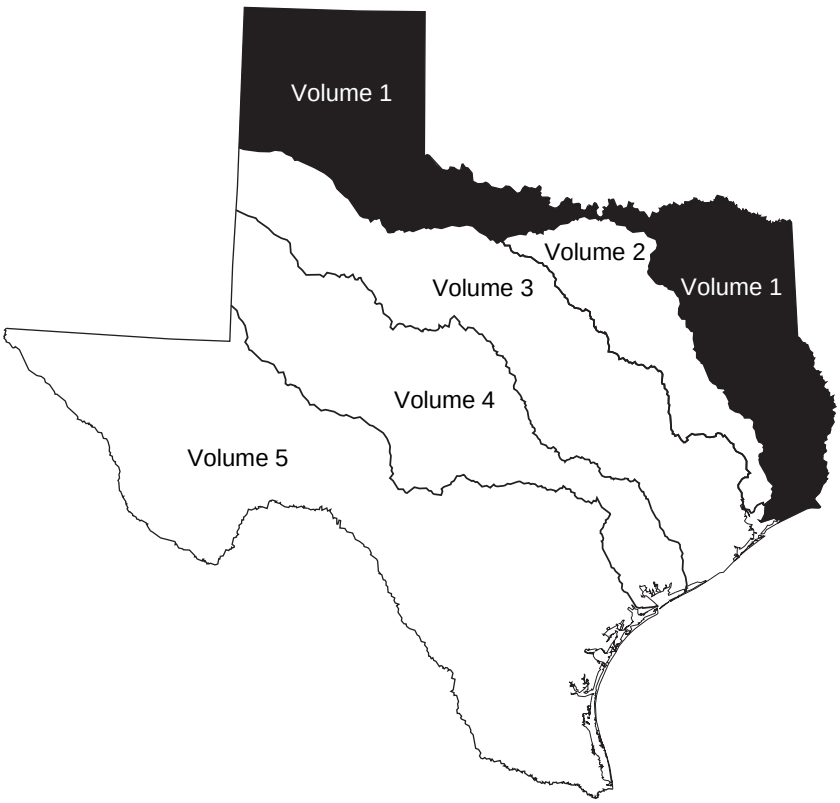
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data
Texas
Water Year 2001

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

By S.C. Gandara

Water-Data Report TX-01-1



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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 2001 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 68 gaging stations; stage only at 3 gaging stations; stage and contents at 30 lakes and reservoirs; water quality at 40 gaging stations; and data for 12 partial-record stations comprised of 6 flood-hydrograph and 6 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.]

	Station number	Page
LOWER MISSISSIPPI RIVER BASIN		
ARKANSAS RIVER BASIN		
Arkansas River:		
Canadian River near Amarillo (d) (c) (t)	07227500	34
Lake Meredith near Sanford (e)	07227900	42
Canadian River near Canadian (d)	07228000	44
Palo Duro Creek near Spearman (d)	07233500	46
Palo Duro Reservoir near Spearman (e)	07233550	48
North Canadian River:		
Wolf Creek at Lipscomb (d)	07235000	50
RED RIVER BASIN		
Prairie Dog Town Fork Red River near Wayside (d)	07297910	54
MacKenzie Reservoir near Silverton (e)	07298100	56
Prairie Dog Town Fork Red River near Childress (d)	07299540	58
Groesbeck Creek at State Highway 6 near Quanah (d)	07299670	60
Salt Fork Red River:		
Greenbelt Lake near Clarendon (e)	07299840	62
Lelia Lake Creek below Bell Creek near Hedley (d) (c) (t)	07299890	64
Salt Fork Red River near Wellington (d) (c) (t) (b)	07300000	72
Salt Fork Red River at Mangum, OK (d)	07300500	76
North Fork Red River:		
McClellan Creek near McLean (d)	07301200	78
North Fork Red River near Shamrock (d) (c) (t) (b)	07301300	80
Sweetwater Creek near Kelton (d)	07301410	84
Red River:		
Pease River near Childress (d)	07307800	88
Pease River near Vernon (d)	07308200	90
Red River near Burkburnett (d) (c) (t)	07308500	92
North Wichita River near Paducah (d) (c) (t)	07311600	102
Middle Wichita River near Guthrie (d) (c) (t)	07311630	112
North Wichita River near Truscott (d) (c) (t)	07311700	124
South Wichita River at low-flow dam near Guthrie (d) (c) (t)	07311782	136
South Wichita River below low-flow dam near Guthrie (d) (c) (t)	07311783	148
South Wichita River near Benjamin (d) (c) (t)	07311800	154
Wