<1.0	3.7
JUN										
14...	18	<1.0	4.7	<.1	1.4	3.3	--	<1.0	1.5	<1.0

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07342495 COOPER LAKE NEAR COOPER, TX

LOCATION.--Lat 33°20'00", long 95°37'30", Delta-Hopkins County line, Hydrologic Unit 11140301, in control room near center of dam on South Sulphur River, about 4.0 mi southeast of Cooper, and at river mile 23.2.

DRAINAGE AREA.--479.0 mi^2.

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Oct 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam, 28,070 ft long, including the dike. Closure of dam and deliberate impoundment of water began Sep 28, 1991. The spillway is a 700-foot wide vertical faced uncontrolled ogee weir located near the right abutment of the dam. The service spillway (outlet works) consists of both service and emergency gates and low-flow release facilities. The outlet works structures is 452 feet long, and consists of an approach channel, approach channel U-frame structure, intake structure and service bridge, over 10.5-foot diameter conduits, and a stilling basin and discharge channel. The emergency part of the outlet structure consists of five 40- x 20-foot tainter gates. The dam was built, and is owned by the U.S. Army Corps of Engineers in cooperation with the North Texas Municipal Water District, the Sulphur River Municipal Water District, and the city of Irving. The principal uses of the dam and lake are for flood control, water supply, and recreation. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	459.0
Top of Flood Control Pool	446.2
Top of Conservation Pool	440.0
Invert, lowest gated outlet	398.0

COOPERATION.--Area and capacity tables provided by the U.S. Army Corps of Engineers. Record of contents provided by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 441,900 acre-ft, May 10, 1995 (elevation, 445.05 ft); minimum contents after initial filling, 191,100 acre-ft, May 11, 1992 (elevation, 432.66 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 383,600 acre-ft, Dec 5-6 (elevation, 443.54 ft); minimum contents, 226,200 acre-ft, Sep 30 (elevation, 435.20 ft).

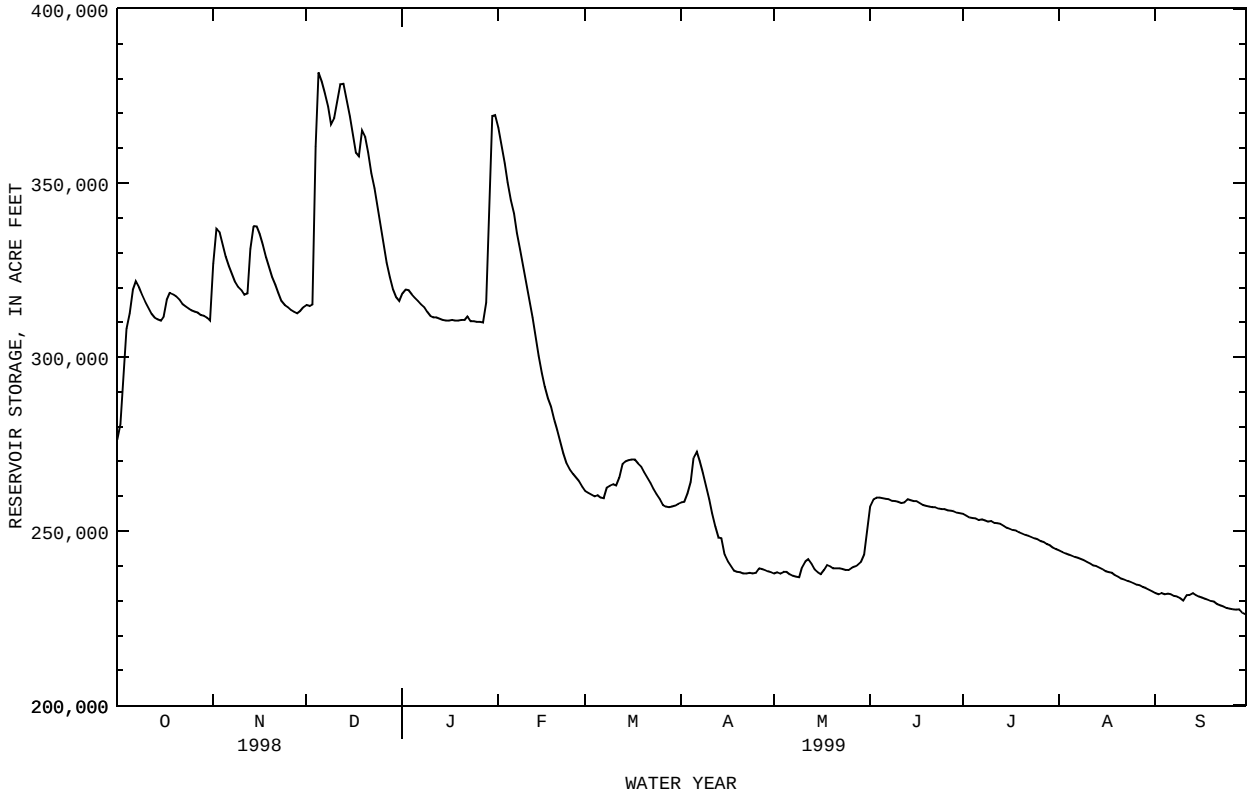
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	276300	326900	315000	318300	365900	261600	258300	237900	257200	255000	244500	232200
2	280800	336900	314800	319400	360900	261000	258400	238200	259100	254500	244000	231900
3	294300	335900	315200	319300	355800	260500	260900	237900	259600	253900	243600	232200
4	308200	332500	360500	318100	350200	260000	264200	238400	259600	253800	243300	231900
5	312600	328900	381700	317100	345100	260300	271100	238400	259500	253600	243000	232000
6	319400	326100	379200	316100	341300	259600	272900	237700	259300	253300	242600	231900
7	321800	324000	375800	315200	335700	259500	270200	237200	259100	253400	242300	231400
8	320000	321600	372000	314400	330900	262600	266800	236900	258800	253100	242000	231200
9	317900	320200	367000	313000	325900	263100	263000	236700	258600	252700	241700	230800
10	315900	319300	368800	311900	320800	263500	259100	239700	258400	252900	241200	230100
11	314200	317900	373900	311500	316100	263100	255100	241300	258100	252400	240700	231600
12	312400	318300	378300	311500	311500	265400	251400	242000	258300	252200	240200	231700
13	311500	331100	378500	311100	305900	269300	248200	240700	259100	252100	240000	232200
14	310900	337700	374300	310700	300400	270000	248000	239000	258900	251600	239500	231700
15	310500	337500	369300	310500	295500	270400	243300	238200	258600	251000	239000	231200
16	311700	335500	364300	310500	291500	270600	241300	237700	258600	250700	238500	230900
17	316500	332300	358700	310700	288200	270600	240000	238900	258100	250400	238200	230600
18	318500	328700	357600	310500	285600	269500	238700	240300	257600	250200	238000	230300
19	318100	325700	365100	310500	281900	268600	238400	240000	257200	249700	237400	230000
20	317500	323000	363200	310700	279000	267000	238200	239300	257000	249400	236900	229800
21	316500	320800	358900	310700	275400	265400	237900	239300	256900	249000	236400	229000
22	315400	318500	352900	311700	272300	263800	237900	239300	256900	248700	236100	228700
23	314600	316100	348600	310300	269500	262300	238000	239200	256500	248300	235800	228400
24	314000	315000	342900	310300	267700	260700	237900	238900	256400	248000	235400	227900
25	313400	314400	337700	310100	266500	259300	238000	238900	256400	247700	235100	227800
26	313000	313600	332300	310100	265400	257600	239300	239500	256000	247200	234600	227600
27	312800	313000	327100	309900	264400	257000	239200	239800	255800	246800	234500	227400
28	312100	312600	323000	315700	262800	256900	238900	240300	255700	246300	234000	227600
29	311900	313200	319400	345300	---	257000	238500	241200	255300	246000	233700	226700
30	311300	314400	317100	369300	---	257400	238200	243300	255100	245300	233200	226200
31	310500	---	316100	369500	---	257900	---	250700	---	244800	232700	---
MAX	321800	337700	381700	369500	365900	270600	272900	250700	259600	255000	244500	232200
MIN	276300	312600	314800	309900	262800	256900	237900	236700	255100	244800	232700	226200
(+)	440.01	440.20	440.28	442.86	437.29	437.01	435.88	436.60	436.85	436.26	435.57	435.20
(@)	+33700	+3900	+1700	+53400	-106700	-4900	-19700	+12500	+4400	-10300	-12100	-6500

CAL YR 1998 MAX 381700 MIN 271300 (@) -2700
WTR YR 1999 MAX 381700 MIN 226200 (@) -50600

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07342495 COOPER LAKE NEAR COOPER, TX--Continued



07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Sep 1992 to current year.
BIOCHEMICAL DATA: Sep 1992 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

331938095374701 - COOPER LAKE SITE AC

DATE	TIME	RESER-VOIR STORAGE (AC-FT) (00054)	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
MAR												
11...	1357	266000	1.00	164	7.6	13.0	.18	9.0	87	K6	K3	64
11...	1400	--	10.0	164	7.6	13.0	--	9.0	87	--	--	--
11...	1402	--	20.0	164	7.6	13.0	--	8.9	86	--	--	--
11...	1404	--	30.0	164	7.6	13.0	--	8.9	86	--	--	--
11...	1408	--	40.0	164	7.6	13.0	--	8.8	85	--	--	61
JUN												
14...	1720	262000	1.00	189	7.9	27.5	.85	6.9	89	--	K1	73
14...	1724	--	10.0	188	7.8	27.5	--	6.8	88	--	--	--
14...	1728	--	20.0	189	7.5	27.0	--	5.9	75	--	--	--
14...	1731	--	30.0	190	7.2	25.0	--	1.6	20	--	--	--
14...	1735	--	39.0	193	7.2	24.0	--	.3	4	--	--	74
AUG												
24...	1552	237000	1.00	207	8.9	32.0	.79	10.3	145	K1	K1	81
24...	1603	--	10.0	206	8.7	31.5	--	9.9	138	--	--	--
24...	1612	--	20.0	211	7.6	29.5	--	5.1	69	--	--	--
24...	1624	--	30.0	212	7.2	29.0	--	2.2	29	--	--	--
24...	1635	--	37.0	213	7.0	29.0	--	.2	3	--	--	81

331938095374701 - COOPER LAKE SITE AC

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
MAR											
11...	0	22	2.3	7.5	.4	2.9	64	9.3	3.7	.17	5.8
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	21	2.2	7.6	.4	2.9	64	9.4	3.6	.16	6.1
JUN											
14...	1	25	2.7	9.3	.5	3.2	72	13	4.3	.26	.61
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	2	25	2.7	8.9	.5	3.2	72	12	4.3	.20	3.4
AUG											
24...	--	27	3.0	9.8	.5	3.6	82	11	5.2	.19	2.6
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	27	3.1	9.7	.5	3.5	83	11	5.2	.18	3.1

07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

331938095374701 - COOPER LAKE SITE AC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR											
11...	95	<.010	.689	<.020	--	.33	<.050	.043	.13	E6.4	3.6
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	94	<.010	.677	.022	.31	.33	<.050	.038	.12	E9.9	20
JUN											
14...	103	<.010	.344	.022	.32	.34	<.050	<.010	--	<10	3.5
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	<.010	.392	.035	.38	.42	<.050	<.010	--	E8.7	24
14...	--	--	--	--	--	--	--	--	--	--	--
14...	106	<.010	.475	.072	.32	.39	E.031	.023	.07	<10	455
AUG											
24...	112	<.010	<.050	<.020	--	.41	<.050	<.010	--	<10	<3.0
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	<.010	<.050	<.020	--	.32	<.050	<.010	--	<10	E1.7
24...	--	<.010	<.050	<.020	--	.33	<.050	<.010	--	<10	31
24...	113	<.010	<.050	<.020	--	.37	<.050	<.010	--	<10	86

332110095422201 - COOPER LAKE SITE BC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR												
11...	1426	1.00	164	7.7	13.5	.15	9.5	93	K28	K12	62	--
11...	1430	10.0	164	7.7	13.5	--	9.4	92	--	--	--	--
11...	1435	17.0	164	7.6	13.5	--	9.2	90	--	--	63	--
JUN												
14...	1755	1.00	190	8.0	28.0	.34	7.5	98	--	K1	72	--
14...	1805	10.0	190	7.9	28.0	--	7.0	91	--	--	--	--
14...	1810	16.0	192	7.3	27.0	--	2.0	26	--	--	74	3
AUG												
24...	1706	1.00	211	8.4	31.0	.52	8.2	113	K1	K1	81	--
24...	1711	14.0	217	7.8	29.5	--	3.8	51	--	--	83	--

332110095422201 - COOPER LAKE SITE BC

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
MAR											
11...	21	2.2	7.7	.4	3.0	64	9.4	3.6	.17	5.3	94
11...	--	--	--	--	--	--	--	--	--	--	--
11...	21	2.3	7.5	.4	3.0	65	9.4	3.8	.17	5.5	95
JUN											
14...	24	2.6	9.0	.5	3.2	74	13	4.6	.20	1.2	103
14...	--	--	--	--	--	--	--	--	--	--	--
14...	25	2.7	9.2	.5	3.2	71	12	4.3	.21	1.6	103
AUG											
24...	28	3.0	9.8	.5	3.6	84	11	5.2	.19	3.1	114
24...	28	3.1	9.8	.5	3.7	85	11	5.2	.18	3.3	115

07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

332110095422201 - COOPER LAKE SITE BC

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
MAR											
11...	--	<.010	.628	<.020	--	.34	<.050	.024	.07	E9.2	E2.4
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	<.010	.622	.026	.34	.36	<.050	.026	.08	<10	E2.8
JUN											
14...	--	<.010	.198	<.020	--	.35	<.050	.010	.03	<10	3.5
14...	--	--	--	--	--	--	--	--	--	--	--
14...	.378	.016	.394	.067	.32	.39	<.050	<.010	--	20	21
AUG											
24...	--	<.010	<.050	<.020	--	.28	<.050	<.010	--	<10	4.5
24...	--	<.010	<.050	<.020	--	.35	<.050	<.010	--	<10	15

331818095422501 - COOPER LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
MAR											
11...	1455	1.00	165	7.4	13.5	.12	8.1	80	K10	K3	64
11...	1458	10.0	165	7.4	13.5	--	8.0	79	--	--	--
11...	1501	20.0	165	7.3	13.0	--	7.8	76	--	--	--
11...	1505	29.0	165	7.3	13.0	--	7.6	74	--	--	64
JUN											
14...	1825	1.00	193	8.3	28.5	.85	8.0	105	--	K10	73
14...	1830	10.0	193	8.1	28.5	--	7.6	100	--	--	--
14...	1835	20.0	224	6.9	26.0	--	.2	3	--	--	--
14...	1840	28.0	232	7.0	25.0	--	.3	4	--	--	87
AUG											
24...	1733	1.00	213	8.4	31.0	.73	8.3	115	K2	K3	81
24...	1737	10.0	214	7.5	29.0	--	4.1	55	--	--	--
24...	1742	20.0	214	7.5	29.0	--	3.7	49	--	--	--
24...	1746	26.0	215	7.7	29.5	--	3.7	50	--	--	82

331818095422501 - COOPER LAKE SITE CC

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
MAR											
11...	1	22	2.2	7.1	.4	2.9	63	9.7	3.4	.16	3.9
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	22	2.2	7.1	.4	2.9	66	9.7	3.5	.17	6.8
JUN											
14...	--	25	2.6	9.4	.5	3.3	73	13	4.5	.20	.86
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	30	3.0	9.8	.5	3.7	94	9.6	4.9	.32	7.6
AUG											
24...	--	28	3.0	10	.5	3.6	84	11	5.1	.19	3.0
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	28	3.0	10	.5	3.6	85	11	5.0	.20	3.1

07342495 COOPER LAKE NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

331818095422501 - COOPER LAKE SITE CC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR											
11...	92	<.010	.706	.023	.34	.36	<.050	.039	.12	E7.8	14
11...	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--
11...	97	<.010	.700	.035	.32	.36	<.050	.031	.10	E9.9	28
JUN											
14...	103	<.010	.174	<.020	--	.36	E.030	.015	.05	<10	19
14...	--	<.010	.182	<.020	--	.37	E.033	.025	.08	30	76
14...	--	<.010	<.050	.585	.40	.99	.472	.552	1.7	1900	610
14...	131	<.010	<.050	.769	.42	1.2	.622	.715	2.2	2100	575
AUG											
24...	114	<.010	<.050	<.020	--	.41	<.050	<.010	--	<10	E2.1
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	115	<.010	<.050	.049	.35	.40	<.050	<.010	--	<10	25

332019095441901 - COOPER LAKE SITE DC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
MAR							
11...	1524	1.00	165	7.6	14.0	9.2	91
11...	1531	9.00	165	7.5	13.0	8.9	86
JUN							
14...	1857	1.00	214	7.6	28.5	5.6	73
14...	1859	7.00	214	7.7	28.5	5.4	71
AUG							
24...	1809	1.00	243	7.7	31.5	5.5	77
24...	1811	5.00	243	7.7	31.0	5.0	69

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1998 to September 1999

Date	3/11/99
Time	1357
TOTAL CELLS/mL	3,449
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	0.30

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Stephanodiscus astraea	150
Order Pennales	
Chlamydomonas sp.	90
Scenedesmus opoliensis	30
CYANOPHYTA	
Aphanocapsa delicatissima	2,999
EUGLENOPHYTA	
Trachelomonas sp.	150
CRYPTOPHYTA	
Cryptomonas erosa	30

Cooper Lake Site CC (331818095422501)

Phytoplankton Analyses October 1998 to September 1999

Date	3/11/99
Time	1455
TOTAL CELLS/mL	4,499
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	0.20

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Stephanodiscus astraea	30
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	40
Navicula sp.	20
CHLOROPHYTA	
Selenastrum Westii	120
CYANOPHYTA	
Aphanocapsa delicatissima	4,199
EUGLENOPHYTA	
Trachelomonas sp.	90

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1998 to September 1999

Date	6/14/99
Time	1720
TOTAL CELLS/mL	3,779
NUMBER OF SPECIES	6
DEPTH COLLECTED (ft.)	1.41

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Cyclotella ocellata	43
Stephanodiscus astraea	47
Order Pennales	
Amphora ovalis var. *ovalis*	60
CYANOPHYTA	
Aphanocapsa delicatissima	600
Merismopedia tenuissima	2,939
EUGLENOPHYTA	
Trachelomonas sp.	90

Cooper Lake Site HC (331927095480001)

Phytoplankton Analyses October 1998 to September 1999

Date	6/14/99
Time	1730
TOTAL CELLS/mL	3,989
NUMBER OF SPECIES	5
DEPTH COLLECTED (ft.)	0.55

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	270
CHLOROPHYTA	
Chlamydomonas sp.	90
CYANOPHYTA	
Aphanocapsa delicatissima	2,399
Oscillatoria sp.	1,200
EUGLENOPHYTA	
Trachelomonas sp.	30

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake Site AC (331938095374701)

Phytoplankton Analyses October 1998 to September 1999

Date	8/24/99
Time	1552
TOTAL CELLS/mL	36,469
NUMBER OF SPECIES	11
DEPTH COLLECTED (ft.)	1.3

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	210
CHLOROPHYTA	
Ankistrodesmus falcatus	360
Chlamydomonas sp.	90
Cosmarium sp.	90
Crucigenia tetrapedia	30
Oocystis sp.	30
Scenedesmus opoliensis	60
CYANOPHYTA	
Anabaena spiroides	1,380
Aphanocapsa delicatissima	12,596
Aphanocapsa elachista	2,399
Chroococcus limneticus	120
Merismopedia tenuissima	3,839
Oscillatoria sp.	14,395
EUGLENOPHYTA	
Trachelomonas sp.	810
CRYPTOPHYTA	
Cryptomonas erosa	60

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07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°21'23", long 95°35'41", Delta County, Hydrologic Unit 11140301, on levee on left bank 110 ft downstream from bridge on State Highways 19 and 154, 1.0 mi downstream from Big Creek, 1.0 mi upstream from Brushy Creek, 4.5 mi downstream from Doctors Creek, and 5.6 mi southeast of Cooper.

DRAINAGE AREA.--527 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 371.91 ft above sea level. Prior to Feb 15, 1985, at site 360 ft to right and 90 ft upstream at same datum. Oct 1, 1970, at datum 3.00 ft higher. May 9, 1942, to Nov 8, 1949, nonrecording gage, and Nov 9, 1949, to May 13, 1955, water-stage recorder at site 1,060 ft to right of present gage. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since Sep 28, 1991, at least 10% of contributing drainage area has been regulated by Cooper Dam (station 07342495, capacity 441,400 acre-ft), 13.4 miles upstream from station. No known diversions. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--49 years (water years 1943-91), 416 ft^3/s (10.72 in/yr), 301,400 acre-ft/yr.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1943-1991).--Maximum discharge 47,200 ft^3/s May 13, 1982 (gage height, 27.21 ft, from floodmark in gage well); no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	511	239	118	1810	548	23	16	32	7.5	e2.5	e.21
2	4.0	429	228	235	2470	344	22	16	15	7.4	e2.0	e.24
3	14	557	226	133	2450	27	31	16	11	7.6	e1.8	e.25
4	3.6	1360	2440	285	2420	23	57	17	8.8	7.6	e1.7	e.24
5	3.1	1350	2520	492	2420	22	674	16	7.7	7.4	e1.5	e.27
6	321	1270	2620	486	2420	22	1450	16	6.3	7.1	e1.4	e.27
7	1090	1030	2510	480	2410	21	1680	16	6.0	7.4	e1.2	e.25
8	1070	1020	2550	480	2410	29	1640	16	5.9	7.3	e1.1	e.25
9	959	1020	2440	482	2400	32	1630	19	5.7	6.3	e1.0	e.27
10	769	1020	2710	480	2380	23	1610	65	6.3	7.0	e.93	e.27
11	768	742	3030	321	2370	21	1600	172	5.7	13	e.88	e.27
12	763	731	2860	124	2350	27	1450	407	5.7	9.1	e.80	e.28
13	553	1150	2610	121	2330	224	1210	839	5.7	7.4	e.73	e.32
14	158	820	2480	104	2310	77	1210	872	5.6	7.1	e.66	e.33
15	10	769	2430	17	2290	37	1100	534	7.0	e6.8	e.58	e.34
16	7.7	860	2400	15	1910	27	715	228	7.2	e6.4	e.52	e.40
17	73	1390	2390	14	1280	24	385	132	7.3	e6.1	e.46	e.41
18	124	1660	2440	14	1260	322	384	113	7.6	e5.8	e.40	e.44
19	172	1590	3450	14	1260	710	212	569	7.7	e5.6	e.36	e.49
20	437	1230	2620	14	1260	706	14	709	7.5	e5.2	e.31	e.52
21	434	1010	2480	14	1260	705	7.8	23	7.7	e4.8	e.27	e.59
22	342	1010	2450	14	1260	703	7.3	11	8.0	e4.6	e.23	e.63
23	229	1000	2420	14	1210	700	6.2	39	8.0	e4.3	e.19	e.68
24	231	744	2410	15	790	699	5.7	20	7.8	e4.0	e.16	e.70
25	231	314	2390	14	551	697	5.8	7.9	7.1	e3.8	e.16	e.73
26	169	228	2370	13	552	694	6.7	9.5	7.3	e3.6	e.18	e.82
27	15	227	2360	13	551	400	8.2	8.3	7.6	e3.4	e.19	e.84
28	314	228	2040	221	551	25	8.7	8.1	7.3	e3.1	e.19	e.86
29	127	227	1540	1080	---	23	7.6	7.4	7.3	e3.0	e.18	e.96
30	220	247	1070	1540	---	23	11	8.5	7.8	e2.8	e.20	e1.0
31	216	---	450	1110	---	22	---	28	---	e2.7	e.20	---
TOTAL	9830.6	25744	67173	8477	48935	7957	17172.0	4958.7	247.6	185.2	22.98	14.13
MEAN	317	858	2167	273	1748	257	572	160	8.25	5.97	.74	.47
MAX	1090	1660	3450	1540	2470	710	1680	872	32	13	2.5	1.0
MIN	3.1	227	226	13	551	21	5.7	7.4	5.6	2.7	.16	.21
AC-FT	19500	51060	133200	16810	97060	15780	34060	9840	491	367	46	28
CFSM	.60	1.63	4.11	.52	3.32	.49	1.09	.30	.02	.01	.00	.00
IN.	.69	1.82	4.74	.60	3.45	.56	1.21	.35	.02	.01	.00	.00

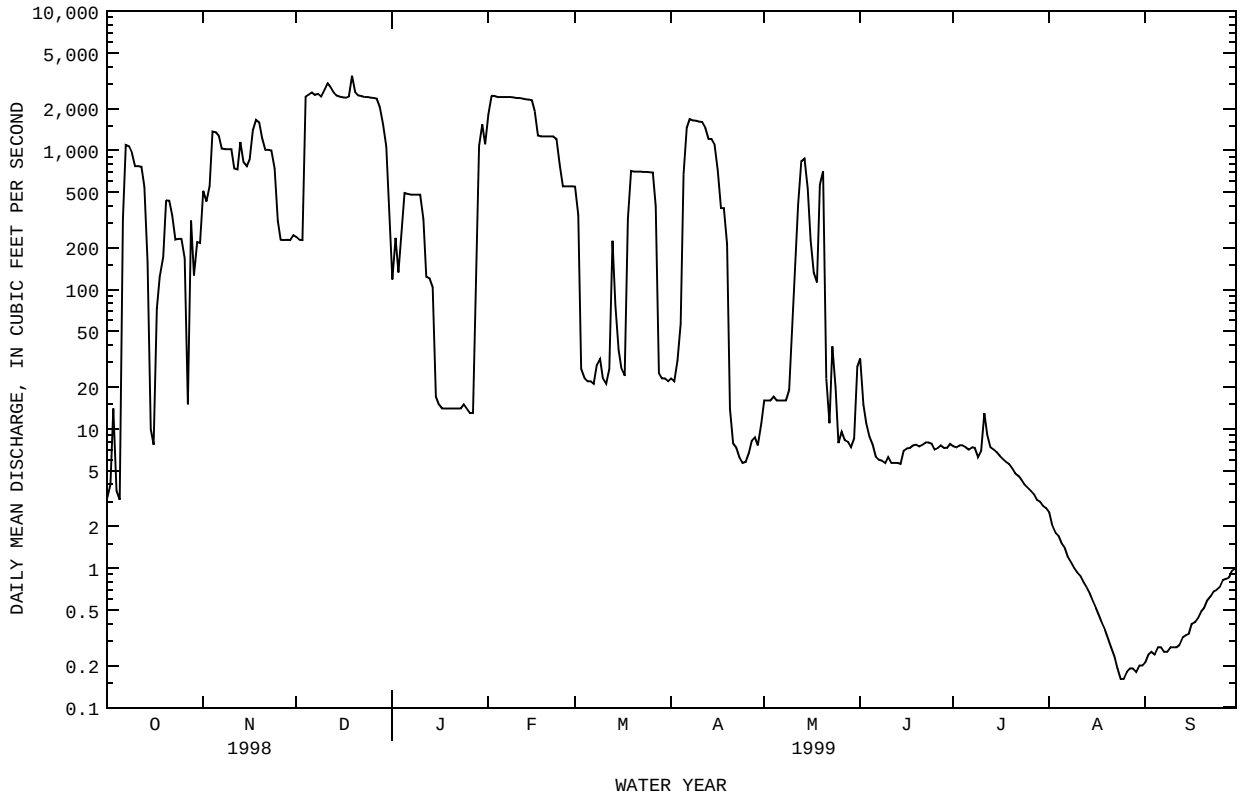
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999z, BY WATER YEAR (WY)

MEAN	144	552	1056	675	728	1179	653	568	306	205	175	18.1
MAX	551	1280	2167	2281	1748	2768	1316	1902	939	839	1205	99.5
(WY)	1994	1995	1999	1998	1999	1992	1997	1995	1995	1992	1992	1994
MIN	2.22	3.12	3.39	3.68	.71	4.17	5.16	15.7	5.95	2.32	.74	.47
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1993	1996	1999	1999

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1992 - 1999z	
ANNUAL TOTAL	221200.3		190717.21			
ANNUAL MEAN	606		523		522	
HIGHEST ANNUAL MEAN					759	1997
LOWEST ANNUAL MEAN					5.52	1996
HIGHEST DAILY MEAN	4730	Jan 8	3450	Dec 19	4850	Feb 21 1997
LOWEST DAILY MEAN	1.6	Sep 30	.16	Aug 24	.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	4.5	Sep 29	.18	Aug 23	.00	Oct 1 1991
INSTANTANEOUS PEAK FLOW			4820	Dec 4	6160	Feb 21 1997
INSTANTANEOUS PEAK STAGE			18.93	Dec 4	19.90	May 14 1995
ANNUAL RUNOFF (AC-FT)	438800		378300		377900	
ANNUAL RUNOFF (CFSM)	1.15		.99		.99	
ANNUAL RUNOFF (INCHES)	15.61		13.46		13.45	
10 PERCENT EXCEEDS	2350		2320		1710	
50 PERCENT EXCEEDS	39		24		19	
90 PERCENT EXCEEDS	13		.56		1.3	

e Estimated
z Period of regulated streamflow.



07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1958 to Sep 1966, Oct 1967 to current year.
BIOCHEMICAL DATA: Dec 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1958 to Sep 1966, Oct 1967 to Sep 1989.
WATER TEMPERATURE: Oct 1958 to Sep 1966, Oct 1967 to Sep 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,710 microsiemens, Aug 14, 1973; minimum daily, 82 microsiemens, Jul 2, 1976, Jul 12, 1988.
WATER TEMPERATURE: Maximum daily, 36.0°C, Aug 6, 1960, Aug 10, 1962; minimum daily, 0.0°C, on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR											
11...	1000	26	176	7.7	13.0	48	9.8	94	.3	64	0
JUN											
14...	1515	5.0	188	8.2	27.5	8.0	8.3	106	1.8	73	--
AUG											
24...	1200	.14	292	7.6	30.5	16	5.4	73	2.3	97	5

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
11...	22	2.4	7.7	.4	3.1	64	9.8	3.8	.14	5.7	111
JUN											
14...	25	2.6	9.0	.5	3.1	74	13	4.3	.18	.75	117
AUG											
24...	32	3.8	18	.8	3.1	92	26	14	.28	4.4	165

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
MAR										
11...	96	47	<.010	.673	.021	.30	.32	E.031	.037	.11
JUN										
14...	103	2	<.010	.316	.027	.38	.41	<.050	.012	.04
AUG										
24...	157	44	<.010	<.050	.059	.42	.47	E.036	.019	.06

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
MAR										
11...	8.2	2.4	<1.0	1	41	<1.0	<1.0	3.5	<1.0	<1.0
JUN										
14...	6.3	7.7	<1.0	1	43	<1.0	<1.0	<1.0	<1.0	1.0
AUG										
24...	8.0	<1.0	<1.0	1	72	<1.0	<1.0	<1.0	<1.0	1.0

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
MAR										
11...	15	<1.0	2.6	<.1	<1.0	1.4	--	<1.0	<1.0	<1.0
JUN										
14...	25	<1.0	<1.0	<.1	<1.0	1.1	--	<1.0	<1.0	<1.0
AUG										
24...	<10	<1.0	13	<.1	1.8	1.9	<1	<1.0	1.3	<1.0

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°28'29", long 95°35'15", Lamar County, Hydrologic Unit 11140301, on right bank at upstream side of highway embankment near right end of upstream bridge on State Highways 19 and 24, 2.3 mi upstream from Auds Creek, 5.5 mi upstream from Hickory Creek, 8.7 mi northeast of Cooper, and 15.6 mi upstream from mouth.

DRAINAGE AREA.--276 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 372.42 ft above sea level. Prior to Nov 8, 1949, nonrecording gage, Nov 8, 1949, to May 21, 1960, water-stage recorder at site 50 ft upstream at datum 9.00 ft higher, and from May 22, 1960, to Sep 30, 1970, at datum 5.00 ft higher. Satellite telemeter at station.

REMARKS.--Records good except those less than 1 ft^3/s, which are fair. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 2, 1944, reached a stage of 35.6 ft, present datum, and flood in 1932 reached about same stage, from information by U.S. Army Corps of Engineers and local residents. In 1928-29, the channel was rectified for a distance of 28 mi upstream and 18 mi downstream from this station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 4	0900	34,400	25.15	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

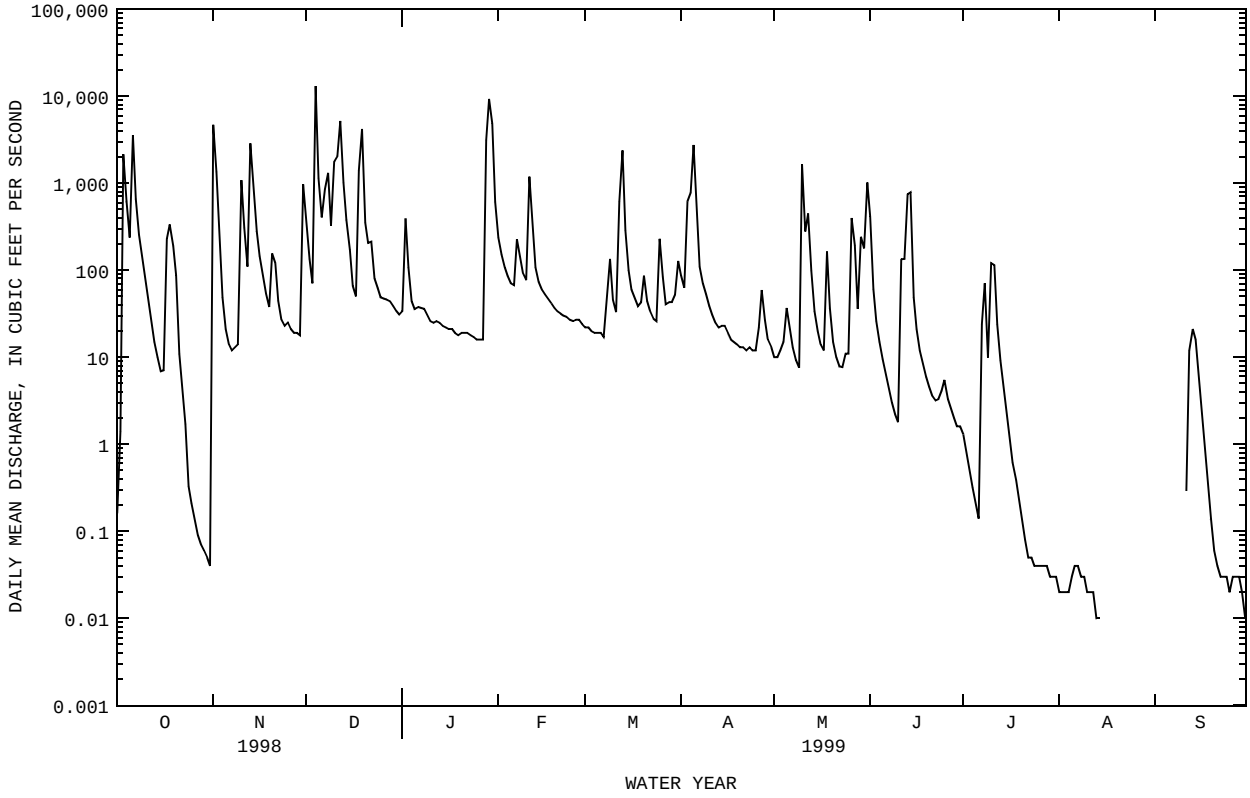
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.16	4680	336	34	238	22	87	10	414	1.3	.02	.00
2	1.4	1350	135	393	151	22	63	10	61	.85	.02	.00
3	2160	226	71	108	108	20	622	12	26	.52	.02	.00
4	624	49	13100	44	86	19	777	15	15	.32	.02	.00
5	238	21	1140	36	71	19	2750	37	9.5	.21	.03	.00
6	3580	14	405	38	67	19	434	22	6.5	.14	.04	.01
7	663	12	854	37	227	17	110	13	4.5	24	.04	.00
8	257	13	1320	36	138	44	71	9.3	3.0	71	.03	.00
9	143	14	324	31	92	135	53	7.6	2.2	9.9	.03	.00
10	80	1080	1790	26	77	46	39	1660	1.8	120	.02	.00
11	44	307	2060	25	1190	33	31	278	134	115	.02	.29
12	25	110	5170	26	378	612	25	449	135	24	.02	12
13	15	2860	1010	25	108	2380	22	98	749	9.2	.01	21
14	10	822	384	23	73	286	23	34	794	4.6	.01	16
15	6.9	283	173	22	60	100	23	20	49	2.4	.00	5.9
16	7.1	145	66	21	53	60	19	14	21	1.2	.00	2.5
17	229	88	50	21	47	48	16	12	12	.62	.00	.92
18	336	54	1390	19	42	39	15	163	8.4	.39	.00	.36
19	191	38	4200	18	37	43	14	37	5.9	.23	.00	.14
20	88	155	355	19	34	87	13	15	4.6	.13	.00	.06
21	11	120	205	19	32	44	13	10	3.6	.08	.00	.04
22	4.8	45	212	19	30	33	12	7.8	3.2	.05	.00	.03
23	1.7	27	80	18	29	28	13	7.7	3.3	.05	.00	.03
24	.33	23	62	17	27	26	12	11	4.1	.04	.00	.03
25	.21	25	49	16	26	229	12	11	5.5	.04	.00	.02
26	.14	21	47	16	27	84	22	398	3.3	.04	.00	.03
27	.09	19	46	16	27	41	59	194	2.6	.04	.00	.03
28	.07	19	44	3110	24	43	27	36	2.0	.04	.00	.03
29	.06	18	39	9320	---	43	16	241	1.6	.03	.00	.02
30	.05	971	34	4850	---	52	13	178	1.6	.03	.00	.01
31	.04	---	31	612	---	128	---	1020	---	.03	.00	---
TOTAL	8717.05	13609	35182	19015	3499	4802	5406	5030.4	2487.2	386.48	0.33	59.45
MEAN	281	454	1135	613	125	155	180	162	82.9	12.5	.011	1.98
MAX	3580	4680	13100	9320	1190	2380	2750	1660	794	120	.04	21
MIN	.04	12	31	16	24	17	12	7.6	1.6	.03	.00	.00
AC-FT	17290	26990	69780	37720	6940	9520	10720	9980	4930	767	.7	118
CFSM	1.02	1.64	4.11	2.22	.45	.56	.65	.59	.30	.05	.00	.01
IN.	1.17	1.83	4.74	2.56	.47	.65	.73	.68	.34	.05	.00	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1999, BY WATER YEAR (WY)

MEAN	224	257	298	221	361	340	392	466	301	98.1	20.6	111
MAX	1784	1406	1527	1172	1483	1223	3017	2461	1792	872	160	584
(WY)	1972	1958	1992	1950	1950	1968	1966	1982	1989	1976	1971	1973
MIN	.000	.000	.000	.16	.81	4.43	2.97	2.43	.28	.000	.000	.000
(WY)	1953	1956	1956	1964	1976	1954	1972	1972	1988	1954	1952	1952

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1950 - 1999	
ANNUAL TOTAL	124021.44		98193.91			
ANNUAL MEAN	340		269		257	
HIGHEST ANNUAL MEAN					541	1957
LOWEST ANNUAL MEAN					34.7	1996
HIGHEST DAILY MEAN	13100	Dec 4	13100	Dec 4	40900	Oct 19 1971
LOWEST DAILY MEAN	.00	Jun 10	.00	Aug 15	.00	Oct 1 1949
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 10	.00	Aug 15	.00	Aug 2 1951
INSTANTANEOUS PEAK FLOW			34400	Dec 4	90600	Oct 19 1971
INSTANTANEOUS PEAK STAGE			25.15	Dec 4	36.16	Oct 19 1971
ANNUAL RUNOFF (AC-FT)	246000		194800		186000	
ANNUAL RUNOFF (CFSM)	1.23		.97		.93	
ANNUAL RUNOFF (INCHES)	16.72		13.23		12.64	
10 PERCENT EXCEEDS	837		422		297	
50 PERCENT EXCEEDS	17		22		11	
90 PERCENT EXCEEDS	.00		.02		.00	



07343210 SULPHUR RIVER BELOW TALCO, TX

LOCATION.--Lat 33°23'26", long 95°03'44", Red River County, Hydrologic Unit 11140302, downstream side at left end of bridge on County Road 2152, 2.3 mi downstream from U.S Highway 271, 1.0 mi downstream from Little Mustang Creek, 2.8 mi northeast of Talco.

DRAINAGE AREA.--1,405 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Dec 1956 to current year. Prior to Oct 1997, published as "near Talco" (station 080343200).

REVISED RECORDS.--WDR TX-76-1: (P).

GAGE.--Water-stage recorder. Datum of gage is 275.48 ft above sea level. Prior to May 21, 1997, at site 2.3 mi upstream at datum 15.34 ft higher. Satellite telemeter at station.

REMARKS.--Records good. The River Crest Steam Electric Generating Plant diverts an unknown amount of water upstream from station. Since Sep 1991, at least 10% of contributing drainage area has been regulated by Cooper Lake (station 07342495, capacity 441,400 acre-ft), 44 mi upstream. Flow may be slightly affected at times by discharge from the flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 8,210 acre-ft. These structures control runoff from 23.4 mi^2 in the Auds and Depot Creek drainage basin.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--35 years (water years 1957-91) prior to regulation by Cooper Lake (station 07342495), 1,408 ft^3/s (1,020,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1957-91).--Maximum discharge 48,000 ft^3/s Dec 11,1971 (gage height, 21.20 ft); no flow at times, at site 2.3 mi upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1908 and 1914 each reached a stage of 27.5 ft, and flood in 1945 reached a stage of 26.5 ft, from information by local residents, at site 2.3 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	278	659	885	5570	548	189	59	709	31	.42	.12
2	22	1680	634	1180	3790	545	197	41	754	21	.28	.12
3	82	3210	458	3230	3220	496	246	37	321	15	1.3	.11
4	601	1270	1540	2100	2950	244	917	43	191	11	1.0	.10
5	642	1100	6240	1050	2680	125	1630	64	129	8.1	.53	.10
6	823	1200	7990	845	2500	80	3510	77	90	5.8	.39	.10
7	2380	1180	6180	733	2470	67	4480	69	70	5.0	.39	.09
8	2130	1070	4990	655	2530	112	3540	56	59	4.4	.40	.16
9	1350	971	4610	613	2550	328	2670	43	47	44	.42	.17
10	1110	978	4120	584	2450	393	2040	51	37	151	.42	.09
11	885	1300	4460	564	2370	267	1660	1150	33	231	.81	3.2
12	756	1220	5570	514	2760	717	1500	1110	89	303	.84	3.1
13	709	1010	6010	325	2970	2600	1400	833	366	193	.51	2.3
14	649	1430	5830	237	2560	4630	1230	887	577	109	.37	1.6
15	414	1930	4590	211	2330	3530	1160	901	778	71	.34	.93
16	237	1280	3640	175	2230	1530	1100	712	298	53	.40	.70
17	150	1020	3130	120	2070	782	874	448	166	26	.44	.56
18	151	1100	2850	94	1440	463	536	441	101	16	.44	.52
19	432	1330	3720	81	1210	370	432	386	71	12	.42	.51
20	346	1470	5860	75	1140	742	370	472	56	8.9	.39	.50
21	391	1390	5790	71	1120	884	188	743	43	6.9	.37	.49
22	434	1150	4550	68	1110	871	95	386	40	5.6	.35	.48
23	416	1000	3730	65	1100	851	62	204	156	4.6	.33	.47
24	328	958	3240	63	1090	839	46	150	93	3.8	.32	.46
25	287	882	2910	60	917	843	36	139	76	3.2	.25	.45
26	277	572	2680	59	654	927	37	133	197	2.6	.15	.44
27	270	374	2530	57	571	911	127	235	199	2.1	.14	.43
28	212	323	2470	58	555	735	248	345	119	1.6	.14	.38
29	167	313	2380	1710	---	309	162	198	73	1.2	.13	.46
30	253	381	1910	5540	---	184	91	236	50	.81	.13	.49
31	242	---	1380	7050	---	165	---	327	---	.59	.13	---
TOTAL	17175	33370	116651	29072	58907	26088	30773	10976	5988	1352.20	12.95	19.63
MEAN	554	1112	3763	938	2104	842	1026	354	200	43.6	.42	.65
MAX	2380	3210	7990	7050	5570	4630	4480	1150	778	303	1.3	3.2
MIN	22	278	458	57	555	67	36	37	33	.59	.13	.09
AC-FT	34070	66190	231400	57660	116800	51750	61040	21770	11880	2680	26	39

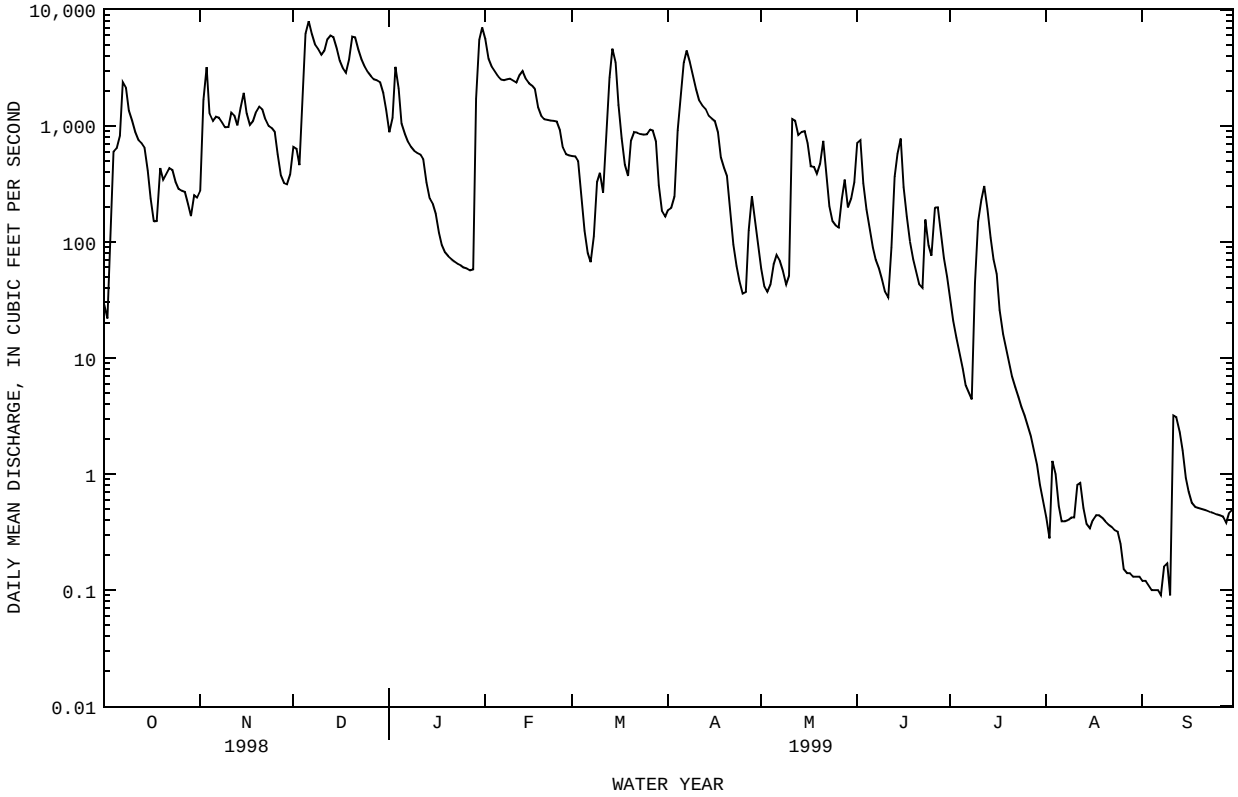
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1999z, BY WATER YEAR (WY)

MEAN	727	1787	2945	1564	2076	2334	1473	1693	743	616	335	121
MAX	2208	5798	5315	4052	6470	4213	4361	6191	1799	3164	1832	299
(WY)	1994	1997	1992	1998	1997	1992	1997	1995	1992	1992	1992	1996
MIN	12.8	12.9	24.0	62.6	12.7	50.3	83.1	88.6	13.3	4.39	.42	.65
(WY)	1996	1996	1996	1996	1996	1996	1996	1998	1998	1993	1999	1999

07343210 SULPHUR RIVER BELOW TALCO, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1992 - 1999z	
ANNUAL TOTAL	427539.8		330384.78			
ANNUAL MEAN	1171		905		1366	
HIGHEST ANNUAL MEAN					2207	1992
LOWEST ANNUAL MEAN					161	1996
HIGHEST DAILY MEAN	9040	Jan 9	7990	Dec 6	31200	Oct 30 1991
LOWEST DAILY MEAN	7.1	Jun 29	.09	Sep 7	.09	Sep 7 1999
ANNUAL SEVEN-DAY MINIMUM	7.3	Jun 26	.11	Sep 1	.11	Sep 1 1999
INSTANTANEOUS PEAK FLOW			8720	Dec 6	g39500	Feb 22 1997
INSTANTANEOUS PEAK STAGE			26.50	Dec 6	26.50	Dec 6 1998
ANNUAL RUNOFF (AC-FT)	848000		655300		989800	
10 PERCENT EXCEEDS	4000		2710		3550	
50 PERCENT EXCEEDS	287		303		277	
90 PERCENT EXCEEDS	8.9		.44		8.7	

z Period of regulated streamflow.
g At site and datum then in use.



08343210 SULPHUR RIVER NEAR TALCO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jan 1965 to Sep 1995, Jan 1968 to Sep 1995, Oct 1996 to current year.
BIOCHEMICAL DATA: Jan 1968 to Sep 1995, Oct 1996 to current year.
PESTICIDE DATA: Jan 1968 to Sep 1995.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1966 to Sep 1991.
WATER TEMPERATURES: Oct 1966 to Sep 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,800 microsiemens Feb 17, 1976; minimum daily 65 microsiemens Jan 15, 1989.
WATER TEMPERATURE: Maximum daily, 39.0°C, Aug 13, 1987; minimum daily, 0.0°C, on several days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
JAN												
27...	1000	58	480	8.0	11.2	35	11	9.8	91	1.7	180	35
MAR												
24...	1431	840	221	7.9	14.0	--	60	10.1	99	1.0	80	2
APR												
27...	1253	148	354	7.7	24.4	--	60	6.6	80	.5	130	21
JUL												
01...	1500	29	297	7.7	30.3	--	62	5.2	70	2.4	110	1
AUG												
25...	1530	.29	702	8.1	34.2	--	16	8.0	116	2.0	220	84

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
JAN											
27...	62	5.5	27	.9	3.4	140	67	18	.17	6.8	--
MAR											
24...	28	2.7	11	.5	3.2	78	18	6.2	.18	5.5	140
APR											
27...	46	4.1	18	.7	3.3	110	37	16	.20	6.6	221
JUL											
01...	38	3.1	16	.7	4.3	110	25	12	.28	9.1	200
AUG											
25...	75	7.4	55	2	4.2	130	120	60	.40	6.8	433

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	RESIDUE VOLA-TILE, SUS-PENDED (MG/L) (00535)	RESIDUE FIXED NON FILTER-ABLE (MG/L) (00540)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
JAN											
27...	278	13	7	6	--	<.010	.169	.022	.25	.28	E.039
MAR											
24...	124	34	--	--	--	<.010	.609	.044	.42	.47	<.050
APR											
27...	199	69	--	--	--	<.010	.224	<.020	--	.37	<.050
JUL											
01...	175	69	--	--	.479	.012	.491	<.020	--	.52	.062
AUG											
25...	410	44	--	--	--	<.010	<.050	.024	.33	.35	E.031

08343210 SULPHUR RIVER NEAR TALCO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
JAN											
27...	<.010	--	8.2	--	--	--	--	--	--	--	--
MAR											
24...	.015	.05	7.1	1.8	<1.0	1	39	<1.0	<1.0	5.3	<1.0
APR											
27...	.025	.08	8.7	1.3	<1.0	1	69	<1.0	<1.0	<1.0	<1.0
JUL											
01...	.048	.15	9.8	4.0	<1.0	2	60	<1.0	<1.0	<1.0	<1.0
AUG											
25...	<.010	--	8.8	2.5	<1.0	2	106	<1.0	<1.0	<1.0	<1.0

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
JAN											
27...	--	--	--	--	--	--	--	--	--	--	--
MAR											
24...	5.8	13	<1.0	1.7	<.1	<1.0	2.3	<1	<1.0	6.1	<1.0
APR											
27...	2.1	<10	<1.0	2.7	<.1	<1.0	2.3	<1	<1.0	3.1	<1.0
JUL											
01...	2.4	<10	<1.0	8.1	<.1	<1.0	2.5	<1	<1.0	1.9	<1.0
AUG											
25...	1.4	<10	<1.0	14	<.1	2.3	3.5	--	<1.0	<1.0	1.8

07343500 WHITE OAK CREEK NEAR TALCO, TX

LOCATION.--Lat 33°19'20", long 95°05'33", Titus County, Hydrologic Unit 11140303, near center of main channel at downstream side of bridge on U.S. Highway 271, 0.8 mi downstream from Lewis Creek, 2.4 mi upstream from Ripley Creek, 2.7 mi south of Talco, and 38.4 mi upstream from mouth.

DRAINAGE AREA.--494 mi^2.

PERIOD OF RECORD.--Dec 1949 to current year.
Water-quality records.-- Chemical data: Oct 1967 to Sep 1998; Biochemical data: Nov 1982 to Sep 1985, Oct 1991 to Sep 1998; Specific conductance: Oct 1967 to Sep 1989; Water temperature: Oct 1967 to Sep 1989.

REVISED RECORDS.--WSP 1711: Elevation of historical maximum.

GAGE.--Water-stage recorder. Datum of gage is 286.45 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1973, at least 10% of contributing drainage area has been regulated by Lake Sulphur Springs (station 07343460, capacity 52,400 acre-ft). There are several small diversions upstream from station for municipal supply. The cities of Sulphur Springs and Mount Vernon discharged wastewater effluent into tributaries above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1951-72) prior to regulation by Lake Sulphur Springs 405 ft^3/s (293,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1951-72).--Maximum discharge 48,000 ft^3/s Dec 11,1971 (gage height, 21.20 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, 22.9 ft Mar 31, 1945, from floodmarks and from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	19	823	153	1620	34	108	69	417	22	3.9	3.0
2	5.3	206	1090	694	1630	34	242	44	739	19	3.9	3.1
3	347	545	1100	1160	1460	32	272	34	868	17	3.9	3.5
4	1110	676	1660	1320	929	27	855	37	1020	15	3.8	3.5
5	1370	826	3070	1280	532	23	1270	83	1100	14	3.7	3.8
6	2050	990	4760	1220	434	23	1520	108	528	14	3.5	4.1
7	4890	1120	4530	744	440	21	1620	347	147	15	3.6	5.0
8	4450	944	3230	485	494	76	1700	210	112	15	3.8	4.7
9	3690	437	2280	430	486	639	1410	85	111	13	3.7	3.9
10	2690	404	1900	401	385	1100	871	76	108	13	3.5	3.6
11	2000	583	2110	313	256	1200	522	332	105	13	3.5	5.2
12	1100	736	2700	174	179	1430	431	789	108	33	3.3	6.2
13	285	1010	3570	114	130	2070	391	854	113	36	3.2	7.2
14	117	1530	3460	92	104	2620	275	823	134	20	3.6	8.4
15	79	1960	2590	85	85	3720	144	507	318	14	3.7	7.5
16	60	2520	2120	79	73	3460	98	186	147	11	3.5	6.6
17	53	2570	1760	72	65	2480	95	106	110	8.7	3.2	5.4
18	67	2120	1240	67	60	1900	80	749	84	7.4	3.0	4.9
19	87	1850	895	64	56	1270	60	1350	83	6.8	3.0	4.1
20	290	1350	1180	62	52	457	49	3450	82	6.2	3.3	4.1
21	569	710	1470	59	48	255	42	4820	82	5.6	3.4	3.9
22	707	640	1600	58	45	202	39	3510	82	5.2	3.3	3.5
23	574	560	1710	56	43	164	36	2610	80	4.9	3.0	3.2
24	440	334	1340	56	40	131	34	1870	79	4.7	2.9	3.1
25	215	186	805	60	38	111	33	663	79	4.5	2.8	3.0
26	81	126	581	57	37	107	36	184	79	4.5	2.9	3.0
27	43	97	517	49	36	133	42	137	309	4.5	3.1	2.8
28	28	82	469	45	34	171	86	155	179	4.4	3.3	2.7
29	20	68	424	340	---	125	238	213	52	4.5	3.4	2.9
30	16	271	300	1020	---	97	135	155	30	4.5	3.6	3.1
31	13	---	192	1490	---	97	---	172	---	4.2	3.3	---
TOTAL	27451.4	25470	55476	12299	9791	24209	12734	24728	7485	364.6	105.6	129.0
MEAN	886	849	1790	397	350	781	424	798	250	11.8	3.41	4.30
MAX	4890	2570	4760	1490	1630	3720	1700	4820	1100	36	3.9	8.4
MIN	5.1	19	192	45	34	21	33	34	30	4.2	2.8	2.7
AC-FT	54450	50520	110000	24400	19420	48020	25260	49050	14850	723	209	256
CFSM	1.79	1.72	3.62	.80	.71	1.58	.86	1.61	.51	.02	.01	.01
IN.	2.07	1.92	4.18	.93	.74	1.82	.96	1.86	.56	.03	.01	.01

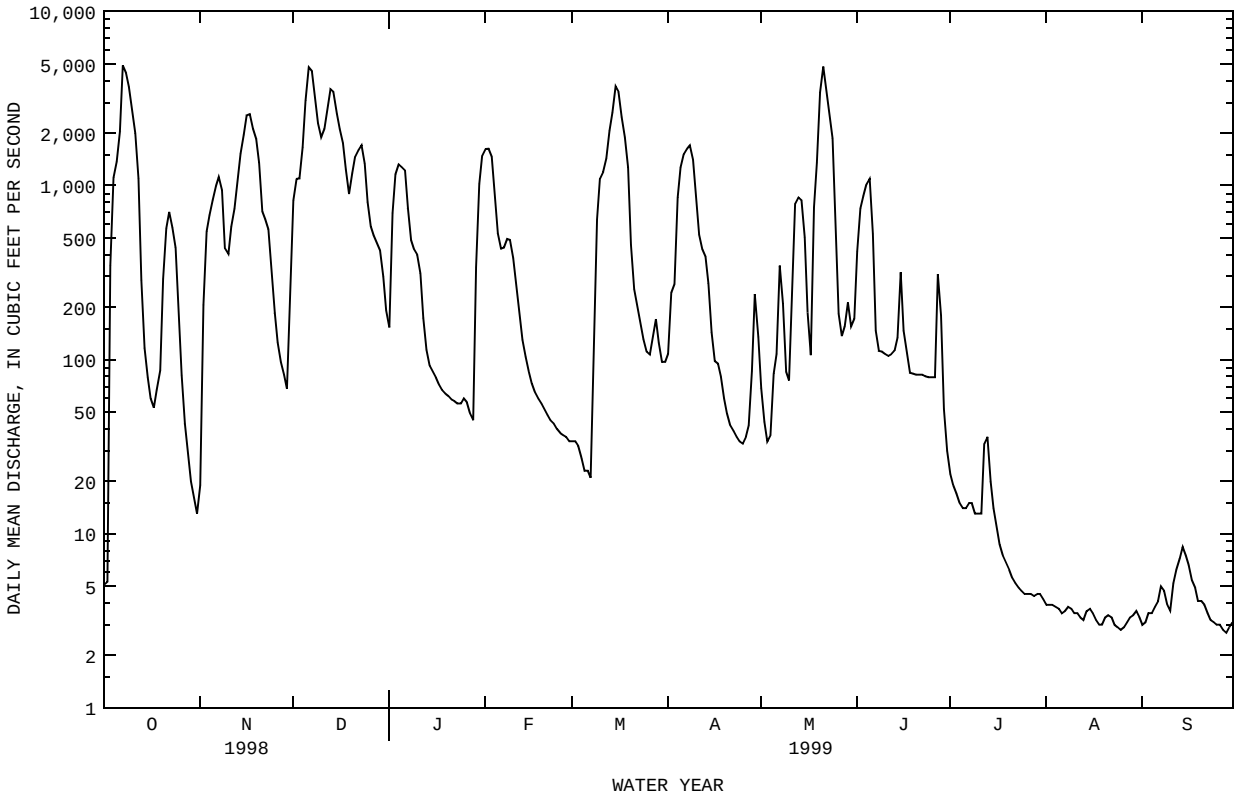
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1999z, BY WATER YEAR (WY)

MEAN	260	750	963	643	882	940	718	695	465	316	81.7	68.7
MAX	1744	2984	2889	3222	3381	3491	2329	3166	2620	3743	898	867
(WY)	1982	1975	1983	1980	1997	1990	1973	1990	1981	1992	1992	1974
MIN	.000	.34	3.22	2.27	5.90	12.2	29.0	7.35	.83	.39	.000	.000
(WY)	1979	1976	1990	1976	1996	1996	1981	1988	1988	1978	1978	1978

07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1973 - 1999z	
ANNUAL TOTAL	249454.84		200242.6			
ANNUAL MEAN	683		549		563	
HIGHEST ANNUAL MEAN					1160	1992
LOWEST ANNUAL MEAN					55.8	1996
HIGHEST DAILY MEAN	8840	Jan 9	4890	Oct 7	31700	Jan 24 1980
LOWEST DAILY MEAN	.89	Sep 4	2.7	Sep 28	.00	Aug 30 1973
ANNUAL SEVEN-DAY MINIMUM	.96	Aug 31	2.9	Sep 24	.00	Jul 24 1978
INSTANTANEOUS PEAK FLOW			5790	May 20	34600	Jan 24 1980
INSTANTANEOUS PEAK STAGE			17.83	May 20	19.86	Jan 24 1980
ANNUAL RUNOFF (AC-FT)	494800		397200		408200	
ANNUAL RUNOFF (CFSM)	1.38		1.11		1.14	
ANNUAL RUNOFF (INCHES)	18.78		15.08		15.50	
10 PERCENT EXCEEDS	2090		1700		1570	
50 PERCENT EXCEEDS	91		107		57	
90 PERCENT EXCEEDS	3.1		3.6		1.7	

z Period of regulated streamflow.



07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX

LOCATION.--Lat 33°18'16", long 94°09'38", Bowie-Cass County line, Hydrologic Unit 11140302, in intake structure of Wright Patman Dam on the Sulphur River, 0.5 mi upstream from U.S. Highway 59, 10 mi southwest of Texarkana, and 44.5 mi upstream from mouth.

DRAINAGE AREA.--3,443 mi^2.

PERIOD OF RECORD.--Jul 1953 to current year. Published as "Texarkana Reservoir" prior to Oct 1970 and as "Lake Texarkana" from Oct 1970 to Sep 1972.
Water-quality Records.--Chemical data: Mar 1967 to Sep 1984, Feb 1992 to Sep 1998.

REVISED RECORDS.--WSP 1561: 1957(M). WSP 1711: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Jul 19 to Dec 31, 1953, nonrecording gage at site about 125 ft upstream at datum 200 ft higher.

REMARKS.--The lake is formed by a rolled earthfill dam 18,500 ft long, including a 200-foot uncontrolled spillway and a 1-mile long dike. Temporary impoundment of water began Jul 2, 1953, and deliberate impoundment began Jun 27, 1956. The dam was completed in Dec 1957. The flood- control outlet works consist of two 20.0-foot-diameter conduits controlled by four 10.0- by 20.0-foot electrically driven broome-type gates. Flow is affected at times by discharge from the flood-detention pools of 25 floodwater-retarding structures with a combined detention capacity of 13,450 acre-ft. These structures control runoff from 40.0 mi^2 in the Sulphur River and Langford Creek drainage basins. Outflow discharging over the spillway passes into an outlet channel and then to the Sulphur River. The lake was built for flood control and for conservation. An unknown amount of water is diverted for industrial and municipal uses. The capacity table is based on a 1948 survey. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	286.0
Crest of spillway	259.5
Top of conservation pool	220.0
Lowest gated outlet (invert)	200.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,912,100 acre-ft, May 9, 1966 (elevation, 252.64 ft); minimum since first appreciable storage and after deliberate impoundment began, 137,500 acre-ft, Sep 5, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 471,300 acre-ft, Dec 21 (elevation, 230.84 ft); minimum contents, 189,600 acre-ft, Dec 4 (elevation, 222.01 ft).

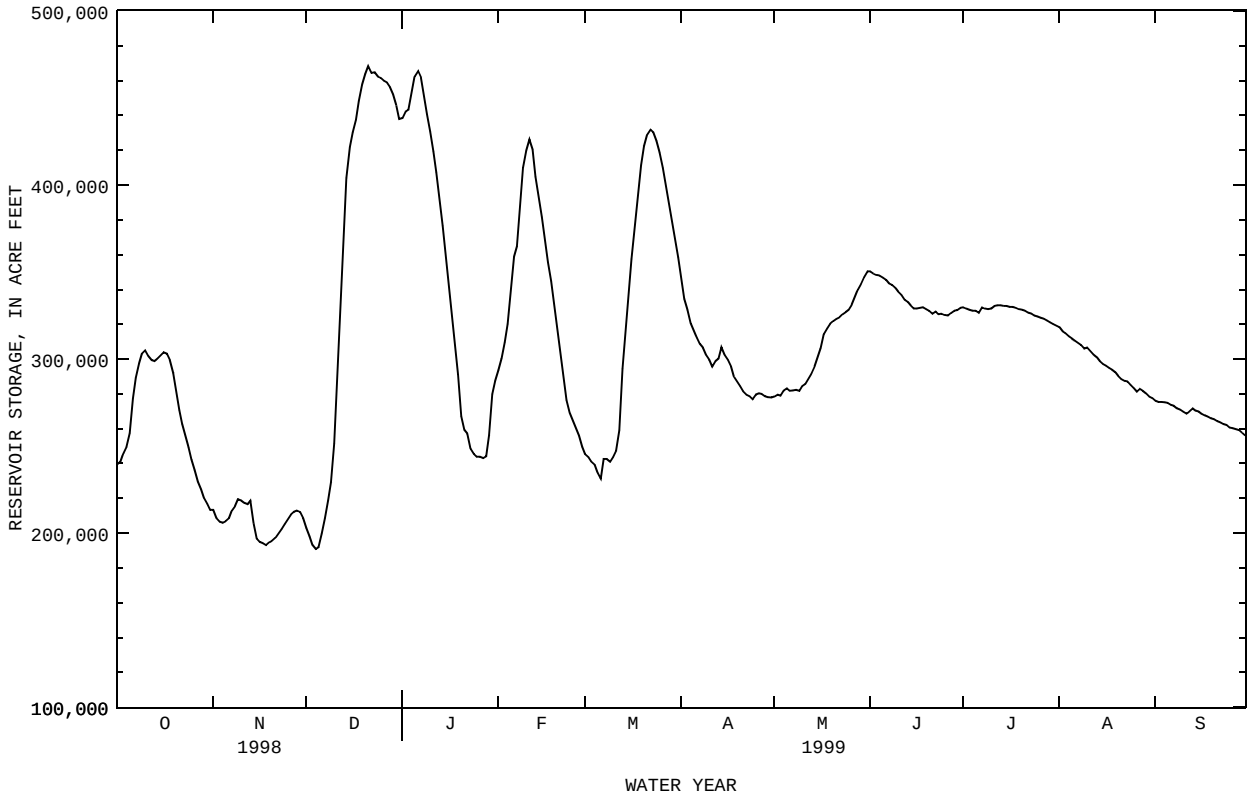
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	239600	213300	202800	438400	293600	245400	347000	278500	350400	329700	318300	276100
2	241300	208500	198200	442300	300400	243800	334600	279700	349000	329000	316100	275500
3	246000	206600	193100	443400	309700	241300	328400	279100	348300	328400	314800	275500
4	249900	206100	191000	453600	320300	239400	320600	282100	348000	327700	313200	275200
5	257500	207000	192200	462400	337900	234800	316700	283300	347000	327700	312000	274900
6	277300	208500	199900	465600	358900	231300	312300	281800	345600	326700	310700	273700
7	289300	213100	208500	462000	364800	242700	308800	282100	343600	329700	309400	273100
8	297600	215600	219000	450900	389200	242700	306600	282400	342600	329000	308200	271700
9	303200	219500	229400	440700	410000	241300	302500	281800	340900	328700	306000	271100
10	305000	218700	251500	430700	419700	243800	299700	284500	338900	329000	306600	269900
11	301600	217400	288100	419300	426100	247600	295700	286000	336900	330700	304700	268700
12	299400	216700	335300	407400	420500	259200	298800	288700	334300	331000	302800	269900
13	298800	218700	374200	391300	404800	294500	300400	291700	333000	331000	301300	271700
14	300400	205800	404100	376700	393500	316400	306900	295700	331000	330700	298800	270500
15	302200	196700	422000	359300	381700	338900	302500	301300	329000	330700	297300	269900
16	303800	195000	430300	342300	369300	357500	299700	306300	329000	330000	296300	268400
17	303200	194300	437600	325800	355800	374200	295700	314500	329400	330000	295100	267600
18	299700	193100	448500	309700	345000	391700	289900	317700	329700	329400	293900	267000
19	292000	194800	457600	291100	330700	411500	287200	320300	328700	328700	292700	266100
20	281800	195800	464000	267300	318700	422400	284500	321900	327700	328400	290200	265500
21	270800	197500	468400	259200	303800	429200	281500	323200	326100	327700	288700	264400
22	262600	199900	464400	257200	290200	431900	279700	324100	327400	326700	287500	263500
23	256100	202300	464800	248500	276400	430300	278800	325800	325800	326100	287200	262600
24	249300	205300	462400	245700	269000	425400	277000	327100	326100	325100	285100	262100
25	242400	208000	461600	244000	264700	418600	279700	328400	325400	324500	283600	260600
26	236100	210600	460000	244000	260600	410000	280300	331300	325100	323800	281200	260300
27	229700	212300	459200	243200	256100	399300	280000	335900	326400	323200	283000	259800
28	225200	213100	456400	244300	249600	388500	278800	339900	327700	322200	281800	259200
29	220300	212300	452100	256300	---	378800	278200	343300	328100	321200	280300	257800
30	216900	208500	445800	280000	---	369000	277900	347300	329400	320300	278500	256100
31	213300	---	438000	287500	---	358600	---	350400	---	319300	277600	---
MAX	305000	219500	468400	465600	426100	431900	347000	350400	350400	331000	318300	276100
MIN	213300	193100	191000	243200	249600	231300	277000	278500	325100	319300	277600	256100
(+)	222.94	222.75	230.02	225.62	224.32	227.83	225.29	227.58	226.94	226.63	225.28	224.55
(@)	-29100	-4800	+229500	-150500	-37900	+109000	-80700	+72500	-21000	-10100	-41700	-21500

CAL YR 1998 MAX 658400 MIN 187400 (@) +190400
WTR YR 1999 MAX 468400 MIN 191000 (@) +13700

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued



07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX

LOCATION.--Lat 33°03'22", long 95°08'22", Franklin County, Hydrologic Unit 11140305, in brick meter house located on upstream side and near center of dam on Big Cypress Creek, 1.5 mi upstream from andy's Creek, 2.6 mi downstream from Panther Creek, and 10.3 mi southeast of Mount Vernon.

DRAINAGE AREA.--75.0 mi^2.

PERIOD OF RECORD.--February 1974 to September 1991, June 1998 to current year.
Water-quality records.--Chemical data: October 1974 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 5,230 ft long. Deliberate impoundment began Jul 7, 1970, and the dam was completed Feb 15, 1971. The spillway is an excavated channel through natural ground 1,000 ft wide located to the left of left end of dam. The service spillway is a rectangular 23x23 ft drop inlet located near the right end of dam. the low- flow outlet works consist of an 18 in. diameter concrete pipe that has duplicate valve controls and discharges into the service spillway conduit. Figures given herein represent total contents. Data regarding the dam and lake are given in the following table:

	Elevation (feet)
Top of dam	397.0
Crest of spillway	385.0
Crest of spillway	378.0
Lowest gated outlet (invert)	317.75

COOPERATION.-The capacity table, provided by the Franklin County Water District, was based on data prepared by Wisenbaker, Fix, and Associates, Consulting Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 85,050 acre-ft, Dec 26, 1988 (elevation, 381.33 ft); minimum contents, 59,440 acre-ft, Nov 12-14, 1978 (elevation, 373.79 ft).

EXTREMES FOR WATER YEAR 1998.--Maximum contents, 66,360 acre-ft, Jun 30 (elevation, 377.62 ft); minimum contents, 60,580 acre-ft, Sep 11 (elevation, 375.89 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 73,900 acre-ft, Dec 12 (elevation, 379.75 ft); minimum contents, 62,370 acre-ft, Sep 30 (elevation, 376.44 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	66220	63200	61450
2	---	---	---	---	---	---	---	---	---	66190	63100	61390
3	---	---	---	---	---	---	---	---	---	66150	63000	61360
4	---	---	---	---	---	---	---	---	---	66050	62930	61260
5	---	---	---	---	---	---	---	---	---	65980	62900	61160
6	---	---	---	---	---	---	---	---	---	65940	62830	61100
7	---	---	---	---	---	---	---	---	---	65880	62900	61030
8	---	---	---	---	---	---	---	---	---	65770	62830	60960
9	---	---	---	---	---	---	---	---	---	65300	62770	60740
10	---	---	---	---	---	---	---	---	---	65160	62700	60610
11	---	---	---	---	---	---	---	---	---	65060	62630	60710
12	---	---	---	---	---	---	---	---	---	64990	62730	61000
13	---	---	---	---	---	---	---	---	---	64890	62700	61520
14	---	---	---	---	---	---	---	---	---	64820	62700	61650
15	---	---	---	---	---	---	---	---	---	64750	62600	62770
16	---	---	---	---	---	---	---	---	---	64680	62560	65090
17	---	---	---	---	---	---	---	---	---	64580	62500	65190
18	---	---	---	---	---	---	---	---	---	64510	62430	65230
19	---	---	---	---	---	---	---	---	---	64440	62370	65260
20	---	---	---	---	---	---	---	---	---	64340	62300	65230
21	---	---	---	---	---	---	---	---	---	64240	62210	65190
22	---	---	---	---	---	---	---	---	---	64170	62140	65190
23	---	---	---	---	---	---	---	---	---	64070	62080	65120
24	---	---	---	---	---	---	---	---	---	64000	62040	65090
25	---	---	---	---	---	---	---	---	---	63900	61980	65060
26	---	---	---	---	---	---	---	---	---	63800	61910	64990
27	---	---	---	---	---	---	---	---	---	63700	61850	64990
28	---	---	---	---	---	---	---	---	---	63600	61780	64920
29	---	---	---	---	---	---	---	---	---	63500	61680	64890
30	---	---	---	---	---	---	---	---	---	63370	61620	64850
31	---	---	---	---	---	---	---	---	---	63270	61520	---
MAX	---	---	---	---	---	---	---	---	---	66220	63200	65260
MIN	---	---	---	---	---	---	---	---	---	63270	61520	60610

07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX--Continued

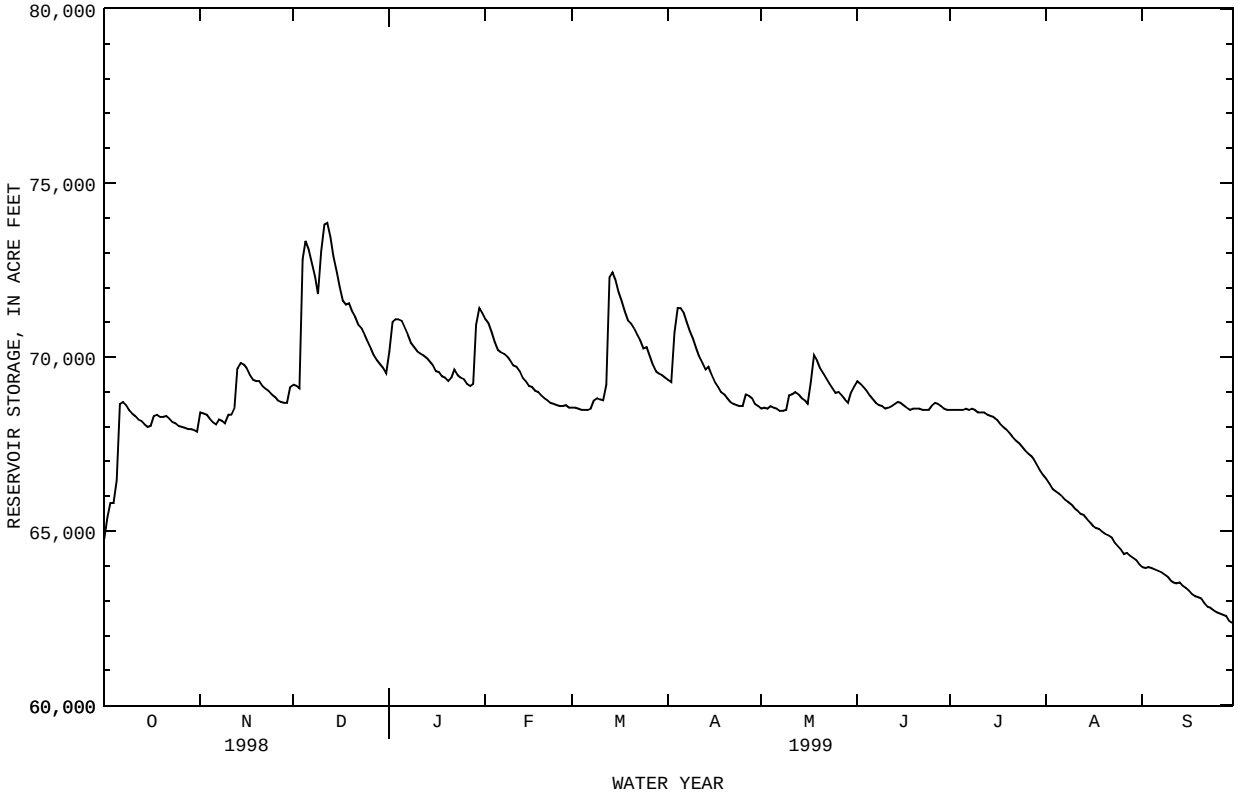
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64780	68410	69210	70170	71090	68550	69350	68520	69310	68480	66500	63970
2	65400	68380	69170	71010	70970	68550	69280	68550	69240	68480	66360	63940
3	65810	68350	69100	71090	70710	68520	70710	68520	69140	68480	66220	63970
4	65810	68240	72810	71090	70440	68480	71410	68590	69030	68480	66150	63940
5	66470	68140	73340	71050	70210	68480	71410	68550	68900	68480	66080	63900
6	68660	68070	73090	70820	70140	68480	71270	68520	68790	68520	66010	63870
7	68720	68210	72710	70630	70100	68520	71010	68450	68690	68480	65910	63830
8	68620	68170	72310	70400	70020	68760	70740	68450	68620	68520	65840	63770
9	68480	68100	71810	70290	69910	68830	70520	68480	68590	68480	65770	63700
10	68380	68350	73050	70170	69760	68790	70250	68900	68520	68410	65670	63600
11	68310	68350	73820	70100	69720	68760	70020	68930	68550	68410	65600	63530
12	68210	68550	73860	70060	69600	69210	69830	69000	68590	68410	65500	63500
13	68170	69680	73450	69980	69410	72310	69640	68930	68660	68350	65470	63530
14	68070	69830	72910	69870	69310	72440	69720	68830	68720	68310	65360	63430
15	68000	69790	72440	69760	69170	72210	69490	68760	68690	68280	65260	63370
16	68030	69680	72010	69600	69140	71880	69280	68660	68620	68210	65160	63300
17	68310	69490	71610	69570	69030	71610	69140	69280	68550	68100	65090	63200
18	68350	69350	71510	69450	69000	71310	69000	70060	68480	68000	65060	63130
19	68280	69310	71550	69410	68900	71050	68930	69910	68520	67930	64990	63100
20	68280	69310	71310	69310	68830	70970	68830	69680	68520	67830	64920	63070
21	68310	69170	71160	69410	68760	70820	68720	69530	68520	67720	64890	62930
22	68240	69100	70930	69640	68690	70630	68660	69380	68480	67620	64820	62830
23	68140	69030	70830	69490	68660	70480	68620	69240	68480	67550	64680	62800
24	68100	68930	70630	69410	68620	70250	68590	69100	68480	67450	64580	62730
25	68030	68860	70440	69380	68590	70290	68590	68970	68590	67340	64480	62670
26	68000	68760	70250	69240	68590	70020	68930	69000	68690	67240	64340	62630
27	67970	68720	70060	69170	68620	69790	68900	68900	68660	67170	64370	62600
28	67930	68690	69910	69240	68550	69600	68830	68790	68590	67060	64300	62560
29	67930	68690	69790	70930	---	69530	68660	68690	68520	66890	64240	62430
30	67900	69140	69680	71410	---	69490	68590	69000	68480	66750	64170	62370
31	67860	---	69530	71270	---	69410	---	69170	---	66610	64040	---
MAX	68720	69830	73860	71410	71090	72440	71410	70060	69310	68520	66500	63970
MIN	64780	68070	69100	69170	68550	68480	68590	68450	68480	66610	64040	62370
(+)	378.05	378.42	378.53	378.99	378.35	378.50	378.26	378.43	378.23	377.69	376.94	376.44
(@)		+1280	+390	+1740	-2720	+860	-820	+580	-690	-1870	-2570	-1670

WTR YR 1999 MAX 73860 MIN 62370

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX--Continued



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07344486 BRUSHY CREEK AT SCROGGINS, TX

LOCATION.--Lat 32°58'32", long 95°11'03", Franklin County, Hydrologic Unit 11140305, at downstream side of highway embankment near left end of bridge on Farm Road 115, 0.1 mi north of Scroggins, 0.3 mi downstream from Briary Creek, 2.5 mi upstream from South Brushy Creek, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--23.4 mi^2.

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

REVISED RECORDS.--WDR TX-89-1: 1983-88 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 343.90 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversions.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jul 11	1015	915	12.85	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

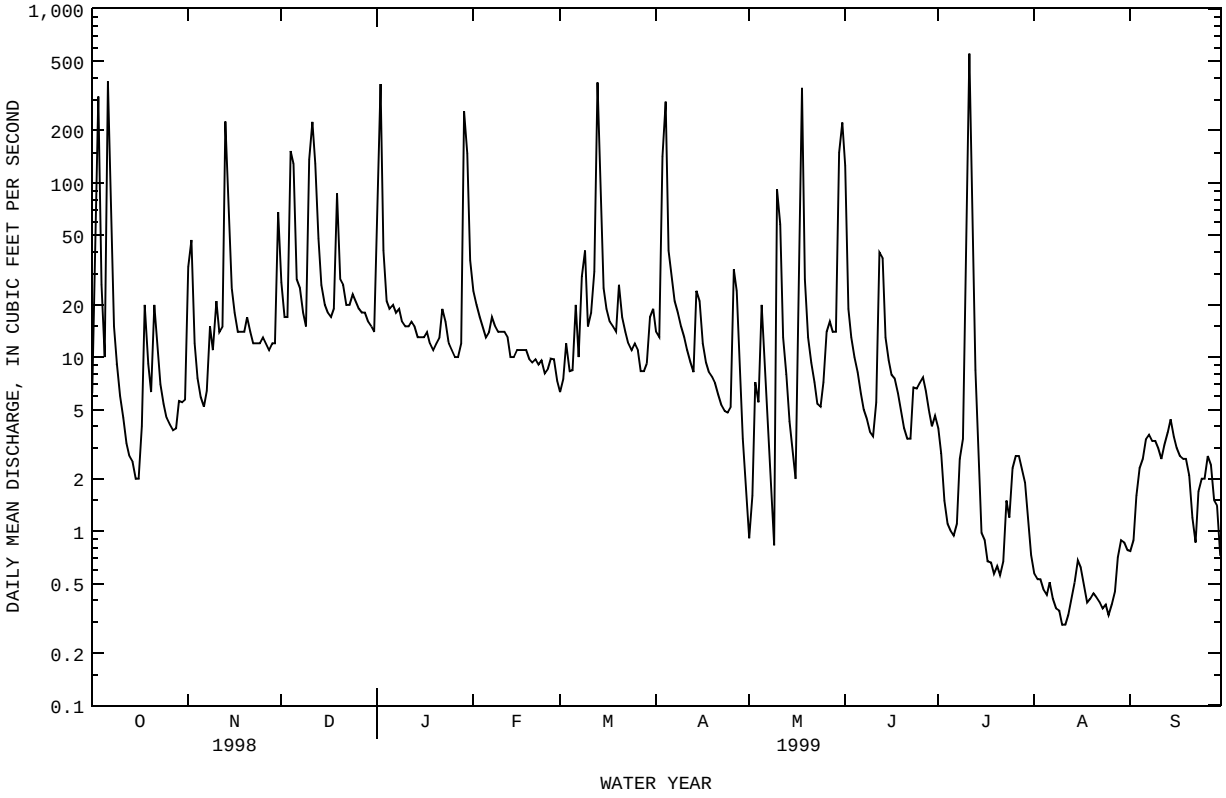
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	33	27	63	24	6.3	14	.91	126	3.9	.57	.77
2	28	47	17	371	20	7.5	13	1.6	19	2.8	.53	.89
3	315	12	17	41	17	12	142	7.2	13	1.5	.53	1.6
4	26	7.6	153	21	15	8.3	294	5.5	10	1.1	.46	2.3
5	10	5.9	129	19	13	8.4	41	20	8.2	1.0	.43	2.6
6	384	5.2	28	20	14	20	29	6.9	6.2	.94	.51	3.4
7	71	6.4	25	18	17	10	21	2.9	5.0	1.1	.41	3.6
8	15	15	18	19	15	29	18	1.5	4.4	2.6	.36	3.3
9	9.2	11	15	16	14	41	15	.83	3.7	3.4	.35	3.3
10	6.0	21	137	15	14	15	13	92	3.5	92	.29	3.0
11	4.5	14	225	15	14	18	11	58	5.5	555	.29	2.6
12	3.2	15	129	16	13	31	9.4	13	40	50	.33	3.1
13	2.7	226	48	15	10	379	8.2	8.0	37	8.4	.41	3.7
14	2.5	69	26	13	10	89	24	4.3	13	3.3	.51	4.4
15	2.0	25	20	13	11	25	21	2.9	9.6	.98	.68	3.5
16	2.0	18	18	13	11	19	12	2.0	7.9	.89	.62	3.0
17	4.0	14	17	14	11	16	9.3	24	7.5	.67	.49	2.7
18	20	14	19	12	11	15	8.2	352	6.2	.66	.39	2.6
19	9.2	14	87	11	9.7	14	7.7	28	4.8	.57	.41	2.6
20	6.3	17	28	12	9.3	26	7.1	13	3.9	.63	.44	2.1
21	20	14	26	13	9.7	17	6.1	9.3	3.4	.56	.42	1.2
22	12	12	20	19	9.1	14	5.3	7.2	3.4	.67	.39	.86
23	7.0	12	20	16	9.6	12	4.9	5.4	6.7	1.5	.36	1.7
24	5.4	12	23	12	8.1	11	4.8	5.2	6.6	1.2	.38	2.0
25	4.5	13	21	11	8.6	12	5.2	7.2	7.1	2.3	.33	2.0
26	4.1	12	19	10	9.8	11	32	14	7.7	2.7	.38	2.7
27	3.8	11	18	10	9.7	8.3	24	16	6.4	2.7	.45	2.4
28	3.9	12	18	12	7.3	8.3	7.7	14	4.9	2.3	.71	1.5
29	5.6	12	16	259	---	9.2	3.4	14	4.0	1.9	.89	1.4
30	5.5	68	15	148	---	17	1.7	150	4.6	1.2	.86	.72
31	5.7	---	14	36	---	19	---	223	---	.73	.78	---
TOTAL	1004.3	768.1	1393	1283	344.9	928.3	813.0	1109.84	389.2	749.20	14.96	71.54
MEAN	32.4	25.6	44.9	41.4	12.3	29.9	27.1	35.8	13.0	24.2	.48	2.38
MAX	384	226	225	371	24	379	294	352	126	555	.89	4.4
MIN	2.0	5.2	14	10	7.3	6.3	1.7	.83	3.4	.56	.29	.72
AC-FT	1990	1520	2760	2540	684	1840	1610	2200	772	1490	30	142

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1999, BY WATER YEAR (WY)

MEAN	14.4	22.7	31.5	22.5	27.5	27.4	21.0	24.7	14.7	8.84	3.63	4.11
MAX	80.5	143	103	62.7	68.8	66.1	54.9	68.2	70.0	32.2	24.4	41.7
(WY)	1992	1995	1983	1993	1997	1990	1990	1991	1981	1981	1997	1979
MIN	.68	2.51	2.99	6.33	5.31	8.15	3.64	1.64	.26	.007	.003	.14
(WY)	1979	1990	1979	1981	1996	1986	1978	1988	1984	1978	1985	1984

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1978 - 1999	
ANNUAL TOTAL	7314.37		8869.34			
ANNUAL MEAN	20.0		24.3		19.0	
HIGHEST ANNUAL MEAN					35.6	1995
LOWEST ANNUAL MEAN					5.21	1996
HIGHEST DAILY MEAN	384	Oct 6	555	Jul 11	2800	Nov 5 1994
LOWEST DAILY MEAN	.00	Sep 8	.29	Aug 10	.00	Jun 28 1978
ANNUAL SEVEN-DAY MINIMUM	.08	Sep 5	.35	Aug 7	.00	Jun 28 1978
INSTANTANEOUS PEAK FLOW			915	Jul 11	7520	Dec 2 1982
INSTANTANEOUS PEAK STAGE			12.85	Jul 11	14.39	Dec 2 1982
ANNUAL RUNOFF (AC-FT)	14510		17590		13760	
10 PERCENT EXCEEDS	33		36		30	
50 PERCENT EXCEEDS	8.6		9.7		7.2	
90 PERCENT EXCEEDS	.27		.75		.46	

07344486 BRUSHY CREEK AT SCROGGINS, TX--Continued



07344488 MONTICELLO RESERVOIR NEAR MOUNT PLEASANT, TX

LOCATION.--Lat 33°04'48", long 90°50'23", Titus County, Hydrologic Unit 11140305, on old intake structure, approximately 11 mi from Mount Pleasant, and approximately 16 mi from Mount Vernon.

DRAINAGE AREA.--36 mi^2.

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

GAGE.--Datum of gage is sea level. Satellite telemeter at station

COOPERATION.--The capacity table was furnished by the Texas Water Development Board in May 1998 and designated Table No. 1.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 36,180 acre-ft, Sep 14, 1998 (elevation, 340.69 ft); minimum contents, 32,960 acre-ft, May 29-30, 1999 (elevation, 339.11 ft).

EXTREMES FOR WATER YEAR 1998.--Maximum contents, 36,180 acre-ft, Sep 14 (elevation, 340.69 ft); minimum contents, 33,830 acre-ft, Sep 30 (elevation, 339.55 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 35,970 acre-ft, Oct 7 (elevation, 340.59 ft); minimum contents, 32,960 acre-ft, May 29-30 (elevation, 339.11 ft).

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	34860	34760
2	---	---	---	---	---	---	---	---	---	---	34860	34760
3	---	---	---	---	---	---	---	---	---	---	34840	34780
4	---	---	---	---	---	---	---	---	---	---	34860	34760
5	---	---	---	---	---	---	---	---	---	---	34970	34720
6	---	---	---	---	---	---	---	---	---	---	35010	34740
7	---	---	---	---	---	---	---	---	---	---	35110	34760
8	---	---	---	---	---	---	---	---	---	---	35150	34760
9	---	---	---	---	---	---	---	---	---	34890	35150	34700
10	---	---	---	---	---	---	---	---	---	34890	35130	34660
11	---	---	---	---	---	---	---	---	---	34860	35130	34820
12	---	---	---	---	---	---	---	---	---	34840	35200	35130
13	---	---	---	---	---	---	---	---	---	34860	35260	35970
14	---	---	---	---	---	---	---	---	---	34860	35320	35180
15	---	---	---	---	---	---	---	---	---	34860	35450	34930
16	---	---	---	---	---	---	---	---	---	34930	35470	34520
17	---	---	---	---	---	---	---	---	---	34930	35490	34150
18	---	---	---	---	---	---	---	---	---	34930	35530	34190
19	---	---	---	---	---	---	---	---	---	34950	35450	34240
20	---	---	---	---	---	---	---	---	---	34950	35300	34280
21	---	---	---	---	---	---	---	---	---	34910	35200	34280
22	---	---	---	---	---	---	---	---	---	34910	35050	34320
23	---	---	---	---	---	---	---	---	---	34890	34970	34240
24	---	---	---	---	---	---	---	---	---	34890	34860	34170
25	---	---	---	---	---	---	---	---	---	34860	34760	34090
26	---	---	---	---	---	---	---	---	---	34860	34740	34010
27	---	---	---	---	---	---	---	---	---	34860	34760	33990
28	---	---	---	---	---	---	---	---	---	34860	34760	33930
29	---	---	---	---	---	---	---	---	---	34860	34760	33870
30	---	---	---	---	---	---	---	---	---	34820	34760	33830
31	---	---	---	---	---	---	---	---	---	34820	34740	---
MAX	---	---	---	---	---	---	---	---	---	---	35530	35970
MIN	---	---	---	---	---	---	---	---	---	---	34740	33830

07344488 MONTICELLO RESERVOIR NEAR MOUNT PLEASANT, TX--Continued

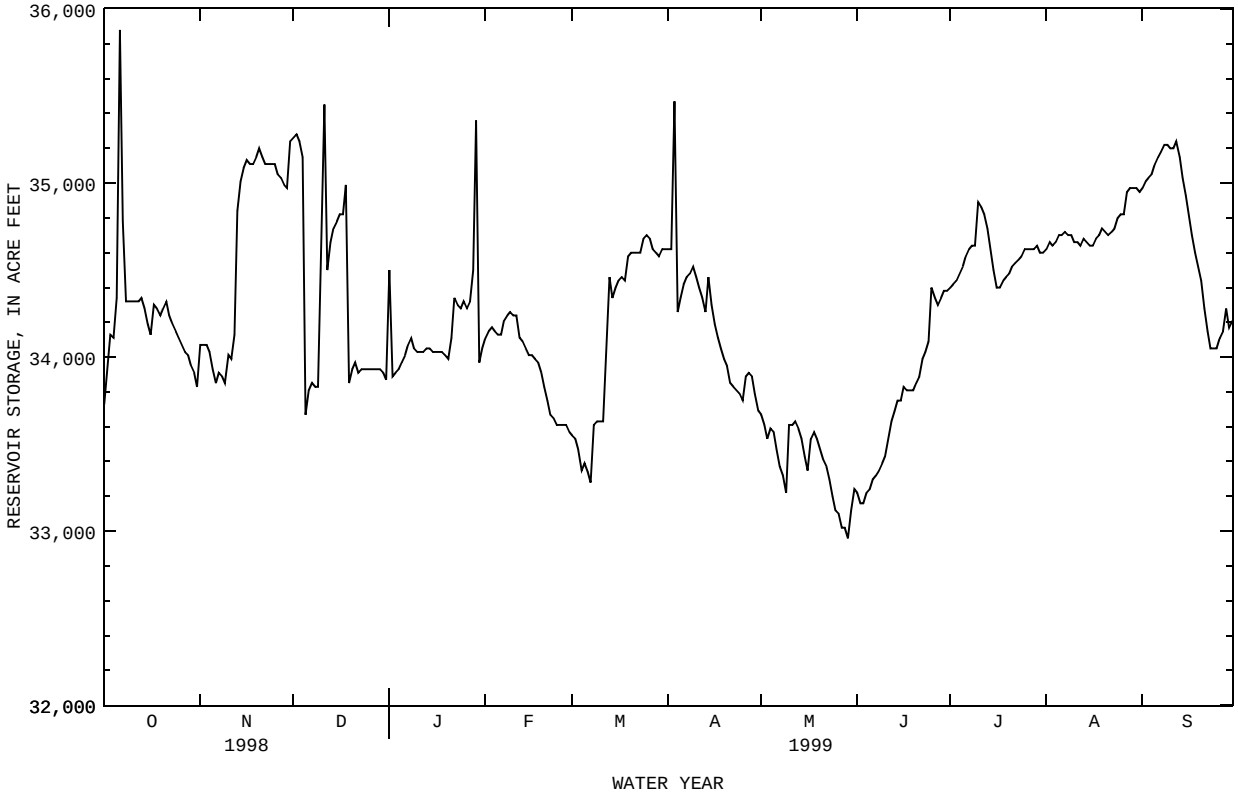
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33730	34070	35260	34500	34110	33550	34620	33670	33220	34400	34620	34970
2	33930	34070	35280	33890	34150	33530	34620	33610	33160	34420	34660	35010
3	34130	34070	35240	33910	34170	33470	35470	33530	33160	34440	34640	35030
4	34110	34030	35150	33930	34150	33350	34260	33590	33220	34480	34660	35050
5	34340	33930	33670	33970	34130	33390	34340	33570	33240	34520	34700	35110
6	35880	33850	33810	34010	34130	33340	34420	33470	33300	34580	34700	35150
7	34780	33910	33850	34070	34210	33280	34460	33370	33320	34620	34720	35180
8	34320	33890	33830	34110	34240	33610	34480	33320	33350	34640	34700	35220
9	34320	33850	33830	34050	34260	33630	34520	33220	33390	34640	34700	35220
10	34320	34010	34840	34030	34240	33630	34460	33610	33430	34890	34660	35200
11	34320	33990	35450	34030	34240	33630	34400	33610	33530	34860	34660	35200
12	34320	34130	34500	34030	34110	33970	34340	33630	33630	34820	34640	35240
13	34340	34840	34660	34050	34090	34460	34260	33590	33690	34740	34680	35150
14	34280	35010	34740	34050	34050	34340	34460	33530	33750	34620	34660	35030
15	34190	35090	34780	34030	34010	34400	34300	33430	33750	34500	34640	34930
16	34130	35130	34820	34030	34010	34440	34190	33350	33830	34400	34640	34820
17	34300	35110	34820	34030	33990	34460	34110	33530	33810	34400	34680	34700
18	34280	35110	34990	34030	33970	34440	34050	33570	33810	34440	34700	34600
19	34240	35150	33850	34010	33910	34580	33990	33530	33810	34460	34740	34520
20	34280	35200	33930	33990	33830	34600	33950	33470	33850	34480	34720	34440
21	34320	35150	33970	34110	33750	34600	33850	33410	33890	34520	34700	34280
22	34240	35110	33910	34340	33670	34600	33830	33370	33990	34540	34720	34150
23	34190	35110	33930	34300	33650	34600	33810	33300	34030	34560	34740	34050
24	34150	35110	33930	34280	33610	34680	33790	33200	34090	34580	34800	34050
25	34110	35110	33930	34320	33610	34700	33750	33120	34400	34620	34820	34050
26	34070	35050	33930	34280	33610	34680	33890	33100	34340	34620	34820	34110
27	34030	35030	33930	34320	33610	34620	33910	33020	34300	34620	34950	34150
28	34010	34990	33930	34500	33570	34600	33890	33020	34340	34620	34970	34280
29	33950	34970	33930	35360	---	34580	33790	32960	34380	34640	34970	34170
30	33910	35240	33910	33970	---	34620	33690	33120	34380	34600	34970	34210
31	33830	---	33870	34050	---	34620	---	33240	---	34600	34950	---
MAX	35880	35240	35450	35360	34260	34700	35470	33670	34400	34890	34970	35240
MIN	33730	33850	33670	33890	33570	33280	33690	32960	33160	34400	34620	34050
(+)	339.55	340.24	339.57	339.66	339.42	339.94	339.48	339.25	339.82	339.93	340.10	339.74
(@)	0	+1410	-1370	+180	-480	+1050	-930	-450	+1140	+220	+350	-740

WTR YR 1999 MAX 35880 MIN 32960 (@) +380

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07344488 MONTICELLO RESERVOIR NEAR MOUNT PLEASANT, TX--Continued



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07344489 LAKE BOB SANDLIN NEAR MOUNT PLEASANT, TX

LOCATION.--Lat 33°04'48", long 95°00'07", Titus County, Hydrologic Unit 11140305, in control room in left abutment of service spillway at left end of Fort Sherman Dam on Big Cypress Creek, 1.7 mi upstream from Tankersley Creek, 3.5 mi upstream from bridge on U.S. Highway 271, 5.7 mi southwest of the county courthouse in Mount Pleasant, and 129.2 mi upstream from mouth.

DRAINAGE AREA.--239 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Apr 12, 1978, a nonrecording gage was located at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 10,800 ft long, including spillways. Deliberate impoundment began Aug 8, 1977, and dam was completed by Apr 1978. The spillway is an excavated channel cut through natural ground. The spillway is 4,500 ft wide, located to the left of the left end of the dam. The service spillway is 289.5 ft wide with 160 ft of net flow width controlled by four 40- by 22.5-foot tainter gates. The dam was built, and is owned, maintained, and operated by the Titus County Fresh Water Supply District No. 1 to provide water for municipal use. Flow from 75.0 mi^2 above this station is controlled by Lake Cypress Springs on Big Cypress Creek and 36.0 mi^2 is controlled by Montecello Reservoir on Blundell Creek, a tributary to Big Cypress Creek. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	349.0
Crest of uncontrolled spillway	341.3
Crest of gated spillway	316.5
Lowest gated outlet (invert)	294.5

COOPERATION.-Capacity Table 1-C was provided by URS/Forest and Cotton, Inc., Consulting Engineers. A new capacity table, Table 2-C, provided by the U.S. Army Corps of Engineers was put into effect Oct 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 224,400 acre-ft, Nov 5, 1994 (elevation, 338.65 ft); minimum contents after initial filling, 133,100 acre-ft, Nov 25, 1982 (elevation, 327.92 ft) using Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 216,600 acre-ft, Jan 2 (elevation, 337.84 ft); minimum contents, 189,400 acre-ft, Sep 30 (elevation, 334.89 ft).

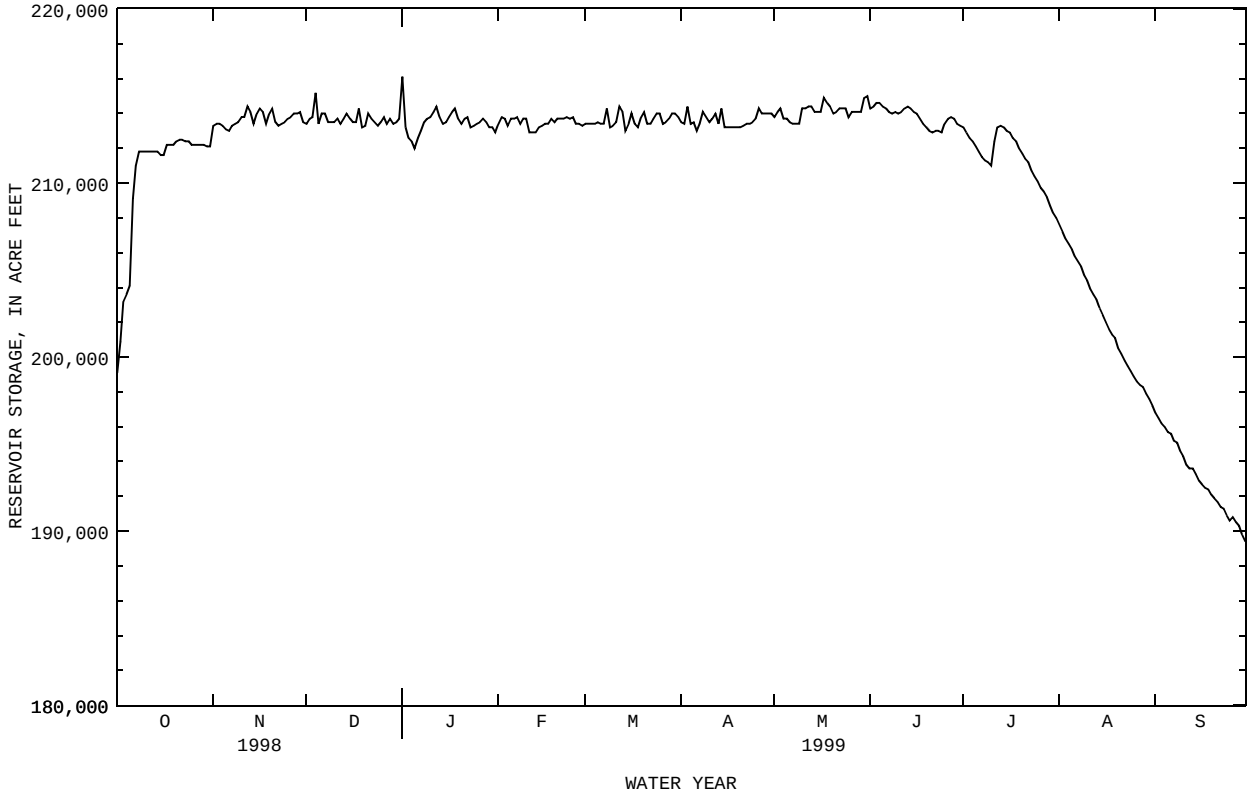
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199100	213300	213400	216100	213400	213400	213500	213800	214300	213200	207600	196800
2	200900	213400	213700	213200	213800	213400	213400	214100	214400	212900	207200	196500
3	203200	213400	213800	212600	213700	213400	214400	214300	214600	212600	206800	196200
4	203600	213300	215200	212400	213300	213400	213400	213700	214600	212400	206500	196000
5	204100	213100	213400	212000	213700	213500	213500	213700	214400	212100	206200	195700
6	209100	213000	214000	212600	213700	213400	213000	213500	214300	211800	205800	195600
7	211000	213300	214000	213000	213800	213400	213400	213400	214100	211500	205500	195200
8	211800	213400	213500	213500	213400	214300	214100	213400	214000	211300	205200	195100
9	211800	213500	213500	213700	213700	213200	213800	213400	214100	211200	204700	194600
10	211800	213800	213500	213800	213700	213300	213500	214300	214000	211000	204400	194300
11	211800	213800	213700	214100	212900	213500	213700	214300	214100	212400	203900	193800
12	211800	214400	213400	214400	212900	214400	214000	214400	214300	213200	203600	193600
13	211800	214100	213700	213800	212900	214100	213400	214400	214400	213300	203300	193600
14	211800	213400	214000	213400	213200	213000	214300	214100	214300	213200	202800	193300
15	211600	214000	213700	213500	213300	213400	213200	214100	214100	213000	202400	192900
16	211600	214300	213500	213800	213400	214000	213200	214100	214000	212900	202000	192700
17	212200	214100	213500	214100	213400	213400	213200	214900	213700	212600	201600	192500
18	212200	213400	214300	214300	213700	213200	213200	214600	213400	212400	201300	192400
19	212200	214000	213200	213700	213500	213800	213200	214400	213200	212000	201100	192100
20	212400	214300	213300	213400	213700	214100	213200	214000	213000	211700	200500	191900
21	212500	213500	214000	213700	213700	213400	213300	214100	212900	211400	200200	191700
22	212500	213300	213700	213800	213700	213400	213400	214300	213000	211200	199800	191400
23	212400	213400	213500	213200	213800	213700	213400	214300	213000	210700	199500	191300
24	212400	213500	213300	213300	213700	214000	213500	214300	212900	210400	199200	190900
25	212200	213700	213500	213400	213800	214000	213700	213800	213400	210100	198900	190600
26	212200	213800	213800	213500	213400	213400	214300	214100	213700	209700	198600	190800
27	212200	214000	213400	213700	213400	213500	214000	214100	213800	209500	198400	190500
28	212200	214000	213700	213500	213300	213700	214000	214100	213700	209200	198300	190300
29	212200	214100	213400	213200	---	214000	214000	214100	213400	208700	197900	189800
30	212100	213500	213500	213200	---	214000	214000	214900	213300	208300	197600	189400
31	212100	---	213700	212900	---	213800	---	215000	---	208000	197200	---
MAX	212500	214400	215200	216100	213800	214400	214400	215000	214600	213300	207600	196800
MIN	199100	213000	213200	212000	212900	213000	213000	213400	212900	208000	197200	189400
(+)	337.37	337.52	337.54	337.45	337.49	337.55	337.57	337.67	337.49	336.94	335.76	334.89
(@)	+12700	+1400	+200	-800	+400	+500	+200	+1000	-1700	-5300	-10800	-7800

CAL YR 1998 MAX 216700 MIN 180700 (@) +400
WTR YR 1999 MAX 216100 MIN 189400 (@) -10000

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07344489 LAKE BOB SANDLIN NEAR MOUNT PLEASANT, TX--Continued



07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 33°01'15", long 94°52'55", Camp-Titus County line, Hydrologic Unit 11140305, near center of stream at downstream side of bridge on State Highway 11, 0.5 mi upstream from Louisiana & Arkansas Railway Co. bridge, 1.4 mi upstream from Williamson Creek, 5.2 mi east of Pittsburg, 19.2 mi downstream from Lake Bob Sandlin, and 110.0 mi upstream from mouth.

DRAINAGE AREA.--366 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 1943 to Dec 1962 (published as "Cypress Creek near Pittsburg"), Oct 1967 to Sep 1989. Oct 1989 to current year, (peak discharges greater than base discharge). Gage-height records collected at this site from Sep 1963 to Dec 1967, are published in reports by the U.S. Army Corps of Engineers.
Water-quality records.--Chemical data: Mar 1965 to Aug 1989. Biochemical data: Jan 1983 to Sep 1985. Specific conductance: Oct 1968 to Sep 1989. Water temperature: Oct 1968 to Sep 1989.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 247.49 ft above sea level. Prior to Nov 12, 1954, water-stage recorder at site 1,900 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--Records fair. Since Jul 1970, at least 10% of contributing drainage area has been regulated by Lake Cypress Springs (station 07344484, capacity 100,400 acre-ft). Additional regulation since Aug 1972 by Monticello Reservoir (station 07344488, capacity 47,600 acre-ft) located on Blundell Creek and since Aug 1977 by Lake Bob Sandlin (station 07344489, capacity 251,000 acre-ft), 19 miles upstream. Wastewater effluent was returned to a tributary above this station by the city of Mount Pleasant, and wastewater effluent was returned to a tributary below this station by the city of Pittsburg. No known diversions.

AVERAGE DISCHARGE.--22 years (water years 1944-62, 1968-70), prior to regulation by Lake Cypress Springs, 349 ft^3/s (12.96 in/yr), 253,000 acre-ft/ yr; 19 years (water years 1971-89) regulated, 237 ft^3/s (171,900 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge prior to regulation by Lake Cypress Springs, 58,500 ft^3/s Mar 30, 1945 (gage height, 28.3 ft, from floodmark, and adjusted to present site on basis of record for flood of Apr 27, 1958), from rating curve extended above 20,000 ft^3/s; no flow Aug 20 to Oct 3, 1954, Jul 19 to Nov 4, 1956; maximum discharge for regulated period, 50,400 ft^3/s Mar 17, 1987 (gage height, 23.65 ft). Maximum stage since at least 1895, that of Mar 30, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jan 1938 reached a stage of about 25 ft from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 5	2130	6,180	15.57	Jan 2	2045	8,350	16.68
Dec 11	1845	4,050	14.36	Jan 30	0915	5,180	14.99
Dec 13	1100	4,080	14.38	Mar 13	2400	6,650	15.82
Dec 20	1545	2,710	13.51	Apr 4	2130	3,940	14.29

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1998 to Sep 1999.
BIOCHEMICAL DATA: Oct 1998 to Sep 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB											
25...	1100	36	524	7.4	11.5	3.0	10.5	97	.6	120	69
APR											
21...	0815	34	422	7.3	19.0	16	6.3	69	1.0	97	54
AUG											
18...	1045	11	1190	7.5	25.5	4.1	5.0	62	1.0	240	160
25...	1215	12	1180	7.4	27.1	.41	5.4	69	.7	230	160

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
FEB											
25...	32	9.3	46	2	9.0	49	76	54	.12	7.9	313
APR											
21...	25	8.3	39	2	7.5	43	57	42	.14	11	262
AUG											
18...	83	8.0	127	4	32	84	170	100	<.10	7.4	784
25...	80	7.8	124	4	32	72	190	100	.13	5.5	766

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
FEB											
25...	299	2	7.36	.010	7.37	.023	.43	.46	.411	.412	1.3
APR											
21...	243	20	5.68	.031	5.71	.097	.55	.64	.235	.191	.59
AUG											
18...	759	<1	36.2	.048	36.2	.020	.95	.97	4.73	4.05	12
25...	747	2	34.0	.047	34.0	.038	.92	.95	5.17	4.51	14

07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
FEB										
25...	6.0	1.7	<1.0	1	56	<1.0	<1.0	4.0	<1.0	1.1
APR										
21...	7.6	3.5	<1.0	1	74	<1.0	<1.0	<1.0	<1.0	1.4
AUG										
18...	8.2	1.9	<1.0	3	56	<1.0	<1.0	<1.0	<1.0	2.4
25...	9.0	--	--	--	--	--	--	--	--	--

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB										
25...	24	<1.0	111	<.1	<1.0	3.6	<1	<1.0	1.4	<1.0
APR										
21...	19	<1.0	205	<.1	<1.0	4.0	--	<1.0	4.6	<1.0
AUG										
18...	<10	<1.0	31	<.1	4.7	5.1	<1	<1.0	1.9	<1.0
25...	<10	--	31	--	--	--	--	--	--	--

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07345900 LAKE O' THE PINES NEAR JEFFERSON, TX

LOCATION.--Lat 32°45'18", long 94°29'57", Marion County, Hydrologic Unit 11140305, on left bank 1,500 ft upstream from left end of Ferrell's Bridge Dam on Big Cypress Creek, on Farm Road 726, 9.0 mi west of Jefferson, and 80.1 mi upstream from mouth.

DRAINAGE AREA.--850 mi^2.

WATER-CONTENT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Nov 12, 1957, non-recording gage at same site and datum.

REMARKS.--The lake is formed by a rolled earthfill dam 10,600 ft long, including a 200-foot-wide concrete spillway. Impoundment of water began Aug 21, 1957, and the dam was completed Jun 25, 1958. Official operation began Dec 11, 1959. The flood-control outlet works consist of two 10.0-foot-diameter conduits that are controlled by two 8.0- by 12.5-foot electrically driven broome-type gates. The low-flow outlet works consist of a controlled 14-inch pipe. Flow over the spillway is discharged into a 2,000-foot-long rectified channel and then into Cypress Creek. The capacity table is based on a survey made in 1950. The lake was built for conservation, flood control, and water supply. During the current year, an unknown amount of water was diverted from the lake for municipal and industrial uses. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	277.0
Crest of spillway	249.5
Top of conservation pool	228.5
Crest of intake to wet well (14 in)	202.5
Lowest gated outlet (invert)	200.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 694,360 acre-ft, May 5, 1966 (elevation, 245.41 ft); minimum since Dec 1959, 210,100 acre-ft, Oct 6, 1984 (elevation, 225.98 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 320,400 acre-ft, Feb 6 (elevation, 231.79 ft); minimum contents, 224,500 acre-ft, Oct 3 (elevation, 226.82 ft).

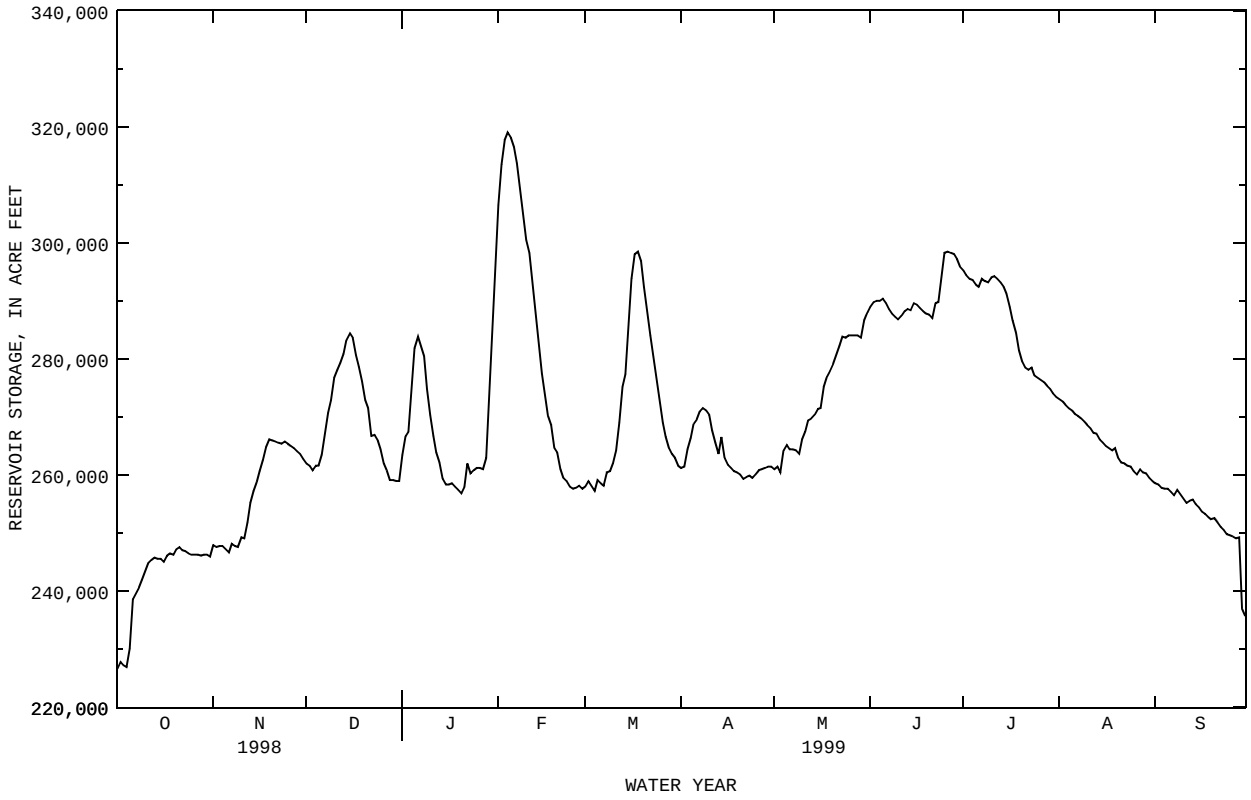
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	226600	248000	262000	263500	306500	258000	261200	261100	289100	295300	273100	258600
2	227800	247600	261600	266800	313600	259000	261400	261400	289900	294500	272700	258400
3	227300	247800	260900	267500	317800	258200	264500	260500	290100	293900	272100	257800
4	226900	247800	261600	275400	319000	257300	266400	264300	290100	293700	271600	257700
5	230100	247300	261600	281900	318200	259200	268900	265200	290500	292900	271200	257700
6	238700	246700	263500	283900	316500	258600	269600	264500	289700	292500	270600	257100
7	239600	248200	267100	282300	313800	258200	271000	264500	288700	293900	270200	256500
8	240700	247800	270800	280500	309400	260500	271600	264300	287900	293500	269800	257500
9	241900	247600	272900	274900	305300	260700	271200	263700	287300	293300	269300	256700
10	243400	249300	276800	270400	300600	262000	270400	266200	286900	294100	268700	256000
11	244900	249100	278200	266800	298300	264300	267700	267500	287500	294300	268100	255200
12	245400	251900	279300	263900	291900	269100	265600	269400	288300	293900	267300	255600
13	245800	255200	280900	262200	286900	275200	263700	269800	288700	293300	267100	255800
14	245600	257300	283300	259400	282100	277400	266600	270400	288500	292500	266200	255000
15	245600	258800	284500	258400	277600	286100	262900	271400	289700	291300	265600	254500
16	245000	260700	283700	258400	274100	293900	261800	271600	289500	289100	265000	253700
17	246100	262600	280700	258600	270200	298100	261200	275200	288900	286700	264700	253400
18	246500	264800	278800	258000	268700	298500	260700	277000	288300	284500	264300	252800
19	246300	266200	276200	257500	264700	296900	260500	278000	287900	281500	264700	252400
20	247300	266000	272900	256900	263900	292500	260100	279200	287700	279500	262900	252600
21	247600	265800	271600	258000	261100	288300	259400	280700	287100	278600	262200	251900
22	247100	265600	266800	262000	259500	284100	259700	282300	289700	278200	262000	251100
23	246900	265400	266900	260300	259000	280900	259900	283900	289900	278600	261600	250600
24	246500	265800	266000	260900	258000	277200	259500	283700	294500	277200	261400	249800
25	246300	265400	264500	261200	257700	273100	260100	284100	298300	276800	260700	249600
26	246300	265000	262000	261200	257800	269100	260900	284100	298500	276400	260100	249500
27	246300	264700	260900	261100	258200	266600	261100	284100	298300	276000	261100	249100
28	246100	264100	259200	262900	257700	264700	261200	284100	298100	275400	260500	249300
29	246300	263700	259200	275200	---	263700	261400	283700	297300	274900	260300	237000
30	246300	262800	259000	284900	---	262900	261400	286700	295900	274100	259500	235700
31	246000	---	259000	295700	---	261600	---	288100	---	273500	259000	---
MAX	247600	266200	284500	295700	319000	298500	271600	288100	298500	295300	273100	258600
MIN	226600	246700	259000	256900	257700	257300	259400	260500	286900	273500	259000	235700
(+)	228.02	228.92	228.72	230.60	228.65	228.86	228.85	230.22	230.61	229.48	228.72	227.45
(@)	+18700	+16800	-3800	+36700	-37300	+3900	-200	+26700	+7800	-22400	-13500	-23300

CAL YR 1998 MAX 351600 MIN 211900 (@) -9500
WTR YR 1999 MAX 319000 MIN 226600 (@) +8400

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07345900 LAKE O' THE PINES NEAR JEFFERSON, TX--Continued



07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1969 to Sep 1984, Oct 1998 to Sep 1999.
BIOCHEMICAL DATA: Oct 1969 to Sep 1984, Oct 1998 to Sep 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

324518094300801 - LAKE O'THE PINES SITE AC

DATE	TIME	RESER-VOIR STORAGE (AC-FT) (00054)	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
FEB												
25...	1035	258000	1.00	128	6.7	13.0	1.07	8.9	85	K5	K1	27
25...	1039	--	10.0	127	6.6	13.0	--	8.7	83	--	--	--
25...	1042	--	20.0	127	6.6	13.0	--	8.5	81	--	--	--
25...	1046	--	30.0	128	6.6	13.0	--	8.0	76	--	--	--
25...	1049	--	44.0	129	6.5	13.0	--	7.2	69	--	--	27
APR												
21...	0939	260000	1.00	132	6.9	19.5	.91	8.9	98	K1	K1	32
21...	0943	--	10.0	131	6.7	19.5	--	8.8	97	--	--	--
21...	0947	--	20.0	131	6.5	18.5	--	7.8	84	--	--	--
21...	0951	--	30.0	132	6.3	17.5	--	5.9	62	--	--	--
21...	0955	--	44.0	134	6.5	17.5	--	5.0	53	--	--	32
AUG												
18...	0926	265000	1.00	134	7.1	31.0	1.71	6.9	94	K1	K1	29
18...	0933	--	10.0	134	6.7	30.5	--	5.9	80	--	--	--
18...	0938	--	20.0	135	6.6	29.5	--	3.3	44	--	--	--
18...	0946	--	30.0	175	6.9	25.5	--	.0	0	--	--	--
18...	0954	--	45.0	188	6.8	24.5	--	.0	0	--	--	42

324518094300801 - LAKE O'THE PINES SITE AC

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB											
25...	21	6.1	2.9	10	.9	3.8	5.7	28	12	<.10	13
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	21	6.0	2.9	11	.9	3.8	6.6	27	12	<.10	13
APR											
21...	20	7.2	3.3	11	.8	3.9	12	28	12	<.10	7.2
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	22	7.5	3.1	11	.9	3.9	10	29	13	<.10	9.0
AUG											
18...	14	6.0	3.5	12	1	4.4	15	23	13	<.10	10
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	10	3.9	12	.8	4.5	57	9.2	13	.12	16

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

324518094300801 - LAKE O'THE PINES SITE AC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB											
25...	81	<.010	.144	.021	.31	.34	<.050	<.010	--	58	123
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	81	<.010	.147	<.020	--	.31	<.050	<.010	--	63	55
APR											
21...	81	<.010	.101	<.020	--	.29	<.050	<.010	--	36	6.3
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	83	<.010	.128	.040	.34	.38	<.050	.028	.09	34	126
AUG											
18...	81	<.010	<.050	<.020	--	.33	<.050	<.010	--	<10	56
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	<.010	<.050	<.020	--	.31	<.050	<.010	--	94	414
18...	--	<.010	<.050	1.01	.24	1.3	.124	.120	.37	3900	5040
18...	116	<.010	<.050	1.54	.18	1.7	.287	.297	.91	5500	5080

324509094303901 - LAKE O'THE PINES SITE AR

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
FEB							
25...	1103	1.00	125	6.8	13.5	8.9	86
25...	1105	10.0	127	6.7	13.0	9.0	86
25...	1107	20.0	127	6.6	13.0	8.4	80
25...	1109	28.0	125	6.6	13.0	7.9	75
APR							
21...	1005	1.00	132	6.9	19.0	9.1	99
21...	1008	10.0	132	6.8	19.0	9.0	98
21...	1011	22.0	132	6.7	18.5	8.0	86
AUG							
18...	1008	1.00	134	7.3	31.0	7.2	98
18...	1010	10.0	134	6.8	30.5	6.3	85
18...	1012	20.0	135	6.5	29.5	3.8	50
18...	1014	25.0	166	6.6	28.0	.2	3

324613094323001 - LAKE O'THE PINES SITE BC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB											
25...	1131	1.00	128	6.8	13.0	1.10	8.9	85	29	22	6.5
25...	1135	10.0	129	6.7	13.0	--	8.8	84	--	--	--
25...	1140	20.0	129	6.7	13.0	--	8.2	78	--	--	--
25...	1143	30.0	129	6.6	13.0	--	8.0	76	--	--	--
25...	1146	44.0	132	6.6	13.0	--	7.6	72	29	19	6.4
APR											
21...	1033	1.00	133	7.0	19.0	.82	9.2	100	--	--	--
21...	1035	10.0	133	6.8	19.0	--	9.0	98	--	--	--
21...	1038	20.0	132	6.6	18.5	--	8.0	86	--	--	--
21...	1040	30.0	132	6.4	18.0	--	6.7	71	--	--	--
21...	1042	40.0	133	6.4	18.0	--	6.6	70	--	--	--
21...	1045	46.0	133	6.5	18.0	--	6.5	69	--	--	--
AUG											
18...	1040	1.00	133	7.4	30.5	1.58	7.3	98	--	--	--
18...	1043	10.0	133	6.9	30.5	--	6.7	90	--	--	--
18...	1047	20.0	134	6.5	29.0	--	3.5	46	--	--	--
18...	1050	30.0	178	6.9	25.5	--	.1	1	--	--	--
18...	1053	40.0	196	6.9	24.5	--	.1	1	--	--	--
18...	1056	45.0	197	6.9	25.0	--	.2	2	--	--	--

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

324613094323001 - LAKE O'THE PINES SITE BC

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB										
25...	3.1	11	.9	3.7	6.6	27	12	<.10	12	81
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	3.0	10	.9	3.9	9.8	28	12	<.10	13	84
APR										
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
AUG										
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

324613094323001 - LAKE O'THE PINES SITE BC

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB										
25...	<.010	.171	<.020	--	.30	<.050	<.010	--	46	41
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--
25...	<.010	.185	.028	.33	.35	<.050	<.010	--	100	367
APR										
21...	<.010	.097	<.020	--	.30	<.050	.013	.04	38	3.5
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--
21...	<.010	.110	.033	.29	.32	<.050	<.010	--	31	58
AUG										
18...	<.010	<.050	.028	.30	.33	<.050	<.010	--	81	194
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
18...	<.010	<.050	1.84	--	1.8	.316	.368	1.1	6800	4990

324738094325101 - LAKE O'THE PINES SITE CC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
FEB							
25...	1157	1.00	122	6.7	14.0	9.2	90
25...	1159	10.0	94	6.6	13.0	8.4	80
25...	1201	21.0	90	6.7	13.0	7.8	74
APR							
21...	1104	1.00	119	6.7	20.5	8.4	94
21...	1107	10.0	121	6.6	20.0	8.2	91
21...	1110	21.0	115	6.3	19.0	5.0	54
AUG							
18...	1106	1.00	133	7.0	31.0	6.8	93
18...	1108	10.0	133	6.4	30.0	3.4	45
18...	1110	23.0	135	6.3	30.0	1.3	17

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

324806094350001 - LAKE O'THE PINES SITE DC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB							
25...	1216	1.00	114	6.8	14.0	9.3	90
25...	1218	10.0	97	6.6	13.5	8.7	84
25...	1220	22.0	77	6.6	13.0	7.4	70
APR							
21...	1137	1.00	126	6.9	20.5	8.7	98
21...	1139	10.0	120	6.6	20.0	8.3	92
21...	1141	22.0	104	6.5	20.0	7.4	82
AUG							
18...	1138	1.00	130	6.8	30.5	6.0	81
18...	1140	10.0	132	6.5	30.0	4.3	58
18...	1142	23.0	132	6.5	30.0	3.9	52

324726094363801 - LAKE O'THE PINES SITE EC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
FEB											
25...	1243	1.00	133	7.0	13.5	1.07	9.3	89	K1	K1	32
25...	1247	10.0	135	6.9	13.0	--	9.2	88	--	--	--
25...	1251	20.0	136	6.8	13.0	--	8.6	82	--	--	--
25...	1255	34.0	137	6.8	12.5	--	8.5	80	--	--	33
APR											
21...	1205	1.00	141	8.0	20.0	.76	9.6	107	K1	K8	46
21...	1210	10.0	140	7.7	19.5	--	9.4	103	--	--	--
21...	1216	20.0	143	7.1	19.5	--	8.7	96	--	--	--
21...	1221	31.0	145	6.6	18.0	--	6.1	65	--	--	36
AUG											
18...	1201	1.00	132	8.0	31.0	1.16	8.1	110	K1	K11	27
18...	1205	10.0	132	6.5	30.5	--	4.1	55	--	--	--
18...	1210	20.0	132	6.3	30.0	--	1.8	24	--	--	--
18...	1216	32.0	209	7.0	26.0	--	.2	2	--	--	44

324726094363801 - LAKE O'THE PINES SITE EC

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
FEB											
25...	22	7.5	3.2	11	.8	3.8	9.8	28	12	<.10	11
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	20	7.8	3.3	11	.8	3.9	13	27	12	<.10	11
APR											
21...	32	11	4.5	14	.9	4.6	14	28	13	<.10	4.4
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	20	8.5	3.7	12	.9	4.0	16	28	13	<.10	5.1
AUG											
18...	13	5.0	3.5	13	1	4.2	14	22	13	<.10	11
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
18...	--	10	4.3	12	.8	4.5	67	5.8	13	<.10	18

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

324726094363801 - LAKE O'THE PINES SITE EC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB											
25...	83	<.010	.238	<.020	--	.41	<.050	<.010	--	160	7.8
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	86	<.010	.254	.033	.43	.46	<.050	<.010	--	180	51
APR											
21...	90	<.010	.086	<.020	--	.36	<.050	<.010	--	420	85
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	85	<.010	.123	.134	.35	.48	<.050	.012	.04	100	54
AUG											
18...	80	<.010	<.050	<.020	--	.35	<.050	<.010	--	<10	54
18...	--	<.010	<.050	<.020	--	.36	<.050	<.010	--	<10	45
18...	--	<.010	<.050	.062	.25	.31	<.050	.016	.05	260	628
18...	125	<.010	<.050	2.54	.38	2.9	.356	.403	1.2	8300	5730

325100094420301 - LAKE O'THE PINES SITE FC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB												
25...	1330	1.00	190	7.1	13.0	1.10	9.1	87	K2	K13	47	29
25...	1335	10.0	190	7.1	13.0	--	8.9	85	--	--	--	--
25...	1339	22.0	192	7.0	13.0	--	8.7	83	--	--	47	34
APR												
21...	1258	1.00	178	7.0	21.5	.73	7.6	87	K9	22	35	11
21...	1303	10.0	177	7.0	21.5	--	7.5	86	--	--	--	--
21...	1308	21.0	178	7.0	21.5	--	7.4	85	--	--	47	23
AUG												
18...	1245	1.00	155	7.0	30.5	1.46	5.7	77	K2	K13	32	13
18...	1250	10.0	166	6.5	29.0	--	1.2	16	--	--	--	--
18...	1255	22.0	169	6.5	29.0	--	.6	8	--	--	39	10

325100094420301 - LAKE O'THE PINES SITE FC

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB											
25...	12	4.5	15	1	4.5	18	37	16	.12	11	113
25...	--	--	--	--	--	--	--	--	--	--	--
25...	12	4.4	15	1	4.4	13	36	17	.12	11	111
APR											
21...	8.0	3.6	12	.9	4.0	24	30	16	.12	8.8	99
21...	--	--	--	--	--	--	--	--	--	--	--
21...	11	4.7	15	.9	4.5	24	30	16	.12	9.2	107
AUG											
18...	6.3	3.9	15	1	4.8	19	24	16	.11	12	93
18...	--	--	--	--	--	--	--	--	--	--	--
18...	8.2	4.4	16	1	4.8	29	21	16	.14	12	100

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

325100094420301 - LAKE O'THE PINES SITE FC

DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB											
25...	--	<.010	.432	.044	.45	.50	E.037	.028	.09	480	63
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	<.010	.409	.044	.47	.52	E.041	.031	.10	400	66
APR											
21...	.397	.013	.410	.071	.53	.60	E.035	.035	.11	120	E2.7
21...	--	--	--	--	--	--	--	--	--	--	--
21...	.382	.011	.393	.083	.52	.60	E.034	.034	.10	440	85
AUG											
18...	--	<.010	<.050	<.020	--	.37	<.050	.015	.05	27	17
18...	--	<.010	<.050	.024	.41	.44	E.033	.014	.04	23	8.0
18...	--	<.010	<.050	<.020	--	.45	<.050	<.010	--	41	114

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O The Pines Site AC (324518094300801)

Phytoplankton Analyses October 1998 to September 1999

Date	2/25/99
Time	1035
TOTAL CELLS/mL	14,096
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	1.75

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Melosira varians	150
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	180
CHLOROPHYTA	
Ankistrodesmus falcatus	30
Chlamydomonas sp.	630
Mougeotia sp.	420
CYANOPHYTA	
Aphanocapsa delicatissima	11,996
Merismopedia tennuissima	960
EUGLENOPHYTA	
Trachelomonas sp.	480
CRYPTOPHYTA	
Cryptomonas erosa	210

Lake O The Pines Site FC (325100094420301)

Phytoplankton Analyses October 1998 to September 1999

Date	2/25/99
Time	1330
TOTAL CELLS/mL	3,799
NUMBER OF SPECIES	3
DEPTH COLLECTED (ft.)	1.3

Organisms	Cells/mL
CHLOROPHYTA	
Chlamydomonas sp.	60
CYANOPHYTA	
Aphanocapsa delicatissima	3,599
EUGLENOPHYTA	
Trachelomonas sp.	120

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O The Pines Site AC (324518094300801)

Phytoplankton Analyses October 1998 to September 1999

Date	4/21/99
Time	939
TOTAL CELLS/mL	10,916
NUMBER OF SPECIES	4
DEPTH COLLECTED (ft.)	0.30

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	30
CHLOROPHYTA	
Chlamydomonas sp.	450
Mougeotia sp.	2,639
CYANOPHYTA	
Aphanocapsa delicatissima	7,797

Lake O The Pines Site FC (325100094420301)

Phytoplankton Analyses October 1998 to September 1999

Date	4/21/99
Time	1258
TOTAL CELLS/mL	2,939
NUMBER OF SPECIES	3
DEPTH COLLECTED (ft.)	1.2

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	90
CHLOROPHYTA	
Chlamydomonas sp.	150
CYANOPHYTA	
Aphanocapsa delicatissima	2,699

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O The Pines Site AC (324518094300801)

Phytoplankton Analyses October 1998 to September 1999

Date	8/18/99
Time	926
TOTAL CELLS/mL	21,774
NUMBER OF SPECIES	15
DEPTH COLLECTED (ft.)	2.8

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	193
Navicula sp.	64
Synedra ulna var. *ulna*	193
CHLOROPHYTA	
Ankistrodesmus falcatus	2,729
Chlamydomonas sp.	120
Cosmarium sp.	30
Crucigenia tetrapedia	30
Pediastrum duplex	30
Scenedesmus opoliensis	150
Staurastrum sp.	210
CYANOPHYTA	
Aphanizomenon flos-aquae	960
Aphanocapsa delicatissima	16,195
Aphanocapsa elachista	600
Chroococcus limneticus	120
EUGLENOPHYTA	
Trachelomonas sp.	150

Lake O The Pines Site FC (325100094420301)

Phytoplankton Analyses October 1998 to September 1999

Date	8/18/99
Time	1245
TOTAL CELLS/mL	7,798
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	ND

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	150
CHLOROPHYTA	
Chlamydomonas sp.	30
Oocystis sp.	90
CYANOPHYTA	
Aphanocapsa delicatissima	6,598
Chroococcus limneticus	240
Oscillatoria sp.	600
EUGLENOPHYTA	
Trachelomonas sp.	90

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07346000 BIG CYPRESS CREEK NEAR JEFFERSON, TX

LOCATION.--Lat 32°44'58", long 94°29'55", Marion County, Hydrologic Unit 11140306, on left bank 950 ft downstream from Ferrell's Bridge Dam, 7.6 mi upstream from French Creek, and 8.5 mi west of Jefferson.

DRAINAGE AREA.--850 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug 1924 to Dec 1959 (published as "Cypress Creek near Jefferson"), Oct 1979 to current year. Records of stage and discharge for the period Oct 1959 to Sep 1979 published by the U.S. Army Corps of Engineers, New Orleans District.

GAGE.--Water-stage recorder. Datum of gage is 180.00 ft above sea level (U.S. Army Corps of Engineers benchmark). Prior to Nov 2, 1933, staff gage, and Nov 2, 1933 to Dec 8, 1955, water-stage recorder, at site about 950 ft upstream at datum 3.70 ft higher. After Dec 9, 1955, at site about 550 ft downstream or at present site at datum 180.00 ft. Satellite telemeter at station.

REMARKS.--Records good. Since Aug 1957, flow completely regulated by Lake O' the Pines (station 07345900, normal storage 254,900 acre-ft), 950 ft upstream. No known diversions.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1925-57), prior to completion of Ferrell's Bridge Dam, 660 ft^3/s (478,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION, (WATER YEARS, 1925-57).--Maximum discharge, 57,100 ft^3/s Apr 1, 1945 (gage height, 28.78. ft, site and datum then in use), from rating curve extended above 29,000 ft^3/s; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	19	497	244	525	220	914	167	46	377	28	28
2	18	19	481	277	494	185	570	167	153	235	28	27
3	19	18	474	258	485	143	526	167	380	231	28	28
4	18	22	469	352	684	99	543	169	516	230	28	30
5	17	29	466	675	1220	42	741	197	525	229	28	29
6	200	29	465	1240	1620	39	1360	179	526	230	28	30
7	148	29	473	2030	1940	38	1750	169	526	183	27	30
8	29	30	508	2460	2400	38	1810	167	464	141	27	44
9	23	30	699	2490	2430	25	1820	167	215	140	27	64
10	23	34	1280	2490	2440	21	1810	122	150	140	21	64
11	23	32	1710	2130	2430	23	1810	58	112	141	16	64
12	22	37	1750	1710	2410	26	1520	64	38	168	16	67
13	22	81	1740	1660	2400	67	1130	57	36	246	16	68
14	22	65	2140	1390	2390	46	1070	53	35	247	16	69
15	21	39	2530	868	2380	126	1060	50	35	320	16	70
16	22	33	2550	546	2200	355	945	49	35	713	27	70
17	20	31	2550	481	1670	708	612	54	34	961	33	71
18	20	140	2540	469	1600	1260	557	87	34	999	33	72
19	19	308	2550	463	1330	1950	468	52	33	1010	33	73
20	19	464	2540	462	988	2420	257	45	33	815	33	73
21	20	476	2530	368	920	2480	240	43	33	393	33	71
22	19	477	2520	253	756	2520	237	43	34	95	33	72
23	18	477	2170	246	476	2590	218	42	34	31	33	77
24	18	478	1760	239	440	2700	170	42	34	30	32	79
25	18	480	1710	317	337	2700	169	42	153	29	29	80
26	18	481	1690	448	224	2290	169	42	248	29	30	81
27	18	479	1690	460	221	1880	169	42	359	29	33	82
28	18	479	1430	461	220	1830	168	42	506	29	32	83
29	18	479	890	625	---	1520	168	42	514	29	32	84
30	18	494	444	793	---	1140	167	45	513	29	32	85
31	18	---	254	627	---	1060	---	47	---	28	32	---
TOTAL	924	6289	45500	27532	37630	30541	23148	2712	6354	8507	860	1865
MEAN	29.8	210	1468	888	1344	985	772	87.5	212	274	27.7	62.2
MAX	200	494	2550	2490	2440	2700	1820	197	526	1010	33	85
MIN	17	18	254	239	220	21	167	42	33	28	16	27
AC-FT	1830	12470	90250	54610	74640	60580	45910	5380	12600	16870	1710	3700

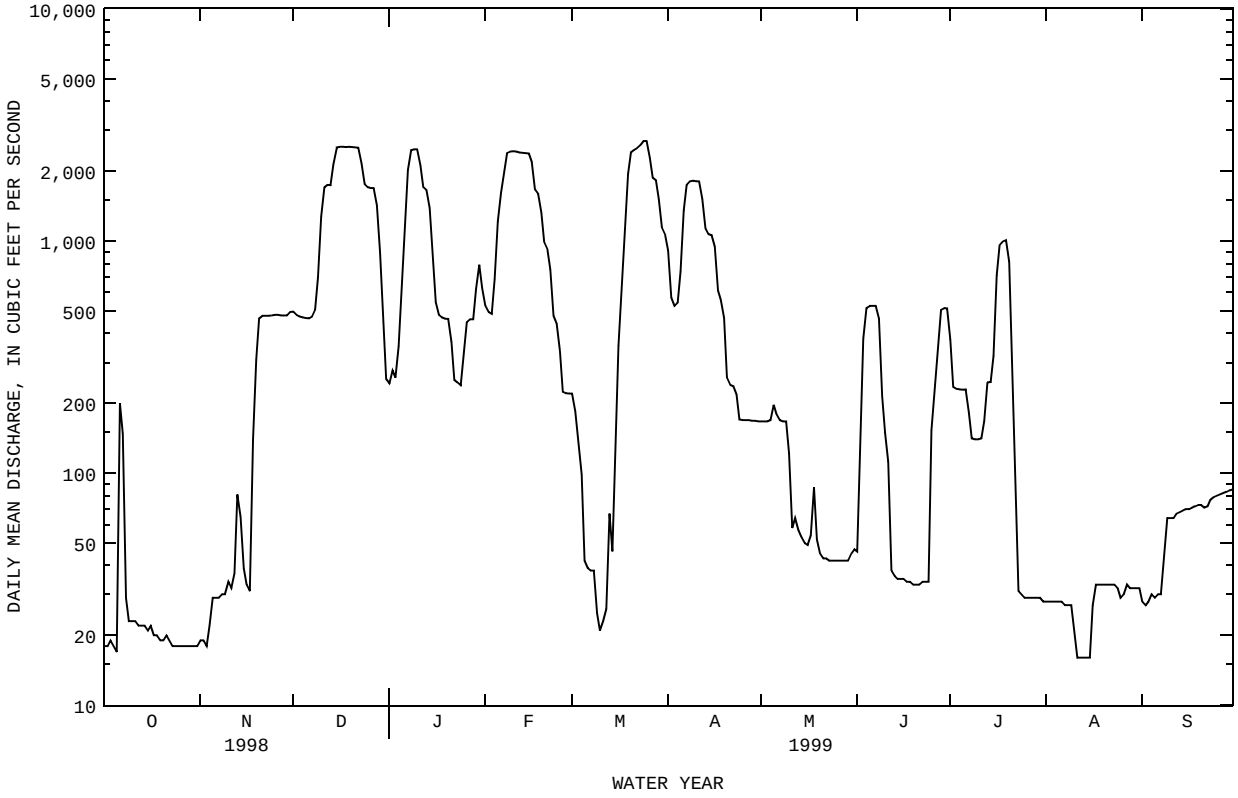
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 1999z, BY WATER YEAR (WY)

MEAN	219	438	725	920	1306	1267	1034	807	833	400	183	103
MAX	728	2690	1946	2685	2688	2645	2669	2979	3209	3057	2349	482
(WY)	1995	1958	1958	1993	1993	1988	1990	1958	1958	1958	1958	1958
MIN	3.35	4.82	4.13	4.16	40.6	37.2	47.7	32.4	32.5	18.7	16.2	8.70
(WY)	1981	1989	1982	1981	1996	1996	1996	1992	1987	1998	1982	1980

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1958 - 1999z	
ANNUAL TOTAL	218878		191862			
ANNUAL MEAN	600		526		685	
HIGHEST ANNUAL MEAN					1859	1958
LOWEST ANNUAL MEAN					47.9	1996
HIGHEST DAILY MEAN	2680	Jan 22	2700	Mar 24	4500	May 20 1958
LOWEST DAILY MEAN	13	Jul 1	16	Aug 11	.00	Jul 26 1987
ANNUAL SEVEN-DAY MINIMUM	14	Jul 1	18	Oct 23	1.4	Oct 18 1979
INSTANTANEOUS PEAK FLOW			2730	Mar 24	3220	Dec 29 1991
INSTANTANEOUS PEAK STAGE			18.71	Mar 24	19.97	Dec 29 1991
ANNUAL RUNOFF (AC-FT)	434100		380600		496200	
10 PERCENT EXCEEDS	2490		1810		2500	
50 PERCENT EXCEEDS	37		168		182	
90 PERCENT EXCEEDS	18		23		22	

z Period of regulated streamflow.

07346000 BIG CYPRESS CREEK NEAR JEFFERSON, TX--Continued



07346000 BIG CYPRESS CREEK NEAR JEFFERSON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1998 to Sep 1999.
BIOCHEMICAL DATA: Oct 1998 to Sep 1999.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB											
25...	1615	274	135	6.9	13.5	4.3	9.8	94	1.0	27	18
APR											
21...	1300	239	141	7.1	19.0	3.0	9.2	100	.9	32	24
AUG											
18...	1430	35	152	7.1	30.5	1.5	7.4	100	1.7	35	6

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB										
25...	5.9	3.0	10	.9	3.8	8.8	27	12	<.10	11
APR										
21...	7.3	3.3	11	.9	3.8	8.2	28	13	<.10	6.9
AUG										
18...	7.8	3.7	12	.9	4.1	29	18	13	.10	11

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
FEB										
25...	90	79	6	<.010	.127	<.020	--	.34	<.050	<.010
APR										
21...	91	79	<1	<.010	.105	<.020	--	.35	<.050	<.010
AUG										
18...	100	90	7	<.010	<.050	.168	.35	.52	<.050	<.010

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
FEB										
25...	6.7	3.3	<1.0	<1	65	<1.0	<1.0	<1.0	<1.0	<1.0
APR										
21...	5.9	3.4	<1.0	<1	67	<1.0	<1.0	<1.0	<1.0	<1.0
AUG										
18...	7.3	1.9	<1.0	2	113	<1.0	<1.0	<1.0	<1.0	<1.0

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB										
25...	52	<1.0	37	<.1	<1.0	1.6	<1	<1.0	2.9	<1.0
APR										
21...	42	<1.0	5.7	<.1	<1.0	1.5	<1	<1.0	3.4	<1.0
AUG										
18...	420	<1.0	2350	<.1	1.5	<1.0	--	<1.0	1.0	<1.0

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07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX

LOCATION.--Lat 32°46'40", long 94°21'26", Marion County, Hydrologic Unit 11140306 near center of channel at downstream side of bridge on U.S. Highway 59, 1.1 mi north of Jefferson, 2.0 mi upstream from Texas and Pacific Railway Co. bridge, and 5.2 mi upstream from mouth.

DRAINAGE AREA.--365 mi^2.

PERIOD OF RECORD.--May 1938 to Sep 1955 (daily gage heights) and Nov 1956 to Aug 1968 (daily gage heights and discharge measurements) published by U.S. Army Corps of Engineers as "Black Cypress Creek at Jefferson", Sep 1964 to Aug 1968 (low-flow partial-record), Sep 1968 to current year.
Water-quality records.--Chemical data: Oct 1967 to Sep 1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 171.47 ft above sea level (U.S. Army Corps of Engineers benchmark). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1938, 22.42 ft Apr 29, 1958, from records by U.S. Army Corps of Engineers.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

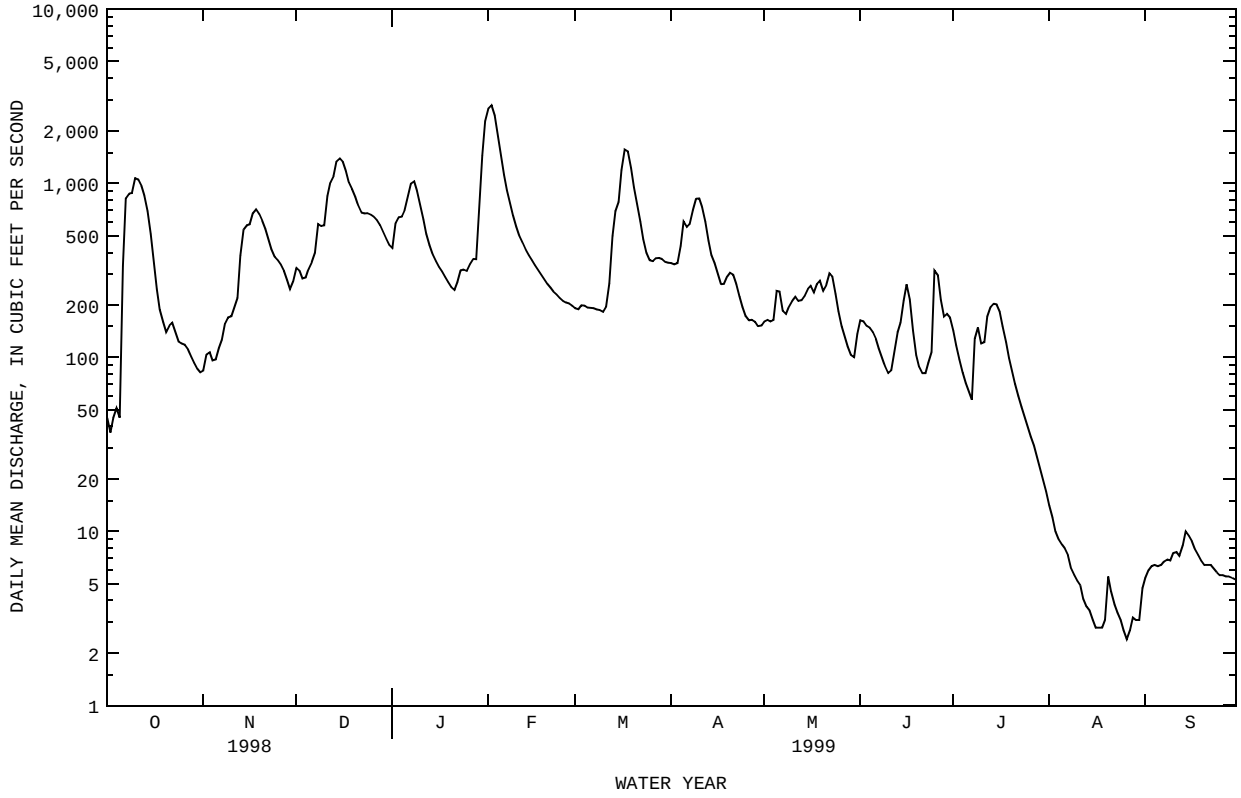
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	84	326	424	2690	191	347	161	163	142	14	5.4
2	37	104	314	591	2800	189	342	164	161	117	12	6.0
3	45	107	284	636	2450	199	348	161	152	97	10	6.3
4	51	96	287	642	1900	198	437	164	148	82	9.0	6.4
5	45	97	322	697	1450	193	602	240	140	71	8.4	6.3
6	335	113	352	852	1120	192	560	239	127	64	8.0	6.4
7	820	126	398	996	911	191	583	185	112	57	7.3	6.7
8	870	157	582	1030	761	188	698	177	99	128	6.1	6.9
9	877	169	568	907	653	186	814	197	88	148	5.6	6.8
10	1070	172	573	748	563	183	816	211	81	120	5.2	7.5
11	1050	193	847	620	496	196	728	223	84	122	4.9	7.6
12	965	219	1010	511	454	266	604	211	109	171	4.1	7.2
13	849	384	1100	440	417	497	468	213	139	194	3.7	8.3
14	694	543	1330	390	386	689	387	226	158	203	3.5	10
15	510	572	1390	357	361	780	348	246	213	201	3.1	9.4
16	353	579	1330	331	339	1190	302	257	263	183	2.8	8.8
17	247	672	1170	311	317	1560	262	236	215	151	2.8	7.9
18	188	706	1010	291	298	1520	264	264	143	122	2.8	7.3
19	159	665	925	271	280	1220	290	275	103	99	3.1	6.8
20	140	612	835	253	264	948	306	242	88	83	5.5	6.4
21	152	547	744	243	251	750	298	260	81	70	4.5	6.4
22	158	480	678	270	239	603	262	304	81	60	3.8	6.4
23	140	417	669	315	229	476	223	290	93	52	3.4	6.1
24	123	378	674	320	219	398	195	231	107	46	3.1	5.8
25	120	361	661	314	211	360	172	184	313	40	2.7	5.6
26	118	342	642	343	206	356	163	151	294	35	2.4	5.6
27	111	314	615	367	204	370	164	131	214	31	2.7	5.5
28	101	278	575	366	198	371	160	115	171	27	3.2	5.5
29	93	246	523	687	---	367	151	103	177	23	3.1	5.4
30	86	273	478	1440	---	354	152	100	168	20	3.1	5.3
31	82	---	443	2280	---	349	---	136	---	17	4.7	---
TOTAL	10634	10006	21655	18243	20667	15530	11446	6297	4485	2976	158.6	202.0
MEAN	343	334	699	588	738	501	382	203	150	96.0	5.12	6.73
MAX	1070	706	1390	2280	2800	1560	816	304	313	203	14	10
MIN	37	84	284	243	198	183	151	100	81	17	2.4	5.3
AC-FT	21090	19850	42950	36180	40990	30800	22700	12490	8900	5900	315	401
CFSM	.94	.91	1.91	1.61	2.02	1.37	1.05	.56	.41	.26	.01	.02
IN.	1.08	1.02	2.21	1.86	2.11	1.58	1.17	.64	.46	.30	.02	.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1999, BY WATER YEAR (WY)

MEAN	94.5	265	546	532	652	708	589	463	287	91.8	42.9	57.9
MAX	415	1344	2157	1508	1612	1606	2006	1934	1321	576	623	581
(WY)	1974	1975	1988	1991	1975	1990	1973	1991	1974	1992	1979	1974
MIN	.009	13.6	62.1	99.0	69.6	108	109	50.8	1.86	.000	.060	.000
(WY)	1979	1984	1990	1971	1996	1996	1971	1984	1998	1998	1969	1969

07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1969 - 1999	
ANNUAL TOTAL	136423.23		122299.6			
ANNUAL MEAN	374		335		359	
HIGHEST ANNUAL MEAN					647	1991
LOWEST ANNUAL MEAN					78.3	1971
HIGHEST DAILY MEAN	2100	Jan 11	2800	Feb 2	10700	Dec 28 1987
LOWEST DAILY MEAN	.00	Jun 17	2.4	Aug 26	.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 17	2.9	Aug 24	.00	Aug 10 1969
INSTANTANEOUS PEAK FLOW			2860	Feb 2	11600	Dec 28 1987
INSTANTANEOUS PEAK STAGE			15.27	Feb 2	19.34	Dec 28 1987
ANNUAL RUNOFF (AC-FT)	270600		242600		260300	
ANNUAL RUNOFF (CFSM)	1.02		.92		.98	
ANNUAL RUNOFF (INCHES)	13.90		12.46		13.37	
10 PERCENT EXCEEDS	1010		815		880	
50 PERCENT EXCEEDS	183		211		168	
90 PERCENT EXCEEDS	.00		6.4		1.8	



07346050 LITTLE CYPRESS CREEK NEAR ORE CITY, TX

LOCATION.--Lat 32°40'21", long 94°45'03", Upshur County, Hydrologic Unit 11140307, on right bank at downstream side of bridge on U.S. Highway 259, 4 mi downstream from Clear Creek, 9 mi south of Ore City, and 12 mi north of Longview.

DRAINAGE AREA.--383 mi^2.

PERIOD OF RECORD.--Jan 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 232.67 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Major beaver dam activity during the water year 400 ft downstream of gage. No known regulation or diversions. During the year, the city of Gilmer discharged a small amount of wastewater effluent into a tributary above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902 occurred in Mar 1945; maximum stage since 1945, that of Apr 24, 1966. The flood in Apr 1958 reached a stage of 19.4 ft, or 1.3 ft lower than the flood of Mar 1945 at a point 6 mi upstream, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

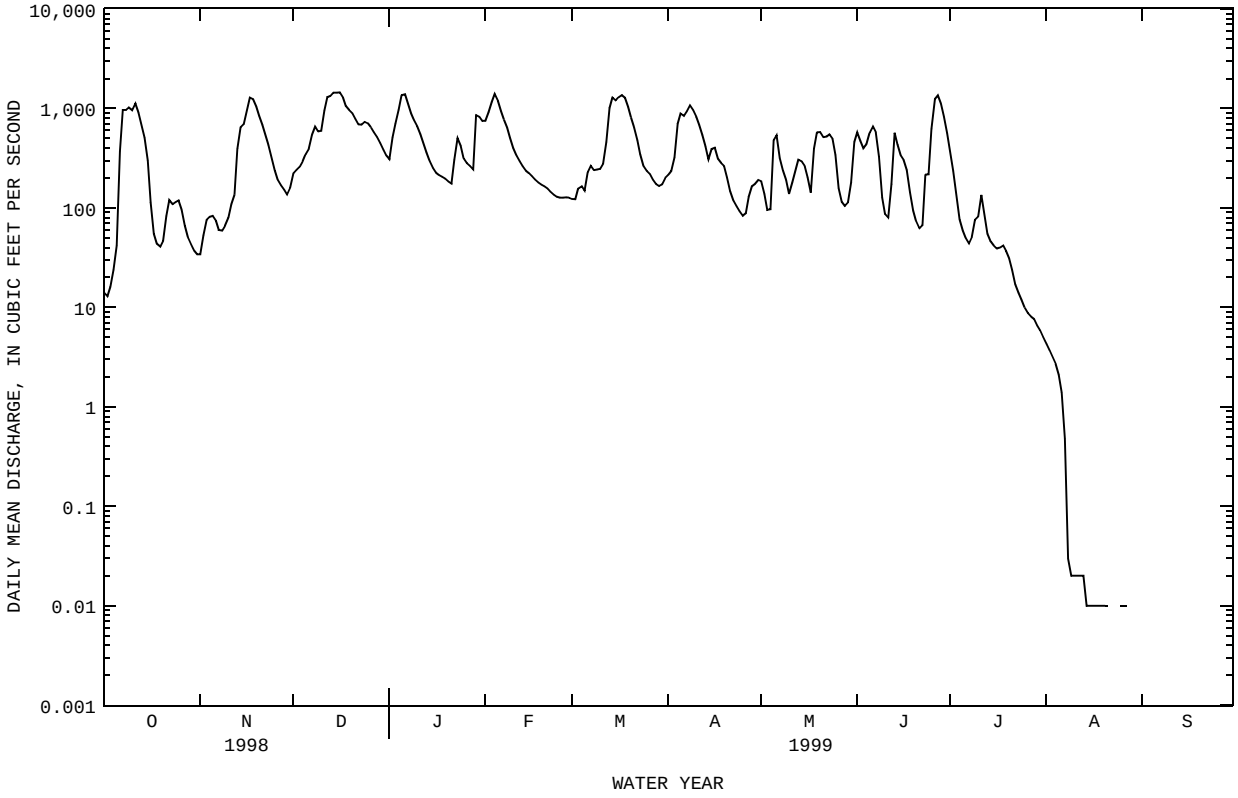
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	34	222	307	752	123	215	186	572	360	4.3	.00
2	13	53	242	514	915	122	236	139	469	237	3.7	.00
3	16	76	258	705	1160	157	321	96	399	132	3.2	.00
4	24	81	296	971	1400	166	701	97	440	77	2.7	.00
5	42	83	347	1360	1200	150	891	485	573	59	2.1	.00
6	369	74	392	1390	939	231	846	541	663	50	1.4	.00
7	964	60	540	1120	777	267	938	319	580	44	.48	.00
8	968	59	658	892	642	240	1080	238	329	51	.03	.00
9	1020	66	585	761	508	244	966	191	128	76	.02	.00
10	970	80	596	660	400	246	828	139	87	82	.02	.00
11	1130	108	954	550	338	280	689	180	80	135	.02	.00
12	911	135	1300	448	296	458	544	230	175	89	.02	.00
13	698	393	1340	361	263	1010	415	306	571	55	.02	.00
14	511	649	1440	295	239	1290	307	294	434	46	.01	.00
15	302	697	1440	252	224	1210	391	264	338	42	.01	.00
16	114	926	1450	228	210	1300	402	204	305	39	.01	.00
17	55	1290	1290	215	194	1370	312	143	240	40	.01	.00
18	44	1240	1060	206	181	1290	285	396	144	42	.01	.00
19	41	1050	970	197	172	1040	265	573	94	37	.01	.00
20	47	846	900	185	165	815	204	581	73	31	.01	.00
21	83	684	788	176	157	643	147	513	62	24	.01	.00
22	120	548	690	306	146	480	119	521	67	17	.00	.00
23	109	430	688	503	137	344	104	548	216	14	.00	.00
24	115	320	735	420	130	265	93	495	217	12	.00	.00
25	120	239	714	314	127	236	84	343	623	10	.01	.00
26	96	192	649	283	127	219	89	158	1250	8.8	.01	.00
27	66	169	581	264	128	193	130	114	1360	8.1	.01	.00
28	50	153	517	244	127	174	165	105	1110	7.7	.00	.00
29	43	137	448	857	---	167	174	113	834	6.6	.00	.00
30	37	161	385	830	---	173	192	181	567	5.9	.00	.00
31	34	---	337	748	---	201	---	462	---	5.0	.00	---
TOTAL	9126	11033	22812	16562	12054	15104	12133	9155	13000	1843.1	18.12	0.00
MEAN	294	368	736	534	431	487	404	295	433	59.5	.58	.000
MAX	1130	1290	1450	1390	1400	1370	1080	581	1360	360	4.3	.00
MIN	13	34	222	176	127	122	84	96	62	5.0	.00	.00
AC-FT	18100	21880	45250	32850	23910	29960	24070	18160	25790	3660	36	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	62.1	190	388	383	498	561	559	450	207	69.7	25.1	59.1
MAX	412	1508	1965	1282	1509	1478	3007	1834	905	426	392	614
(WY)	1994	1975	1988	1998	1997	1987	1966	1968	1974	1992	1979	1974
MIN	.000	1.10	3.70	25.6	42.0	40.9	54.3	23.9	2.09	.005	.000	.000
(WY)	1964	1966	1990	1964	1996	1966	1971	1984	1971	1984	1984	1963

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999	
ANNUAL TOTAL	141154.18		122840.22			
ANNUAL MEAN	387		337		290	
HIGHEST ANNUAL MEAN					599	1975
LOWEST ANNUAL MEAN					35.7	1964
HIGHEST DAILY MEAN	4380	Jan 9	1450	Dec 16	21000	Apr 24 1966
LOWEST DAILY MEAN	.00	Jul 5	.00	Aug 22	.00	Aug 16 1963
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 5	.00	Aug 28	.00	Aug 16 1963
INSTANTANEOUS PEAK FLOW			1460	Dec 14	23500	Apr 24 1966
INSTANTANEOUS PEAK STAGE			10.18	Dec 14	20.20	Apr 24 1966
ANNUAL RUNOFF (AC-FT)	280000		243700		210400	
10 PERCENT EXCEEDS	1130		945		778	
50 PERCENT EXCEEDS	83		194		73	
90 PERCENT EXCEEDS	.00		.00		.22	

07346050 LITTLE CYPRESS CREEK NEAR ORE CITY, TX--Continued



07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX

LOCATION.--Lat 32°42'46", long 94°20'45", Harrison County, Hydrologic Unit 11140307, at downstream side of upstream bridge on U.S. Highway 59, 0.3 mi downstream from Texas and Pacific Railway Co. bridge, 3.3 mi downstream from Grays Creek, 3.5 mi south of Jefferson, and 6.8 mi upstream from mouth.

DRAINAGE AREA.--675 mi^2.

PERIOD OF RECORD.--Jun 1946 to current year.
Water-quality records.--Chemical data: Jun 1964 to Oct 1997. Biological data: Jun 1964 to Oct 1997. Pesticide data: Jan 1968 to Jun 1981. Specific conductance: Oct 1967 to Sep 1990. Water temperature: Oct 1967 to Sep 1990.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 174.60 ft above sea level. Prior to Sep 19, 1947, nonrecording gage at upstream side of bridge at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Wastewater effluent is discharged into tributaries that enter Little Cypress Creek above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 21.1 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 9	1415	2,050	10.97	Feb 2	0045	4,340	12.96
Dec 13	0645	2,190	11.21				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

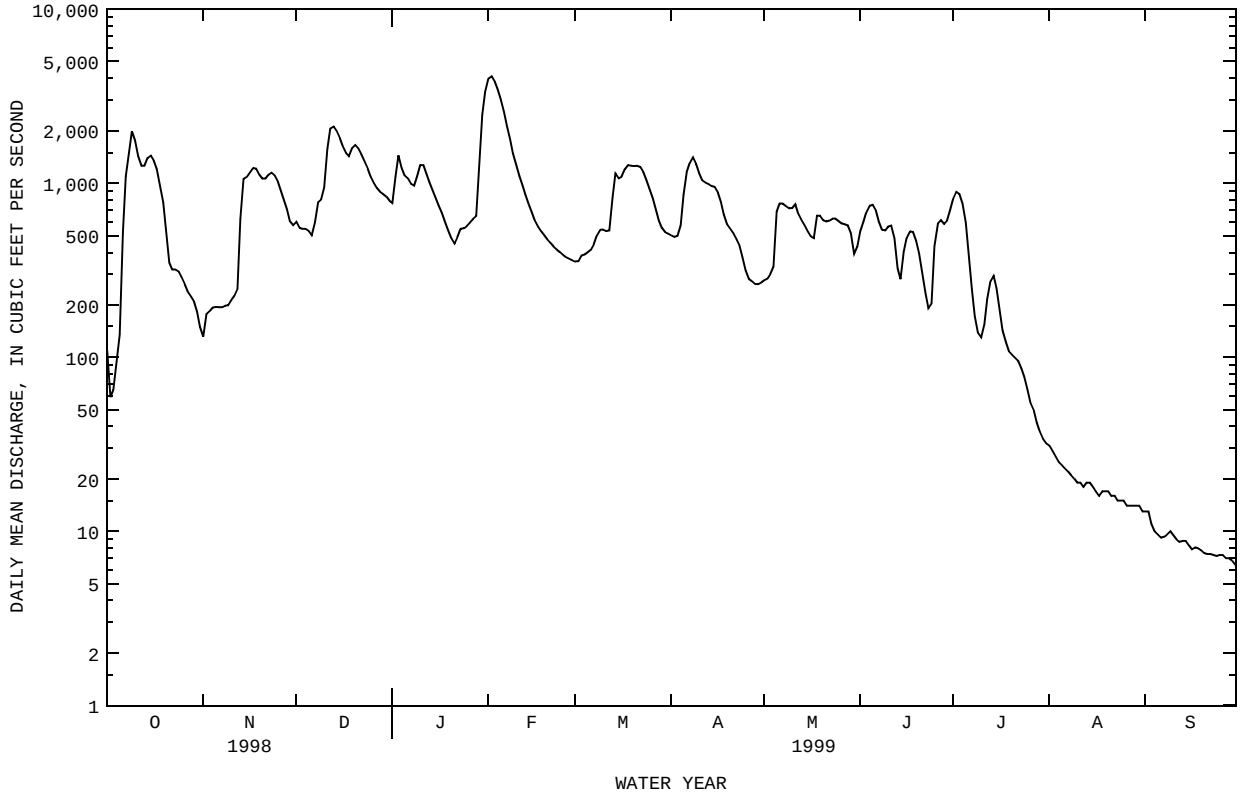
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	109	131	599	771	4000	355	501	277	528	820	31	13
2	59	177	554	1100	4120	356	493	283	601	893	29	13
3	65	184	547	1450	3840	383	498	301	680	867	27	11
4	96	193	547	1220	3460	390	574	332	741	761	25	10
5	135	195	533	1110	3030	401	861	687	751	594	24	9.6
6	521	194	501	1060	2560	415	1160	763	696	397	23	9.2
7	1100	194	595	992	2140	445	1310	764	602	247	22	9.3
8	1510	198	777	969	1790	502	1410	739	539	173	21	9.6
9	1990	199	802	1090	1480	539	1290	715	536	138	20	10
10	1760	214	946	1270	1270	542	1140	720	562	130	19	9.5
11	1420	225	1580	1270	1100	532	1040	756	569	155	19	9.0
12	1260	248	2070	1140	969	535	1010	669	483	217	18	8.7
13	1260	624	2120	1010	858	825	988	615	324	274	19	8.8
14	1400	1060	2000	904	758	1140	962	574	281	294	19	8.8
15	1440	1090	1810	814	678	1070	951	528	405	249	18	8.3
16	1350	1150	1630	742	612	1090	885	496	485	185	17	7.9
17	1200	1220	1490	673	563	1200	776	483	529	142	16	8.1
18	988	1210	1430	602	527	1270	660	649	525	121	17	8.0
19	777	1120	1590	537	500	1260	581	650	465	108	17	7.8
20	515	1060	1660	483	475	1250	549	613	397	103	17	7.5
21	349	1060	1590	450	454	1260	517	602	306	99	16	7.4
22	319	1120	1470	490	434	1240	477	611	234	95	16	7.4
23	319	1150	1330	547	418	1160	436	626	192	86	15	7.3
24	311	1110	1210	551	403	1040	376	627	205	77	15	7.2
25	288	1020	1090	567	388	923	315	608	435	65	15	7.3
26	262	914	1000	591	377	817	282	587	589	54	14	7.3
27	237	805	939	624	369	706	274	580	613	49	14	7.0
28	223	704	895	647	360	608	264	572	582	42	14	7.0
29	209	603	867	1150	---	553	262	516	607	37	14	6.8
30	182	573	839	2480	---	523	269	393	702	34	14	6.4
31	149	---	798	3360	---	513	---	434	---	32	13	---
TOTAL	21803	19945	35809	30664	37933	23843	21111	17770	15164	7538	578	258.2
MEAN	703	665	1155	989	1355	769	704	573	505	243	18.6	8.61
MAX	1990	1220	2120	3360	4120	1270	1410	764	751	893	31	13
MIN	59	131	501	450	360	355	262	277	192	32	13	6.4
AC-FT	43250	39560	71030	60820	75240	47290	41870	35250	30080	14950	1150	512
CFSM	1.04	.98	1.71	1.47	2.01	1.14	1.04	.85	.75	.36	.03	.01
IN.	1.20	1.10	1.97	1.69	2.09	1.31	1.16	.98	.84	.42	.03	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1999, BY WATER YEAR (WY)

MEAN	126	314	659	758	942	996	999	988	449	136	47.0	101
MAX	927	2709	3391	2664	2853	2367	4584	4212	2525	689	667	941
(WY)	1950	1958	1961	1991	1950	1969	1966	1958	1946	1992	1979	1979
MIN	.000	.017	.53	8.33	73.1	75.7	117	61.6	4.67	.24	.000	.000
(WY)	1953	1957	1957	1957	1996	1996	1972	1971	1971	1964	1956	1952

07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1946 - 1999	
ANNUAL TOTAL	243507.78		232416.2			
ANNUAL MEAN	667		637		538	
HIGHEST ANNUAL MEAN					1260	1958
LOWEST ANNUAL MEAN					67.3	1964
HIGHEST DAILY MEAN	5310	Jan 12	4120	Feb 2	32700	Apr 26 1966
LOWEST DAILY MEAN	.06	Sep 10	6.4	Sep 30	.00	Sep 20 1948
ANNUAL SEVEN-DAY MINIMUM	.09	Sep 5	7.0	Sep 24	.00	Sep 20 1948
INSTANTANEOUS PEAK FLOW			4340	Feb 2	35500	Apr 26 1966
INSTANTANEOUS PEAK STAGE			12.96	Feb 2	22.28	Apr 26 1966
ANNUAL RUNOFF (AC-FT)	483000		461000		389400	
ANNUAL RUNOFF (CFSM)	.99		.94		.80	
ANNUAL RUNOFF (INCHES)	13.42		12.81		10.82	
10 PERCENT EXCEEDS	1580		1270		1370	
50 PERCENT EXCEEDS	287		535		182	
90 PERCENT EXCEEDS	.38		15		1.5	



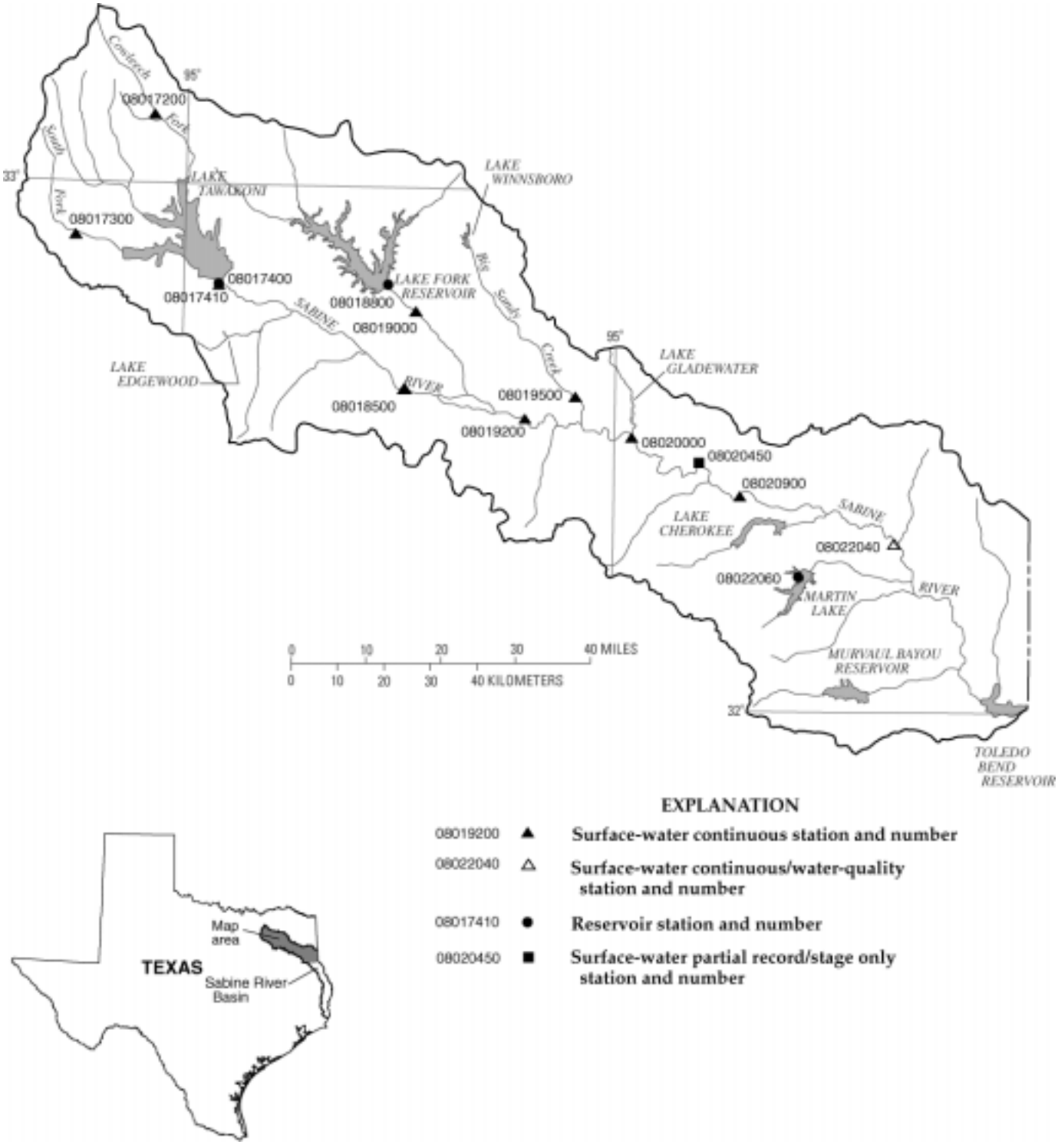


Figure 8.-- Map showing location of gaging stations in the first section of the Sabine River Basin

08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX

LOCATION.--Lat 33°07'58", long 96°04'36", Hunt County, Hydrologic Unit 12010001, on left bank 103 ft downstream from centerline of downstream bridge on Interstate Highway 30, 0.3 mi downstream from Horse Creek, 0.9 mi downstream from Louisiana and Arkansas Railroad Co. bridge, 1.8 mi east of Greenville, and at mile 558.3.

DRAINAGE AREA.--77.7 mi^2.

PERIOD OF RECORD.--Feb 1959 to current year. Prior to Oct 1963, published as "Sabine River at Greenville".

REVISED RECORDS.--WSP 1732: Drainage area. WSP 2122: 1960, 1963-65.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 485.07 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. The city of Greenville diverts water from city lakes upstream from gage and from Lake Tawakoni for municipal use. Wastewater effluent was returned to a tributary downstream from gage. Extreme low flows are largely sustained by return water from a water treatment plant upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1895, 22 ft in May 1935, from information by local resident and city engineer of Greenville. Flood of Jul 3, 1913, reached a stage of 20 ft, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 3	1645	3,880	16.62	Dec 4	1000	11,800	17.97

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

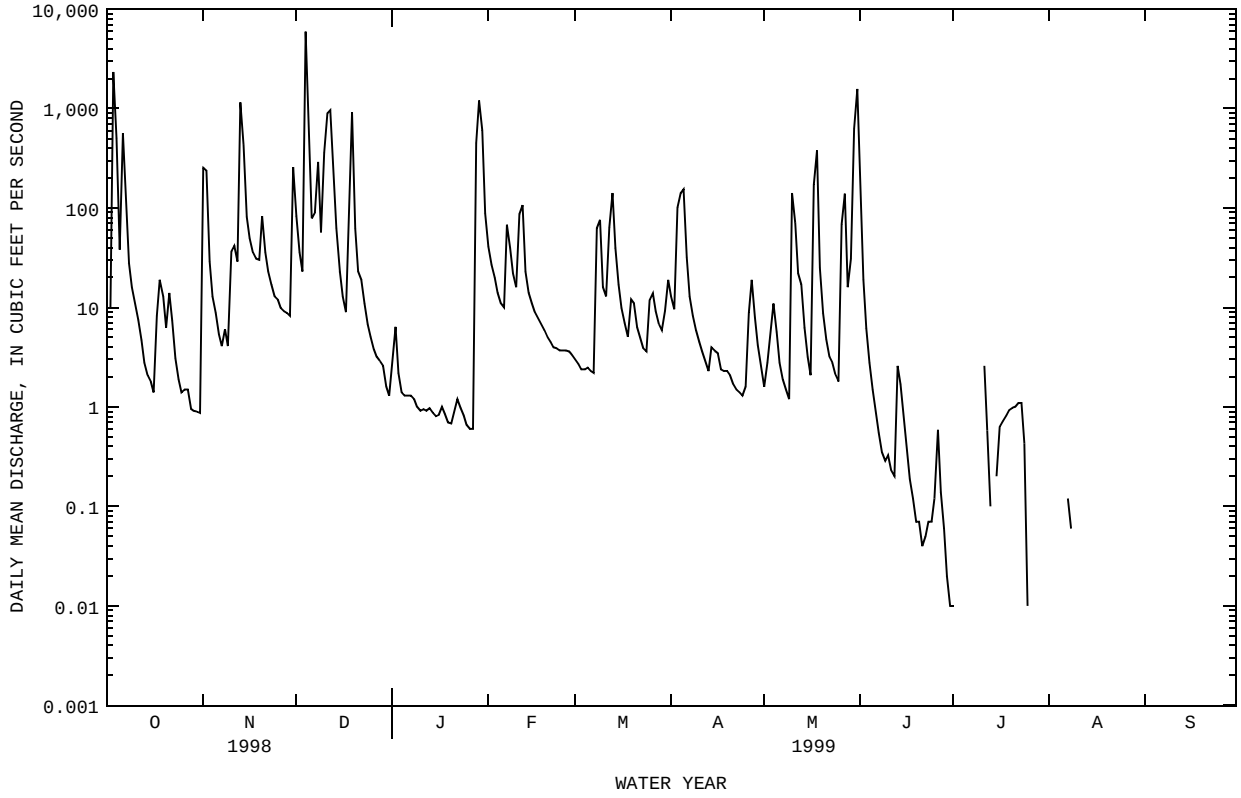
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	254	84	2.9	41	3.0	13	1.6	204	.01	.00	.00
2	10	238	36	6.4	27	2.7	9.6	2.8	19	.00	.00	.00
3	2330	29	23	2.2	20	2.4	101	5.5	6.2	.00	.00	.00
4	505	13	5930	1.4	14	2.4	141	11	2.8	.00	.00	.00
5	38	8.9	675	1.3	11	2.5	155	5.7	1.5	.00	.00	.00
6	567	5.4	79	1.3	10	2.3	32	2.8	.89	.00	.00	.00
7	129	4.1	91	1.3	68	2.2	13	1.9	.55	.00	.12	.00
8	28	6.1	291	1.2	40	63	8.3	1.5	.35	.00	.06	.00
9	16	4.1	57	1.0	22	76	5.9	1.2	.29	.00	.00	.00
10	11	37	361	.92	16	16	4.5	142	.33	.00	.00	.00
11	7.5	42	900	.95	87	13	3.6	71	.23	2.6	.00	.00
12	4.7	29	967	.92	107	64	2.9	22	.20	.58	.00	.00
13	2.8	1150	280	.97	23	141	2.3	17	2.6	.10	.00	.00
14	2.1	432	63	.88	14	40	4.0	6.3	1.7	.00	.00	.00
15	1.8	82	23	.81	11	17	3.7	3.2	.78	.20	.00	.00
16	1.4	50	13	.83	9.0	9.9	3.5	2.1	.39	.64	.00	.00
17	8.2	36	9.0	1.0	7.8	7.0	2.4	172	.19	.72	.00	.00
18	19	31	102	.85	6.8	5.1	2.3	381	.12	.82	.00	.00
19	13	30	918	.70	5.9	12	2.3	25	.07	.93	.00	.00
20	6.3	83	62	.68	5.1	11	2.1	8.8	.07	.98	.00	.00
21	14	36	23	.92	4.5	6.3	1.7	4.8	.04	1.0	.00	.00
22	7.4	23	19	1.2	4.0	4.9	1.5	3.2	.05	1.1	.00	.00
23	3.1	17	11	.98	3.9	3.9	1.4	2.8	.07	1.1	.00	.00
24	1.9	13	6.8	.82	3.7	3.6	1.3	2.1	.07	.43	.00	.00
25	1.4	12	5.1	.66	3.7	12	1.6	1.8	.12	.01	.00	.00
26	1.5	9.9	3.8	.60	3.7	14	8.9	69	.59	.00	.00	.00
27	1.5	9.2	3.2	.60	3.6	9.2	19	140	.14	.00	.00	.00
28	.96	8.8	2.9	451	3.3	6.8	8.0	16	.06	.00	.00	.00
29	.91	8.2	2.6	1210	---	5.9	4.2	31	.02	.00	.00	.00
30	.90	258	1.6	605	---	9.3	2.5	628	.01	.00	.00	.00
31	.87	---	1.3	89	---	19	---	1570	---	.00	.00	---
TOTAL	3735.24	2959.7	11044.3	2389.29	576.0	587.4	562.5	3353.1	243.43	11.22	0.18	0.00
MEAN	120	98.7	356	77.1	20.6	18.9	18.8	108	8.11	.36	.006	.000
MAX	2330	1150	5930	1210	107	141	155	1570	204	2.6	.12	.00
MIN	.00	4.1	1.3	.60	3.3	2.2	1.3	1.2	.01	.00	.00	.00
AC-FT	7410	5870	21910	4740	1140	1170	1120	6650	483	22	.4	.00
CFSM	1.55	1.27	4.59	.99	.26	.24	.24	1.39	.10	.00	.00	.00
IN.	1.79	1.42	5.29	1.14	.28	.28	.27	1.61	.12	.01	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

MEAN	57.0	59.1	105	64.2	88.0	93.3	95.8	137	60.4	22.4	5.64	28.1
MAX	354	433	573	403	444	390	431	540	353	264	95.2	258
(WY)	1972	1997	1972	1998	1997	1984	1966	1982	1981	1989	1977	1974
MIN	.001	.025	.11	.24	.22	.48	.85	.33	.032	.001	.000	.000
(WY)	1996	1996	1990	1986	1996	1996	1971	1988	1988	1998	1985	1999

08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1959 - 1999	
ANNUAL TOTAL	36264.45		25462.36			
ANNUAL MEAN	99.4		69.8		68.7	
HIGHEST ANNUAL MEAN					146	1995
LOWEST ANNUAL MEAN					2.85	1996
HIGHEST DAILY MEAN	5930	Dec 4	5930	Dec 4	9730	May 13 1982
LOWEST DAILY MEAN	.00	May 16	.00	Oct 1	.00	Aug 4 1964
ANNUAL SEVEN-DAY MINIMUM	.00	May 16	.00	Jul 2	.00	Aug 4 1972
INSTANTANEOUS PEAK FLOW			11800	Dec 4	15300	May 13 1982
INSTANTANEOUS PEAK STAGE			17.97	Dec 4	18.47	May 13 1982
ANNUAL RUNOFF (AC-FT)	71930		50500		49740	
ANNUAL RUNOFF (CFSM)	1.28		.90		.88	
ANNUAL RUNOFF (INCHES)	17.36		12.19		12.01	
10 PERCENT EXCEEDS	137		85		57	
50 PERCENT EXCEEDS	2.3		2.8		1.4	
90 PERCENT EXCEEDS	.00		.00		.02	



08017300 SOUTH FORK SABINE RIVER NEAR QUINLAN, TX

LOCATION.--Lat 32°53'52", long 96°15'11", Hunt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 1565, 2.4 mi upstream from Dry Creek, 6.2 mi upstream from Bearpen Creek, 7 mi southwest of Quinlan, and 25 mi upstream from mouth.

DRAINAGE AREA.--78.7 mi^2.

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 461.40 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversions. Wastewater effluent is discharged at various periods during the water year by Royse City located approximately 10 mi above this station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 21 ft Jul 29, 1902, from information by local resident. Flood of Apr 27, 1957, reached a stage of 17.76 ft, from floodmarks.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 13	1415	3,260	16.26	May 18	0200	11,800	17.55
Dec 4	1030	16,200	18.14	May 30	1945	5,570	16.65
Dec 11	0130	3,040	16.17				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

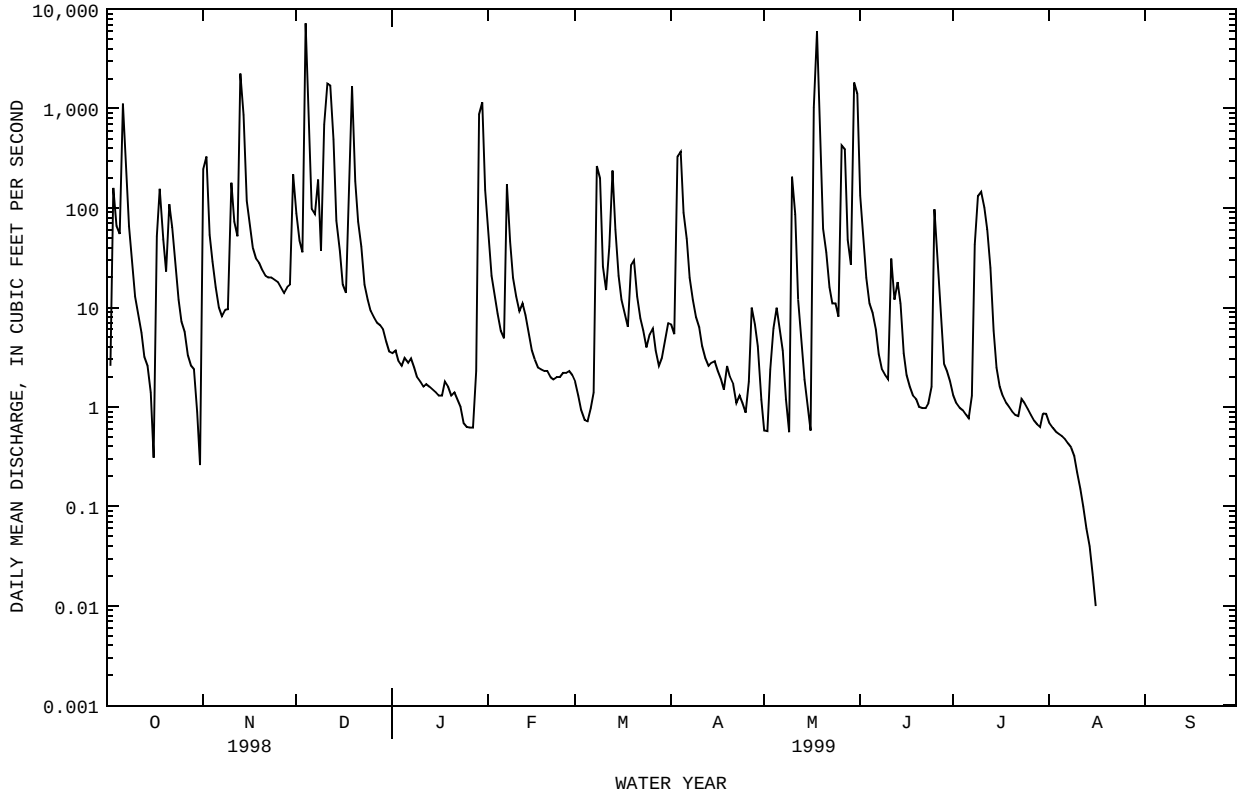
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	247	89	3.5	55	1.8	6.8	.58	134	1.3	.69	.00
2	2.6	329	47	3.7	21	1.3	5.4	.57	51	1.1	.62	.00
3	160	54	36	2.9	13	.93	333	2.4	20	.99	.57	.00
4	66	29	7190	2.6	8.7	.74	370	6.2	11	.93	.54	.00
5	55	16	896	3.1	5.8	.72	90	10	8.8	.84	.51	.00
6	1120	10	98	2.8	4.9	.97	49	6.3	6.0	.77	.48	.00
7	251	8.2	87	3.1	173	1.4	20	3.7	3.4	1.3	.43	.00
8	66	9.5	193	2.5	46	264	12	1.2	2.4	43	.39	.00
9	33	9.6	37	2.0	20	199	8.0	.56	2.1	132	.32	.00
10	13	180	694	1.8	13	26	6.3	206	1.9	146	.22	.00
11	8.6	73	1790	1.6	9.2	15	4.1	87	31	101	.15	.00
12	5.6	52	1710	1.7	11	41	3.1	12	12	61	.10	.00
13	3.2	2240	492	1.6	8.4	238	2.6	4.9	18	25	.06	.00
14	2.6	865	75	1.5	5.7	61	2.8	1.9	11	5.8	.04	.00
15	1.4	119	37	1.4	3.7	21	2.9	1.0	3.5	2.5	.02	.00
16	.31	70	17	1.3	3.0	12	2.3	.58	2.1	1.6	.01	.00
17	52	40	14	1.3	2.5	8.9	1.9	1020	1.6	1.3	.00	.00
18	156	31	108	1.8	2.4	6.4	1.5	5960	1.3	1.1	.00	.00
19	49	28	1680	1.6	2.3	27	2.6	563	1.2	1.0	.00	.00
20	23	24	186	1.3	2.3	30	2.0	62	1.0	.90	.00	.00
21	109	21	73	1.4	2.0	13	1.7	36	.97	.83	.00	.00
22	64	20	41	1.2	1.9	7.8	1.1	16	.97	.81	.00	.00
23	26	20	17	1.0	2.0	5.9	1.3	11	1.1	1.2	.00	.00
24	12	19	12	.68	2.0	4.0	1.1	11	1.6	1.1	.00	.00
25	7.2	18	9.3	.63	2.2	5.4	.88	8.1	97	.96	.00	.00
26	5.7	16	8.0	.62	2.2	6.2	1.8	423	27	.83	.00	.00
27	3.3	14	7.1	.62	2.3	3.7	10	388	8.0	.73	.00	.00
28	2.6	16	6.7	2.3	2.1	2.6	6.8	48	2.7	.67	.00	.00
29	2.4	17	6.0	877	---	3.1	4.1	27	2.3	.63	.00	.00
30	.89	217	4.5	1150	---	4.6	1.2	1820	1.8	.86	.00	.00
31	.26	---	3.6	151	---	7.0	---	1410	---	.85	.00	---
TOTAL	2301.66	4812.3	15664.2	2229.55	427.6	1020.46	956.28	12147.99	466.74	538.90	5.15	0.00
MEAN	74.2	160	505	71.9	15.3	32.9	31.9	392	15.6	17.4	.17	.000
MAX	1120	2240	7190	1150	173	264	370	5960	134	146	.69	.00
MIN	.00	8.2	3.6	.62	1.9	.72	.88	.56	.97	.63	.00	.00
AC-FT	4570	9550	31070	4420	848	2020	1900	24100	926	1070	10	.00
CFSM	.94	2.04	6.42	.91	.19	.42	.41	4.98	.20	.22	.00	.00
IN.	1.09	2.27	7.40	1.05	.20	.48	.45	5.74	.22	.25	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

MEAN	99.5	66.6	112	63.4	116	106	125	151	86.6	28.3	5.46	24.8
MAX	656	655	505	277	556	572	693	674	1128	490	96.8	353
(WY)	1982	1995	1999	1974	1983	1977	1966	1979	1981	1981	1974	1974
MIN	.000	.000	.000	.000	.000	.11	.062	.038	.000	.000	.000	.000
(WY)	1964	1964	1964	1976	1976	1972	1971	1988	1977	1964	1965	1963

08017300 SOUTH FORK SABINE RIVER NEAR QUINLAN, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1959 - 1999	
ANNUAL TOTAL	34680.37		40570.83			
ANNUAL MEAN	95.0		111		82.7	
HIGHEST ANNUAL MEAN					187	1995
LOWEST ANNUAL MEAN					3.29	1996
HIGHEST DAILY MEAN	7190	Dec 4	7190	Dec 4	13300	Jun 16 1981
LOWEST DAILY MEAN	.00	May 20	.00	Oct 1	.00	Mar 3 1959
ANNUAL SEVEN-DAY MINIMUM	.00	May 20	.00	Aug 17	.00	Apr 5 1959
INSTANTANEOUS PEAK FLOW			16200	Dec 4	23000	Jun 16 1981
INSTANTANEOUS PEAK STAGE			18.14	Dec 4	18.77	Apr 5 1986
ANNUAL RUNOFF (AC-FT)	68790		80470		59940	
ANNUAL RUNOFF (CFSM)	1.21		1.41		1.05	
ANNUAL RUNOFF (INCHES)	16.39		19.18		14.28	
10 PERCENT EXCEEDS	113		148		59	
50 PERCENT EXCEEDS	3.5		3.3		.46	
90 PERCENT EXCEEDS	.00		.00		.00	



08017400 LAKE TAWAKONI NEAR WILLS POINT, TX

LOCATION.--Lat 32°48'31", long 95°55'10", Rains County, Hydrologic Unit 120l0001, in stairwell at left end of spillway of Iron Bridge Dam on Sabine River, 750 ft upstream from bridge on Farm Road 47, 3.8 mi upstream from McBee Creek, 9.0 mi northeast of Wills Point, and at mile 514.5.

DRAINAGE AREA.--756 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 29,500 ft long, including a 480-foot uncontrolled concrete ogee spillway. Outlet works consist of two 4- by 6-foot sluice gates and two 20-inch steel pipes controlled by service valves. Closure of earthen dam began Jul 1, 1960, and deliberate impoundment of water began Oct 7, 1960. Capacity table is based on a 1984 survey. Diversions are made for municipal use by the city of Dallas and various other users in the Sabine River basin. The lake was built for water conservation. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	454.0
Design flood	446.2
Crest of spillway	437.5
Lowest intake to wet well (invert)	416.5
Lowest gated outlet (invert)	378.0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,130,400 acre-ft, May 1, 1966 (elevation, 442.58 ft); minimum contents since lake first filled in May 1965, 786,900 acre-ft, Sep 11, 1998 (elevation, 433.17 ft) using Capacity Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,022,000 acre-ft, Dec 5-6 (elevation, 439.81 ft); minimum contents, 787,200 acre-ft, Oct 2 (elevation, 433.18 ft).

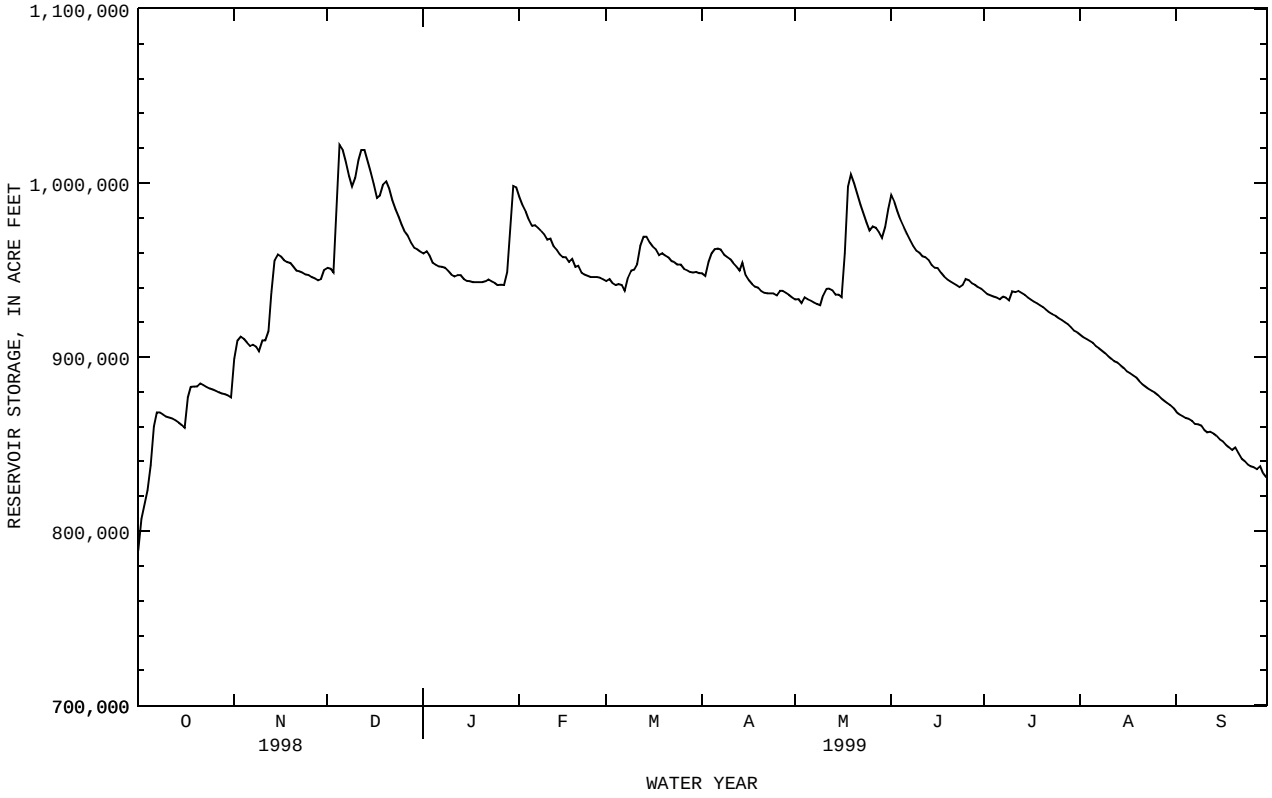
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	788900	899100	951400	959500	992000	943800	948200	933000	993100	937700	912900	868600
2	807100	909700	950700	961000	987200	944900	946700	933400	989000	936200	911400	867200
3	815000	911800	948500	958400	983500	942800	954700	931200	983900	935500	910400	866200
4	823500	910700	991200	954300	979100	941300	959900	934400	978700	934800	909300	865100
5	838000	908600	1022000	953200	975400	942000	962100	933400	974600	934100	908300	864500
6	860300	906500	1019000	952100	975700	941300	962400	932600	970900	933400	906500	863400
7	868300	907200	1012000	951800	974300	938000	961700	931500	967600	934800	905100	861700
8	868300	906100	1004000	951400	972400	945600	959100	930500	963900	934100	903700	861400
9	867200	903300	998000	949600	970600	949600	957600	929700	961300	932600	902200	860700
10	865800	909700	1003000	947500	967600	950300	956200	935500	960200	937700	900500	858200
11	865200	909700	1013000	946400	968000	953600	954000	939100	958000	937300	899100	856800
12	864800	915000	1019000	947100	963600	963900	952100	939500	957300	938000	897600	857200
13	863800	937000	1019000	947100	961700	969100	949600	938400	955800	937000	896900	856100
14	862400	955800	1013000	944900	959100	969100	954300	935900	952900	935900	895200	854800
15	861000	959100	1006000	943800	957300	965800	947100	935900	951400	934400	893800	852700
16	859300	958000	999600	943500	957300	963600	944200	934400	951100	933000	892000	851600
17	876900	955700	991600	943100	954700	962100	942000	959500	948500	931900	890900	849600
18	882800	954700	992800	943100	956500	958800	940600	998000	946400	930800	889500	848200
19	883100	954000	999200	943100	951800	959900	939900	1005000	944600	929700	888400	846800
20	883100	952100	1001000	943100	952500	958400	938000	999900	943500	928700	886300	848200
21	884900	949600	996900	943500	948500	957300	937000	993900	942400	927200	884600	844800
22	883900	949300	990100	944600	947500	955100	936600	987600	941300	925800	883100	841700
23	882800	948500	985000	943500	946700	954700	936600	982800	940200	924700	881800	840400
24	882100	947500	980500	942800	946000	953200	936600	977200	941700	924000	880700	838400
25	881400	947100	976100	941300	946000	953200	935500	972800	944900	922500	879700	837300
26	880700	946000	972000	941700	946000	950700	938000	975000	944200	921400	878300	836700
27	879700	945300	969800	941300	945600	950000	938000	974300	942400	920000	876600	835600
28	879000	944200	965800	948900	944600	948900	937000	972000	941700	918900	875200	837300
29	878600	944900	962800	973200	---	948500	935900	968400	940200	917100	873800	833300
30	877900	950100	962100	998400	---	948900	934100	974600	939500	915300	872400	830900
31	876900	---	960600	997700	---	948200	---	985300	---	914300	870700	---
MAX	884900	959100	1022000	998400	992000	969100	962400	1005000	993100	938000	912900	868600
MIN	788900	899100	948500	941300	944600	938000	934100	929700	939500	914300	870700	830900
(+)	435.83	437.88	438.17	439.17	437.73	437.83	437.44	438.84	437.59	436.89	435.65	434.49
(@)	+86700	+73200	+10500	+37100	-53100	+3600	-14100	+51200	-45800	-25200	-43600	-39800

CAL YR 1998 MAX 1022000 MIN 787500 (@) -2600
WTR YR 1999 MAX 1022000 MIN 788900 (@) +40700

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08017400 LAKE TAWAKONI NEAR WILLS POINT, TX--Continued



08017410 SABINE RIVER NEAR WILLS POINT, TX

LOCATION.--Lat 32°48'22", long 95°55'09", Van Zandt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 47, 750 ft downstream from Iron Bridge Dam that forms Lake Tawakoni, 3.6 mi upstream from McBee Creek, 9.0 mi northeast of Wills Point, and at mile 514.3.

DRAINAGE AREA.--756 mi^2.

PERIOD OF RECORD.--Oct 1970 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 370.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1970, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, normal storage 936,200 acre-ft), 750 ft upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since construction of Iron Bridge Dam in 1960, about 21,000 ft^3/s May 1, 1966, from theoretical rating curve of flow over dam 750 ft upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

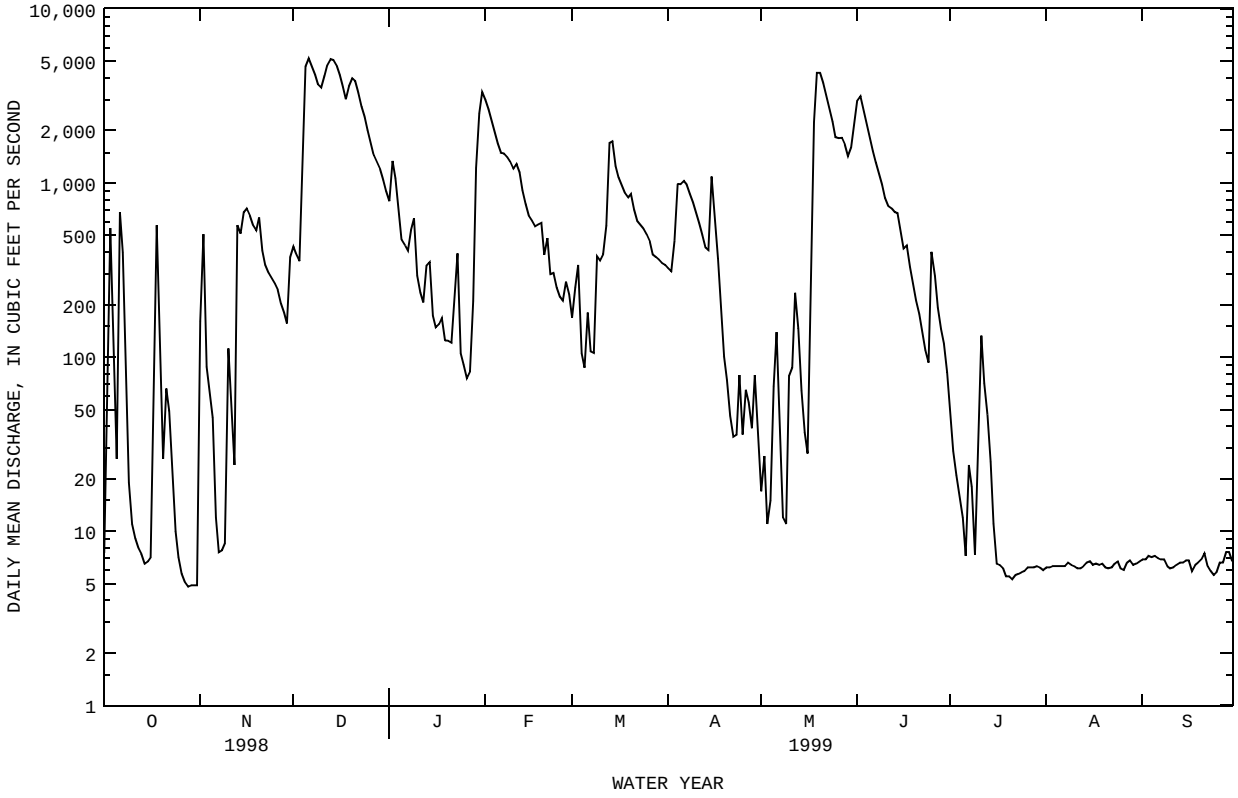
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	161	432	786	3010	169	325	17	2990	45	6.2	6.9
2	74	508	387	1340	2650	252	312	27	3160	29	6.2	6.9
3	552	88	356	1070	2270	339	464	11	2710	21	6.3	7.2
4	130	64	1180	697	1970	105	987	15	2250	16	6.3	7.1
5	26	45	4680	473	1690	87	985	68	1840	12	6.3	7.2
6	681	12	5190	439	1490	180	1030	139	1530	7.2	6.3	7.0
7	400	7.6	4670	408	1480	108	980	34	1320	24	6.3	6.9
8	57	7.8	4180	542	1410	106	865	12	1140	18	6.6	6.9
9	19	8.5	3680	628	1330	380	775	11	975	7.3	6.4	6.3
10	11	112	3540	294	1210	359	673	78	821	38	6.3	6.1
11	9.1	58	4120	234	1290	391	590	87	738	133	6.1	6.2
12	8.0	24	4770	206	1150	569	505	234	718	71	6.1	6.4
13	7.4	572	5150	336	909	1710	426	146	680	47	6.3	6.6
14	6.5	513	5090	352	758	1740	412	64	672	25	6.6	6.6
15	6.7	682	4700	174	647	1250	1090	37	521	11	6.7	6.8
16	7.1	714	4190	148	612	1080	598	28	421	6.5	6.4	6.8
17	86	650	3560	155	565	978	369	126	439	6.4	6.5	5.9
18	574	572	3040	168	580	878	184	2240	330	6.1	6.4	6.4
19	128	536	3620	125	592	829	101	4290	261	5.5	6.5	6.6
20	26	636	4000	124	388	865	74	4300	212	5.5	6.2	6.9
21	66	409	3870	121	482	701	46	3760	177	5.3	6.1	7.5
22	49	338	3300	215	300	604	35	3170	139	5.6	6.2	6.3
23	20	306	2750	395	305	575	36	2700	110	5.7	6.5	5.9
24	10	285	2390	105	251	547	79	2260	93	5.8	6.7	5.6
25	7.1	265	2010	91	222	506	36	1830	403	5.9	6.1	5.8
26	5.7	245	1700	76	211	462	65	1810	293	6.2	6.0	6.6
27	5.1	204	1450	83	272	390	55	1820	193	6.2	6.6	6.6
28	4.8	180	1320	210	229	377	39	1670	145	6.2	6.8	7.6
29	4.9	156	1200	1220	---	364	79	1430	120	6.3	6.4	7.6
30	4.9	375	1040	2520	---	347	38	1600	82	6.2	6.5	6.7
31	4.9	---	898	3330	---	339	---	2250	---	6.0	6.7	---
TOTAL	2998.7	8733.9	92463	17065	28273	17587	12253	36264	25483	599.9	197.6	199.9
MEAN	96.7	291	2983	550	1010	567	408	1170	849	19.4	6.37	6.66
MAX	681	714	5190	3330	3010	1740	1090	4300	3160	133	6.8	7.6
MIN	4.8	7.6	356	76	211	87	35	11	82	5.3	6.0	5.6
AC-FT	5950	17320	183400	33850	56080	34880	24300	71930	50550	1190	392	397

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1999, BY WATER YEAR (WY)

MEAN	196	382	585	359	539	704	705	927	596	174	34.2	48.9
MAX	1726	2539	3377	1701	2482	1911	2090	3888	2825	1229	332	868
(WY)	1974	1975	1992	1998	1975	1990	1986	1990	1989	1981	1979	1974
MIN	.21	.76	.16	3.14	1.87	2.84	1.31	5.35	.81	.56	.12	.25
(WY)	1991	1979	1991	1996	1976	1976	1971	1996	1972	1972	1986	1987

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1971 - 1999	
ANNUAL TOTAL	213234.4		242118.0			
ANNUAL MEAN	584		663		437	
HIGHEST ANNUAL MEAN					1064	1992
LOWEST ANNUAL MEAN					3.66	1996
HIGHEST DAILY MEAN	5190	Dec 6	5190	Dec 6	20000	May 4 1990
LOWEST DAILY MEAN	3.6	Jun 24	4.8	Oct 28	.00	Oct 1 1971
ANNUAL SEVEN-DAY MINIMUM	4.4	Jun 22	5.3	Oct 25	.00	Oct 6 1971
INSTANTANEOUS PEAK FLOW			5490	Dec 6	20600	May 4 1990
INSTANTANEOUS PEAK STAGE			15.15	Dec 6	19.11	May 4 1990
ANNUAL RUNOFF (AC-FT)	423000		480200		316500	
10 PERCENT EXCEEDS	1650		2240		1360	
50 PERCENT EXCEEDS	54		180		22	
90 PERCENT EXCEEDS	6.6		6.3		.28	

08017410 SABINE RIVER NEAR WILLS POINT, TX--Continued



08018500 SABINE RIVER NEAR MINEOLA, TX

LOCATION.--Lat 32°36'49", long 95°29'08", Wood County, Hydrologic Unit 12010001, on left bank at downstream side of highway embankment 3 ft downstream from left end of bridge on U.S. Highway 69, 3.5 mi south of Mineola, 4.5 mi upstream from Missouri Pacific Railway Lines bridge, 16.2 mi upstream from Lake Fork Creek, and at mile 461.1.

DRAINAGE AREA.--1,357 mi^2.

PERIOD OF RECORD.--Jun 1939 to Sep 1959, Oct 1967 to current year. Gage-height records collected at this site since Jul 1946 are contained in reports published by the National Weather Service.
Water-quality records.--Chemical data: October 1967 to September 1996. Biochemical data: October 1973 to September 1996.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 304.16 ft above sea level. May 12, 1939 to Dec 11, 1955, at site 55 ft upstream from downstream side of bridge; Dec 12, 1955 to Dec 12, 1959, at downstream side of bridge; Oct 1, 1967 to Sep 12, 1968, nonrecording gage at downstream side of bridge; Sep 13, 1968 to Oct 23, 1974, water-stage recorder at downstream side of bridge; Oct 24, 1974 to Oct 16, 1975, at site on right bank 75 ft downstream from bridge. All gages at present datum. Satellite telemeter at station.

REMARKS.--Records good. Since Oct 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, normal storage 936,200 acre-ft), 53 mi upstream. Additional regulation since Sep 1962 by Lake Holbrook (normal storage, 7,990 acre-ft), located on Keys Creek, a tributary to the Sabine River 8.0 mi upstream. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi^2 area in the Mill Creek drainage basin.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--20 years (water years 1940-59) prior to regulation by Lake Tawakoni, (station 08017400) 1,054 ft^3/s (763,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-59).--Maximum discharge 76,000 ft^3/s Apr 1, 1945 (gage height, 24.00 ft); maximum gage height, 24.37 ft Jun 8, 1943; no flow at times. Maximum stage since at least 1890, that of Jun 8, 1943.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	60	665	1770	6050	315	548	85	3620	164	10	8.8
2	13	373	921	2160	5950	296	525	83	3860	119	10	9.7
3	97	906	1030	2370	4770	235	595	68	4460	83	10	14
4	551	1290	907	2240	3980	314	1360	59	4550	59	10	14
5	926	1370	1170	2040	3600	362	2010	140	4030	44	10	12
6	1370	803	1980	1790	3280	208	2320	287	3610	35	9.8	21
7	2000	272	3770	1370	2890	145	2400	227	3290	30	10	15
8	2400	137	6310	1010	2540	243	2250	189	2900	27	9.8	12
9	2720	98	5710	750	2320	556	1870	116	2510	128	9.8	11
10	2930	100	5790	695	2100	555	1460	86	2260	141	9.8	11
11	2220	172	6610	751	1930	632	1190	317	1930	82	9.9	11
12	1030	557	7770	583	1770	826	1030	584	1530	59	9.7	11
13	261	1460	8990	408	1620	1520	878	416	1250	125	9.2	11
14	75	2320	8400	342	1500	2040	740	400	1140	104	9.3	14
15	47	2880	7270	414	1410	2460	633	280	1060	70	9.0	15
16	38	3740	6600	444	1240	3410	601	138	1010	50	8.8	13
17	36	4150	5970	318	1050	3940	803	85	903	36	8.8	13
18	104	3370	5380	249	881	3390	877	304	828	26	9.1	12
19	508	2350	5090	248	772	2500	643	1070	792	21	9.5	11
20	1040	1620	4790	246	726	1900	338	1610	559	18	9.6	10
21	1360	1140	4540	212	720	1430	167	2120	355	19	9.5	10
22	1230	916	4690	217	598	1220	120	2480	255	18	9.6	9.9
23	965	729	4650	250	554	1110	92	2860	206	15	9.6	9.2
24	637	557	4300	344	437	978	72	3210	178	14	9.9	9.0
25	273	453	3960	442	372	872	61	3390	228	13	9.4	9.4
26	131	401	3690	267	325	821	88	3500	610	12	8.9	10
27	82	367	3390	175	290	752	126	3460	1010	12	8.7	11
28	60	338	2970	157	274	676	125	3300	969	11	8.8	10
29	48	297	2570	748	---	584	142	3150	513	11	9.3	9.6
30	42	369	2320	2140	---	542	106	3170	243	11	9.2	8.7
31	38	---	2040	3160	---	554	---	3430	---	11	8.9	---
TOTAL	23245	33595	134243	28310	53949	35386	24170	40614	50659	1568	293.9	346.3
MEAN	750	1120	4330	913	1927	1141	806	1310	1689	50.6	9.48	11.5
MAX	2930	4150	8990	3160	6050	3940	2400	3500	4550	164	10	21
MIN	13	60	665	157	274	145	61	59	178	11	8.7	8.7
AC-FT	46110	66640	266300	56150	107000	70190	47940	80560	100500	3110	583	687

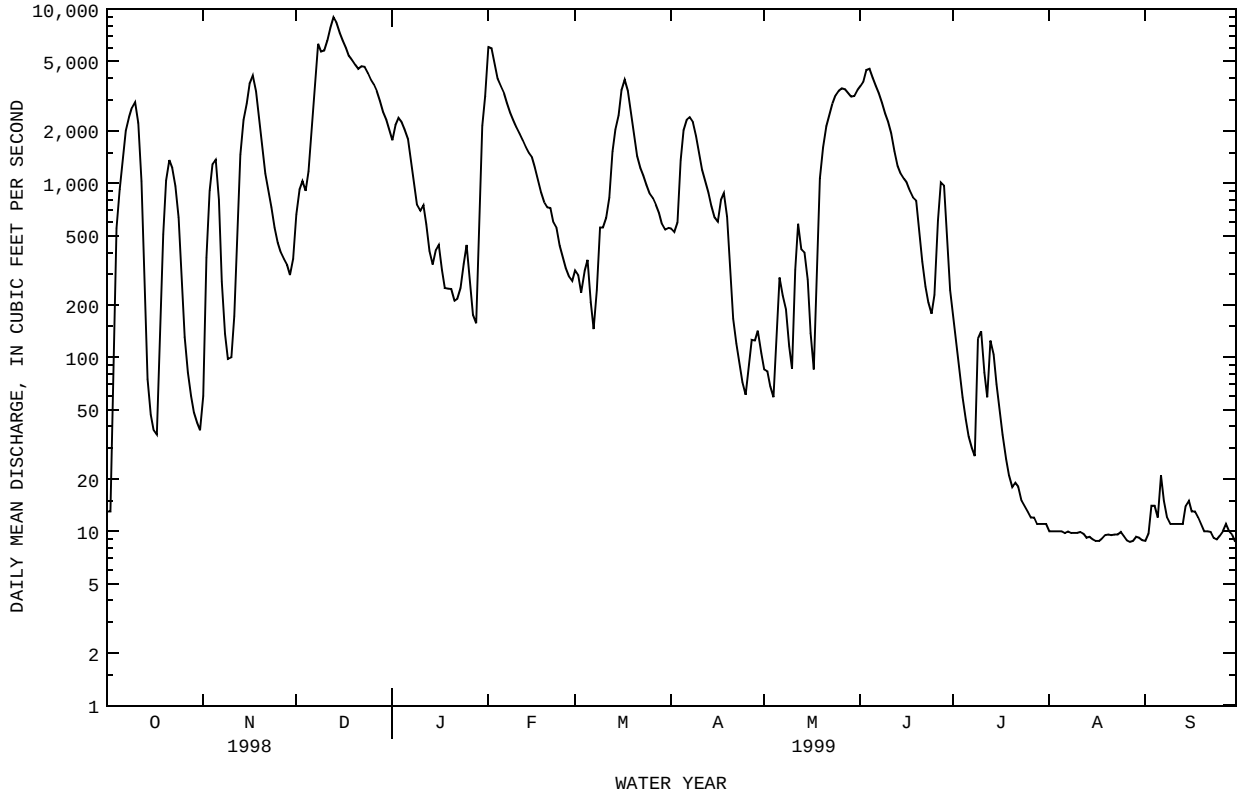
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999z, BY WATER YEAR (WY)

MEAN	298	807	1261	929	1339	1642	1375	2022	1015	262	59.3	63.0
MAX	2158	5296	5873	4097	4334	4175	4086	6934	4083	1626	419	616
(WY)	1974	1975	1992	1998	1975	1969	1990	1968	1973	1992	1979	1974
MIN	3.42	9.88	10.9	28.8	20.3	28.0	31.8	29.6	5.72	4.87	.071	.048
(WY)	1988	1990	1990	1981	1996	1996	1971	1988	1971	1969	1987	1987

08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999z	
ANNUAL TOTAL	442299.5		426379.2			
ANNUAL MEAN	1212		1168		921	
HIGHEST ANNUAL MEAN					1904	1968
LOWEST ANNUAL MEAN					29.8	1996
HIGHEST DAILY MEAN	9400	Jan 10	8990	Dec 13	36200	Dec 11 1971
LOWEST DAILY MEAN	4.9	Aug 3	8.7	Aug 27	.00	Aug 13 1970
ANNUAL SEVEN-DAY MINIMUM	5.7	Jul 29	8.9	Aug 26	.00	Sep 15 1971
INSTANTANEOUS PEAK FLOW			9330	Dec 13	37700	Dec 11 1971
INSTANTANEOUS PEAK STAGE			18.06	Dec 13	21.53	Dec 11 1971
ANNUAL RUNOFF (AC-FT)	877300		845700		667000	
10 PERCENT EXCEEDS	3930		3440		2850	
50 PERCENT EXCEEDS	189		444		143	
90 PERCENT EXCEEDS	8.4		10		7.9	

z Period of regulated streamflow.



08018800 LAKE FORK RESERVOIR NEAR QUITMAN, TX

LOCATION.--Lat 32°48'48", long 95°31'40", Wood County, Hydrologic Unit 12010003, in room at left-end of gated concrete spillway structure of Lake Fork Dam on Lake Fork Creek, 2,000 ft upstream from bridge on State Highway 182, 2.3 mi upstream from Alum Branch, and 4.4 mi west-northwest of the county courthouse in Quitman.

DRAINAGE AREA.--490 mi^2.

PERIOD OF RECORD.--Oct 1979 to current year.
Water-quality records.--Chemical data: Oct 1980 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 12,660 ft long, including a 260-foot gated concrete spillway. The outlet works consist of two 5- by 8-foot low-flow sluice gates, five 40- by 20-foot tainter gates, and two 5- by 6-foot sluice gates that open into a wet well where there are two 36-inch and one 10-inch valve-controlled and metered-outlet pipes. Deliberate impoundment began Jun 29, 1979, and closure of the dam was completed in Jan 1980. The lake was built for water conservation and is owned by the Sabine River Authority. No known diversions were made from the lake this year. Flow is affected at times by discharge from the flood-detention pools of 21 floodwater-retarding structures with a combined detention capacity of 20,270 acre-ft. These structures control runoff from 60 mi^2 above the lake. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	419.5
Top of tainter gates	405.0
Crest of gated spillway	385.0
Invert of upper sluice gate	383.0
Invert of lower sluice gate	360.5
Invert of sluice gate in two center pieces	360.0

COOPERATION.--Capacity table 1-A was provided by URS/Forest and Cotton, Inc., Consulting Engineers for the Sabine River Authority. Observed elevations for the period Oct 31, 1979, to Jan 31, 1980, were provided by the Sabine River Authority. A new capacity table, Table 2-C, provided by the Sabine River Authority was put into effect Oct 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 737,300 acre-ft, May 4, 1990 (elevation, 405.15 ft); minimum contents after initial filling, 81,550 acre-ft, Sep 27, 1980 (elevation, 366.86 ft) using Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 703,100 acre-ft, May 18 (elevation, 403.97 ft); minimum contents, 609,700 acre-ft, Sep 30 (elevation, 400.52 ft).

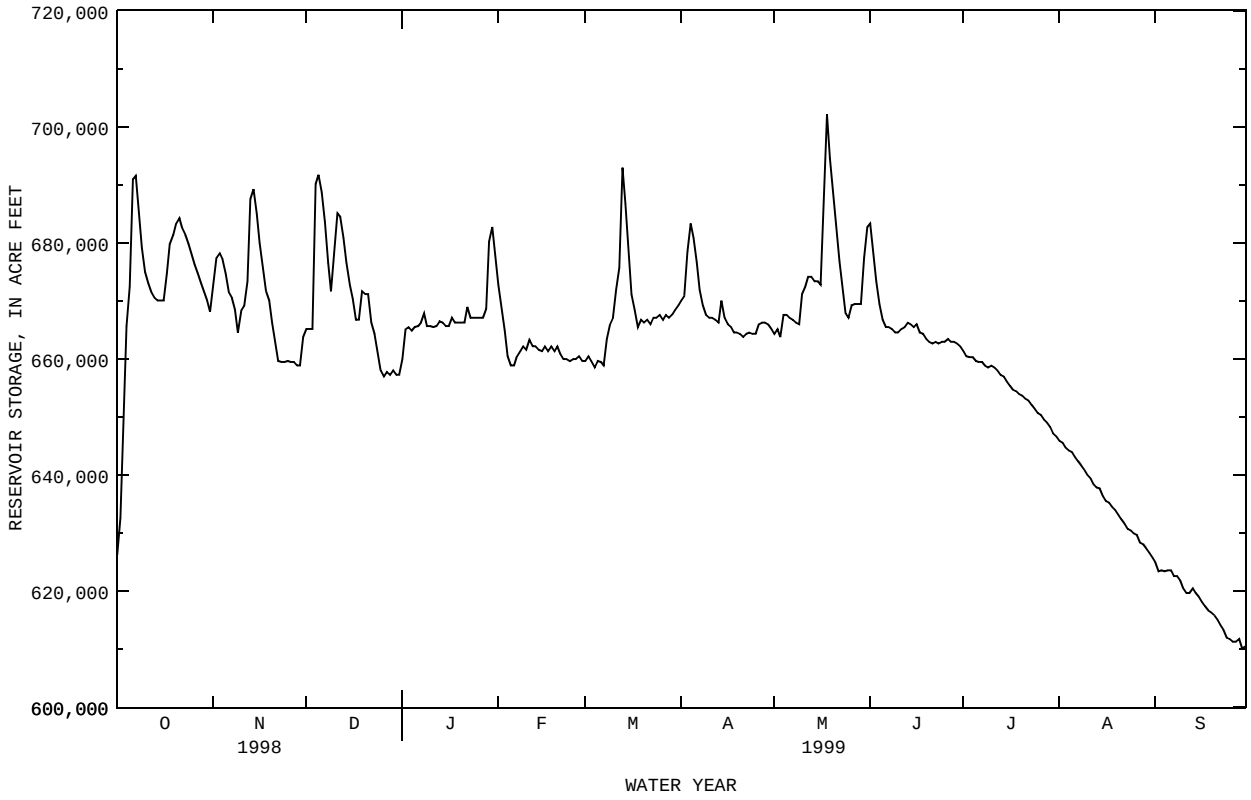
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	626300	673100	665200	660000	672800	659700	670100	664400	683400	661400	645900	625000
2	632700	677500	665200	665200	668700	660500	670900	665200	678300	660500	645600	623400
3	652600	678300	665200	665500	664900	659700	678600	663800	673400	660300	644800	623600
4	665700	677200	690200	664900	660500	658600	683400	667600	669500	660300	644300	623400
5	672500	674700	691800	665500	658900	659700	680900	667600	666800	659700	644000	623600
6	691000	671500	688800	665700	658900	659500	676700	667100	665500	659500	643200	623600
7	691600	670600	683700	666300	660500	658900	672000	666800	665500	659500	642400	622600
8	685100	668500	676700	667900	661400	663500	669300	666300	665200	658900	641700	622600
9	679200	664600	671700	665700	662200	666000	667600	666000	664600	658600	640900	621800
10	675000	668500	678600	665700	661600	667100	667100	671200	664600	658900	640100	620500
11	673100	669300	685100	665500	663300	672000	667100	672500	665200	658600	639500	619700
12	671500	673400	684500	665700	662200	675800	666800	674200	665500	658100	638500	619700
13	670600	687600	680900	666500	662200	693000	666300	674200	666300	657300	637900	620500
14	670100	689300	676700	666300	661600	686800	670100	673400	666000	657000	637700	619700
15	670100	685100	672800	665700	661400	677800	667100	673400	665500	656200	636400	619000
16	670100	680000	670400	665700	662200	671200	666000	672800	666000	655400	635600	618200
17	674700	675800	666800	667100	661400	668500	665500	687100	664600	654800	635300	617400
18	679800	671700	666800	666300	662200	665500	664600	702200	664400	654500	634500	616700
19	681400	670100	671700	666300	661400	666800	664600	694700	663500	654000	634000	616400
20	683400	666300	671200	666300	662200	666300	664400	688800	663000	653700	633200	615900
21	684300	663000	671200	666300	660800	666800	663800	683400	662700	653200	632400	615100
22	682600	659700	666300	669000	660000	666000	664400	676900	663000	652900	631600	614100
23	681400	659500	664400	667100	660000	667100	664600	672500	662700	652100	630800	613300
24	679800	659500	661100	667100	659700	667100	664400	667900	663000	651500	630500	612000
25	678100	659700	658100	667100	660000	667600	664400	667100	663000	650700	630000	611800
26	676300	659500	657000	667100	660000	666800	666000	669300	663500	650400	629700	611300
27	674700	659500	657800	667100	660500	667600	666300	669500	663000	649600	628400	611300
28	673100	658900	657300	668700	659700	667100	666300	669500	663000	649100	628100	611800
29	671700	658900	658100	680300	---	667600	666000	669500	662700	648300	627400	610200
30	670100	663800	657300	682800	---	668500	665200	677500	662200	647200	626600	610500
31	668200	---	657300	678100	---	669300	---	682800	---	646700	625800	---
MAX	691600	689300	691800	682800	672800	693000	683400	702200	683400	661400	645900	625000
MIN	626300	658900	657000	660000	658900	658600	663800	663800	662200	646700	625800	610200
(+)	402.72	402.56	402.32	403.08	402.41	402.76	402.61	403.25	402.50	401.93	401.14	400.55
(@)	+40800	-4400	-6500	+20800	-18400	+9600	-4100	+17600	-20600	-15500	-20900	-15300

CAL YR 1998 MAX 691800 MIN 602800 (@) -3800
WTR YR 1999 MAX 702200 MIN 610200 (@) -16900

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08018800 LAKE FORK RESERVOIR NEAR QUITMAN, TX--Continued



08019000 LAKE FORK CREEK NEAR QUITMAN, TX

LOCATION.--Lat 32°45'47", long 95°27'46", Wood County, Hydrologic Unit 12010003, at downstream side of highway embankment near left end of bridge on State Highway 37, 0.3 mi downstream from Dry Creek, 2.4 mi south of Quitman, and 23.4 mi upstream from mouth.

DRAINAGE AREA.--585 mi^2.

PERIOD OF RECORD.--Jun 1924 to Apr 1926, Feb 1939 to current year. Discharge from some high-water periods in 1925-26 published in WSP 1342. Monthly discharge only for some periods, published in WSP 1312. Prior to Oct 1961, published as Lake Fork Sabine River near Quitman.
Water-quality records.--Chemical data: Dec 1961 to Sep 1989. Specific conductance: Nov 1967 to Sep 1989. Water temperature: Dec 1967 to Sep 1989.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 317.42 ft above sea level. From Jun 27, 1924, to Apr 30, 1926, a nonrecording gage was located at site 1,000 ft downstream at same datum. Prior to Sep 5, 1978, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1980, at least 10% of contributing drainage area has been regulated by Lake Fork Dam and Reservoir (normal storage, 675,800 acre-ft). Construction of Lake Fork Dam and Reservoir located about 5 mi upstream from this station, began in 1975. Deliberate impoundment began Jun 29, 1979, and the dam was completed in Jan 1980. Lake Fork Reservoir controls runoff from 490 mi^2 above this station. The city of Quitman discharges wastewater effluent into a tributary above this station.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--41 years (water years 1925, 1940-79), prior to regulation by Lake Fork Reservoir, 432 ft^3/s (313,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925, 1940-79).--Maximum discharge, 75,600 ft^3/s Mar 30, 1945 (gage height, 29.85 ft, from floodmark), from rating curve extended above 49,000 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1895 reached a stage of about 25.9 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	1040	155	79	3670	30	64	29	1900	90	62	97
2	28	1150	102	564	3470	30	61	28	3580	80	62	97
3	136	1310	56	651	2790	33	221	30	3760	75	62	99
4	120	1430	272	304	2610	32	1140	43	3050	71	62	98
5	38	1460	2610	154	2480	30	2650	314	2230	68	62	100
6	520	1470	4140	108	1220	31	3650	225	1930	67	62	103
7	3040	1470	3890	89	245	38	3040	82	1000	67	63	99
8	4430	1480	3710	80	79	44	2800	56	197	68	62	100
9	4370	1470	3550	73	65	119	2130	46	85	64	64	98
10	3330	1460	3190	63	60	99	1470	130	77	63	67	98
11	2660	771	4230	57	56	123	500	216	87	63	70	98
12	1770	122	4220	56	52	1080	93	95	256	63	71	96
13	1570	527	3940	58	46	2380	60	65	114	64	72	99
14	928	2430	3650	54	42	5510	55	51	84	63	72	100
15	144	3550	3000	50	41	5600	67	43	76	62	72	98
16	34	3480	2770	48	40	5250	63	38	72	62	72	99
17	34	3370	2220	47	39	3600	48	37	68	61	73	99
18	77	2670	2020	46	38	2230	42	354	66	61	40	99
19	64	2480	2140	44	37	1890	37	6850	63	62	48	99
20	45	2060	2170	43	34	915	36	5810	63	62	64	102
21	152	1870	2080	43	33	186	33	4510	63	63	64	105
22	710	1820	2030	49	33	87	32	4420	63	63	62	101
23	943	1770	2020	62	32	74	30	4240	76	62	62	109
24	990	977	1990	53	32	62	29	3140	71	63	61	100
25	993	163	1970	45	30	57	28	2780	69	62	87	99
26	990	32	1910	43	31	54	33	1500	91	62	95	101
27	989	24	987	42	32	50	58	463	184	62	95	100
28	988	20	202	41	33	47	47	108	199	62	96	101
29	989	19	81	470	---	47	37	59	139	62	96	101
30	994	73	66	2790	---	50	33	358	105	62	97	100
31	995	---	59	3820	---	60	---	1160	---	62	97	---
TOTAL	33093	41968	65430	10126	17370	29838	18587	37280	19818	2021	2194	2995
MEAN	1068	1399	2111	327	620	963	620	1203	661	65.2	70.8	99.8
MAX	4430	3550	4230	3820	3670	5600	3650	6850	3760	90	97	109
MIN	22	19	56	41	30	30	28	28	63	61	40	96
AC-FT	65640	83240	129800	20080	34450	59180	36870	73940	39310	4010	4350	5940

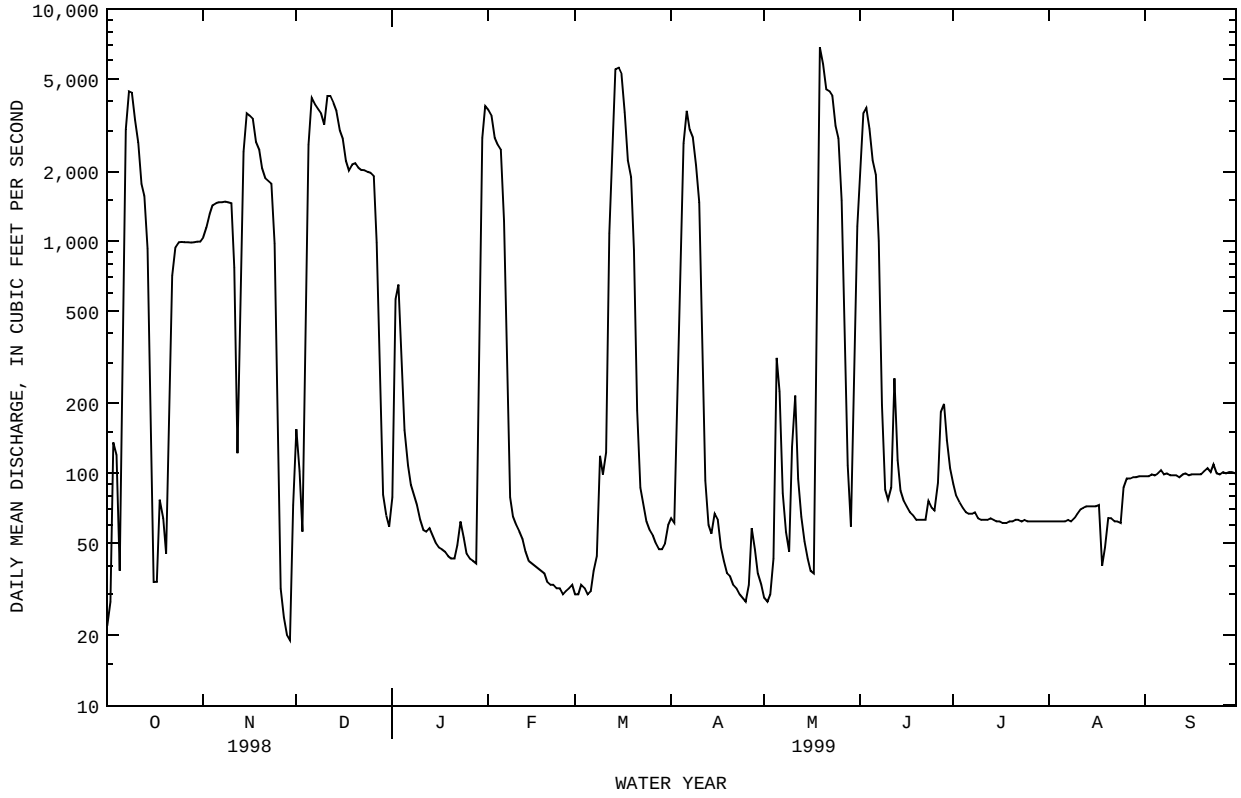
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1999z, BY WATER YEAR (WY)

MEAN	124	339	663	501	869	810	554	678	311	241	91.8	37.6
MAX	1068	1552	2853	1786	3160	2938	1991	2807	1280	1795	940	167
(WY)	1999	1989	1992	1998	1997	1990	1990	1990	1986	1994	1992	1992
MIN	1.23	2.92	9.31	4.43	14.1	25.3	4.29	9.51	8.51	1.43	.13	.76
(WY)	1983	1981	1982	1981	1981	1996	1981	1998	1984	1985	1980	1982

08019000 LAKE FORK CREEK NEAR QUITMAN, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1980 - 1999z	
ANNUAL TOTAL	257307.3		280720			
ANNUAL MEAN	705		769		433	
HIGHEST ANNUAL MEAN					1006	1992
LOWEST ANNUAL MEAN					43.2	1984
HIGHEST DAILY MEAN	5850	Jan 8	6850	May 19	23600	May 18 1989
LOWEST DAILY MEAN	7.3	Jun 1	19	Nov 29	.00	Aug 23 1980
ANNUAL SEVEN-DAY MINIMUM	8.1	May 21	31	Feb 24	.00	Aug 23 1980
INSTANTANEOUS PEAK FLOW			8930	May 19	24200	May 18 1989
INSTANTANEOUS PEAK STAGE			18.01	May 19	21.75	May 18 1989
ANNUAL RUNOFF (AC-FT)	510400		556800		313700	
10 PERCENT EXCEEDS	2570		2790		1260	
50 PERCENT EXCEEDS	38		90		43	
90 PERCENT EXCEEDS	14		37		4.7	

z Period of regulated streamflow.



08019200 SABINE RIVER NEAR HAWKINS, TX

LOCATION.--Lat 32°33'35", long 95°12'23", Wood County, Hydrologic Unit 12010002, on downstream side of Farm Road 14 bridge, 2.2 mi south of Hawkins.

DRAINAGE AREA.--2,259 mi^2.

PERIOD OF RECORD.--Oct 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage not determined. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1997, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, normal storage 936,200 acre-ft), Lake Fork Creek Reservoir (station 08018800, normal storage 675,800 acre-ft), and by five tributary reservoirs with a combined capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

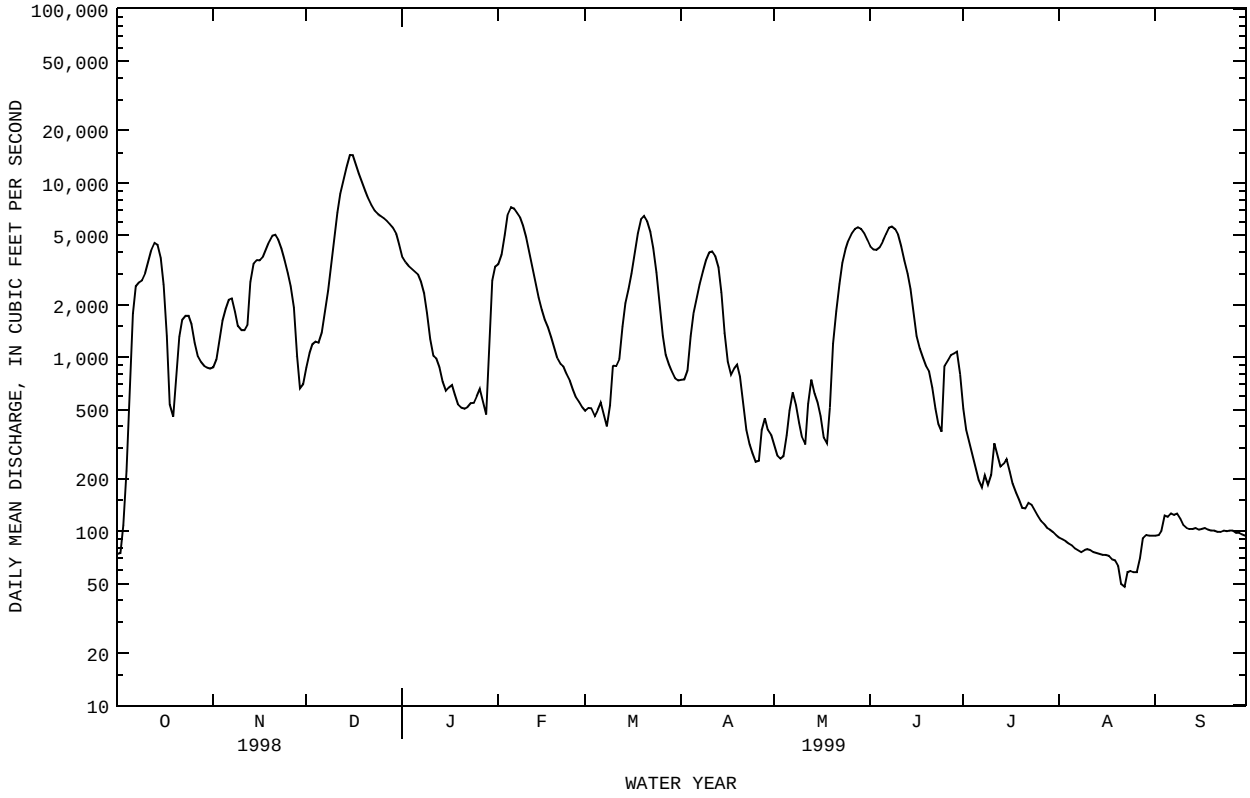
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	874	876	3750	3430	492	742	313	4330	505	92	94
2	75	972	1060	3500	3880	511	744	271	4150	383	90	95
3	108	1260	1190	3350	5050	508	837	262	4130	320	88	101
4	222	1620	1230	3210	6610	459	1320	270	4270	268	85	123
5	655	1900	1210	3110	7250	495	1790	356	4610	227	83	121
6	1780	2140	1380	2980	7130	548	2200	495	5110	197	80	127
7	2560	2180	1830	2720	6770	472	2620	628	5540	179	78	124
8	2700	1830	2420	2320	6330	400	3100	533	5640	210	76	126
9	2760	1510	3240	1790	5700	529	3610	418	5450	185	78	118
10	3040	1430	4660	1270	4880	892	4000	346	5060	211	79	109
11	3570	1430	6790	1020	4010	888	4050	315	4330	321	78	105
12	4170	1540	8730	984	3280	976	3790	539	3580	276	76	103
13	4540	2710	10400	874	2690	1500	3280	744	3020	235	75	103
14	4410	3440	12200	722	2200	2050	2350	619	2460	244	74	104
15	3720	3600	14500	641	1860	2480	1380	547	1780	260	73	102
16	2610	3590	14500	671	1640	3020	944	459	1320	221	73	103
17	1320	3760	12700	693	1480	3960	796	344	1120	188	72	104
18	534	4160	11300	610	1300	5140	859	319	991	166	69	102
19	454	4630	10100	535	1120	6200	906	513	885	152	68	101
20	734	4980	8990	512	987	6480	774	1200	825	136	63	101
21	1310	5040	8170	507	913	6040	540	1840	670	135	50	99
22	1640	4730	7480	516	885	5240	383	2640	506	146	48	99
23	1730	4200	6960	543	800	4240	317	3490	413	142	58	101
24	1730	3600	6680	547	734	3080	281	4190	374	133	59	100
25	1550	3050	6480	595	648	2020	251	4700	891	123	58	101
26	1210	2560	6290	659	591	1330	254	5150	961	115	58	101
27	1010	1940	6060	553	554	1030	381	5460	1030	110	70	98
28	936	1020	5810	470	515	908	446	5590	1050	105	91	98
29	894	663	5520	1260	---	826	383	5470	1080	102	95	96
30	871	702	5100	2760	---	757	356	5160	799	99	94	94
31	860	---	4450	3310	---	734	---	4710	---	95	94	---
TOTAL	53777	77061	198306	46982	83237	64205	43684	57891	76375	6189	2325	3153
MEAN	1735	2569	6397	1516	2973	2071	1456	1867	2546	200	75.0	105
MAX	4540	5040	14500	3750	7250	6480	4050	5590	5640	505	95	127
MIN	74	663	876	470	515	400	251	262	374	95	48	94
AC-FT	106700	152900	393300	93190	165100	127400	86650	114800	151500	12280	4610	6250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 1999, BY WATER YEAR (WY)

MEAN	939	1359	3771	3770	2971	2559	992	991	1316	124	62.2	151
MAX	1735	2569	6397	6024	2973	3048	1456	1867	2546	200	75.0	198
(WY)	1999	1999	1999	1998	1999	1998	1999	1999	1999	1999	1999	1998
MIN	143	149	1146	1516	2970	2071	529	115	87.0	47.9	49.5	105
(WY)	1998	1998	1998	1999	1998	1999	1998	1998	1998	1998	1998	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1997 - 1999	
ANNUAL TOTAL	724496		713185			
ANNUAL MEAN	1985		1954		1579	
HIGHEST ANNUAL MEAN					1954	1999
LOWEST ANNUAL MEAN					1205	1998
HIGHEST DAILY MEAN	14500	Dec 15	14500	Dec 15	14500	Dec 15 1998
LOWEST DAILY MEAN	41	Aug 2	48	Aug 22	4.8	Oct 5 1997
ANNUAL SEVEN-DAY MINIMUM	42	Jul 29	56	Aug 20	4.9	Sep 30 1997
INSTANTANEOUS PEAK FLOW			15000	Dec 15	15000	Dec 15 1998
INSTANTANEOUS PEAK STAGE			29.04	Dec 15	29.04	Dec 15 1998
ANNUAL RUNOFF (AC-FT)	1437000		1415000		1144000	
10 PERCENT EXCEEDS	5600		5150		4810	
50 PERCENT EXCEEDS	702		885		469	
90 PERCENT EXCEEDS	48		95		51	

08019200 SABINE RIVER NEAR HAWKINS, TX--Continued



08019500 BIG SANDY CREEK NEAR BIG SANDY, TX

LOCATION.--Lat 32°36'14", long 95°05'29", Upshur County, Hydrologic Unit 12010002, on downstream side of highway embankment near left end of bridge on State Highway 155, 0.5 mi upstream from St. Louis Southwestern Railway Lines bridge, 1.6 mi northeast of Big Sandy, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--231 mi^2.

PERIOD OF RECORD.--Feb 1939 to current year.
Water-quality records.--Chemical data: Mar 1961 to Sep 1986. Biochemical data: Oct 1984 to Sep 1986.

REVISED RECORDS.--WSP 1732: 1941(M), 1945-46, 1956, drainage area. WSP 1922: 1944(M), 1945-46.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 278.38 ft above sea level. Prior to Oct 5, 1940, nonrecording gage, and Oct 5, 1940, to Nov 26, 1951, water-stage recorder at site 1.3 mi upstream at datum 3.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Winnsboro (station 08019300, capacity 8,100 acre-ft, drainage area 27.1 mi^2), about 27 miles upstream and by several other smaller lakes.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--24 years (water years 1939-62), 200 ft^3/s (145,0 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1939-62).--Maximum discharge, 24,000 ft^3/s Mar 31, 1945 (gage height, 24.10 ft, from floodmark), from rating curve extended above 91,000 ft^3/s; minimum, 5.6 ft^3/s Aug 16, 1939. Maximum stage since at least 1892, that of Apr 2, 1945.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	49	136	149	1090	71	106	181	190	150	19	14
2	27	76	134	463	1180	72	109	130	269	133	18	14
3	43	73	148	446	891	74	154	104	761	103	17	14
4	55	77	183	275	634	71	296	103	1010	78	16	14
5	60	98	216	1010	448	70	261	173	827	61	15	14
6	366	113	198	1060	322	74	285	165	572	51	15	14
7	595	98	174	688	247	74	701	150	370	58	15	13
8	443	85	216	432	199	74	835	164	228	151	15	13
9	372	78	559	288	173	93	609	164	148	107	15	14
10	602	90	816	214	159	151	436	134	118	89	14	13
11	573	100	867	183	153	284	319	119	105	81	14	13
12	340	113	809	166	150	359	234	133	169	71	15	13
13	182	379	735	156	138	439	189	176	135	58	15	13
14	105	496	1120	142	127	389	189	232	104	74	15	13
15	70	430	1150	128	119	430	203	243	128	102	15	13
16	54	512	919	122	113	877	164	180	169	90	15	13
17	49	701	714	120	105	969	139	137	180	60	14	13
18	64	649	549	116	99	676	134	180	136	47	14	13
19	77	451	479	111	95	439	126	136	99	40	14	13
20	87	296	392	107	91	302	113	120	81	37	14	13
21	155	204	323	109	88	214	98	152	71	34	14	13
22	149	162	331	130	85	171	88	241	62	39	14	13
23	122	140	395	132	83	149	80	328	60	37	14	13
24	112	128	374	119	79	142	76	295	60	32	14	13
25	112	117	301	115	78	140	73	181	87	29	14	13
26	95	106	241	115	82	125	83	132	91	27	14	13
27	73	96	203	112	82	113	111	123	94	25	14	13
28	58	91	185	110	77	104	124	115	128	24	18	13
29	50	89	172	370	---	102	153	121	156	22	18	14
30	46	116	157	777	---	105	192	153	154	21	14	13
31	44	---	146	806	---	108	---	166	---	20	14	---
TOTAL	5208	6213	13342	9271	7187	7461	6680	5131	6762	1951	466	398
MEAN	168	207	430	299	257	241	223	166	225	62.9	15.0	13.3
MAX	602	701	1150	1060	1180	969	835	328	1010	151	19	14
MIN	27	49	134	107	77	70	73	103	60	20	14	13
AC-FT	10330	12320	26460	18390	14260	14800	13250	10180	13410	3870	924	789

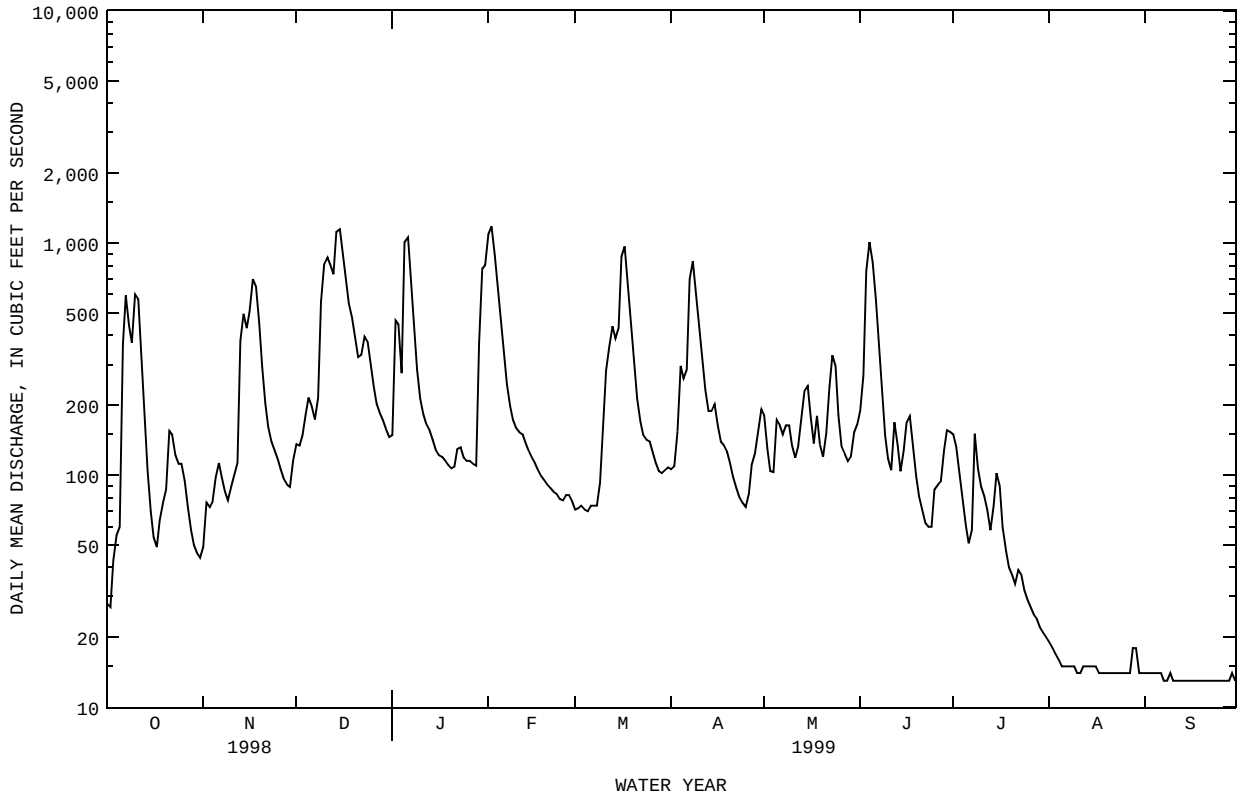
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1999, BY WATER YEAR (WY)

MEAN	62.9	147	247	232	289	312	297	277	146	79.2	30.6	52.3
MAX	469	884	884	798	856	694	1068	796	528	416	150	441
(WY)	1994	1975	1988	1993	1997	1969	1973	1968	1981	1994	1979	1974
MIN	13.2	20.0	27.2	38.4	43.7	47.5	52.3	32.5	9.61	6.99	4.65	9.02
(WY)	1979	1966	1966	1966	1996	1966	1981	1998	1984	1984	1984	1983

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1963 - 1999	
ANNUAL TOTAL	76142		70070			
ANNUAL MEAN	209		192		181	
HIGHEST ANNUAL MEAN					358	1975
LOWEST ANNUAL MEAN					43.7	1964
HIGHEST DAILY MEAN	1900	Jan 9	1180	Feb 2	6240	May 19 1989
LOWEST DAILY MEAN	12	Jun 20	13	Sep 7	3.5	Jul 24 1984
ANNUAL SEVEN-DAY MINIMUM	12	Aug 23	13	Sep 10	4.0	Aug 16 1984
INSTANTANEOUS PEAK FLOW			1260	Jan 5	24000	Mar 31 1945
INSTANTANEOUS PEAK STAGE			12.44	Jan 5	24.10	Mar 31 1945
ANNUAL RUNOFF (AC-FT)	151000		139000		130800	
10 PERCENT EXCEEDS	598		486		417	
50 PERCENT EXCEEDS	81		115		78	
90 PERCENT EXCEEDS	14		14		16	

z Period of regulated streamflow.

08019500 BIG SANDY CREEK NEAR BIG SANDY, TX--Continued



08020000 SABINE RIVER NEAR GLADEWATER, TX

LOCATION.--Lat 32°31'37", long 94°57'36", Gregg County, Hydrologic Unit 12010002, on right bank 46 ft downstream from bridge on U.S. Highway 271, 0.4 mi downstream from Glade Creek, 1.2 mi southwest of Gladewater, and at mile 397.5.

DRAINAGE AREA.--2,791 mi^2.

PERIOD OF RECORD.--Oct 1932 to current year.

REVISED RECORDS.--WSP 1732: Drainage area. WRD TX-73-1: 1972.

GAGE.--Water-stage recorder. Datum of gage is 243.85 ft above sea level. Prior to Oct 13, 1933, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, normal storage 936,200 acre-ft), Lake Fork Creek Reservoir (station 08018800, normal storage 675,800 acre-ft), and by five tributary reservoirs with a combined capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply. Several observations of water temperature were obtained during the year.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--28 years (water years 1933-60) prior to regulation by Lake Tawakoni, 2,012 ft^3/s (1,458,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1933-60).--Maximum discharge, 138,000 ft^3/s Apr 2, 1945 (gage height, 44.16 ft, from floodmark), from rating curve extended above 91,000 ft^3/s; minimum, 5.6 ft^3/s Aug 16, 1939. Maximum stage since at least 1892, that of Apr 2, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of about 41.7 ft (discharge, 85,900 ft^3/s), from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	209	1090	1260	7790	6380	797	1200	713	6680	1100	120	94
2	185	1240	1350	7570	6160	780	1190	622	6420	794	115	91
3	291	1350	1470	7250	6060	812	1350	536	6080	602	110	93
4	390	1550	1580	6540	6230	798	2560	599	5860	482	105	109
5	493	1790	1650	5870	6710	739	3320	1280	5810	385	100	156
6	3490	2030	1700	5420	7370	811	3480	1440	5860	306	96	157
7	5470	2240	2150	5060	7850	863	3490	1470	6000	254	88	150
8	5390	2320	2730	4540	8200	813	3730	1230	6190	385	87	143
9	4760	2110	3260	3970	8360	719	4040	1000	6360	517	84	138
10	4180	1900	4110	3190	8270	904	4340	794	6450	485	83	125
11	3910	1810	5550	2340	7940	1320	4590	716	6450	540	81	113
12	3940	1840	6950	1810	7420	1640	4760	695	6360	642	80	106
13	4120	3300	7960	1620	6440	2370	4700	953	6000	631	79	97
14	4320	4290	9170	1450	5270	2950	4470	1150	5350	504	77	94
15	4380	4670	10900	1250	4150	3240	3950	1060	4370	450	76	96
16	4100	4700	12800	1130	3260	3490	2940	965	3290	463	75	96
17	3320	4580	14200	1150	2580	3930	2000	831	2280	403	76	96
18	2050	4570	14600	1160	2140	4500	1440	1210	1720	331	76	96
19	1060	4730	14700	1060	1830	5220	1310	1200	1430	282	75	93
20	856	5000	14300	979	1590	5890	1280	1180	1250	254	70	92
21	1360	5310	13600	953	1420	6540	1120	1670	1080	236	66	94
22	1880	5540	12900	1210	1310	7060	863	2270	899	246	61	96
23	2060	5630	12200	1400	1250	7220	673	3020	727	282	56	97
24	2050	5500	11600	1310	1140	6850	575	3700	594	264	55	98
25	1980	5110	10900	1190	1050	5910	504	4250	1230	209	57	99
26	1800	4490	10300	1150	959	4460	569	4690	2260	172	58	101
27	1510	3810	9760	1060	901	3060	766	5150	2220	153	63	103
28	1290	2850	9370	914	850	1970	891	5550	1770	142	80	105
29	1170	1720	9000	2580	---	1480	896	5880	1520	135	97	106
30	1110	1190	8620	5610	---	1310	756	6240	1410	131	106	103
31	1070	---	8220	6360	---	1240	---	6680	---	126	101	---
TOTAL	74194	98260	248860	94886	123090	89686	67753	68744	113920	11906	2553	3237
MEAN	2393	3275	8028	3061	4396	2893	2258	2218	3797	384	82.4	108
MAX	5470	5630	14700	7790	8360	7220	4760	6680	6680	1100	120	157
MIN	185	1090	1260	914	850	719	504	536	594	126	55	91
AC-FT	147200	194900	493600	188200	244100	177900	134400	136400	226000	23620	5060	6420

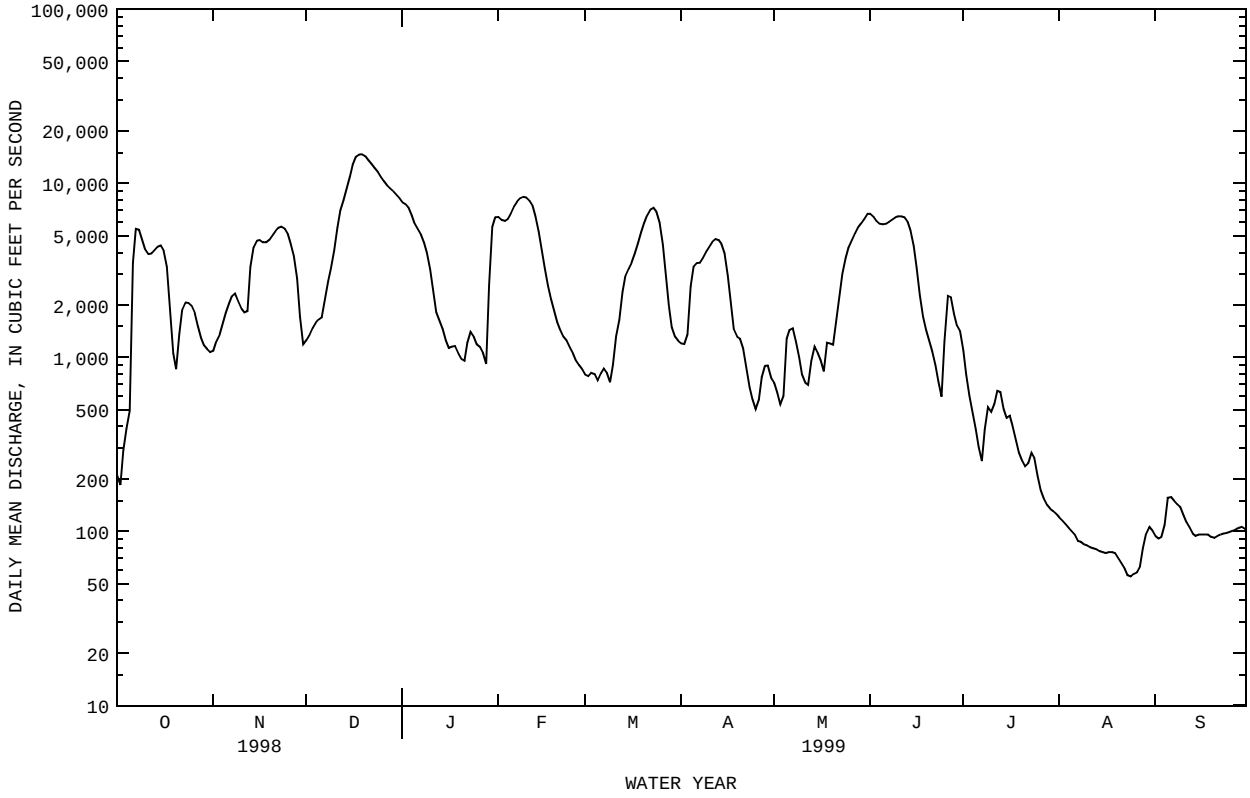
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999z, BY WATER YEAR (WY)

MEAN	500	1321	2581	2183	2717	3416	2823	3977	1862	665	202	288
MAX	3361	7839	10580	8357	9664	9717	9644	17100	6745	4261	1291	2566
(WY)	1974	1975	1972	1998	1975	1992	1990	1966	1973	1994	1992	1974
MIN	29.4	86.9	101	199	174	204	241	181	49.0	17.9	18.1	27.0
(WY)	1964	1964	1966	1964	1996	1996	1971	1998	1971	1964	1964	1985

08020000 SABINE RIVER NEAR GLADEWATER, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999z	
ANNUAL TOTAL	990188		997089			
ANNUAL MEAN	2713		2732		1875	
HIGHEST ANNUAL MEAN					3831	1992
LOWEST ANNUAL MEAN					209	1996
HIGHEST DAILY MEAN	14700	Dec 19	14700	Dec 19	51000	May 22 1989
LOWEST DAILY MEAN	39	Aug 2	55	Aug 24	7.4	Jul 20 1971
ANNUAL SEVEN-DAY MINIMUM	41	Jul 28	59	Aug 21	9.5	Jul 16 1971
INSTANTANEOUS PEAK FLOW			14800	Dec 18	52300	May 22 1989
INSTANTANEOUS PEAK STAGE			33.48	Dec 18	38.98	Apr 30 1966
ANNUAL RUNOFF (AC-FT)	1964000		1978000		1358000	
10 PERCENT EXCEEDS	7850		6600		5480	
50 PERCENT EXCEEDS	1240		1400		552	
90 PERCENT EXCEEDS	54		97		60	

z Period of regulated streamflow.



08020450 SABINE RIVER ABOVE LONGVIEW, TX
(Low-flow/partial-record station)

LOCATION.--Lat 32°28'47", long 94°48'15", Gregg County, Hydrologic Unit 12010002, on left bank at city of Longview pumping station at the end of Swinging Bridge Road, 1.4 mi southwest of the intersection of Swinging Bridge Road and Farm Road 2206 in Longview, 2.5 mi downstream from Hawkins Creek, 2.6 mi upstream from U.S. Highway 259, and at mile 357.4.

DRAINAGE AREA.--2,943 mi^2.

PERIOD OF RECORD.--Aug 1983 to current year (discharges below 500ft^3/s).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 230.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Daily discharges below 500 ft^3/s are published. Since installation of gage in Aug 1983, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, normal storage 936,200 acre-ft). Additional regulation by Lake Fork Reservoir (station 08018800, normal storage 675,800 acre-ft) and by five tributary reservoirs with a combined capacity of 42,370 acre-ft. There are many diversions above station for municipal and industrial supply, and for oil field operations.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 31.64 ft May 10, 1990; minimum daily discharge, 0.50 ft^3/s Sep 4, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 710 ft^3/s, Mar 9-10, May 1, 4, 12-13, Jun 24, Jul 3, gage height, 7.50 ft; minimum discharge, 0.06 ft^3/s, Aug 20-21, gage height, 4.19 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	---	---	---	---	---	---	---	---	---	68	44
2	81	---	---	---	---	---	---	---	---	---	56	68
3	184	---	---	---	---	---	---	---	---	---	48	87
4	334	---	---	---	---	---	---	---	---	---	42	116
5	340	---	---	---	---	---	---	---	---	---	36	157
6	---	---	---	---	---	---	---	---	---	449	24	205
7	---	---	---	---	---	---	---	---	---	382	16	199
8	---	---	---	---	---	---	---	---	---	355	7.6	196
9	---	---	---	---	---	---	---	---	---	359	4.3	192
10	---	---	---	---	---	---	---	---	---	419	3.1	190
11	---	---	---	---	---	---	---	---	---	---	2.6	187
12	---	---	---	---	---	---	---	---	---	---	2.2	172
13	---	---	---	---	---	---	---	---	---	---	1.8	175
14	---	---	---	---	---	---	---	---	---	---	1.4	180
15	---	---	---	---	---	---	---	---	---	423	1.1	171
16	---	---	---	---	---	---	---	---	---	407	.59	166
17	---	---	---	---	---	---	---	---	---	406	.49	161
18	---	---	---	---	---	---	---	---	---	361	.37	166
19	---	---	---	---	---	---	---	---	---	317	.24	166
20	---	---	---	---	---	---	---	---	---	283	.12	162
21	---	---	---	---	---	---	---	---	---	266	.09	169
22	---	---	---	---	---	---	---	---	---	256	.26	158
23	---	---	---	---	---	---	---	---	---	245	.39	164
24	---	---	---	---	---	---	---	---	---	228	.62	155
25	---	---	---	---	---	---	---	---	---	208	.89	166
26	---	---	---	---	---	---	---	---	---	183	1.1	158
27	---	---	---	---	---	---	---	---	---	155	1.5	150
28	---	---	---	---	---	---	---	---	---	124	2.3	157
29	---	---	---	---	---	---	---	---	---	110	4.0	150
30	---	---	---	---	---	---	---	---	---	96	9.5	136
31	---	---	---	---	---	---	---	---	---	85	23	---
TOTAL	---	---	---	---	---	---	---	---	---	---	359.56	4723
MEAN	---	---	---	---	---	---	---	---	---	---	11.6	157
MAX	---	---	---	---	---	---	---	---	---	---	68	205
MIN	---	---	---	---	---	---	---	---	---	---	.09	44
AC-FT	---	---	---	---	---	---	---	---	---	---	713	9370

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08020900 SABINE RIVER BELOW LONGVIEW, TX

LOCATION.--Lat 32°25'00", long 94°42'33", Gregg County, Hydrologic Unit 12010002, on downstream side of Highway 149 bridge, 5 mi south of Longview, 14 mi northwest of Tatum.

DRAINAGE AREA.--3,155 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 230.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Oct 1995, at least 10% of contributing drainage area has been regulated by seven upstream reservoirs, with a combined capacity of 1,654,000 acre-ft. There are several diversions above this station for municipal, industrial and for oil field operations. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi^2 area in the Mill Creek drainage basin.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

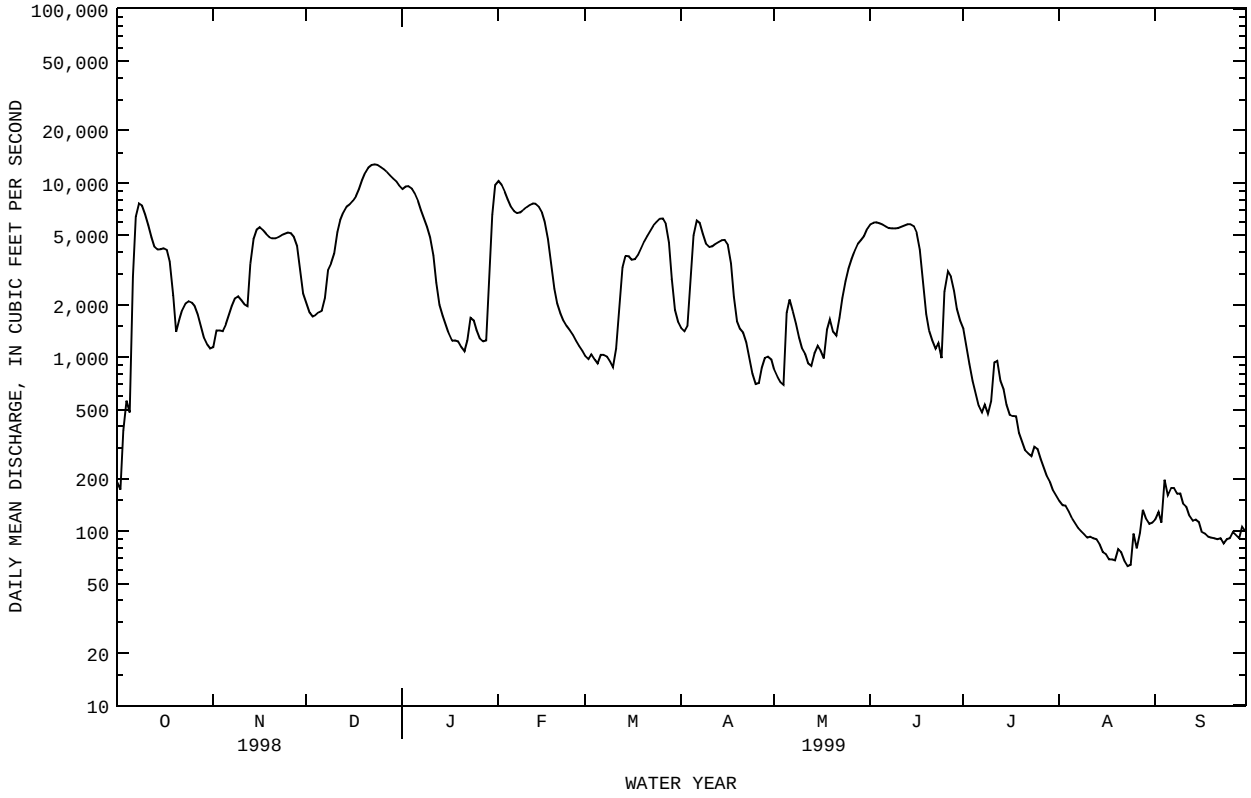
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	191	1140	2050	9260	10300	1020	1470	845	5810	1460	149	117
2	173	1420	1800	9560	9750	975	1410	770	5930	1180	141	129
3	379	1420	1710	9580	8900	1040	1520	719	5960	913	140	112
4	562	1410	1750	9320	8060	969	2940	693	5890	730	130	198
5	482	1540	1810	8750	7330	921	5010	1800	5760	613	119	161
6	2880	1750	1850	7880	6890	1030	6100	2140	5620	526	112	177
7	6420	1970	2190	6970	6720	1030	5920	1840	5520	480	105	177
8	7630	2180	3200	6230	6790	1010	5110	1560	5480	533	100	164
9	7430	2240	3460	5600	7000	943	4480	1290	5480	473	96	165
10	6610	2120	3950	4860	7250	872	4290	1120	5520	560	92	144
11	5730	2010	5230	3850	7480	1120	4340	1040	5600	936	93	138
12	4880	1960	6160	2680	7630	1880	4470	922	5700	957	91	123
13	4320	3440	6860	2000	7600	3290	4590	892	5800	730	90	115
14	4140	4780	7330	1730	7330	3820	4690	1050	5790	653	84	117
15	4160	5420	7590	1530	6790	3800	4710	1160	5650	532	76	113
16	4220	5580	7900	1360	5970	3630	4430	1090	5190	466	74	99
17	4130	5370	8410	1240	4780	3650	3460	984	4150	459	69	97
18	3550	5110	9210	1250	3420	3880	2230	1440	2640	458	69	93
19	2260	4900	10400	1230	2480	4240	1600	1650	1770	367	68	92
20	1400	4810	11500	1140	2030	4610	1450	1400	1420	326	79	91
21	1650	4810	12300	1080	1780	4980	1380	1330	1250	292	76	90
22	1870	4890	12700	1250	1620	5350	1210	1680	1120	280	67	91
23	2040	5010	12800	1680	1510	5690	978	2190	1210	270	63	85
24	2100	5120	12700	1630	1430	5980	803	2740	985	306	64	90
25	2060	5190	12400	1430	1340	6220	701	3220	2380	297	97	91
26	1960	5140	12000	1280	1250	6250	708	3670	3120	259	80	99
27	1750	4900	11600	1230	1160	5850	867	4120	2910	230	98	95
28	1480	4350	11100	1250	1090	4580	994	4480	2400	207	133	91
29	1290	3280	10600	3000	---	2820	1010	4700	1890	191	118	106
30	1180	2310	10200	6600	---	1860	971	4990	1620	172	110	100
31	1120	---	9690	9760	---	1590	---	5490	---	160	112	---
TOTAL	90047	105570	232450	126210	145680	94900	83842	63015	119565	16016	2995	3560
MEAN	2905	3519	7498	4071	5203	3061	2795	2033	3986	517	96.6	119
MAX	7630	5580	12800	9760	10300	6250	6100	5490	5960	1460	149	198
MIN	173	1140	1710	1080	1090	872	701	693	985	160	63	85
AC-FT	178600	209400	461100	250300	289000	188200	166300	125000	237200	31770	5940	7060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1999, BY WATER YEAR (WY)

MEAN	966	1197	2849	3897	4159	4996	2757	2156	1446	455	227	418
MAX	2905	3519	7498	9715	5874	12120	6302	5846	3986	1041	491	1008
(WY)	1999	1999	1999	1998	1997	1997	1997	1997	1999	1997	1997	1998
MIN	149	151	287	340	236	260	533	324	184	48.5	66.0	119
(WY)	1996	1996	1996	1996	1996	1996	1996	1998	1998	1998	1998	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1996 - 1999	
ANNUAL TOTAL	1114233		1083850			
ANNUAL MEAN	3053		2969		2119	
HIGHEST ANNUAL MEAN					3115	1997
LOWEST ANNUAL MEAN					294	1996
HIGHEST DAILY MEAN	12800	Dec 23	12800	Dec 23	16600	Mar 2 1997
LOWEST DAILY MEAN	23	Aug 1	63	Aug 23	23	Aug 1 1998
ANNUAL SEVEN-DAY MINIMUM	26	Jul 28	69	Aug 18	26	Jul 28 1998
INSTANTANEOUS PEAK FLOW			12800	Dec 23	16600	Mar 2 1997
INSTANTANEOUS PEAK STAGE			29.43	Dec 23	32.40	Mar 2 1997
ANNUAL RUNOFF (AC-FT)	2210000		2150000		1535000	
10 PERCENT EXCEEDS	9070		7280		6640	
50 PERCENT EXCEEDS	1480		1730		548	
90 PERCENT EXCEEDS	48		108		96	

08020900 SABINE RIVER BELOW LONGVIEW, TX--Continued



08022040 SABINE RIVER NEAR BECKVILLE, TX

LOCATION.--Lat 32°19'38", long 94°21'12", Panola County, Hydrologic Unit 12010002, on downstream side of highway embankment near right end of downstream bridge on U.S. Highway 59, 0.9 mi upstream from Eightmile Creek, 6.0 mi upstream from Farm Road 1794, 8.4 mi northeast of Beckville, 12.4 mi downstream from State Highway 43 and at mile 327.0.

DRAINAGE AREA.--3,589 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1938 to current year. Prior to Oct 1978, published as "near Tatum" (station 08022000).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.00 ft above sea level. Prior to Oct 1, 1978, at site 12.4 mi upstream at datum 14.18 ft higher. Prior to Sep 21, 1945, nonrecording gage. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated by eight major upstream reservoirs, with a combined capacity of 1,701,000 acre-ft. There are several diversions above this station and below Lake Tawakoni for municipal, industrial and oil field operations. Low flows are sustained by wastewater effluents that are returned to the river above the station. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from 9.70 mi^2 in the Mill Creek drainage basin.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1939-60) prior to regulation by Lake Tawakoni, 2,663 ft^3/s (1,929,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD PRIOR TO REGULATION (WATER YEARS 1939-60).--Maximum discharge, 123,000 ft^3/s Apr 4, 1945 (gage height, 33.80 ft), site and datum then in use, from graph based on gage readings, from rating curve extended above 66,000 ft^3/s on basis of partly estimated discharge measurement of 88,900 ft^3/s; minimum observed, 2.4 ft^3/s Aug 11, 1964. Maximum stage since at least 1884, that of Apr 4, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of about 2 ft lower than flood of Apr 4, 1945. These dates and gage heights are based on information for Sabine River near Tatum (station 08022000, discontinued) and Sabine River at Logansport, La. (station 08022500).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	223	1560	3160	e14200	14100	1420	2650	1230	6970	2120	213	146
2	199	1980	2650	e13400	13400	1320	2400	1080	6990	1830	194	150
3	212	2280	1890	e12500	12800	1340	2380	996	6940	1430	186	146
4	484	2100	1810	e11800	11800	1420	4560	936	6870	1100	193	142
5	627	2070	1820	e11300	10500	1340	11000	1440	6760	904	190	222
6	1380	2230	1870	10900	9300	1580	12200	2910	6590	791	180	207
7	6180	2470	2380	9980	8510	1740	11000	2870	6430	731	164	200
8	8100	2740	3970	8970	8090	1520	9790	2350	6340	877	147	201
9	8380	2970	5200	8020	8080	1470	8440	1960	6300	745	140	205
10	8250	2970	6030	7120	8120	1400	7200	1660	6300	739	137	215
11	7760	2920	8700	6100	8160	1380	6450	1750	6350	986	137	183
12	6900	2810	10500	4820	8250	2200	6040	1570	6460	1810	145	155
13	6020	4310	10500	3500	8300	5290	5860	1290	6620	1780	127	147
14	5490	7380	10100	2780	8270	7950	5950	1230	6750	1170	122	136
15	5260	8420	9500	e2530	8080	8330	6320	1390	6710	1010	131	132
16	5250	8400	9050	e2250	7700	7140	6300	1440	6480	860	128	130
17	5260	8140	8730	e2090	6890	6030	5670	1330	5930	727	112	123
18	5050	7510	8710	e1950	5500	5700	4250	1530	4580	641	105	119
19	4120	6840	9140	e1780	4000	5820	2890	2330	2940	587	103	131
20	2670	6470	9790	1500	3080	6120	2350	2250	2070	493	107	132
21	2440	6170	10300	1450	2560	6490	2080	1810	1700	493	119	127
22	2860	5990	10900	1560	2260	6730	1860	1860	1500	432	110	111
23	2930	5950	11500	e1800	2060	7010	1580	2320	1490	394	100	107
24	2980	6000	11800	e1860	1940	7070	1280	2980	1450	351	95	104
25	2930	6040	e11500	1820	1830	7370	1080	3580	2360	359	106	107
26	2800	6020	e11600	1730	1710	7740	982	4110	4850	352	117	113
27	2620	5910	e11700	e1500	1610	7570	1090	4620	5620	324	117	118
28	2310	5600	e11900	e1210	1520	7000	1290	5110	5110	297	122	134
29	1990	4890	e12300	e1220	---	5730	1350	5470	3490	262	164	134
30	1760	3640	e12900	e6460	---	4160	1340	5790	2520	249	160	122
31	1620	---	e13400	e12400	---	3110	---	6340	---	239	139	---
TOTAL	115055	142780	255300	170500	188420	140490	137632	77532	151470	25083	4310	4399
MEAN	3711	4759	8235	5500	6729	4532	4588	2501	5049	809	139	147
MAX	8380	8420	13400	14200	14100	8330	12200	6340	6990	2120	213	222
MIN	199	1560	1810	1210	1520	1320	982	936	1450	239	95	104
AC-FT	228200	283200	506400	338200	373700	278700	273000	153800	300400	49750	8550	8730

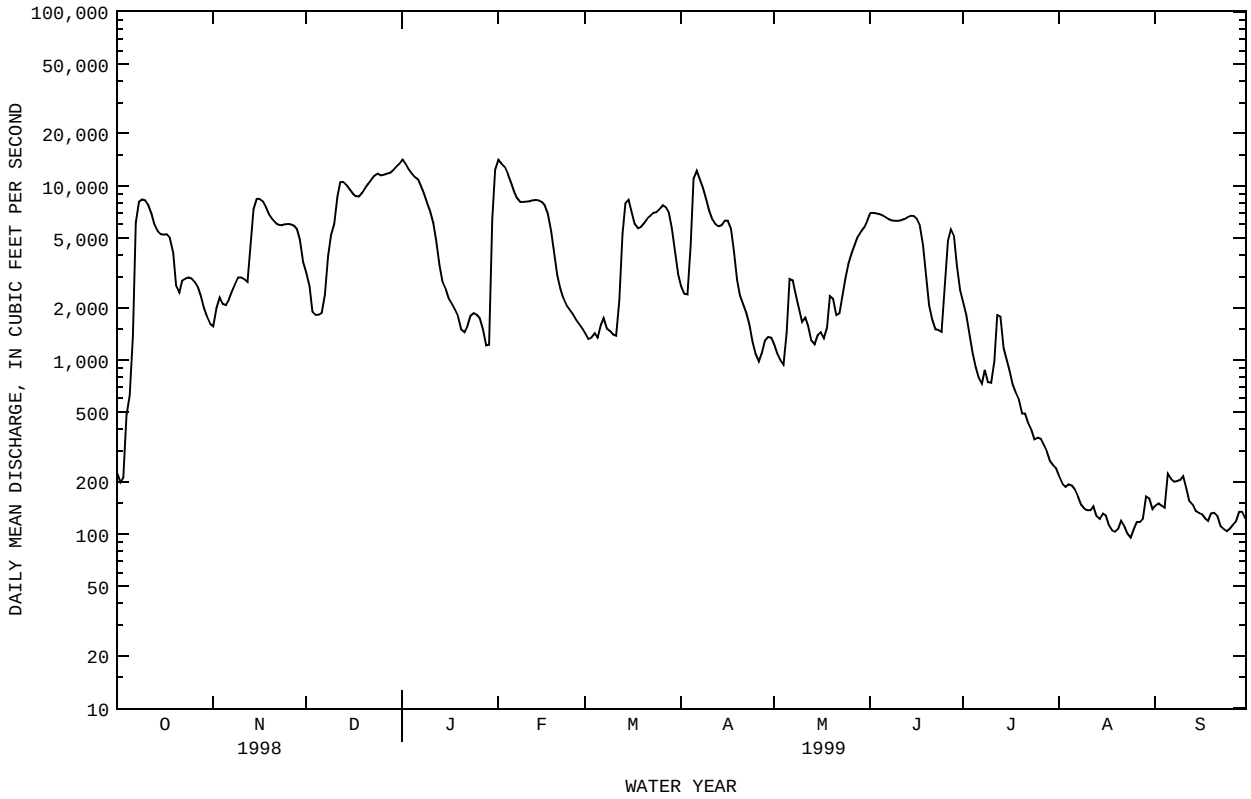
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999z, BY WATER YEAR (WY)

MEAN	683	1693	3309	3369	4099	4573	3985	4745	2803	937	320	442
MAX	4325	8221	9866	10960	11930	13180	11330	21010	11580	3834	1725	3434
(WY)	1974	1975	1975	1992	1975	1997	1990	1966	1989	1992	1979	1974
MIN	42.5	82.1	144	239	322	317	355	317	77.5	32.1	36.7	33.8
(WY)	1964	1964	1966	1964	1996	1996	1971	1972	1971	1964	1969	1985

08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999z	
ANNUAL TOTAL	1372931		1412971			
ANNUAL MEAN	3761		3871		2572	
HIGHEST ANNUAL MEAN					4857	1992
LOWEST ANNUAL MEAN					311	1964
HIGHEST DAILY MEAN	13400	Dec 31	14200	Jan 1	48100	May 2 1966
LOWEST DAILY MEAN	20	Aug 2	95	Aug 24	2.4	Aug 11 1964
ANNUAL SEVEN-DAY MINIMUM	30	Jul 30	106	Aug 18	3.8	Aug 7 1964
INSTANTANEOUS PEAK FLOW			14700	Jan 1	49400	May 2 1966
INSTANTANEOUS PEAK STAGE			27.48	Jan 1	38.87	Mar 30 1989
ANNUAL RUNOFF (AC-FT)	2723000		2803000		1863000	
10 PERCENT EXCEEDS	10500		9000		7610	
50 PERCENT EXCEEDS	2070		2360		896	
90 PERCENT EXCEEDS	53		140		91	

e Estimated
z Period of regulated streamflow.



08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMCIAL DATA: Feb 1952 to Mar 1999(discontinued).
BIOCHEMICAL DATA: Jan 1968 to Mar 1999(discontinued).
PESTICIDE DATA: Mar 1968 to Jun 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Feb 1952 to Sep 1998.
WATER TEMPERATURE: Feb 1952 to Sep 1998.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous water years using the daily (or continuous) records of specific conductance and regression relationship between each chemical constituent and specific conductance. 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 daily, 3,040 microsiemens, Jan 13, 1966; minimum daily, 53 microsiemens, Mar 31, 1979, Mar 30, 1989.
WATER TEMPERATURE: Maximum daily, 38.0°C, Jul 8, 1969; minimum daily, 0.0°C, on several days during Dec 1983.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
JAN									
26...	1235	1740	244	6.9	13.0	48	26	13	3.9
MAR									
24...	1725	7060	165	7.3	16.2	42	14	11	3.3

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
JAN									
26...	24	1	3.3	22	29	31	<.10	14	131
MAR									
24...	12	.8	4.1	28	19	14	.13	3.4	83

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08022060 MARTIN LAKE NEAR TATUM, TX

LOCATION.--Lat 32°15'42", long 94°34'23", Rusk County, Hydrologic Unit 12010002, on retaining wall, 30 ft to right of intake to generating plant No. 1, 1.9 mi upstream from Martin Dam on Martin Creek, 5.8 mi southwest of Tatum and 21.9 mi upstream from mouth.

DRAINAGE AREA.--130 mi^2.

PERIOD OF RECORD.--Apr 1974 to current year.
Water-quality records.--Chemical data: Oct 1974 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 15, 1976, non-recording gage near left end of dam 1.9 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 8,675 ft long, including a 1,000-foot uncontrolled spillway. Deliberate impoundment began in Apr 1974. The uncontrolled spillway is an excavated channel cut through natural ground and located at the left end of the dam. The controlled spillway is a concrete ogee design with four 14.0- by 40.0-foot-wide tainter gates located near the left end of the dam. The low-flow outlet works consist of a 3.0- by 5.0-foot conduit with a sluice gate located in one of the gate piers. There is an 8-inch pipe with sluice gate. There are no known diversions. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	321.5
Crest of uncontrolled spillway	312.0
Top of gates	308.0
Top of conservation pool	306.0
Crest of gated spillway	294.0
Lowest gated outlet (invert)	284.0

COOPERATION.--Capacity table provided by URS/Forrest and Cotton, Consulting Engineers for Texas Utilities Services, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 118,000 acre-ft, Mar 29, 1989 (elevation, 313.00 ft); minimum contents since first appreciable storage, 45,230 acre-ft, Sep 18, 1996 (elevation, 298.45 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 80,500 acre-ft, Jan 29 (elevation, 306.59 ft); minimum contents, 63,450 acre-ft, Oct 2-3 (elevation, 303.02 ft).

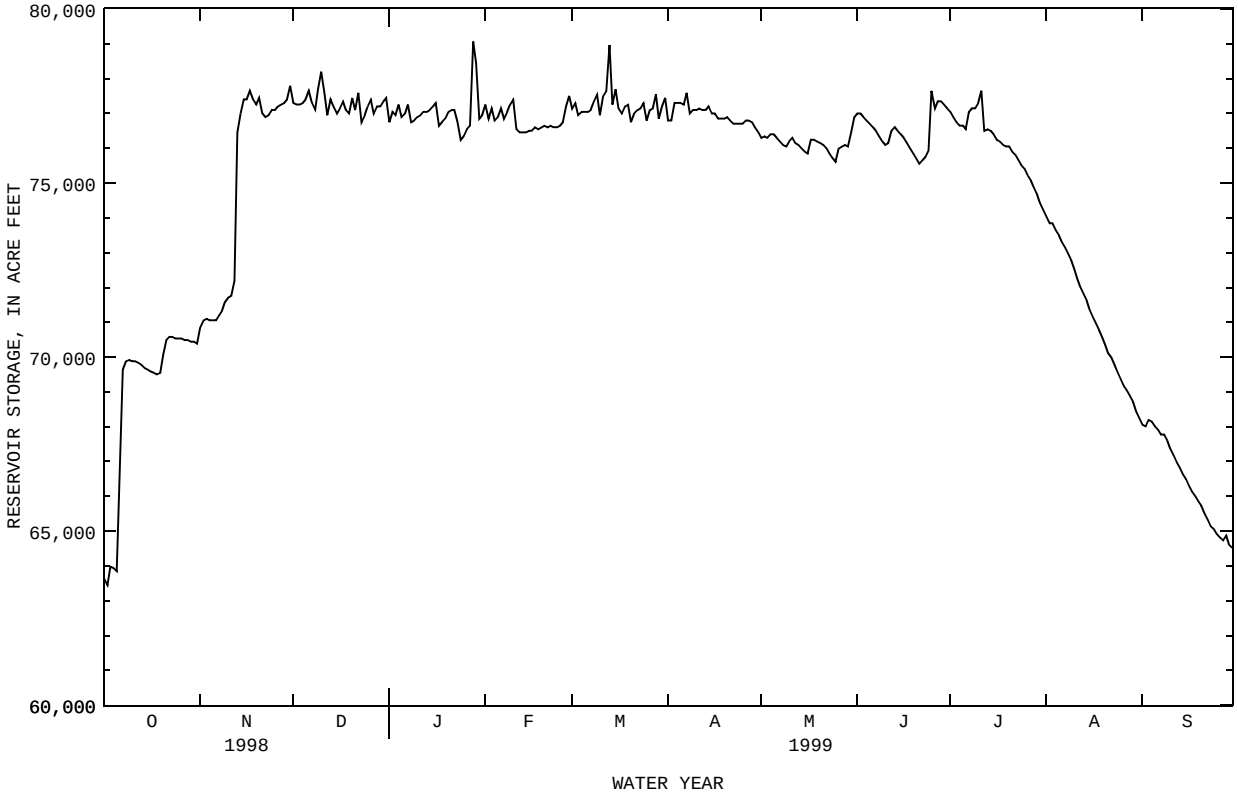
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63630	70870	77300	76750	77250	77150	76800	76300	77000	77050	74040	68060
2	63450	71060	77250	77050	76850	77300	76800	76350	77000	76900	73840	68010
3	63980	71100	77250	76950	77150	76950	77300	76300	76900	76750	73840	68200
4	63940	71060	77300	77250	76800	77050	77300	76400	76800	76650	73650	68150
5	63850	71060	77400	76900	76900	77050	77300	76400	76700	76650	73500	68010
6	67550	71060	77650	77000	77150	77050	77250	76300	76600	76550	73310	67920
7	69640	71200	77300	77250	76850	77100	77600	76200	76500	77050	73160	67780
8	69880	71340	77100	76750	77050	77350	77000	76100	76350	77150	72970	67780
9	69920	71580	77700	76800	77250	77550	77100	76050	76200	77150	72780	67600
10	69880	71720	78200	76900	77400	76950	77100	76200	76100	77300	72540	67370
11	69880	71770	77600	76950	76550	77500	77150	76300	76150	77650	72250	67190
12	69830	72200	76950	77050	76450	77650	77100	76150	76500	76500	72010	67000
13	69780	76450	77400	77050	76450	78960	77100	76100	76600	76550	71820	66820
14	69690	77000	77200	77100	76450	77250	77200	76000	76500	76500	71630	66640
15	69640	77400	77000	77200	76500	77700	77000	75900	76400	76400	71340	66500
16	69590	77400	77150	77300	76500	77150	77000	75850	76300	76250	71150	66320
17	69550	77650	77350	76650	76600	77000	76850	76250	76150	76200	70960	66140
18	69500	77400	77100	76750	76550	77200	76850	76250	76000	76100	70770	66010
19	69550	77250	77000	76850	76600	77250	76850	76200	75850	76050	70580	65870
20	70060	77450	77450	77050	76650	76750	76900	76150	75710	76050	70350	65740
21	70490	77000	77100	77100	76600	77000	76800	76100	75560	75900	70110	65510
22	70580	76900	77600	77100	76650	77100	76700	76000	75660	75810	69970	65330
23	70580	76950	76750	76750	76600	77150	76700	75850	75760	75660	69780	65150
24	70540	77100	76950	76250	76600	77300	76700	75710	75950	75510	69550	65060
25	70540	77100	77200	76350	76650	76800	76700	75610	77650	75410	69360	64920
26	70540	77200	77400	76550	76750	77100	76800	76000	77150	75210	69170	64830
27	70490	77250	77000	76650	77200	77150	76800	76050	77350	75070	69030	64740
28	70490	77300	77200	79070	77500	77550	76750	76100	77350	74870	68890	64880
29	70440	77400	77200	78460	---	76850	76600	76050	77250	74670	68710	64610
30	70440	77800	77350	76850	---	77200	76450	76450	77150	74430	68430	64520
31	70390	---	77450	76950	---	77450	---	76900	---	74230	68240	---
MAX	70580	77800	78200	79070	77500	78960	77600	76900	77650	77650	74040	68200
MIN	63450	70870	76750	76250	76450	76750	76450	75610	75560	74230	68240	64520
(+)	304.54	306.06	305.99	305.89	306.00	305.99	305.79	305.88	305.93	305.34	304.08	303.26
(@)	+6680	+7410	-350	-500	+550	-50	-1000	+450	+250	-2920	-5990	-3720

CAL YR 1998 MAX 78360 MIN 57230 (@) +1200
WTR YR 1999 MAX 79070 MIN 63450 (@) +810

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08022060 MARTIN LAKE NEAR TATUM, TX--Continued



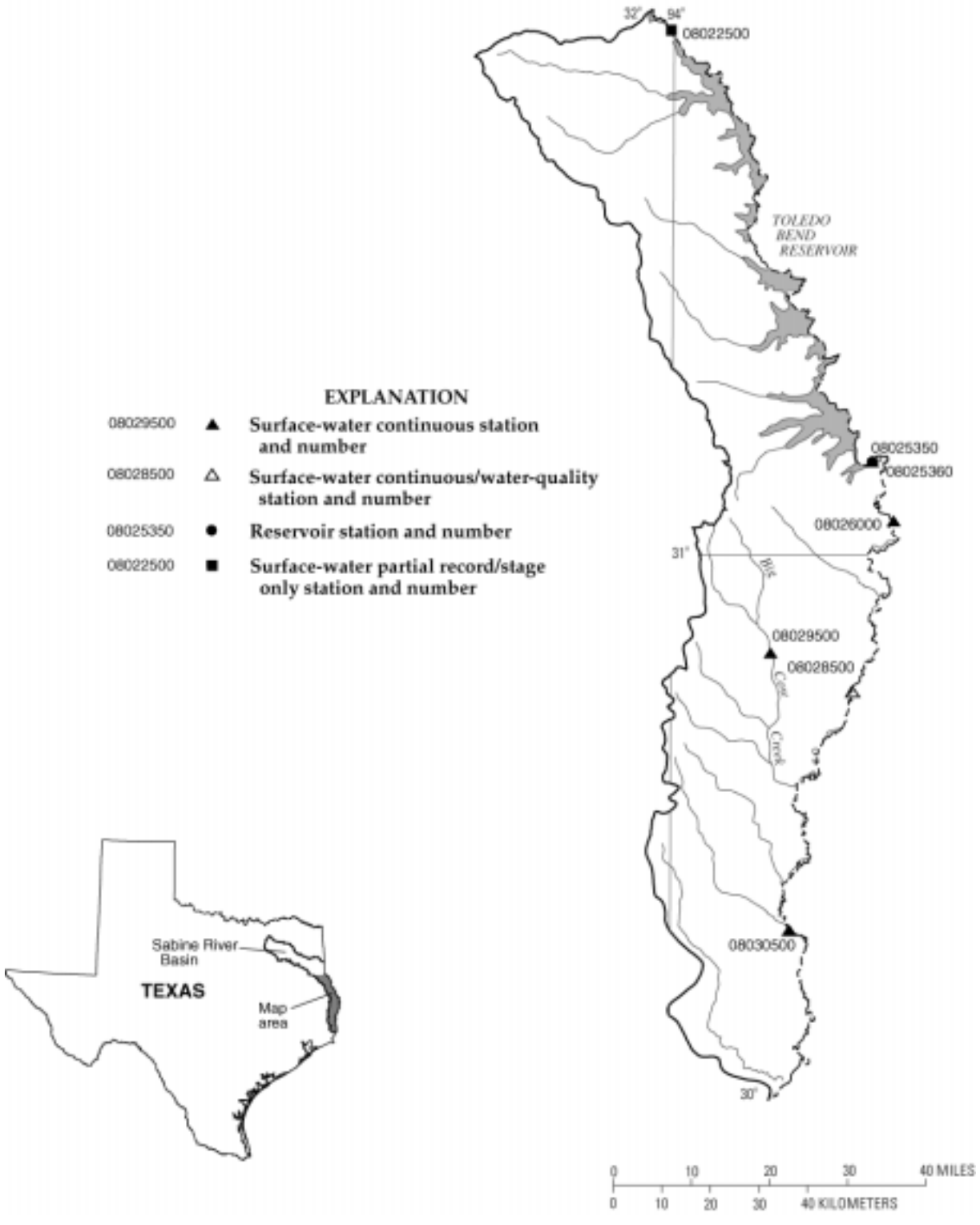


Figure 9.-- Map showing location of gaging stations in the second section of the Sabine River Basin

08022500 SABINE RIVER AT LOGANSPORT, LA

LOCATION.--Lat 31°58'20", long 94°00'22", De Soto Parish, Louisiana-Shelby County, Texas State line at Logansport, Hydrologic Unit 12010004, on left bank just upstream from bridge on U.S. Highway 84, 3 mi upstream from Bayou Castor, 111 mi upstream from Toledo Bend Dam and at mile 267.1.

DRAINAGE AREA.--4,842 mi^2.

PERIOD OF RECORD.--Jul 1903 to Feb 1968 (daily discharge), Mar 1968 to current year (gage height).
Water-quality records.--Specific conductance: 1939 to 1945. Water temperature: 1939 to 1945.

REVISED RECORDS.--WSP 1312: 1903-6 (monthly and annual means). WSP 1732: 1929(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 147.72 ft above sea level. Jul 1, 1903, to Sep 30, 1956, nonrecording gage. Oct 1, 1956, to Jan 16, 1964, water-stage recorder 4,600 ft upstream. Jan 16, 1964, to Dec 10, 1968, water-stage recorder 4,700 ft upstream. All gages to present datum except prior to Dec 31, 1906 when datum was 2.00 ft lower. Satellite telemeter at station.

REMARKS.--Records good. Station discontinued as a daily streamflow station on Mar 1, 1968, due to backwater from storage in Toledo Bend Reservoir. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (capacity 936,200 acre-ft) and three additional upstream reservoirs. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from 9.70 mi^2 in the Mill Creek drainage basin. Numerous diversions above station for oil field operations, municipal and industrial uses.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--57 years (water years 1904-60), 3,325 ft^3/s (2,407,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1904-60).--Maximum discharge, 92,000 ft^3/s Apr 8, 1945 (gage height, 44.07 ft, from floodmark); minimum, 16 ft^3/s Sep 26-28, Oct 3, 4, 1939.

AVERAGE DISCHARGE FOR PERIOD AFTER REGULATION.--7 years (water years 1961-67), 2,252 ft^3/s (1,632,00 acre-ft/yr).

EXTREMES FOR PERIOD AFTER REGULATION (WATER YEARS, 1961-67).--Maximum gage height, 34.78 ft Apr 16. 1991; minimum since initial filling of Toledo Bend Reservoir in Jun 1968, 16.85 ft Nov 9, 1987. Maximum discharge, 46,800 ft^3/s May 6, 1966 (gage height, 38.46 ft); minimum, 25 ft^3/s Aug 13, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 39.4 ft at present site and datum. Stage determined from high-water mark.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 33.07 ft, Jan 31; minimum gage height, 17.31 ft, Oct 1.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.35	18.98	21.62	26.10	32.33	22.72	23.30	22.85	23.50	23.90	22.35	20.12
2	17.60	19.01	21.41	27.64	31.53	22.07	23.00	22.91	23.43	23.71	22.35	20.20
3	17.53	19.15	21.33	27.38	30.49	22.30	23.08	23.04	23.46	23.78	22.51	20.07
4	17.74	18.99	21.21	27.10	29.43	22.48	23.88	22.77	23.49	23.62	22.28	20.01
5	17.76	19.05	21.13	27.15	28.43	22.11	24.62	22.46	23.55	23.59	22.01	19.93
6	17.80	19.12	20.95	26.99	27.77	21.95	25.52	22.59	23.49	23.43	21.94	20.06
7	18.58	19.21	20.93	26.87	27.13	22.05	26.37	22.65	23.61	23.37	21.99	19.88
8	19.51	19.26	21.66	26.65	26.62	22.06	26.66	22.65	23.47	23.57	22.01	19.87
9	20.02	19.60	22.17	26.31	26.18	22.09	26.52	22.92	23.46	23.44	21.87	19.76
10	20.33	19.40	22.70	26.10	25.89	22.14	26.09	22.97	23.46	23.31	21.83	19.67
11	20.38	19.45	23.80	25.90	25.44	22.17	25.48	22.72	23.45	23.47	21.70	19.67
12	20.36	19.53	25.00	25.64	25.25	22.23	24.87	22.64	23.53	23.46	21.64	19.62
13	20.17	20.62	26.23	25.11	25.16	23.10	24.44	22.52	23.56	23.49	21.50	19.62
14	19.80	22.03	26.87	24.72	25.18	23.79	24.24	22.53	23.55	23.54	21.46	19.51
15	19.47	22.64	26.91	24.55	25.27	e24.20	23.91	22.62	23.64	23.37	21.43	19.44
16	19.52	22.92	26.66	24.38	24.94	e24.55	23.92	22.63	23.62	23.43	21.30	19.40
17	19.42	23.13	26.18	24.14	24.92	e24.80	23.80	22.31	23.57	23.39	21.25	19.42
18	19.32	23.28	25.81	23.98	24.72	24.76	23.65	22.37	23.52	23.38	21.10	19.37
19	19.42	23.25	25.44	23.92	24.50	24.41	23.29	22.39	23.40	23.19	21.03	19.34
20	19.24	23.24	25.19	23.92	24.13	23.93	23.22	22.54	23.24	23.25	20.97	19.31
21	19.06	23.32	24.90	23.81	23.84	23.77	23.26	22.49	23.09	23.10	20.93	19.07
22	19.02	23.17	24.71	24.28	23.94	23.85	22.99	22.33	23.27	23.02	20.92	19.27
23	19.11	22.93	24.72	24.77	23.52	23.64	22.88	22.28	23.18	22.98	20.90	19.15
24	19.08	22.76	e24.80	24.73	23.41	23.47	22.77	22.33	23.06	23.02	20.82	19.18
25	19.10	22.57	24.91	24.40	23.22	23.46	22.90	22.57	23.84	22.91	20.58	19.32
26	19.07	22.40	25.09	24.22	23.25	23.53	22.82	22.46	23.96	22.80	20.51	19.21
27	19.04	22.30	25.23	23.79	22.79	23.60	22.84	22.62	24.24	22.73	20.36	19.10
28	19.06	22.25	25.29	24.29	22.78	23.58	22.79	22.71	24.38	22.74	20.35	19.10
29	19.01	22.25	25.27	29.60	---	23.54	22.78	22.84	24.38	22.80	20.32	18.99
30	18.98	21.88	25.30	32.76	---	23.67	22.79	23.14	24.30	22.56	20.20	19.04
31	19.01	---	25.20	32.86	---	23.59	---	23.33	---	22.51	20.35	---
MAX	20.38	23.32	26.91	32.86	32.33	24.80	26.66	23.33	24.38	23.90	22.51	20.20
MIN	17.35	18.98	20.93	23.79	22.78	21.95	22.77	22.28	23.06	22.51	20.20	18.99

CAL YR MAX 28.42 MIN 16.15
WTR YR MAX 32.86 MIN 17.35

e Estimated

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08025350 TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010004, in powerhouse at right end of Toledo Bend Dam on Sabine River, 15 mi northeast of Burkeville and at mile 156.5.

DRAINAGE AREA.--7,178 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Sabine River Authority). Prior to Jul 20, 1967, nonrecording gage at same site and datum. Jul 20, 1967, to Jun 30, 1973, recording gage at right end of spillway 1.6 mi north of present site and at same datum. Satellite telemeter at station.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam. Closure of embankment completed and deliberate impoundment began Oct 3, 1966. The reservoir is operated for hydro-electric power generation and water conservation. Releases during high inflow periods are controlled by eleven 40 x 28-foot tainter gates. An 8.33 x 12-foot gated conduit through the dam is used for low-flow releases. Two additional 20-inch-diameter conduits, that bypass the larger conduit, may also be used for low-flow releases. Water for turbines is admitted through four 16.75 x 29-foot penstocks and controlled by vertically operated caterpillar-type gates. The capacity table is based on U.S. Geological Survey topographic maps. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400), capacity 936,200 acre-ft, Lake Fork Creek Reservoir (station 08018800), capacity 675,819 acre-ft, and by five tributary reservoirs with a combined total capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	185.0
Design flood	175.3
Top of gates	173.0
Top of power drawdown storage	172.0
Top of power head storage	162.2
Crest of spillway (controlled)	145.0
Lowest gated outlet (invert)	100.0

COOPERATION.--Capacity table furnished by the Sabine River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,840,000 acre-ft, May 18, 1989 (elevation, 173.95 ft); minimum since initial filling of reservoir in Jun 1968, 3,290,000 acre-ft, Nov 14, 15, 1987 and Oct 20, 1994 (elevation, 164.78 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,813,000 acre-ft, Jan 30 (elevation, 173.81 ft); minimum contents, 3,310,000 acre-ft, Oct 2, 4-5 (elevation, 164.92 ft).

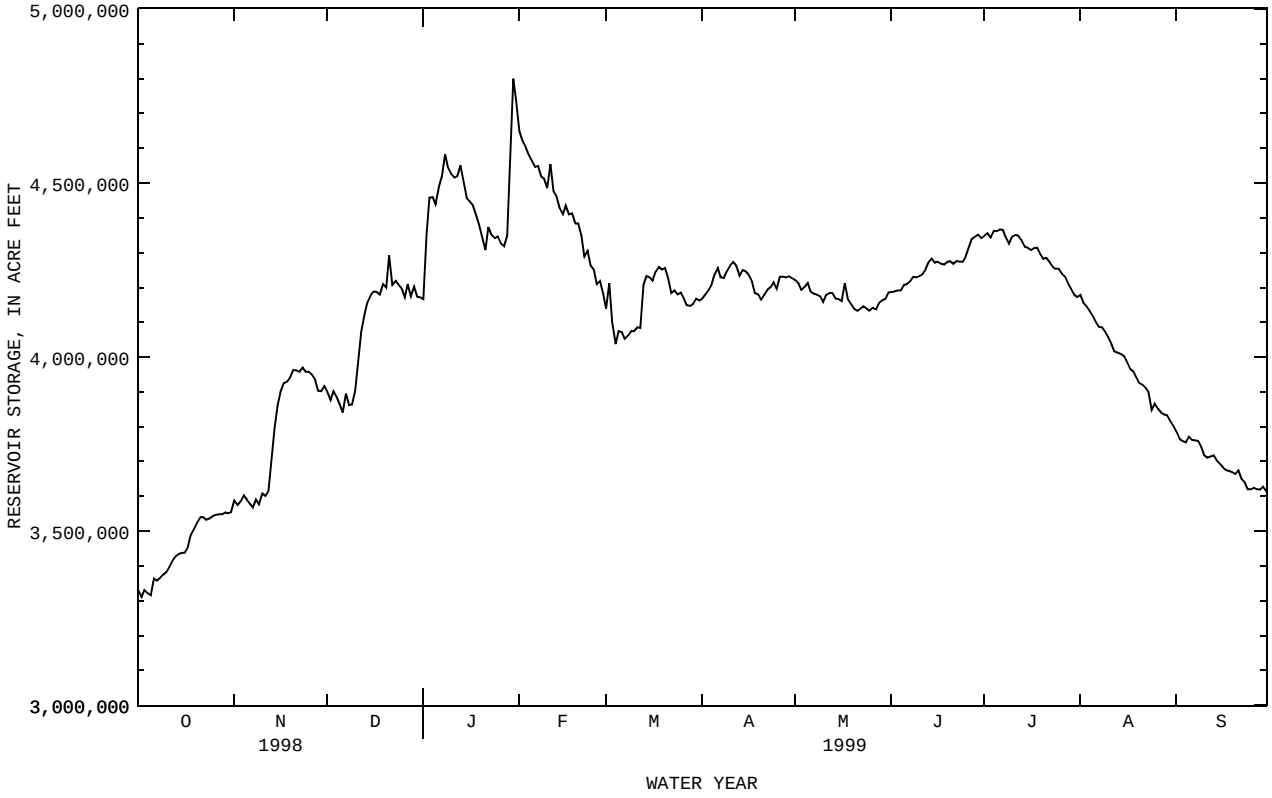
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3331000	3588000	3900000	4167000	4649000	4140000	4168000	4222000	4187000	4349000	4179000	3786000
2	3310000	3575000	3877000	4352000	4621000	4212000	4180000	4212000	4189000	4356000	4156000	3766000
3	3331000	3586000	3902000	4458000	4603000	4101000	4193000	4193000	4191000	4344000	4146000	3759000
4	3322000	3603000	3885000	4460000	4581000	4038000	4210000	4201000	4191000	4363000	4132000	3756000
5	3316000	3591000	3866000	4440000	4564000	4074000	4238000	4213000	4207000	4363000	4118000	3772000
6	3364000	3578000	3841000	4491000	4546000	4072000	4257000	4189000	4210000	4367000	4101000	3762000
7	3358000	3568000	3895000	4520000	4550000	4052000	4229000	4182000	4217000	4365000	4087000	3761000
8	3366000	3591000	3862000	4583000	4520000	4062000	4227000	4179000	4231000	4344000	4086000	3759000
9	3375000	3577000	3864000	4544000	4513000	4075000	4248000	4175000	4229000	4326000	4072000	3742000
10	3382000	3608000	3905000	4526000	4485000	4074000	4264000	4158000	4233000	4347000	4057000	3719000
11	3398000	3602000	4001000	4516000	4555000	4086000	4273000	4179000	4238000	4351000	4038000	3711000
12	3416000	3617000	4075000	4520000	4476000	4084000	4262000	4184000	4252000	4349000	4016000	3714000
13	3428000	3705000	4123000	4551000	4462000	4208000	4234000	4184000	4273000	4336000	4013000	3718000
14	3434000	3796000	4158000	4502000	4428000	4233000	4250000	4168000	4283000	4317000	4009000	3703000
15	3437000	3864000	4179000	4456000	4410000	4229000	4247000	4167000	4271000	4315000	4004000	3694000
16	3438000	3902000	4189000	4447000	4435000	4220000	4236000	4161000	4274000	4308000	3987000	3684000
17	3456000	3925000	4187000	4435000	4410000	4247000	4217000	4212000	4269000	4313000	3967000	3676000
18	3490000	3930000	4180000	4410000	4413000	4259000	4184000	4165000	4266000	4315000	3960000	3673000
19	3509000	3943000	4210000	4381000	4383000	4252000	4180000	4153000	4273000	4297000	3943000	3670000
20	3526000	3963000	4200000	4345000	4385000	4257000	4165000	4139000	4276000	4283000	3925000	3665000
21	3540000	3963000	4292000	4308000	4349000	4226000	4179000	4133000	4269000	4285000	3922000	3674000
22	3540000	3958000	4208000	4374000	4290000	4184000	4194000	4140000	4276000	4274000	3912000	3650000
23	3533000	3970000	4219000	4351000	4306000	4191000	4201000	4146000	4274000	4260000	3900000	3641000
24	3537000	3958000	4207000	4342000	4262000	4180000	4215000	4140000	4274000	4254000	3849000	3620000
25	3543000	3958000	4198000	4347000	4250000	4186000	4196000	4133000	4288000	4254000	3867000	3620000
26	3547000	3950000	4172000	4327000	4210000	4168000	4231000	4142000	4317000	4240000	3852000	3625000
27	3549000	3936000	4210000	4318000	4219000	4149000	4231000	4137000	4340000	4231000	3841000	3620000
28	3549000	3903000	4175000	4349000	4182000	4147000	4229000	4154000	4347000	4212000	3836000	3619000
29	3554000	3902000	4203000	4601000	---	4153000	4233000	4163000	4352000	4196000	3833000	3628000
30	3552000	3917000	4173000	4800000	---	4168000	4226000	4167000	4342000	4180000	3816000	3614000
31	3555000	---	4172000	4737000	---	4163000	---	4186000	---	4173000	3801000	---
MAX	3555000	3970000	4292000	4800000	4649000	4259000	4273000	4222000	4352000	4367000	4179000	3786000
MIN	3310000	3568000	3841000	4167000	4182000	4038000	4165000	4133000	4187000	4173000	3801000	3614000
(+)	166.53	168.78	170.28	173.41	170.34	170.23	170.59	170.36	171.25	170.29	168.08	166.91
(@)	+218000	+362000	+255000	+565000	-555000	-19000	+63000	-40000	+156000	-169000	-372000	-187000

CAL YR 1998 MAX 4642000 MIN 3151000 (@) +81000
WTR YR 1999 MAX 4800000 MIN 3310000 (@) +277000

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08025350 TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX--Continued



08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010005, in powerhouse at right end of Toledo Bend Dam, 10 mi upstream from Sabine River near Burkeville gage and at mile 156.5.

DRAINAGE AREA.--7,178 mi^2.

PERIOD OF RECORD.--Oct 1971 to current year.
Water-quality records.--Chemical data: Oct 1967 to Sep 1986. Biochemical data: Oct 1967 to Sep 1986.

GAGE.--Water-stage recorders. Datum of gage is at sea level (levels by Sabine River Authority). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. Daily discharges are a combination of releases from various outlets at the dam. Discharges for releases through the turbines are computed using scroll case differential relationships and operation logs. Tainter gate releases, low-flow sluiceway releases, bypass gate releases, and turbine leakages are based on discharge measurements and operation logs. Since installation of gage in 1972, at least 10% of contributing drainage area has been regulated by Toledo Bend Reservoir (station 08025350, normal storage 4,477,000 acre-ft).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

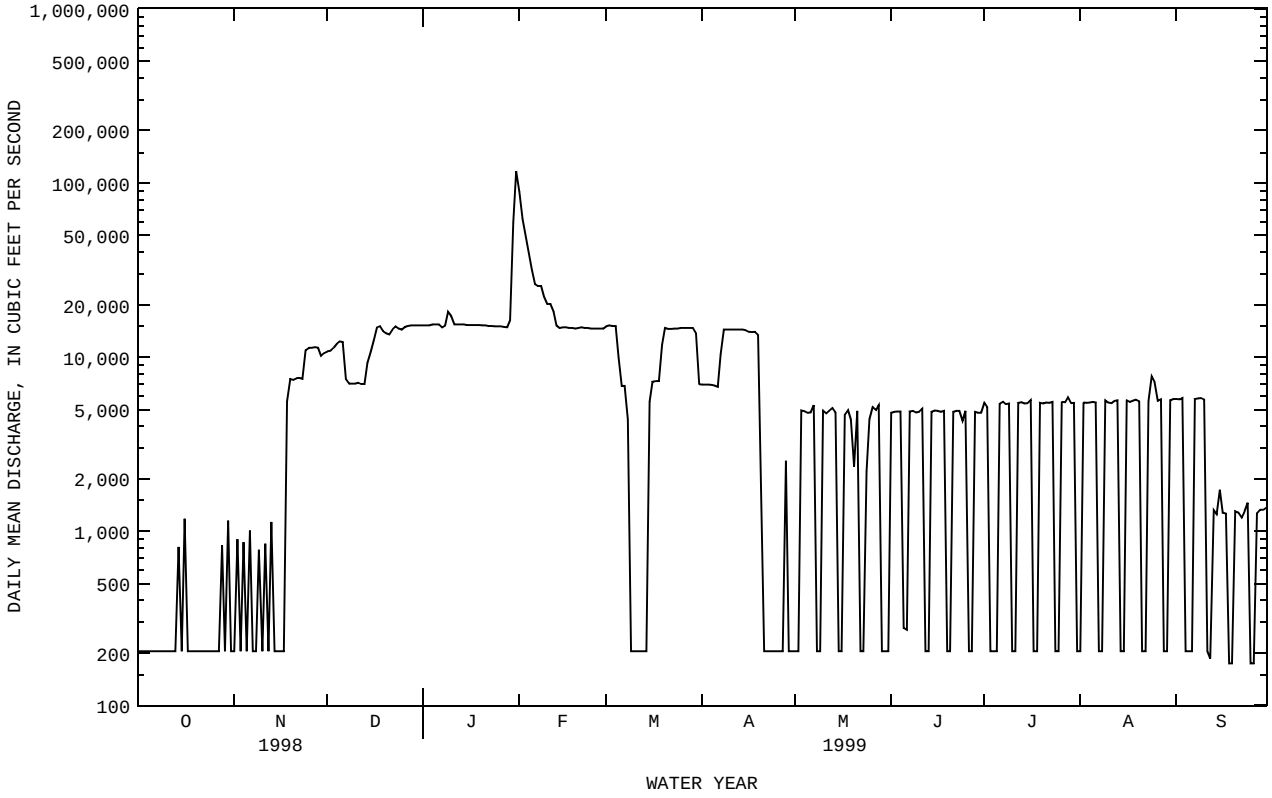
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	204	10800	15200	89300	15000	6960	204	4780	5470	204	5750
2	204	898	10900	15200	62300	15200	6970	204	4850	5170	5480	5730
3	204	204	11300	15200	49600	15100	6950	4930	4860	204	5470	5850
4	204	864	11900	15400	40700	15100	6920	4890	4870	204	5490	204
5	204	204	12300	15400	31900	10000	6880	4790	278	204	5540	204
6	204	1010	12200	15400	26300	6840	6750	4820	271	5420	5490	204
7	204	204	7480	14800	25600	6830	10400	5300	4870	5560	204	5750
8	204	204	7040	15200	25600	4400	14400	204	4900	5370	204	5800
9	204	781	7040	18200	22300	204	14400	204	4800	5420	5660	5810
10	204	204	7060	17200	20200	204	14400	4930	4840	204	5490	5730
11	204	847	7130	15400	20200	204	14400	4760	5060	204	5440	204
12	204	204	7020	15400	18300	204	14400	4910	204	5470	5590	185
13	204	1130	7020	15400	15200	204	14400	5090	204	5510	5640	1320
14	812	204	9220	15400	14700	204	14400	4810	4840	5410	204	1250
15	204	204	10800	15300	14800	5560	14300	204	4940	5430	204	1730
16	1180	204	12500	15300	14800	7210	14000	204	4910	5670	5640	1280
17	204	204	14800	15300	14700	7280	13900	4690	4850	204	5520	1260
18	204	5580	15100	15300	14700	7290	14000	4980	4900	204	5620	174
19	204	7460	14100	15300	14600	11800	13400	4390	204	5450	5690	174
20	204	7410	13700	15200	14700	14700	3020	2350	204	5410	5580	1300
21	204	7560	13500	15200	14800	14500	204	4900	4850	5480	204	1280
22	204	7600	14400	15100	14700	14500	204	204	4900	5450	204	1200
23	204	7490	15000	15100	14700	14600	204	204	4920	5530	5610	1300
24	204	11000	14600	15000	14600	14600	204	2210	4310	204	7760	1460
25	204	11300	14400	15000	14600	14700	204	4410	4910	204	7190	174
26	204	11300	14900	15000	14600	14700	204	5160	204	5520	5620	174
27	204	11400	15100	14900	14600	14700	204	4970	204	5510	5750	1270
28	829	11300	15200	14800	14600	14700	2530	5330	4840	5910	204	1330
29	204	10200	15200	16300	---	14700	204	204	4780	5440	204	1330
30	1150	10600	15200	59400	---	13700	204	204	4790	5450	5650	1370
31	204	---	15200	117000	---	6980	---	204	---	204	5740	---
TOTAL	9479	127974	372110	623300	667700	295914	229616	94864	108343	117090	128496	60797
MEAN	306	4266	12000	20110	23850	9546	7654	3060	3611	3777	4145	2027
MAX	1180	11400	15200	117000	89300	15200	14400	5330	5060	5910	7760	5850
MIN	204	204	7020	14800	14600	204	204	204	204	204	204	174
AC-FT	18800	253800	738100	1236000	1324000	586900	455400	188200	214900	232200	254900	120600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1999, BY WATER YEAR (WY)

MEAN	1220	2304	5645	9506	10450	10710	8320	7825	5919	4647	3642	2965
MAX	6809	13340	17720	27680	23850	28210	19270	22170	24960	18790	6732	7323
(WY)	1992	1995	1975	1974	1999	1997	1991	1991	1989	1989	1976	1991
MIN	59.0	50.7	74.5	90.0	339	231	247	311	508	493	470	424
(WY)	1976	1976	1976	1978	1981	1972	1978	1984	1996	1996	1996	1983

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1972 - 1999	
ANNUAL TOTAL	2711622		2835683			
ANNUAL MEAN	7429		7769		6077	
HIGHEST ANNUAL MEAN					10370	1995
LOWEST ANNUAL MEAN					517	1996
HIGHEST DAILY MEAN	25300	Jan 19	117000	Jan 31	117000	Jan 31 1999
LOWEST DAILY MEAN	144	Apr 21	174	Sep 18	30	Oct 1 1972
ANNUAL SEVEN-DAY MINIMUM	146	Apr 20	204	Oct 1	34	Nov 21 1975
ANNUAL RUNOFF (AC-FT)	5379000		5625000		4402000	
10 PERCENT EXCEEDS	17300		15200		14900	
50 PERCENT EXCEEDS	4760		5470		3940	
90 PERCENT EXCEEDS	204		204		143	

08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX--Continued



08026000 SABINE RIVER NEAR BURKEVILLE, TX

LOCATION.--Lat 31°03'50", long 93°31'10", Newton County, Texas-Vernon Parish, Louisiana State line, Hydrologic Unit 12010005, near left edge of low-water channel on downstream side of bridge on State Highway 63, about 200 ft downstream from Pearl Creek, 10 mi northeast of Burkeville, 16 mi downstream from Bayou Toro and at mile 139.7.

DRAINAGE AREA.--7,482 mi^2.

PERIOD OF RECORD.--Sep 1955 to current year. Published as "below Toledo Bend near Burkeville" for period 1955-75.
Water-quality records.--Chemical data: May 1968 to Sep 1986. Biochemical data: May 1968 to Sep 1986. Pesticide data: Oct 1972 to Sep 1981.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 60.59 ft above sea level. Prior to Aug 23, 1958, nonrecording gage at current site. Prior to Jan 1, 1989, at datum 10.00 ft higher. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, normal storage 936,200 acre-ft) and three additional upstream reservoirs.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1956-60) prior to completion of Toledo Bend Reservoir, 5,179 ft^3/s (3,749,00 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1956-60).--Maximum discharge, 52,900 ft^3/s May 15, 1957 (gage height, 32.43 ft); minimum, 60 ft^3/s Sep 26-30, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860: Flood in May 1884 reached a stage of 45.9 ft, current datum, from information by local resident. Flood of Apr 15, 1945, reached a stage of 45.8 ft, current datum. Flood of May 23, 1953, reached a stage of 45.3 ft, current datum, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2600	298	9300	13200	117000	14100	7510	580	2480	4870	449	5230
2	364	568	9490	15500	94100	14300	7180	560	4650	4870	2650	5240
3	411	850	9600	15800	69400	14300	7170	2420	4700	2680	4910	5300
4	403	468	9940	14800	49200	14300	12200	4970	e4740	491	4940	2980
5	330	722	10400	13800	40000	12200	11700	4900	e2650	451	4970	497
6	405	507	10500	13400	32800	7480	8850	4880	e550	2710	4980	429
7	520	771	8630	13300	28200	7050	8680	4900	e2550	5010	2710	2760
8	365	403	6140	16800	25900	6370	13300	3270	4580	5080	444	5120
9	316	488	5990	16300	23900	1410	13700	635	4580	5100	2700	5250
10	293	737	6100	17000	20100	744	13700	2630	4680	2830	e5040	5220
11	275	413	7780	13700	19300	745	13600	4930	4770	549	e5030	2830
12	264	700	12100	13200	18600	793	13500	5060	3220	2970	e5020	460
13	256	2490	10300	13100	15300	6460	13500	4960	1250	5200	e5160	865
14	476	5930	10200	13100	14400	7600	13700	4980	2600	5080	e2790	1330
15	548	8540	10400	13000	14200	7790	14700	2840	4600	4990	e495	1430
16	668	6710	10100	12900	14200	8340	14200	629	4660	5080	e2800	1600
17	655	3470	12900	12900	14200	7530	13700	2490	4620	2840	e5150	1320
18	288	3770	13500	12800	14200	7340	13500	4710	4620	925	5110	817
19	292	6530	13100	12800	14100	9240	13400	4550	2670	2860	5150	334
20	308	6500	12800	12800	14100	13500	7150	3620	520	4960	5180	793
21	299	6420	12400	12800	14100	13700	1210	3710	2320	5010	2810	1260
22	284	6400	12600	13000	14000	13700	825	2830	4460	5020	467	1200
23	274	6360	13400	13300	14000	13700	755	574	4570	5030	2740	1240
24	268	7590	13400	13100	14000	13700	709	1350	4120	2800	5260	1330
25	262	9610	13000	12900	13900	14000	675	3330	4570	537	7890	889
26	258	9630	13000	12700	13900	14200	678	4660	3000	2710	5290	308
27	253	9640	13200	12700	13900	14100	764	4990	772	4960	5200	757
28	465	9640	13600	12700	13900	13900	1520	5020	2540	5050	2910	1250
29	537	9310	13500	16700	---	13800	2040	3230	4500	5240	468	1310
30	596	9090	13300	30600	---	14100	644	701	4500	4960	2760	1320
31	699	---	13200	67600	---	9330	---	622	---	2700	5110	---
TOTAL	14232	134555	343870	498300	764900	309822	244760	99531	105042	113563	116583	60669
MEAN	459	4485	11090	16070	27320	9994	8159	3211	3501	3663	3761	2022
MAX	2600	9640	13600	67600	117000	14300	14700	5060	4770	5240	7890	5300
MIN	253	298	5990	12700	13900	744	644	560	520	451	444	308
AC-FT	28230	266900	682100	988400	1517000	614500	485500	197400	208400	225300	231200	120300

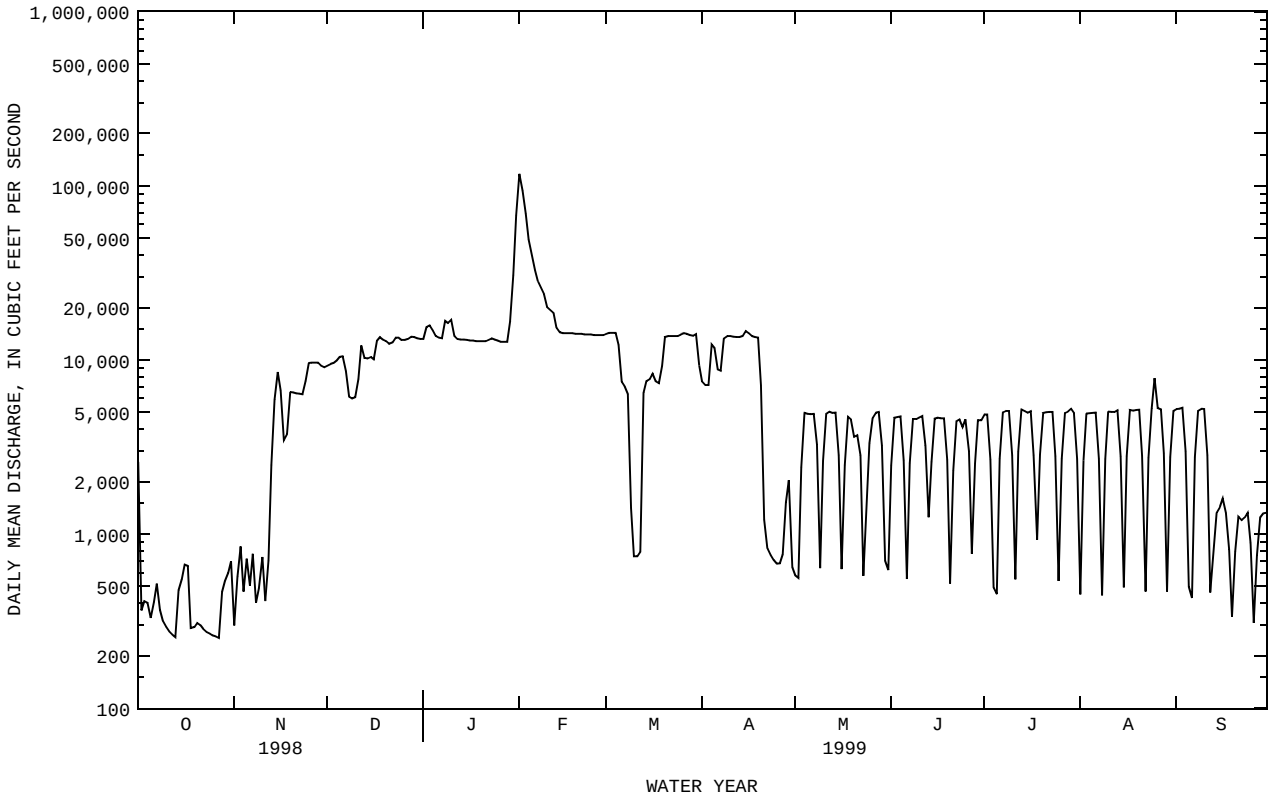
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1999z, BY WATER YEAR (WY)

MEAN	1157	2039	5707	8488	9484	9940	8226	8162	5541	4008	2916	2649
MAX	6846	12880	17990	28510	27320	27000	26530	32070	25310	23750	6662	7099
(WY)	1992	1995	1962	1974	1999	1997	1969	1966	1989	1989	1976	1991
MIN	82.5	86.2	247	484	266	485	231	471	400	166	91.7	77.6
(WY)	1968	1968	1968	1968	1968	1968	1971	1967	1970	1964	1967	1967

08026000 SABINE RIVER NEAR BURKEVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1961 - 1999z	
ANNUAL TOTAL	2648363		2805827			
ANNUAL MEAN	7256		7687		5676	
HIGHEST ANNUAL MEAN					11190	1995
LOWEST ANNUAL MEAN					548	1967
HIGHEST DAILY MEAN	25800	Jan 23	117000	Feb 1	117000	Feb 1 1999
LOWEST DAILY MEAN	253	Oct 27	253	Oct 27	38	Sep 14 1967
ANNUAL SEVEN-DAY MINIMUM	271	Oct 21	271	Oct 21	41	Sep 9 1967
INSTANTANEOUS PEAK FLOW			124000	Feb 1	124000	Feb 1 1999
INSTANTANEOUS PEAK STAGE			48.05	Feb 1	48.05	Feb 1 1999
ANNUAL RUNOFF (AC-FT)	5253000		5565000		4112000	
10 PERCENT EXCEEDS	18000		14100		15300	
50 PERCENT EXCEEDS	4230		5010		2720	
90 PERCENT EXCEEDS	417		483		262	

e Estimated
z Period of regulated streamflow.



08028500 SABINE RIVER NEAR BON WIER, TX

LOCATION.--Lat 30°44'49", long 93°36'30", Beauregard Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, near left bank on downstream side of bridge on U.S. Highway 190, 0.7 mi upstream from Quicksand Creek, 0.8 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2.0 mi east of Bon Wier, 2.4 mi upstream from Caney Creek and at mile 97.7.

DRAINAGE AREA.--8,229 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1923 to current year. Monthly discharge only for some periods, published in WSP 1312. Gage-height records collected in this vicinity since 1913 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1342: 1953. WSP 1442: 1924, 1926-27(M), 1929(M), 1939. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 33.42 ft above sea level. Prior to Jul 8, 1931, nonrecording gage at site 0.8 mi downstream at datum 13.00 ft higher. Jul 8, 1931, to Oct 15, 1958, nonrecording gage at present site at datum 13.00 ft higher. Oct 16, 1958, to Sep 30, 1975, water-stage recorder at present site at datum 13.00 ft higher. Oct 1, 1975, to Dec 31, 1988, at present site at datum 10.00 ft higher. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, normal storage 936,200 acre-ft) and three additional upstream reservoirs. Additional regulation since Oct 1966 by Toledo Bend Reservoir (station 08018800, normal storage 4,477,000 acre-ft), 58.8 mi upstream.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--36 years (water years 1924-59) prior to completion of Lake Tawakoni.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1924-59).--Maximum discharge, 115,000 ft^3/s May 19, 1953 (gage height, 38.70 ft, current datum); minimum, 160 ft^3/s Sep 29, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 43.5 ft Apr 23 or 24, 1913, from information by Gulf, Colorado, and Santa Fe Railway Co. and local residents. Flood in May 1884 reached a stage of 39 ft. Floods occurring about 1844 and 1860 were higher than flood in May 1884, from information by local residents. All flood data referenced to current datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5020	1180	10900	16100	51600	15900	11800	1930	2640	5710	3120	5760
2	2750	1060	11000	18300	82200	16200	9990	1760	4440	6090	1390	5940
3	1090	1430	11200	22600	90500	16600	9490	1690	5880	6030	3840	5940
4	1090	1440	11300	21700	82200	16600	19800	4100	5910	3290	5700	6140
5	1190	1110	11700	20400	68600	16300	29400	6130	5850	1620	5790	3220
6	1110	1250	12100	19000	55600	12600	23400	6130	3280	1750	5830	1340
7	1630	1060	12000	17400	43300	9430	19200	6060	1570	4540	5830	1090
8	1800	1290	9440	18700	34200	8920	20100	6170	3860	6390	3030	3700
9	1270	1160	8090	20700	30000	7000	21000	3510	5570	6780	1300	5900
10	1070	1410	7930	21200	27000	3220	18500	1670	5680	6480	3790	6030
11	969	1730	10300	20800	23700	2360	16900	4350	5780	3590	5650	5950
12	904	1420	23100	18300	22200	2550	16300	6510	6350	2030	5720	2980
13	853	2790	24500	17000	20700	6560	16000	6840	5320	5260	5790	1130
14	819	14300	19900	16500	18100	17000	15900	6510	4230	7020	5840	1280
15	945	20100	19600	16300	17000	13000	16900	6250	4980	6640	3020	1750
16	1100	21500	18800	16000	16700	12300	17400	3450	6130	6550	1230	1930
17	1120	15900	17100	15800	16600	11500	16600	1730	6010	6700	3720	1970
18	1240	12500	16800	15600	16600	10600	16000	3940	5940	3970	5640	1750
19	990	12800	16600	15400	16500	10100	15700	5770	5840	2770	5770	1290
20	1060	12200	16100	15300	16400	13200	14600	5540	3270	4970	5830	787
21	1040	9950	15600	15300	16400	15600	7460	4300	1600	6440	5850	1090
22	921	9090	15100	15400	16300	15800	3060	5000	3710	6460	2990	1620
23	847	8710	15400	16700	16200	15900	2440	3160	5470	6540	1230	1590
24	810	8410	15900	16800	16200	15900	2260	1460	5740	6370	3710	1640
25	781	10400	15800	16500	16100	16100	2140	2250	5460	3620	6940	1750
26	758	11400	15500	16000	16000	17000	2080	4470	6920	2270	7520	1340
27	738	11400	15500	15700	16000	17000	2230	5860	5080	4300	6030	744
28	725	11400	16500	15500	16000	16500	2300	6170	3000	5980	5980	1050
29	854	11300	17700	16300	---	16200	3200	6850	4460	6200	3060	1730
30	1020	10900	17100	24500	---	16800	3010	4320	5760	6140	1230	1810
31	990	---	16500	34000	---	16300	---	2030	---	5950	3700	---
TOTAL	37504	230590	465060	565800	878900	401040	375160	135910	145730	158450	136070	80241
MEAN	1210	7686	15000	18250	31390	12940	12510	4384	4858	5111	4389	2675
MAX	5020	21500	24500	34000	90500	17000	29400	6850	6920	7020	7520	6140
MIN	725	1060	7930	15300	16000	2360	2080	1460	1570	1620	1230	744
AC-FT	74390	457400	922400	1122000	1743000	795500	744100	269600	289100	314300	269900	159200

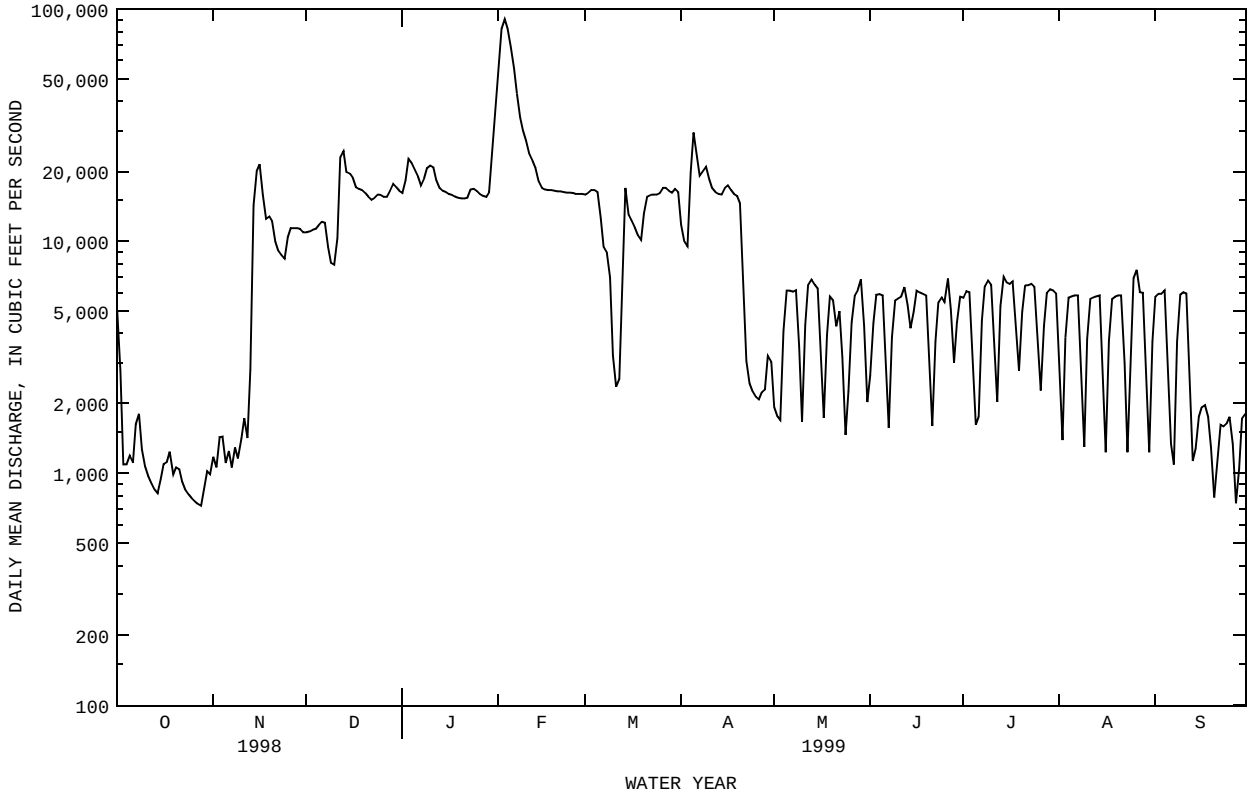
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999z, BY WATER YEAR (WY)

MEAN	1690	2785	7000	10240	11520	11660	9656	9064	6341	4766	3363	3158
MAX	7315	13250	21420	30930	31390	30030	27370	31210	26340	31490	7288	8247
(WY)	1992	1995	1983	1974	1999	1997	1969	1966	1989	1989	1976	1991
MIN	188	217	822	1000	746	1288	634	1011	663	530	211	206
(WY)	1968	1968	1981	1981	1968	1981	1971	1996	1970	1964	1967	1967

08028500 SABINE RIVER NEAR BON WIER, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999z	
ANNUAL TOTAL	3443260		3610455			
ANNUAL MEAN	9434		9892		6749	
HIGHEST ANNUAL MEAN					12670	1975
LOWEST ANNUAL MEAN					1172	1967
HIGHEST DAILY MEAN	31000	Jan 8	90500	Feb 3	98000	Jul 4 1989
LOWEST DAILY MEAN	678	Sep 8	725	Oct 28	134	Nov 9 1966
ANNUAL SEVEN-DAY MINIMUM	788	Oct 23	788	Oct 23	142	Nov 3 1966
INSTANTANEOUS PEAK FLOW			92600	Feb 3	98200	Jul 4 1989
INSTANTANEOUS PEAK STAGE			37.58	Feb 3	37.90	Jul 4 1989
ANNUAL RUNOFF (AC-FT)	6830000		7161000		4890000	
10 PERCENT EXCEEDS	22900		18600		17000	
50 PERCENT EXCEEDS	5880		6130		3590	
90 PERCENT EXCEEDS	1030		1210		695	

z Period of regulated streamflow.



08028500 SABINE RIVER NEAR BON WEIR, TX

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1969 to current year.
BIOCHEMICAL DATA: Oct 1969 to May 1973.
SEDIMENT DATA: Apr 1957 to Sep 1962.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Nov 1969 to Jun 1983.
WATER TEMPERATURE: Nov 1969 to Jun 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 407 microsiemens, Aug 31, 1978; minimum daily, 34 microsiemens, Feb 3, 1983.
WATER TEMPERATURE: Maximum daily, 33.0°C, Jul 17, 1978, and Jul 14, 26, 1980; minimum daily, 4.0°C, Feb 2, 1980.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV							
05...	1515	1030	178	19.0	120	23	18
14...	1345	16100	50	15.0	120	4.8	4.2
22...	1520	9020	123	17.0	50	13	13
26...	1530	11900	130	19.0	60	14	13
DEC							
03...	1525	11500	132	19.0	40	14	13
12...	1430	25600	64	14.0	100	5.8	6.2
16...	1700	18100	101	14.0	120	11	11
27...	1530	15600	130	13.0	50	13	13
31...	1700	16400	127	13.0	50	13	14
JAN							
07...	1435	17100	124	13.0	60	13	13
16...	1200	16000	125	14.0	120	14	13
22...	1720	15500	141	14.0	70	16	15
30...	1745	27000	91	16.0	100	9.3	10
FEB							
02...	1100	82200	127	14.0	140	14	15
10...	1045	27300	141	17.0	50	16	14
16...	1130	16700	140	14.0	60	16	15
22...	1725	16300	141	14.0	70	16	15
27...	1420	16000	125	15.0	80	14	13
JUN							
05...	1815	6460	122	28.0	60	15	13
12...	1855	7020	113	26.0	60	16	12
20...	1830	2250	138	30.0	70	20	12
26...	1120	7470	113	25.0	60	14	11
JUL							
04...	1110	3200	114	30.0	60	14	11
10...	1410	7320	114	29.0	50	13	11
18...	1630	3190	143	30.0	60	20	13
24...	1800	6910	116	30.0	50	14	11

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08029500 BIG COW CREEK NEAR NEWTON, TX

LOCATION.--Lat 30°49'08", long 93°47'07", Newton County, Hydrologic Unit 12010005, near center of span on downstream side of bridge on State Highway 87, 2.6 mi southwest of Newton, 5.0 mi downstream from Melhomes Creek, and 8.0 mi upstream from White Oak Creek.

DRAINAGE AREA.--128 mi^2.

PERIOD OF RECORD.--Apr 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 134.69 ft above sea level. Prior to Dec 19, 1957, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 27.5 ft in Apr 1922, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 14	0200	6,780	17.08	Mar 14	0100	6,120	16.88
Dec 12	0900	4,600	16.37	Apr 4	1500	5,050	16.52
Jan 3	0400	1,390	14.68	Apr 15	1700	1,360	14.63
Jan 30	1300	4,420	16.31	Jun 26	1400	1,640	14.99

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

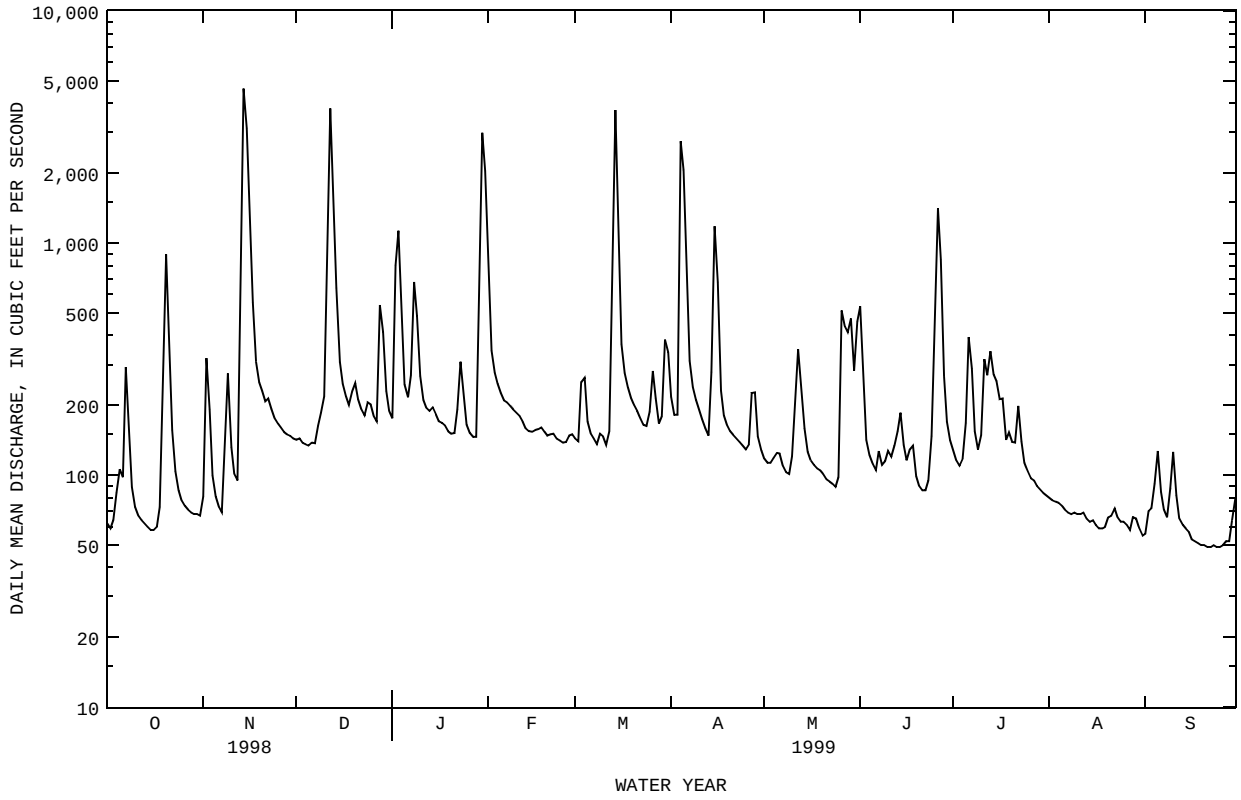
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	81	142	176	688	144	218	118	535	127	80	56
2	59	319	144	802	344	140	182	113	244	116	78	70
3	64	192	138	1130	277	252	182	113	142	110	77	72
4	84	100	136	459	248	263	2750	119	122	118	76	92
5	106	81	134	246	226	170	2070	125	112	168	74	127
6	98	73	138	217	210	151	744	124	105	393	71	85
7	292	69	137	270	206	144	312	110	127	289	69	71
8	169	144	164	680	199	136	240	103	111	155	68	66
9	89	274	186	485	192	151	211	101	115	129	69	88
10	73	132	219	268	186	147	191	121	127	149	68	126
11	67	101	1180	211	180	135	174	228	120	316	68	82
12	64	95	3800	195	170	155	159	349	134	270	69	65
13	62	1100	1800	189	159	1230	148	245	155	343	65	61
14	60	4630	641	196	155	3750	278	159	186	272	63	59
15	58	3120	308	183	154	961	1180	126	135	254	64	57
16	58	1640	248	171	156	367	678	116	116	213	61	53
17	60	554	219	168	158	276	232	111	129	214	59	52
18	73	308	201	164	161	239	181	107	134	142	59	51
19	311	251	229	155	154	215	164	105	99	153	60	50
20	892	231	249	151	148	201	155	101	90	139	66	50
21	410	208	212	152	150	189	149	96	86	138	67	49
22	156	214	192	192	151	175	144	94	86	199	72	49
23	104	193	181	308	144	165	139	92	95	140	66	50
24	86	176	206	216	141	163	134	89	147	113	63	49
25	78	167	202	165	138	188	129	98	471	104	63	49
26	74	161	179	152	139	281	136	513	1410	97	61	50
27	71	154	170	146	148	215	226	438	849	95	58	52
28	69	150	541	146	150	167	227	413	267	90	66	52
29	68	148	414	671	---	179	147	474	170	87	65	64
30	68	144	231	2990	---	384	128	282	141	84	59	79
31	67	---	189	2050	---	339	---	460	---	82	55	---
TOTAL	4052	15210	13130	13704	5532	11672	12008	5843	6760	5299	2059	1976
MEAN	131	507	424	442	198	377	400	188	225	171	66.4	65.9
MAX	892	4630	3800	2990	688	3750	2750	513	1410	393	80	127
MIN	58	69	134	146	138	135	128	89	86	82	55	49
AC-FT	8040	30170	26040	27180	10970	23150	23820	11590	13410	10510	4080	3920

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1999, BY WATER YEAR (WY)

MEAN	68.9	110	168	196	214	175	169	153	112	72.0	56.0	72.2
MAX	278	507	489	645	743	377	533	817	414	426	221	491
(WY)	1995	1999	1983	1974	1984	1999	1953	1953	1993	1989	1973	1998
MIN	17.4	27.3	39.3	42.2	57.4	46.4	29.4	31.7	16.6	14.2	14.5	17.3
(WY)	1957	1968	1982	1982	1996	1996	1971	1971	1971	1971	1956	1956

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1952 - 1999	
ANNUAL TOTAL	83285		97245			
ANNUAL MEAN	228		266		130	
HIGHEST ANNUAL MEAN					266	1999
LOWEST ANNUAL MEAN					46.1	1965
HIGHEST DAILY MEAN	4710	Sep 14	4630	Nov 14	9720	Feb 12 1984
LOWEST DAILY MEAN	24	Aug 2	49	Sep 21	10	Jul 7 1971
ANNUAL SEVEN-DAY MINIMUM	24	Jul 30	49	Sep 19	11	Jul 17 1971
INSTANTANEOUS PEAK FLOW			6780	Nov 14	20200	Apr 29 1953
INSTANTANEOUS PEAK STAGE			17.08	Nov 14	19.45	Apr 29 1953
ANNUAL RUNOFF (AC-FT)	165200		192900		94350	
10 PERCENT EXCEEDS	412		424		228	
50 PERCENT EXCEEDS	84		148		64	
90 PERCENT EXCEEDS	31		64		28	

08029500 BIG COW CREEK NEAR NEWTON, TX--Continued



08030500 SABINE RIVER NEAR RULIFF, TX

LOCATION.--Lat 30°18'13", long 93°44'37", Calcasieu Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, on downstream side of bridge on State Highway 12, 2.4 mi north of Ruliff, 4.2 mi upstream from the Kansas City Southern Railway Co. bridge, 4.5 mi downstream from Cypress Creek and at mile 40.2.

DRAINAGE AREA.--9,329 mi^2.

PERIOD OF RECORD.--Oct 1924 to current year.
Water-quality records.--Chemical data: Sep 1945 to Sep 1946, Oct 1947 to Sep 1998. Biochemical data: Feb 1968 to Sep 1998. Radiochemical data: Oct 1969 to Sep 1995. Pesticide data: Jan 1968 to May 1982. Sediment data: Oct 1974 to Sep 1995.

REVISED RECORDS.--WSP 1282: 1941(M), 1942. WSP 1442: 1925-29, 1937-39, 1943. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5.92 ft below sea level. Prior to Mar 1, 1941, nonrecording gage at Kansas City Southern Railway Co. bridge, 4.2 mi downstream and at datum 7.98 ft higher than current datum. Mar 1, 1941, to Dec 8, 1948, nonrecording gage at present site and at datum 10.00 ft higher than current datum. Dec 9, 1948, to Dec 31, 1989, recording gage at present site and at datum 10.00 ft higher than current datum. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, normal storage 936,200 acre-ft) and three additional upstream reservoirs.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--35 years (water years 1925-59) prior to completion of Lake Tawakoni, 8,842 ft^3/s (6,406,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925-59).--Maximum discharge, 121,000 ft^3/s May 22, 1953, (gage height, 29.98 ft, current datum); minimum, 270 ft^3/s Sep 27-30, Oct 1-3, 17-20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1835, 32.2 ft in May or Jun 1884 (adjusted to present site and datum on basis of slope of flood of Jun 8, 9, 1950); flood of Apr 26-29, 1913, reached a stage of 29.5 ft, present site and datum, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4290	1480	12700	19100	20400	15500	16200	3870	6470	9210	6090	2670
2	5310	1690	12700	19900	30500	15400	16000	3290	4970	7730	5730	4480
3	5500	1770	12600	20100	48600	15200	15200	2610	4640	6780	3610	5770
4	3630	2240	12500	20800	72000	15000	15600	2290	5530	6530	2710	6270
5	2200	2570	12400	24500	88500	15300	17500	2730	6130	6090	3970	6520
6	1970	2140	12400	27700	90600	15400	21600	4640	6400	4570	5110	6310
7	2190	1890	12600	28500	81100	e15200	35300	5780	6170	3750	5680	4070
8	2380	1700	12900	26700	67100	e14500	32800	6240	4280	4120	5960	2080
9	2810	1810	13000	24300	53500	e13200	25800	6440	3160	5480	5650	2170
10	2570	1880	13100	22200	40800	e11800	21200	6380	4690	6290	3400	4390
11	2030	2120	13200	21900	33200	9910	18900	5020	5680	6830	2530	5710
12	1720	2410	14300	22500	28100	7640	17700	4230	6120	6770	3980	6240
13	1560	2470	16100	22900	24400	6510	16700	5980	6400	5420	5200	6040
14	1450	3700	24000	22700	22000	8040	15800	7080	6740	4700	5750	3760
15	1380	7520	39700	20900	20100	10700	15300	7670	6740	6050	6030	1900
16	1340	11600	35500	19600	18500	13800	14900	7810	6320	7260	5720	1850
17	1510	17700	28900	18800	17600	16100	14800	7330	6430	7640	3380	2020
18	2450	28300	24900	18100	16900	16200	15200	5450	6810	7630	2450	2220
19	10400	27400	22100	17700	16400	14800	15700	3760	6980	7350	4030	2120
20	12700	22800	19900	17400	16100	13300	15400	4870	6950	5910	5320	1910
21	10500	18900	18700	17100	15800	12400	14800	5750	6500	4610	5900	1430
22	8430	16500	18300	17000	15400	12100	14300	5910	4530	5200	6200	1190
23	6730	14800	17800	16700	15300	12700	12500	5520	3270	5960	5890	1530
24	4660	13300	17500	16600	15200	13400	9210	5280	4700	6390	3480	1750
25	2960	12200	17200	17000	15100	14000	6170	3580	5880	6580	2470	1770
26	2140	11500	16900	17500	15100	14300	4180	2380	7250	6290	4310	1830
27	1750	11200	17000	17700	15200	14500	3340	3300	9000	4610	6110	1850
28	1570	11500	17900	17500	15300	14700	3140	4980	11000	3500	6840	1420
29	1460	12000	18000	17700	---	15300	3230	6080	12200	4340	6920	1200
30	1400	12400	18000	18200	---	16300	3340	6720	11100	5300	6410	1570
31	1520	---	18400	18500	---	16300	---	7210	---	5860	3870	---
TOTAL	112510	279490	561200	627800	928800	419500	451810	160180	193040	184750	150700	94040
MEAN	3629	9316	18100	20250	33170	13530	15060	5167	6435	5960	4861	3135
MAX	12700	28300	39700	28500	90600	16300	35300	7810	12200	9210	6920	6520
MIN	1340	1480	12400	16600	15100	6510	3140	2290	3160	3500	2450	1190
AC-FT	223200	554400	1113000	1245000	1842000	832100	896200	317700	382900	366500	298900	186500

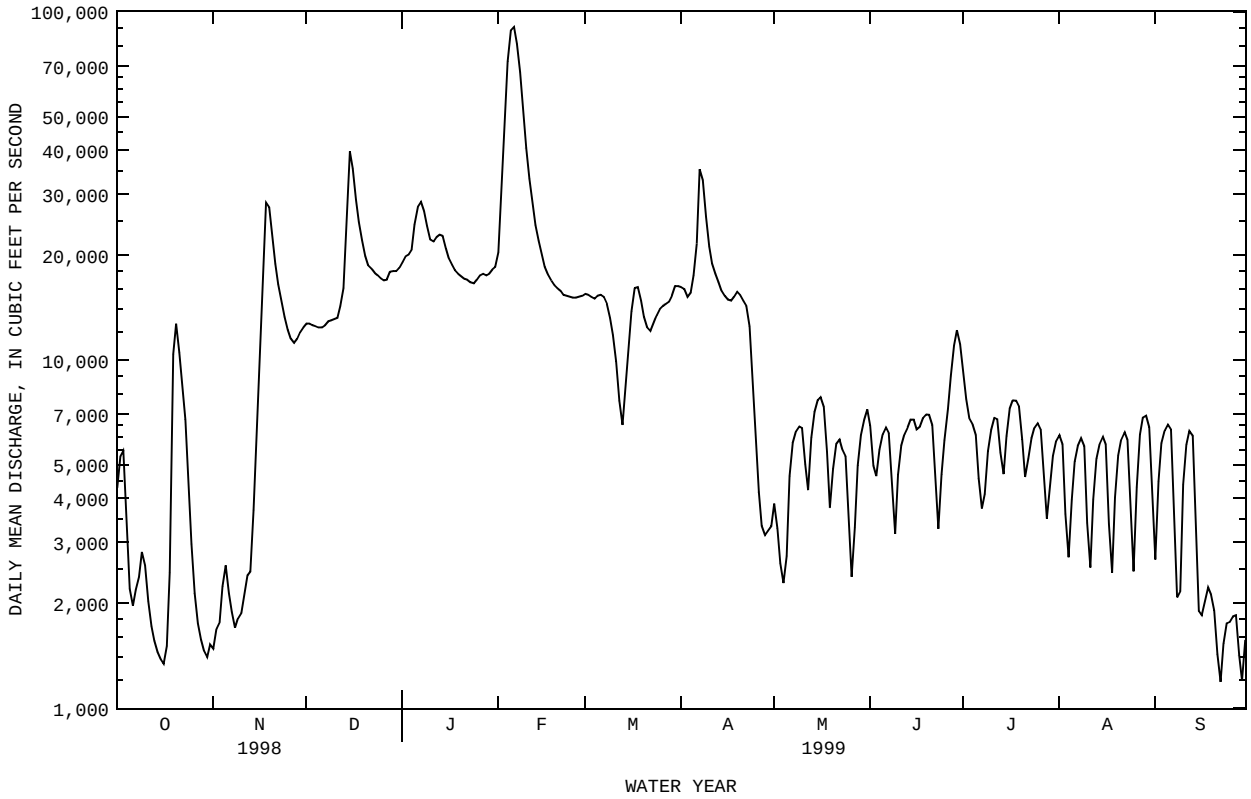
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1999, BY WATER YEAR (WY)

MEAN	2427	3566	8508	12380	13360	13470	11420	10170	7733	5763	3934	3900
MAX	9591	14910	22070	35570	33170	35780	33240	32980	26240	42320	7982	12530
(WY)	1995	1995	1983	1961	1999	1997	1969	1966	1989	1989	1975	1998
MIN	292	327	1366	1422	1559	1695	1030	1395	1383	805	382	333
(WY)	1968	1968	1981	1981	1968	1996	1971	1996	1963	1967	1967	1967

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1960 - 1999	
ANNUAL TOTAL	4107850		4163820			
ANNUAL MEAN	11250		11410		8027	
HIGHEST ANNUAL MEAN					14210	1975
LOWEST ANNUAL MEAN					1959	1967
HIGHEST DAILY MEAN	50500	Sep 16	90600	Feb 6	108000	Jul 6 1989
LOWEST DAILY MEAN	1340	May 27	1190	Sep 22	278	Oct 28 1967
ANNUAL SEVEN-DAY MINIMUM	1550	Oct 27	1550	Oct 27	282	Oct 9 1967
INSTANTANEOUS PEAK FLOW			92800	Feb 6	109000	Jul 6 1989
INSTANTANEOUS PEAK STAGE			28.18	Feb 6	29.15	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	8148000		8259000		5815000	
10 PERCENT EXCEEDS	25100		21400		18800	
50 PERCENT EXCEEDS	6450		6920		4710	
90 PERCENT EXCEEDS	1920		2120		1160	

e Estimated
z Period of regulated streamflow.



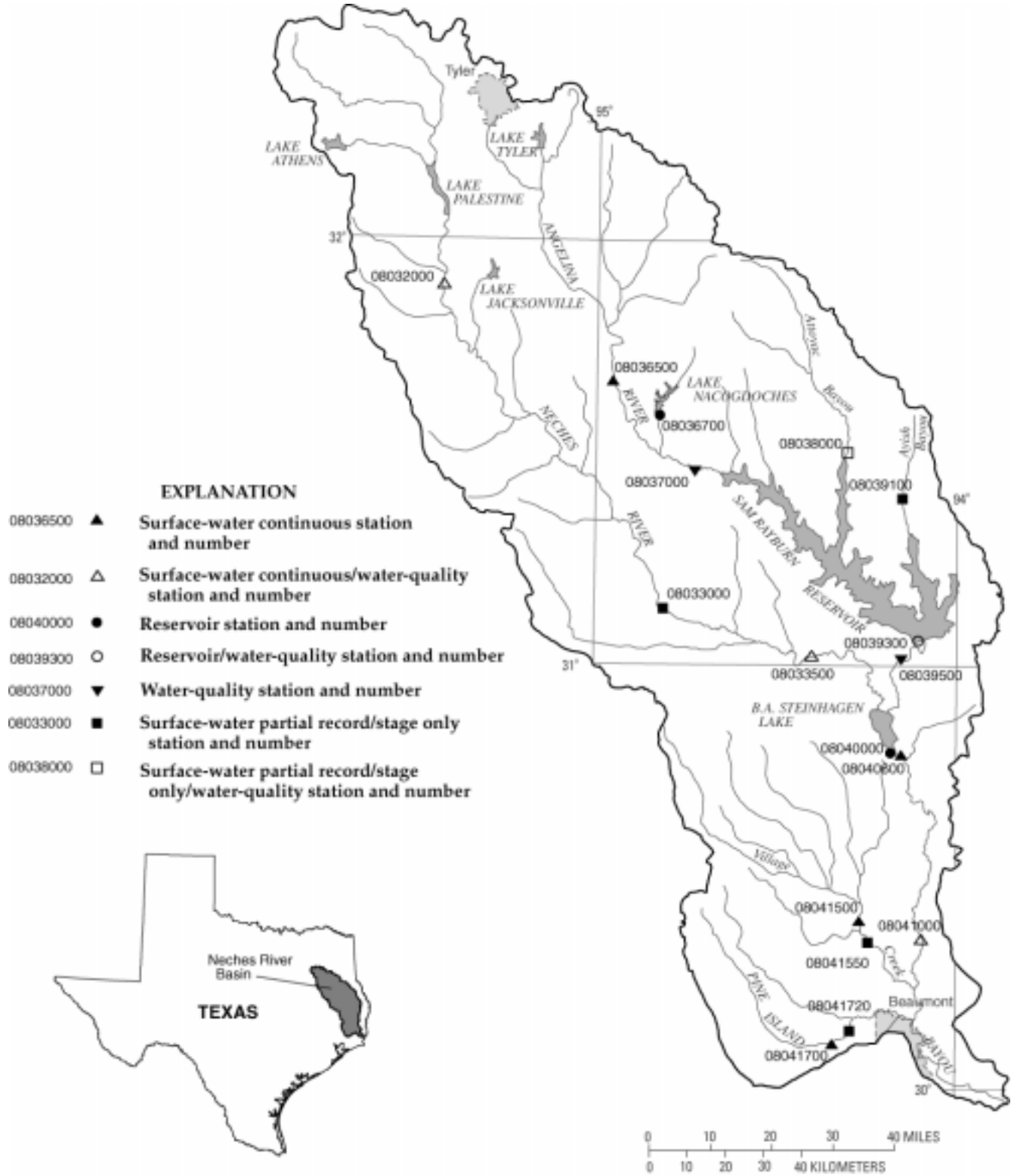


Figure 10.--Map showing location of gaging stations in the Neches River Basin

08032000 NECHES RIVER NEAR NECHES, TX

LOCATION.--Lat 31°53'32", long 95°25'50", Anderson-Cherokee County line, Hydrologic Unit 12020001, on left bank just downstream from bridge on U.S. Highway 79, 1.0 mi downstream from Missouri Pacific Railroad Co. bridge, 1.4 mi downstream from Walnut Creek, 4.4 mi northeast of Neches and at mile 333.2.

DRAINAGE AREA.--1,145 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 264.06 ft above sea level. Prior to Oct 27, 1945, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of the contributing drainage area has been regulated by Lake Palestine (station 08031400) 11 mi upstream and by Lake Athens 50 mi upstream (combined normal storage 454,600 acre-ft). No known diversions.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1940-61), 804 ft^3/s (502,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1940-61).--Maximum discharge, 45,500 ft^3/s Apr 2, 1945 (gage height, 22.07 ft); no flow Oct 3-5, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 (stage 24.3 ft) was the highest since flood in May 1884, which was probably higher.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	159	945	909	6770	573	538	569	1280	1250	134	112
2	61	270	964	940	6080	536	524	494	1270	1250	130	113
3	63	261	938	1080	5560	589	581	458	1250	1200	128	116
4	75	213	874	1260	4870	582	1330	433	1210	1120	127	117
5	67	206	801	1340	4160	445	1870	510	1150	1020	124	113
6	175	192	771	1280	3540	438	1930	701	1070	907	122	114
7	596	173	763	1210	3020	498	1780	750	994	796	121	117
8	726	185	903	1180	2620	475	1680	690	921	751	120	115
9	618	200	1020	1170	2320	584	1520	590	830	736	119	110
10	376	218	1140	1210	2090	600	1360	537	729	658	120	108
11	233	262	1620	1160	1880	539	1260	578	651	740	120	107
12	178	237	2280	1050	1690	531	1170	622	603	806	122	106
13	155	701	2600	947	1570	670	1090	743	605	787	122	113
14	142	1610	2450	899	1410	851	1050	738	645	655	122	109
15	133	2060	2250	890	1220	878	1210	638	685	531	121	107
16	127	2160	2120	813	1060	821	1340	528	625	441	120	107
17	122	2260	2040	735	967	752	1300	466	550	385	119	106
18	163	2480	1970	701	916	728	1100	539	512	353	118	105
19	235	2630	1980	683	855	745	907	630	443	340	117	104
20	251	2650	1950	641	810	793	744	604	383	296	116	105
21	446	2530	1910	612	791	801	643	559	342	276	115	104
22	449	2360	1830	624	812	745	545	510	312	290	115	106
23	348	2140	1780	748	713	665	509	477	303	284	116	105
24	287	1890	1670	797	665	632	519	458	288	264	116	105
25	236	1680	1520	746	613	641	503	431	319	242	116	106
26	203	1490	1390	700	581	641	501	430	664	219	115	107
27	180	1330	1270	655	566	578	651	754	876	193	114	106
28	166	1170	1150	707	589	518	706	973	1020	174	114	106
29	159	1040	1080	4760	---	508	673	1130	1120	157	114	114
30	155	938	1030	8560	---	527	635	1250	1190	146	113	119
31	151	---	971	7940	---	539	---	1290	---	138	112	---
TOTAL	7338	35695	45980	46947	58738	19423	30169	20080	22840	17405	3702	3282
MEAN	237	1190	1483	1514	2098	627	1006	648	761	561	119	109
MAX	726	2650	2600	8560	6770	878	1930	1290	1280	1250	134	119
MIN	61	159	763	612	566	438	501	430	288	138	112	104
AC-FT	14550	70800	91200	93120	116500	38530	59840	39830	45300	34520	7340	6510

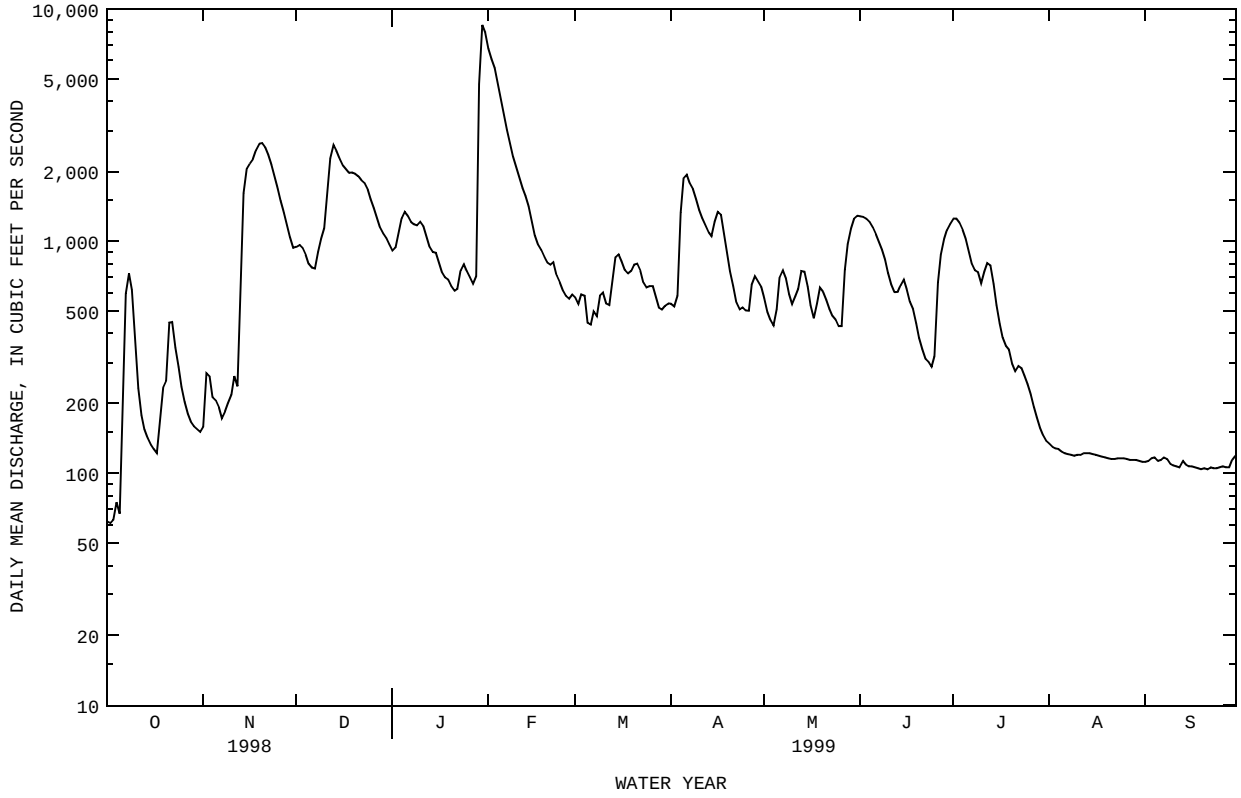
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999z, BY WATER YEAR (WY)

MEAN	223	428	786	912	1105	1260	1225	1252	773	221	119	194
MAX	2064	2559	3344	4389	3097	2879	4162	5289	4129	1076	617	1313
(WY)	1974	1975	1992	1998	1992	1987	1966	1968	1973	1976	1979	1973
MIN	12.8	16.0	82.1	102	181	92.0	60.1	43.3	23.7	12.5	9.70	8.37
(WY)	1964	1964	1990	1981	1981	1972	1972	1972	1971	1964	1964	1964

08032000 NECHES RIVER NEAR NECHES, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999z	
ANNUAL TOTAL	353464		311599			
ANNUAL MEAN	968		854		706	
HIGHEST ANNUAL MEAN					1358	1995
LOWEST ANNUAL MEAN					106	1972
HIGHEST DAILY MEAN	15500	Jan 9	8560	Jan 30	26200	May 13 1968
LOWEST DAILY MEAN	45	Sep 3	61	Oct 2	3.3	Nov 1 1963
ANNUAL SEVEN-DAY MINIMUM	46	Aug 31	105	Sep 18	3.4	Oct 29 1963
INSTANTANEOUS PEAK FLOW			8920	Jan 30	26900	May 13 1968
INSTANTANEOUS PEAK STAGE			16.72	Jan 30	19.46	May 13 1968
ANNUAL RUNOFF (AC-FT)	701100		618100		511200	
10 PERCENT EXCEEDS	2120		1850		1750	
50 PERCENT EXCEEDS	251		630		263	
90 PERCENT EXCEEDS	51		115		56	

z Period of regulated streamflow.



08032000 NECHES RIVER NEAR NECHES, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Dec 1969 to current year.
BIOCHEMICAL DATA: Oct 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Dec 1969 to Sep 1991.
WATER TEMPERATURE: Dec 1983 to Sep 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1974-88): Maximum, 1,190 microsiemens, Aug 29, 1976; minimum 65 microsiemens, Jun 1, 1990.
WATER TEMPERATURE: Maximum, 36.0°C, Jul 16, 1985; minimum, 0.0°C, Dec 24, 25, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB										
25...	1000	618	159	6.5	13.0	9.4	90	1.9	36	18
APR										
28...	1700	706	154	7.3	22.0	7.1	82	1.5	37	17
JUL										
07...	1628	776	171	7.0	30.0	6.6	87	3.6	41	16
AUG										
26...	1325	115	181	8.7	30.0	7.4	99	1.8	43	7
SEP										
30...	1225	119	180	6.2	23.0	7.2	83	1.8	43	11

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB										
25...	8.4	3.6	13	1	3.4	18	18	20	<.10	13
APR										
28...	8.8	3.6	13	.9	3.6	20	17	19	.11	10
JUL										
07...	10	3.7	13	.9	4.4	25	18	20	.13	7.6
AUG										
26...	11	4.1	13	.9	4.1	36	16	18	<.10	11
SEP										
30...	11	4.0	15	1	4.6	32	16	19	.13	12

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
FEB										
25...	91	.079	.020	.099	.035	.28	.31	<.050	<.010	--
APR										
28...	87	--	<.010	.086	.083	.37	.46	<.050	.016	.05
JUL										
07...	92	--	<.010	<.050	<.020	--	.40	<.050	<.010	--
AUG										
26...	99	--	<.010	.147	<.020	--	.38	<.050	.013	.04
SEP										
30...	102	.387	.030	.417	.055	.43	.49	<.050	<.010	--

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08033000 NECHES RIVER NEAR DIBOLL, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°07'58", long 94°48'35", Angelina-Polk County line, Hydrologic Unit 12020002, near center of main span of downstream bridge on U.S. Highway 59, 700 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.9 mi downstream from Alabama Creek, 3.8 mi south of Diboll and at mile 203.5

DRAINAGE AREA.--2,724 mi^2.

PERIOD OF RECORD.--Oct 1923 to Sep 1925, Mar 1939 to Sep 1985. Monthly discharge only for some periods, published in WSP 1312. Oct 1985 to Sep 1989 (annual maximum), Oct 1989 to present (peak discharges greater than base discharge).
Water-quality records.--Chemical data: Oct 1969 to Sep 1981. Biochemical data: Oct 1969 to Sep 1981. Specific conductance: Oct 1969 to Sep 1981. Water temperature: Oct 1969 to Sep 1981.

REVISED RECORDS.--WSP 1242: 1950. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 136.46 ft above sea level. Prior to Jul 10, 1925, nonrecording gage at site 630 ft upstream; Jul 10 to Aug 31, 1925, and Mar 30, 1939, to Sep 24, 1943, nonrecording gage at site 500 ft upstream; Sep 25, 1943, to Aug 16, 1973, nonrecording gage at site 70 ft upstream; all at present datum. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Palestine (station 08031400, normal storage 411,840 acre-ft) 140 mi upstream and by Lake Athens (station 08031290, normal storage 32,840 acre-ft) 180 mi upstream.

AVERAGE DISCHARGE.--26 years (water years 1923-25, 1939-61) unregulated, 1,807 ft^3/s (1,309,000 acre-ft/yr); 24 years (water years 1962-85) regulated, 1,353 ft^3/s (980,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,900 ft^3/s May 4, 1944 (gage height, 18.70 ft); no flow Aug 15-22, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1874, 21 ft in May 1884 (discharge, about 110,000 ft^3/s) from rating curve extended above 40,000 ft^3/s; flood in 1900 reached a stage of 19.9 ft (discharge, about 80,000 ft^3/s), from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 14	2100	12,900	15.06	Jan 3	1000	7,410	13.77
Dec 12	1900	11,400	14.59	Jan 31	1600	27,100	16.43

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08033500 NECHES RIVER NEAR ROCKLAND, TX
(Hydrologic index station)

LOCATION.--Lat 31°01'29", long 94°23'55", Tyler County, Hydrologic Unit 12020003, on downstream side of bridge at U.S. Highway 69, 2,200 ft upstream from abandoned ferry crossing, 0.8 mi upstream from Texas and New Orleans Railway Co. bridge, 1.2 mi north of Rockland, 3.2 mi downstream from Billiams Creek and 32.4 mi upstream from Angelina River.

DRAINAGE AREA.--3,636 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1903 to current year.

REVISED RECORDS.--WSP 878: 1926-27. WSP 1342: 1922(M), 1935. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 88.41 ft above sea level. Prior to May 23, 1973, nonrecording gage located 2,200 ft downstream at datum 3.00 ft higher. May 23, 1973, to Sep 30, 1975, recording gage at present site at datum 3.00 ft higher. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Palestine (station 08031400) and by Lake Athens (station 08031290) (combined normal storage 454,600 acre-feet).

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--58 years (water years 1904-61), 2,362 ft^3/s (1,711,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1904-61).--Maximum discharge, 49,800 ft^3/s May 6, 1944 (gage height, 35.04 ft), present site; minimum observed during period of daily records, 1.6 ft^3/s Sep 28-30, and Oct 1, 2, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Historical flood information begins with flood in May 1884, which reached a stage of 38.0 ft, present site, from information by local resident (discharge, about 62,000 ft^3/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230	637	2850	3900	16400	2420	4150	1460	2930	2070	356	109
2	211	934	2830	e3800	22100	2220	3650	1370	2420	1610	322	112
3	204	1280	2850	e7800	24700	2050	3300	1370	2000	1240	295	113
4	196	1140	2880	e7600	25300	1930	7710	1390	1790	1190	273	113
5	184	1060	3050	7400	24300	1840	7240	1360	1710	1300	244	114
6	197	945	3200	7240	22800	1770	5210	1290	1650	1350	224	113
7	275	816	3150	7190	21300	1710	3420	1210	1620	1470	209	110
8	224	746	3470	7110	19600	1640	2780	1110	1610	1610	197	112
9	216	911	3610	6720	18100	1580	2410	1030	1630	1810	188	123
10	337	1010	3640	6220	16400	1580	2250	1080	1650	1850	180	123
11	571	852	6880	5790	14600	1610	2240	1300	1760	1830	173	121
12	680	1000	10200	5510	12700	1630	2300	1900	1830	1860	167	127
13	670	6370	10200	5260	11000	9930	2410	2240	2200	2230	161	132
14	640	14100	11100	4950	9700	11100	2590	2200	2870	2420	154	128
15	636	22000	12000	4560	8560	9110	2850	2060	3080	2310	147	120
16	621	26900	12200	4140	7580	6980	3030	1850	3370	2230	141	112
17	577	26700	11900	3750	6840	4850	3200	1550	3580	2160	137	106
18	816	23500	11100	3390	6250	3970	3350	1380	3140	2010	137	101
19	3070	20000	10300	3080	5710	3820	3430	1310	2310	1760	135	98
20	6090	17200	9390	2850	5230	3890	3440	1310	1730	1350	131	95
21	6220	14300	8510	2680	4800	3900	3390	1280	1500	1090	128	94
22	6040	11400	7670	2620	4420	3780	3230	1240	1490	941	126	93
23	5740	8780	6940	2820	4090	3620	3000	1230	1600	829	124	93
24	5120	6480	6320	3310	3820	3460	2760	1220	1680	752	123	91
25	3660	4730	5780	3250	3520	3580	2570	1620	2560	691	121	90
26	2320	3860	5330	3110	3220	4480	2490	2400	5870	641	117	89
27	1790	3430	4990	3070	2940	5110	2620	1850	6210	555	114	89
28	1440	3190	4750	3000	2670	4790	2320	2080	4850	490	111	91
29	1100	3020	4530	5250	---	4590	1970	3220	3230	450	109	114
30	851	2910	4310	9200	---	4640	1680	3550	2550	416	107	140
31	709	---	4090	11600	---	4500	---	3070	---	386	106	---
TOTAL	51635	230201	200020	158170	328650	122080	96990	52530	76420	42901	5257	3266
MEAN	1666	7673	6452	5102	11740	3938	3233	1695	2547	1384	170	109
MAX	6220	26900	12200	11600	25300	11100	7710	3550	6210	2420	356	140
MIN	184	637	2830	2620	2670	1580	1680	1030	1490	386	106	89
AC-FT	102400	456600	396700	313700	651900	242100	192400	104200	151600	85090	10430	6480

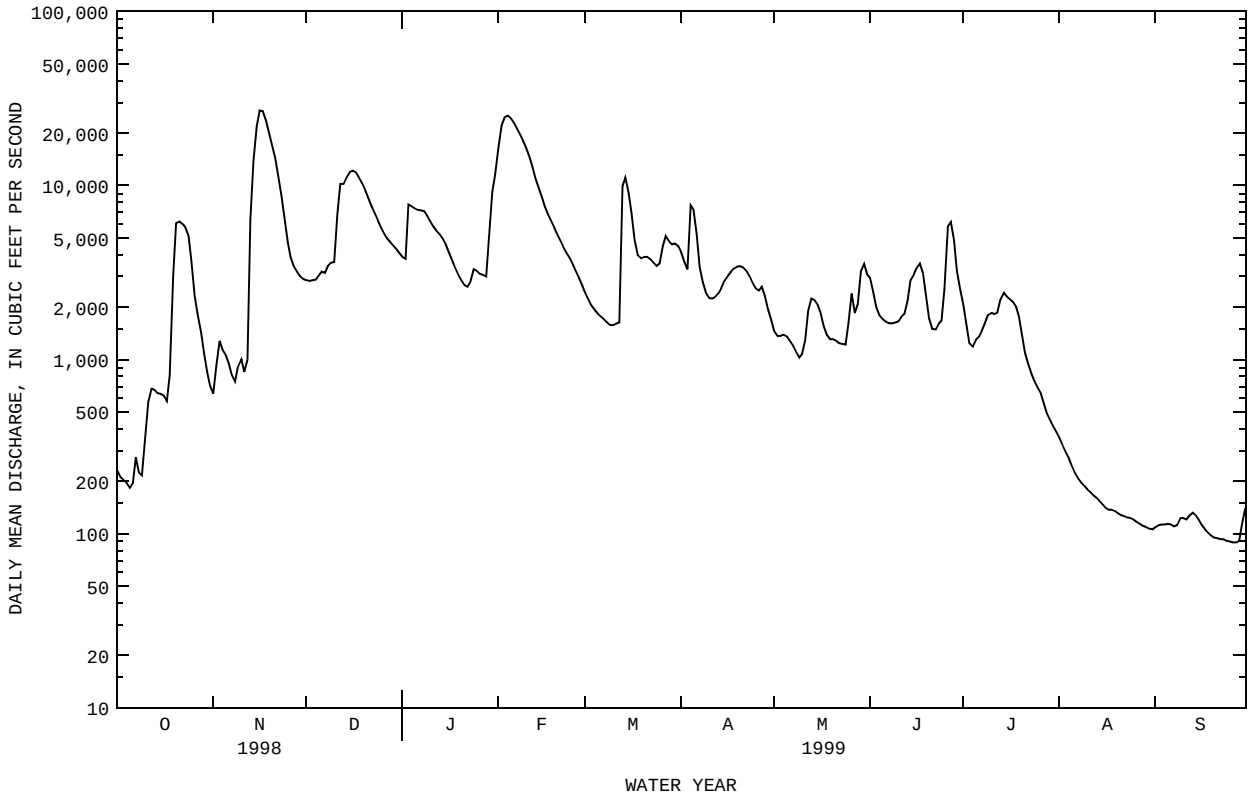
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1999z, BY WATER YEAR (WY)

MEAN	822	1288	2550	3770	4065	4096	3719	3821	2601	1142	394	467
MAX	10620	7673	8982	13170	13930	13750	11990	12730	10360	11260	2673	3042
(WY)	1995	1999	1995	1998	1992	1992	1979	1969	1990	1989	1991	1979
MIN	36.6	65.8	213	263	368	395	282	307	102	42.9	34.2	43.1
(WY)	1964	1965	1981	1981	1971	1996	1971	1996	1971	1971	1964	1964

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1962 - 1999z	
ANNUAL TOTAL	1367307		1368120			
ANNUAL MEAN	3746		3748		2386	
HIGHEST ANNUAL MEAN					5328	1995
LOWEST ANNUAL MEAN					352	1971
HIGHEST DAILY MEAN	26900	Nov 16	26900	Nov 16	41600	Jul 2 1989
LOWEST DAILY MEAN	77	Aug 4	89	Sep 26	18	Aug 30 1970
ANNUAL SEVEN-DAY MINIMUM	84	Jul 30	91	Sep 22	23	Jul 21 1971
INSTANTANEOUS PEAK FLOW			27800	Nov 16	42300	Oct 20 1994
INSTANTANEOUS PEAK STAGE			29.12	Nov 16	33.29	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	2712000		2714000		1729000	
10 PERCENT EXCEEDS	11900		9150		6260	
50 PERCENT EXCEEDS	1100		2250		935	
90 PERCENT EXCEEDS	104		127		109	

e Estimated
z Period of regulated streamflow.



08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Apr 1941 to Sep 1942, Sep 1945 to Sep 1947, Dec 1967 to current year.
BIOCHEMICAL DATA: Dec 1967 to current year.
SEDIMENT DATA: 1961 to 1963.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Apr 1941 to Sep 1942, Sep 1945 to Sep 1947.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB											
23...	1536	4090	175	6.6	13.0	--	9.5	90	1.7	36	13
APR											
29...	1010	1970	177	6.5	23.0	--	6.4	75	1.1	40	12
JUL											
07...	1005	1470	184	6.3	28.0	--	6.4	82	2.2	38	14
AUG											
27...	0900	115	237	6.7	31.5	--	5.9	81	1.2	46	7
SEP											
30...	0915	134	209	6.8	23.0	52	7.0	81	1.5	35	1

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB										
23...	8.5	3.7	14	1	3.3	23	24	20	.11	12
APR										
29...	9.6	3.9	16	1	3.4	28	18	21	<.10	13
JUL										
07...	9.6	3.5	18	1	3.0	24	21	22	.10	13
AUG										
27...	11	4.6	23	1	3.5	39	17	33	.12	13
SEP										
30...	8.6	3.4	25	2	3.8	34	18	27	.14	11

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
FEB										
23...	120	100	--	.010	<.050	<.020	--	.40	<.050	<.010
APR										
29...	--	104	--	<.010	.189	.083	.38	.46	<.050	.019
JUL										
07...	--	106	--	<.010	.134	<.020	--	.41	E.036	.025
AUG										
27...	139	128	--	<.010	<.050	<.020	--	.28	<.050	<.010
SEP										
30...	123	118	37	<.010	.126	<.020	--	.29	E.031	<.010

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
FEB										
23...	--	13	<1.0	1	48	<1.0	<1.0	1.8	<1.0	1.4
APR										
29...	.06	--	--	--	--	--	--	--	--	--
JUL										
07...	.08	--	--	--	--	--	--	--	--	--
AUG										
27...	--	1.6	<1.0	1	58	<1.0	<1.0	<1.0	<1.0	1.2
SEP										
30...	--	6.8	<1.0	E1	48	<1.0	<1.0	<.80	<1.0	2.1

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB										
23...	420	<1.0	71	<.1	<1.0	3.2	<1	<1.0	5.4	<1.0
APR										
29...	--	--	--	--	--	--	--	--	--	--
JUL										
07...	--	--	--	--	--	--	--	--	--	--
AUG										
27...	E10	<1.0	46	<.1	<1.0	2.0	1	<1.0	<1.0	<1.0
SEP										
30...	E9.4	<1.0	23	<.1	<1.0	1.6	<2	<1.0	2.3	<1.0

08036500 ANGELINA RIVER NEAR ALTO, TX

LOCATION.--Lat 31°40'10", long 94°57'24", Nacogdoches-Cherokee County line, Hydrologic Unit 12020004, near center of rectified channel on downstream side of bridge on State Highway 21, 0.4 mi upstream from Allen Creek, 1.5 mi upstream from Bingham Creek, 7.5 mi east of Alto, and 149.3 mi upstream from mouth.

DRAINAGE AREA.--1,276 mi^2.

PERIOD OF RECORD.--May to Aug 1940 (discharge measurements only), Sep 1940 to Mar 1949 (fragmentary for 1941-42, 1944-49), Feb 1959 to current year.
Water-quality records.--Chemical data: Nov 1961 to Sep 1963.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 204.30 ft above sea level. May 9, 1940, to Mar 31, 1949, nonrecording gage on bridge at natural channel 1,400 ft to right at same datum. Feb 18 to Sep 15, 1959, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1959, at least 10% of contributing drainage area has been regulated by Striker Creek Reservoir (normal storage 26,960 acre-feet). No known diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, that of Mar 31, 1989. A flood in May 1908 reached a stage of about 22 ft, from information by local residents. Flood in 1932 reached a stage of 21.5 ft, from floodmarks and from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

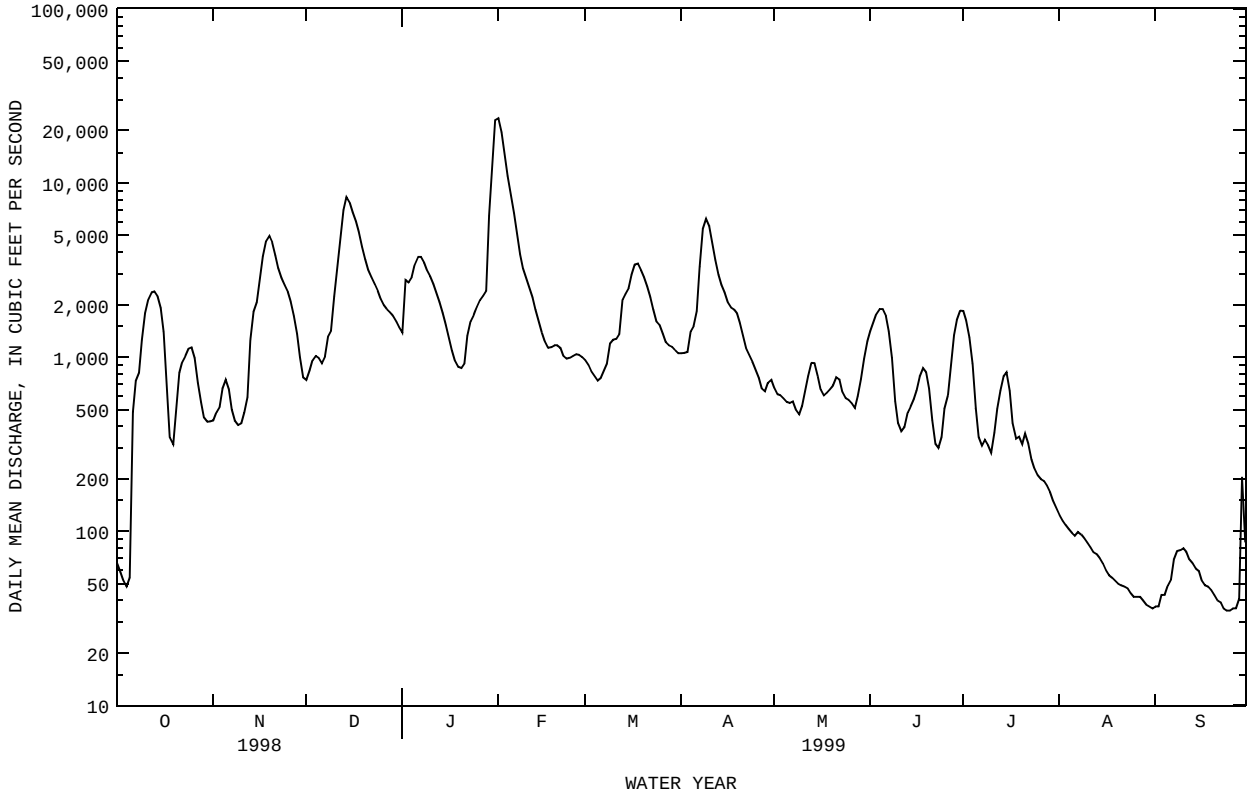
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	433	742	1380	23700	962	1050	665	1410	1840	124	37
2	58	483	839	2770	19600	904	1060	613	1590	1620	115	37
3	52	519	960	2700	14600	832	1070	604	1770	1300	109	43
4	48	662	1020	2880	11000	774	1410	580	1890	917	103	43
5	54	741	994	3390	8580	734	1510	553	1890	510	98	49
6	484	653	922	3770	6730	760	1840	547	1730	347	94	53
7	730	499	1010	3760	5150	831	3300	557	1410	310	99	69
8	813	430	1320	3490	3900	915	5460	498	994	335	96	77
9	1260	407	1420	3160	3240	1200	6220	469	560	312	91	78
10	1790	419	2240	2900	2840	1260	5650	522	419	282	86	80
11	2150	480	3250	2620	2500	1270	4570	645	376	369	81	76
12	2360	589	4530	2360	2200	1360	3630	780	398	505	76	69
13	2380	1260	7030	2070	1870	2140	2970	926	482	644	74	65
14	2240	1830	8310	1790	1600	2310	2610	923	519	779	70	61
15	1910	2060	7660	1530	1380	2490	2350	779	572	821	65	59
16	1400	2760	6790	1300	1230	2970	2060	654	644	641	60	52
17	738	3800	6030	1090	1130	3400	1930	603	777	418	56	49
18	346	4640	5230	953	1140	3440	1880	626	861	342	54	48
19	314	4970	4300	880	1170	3150	1780	654	818	350	52	46
20	485	4570	3640	867	1170	2880	1570	690	660	316	50	43
21	812	3850	3180	922	1130	2550	1310	764	434	364	49	40
22	937	3250	2890	1330	1020	2210	1110	744	317	319	48	39
23	1020	2860	2640	1610	980	1880	1020	630	300	258	47	36
24	1120	2590	2400	1750	992	1600	938	582	347	229	44	35
25	1140	2370	2160	1940	1020	1530	844	569	507	210	42	35
26	985	2090	1990	2130	1040	1360	759	543	604	199	42	36
27	714	1730	1890	2260	1030	1220	662	510	895	194	42	36
28	551	1360	1810	2410	998	1170	636	597	1340	183	40	41
29	450	1000	1720	6510	---	1150	710	748	1640	168	38	204
30	425	765	1600	11800	---	1100	741	983	1850	150	37	86
31	428	---	1480	23100	---	1050	---	1230	---	136	36	---
TOTAL	28259	54070	91997	101422	122940	51402	62650	20788	28004	15368	2118	1722
MEAN	912	1802	2968	3272	4391	1658	2088	671	933	496	68.3	57.4
MAX	2380	4970	8310	23100	23700	3440	6220	1230	1890	1840	124	204
MIN	48	407	742	867	980	734	636	469	300	136	36	35
AC-FT	56050	107200	182500	201200	243900	102000	124300	41230	55550	30480	4200	3420

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1999, BY WATER YEAR (WY)

MEAN	298	529	1211	1456	1687	1645	1489	1345	814	280	155	189
MAX	2350	2081	4836	4874	4643	4622	4301	4484	4316	1718	1129	950
(WY)	1974	1986	1961	1991	1983	1969	1969	1966	1993	1976	1997	1973
MIN	5.56	18.0	67.8	150	158	183	172	119	34.2	7.91	22.4	16.2
(WY)	1968	1968	1965	1981	1967	1967	1972	1972	1971	1998	1972	1972

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1959 - 1999	
ANNUAL TOTAL	448436.52		580740			
ANNUAL MEAN	1229		1591		918	
HIGHEST ANNUAL MEAN					1917	1991
LOWEST ANNUAL MEAN					154	1964
HIGHEST DAILY MEAN	8310	Dec 14	23700	Feb 1	41600	Mar 31 1989
LOWEST DAILY MEAN	.00	Jul 30	35	Sep 24	.00	Jul 30 1998
ANNUAL SEVEN-DAY MINIMUM	.15	Jul 28	37	Sep 21	.15	Jul 28 1998
INSTANTANEOUS PEAK FLOW			25100	Feb 1	42500	Mar 31 1989
INSTANTANEOUS PEAK STAGE			20.53	Feb 1	23.20	Mar 31 1989
ANNUAL RUNOFF (AC-FT)	889500		1152000		665100	
10 PERCENT EXCEEDS	3250		3340		2360	
50 PERCENT EXCEEDS	519		917		345	
90 PERCENT EXCEEDS	8.8		55		49	

08036500 ANGELINA RIVER NEAR ALTO, TX--Continued



08036700 LAKE NACOGDOCHES NEAR NACOGDOCHES, TX

LOCATION.--Lat 31°35'19", long 94°49'31", Nacogdoches County, Hydrologic Unit 12020004, at upstream side of dam on Bayou Loco near service outlet tower and 10 mi west of Nacogdoches.

DRAINAGE AREA.--87.9 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam. Deliberate impoundment began Jul 14, 1976. Water is used for industrial and municipal supply by the city of Nacogdoches. The spillway is an uncontrolled 500-foot-wide cut through natural ground located near the right end of dam. There is an uncontrolled drop inlet with a 20.5-foot-diameter top opening that is connected to an 8 x 7-foot conduit that extends through the dam. A separate multi-gated inlet tower is connected to a valve by a 30-inch conduit through the dam. The valve box directs water to a purification plant. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	303.0
Top of design flood	298.5
Crest of spillway	286.0
Crest of drop inlet (top of conservation pool)	279.0
Lowest gated outlet (invert of 30 in. conduit)	238.25

COOPERATION.--The capacity table, furnished by the Texas Water Development Board, dated Jun 16, 1994, is from a Mar 1994 survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 58,730 acre-ft, Jan 30, 1999 (elevation, 286.67 ft); minimum contents after initial filling, 20,540 acre-ft, Nov 26, 1977 (elevation, 266.62 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 58,730 acre-ft, Jan 30 (elevation, 286.67 ft); minimum contents, 32,980 acre-ft, Oct 6 (elevation, 275.79 ft).

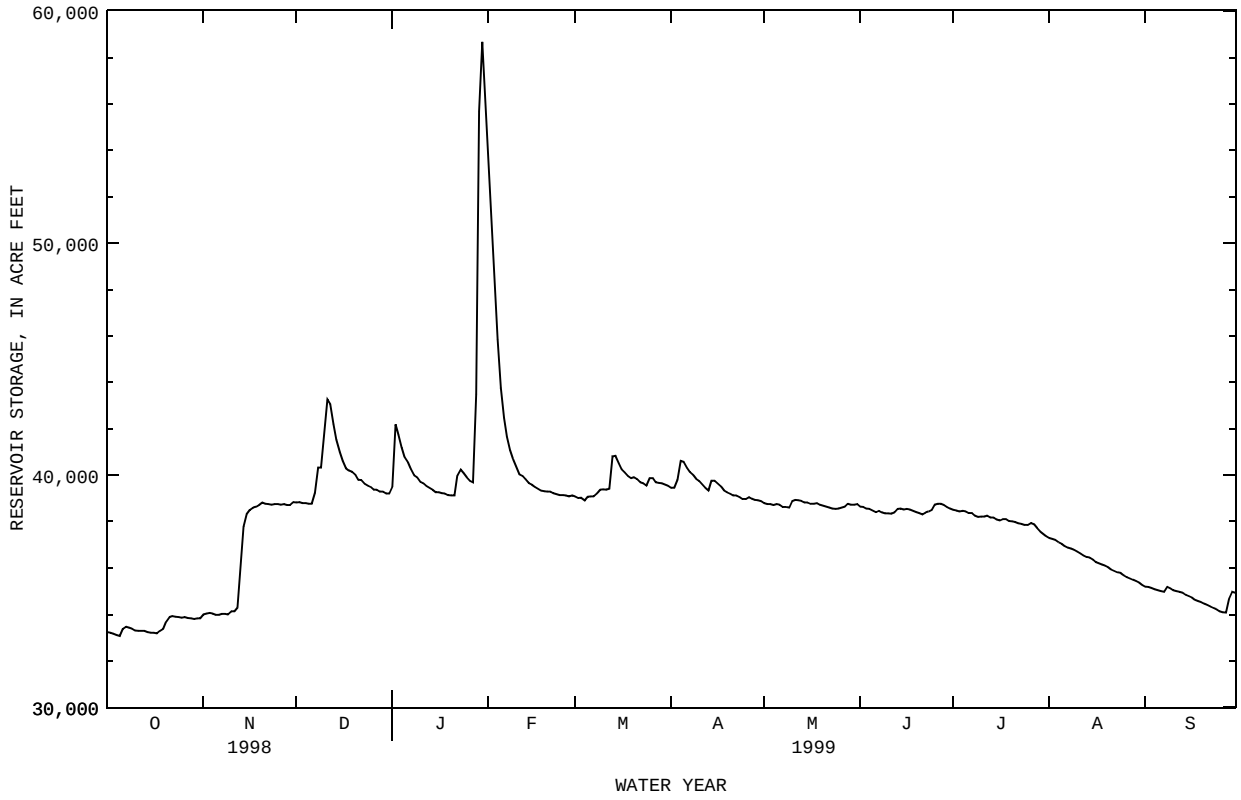
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33240	34000	38820	39520	53780	39090	39460	38800	38650	38500	37290	35200
2	33200	34040	38840	42180	51130	39010	39460	38750	38630	38480	37250	35180
3	33160	34060	38800	41750	48480	39030	39800	38750	38560	38430	37210	35140
4	33110	34040	38800	41200	45850	38920	40610	38710	38540	38460	37120	35080
5	33070	33980	38770	40780	43770	39070	40570	38750	38480	38430	37040	35040
6	33390	33980	38770	40540	42480	39090	40330	38730	38410	38370	36940	35010
7	33470	34020	39240	40260	41660	39090	40150	38630	38460	38370	36880	34970
8	33430	34020	40330	40000	41070	39200	40020	38630	38390	38260	36840	35200
9	33390	34000	40330	39910	40700	39370	39850	38600	38350	38200	36780	35120
10	33310	34140	41840	39720	40370	39390	39740	38880	38350	38220	36710	35040
11	33290	34140	43260	39650	40040	39370	39610	38940	38330	38220	36630	35010
12	33290	34300	43060	39540	39960	39410	39460	38920	38390	38260	36550	34970
13	33290	36120	42210	39460	39830	40810	39350	38900	38540	38180	36470	34930
14	33240	37790	41530	39370	39670	40830	39760	38820	38560	38180	36450	34850
15	33200	38330	40980	39260	39590	40520	39760	38820	38520	38090	36370	34790
16	33200	38500	40610	39260	39500	40260	39630	38770	38540	38050	36260	34730
17	33180	38600	40300	39220	39410	40110	39520	38770	38520	38110	36200	34630
18	33290	38650	40200	39200	39330	39960	39350	38800	38460	38110	36140	34570
19	33390	38730	40150	39140	39310	39870	39260	38730	38410	38030	36100	34530
20	33690	38820	40020	39120	39290	39910	39200	38690	38370	38010	36040	34470
21	33880	38770	39800	39120	39290	39830	39120	38650	38310	37990	35930	34410
22	33920	38750	39780	40000	39220	39690	39120	38600	38390	37920	35870	34340
23	33900	38730	39630	40240	39180	39650	39050	38560	38430	37900	35810	34280
24	33880	38750	39560	40070	39140	39560	38970	38540	38500	37860	35790	34220
25	33860	38750	39500	39910	39140	39870	38970	38560	38730	37860	35690	34140
26	33880	38730	39370	39760	39120	39870	39050	38600	38770	37940	35610	34100
27	33840	38750	39370	39690	39090	39690	38990	38650	38770	37880	35550	34080
28	33820	38710	39290	43490	39120	39670	38940	38770	38710	37730	35500	34690
29	33800	38710	39290	55680	---	39650	38920	38730	38630	37580	35440	34970
30	33820	38840	39200	58670	---	39590	38880	38730	38560	37480	35380	34930
31	33820	---	39200	56350	---	39540	---	38750	---	37370	35260	---
MAX	33920	38840	43260	58670	53780	40830	40610	38940	38770	38500	37290	35200
MIN	33070	33980	38770	39120	39090	38920	38880	38540	38310	37370	35260	34080
(+)	276.23	278.68	278.85	285.84	278.81	279.01	278.70	278.64	278.55	277.99	276.96	276.79
(@)	+540	+5020	+360	+17150	-17230	+420	-660	-130	-190	-1190	-2110	-330

CAL YR 1998 MAX 45920 MIN 32340 (@) -210
WTR YR 1999 MAX 58670 MIN 33070 (@) +1650

(+) Elevation in feet, at end of month.
(@) Change in contents, in acre-feet.

08036700 LAKE NACOGDOCHES NEAR NACOGDOCHES, TX--Continued



08037000 ANGELINA RIVER NEAR LUFKIN, TX

LOCATION.--Lat 31°27'26", long 94°43'34", Angelina-Nacogdoches County line, Hydrologic Unit 12020004, near right bank on downstream side of bridge on U.S. Highway 59, 100 ft upstream from Procella Creek, 1.5 mi downstream from Bayou Loco, 1.5 mi upstream from Southern Pacific Transportation Co. (formerly Southern Pacific Lines) bridge, 8 mi north of Lufkin and 109.5 mi upstream from mouth.

DRAINAGE AREA.--1,600 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1954 to Sep 1978, Jan 1994 to current year.
BIOCHEMICAL DATA: Oct 1954 to Sep 1978, Jan 1994 to current year.
Water-discharge records.--Oct 1923 to Sep 1934, Jul 1939 to Sep 1979.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1954 to Sep 1978.
WATER TEMPERATURES: Oct 1954 to Sep 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 1,090 microsiemens, Nov 10, 11, 1963; minimum 38 microsiemens, Sep 21, 1958, May 2, 1962.
WATER TEMPERATURE: Maximum, 32.0°C, on several days during Jul 1966; minimum, 0.0°C, Jan 11, 12, 1962, Jan 19, 1977.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB											
24...	1630	739	144	6.6	14.0	16	9.4	91	1.1	33	13
APR											
21...	1625	1100	133	7.2	20.5	40	6.4	70	1.7	33	12
JUL											
08...	1000	446	163	6.8	27.5	23	4.8	61	1.6	40	14
AUG											
26...	1002	45	209	7.2	28.5	22	5.6	73	1.2	38	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
FEB											
24...	6.7	3.9	11	.9	2.4	20	18	15	<.10	14	95
APR											
21...	6.8	3.9	10	.8	3.1	21	16	14	<.10	12	--
JUL											
08...	8.6	4.4	14	1	3.1	26	16	21	<.10	16	133
AUG											
26...	7.8	4.4	23	2	3.0	43	16	19	<.10	15	122

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
FEB											
24...	86	14	.181	.025	.206	.034	.32	.35	<.050	.016	.05
APR											
21...	81	20	--	<.010	.258	.041	.42	.46	<.050	.026	.08
JUL											
08...	101	24	--	<.010	.202	.030	.49	.52	.061	.025	.08
AUG											
26...	114	23	--	<.010	.103	<.020	--	.26	<.050	<.010	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
FEB										
24...	7.3	11	<1.0	<1	45	<1.0	<1.0	1.7	<1.0	1.4
APR										
21...	12	16	<1.0	<1	44	<1.0	<1.0	<1.0	<1.0	1.7
JUL										
08...	--	--	--	--	--	--	--	--	--	--
AUG										
26...	6.6	6.8	<1.0	2	44	<1.0	<1.0	<1.0	<1.0	1.3

08037000 ANGELINA RIVER NEAR LUFKIN, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB										
24...	470	<1.0	88	<.1	<1.0	3.0	<1	<1.0	4.5	<1.0
APR										
21...	500	<1.0	130	<.1	<1.0	3.4	<1	<1.0	3.6	<1.0
JUL										
08...	290	--	284	--	--	--	--	--	--	--
AUG										
26...	21	<1.0	60	<.1	<1.0	2.2	<1	<1.0	<1.0	<1.0

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°30'15", long 94°18'15", Nacogdoches-San Augustine County Line, Hydrologic Unit 12020005, near right bank on downstream side of bridge on State Highway 21, 2.2 mi upstream from Amaladeros Creek, 2.8 mi east of Chireno, 5.4 mi downstream from Arenoso Creek and 41 mi upstream from mouth.

DRAINAGE AREA.--503 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan 1924 to Sep 1925, Jul 1939 to Nov 1954, and Oct 1955 to Sep 30, 1985. Monthly discharge only for some periods, published in WSP 1312 and 1732. Oct 1985 to Sep 1989 (annual maximum). Oct 1989 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 169.58 ft above sea level. Jan 24, 1924, to Aug 29, 1925, and Sep 6, 1957, to Oct 27, 1958, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-detention pools of twelve floodwater-retarding structures with a combined detention capacity of 15,870 acre-ft. These structures control runoff from 46.7 mi^2 above this station.

AVERAGE DISCHARGE.--45 years (water years 1940-54, 1956-1985), 479 ft^3/s (12.93 in/yr), 347,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft^3/s Nov 24, 1940 (gage height, 25.97 ft), maximum gage height, 26.01 ft on Jan 30, 1999 (discharge, 31,700 ft^3/s); minimum, 0.8 ft^3/s Aug 26-27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1865, 29.9 ft Jun 29, 1902, from information by local residents. Flood in Jul 1933 reached a stage of 25.2 ft from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 13	1200	5,640	18.37	Jan 30	0700	31,700	26.01
Jan 4	2300	3,890	17.54				

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jan 1994 to current year.
BIOCHEMICAL DATA: Jan 1994 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB											
24...	1145	541	134	6.6	11.0	22	9.6	87	1.3	35	15
APR											
21...	1340	343	131	7.0	18.0	10	8.1	85	2.3	35	10
JUL											
07...	1206	308	110	6.6	27.0	20	6.2	78	2.2	31	5
AUG											
26...	1644	34	115	8.9	29.0	13	6.5	85	1.0	29	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
FEB											
24...	6.7	4.6	8.5	.6	1.6	20	22	11	<.10	13	87
APR											
21...	6.7	4.5	9.8	.7	2.2	25	17	11	<.10	13	--
JUL											
07...	5.9	3.8	8.5	.7	2.3	26	10	11	<.10	15	89
AUG											
26...	5.6	3.6	8.5	.7	2.0	33	5.7	8.4	<.10	15	72

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
FEB											
24...	82	28	.555	.017	.572	.029	.10	.13	<.050	<.010	--
APR											
21...	83	21	--	<.010	.518	.041	.37	.41	<.050	.017	.05
JUL											
07...	75	30	--	<.010	.508	.030	.38	.41	.051	.030	.09
AUG											
26...	72	18	--	<.010	.640	<.020	--	.25	<.050	<.010	--

08038000 ATTOYAC BAYOU NEAR CHIRENO, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
FEB										
24...	5.8	10	<1.0	<1	47	<1.0	<1.0	1.4	<1.0	1.4
APR										
21...	9.3	11	<1.0	<1	41	<1.0	<1.0	<1.0	<1.0	1.9
JUL										
07...	8.1	--	--	--	--	--	--	--	--	--
AUG										
26...	5.0	2.9	<1.0	<1	41	<1.0	<1.0	<1.0	<1.0	1.1

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB										
24...	180	<1.0	52	<.1	<1.0	2.2	<1	<1.0	8.4	<1.0
APR										
21...	280	<1.0	131	<.1	<1.0	2.5	<1	<1.0	5.8	<1.0
JUL										
07...	350	--	120	--	--	--	--	--	--	--
AUG										
26...	13	<1.0	112	<.1	<1.0	1.2	<1	<1.0	1.2	<1.0

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08039100 AYISH BAYOU NEAR SAN AUGUSTINE, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°23'46", Long 94°09'03", San Augustine County, Hydrologic Unit 12020005, near center of span on downstream side of bridge on State Highway 103, 3.0 mi upstream from Turkey Creek and 9.5 mi south of San Augustine.

DRAINAGE AREA.--89.0 mi^2.

PERIOD OF RECORD.--Feb 1959 to Sep 1985 (daily mean discharge), Oct 1985 to Sep 1989 (annual maximum), Oct 1989 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1922: 1959(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.22 ft above sea level. Prior to Jun 2, 1959, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions.

AVERAGE DISCHARGE.--26 years (water years 1960-85), 83.7 ft^3/s, 12.77 in/yr, 60,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft^3/s Sep 14, 1978 (gage height, 18.02 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since Oct 1957, 15,900 ft^3/s on Sep 21 or 22, 1958 (gage height, 17.5 ft, from floodmarks).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 15	0400	1,980	12.68	No other peak greater than base discharge.			

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08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX

LOCATION.--Lat 31°03'38", long 94°06'21", Jasper County, Hydrologic Unit 12020005, in the powerhouse-intake structure of Sam Rayburn Dam on the Angelina River, 10 mi northwest of Jasper and 25.2 mi upstream from mouth.

DRAINAGE AREA.--3,449 mi^2.

WATER-CONTENT RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Apr 20, 1965, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--The reservoir is formed by a rolled earthfill dam 19,430 ft long, including spillway and dikes. The dam was completed and deliberate impoundment began Mar 29, 1965. The spillway is an uncontrolled broad-crested weir 2,200 ft wide, on right bank 7,000 ft to right of outlet works and is designed to discharge 125,300 ft^3/s at maximum flood design. The flood-control outlet works consists of two 10.0 x 20.0-foot rectangular concrete-lined conduits controlled by two 10.0 x 20.0-foot tractor-type service gates and one 10.0 x 20.0-foot tractor-type emergency gate. Water for turbines is admitted through four 18.0 x 26.0-foot penstocks and controlled by two wheeled-leaf-type headgates. The reservoir is operated for flood control and power generation. The area-capacity tables are based on topographic maps prepared by the U.S. Army Corps of Engineers and detailed sedimentation ranges established in 1961 and dated Feb 1965. For statement regarding regulation by Natural Resource Conservation Service flood-water-retarding structures, see station 08038000. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	190.0
Design flood	183.0
Crest of spillway	176.0
Top of flood-control pool	173.0
Top of conservation pool (power pool)	l64.0
Top of power head and sediment pool	149.0
Lowest gated outlet (invert)	105.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,881,000 acre-ft, Feb 7, 1974 (elevation, 172.17 ft); minimum since conservation storage was reached in 1968, 1,585,000 acre-ft, Aug 10, 1996 (elevation, 150.74 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,861,000 acre-ft, Feb 11 (elevation, 172.03 ft); minimum contents, 2,046,000 acre-ft, Oct 16-17 (elevation, 156.15 ft).

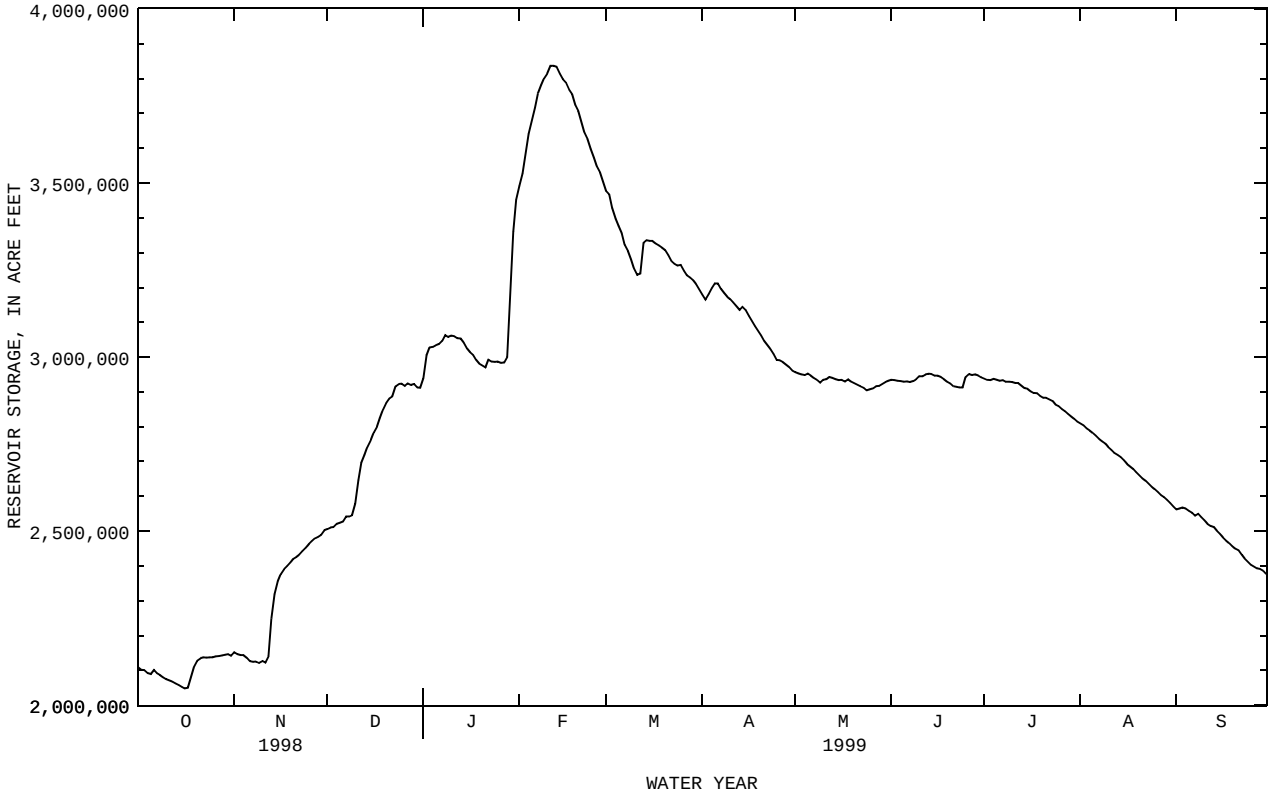
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2109000	2152000	2507000	2940000	3492000	3477000	3180000	2957000	2935000	2938000	2810000	2563000
2	2102000	2147000	2511000	3006000	3529000	3468000	3166000	2953000	2934000	2935000	2804000	2566000
3	2100000	2144000	2512000	3027000	3587000	3429000	3181000	2950000	2933000	2934000	2796000	2568000
4	2093000	2144000	2521000	3029000	3642000	3397000	3198000	2949000	2932000	2937000	2789000	2565000
5	2089000	2136000	2523000	3034000	3679000	3377000	3212000	2953000	2929000	2935000	2782000	2558000
6	2102000	2127000	2528000	3038000	3717000	3356000	3212000	2948000	2930000	2933000	2775000	2553000
7	2093000	2125000	2542000	3046000	3758000	3323000	3197000	2941000	2928000	2934000	2766000	2545000
8	2087000	2126000	2542000	3064000	3782000	3306000	3185000	2935000	2932000	2929000	2758000	2550000
9	2081000	2122000	2546000	3058000	3801000	3281000	3174000	2927000	2936000	2929000	2752000	2540000
10	2075000	2128000	2579000	3061000	3815000	3255000	3167000	2935000	2945000	2928000	2742000	2532000
11	2071000	2123000	2647000	3060000	3837000	3236000	3157000	2936000	2945000	2926000	2734000	2521000
12	2068000	2141000	2696000	3054000	3837000	3240000	3146000	2943000	2950000	2926000	2725000	2515000
13	2063000	2249000	2720000	3053000	3835000	3328000	3135000	2941000	2952000	2919000	2720000	2512000
14	2058000	2319000	2743000	3041000	3815000	3336000	3145000	2936000	2951000	2911000	2713000	2501000
15	2053000	2356000	2763000	3025000	3799000	3334000	3135000	2934000	2947000	2908000	2704000	2492000
16	2048000	2377000	2784000	3015000	3789000	3334000	3119000	2935000	2947000	2902000	2694000	2483000
17	2050000	2390000	2801000	3007000	3769000	3327000	3103000	2930000	2943000	2897000	2687000	2473000
18	2079000	2400000	2825000	2993000	3755000	3321000	3090000	2936000	2936000	2896000	2679000	2466000
19	2113000	2409000	2850000	2981000	3724000	3314000	3076000	2930000	2929000	2889000	2670000	2458000
20	2129000	2421000	2870000	2977000	3707000	3308000	3062000	2926000	2925000	2883000	2660000	2450000
21	2135000	2427000	2881000	2971000	3674000	3293000	3046000	2921000	2917000	2883000	2653000	2445000
22	2137000	2433000	2888000	2993000	3646000	3276000	3034000	2917000	2914000	2879000	2645000	2433000
23	2136000	2443000	2917000	2987000	3626000	3268000	3022000	2913000	2913000	2874000	2637000	2422000
24	2137000	2452000	2922000	2986000	3598000	3263000	3009000	2905000	2913000	2864000	2628000	2412000
25	2138000	2463000	2923000	2987000	3573000	3265000	2992000	2907000	2942000	2859000	2621000	2404000
26	2140000	2471000	2918000	2984000	3548000	3249000	2991000	2910000	2951000	2851000	2613000	2399000
27	2141000	2479000	2925000	2985000	3531000	3235000	2986000	2917000	2949000	2845000	2604000	2393000
28	2143000	2485000	2920000	3001000	3503000	3229000	2979000	2918000	2950000	2837000	2598000	2391000
29	2145000	2490000	2922000	3200000	---	3222000	2972000	2922000	2948000	2830000	2590000	2387000
30	2147000	2502000	2913000	3361000	---	3209000	2962000	2928000	2942000	2823000	2581000	2377000
31	2142000	---	2912000	3452000	---	3195000	---	2933000	---	2815000	2571000	---
MAX	2147000	2502000	2925000	3452000	3837000	3477000	3212000	2957000	2952000	2938000	2810000	2568000
MIN	2048000	2122000	2507000	2940000	3492000	3195000	2962000	2905000	2913000	2815000	2571000	2377000
(+)	157.18	160.77	164.52	168.97	169.36	166.91	164.95	164.70	164.78	163.66	161.44	159.57
(@)	+28000	+360000	+410000	+540000	+51000	-308000	-233000	-29000	+9000	-127000	-244000	-194000

CAL YR 1998 MAX 3709000 MIN 2046000 (@) 0
WTR YR 1999 MAX 3837000 MIN 2048000 (@) +263000

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued



08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1964 to Sep 1984, Sep 1993 to current year.
BIOCHEMICAL DATA: Nov 1967 to Sep 1984, Sep 1993 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

310816094041401 - SAM RAYBURN RESERVOIR SITE AC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB								
23...	1445	1.00	130	7.0	14.5	1.50	8.9	88
23...	1447	10.0	130	7.0	14.5	--	8.9	88
23...	1449	20.0	130	6.9	14.0	--	8.9	87
23...	1451	30.0	130	7.0	14.0	--	8.9	87
23...	1453	40.0	130	7.0	14.0	--	8.9	87
23...	1455	50.0	130	7.0	14.0	--	8.9	87
23...	1457	63.0	130	6.9	14.0	--	8.9	87
AUG								
25...	1330	1.00	130	7.3	32.0	1.90	6.7	92
25...	1332	10.0	130	7.1	31.0	--	6.7	91
25...	1334	20.0	130	6.8	30.5	--	6.0	80
25...	1336	30.0	130	6.5	30.0	--	3.6	48
25...	1338	40.0	145	6.5	24.5	--	3.2	39
25...	1340	52.0	145	6.5	23.0	--	2.5	29

310437094065501 - SAM RAYBURN RESERVOIR SITE CC

DATE	TIME	RESERVOIR STORAGE (AC-FT) (00054)	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
FEB												
24...	0825	3620000	1.00	135	7.0	14.0	1.50	10.9	105	K1	K1	27
24...	0827	--	10.0	135	7.0	14.0	--	10.8	104	--	--	--
24...	0829	--	20.0	135	6.9	14.0	--	10.8	104	--	--	--
24...	0831	--	30.0	135	6.9	14.0	--	10.8	104	--	--	--
24...	0833	--	40.0	135	6.9	14.0	--	10.8	104	--	--	--
24...	0835	--	50.0	135	6.8	14.0	--	10.8	104	--	--	--
24...	0837	--	60.0	135	6.8	14.0	--	10.8	105	--	--	--
24...	0839	--	70.0	135	6.8	13.5	--	10.7	102	--	--	--
24...	0841	--	80.0	135	6.7	13.5	--	10.7	102	--	--	--
24...	0843	--	92.5	135	6.7	13.5	--	10.7	102	--	--	26
APR												
20...	1620	3070000	1.00	125	7.6	20.5	1.40	8.2	92	K2	K1	25
20...	1622	--	10.0	125	7.3	19.0	--	8.0	87	--	--	--
20...	1624	--	20.0	125	7.2	19.0	--	7.9	86	--	--	--
20...	1626	--	30.0	125	7.1	18.5	--	7.7	83	--	--	--
20...	1628	--	40.0	130	7.1	18.5	--	7.6	82	--	--	--
20...	1630	--	50.0	130	7.0	18.0	--	7.6	81	--	--	--
20...	1632	--	60.0	130	7.0	18.0	--	7.5	80	--	--	--
20...	1634	--	70.0	130	7.0	18.0	--	7.4	79	--	--	--
20...	1636	--	82.0	130	6.8	17.0	--	5.8	60	--	--	26
AUG												
25...	1154	2630000	1.00	130	7.1	31.5	2.10	6.6	90	K1	K10	26
25...	1156	--	10.0	130	6.8	30.0	--	5.8	77	--	--	--
25...	1158	--	20.0	130	6.8	30.0	--	5.7	76	--	--	--
25...	1200	--	30.0	130	6.7	30.0	--	3.3	44	--	--	--
25...	1202	--	40.0	140	6.4	22.5	--	2.4	28	--	--	--
25...	1204	--	50.0	145	6.6	22.5	--	2.4	28	--	--	--
25...	1206	--	60.0	155	6.6	21.5	--	2.4	27	--	--	--
25...	1208	--	70.0	155	6.6	21.0	--	2.4	27	--	--	--
25...	1210	--	82.0	160	6.5	20.5	--	2.4	27	--	--	29

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

310437094065501 - SAM RAYBURN RESERVOIR SITE CC

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB												
24...	13	5.9	2.9	14	1	2.6	14	18	17	<.10	9.3	78
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--	--
24...	11	5.9	2.8	13	1	2.5	15	18	16	<.10	9.6	78
APR												
20...	14	5.5	2.6	12	1	2.4	11	17	14	<.10	6.9	68
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--
20...	15	5.9	2.7	12	1	2.5	11	18	15	<.10	9.4	74
AUG												
25...	1	5.8	2.8	12	1	2.7	25	16	12	<.10	7.0	74
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	6.8	3.0	12	1	3.0	44	9.6	15	<.10	14	99

310437094065501 - SAM RAYBURN RESERVOIR SITE CC

DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB											
24...	.071	.020	.091	<.020	--	.25	<.050	<.010	--	71	<3.0
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	.076	.018	.094	<.020	--	.27	<.050	<.010	--	60	4.1
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	.074	.013	.087	<.020	--	.25	<.050	<.010	--	32	19
APR											
20...	--	<.010	.054	.041	.22	.26	<.050	.011	.03	140	8.8
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	<.010	.065	.031	.22	.25	<.050	.011	.03	110	11
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	<.010	.081	.044	.22	.26	<.050	<.010	--	150	24
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	<.010	.133	.038	.23	.27	<.050	.014	.04	65	148
AUG											
25...	--	<.010	<.050	<.020	--	.24	<.050	<.010	--	12	99
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	<.010	<.050	<.020	--	.25	<.050	<.010	--	100	239
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	<.010	<.050	.332	.22	.55	.052	.048	.15	2200	2130
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--	--	--
25...	--	<.010	<.050	.639	.21	.85	.154	.154	.47	5000	3160

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

310802094112201 - SAM RAYBURN RESERVOIR SITE FC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB								
24...	0915	1.00	140	7.0	14.0	1.50	10.9	105
24...	0917	10.0	140	7.0	14.0	--	10.9	105
24...	0919	20.0	140	7.0	14.0	--	10.9	105
24...	0921	30.0	140	7.0	14.0	--	10.9	105
24...	0923	40.0	140	6.9	14.0	--	10.8	104
24...	0925	50.0	140	6.9	14.0	--	10.7	103
24...	0927	60.0	140	6.9	14.0	--	10.8	104
24...	0929	70.0	140	6.9	14.0	--	10.8	104
24...	0931	80.5	140	6.9	14.0	--	10.7	103
APR								
21...	0920	1.00	120	7.2	20.0	1.40	7.8	87
21...	0922	10.0	120	7.1	20.0	--	7.6	84
21...	0924	20.0	120	6.7	19.0	--	6.8	74
21...	0926	30.0	125	6.6	18.5	--	6.4	69
21...	0928	40.0	125	6.5	18.0	--	6.2	66
21...	0930	50.0	130	6.5	18.0	--	6.2	66
21...	0932	60.0	130	6.5	18.0	--	6.2	66
21...	0934	75.0	130	6.4	17.5	--	5.8	61
AUG								
26...	0902	1.00	130	7.0	31.0	2.00	6.5	88
26...	0904	10.0	130	6.9	30.5	--	6.4	86
26...	0906	20.0	130	6.9	30.5	--	6.1	82
26...	0908	30.0	145	6.4	27.0	--	2.3	29
26...	0910	40.0	145	6.6	24.5	--	3.1	38
26...	0912	50.0	150	6.5	21.5	--	3.1	35
26...	0914	60.0	155	6.4	21.5	--	2.5	29
26...	0916	73.0	155	6.4	21.5	--	2.5	29

311039094141201 - SAM RAYBURN RESERVOIR SITE GC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB								
24...	0950	1.00	135	6.9	14.5	1.20	10.8	105
24...	0952	20.0	135	6.9	14.0	--	10.7	103
24...	0954	30.0	135	6.9	14.0	--	10.7	103
24...	0956	40.0	135	6.9	14.0	--	10.7	103
24...	0958	50.0	140	6.9	14.0	--	10.9	105
24...	1000	60.0	140	6.9	14.0	--	10.9	105
24...	1002	72.0	140	6.9	14.0	--	11.1	107
APR								
21...	0950	1.00	120	7.2	20.0	1.30	7.6	84
21...	0952	10.0	120	7.1	19.5	--	7.6	84
21...	0954	20.0	120	7.1	19.5	--	7.2	79
21...	0956	30.0	120	6.8	19.0	--	6.8	74
21...	0958	40.0	125	6.7	18.5	--	6.8	73
21...	1000	50.0	125	6.4	18.5	--	6.1	66
21...	1002	60.0	125	6.5	18.5	--	6.1	66
21...	1004	72.0	125	6.5	18.5	--	6.1	66
AUG								
26...	0930	1.00	130	7.0	31.0	1.80	6.3	86
26...	0932	10.0	130	7.0	30.5	--	6.3	85
26...	0934	20.0	130	6.9	30.5	--	6.1	82
26...	0936	30.0	140	6.3	28.5	--	2.4	31
26...	0938	40.0	145	6.5	24.0	--	2.4	29
26...	0940	50.0	150	6.5	23.0	--	2.4	28
26...	0942	62.0	155	6.5	21.5	--	2.4	27

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

311828094191801 - SAM RAYBURN RESERVOIR SITE IC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLVED FLD. AS CACO3 (MG/L) (00904)
FEB												
24...	1025	1.00	115	6.7	14.5	.80	10.3	101	K2	K1	24	14
24...	1027	10.0	115	6.6	14.0	--	10.2	99	--	--	--	--
24...	1029	20.0	115	6.6	14.0	--	10.2	99	--	--	--	--
24...	1031	30.0	115	6.6	14.0	--	10.1	98	--	--	--	--
24...	1033	40.0	115	6.6	14.0	--	10.0	97	--	--	--	--
24...	1035	50.0	115	6.6	14.0	--	10.0	97	--	--	--	--
24...	1037	60.0	115	6.6	14.0	--	10.0	97	--	--	--	--
24...	1039	66.0	115	6.6	14.0	--	10.0	97	--	--	24	13
AUG												
26...	1010	1.00	140	7.2	31.0	1.70	6.5	88	K3	K1	29	--
26...	1012	10.0	140	7.0	31.0	--	6.1	83	--	--	--	--
26...	1014	20.0	140	6.8	31.0	--	5.4	73	--	--	--	--
26...	1016	30.0	165	6.7	28.5	--	2.3	30	--	--	--	--
26...	1018	40.0	170	6.7	24.5	--	2.3	28	--	--	--	--
26...	1020	50.0	170	6.7	24.5	--	2.3	28	--	--	--	--
26...	1022	56.0	170	6.7	23.0	--	2.3	27	--	--	33	--

311828094191801 - SAM RAYBURN RESERVOIR SITE IC

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
FEB											
24...	5.1	2.7	10	.9	2.5	10	16	15	<.10	9.3	68
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	5.3	2.7	11	1	2.6	11	18	14	<.10	10	71
AUG											
26...	6.4	3.2	15	1	2.9	34	16	14	<.10	8.2	86
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--
26...	7.7	3.4	12	.9	3.1	48	6.8	17	<.10	13	103

311828094191801 - SAM RAYBURN RESERVOIR SITE IC

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
FEB											
24...	.091	.014	.105	.031	.28	.31	<.050	<.010	--	170	E2.7
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	.094	.013	.107	.030	.29	.32	<.050	<.010	--	140	5.3
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	.102	.015	.117	.034	.28	.32	<.050	<.010	--	75	5.7
AUG											
26...	--	<.010	<.050	<.020	--	.27	<.050	<.010	--	36	113
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	<.010	<.050	<.020	--	.26	<.050	.010	.03	1600	817
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	<.010	<.050	.386	.92	1.3	.302	.319	.98	5900	2100
26...	--	--	--	--	--	--	--	--	--	--	--
26...	--	<.010	<.050	1.17	.15	1.3	.305	.385	1.2	6500	2080

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

311804094234901 - SAM RAYBURN RESERVOIR SITE JC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB								
24...	1220	1.00	80	6.5	15.0	.50	9.8	97
24...	1222	10.0	80	6.5	14.5	--	10.0	98
24...	1224	20.0	80	6.5	14.5	--	9.7	95
24...	1226	30.0	80	6.4	14.5	--	9.7	95
24...	1228	41.0	80	6.4	14.5	--	10.0	98
APR								
21...	1240	1.00	150	7.3	21.0	1.00	7.4	84
21...	1242	10.0	150	7.2	21.0	--	7.4	84
21...	1244	20.0	150	7.2	21.0	--	7.2	82
21...	1246	29.0	150	7.1	21.0	--	6.9	78
AUG								
26...	1150	1.00	165	7.9	32.0	1.30	6.9	95
26...	1152	10.0	170	7.3	31.5	--	6.2	85
26...	1154	20.0	175	6.8	30.5	--	3.3	44
26...	1156	30.0	240	6.8	28.0	--	2.3	30
26...	1158	38.0	240	6.8	28.0	--	2.3	30

312216094280601 - SAM RAYBURN RESERVOIR SITE KC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB												
24...	1335	1.00	100	6.7	15.5	.70	10.1	101	K1	K5	23	13
24...	1337	10.0	100	6.7	15.0	--	10.1	100	--	--	--	--
24...	1339	20.0	100	6.7	15.0	--	10.1	100	--	--	--	--
24...	1341	34.0	100	6.6	14.5	--	10.0	98	--	--	24	13
APR												
21...	1325	1.00	160	7.1	21.5	.74	7.0	80	K2	K2	32	9
21...	1327	10.0	160	7.0	21.0	--	6.6	75	--	--	--	--
21...	1329	20.0	160	7.0	21.0	--	6.6	75	--	--	--	--
21...	1331	29.5	160	7.0	21.0	--	6.6	75	--	--	32	9
AUG												
25...	1640	1.00	265	8.3	32.5	.40	7.9	110	K3	K2	40	--
25...	1642	10.0	260	8.2	32.0	--	7.5	104	--	--	--	--
25...	1644	21.0	245	8.0	31.5	--	5.4	74	--	--	39	--

312216094280601 - SAM RAYBURN RESERVOIR SITE KC

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
FEB											
24...	4.9	2.7	8.2	.7	2.9	10	13	14	<.10	10	63
24...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
24...	5.0	2.7	8.1	.7	3.1	11	13	13	<.10	10	63
APR											
21...	6.8	3.7	16	1	3.1	23	18	19	<.10	11	93
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--	--	--
21...	6.8	3.6	16	1	3.2	23	18	20	<.10	11	94
AUG											
25...	8.9	4.3	32	2	3.8	44	19	33	.11	16	144
25...	--	--	--	--	--	--	--	--	--	--	--
25...	8.7	4.3	29	2	3.7	44	18	30	.10	15	135

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

312216094280601 - SAM RAYBURN RESERVOIR SITE KC

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
FEB											
24...	.055	.013	.068	.025	.38	.40	<.050	<.010	--	340	46
24...	.066	.015	.081	.027	.32	.35	<.050	<.010	--	270	43
24...	--	--	--	--	--	--	--	--	--	--	--
24...	.047	.017	.064	.030	.35	.38	<.050	<.010	--	220	40
APR											
21...	--	<.010	.171	.034	.38	.41	<.050	.022	.07	790	31
21...	--	--	--	--	--	--	--	--	--	--	--
21...	--	<.010	.175	.113	.30	.42	<.050	.020	.06	750	39
21...	--	<.010	.177	.047	.40	.44	<.050	.026	.08	1000	42
AUG											
25...	--	<.010	<.050	<.020	--	.43	<.050	.014	.04	40	E2.0
25...	--	<.010	<.050	<.020	--	.42	<.050	.010	.03	37	2.6
25...	--	<.010	<.050	<.020	--	.36	<.050	<.010	--	34	16

311000094010301 - SAM RAYBURN RESERVOIR SITE LC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)
FEB										
23...	1550	1.00	125	7.0	15.0	1.40	9.0	89	.082	.011
23...	1552	10.0	125	7.0	15.0	--	9.0	89	--	--
23...	1554	20.0	125	7.0	15.0	--	9.0	89	--	--
23...	1556	33.0	115	6.8	14.0	--	8.7	85	.047	.013
APR										
20...	1548	1.00	120	7.6	22.0	1.20	8.1	93	--	<.010
20...	1550	10.0	120	7.3	20.5	--	7.8	87	--	--
20...	1552	20.0	120	7.1	20.5	--	7.7	86	--	--
20...	1554	31.0	120	7.1	20.5	--	7.7	86	--	<.010
AUG										
25...	1520	1.00	130	7.4	32.5	1.00	6.9	96	--	<.010
25...	1522	10.0	130	7.2	32.0	--	6.8	93	--	--
25...	1524	20.0	130	7.1	32.0	--	6.7	92	--	--
25...	1526	30.5	130	6.9	31.5	--	6.2	84	--	<.010

311000094010301 - SAM RAYBURN RESERVOIR SITE LC

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
FEB									
23...	.093	<.020	--	.23	<.050	<.010	--	50	3.8
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	.060	<.020	--	.25	<.050	<.010	--	65	3.8
APR									
20...	<.050	.031	.25	.28	<.050	.012	.04	140	5.8
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	<.050	.036	.24	.28	<.050	.011	.03	110	19
AUG									
25...	<.050	<.020	--	.24	<.050	<.010	--	E6.2	31
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	<.050	<.020	--	.26	<.050	<.010	--	12	56

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

311137094051401 - SAM RAYBURN RESERVOIR SITE MC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)
FEB										
23...	1510	1.00	120	7.0	15.5	1.30	8.8	88	.055	.012
23...	1512	10.0	120	6.9	15.0	--	8.8	87	--	--
23...	1514	20.0	120	6.8	15.0	--	8.5	84	--	--
23...	1516	30.0	125	6.8	14.5	--	8.5	83	--	--
23...	1518	40.0	125	6.8	14.5	--	8.5	83	--	--
23...	1520	51.0	125	6.8	14.5	--	8.6	84	.063	.016
APR										
20...	1515	1.00	120	7.5	21.0	1.55	8.0	90	--	<.010
20...	1517	10.0	120	7.4	20.5	--	7.9	88	--	--
20...	1519	20.0	120	7.3	20.0	--	7.8	86	--	--
20...	1521	30.0	125	6.8	19.0	--	6.4	69	--	--
20...	1523	40.0	125	6.8	19.0	--	6.0	65	--	--
20...	1525	50.0	130	6.7	18.5	--	6.0	64	--	<.010
AUG										
25...	1418	1.00	130	7.6	32.5	1.90	7.0	97	--	<.010
25...	1420	10.0	130	7.4	32.0	--	6.8	93	--	--
25...	1422	20.0	130	7.0	31.0	--	6.2	84	--	--
25...	1424	30.0	130	6.6	30.0	--	2.4	32	--	--
25...	1426	42.0	155	6.6	26.5	--	2.4	30	--	<.010

311137094051401 - SAM RAYBURN RESERVOIR SITE MC

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)
FEB									
23...	.067	<.020	--	.26	<.050	<.010	--	95	3.8
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--
23...	.079	<.020	--	.23	<.050	<.010	--	45	3.4
APR									
20...	<.050	.064	.22	.28	<.050	.011	.03	170	17
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	.091	.078	.24	.32	<.050	.010	.03	83	135
AUG									
25...	<.050	<.020	--	.27	<.050	<.010	--	330	267
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	--	--	--	--	--	--	--	--	--
25...	<.050	.651	.38	1.0	.134	.134	.41	3700	1620

311817094190701 - SAM RAYBURN RESERVOIR SITE NC

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (M) (00078)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)
FEB										
24...	1110	1.00	75	6.6	15.0	.50	9.7	96	.039	.018
24...	1112	10.0	75	6.5	14.5	--	9.6	94	--	--
24...	1114	20.0	80	6.5	14.5	--	9.3	91	--	--
24...	1116	30.0	80	6.5	14.5	--	9.3	91	--	--
24...	1118	37.5	80	6.4	14.5	--	9.3	91	.073	.010
APR										
21...	1132	1.00	120	7.6	21.5	1.10	7.6	87	--	<.010
21...	1134	10.0	120	7.5	21.5	--	7.5	86	--	--
21...	1136	20.0	120	7.4	21.0	--	7.4	84	--	--
21...	1138	33.5	125	7.1	21.0	--	6.8	77	--	<.010
AUG										
26...	1100	1.00	140	7.5	32.0	1.00	6.6	91	--	<.010
26...	1102	10.0	140	7.0	31.5	--	5.7	78	--	--
26...	1104	20.0	140	6.9	31.5	--	5.5	75	--	--
26...	1106	28.0	140	6.9	31.5	--	5.4	74	--	<.010

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

311817094190701 - SAM RAYBURN RESERVOIR SITE NC

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB									
24...	.057	.032	.13	.16	<.050	<.010	--	170	6.0
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--
24...	.083	.042	.24	.28	<.050	.016	.05	180	8.7
APR									
21...	<.050	.131	.21	.34	<.050	.015	.05	490	9.9
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	<.050	.043	.31	.35	<.050	.019	.06	610	30
AUG									
26...	<.050	<.020	--	.28	<.050	<.010	--	E8.1	24
26...	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--
26...	<.050	.030	.37	.40	E.032	<.010	--	28	99

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1998 to September 1999

Date	2/24/99
Time	825
TOTAL CELLS/mL	7,588
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	2.46

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	30
CHLOROPHYTA	
Chlamydomonas sp.	90
Mougeotia sp.	2,429
CYANOPHYTA	
Aphanizomenon flos-aquae	3,299
Aphanocapsa delicatissima	600
Aphanocapsa elachista	600
Merismopedia tenuissima	480
EUGLENOPHYTA	
Trachelomonas sp.	60

Sam Rayburn Reservoir Site IC (311828094191801)

Phytoplankton Analyses October 1998 to September 1999

Date	2/24/99
Time	1035
TOTAL CELLS/mL	2,759
NUMBER OF SPECIES	5
DEPTH COLLECTED (ft.)	1.31

Organisms	Cells/mL
CHLOROPHYTA	
Chlamydomonas sp.	60
Mougeotia sp.	180
Pediastrum duplex	30
CYANOPHYTA	
Aphanocapsa delicatissima	2,399
EUGLENOPHYTA	
Trachelomonas sp.	90

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1998 to September 1999

Date	2/24/99
Time	1335
TOTAL CELLS/mL	4,529
NUMBER OF SPECIES	5
DEPTH COLLECTED (ft.)	1.15

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	60
CHLOROPHYTA	
Ankistrodesmus falcatus	120
Chlamydomonas sp.	60
CYANOPHYTA	
Aphanocapsa delicatissima	4,199
EUGLENOPHYTA	
Trachelomonas sp.	90

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1998 to September 1999

Date	4/20/99
Time	1620
TOTAL CELLS/mL	9,207
NUMBER OF SPECIES	11
DEPTH COLLECTED (ft.)	2.30

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Melosira varians	300
Order Pennales	
Asterionella formosa var. *formosa*	64
Nitzschia palea var. *palea*	13
Synedra ulna var. *ulna*	13
CHLOROPHYTA	
Ankistrodesmus falcatus	30
Chlamydomonas sp.	3,090
Mougeotia sp.	2,849
CYANOPHYTA	
Aphanizomenon flos-aquae	750
Aphanocapsa delicatissima	4,798
Oscillatoria sp.	300
EUGLENOPHYTA	
Trachelomonas sp.	60

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1998 to September 1999

Date	4/21/99
Time	1325
TOTAL CELLS/mL	23,722
NUMBER OF SPECIES	9
DEPTH COLLECTED (ft.)	1.21

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Melosira varians	90
Order Pennales	
Asterionella formosa var. *formosa*	30
CHLOROPHYTA	
Cosmarium sp.	30
Crucigenia tetrapedia	150
Scenedesmus acuminatus	30
Tetrastrum punctatum	60
CYANOPHYTA	
Aphanocapsa delicatissima	19,793
EUGLENOPHYTA	
Trachelomonas sp.	540
CRYPTOPHYTA	
Cryptomonas erosa	2,999

Sam Rayburn Reservoir Site CC (310437094065501)

Phytoplankton Analyses October 1998 to September 1999

Date	8/25/99
Time	1154
TOTAL CELLS/mL	11,517
NUMBER OF SPECIES	8
DEPTH COLLECTED (ft.)	3.44

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	820
Synedra ulna var. *ulna*	410
CHLOROPHYTA	
Cosmarium sp.	30
Staurastrum sp.	30
CYANOPHYTA	
Anabaena sp.	300
Aphanizomenon flos-aquae	300
Aphanocapsa delicatissima	9,597
EUGLENOPHYTA	
Trachelomonas sp.	30

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued

Sam Rayburn Reservoir Site IC (311828094191801)

Phytoplankton Analyses October 1998 to September 1999

Date	8/25/99
Time	1010
TOTAL CELLS/mL	10,677
NUMBER OF SPECIES	5
DEPTH COLLECTED (ft.)	2.79

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	600
CHLOROPHYTA	
Scenedesmus opoliensis	30
CYANOPHYTA	
Aphanizomenon flos-aquae	300
Aphanocapsa delicatissima	9,597
EUGLENOPHYTA	
Trachelomonas sp.	150

Sam Rayburn Reservoir Site KC (312216094280601)

Phytoplankton Analyses October 1998 to September 1999

Date	8/25/99
Time	1640
TOTAL CELLS/mL	12,356
NUMBER OF SPECIES	7
DEPTH COLLECTED (ft.)	0.66

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Pennales	
Fragilaria crotonensis var. *crotonensis*	900
CHLOROPHYTA	
Cosmarium sp.	30
Pediastrum duplex	30
Scenedesmus opoliensis	60
CYANOPHYTA	
Anabaena sp.	450
Aphanocapsa delicatissima	10,796
EUGLENOPHYTA	
Trachelomonas sp.	90

08039500 ANGELINA RIVER AT STATE HIGHWAY 63 NEAR EBENEZER, TX

LOCATION.--Lat 31°00'54", long 94°09'07", Jasper County, Hydrologic Unit 1202005, at bridge on State Highway 63, 1.7 miles south of Ebenezer, 0.25 mile east of the abandoned town of Horger, 7 miles upstream from Indian Creek and 20 miles upstream from mouth.

DRAINAGE AREA.--3,435 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Jan 1994 to current year
BIOCHEMICAL DATA: Jan 1994 to current year
Water-discharge.-- water years 1928-1951 and 1967-1973 previously published as "Angelina River at Highway 63 near Horger"

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB											
23...	1250	15100	146	7.3	14.5	5.4	9.6	94	.7	26	10
APR											
19...	1250	9780	127	6.9	22.0	100	9.0	102	1.2	25	14
AUG											
25...	0943	4290	130	6.4	28.0	1.5	4.4	56	.9	27	2

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
FEB											
23...	6.0	2.6	13	1	2.7	16	18	16	<.10	8.9	87
APR											
19...	5.9	2.4	11	1	2.5	11	18	15	<.10	7.1	--
AUG											
25...	6.2	2.8	12	1	2.7	25	15	13	<.10	7.7	81

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
FEB											
23...	77	3	.081	.015	.096	<.020	--	.28	<.050	<.010	--
APR											
19...	69	3	--	<.010	.087	.026	.24	.26	<.050	.015	.05
AUG											
25...	75	3	--	<.010	<.050	.028	.20	.22	<.050	<.010	--

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
FEB										
23...	7.3	7.9	<1.0	<1	29	<1.0	<1.0	1.4	<1.0	1.8
APR										
19...	8.2	7.7	<1.0	<1	38	<1.0	<1.0	<1.0	<1.0	2.2
AUG										
25...	6.5	3.8	<1.0	3	47	<1.0	<1.0	<1.0	<1.0	1.4

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB										
23...	39	<1.0	8.8	<.1	<1.0	1.5	1	<1.0	12	<1.0
APR										
19...	99	1.3	7.3	<.1	<1.0	1.3	<1	<1.0	10	<1.0
AUG										
25...	290	1.2	524	<.1	<1.0	1.2	<1	<1.0	10	<1.0

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08040000 B.A. STEINHAGEN LAKE AT TOWN BLUFF, TX

LOCATION.--Lat 30°47'43", long 94°10'48", Tyler County, Hydrologic Unit 12020003, near right bank 70 ft upstream from outlet structure of Town Bluff Dam on Neches River, 0.4 mi north of Town Bluff and at mile 113.7.

DRAINAGE AREA.--7,573 mi^2.

PERIOD OF RECORD.--Apr 1951 to current year. Prior to Oct 1967, published as "Dam B Reservoir at Town Bluff".

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct 25, 1954, at site 490 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam with concrete spillway sections. The total length of dam is 6,698 ft, including a concrete spillway and non-overflow section. Deliberate impoundment of water began Apr 16, 1951, and the dam was completed in Jun 1951. The uncontrolled spillway is 6,100 ft long. A 326-foot-long gated service spillway with six 40.0- by 35.0-foot tainter gates is located near right end of dam. The capacity of the spillways at maximum flood design is 218,300 ft^3/s. The capacity table is based on a survey made in 1945. Water is used for industrial, municipal and irrigation supplies. Figures given herein represent total contents. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam (nonoverflow)	95.0
Design flood	93.0
Crest of uncontrolled spillway (top of tainter gates)	85.0
Top of conservation pool	83.0
Bottom of tainter gates (sill)	50.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 128,400 acre-ft, May 22, 1953 (elevation, 85.21 ft); no storage Sep 18 to Oct 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 99,090 acre-ft, May 25 (elevation, 83.75 ft); minimum contents, 23,950 acre-ft, Jan 21 (elevation, 75.29 ft).

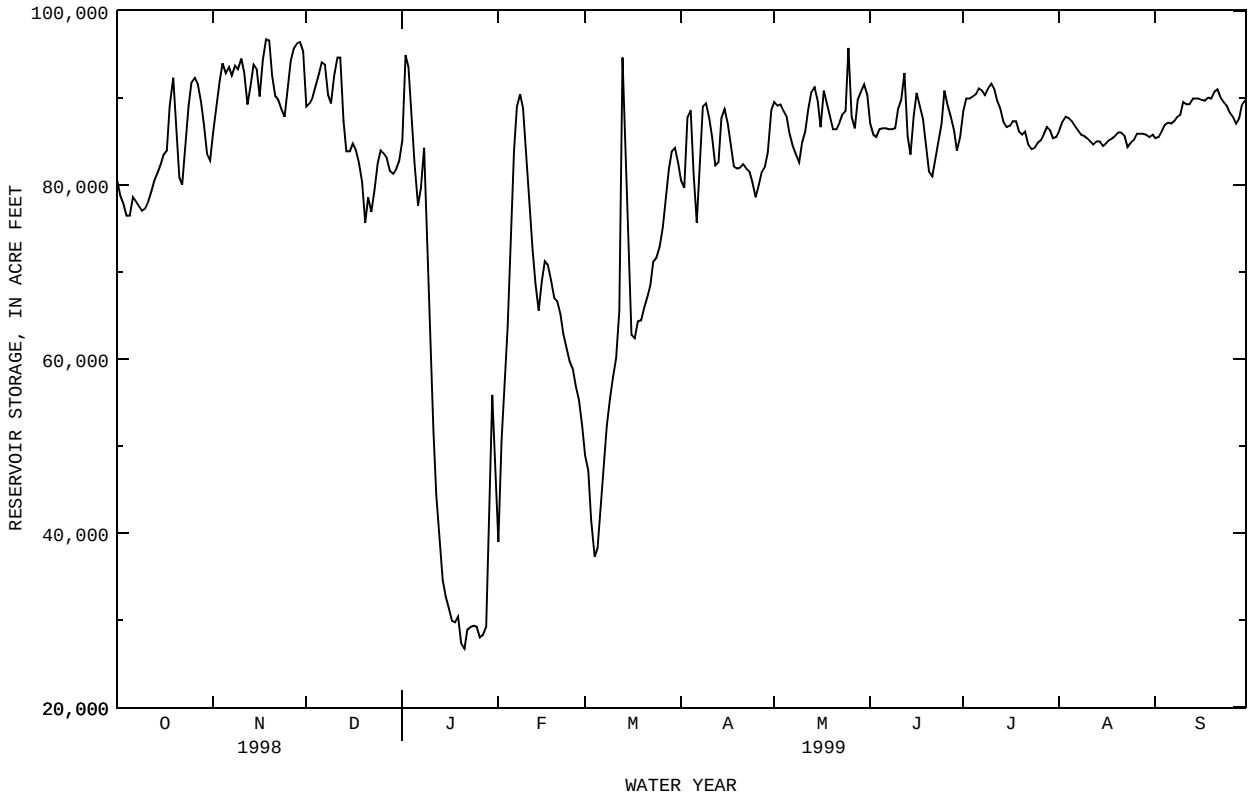
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80540	86160	89020	85140	39000	48960	80540	89540	87060	88490	86290	85400
2	78730	88890	89410	94940	50620	47180	79690	89150	85780	89940	87320	85520
3	77900	91940	90070	93570	57780	41520	87840	89280	85520	89940	87840	86160
4	76480	93980	91410	87970	63630	37310	88620	88490	86420	90210	87710	86930
5	76480	92890	92620	82510	75550	38260	81400	87840	86550	90470	87320	87190
6	78610	93570	94110	77660	84010	43410	75660	85910	86550	91140	86810	87060
7	78130	92620	93840	79690	89020	47680	82260	84510	86420	90870	86290	87320
8	77540	93700	90340	84260	90470	52390	89020	83500	86420	90340	85780	87840
9	77070	93300	89410	77540	88890	55510	89410	82630	86550	91140	85650	88100
10	77300	94520	92620	66440	83000	57870	87710	84890	88760	91670	85400	89540
11	78130	92890	94660	51860	78130	60110	85520	86160	89810	91000	85020	89280
12	79330	89280	94660	44370	72570	65500	82260	88620	92890	89680	84640	89280
13	80540	91270	87450	39450	68690	94660	82630	90740	85650	88760	85020	89940
14	81400	93840	83880	34670	65600	85650	87710	91270	83500	87190	85020	89940
15	82380	93300	83880	32630	69020	74620	88760	89680	87970	86680	84510	89940
16	83500	90210	84760	31430	71220	62810	87060	86680	90600	86810	84760	89810
17	84010	94390	84010	29950	70780	62410	84510	90870	89150	87320	85140	89680
18	89150	96740	82630	29760	69020	64350	82140	89280	87580	87320	85400	90070
19	92350	96600	80420	30460	66980	64450	81890	87970	84380	86160	85650	89940
20	87060	92620	75660	27300	66660	65810	82010	86420	81520	85780	86040	90740
21	80910	90210	78610	26710	65180	67080	82380	86420	81030	86160	86040	91000
22	80060	89810	76950	28950	62910	68480	81890	87190	83000	84640	85650	90070
23	84890	88760	79450	29200	61300	71220	81520	88100	84890	84130	84380	89540
24	89150	87840	82510	29380	59720	71670	80300	88490	87060	84260	84890	89150
25	91810	91270	84010	29260	58840	72910	78610	95770	90870	84890	85140	88360
26	92350	94250	83630	28030	56920	75200	80060	87840	89020	85140	85910	87840
27	91540	95770	83130	28330	55320	78370	81520	86550	87840	85910	85910	87060
28	89540	96320	81640	29260	52300	81890	82140	89810	86290	86680	85910	87710
29	86930	96460	81280	38630	---	83880	83750	90740	84010	86290	85780	89280
30	83500	95350	81890	55880	---	84260	88620	91540	85520	85400	85520	89810
31	82760	---	82760	47940	---	82510	---	90340	---	85520	85780	---
MAX	92350	96740	94660	94940	90470	94660	89410	95770	92890	91670	87840	91000
MIN	76480	86160	75660	26710	39000	37310	75660	82630	81030	84130	84380	85400
(+)	82.11	83.17	82.11	78.74	79.24	82.10	82.57	82.70	82.33	82.33	82.35	82.66
(@)	+1120	+12590	-12590	-34820	+4360	+30210	+6110	+1720	-4820	0	+260	+4030

CAL YR 1998 MAX 96880 MIN 68800 (@) -2560
WTR YR 1999 MAX 96740 MIN 26710 (@) +8170

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

08040000 B.A. STEINHAGEN LAKE AT TOWN BLUFF, TX--Continued



08040600 NECHES RIVER NEAR TOWN BLUFF, TX

LOCATION.--Lat 30°47'27", long 94°09'03", Jasper-Tyler County line, Hydrologic Unit 12020003, on left bank 1.8 mi downstream from Town Bluff Dam, 2.0 mi northeast of Town Bluff, 1.0 mi upstream from Walnut Run, 6.5 mi downstream from Wolf Creek and at mile 114.9.

DRAINAGE AREA.--7,574 mi^2.

PERIOD OF RECORD.--Mar 1951 to current year. Prior to Oct 27, 1989, published as "Neches River at Town Bluff".

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Dec 4, 1954 to Oct 27, 1989, water-stage recorder at site 1.5 mi upstream at same datum. Prior to May 21, 1953, water-stage recorder, and May 21, 1953, to Dec 3, 1954, nonrecording gage at former site at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1951, at least 10% of contributing drainage area has been regulated by B. A. Steinhagen Lake (station 08040000, normal storage 124,700 acre-ft) 1.8 mi upstream and by Sam Rayburn Reservoir (station 08039300, normal storage 2,852,600 acre-ft) 37.9 mi upstream. There are some diversions upstream from station. Prior to Oct 1989, published as Neches River at Town Bluff (station 08040500).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1884 reached a stage about 86.8 ft (discharge, about 120,000 ft^3/s) and is the highest since that date, from information by the U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

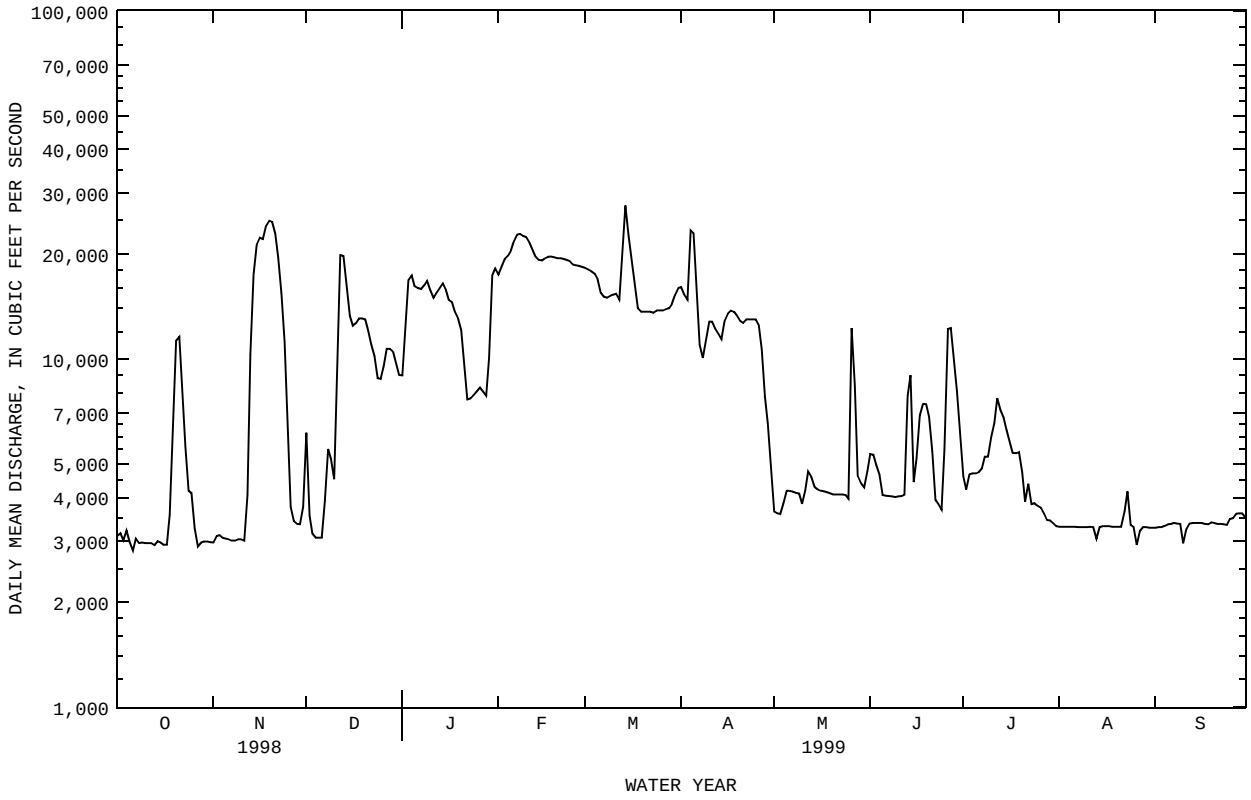
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3110	2970	6150	8970	17500	18300	16100	3650	5330	4610	3300	3280
2	3160	3100	3560	12300	18400	18100	15300	3610	5310	4230	3300	3290
3	3020	3120	3150	16900	19400	17900	14800	3590	4960	4670	3300	3290
4	3220	3070	3070	17400	19800	17600	23400	3860	4660	4690	3300	3320
5	2980	3050	3070	16200	20500	17000	23000	4190	4070	4700	3300	3350
6	2820	3040	3070	16000	21900	15500	16500	4180	4050	4740	3300	3360
7	3050	3010	3930	15900	22800	15100	11000	4160	4040	4860	3290	3380
8	2960	3010	5520	16300	22900	15000	10100	4130	4030	5240	3290	3370
9	2970	3040	5160	16800	22600	15200	11400	4110	4020	5240	3290	3360
10	2960	3040	4520	15800	22400	15300	12800	3840	4030	5970	3290	2960
11	2960	3010	9780	15000	21600	15400	12800	4200	4040	6560	3300	3260
12	2960	4070	19900	15500	20600	14800	12200	4750	4080	7720	3290	3370
13	2920	10300	19800	16000	19700	20200	11800	4590	7860	7140	3050	3380
14	3000	17500	16300	16500	19300	27600	11400	4300	9010	6790	3290	3380
15	2970	21400	13300	15800	19200	22600	12900	4230	4440	6270	3310	3380
16	2930	22300	12500	14800	19500	19700	13500	4190	5210	5780	3310	3380
17	2930	22100	12700	14600	19700	16600	13800	4170	6900	5380	3310	3360
18	3570	24200	13100	13700	19700	14000	13700	4150	7430	5370	3300	3350
19	6590	25000	13100	13100	19600	13700	13300	4120	7410	5420	3300	3400
20	11300	24800	13000	12100	19500	13700	12900	4080	6830	4740	3300	3380
21	11600	22900	12100	9480	19500	13700	12700	4080	5440	3900	3300	3360
22	8560	19600	11000	7660	19400	13700	13000	4080	3930	4390	3660	3360
23	5600	15500	10200	7710	19300	13600	13000	4080	3830	3830	4170	3350
24	4190	11200	8810	7890	19100	13800	13000	4070	3690	3860	3340	3340
25	4130	6540	8770	8070	18700	13800	13000	3970	5500	3790	3300	3470
26	3270	3770	9590	8290	18600	13800	12500	12300	12200	3750	2930	3490
27	2900	3430	10700	8050	18500	13900	10700	8400	12300	3600	3220	3600
28	2970	3360	10700	7840	18400	14000	7830	4610	9870	3450	3290	3610
29	2990	3350	10500	10100	---	14400	6530	4400	8110	3440	3290	3610
30	2990	3770	9690	17400	---	15300	4830	4280	5970	3380	3280	3510
31	2980	---	9000	18200	---	16000	---	4760	---	3310	3280	---
TOTAL	124560	298550	295740	410360	558100	499300	389790	141130	178550	150820	102780	101300
MEAN	4018	9952	9540	13240	19930	16110	12990	4553	5952	4865	3315	3377
MAX	11600	25000	19900	18200	22900	27600	23400	12300	12300	7720	4170	3610
MIN	2820	2970	3070	7660	17500	13600	4830	3590	3690	3310	2930	2960
AC-FT	247100	592200	586600	813900	1107000	990400	773100	279900	354200	299200	203900	200900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999, BY WATER YEAR (WY)

MEAN	2284	2790	4454	6448	7712	8668	7989	9037	5795	3816	2508	2252
MAX	13040	18490	18170	25690	20800	26430	20220	48140	17000	22870	8252	6652
(WY)	1995	1958	1961	1961	1974	1992	1969	1953	1979	1989	1979	1973
MIN	88.1	32.0	18.6	120	252	1178	1231	1003	856	756	288	124
(WY)	1955	1957	1957	1957	1981	1971	1981	1971	1956	1964	1951	1956

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1951 - 1999	
ANNUAL TOTAL	3075790		3250980			
ANNUAL MEAN	8427		8907		5339	
HIGHEST ANNUAL MEAN					12010	1995
LOWEST ANNUAL MEAN					961	1971
HIGHEST DAILY MEAN	25000	Jan 8	27600	Mar 14	90100	May 21 1953
LOWEST DAILY MEAN	1700	Sep 22	2820	Oct 6	.00	Oct 6 1956
ANNUAL SEVEN-DAY MINIMUM	2020	Sep 19	2950	Oct 11	.00	Nov 17 1956
INSTANTANEOUS PEAK FLOW			29600	Mar 14	90900	May 21 1953
INSTANTANEOUS PEAK STAGE			73.45	Mar 14	82.85	May 21 1953
ANNUAL RUNOFF (AC-FT)	6101000		6448000		3868000	
10 PERCENT EXCEEDS	18800		19200		15000	
50 PERCENT EXCEEDS	3590		5420		2980	
90 PERCENT EXCEEDS	3010		3120		515	

08040600 NECHES RIVER NEAR TOWN BLUFF, TX--Continued



08041000 NECHES RIVER AT EVADALE, TX

LOCATION.--Lat 30°21'20", long 94°05'35", Jasper-Hardin County line, Hydrologic Unit 12020003, near right bank on downstream side of bridge on U.S. Highway 96 at Evadale, 0.8 mi upstream from Mill Creek, 16 mi upstream from Village Creek, and at mile 55.6.

DRAINAGE AREA.--7,951 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1904 to Dec 1906, Apr 1921 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 718: 1929. WSP 1342: 1905-07, 1924. WSP 1732: Drainage area at former site.

GAGE.--Water-stage recorder. Datum of gage is 8.25 ft above sea level. Jul 1, 1904, to Dec 31, 1906, nonrecording gage on Gulf, Colorado, and Santa Fe Railway Co. bridge at site 1.2 mi downstream at datum 5.50 ft lower; Apr 1, 1921, to Dec 7, 1948, nonrecording gages at site 1.2 mi downstream at present datum; Dec 8, 1948, to Nov 8, 1963, water-stage recorder at site 1.2 mi downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1951, at least 10% of contributing drainage area has been regulated by B. A. Steinhagen Lake (station 08040000, normal storage 124,700 acre-ft) 58.1 mi upstream. Additional regulation by Sam Rayburn Reservoir (station 08039300, normal storage 2,852,600 acre-ft), 95.7 mi upstream. There are some diversions upstream for municipal use.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--31 years (water years 1905-06, 1922-50) 7,089 ft^3/s (5,136,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1905-06, 1922-50).--Maximum discharge, 92,100 ft^3/s May 11, 1944 (gage height, 23.58 ft, from floodmark), at site then in use; minimum daily, 148 ft^3/s Sep 10, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 26.2 ft, at former site (discharge, about 125,000 ft^3/s), and flood in Aug 1915 reached a stage of 24.5 ft, at former site (discharge, about 102,000 ft^3/s). These are the highest floods since at least 1884. Stages furnished by Gulf, Colorado, and Santa Fe Railway Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3110	3060	4190	11100	16200	20200	16500	7260	5530	8750	3480	3330
2	3070	3160	5250	11300	19100	20000	17000	5380	5620	6490	3430	3320
3	3050	3300	5170	11600	19700	19800	17300	4520	5660	5140	3430	3360
4	3010	3350	4110	13700	20000	19600	18700	4240	5480	4940	3440	3310
5	3100	3260	3650	16900	20500	19400	19700	4250	5180	5060	3450	3320
6	3050	3180	3510	19000	21100	19200	22700	4510	4650	5180	3430	3350
7	2800	3130	3470	19300	21600	18600	24700	4610	4380	5270	3420	3350
8	2900	3110	3890	18700	22500	17700	21300	4630	4290	5250	3400	3330
9	2920	3100	5090	18200	23600	17000	16000	4600	4250	5440	3400	3330
10	2870	3150	5660	18200	24200	16600	13100	4690	4260	5590	3390	3320
11	2850	3160	6170	18500	24300	16500	12800	4710	4240	5820	3380	3040
12	2850	3180	9880	18400	24100	16800	13500	4810	4350	6390	3380	3070
13	2840	4160	15300	17700	23600	17900	13800	5380	4620	7180	3380	3230
14	2810	7760	21700	17500	22900	18200	13600	5610	5720	7670	3250	3280
15	2840	12100	23900	17800	21900	20100	13200	5250	7920	7460	3270	3280
16	2860	17400	21900	18500	21300	24800	13200	4920	7310	7070	3350	3280
17	2820	22000	18500	18300	21600	26000	14000	4740	6000	6630	3360	3300
18	3630	24300	15900	17600	21100	23700	14700	4640	6300	6090	3360	3350
19	4740	25000	14900	16900	21000	20300	14900	4590	7000	5760	3370	3310
20	6470	25800	14700	16100	21000	17300	14900	4520	7290	5680	3350	3330
21	8590	27000	14600	15300	21100	15700	14600	4470	7230	5430	3350	3330
22	10700	27900	14400	14300	21000	15200	14300	4430	6630	4740	3350	3320
23	11600	27500	13900	12100	21000	15000	14100	4390	5300	4550	3510	3310
24	9930	25300	13000	10200	20900	14900	14100	4370	4450	4380	4030	3310
25	6650	21500	11700	9380	20800	14900	14100	4350	4460	4180	3710	3290
26	5140	16200	10500	9140	20700	14900	14200	4500	6240	4080	3430	3350
27	4050	9710	10100	9180	20600	14900	14400	6630	9160	4010	3190	3430
28	3300	5850	10700	9270	20500	15000	13700	8970	11900	3910	3120	3520
29	3100	4520	11500	9500	---	15300	11800	8420	12600	3720	3290	3680
30	3080	4150	11800	10100	---	15800	9310	6900	11100	3630	3320	3630
31	3060	---	11700	12500	---	16000	---	6000	---	3580	3320	---
TOTAL	133790	346290	340740	456270	597900	557300	460210	161290	189120	169070	105340	99960
MEAN	4316	11540	10990	14720	21350	17980	15340	5203	6304	5454	3398	3332
MAX	11600	27900	23900	19300	24300	26000	24700	8970	12600	8750	4030	3680
MIN	2800	3060	3470	9140	16200	14900	9310	4240	4240	3580	3120	3040
AC-FT	265400	686900	675900	905000	1186000	1105000	912800	319900	375100	335400	208900	198300

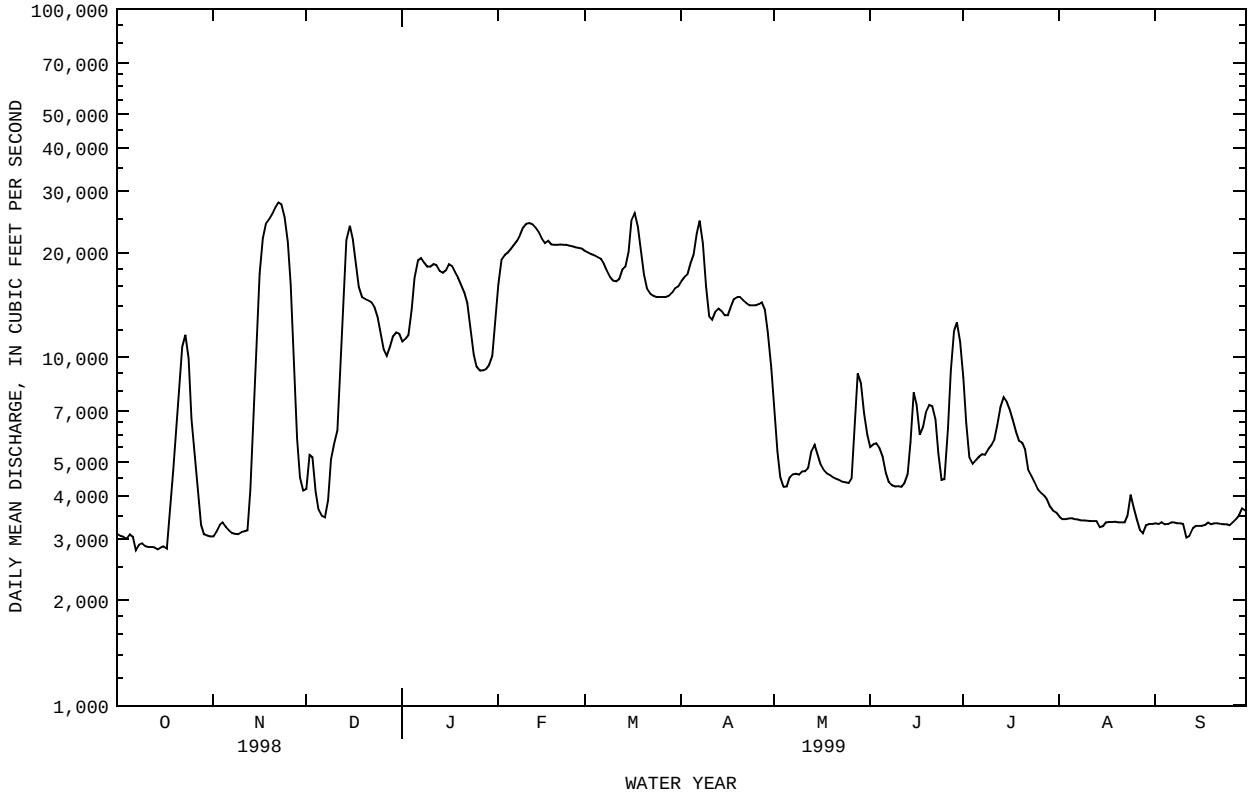
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1999z, BY WATER YEAR (WY)

MEAN	2490	2966	4892	7190	8446	9475	8881	9627	6525	4371	2756	2416
MAX	15780	16580	18680	31060	22720	28790	21440	46790	19920	25680	9644	7090
(WY)	1995	1958	1961	1961	1995	1992	1995	1953	1991	1989	1979	1979
MIN	169	110	143	159	394	1352	1432	1220	1112	863	358	194
(WY)	1955	1957	1957	1957	1957	1971	1981	1981	1963	1955	1951	1956

08041000 NECHES RIVER AT EVADALE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1951 - 1999z	
ANNUAL TOTAL	3393530		3617280			
ANNUAL MEAN	9297		9910		5824	
HIGHEST ANNUAL MEAN					13480	1995
LOWEST ANNUAL MEAN					1128	1971
HIGHEST DAILY MEAN	27900	Nov 22	27900	Nov 22	80000	May 24 1953
LOWEST DAILY MEAN	1760	Sep 23	2800	Oct 7	63	Nov 26 1956
ANNUAL SEVEN-DAY MINIMUM	2080	Sep 21	2840	Oct 11	66	Nov 23 1956
INSTANTANEOUS PEAK FLOW			28300	Nov 22	47900	Jul 6 1989
INSTANTANEOUS PEAK STAGE			17.89	Nov 22	20.79	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	6731000		7175000		4219000	
10 PERCENT EXCEEDS	20600		20900		16400	
50 PERCENT EXCEEDS	3970		6390		3190	
90 PERCENT EXCEEDS	2980		3270		675	

z Period of regulated streamflow.



08041000 NECHES RIVER AT EVADALE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Sep 1939 to current year.
BIOCHEMICAL DATA: Sep 1939 to current year.
PESTICIDE DATA: Feb 1968 to Jul 1981.
SEDIMENT DATA: Oct 1960 to Aug 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1947 to Sep 1997.
WATER TEMPERATURE: Oct 1947 to Sep 1997.

INSTRUMENTATION.--Graphic recorder with thermograph Oct 1954 to Sep 1963.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed for previous water years using the daily (or continuous) records of specific conductance and regression relationship between each chemical constituent and specific conductance. 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 daily, 670 microsiemens, Mar 21, 25, 31, 1994; minimum daily, 23 microsiemens, Sep 19, 1963.
WATER TEMPERATURE (1947-85, 1987 to current year): Maximum daily, 36.0°C, many days in Aug 1997; minimum daily, 3.0°C, Jan 30, 31, 1948, Jan 31, 1949, and Jan 24, 1963.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB										
10...	1325	24300	68	6.9	18.5	6.5	69	15	5	4.0

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB										
10...	1.3	5.4	.6	2.5	10	8.7	7.0	<.10	7.4	42

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08041500 VILLAGE CREEK NEAR KOUNTZE, TX

LOCATION.--Lat 30°23'52", long 94°15'48", Hardin County, Hydrologic Unit 12020006, on downstream side of bridge on Farm Road 418, 1.6 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.1 mi upstream from Cypress Creek, 3.4 mi northeast of Kountze and 4.3 mi downstream from Beech Creek.

DRAINAGE AREA.--860 mi^2.

PERIOD OF RECORD.--May 1924 to Nov 1929 (discharge measurements only), Apr 1939 to current year.
Water-quality records.--Chemical data: Nov 1967 to Sep 1985. Water temperature: Nov 1967 to Sep 1970.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 25.12 ft above sea level. Prior to Apr 30, 1939, nonrecording gage at site 1.6 mi downstream at different datum. Apr 30, 1939, to Sep 30, 1966, water-stage recorder at site 2,000 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. There are small diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1884, about 34 ft in Aug 1915 at site 2,000 ft downstream at present datum; stage was determined on basis of information by engineers of Gulf, Colorado, and Santa Fe Railway Co. for site 1.6 mi downstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 16	2000	17,900	20.26	Mar 16	0700	13,100	18.83
Dec 14	1600	13,400	18.93	Apr 6	1100	27,900	22.41
Jan 6	0900	9,000	17.32				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192	391	718	961	2450	660	1090	682	924	1950	208	146
2	179	647	681	1260	3830	695	1090	556	739	1040	198	131
3	174	949	647	e1700	3480	632	909	483	603	564	198	153
4	177	994	616	e2700	2530	547	1280	451	463	452	188	164
5	188	920	596	5020	1690	487	9000	440	389	404	174	144
6	204	713	607	8590	1140	453	26000	437	346	388	171	155
7	373	518	859	6550	947	433	15600	443	316	423	178	146
8	654	442	1040	4120	865	421	7260	433	300	456	169	135
9	863	462	881	2740	819	427	4750	404	299	435	159	121
10	683	513	932	2510	775	472	3210	403	e367	440	154	112
11	427	572	2060	2710	734	592	2100	482	509	534	151	104
12	312	691	8140	2450	692	613	1420	788	473	660	146	101
13	260	1680	11700	1890	651	811	1090	1450	e966	658	143	102
14	232	3830	13000	1650	616	1470	930	1760	2370	898	137	98
15	212	7950	11000	1620	587	5430	1330	1720	2440	1140	133	93
16	199	16300	6830	1500	559	12100	2230	1260	2140	957	129	90
17	189	15800	4530	1350	557	7450	2970	797	2100	630	129	87
18	611	10500	3010	1250	573	4610	2630	597	1710	484	129	83
19	2850	6670	2010	e1060	582	2800	1760	524	e1160	433	127	79
20	3580	4680	1470	834	583	1720	1100	494	e877	440	122	79
21	3500	3190	1330	767	566	1150	845	490	e682	531	120	79
22	3410	2160	1300	766	539	944	754	453	e518	632	121	77
23	3950	1610	1230	870	519	848	696	409	490	755	119	76
24	3920	1410	1130	914	504	778	647	381	645	621	117	75
25	2710	1280	1060	924	483	714	604	360	836	459	115	75
26	1500	1130	1060	877	468	669	576	343	2200	364	117	76
27	750	994	1060	764	464	640	833	328	2640	309	119	78
28	560	891	1100	688	507	618	885	584	2270	278	121	82
29	484	818	1200	740	---	590	935	1100	2200	252	121	101
30	435	761	1190	1140	---	677	875	1300	2430	234	133	127
31	402	---	1080	1760	---	900	---	1200	---	219	152	---
TOTAL	34180	89466	84067	62675	28710	51351	95399	21552	34402	18040	4498	3169
MEAN	1103	2982	2712	2022	1025	1656	3180	695	1147	582	145	106
MAX	3950	16300	13000	8590	3830	12100	26000	1760	2640	1950	208	164
MIN	174	391	596	688	464	421	576	328	299	219	115	75
AC-FT	67800	177500	166700	124300	56950	101900	189200	42750	68240	35780	8920	6290
CFSM	1.28	3.47	3.15	2.35	1.19	1.93	3.70	.81	1.33	.68	.17	.12
IN.	1.48	3.87	3.64	2.71	1.24	2.22	4.13	.93	1.49	.78	.19	.14

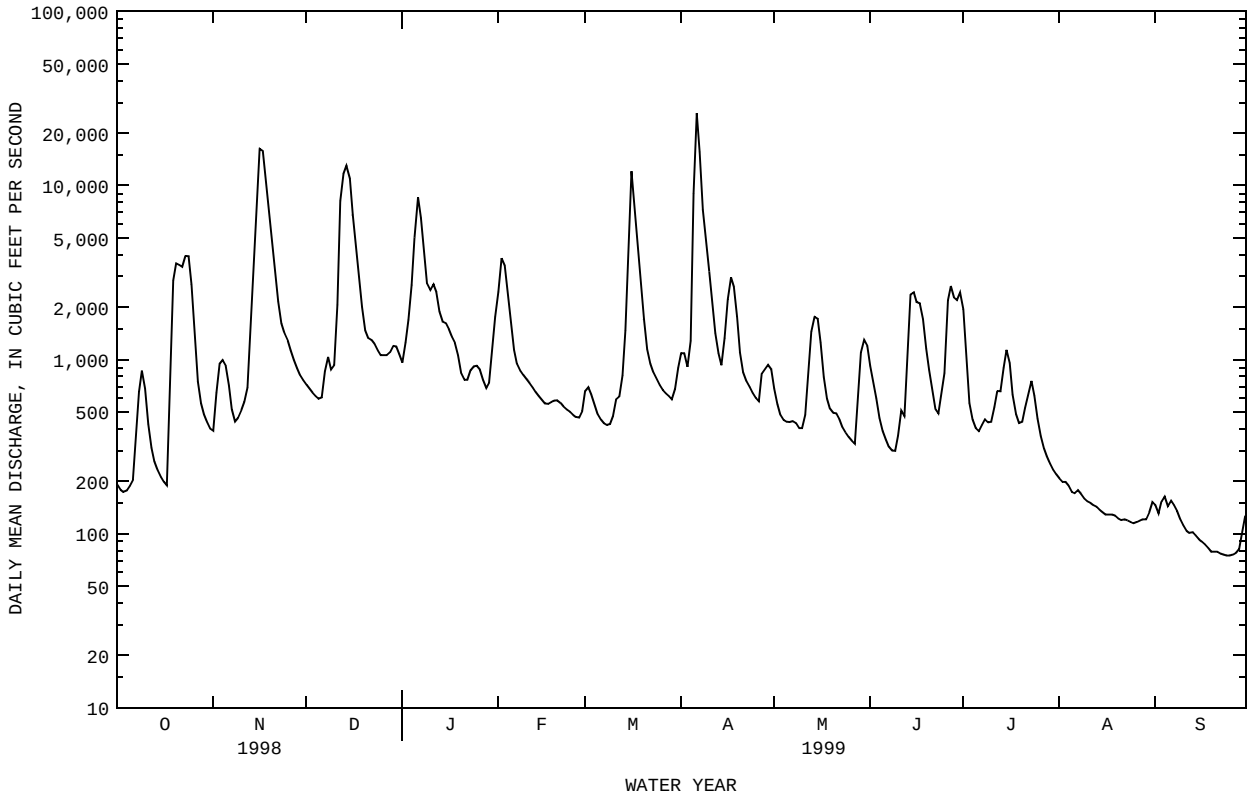
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1924 - 1999, BY WATER YEAR (WY)

MEAN	402	739	1106	1530	1457	1235	1194	1151	867	484	254	321
MAX	4743	6430	5835	5693	4420	3311	6733	6932	6668	4963	1580	2111
(WY)	1995	1941	1941	1974	1966	1992	1979	1953	1950	1989	1975	1961
MIN	22.8	34.9	115	113	169	206	104	89.5	69.5	31.1	28.8	26.5
(WY)	1968	1968	1955	1957	1968	1940	1971	1963	1956	1971	1956	1956

08041500 VILLAGE CREEK NEAR KOUNTZE, TX--Continued

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1924 - 1999	
ANNUAL TOTAL	488975		527509			
ANNUAL MEAN	1340		1445		894	
HIGHEST ANNUAL MEAN					2248	1950
LOWEST ANNUAL MEAN					190	1971
HIGHEST DAILY MEAN	16300	Nov 16	26000	Apr 6	62200	Nov 26 1940
LOWEST DAILY MEAN	52	Aug 4	75	Sep 24	16	Oct 1 1956
ANNUAL SEVEN-DAY MINIMUM	55	Jul 31	77	Sep 21	18	Sep 28 1956
INSTANTANEOUS PEAK FLOW			27900	Apr 6	67200	Nov 26 1940
INSTANTANEOUS PEAK STAGE			22.41	Apr 6	27.60	Nov 26 1940
ANNUAL RUNOFF (AC-FT)	969900		1046000		647800	
ANNUAL RUNOFF (CFSM)	1.56		1.68		1.04	
ANNUAL RUNOFF (INCHES)	21.15		22.82		14.13	
10 PERCENT EXCEEDS	3410		2990		2160	
50 PERCENT EXCEEDS	440		660		336	
90 PERCENT EXCEEDS	83		130		82	

e Estimated



08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX

LOCATION.--Lat 30°06'21", long 94°20'04", Jefferson-Hardin County line, Hydrologic Unit 12020007, on right bank on downstream side of bridge on county road and 5.1 mi southeast of Sour Lake.

DRAINAGE AREA.--336 mi^2.

PERIOD OF RECORD.--Oct 1967 to current year.
Water-quality records.--Chemical data: Feb 1968 to Jun 1989. Specific conductance: Feb 1968 to Sep 1989. Water temperature: Feb 1968 to Sep 1989.

GAGE.--Water-stage recorder. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. Low flow for period Mar through Sep is affected by small diversions and return flow from irrigated fields.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 17	1930	4,720	28.13	Dec 15	1100	4,300	27.88

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	157	108	335	179	84	24	12	194	812	30	5.2
2	35	104	93	868	196	70	32	7.3	132	337	33	7.3
3	26	92	84	1050	180	49	35	12	75	133	34	6.6
4	92	132	79	1020	149	29	73	12	40	80	58	6.2
5	156	174	70	972	e118	23	334	15	26	55	48	6.0
6	158	174	59	879	e101	26	489	34	19	47	41	5.5
7	315	143	50	828	e88	20	520	33	13	52	35	5.3
8	306	126	44	804	e70	15	502	30	14	68	31	6.0
9	284	127	45	751	52	12	503	19	15	114	23	6.4
10	216	96	95	629	44	9.7	479	47	24	140	18	6.8
11	143	93	595	466	37	8.1	352	67	42	146	16	7.7
12	103	95	1760	348	32	7.2	178	72	40	123	13	8.3
13	76	164	3130	278	26	152	90	62	104	223	13	5.6
14	52	701	4060	364	22	316	71	39	217	392	17	3.3
15	35	1880	4260	512	18	391	42	29	187	344	14	2.9
16	26	3810	4020	569	16	437	30	27	182	270	16	3.3
17	23	4610	3500	558	27	462	30	68	332	304	10	5.2
18	235	4540	2960	523	64	497	74	77	330	340	10	5.1
19	1290	4020	2480	478	43	496	92	64	225	411	9.3	4.5
20	1480	3400	2080	395	30	381	85	50	121	486	13	4.8
21	1440	2810	1770	279	41	195	58	46	75	459	13	5.1
22	2020	2320	1370	193	47	99	57	33	59	312	14	5.2
23	3080	1960	964	160	39	63	31	27	70	174	13	4.8
24	2980	1640	580	137	34	44	25	28	117	106	12	5.1
25	2540	1260	314	110	34	31	21	30	159	79	11	4.3
26	2170	878	206	87	30	21	25	21	697	67	8.8	3.8
27	1890	506	161	67	30	15	36	31	1470	47	7.7	3.4
28	1590	266	177	52	71	11	30	36	1900	36	8.0	3.3
29	1210	173	272	48	---	9.4	40	33	1840	40	8.6	7.6
30	758	131	358	153	---	14	37	32	1410	42	6.7	12
31	344	---	372	157	---	21	---	103	---	31	6.0	---
TOTAL	25122	36582	36116	14070	1818	4008.4	4395	1196.3	10129	6270	591.1	166.6
MEAN	810	1219	1165	454	64.9	129	147	38.6	338	202	19.1	5.55
MAX	3080	4610	4260	1050	196	497	520	103	1900	812	58	12
MIN	23	92	44	48	16	7.2	21	7.3	13	31	6.0	2.9
AC-FT	49830	72560	71640	27910	3610	7950	8720	2370	20090	12440	1170	330

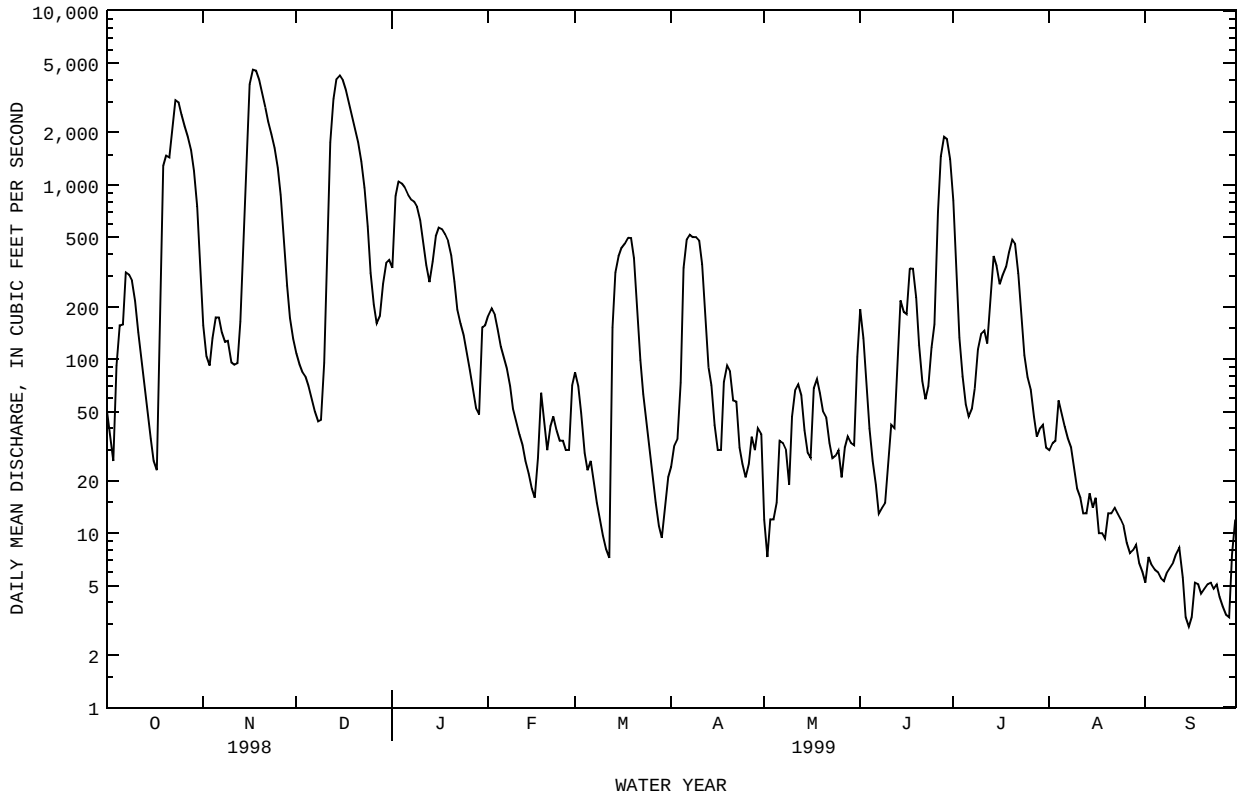
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1999, BY WATER YEAR (WY)

MEAN	485	384	579	735	621	584	581	505	614	377	174	246
MAX	8080	2095	2159	2245	1850	1838	4972	3589	2795	3291	1660	1715
(WY)	1995	1987	1987	1998	1992	1993	1979	1989	1981	1989	1983	1998
MIN	2.90	2.48	12.4	4.75	13.5	14.7	21.4	22.8	25.1	33.4	12.3	5.55
(WY)	1970	1989	1990	1971	1989	1996	1987	1998	1998	1980	1977	1999

SUMMARY STATISTICS	FOR 1998 CALENDAR YEAR		FOR 1999 WATER YEAR		WATER YEARS 1968 - 1999	
ANNUAL TOTAL	258166.0		140464.4			
ANNUAL MEAN	707		385		490	
HIGHEST ANNUAL MEAN					1167	1979
LOWEST ANNUAL MEAN					133	1970
HIGHEST DAILY MEAN	5750	Sep 17	4610	Nov 17	47400	Oct 20 1994
LOWEST DAILY MEAN	6.0	Sep 5	2.9	Sep 15	.00	Oct 21 1979
ANNUAL SEVEN-DAY MINIMUM	6.5	Sep 3	4.2	Sep 14	.62	Sep 14 1984
INSTANTANEOUS PEAK FLOW			4720	Nov 17	48800	Oct 20 1994
INSTANTANEOUS PEAK STAGE			28.13	Nov 17	37.50	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	512100		278600		354900	
10 PERCENT EXCEEDS	2500		1230		1370	
50 PERCENT EXCEEDS	84		71		84	
90 PERCENT EXCEEDS	19		8.5		10	

e Estimated

08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX--Continued



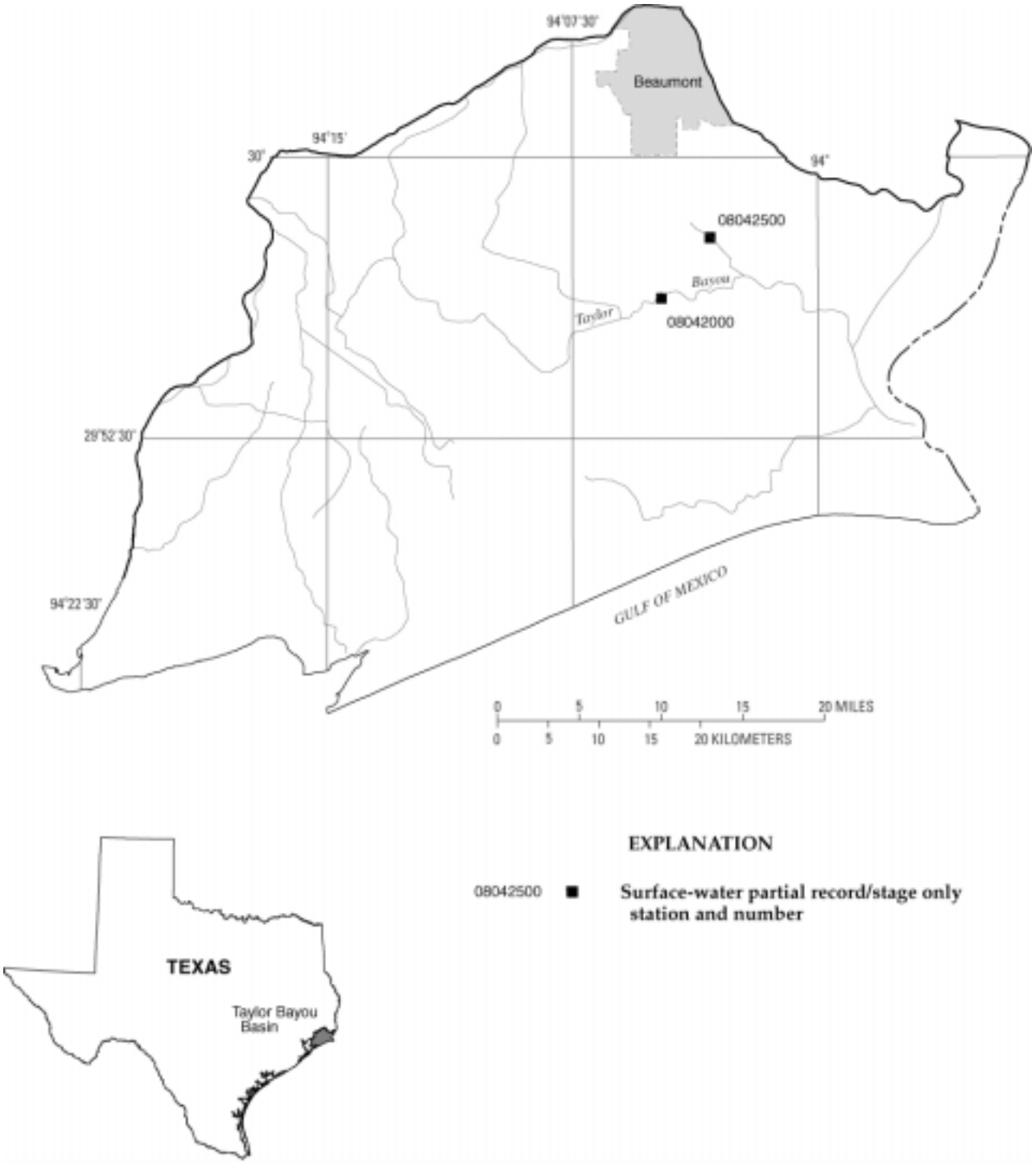


Figure 11.--Map showing location of gaging stations in the Taylor Bayou Basin

08042000 TAYLOR BAYOU NEAR LABELLE, TX

LOCATION.--Lat 29°52'30", long 94°09'34", Jefferson County, Hydrologic Unit 12040201, near center of stream on downstream side of bridge on county road, 0.7 mi south of LaBelle, 6.0 mi upstream from Hillebrandt Bayou, 7.2 mi upstream from State Highway 73 and 11.2 mi upstream from saltwater gates and barge locks. Distances are measured along rectified channel.

DRAINAGE AREA.--262 mi^2.

PERIOD OF RECORD.--Apr 1954 to Sep 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for period Sep 10-22, 1961). Oct 1984 to current year (gage heights only).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below sea level, originally determined by several comparisons of water surface with auxiliary water-stage recorder 7.2 mi downstream during times of no flow and ideal weather conditions. Prior to Oct 1984, auxiliary water-stage recorder 7.2 mi downstream.

REMARKS.--Records good. Prior to Oct 1984, records were computed using fall as a factor. Low flow is regulated by drainage from rice fields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for irrigation of rice fields.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,590 ft^3/s Sep 22, 1963, and Apr 23, 1979; maximum gage height, 11.78 ft Sep 20, 1963 (backwater from Hillebrandt Bayou); minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.31 ft Jul 17, 1954. Maximum stage since at least 1941, that of Sep 20, 1963, and Apr 23, 1979. Flood of Sep 13, 1961 (Hurricane Carla), reached a stage of 11.51 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1941 reached a stage of 11.3 ft, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 7.53 ft, Oct 20; minimum gage height, 3.99 ft, Mar 15.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.03	6.54	5.69	5.57	5.19	5.21	6.18	6.02	5.86	6.07	5.71	5.81
2	6.30	6.66	5.34	6.18	5.33	5.34	6.28	6.02	5.93	6.07	---	5.85
3	6.44	6.26	5.27	5.94	5.52	5.36	6.30	6.02	5.95	6.08	---	5.87
4	6.86	6.06	5.37	5.28	5.67	5.15	6.42	6.08	5.95	6.10	---	5.90
5	7.44	5.87	5.39	5.27	5.81	5.33	6.43	6.11	5.89	6.10	---	5.91
6	7.36	5.54	5.34	5.87	5.93	5.48	6.43	6.11	5.86	6.04	---	5.85
7	7.36	5.57	5.45	6.27	6.00	5.49	6.39	6.05	5.79	6.08	---	5.76
8	6.84	5.73	5.51	6.38	6.02	5.61	6.31	6.02	5.98	6.14	---	5.75
9	6.54	5.63	5.01	6.33	5.97	5.69	6.28	6.07	6.08	6.14	---	5.67
10	6.39	5.85	5.62	5.63	5.94	5.70	6.25	6.41	6.31	6.28	---	5.61
11	6.29	5.63	6.08	5.77	6.00	5.81	6.25	6.59	6.13	6.20	5.36	5.69
12	6.24	5.79	6.39	5.85	5.97	5.91	6.16	6.67	6.07	6.20	5.39	5.76
13	5.91	6.08	6.03	5.79	4.86	6.23	6.07	6.61	6.10	6.23	5.39	5.81
14	5.90	7.04	5.53	5.76	5.00	5.60	6.17	6.35	6.08	6.17	5.37	5.82
15	6.00	7.05	5.61	5.40	5.18	4.41	6.19	6.29	5.90	6.08	5.36	5.85
16	6.24	6.66	5.51	5.45	5.36	5.67	5.68	6.20	6.16	6.25	5.45	5.87
17	6.36	6.35	5.36	5.63	5.54	5.70	5.60	6.19	6.08	6.25	5.52	5.85
18	7.14	6.02	5.45	5.73	5.66	5.79	5.48	6.17	6.07	6.26	5.55	5.77
19	7.51	6.00	5.61	5.43	5.72	5.88	5.48	5.99	6.08	6.28	5.57	5.77
20	7.53	5.96	5.72	5.43	5.67	5.90	5.48	5.84	6.16	6.52	5.55	5.81
21	7.41	5.81	5.61	5.58	5.67	5.79	5.51	5.78	6.22	6.37	5.61	5.82
22	6.80	5.88	5.69	5.81	5.43	5.69	5.62	5.78	6.38	6.14	5.64	5.81
23	6.45	5.93	5.16	5.82	5.51	5.73	5.71	5.78	6.37	5.86	5.69	5.82
24	6.53	5.79	5.28	5.06	5.52	5.73	5.78	5.74	6.32	5.74	5.67	5.84
25	6.59	5.64	5.12	5.18	5.33	5.75	5.86	5.59	6.83	5.84	5.67	5.84
26	6.63	5.73	5.28	5.21	5.37	5.78	6.02	5.60	6.98	5.89	5.66	5.87
27	6.56	5.57	5.45	5.25	5.54	5.83	6.07	5.48	6.86	5.84	5.61	5.90
28	6.47	5.49	5.66	5.36	5.55	5.92	6.04	5.47	6.62	5.77	5.52	5.97
29	6.38	5.64	5.66	5.60	---	6.12	6.01	5.62	6.26	5.72	5.55	6.15
30	6.36	5.73	5.46	5.76	---	6.19	5.99	5.75	5.98	5.72	5.57	5.91
31	6.41	---	5.34	5.58	---	6.15	---	5.79	---	5.71	5.66	---
MAX	7.53	7.05	6.39	6.38	6.02	6.23	6.43	6.67	6.98	6.52	---	6.15

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08042500 HILLEBRANDT BAYOU NEAR LOVELL LAKE, TX

LOCATION.--Lat 29°55'44", long 94°06'35", Jefferson County, Hydrologic Unit 12040201, near center of stream on downstream side of bridge on county road, 1.3 mi southeast of Lovell Lake and 4.4 mi upstream (along rectified channel) from Taylor Bayou.

DRAINAGE AREA.--128 mi^2.

PERIOD OF RECORD.--Apr 1954 to Sep 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for the period Sep 11-18, 1961). Oct 1984 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below sea level, originally determined by comparisons of water surface with Taylor Bayou near LaBelle, an auxiliary gage 5.6 mi downstream, during times of no flow and calm wind conditions. Prior to Aug 28, 1963, auxiliary water-stage recorder on Taylor Bayou, 1.2 mi downstream from Hillebrandt Bayou, nonrecording gages on Taylor Bayou 2.3 and 5.2 mi downstream from Hillebrandt Bayou; Aug 28, 1963, to Sep 30, 1984, auxiliary water-stage recorder 3.0 mi downstream. Gage was destroyed on Aug 24, 1991 and re-installed on Mar 4, 1992.

REMARKS.--Records poor. Prior to Oct 1984, records were computed using fall as a factor. Low flow regulated by drainage from rice fields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for rice irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft^3/s Sep 18, 1963; maximum gage height, 12.34 ft Sep 19, 1963; minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.33 ft Jul 17, 1954. Maximum stage since at least 1941, 12.34 ft Sep 19, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 7.81 ft, Oct 6; minimum gage height, 4.44 ft, Mar 14-15.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.20	6.58	5.71	5.59	5.22	5.40	6.32	6.18	5.98	6.22	5.83	5.93
2	6.50	6.66	5.41	6.14	5.25	5.48	6.45	6.21	6.07	6.22	5.78	5.97
3	6.58	6.40	5.31	5.75	5.37	5.47	6.49	6.21	6.09	6.23	5.78	5.98
4	6.97	6.07	5.37	5.24	5.56	5.32	6.61	6.27	6.08	6.24	5.83	6.03
5	7.62	5.90	5.38	5.23	5.73	5.43	6.61	6.28	6.02	6.24	5.87	6.04
6	7.81	5.53	5.37	5.82	5.86	5.49	6.60	6.27	5.99	6.19	5.86	5.97
7	7.72	5.58	5.47	6.22	5.95	5.50	6.57	6.23	5.93	6.21	5.83	5.93
8	6.89	5.74	5.51	6.27	5.95	5.73	6.46	6.20	6.09	6.26	5.81	5.88
9	6.69	5.65	5.05	6.27	5.93	5.80	6.44	6.23	6.24	6.30	5.73	5.82
10	6.42	5.83	5.55	5.62	5.92	5.84	6.44	6.49	6.39	6.39	5.64	5.75
11	6.31	5.68	5.97	5.75	5.75	5.90	6.41	6.73	6.28	6.32	5.56	5.82
12	6.31	5.78	6.26	5.82	5.89	6.06	6.32	6.79	6.20	6.32	5.55	5.88
13	5.98	6.07	5.53	5.80	4.82	6.32	6.24	6.71	6.22	6.33	5.55	5.93
14	5.97	6.81	5.46	5.78	5.00	5.86	6.34	6.45	6.21	6.31	5.54	5.94
15	6.04	6.55	5.61	5.41	5.18	4.59	6.33	6.43	5.98	6.23	5.48	5.94
16	6.30	6.23	5.48	5.41	5.36	5.86	5.84	6.33	6.27	6.33	5.59	5.98
17	6.42	6.19	5.39	5.61	5.49	5.85	5.75	6.33	6.21	6.33	5.70	5.96
18	7.08	6.00	5.51	5.69	5.67	5.93	5.69	6.32	6.21	6.35	5.71	5.92
19	7.12	6.00	5.67	5.46	5.72	6.01	5.66	6.16	6.22	6.36	5.72	5.92
20	7.07	5.96	5.78	5.44	5.70	6.01	5.66	5.96	6.29	6.63	5.72	5.93
21	6.96	5.78	5.68	5.56	5.70	5.92	5.69	5.93	6.32	6.47	5.78	5.93
22	6.65	5.86	5.68	5.77	5.82	5.82	5.79	5.93	6.49	6.30	5.79	5.93
23	6.44	5.94	5.15	5.78	5.61	5.86	5.84	5.93	6.49	5.97	5.82	5.95
24	6.56	5.86	5.27	5.01	5.61	5.86	5.93	5.89	6.44	5.85	5.83	5.97
25	6.60	5.70	5.24	5.13	5.47	5.87	5.99	5.76	6.90	5.96	5.84	5.96
26	6.63	5.70	5.28	5.14	5.50	5.93	6.20	5.73	6.91	6.04	5.80	6.00
27	6.63	5.67	5.44	5.14	5.58	5.96	6.22	5.66	6.84	5.97	5.76	6.02
28	6.59	5.60	5.64	5.30	5.58	6.07	6.22	5.60	6.72	5.93	5.71	6.12
29	6.51	5.64	5.68	5.50	---	6.25	6.21	5.74	6.41	5.90	5.72	6.27
30	6.47	5.71	5.54	5.68	---	6.32	6.14	5.86	6.14	5.84	5.72	6.01
31	6.50	---	5.29	5.57	---	6.31	---	5.93	---	5.83	5.79	---
MAX	7.81	6.81	6.26	6.27	5.95	6.32	6.61	6.79	6.91	6.63	5.87	6.27

The U.S. Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations because 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. 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. 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 of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled "Gaging-station records."

Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed "Period of record" identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record station during water year 1999

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Neches River Basin				
08041550	Village Creek at State Highway. 327 near Silsbee, Tex.	Lat 30°20'48", long 94°16'44", Hardin County, at bridge on State Highway 327, about 1.6 mi upstream from Mill Creek, and 2.7 mi west of Silsbee.	1,043	1979-99	09-21-99	80.1
08041720	Pine Island Bayou at State Highway 105 near Sour Lake, Tex.	Lat 30°08'08", long 94°16'44", Hardin-Jefferson County line, at bridge on State Highway 105, about 2.0 mi upstream from mouth of Little Pine Island Bayou, and 7.90 mi east of Sour Lake.	338	1979-99	09-27-99	3.77

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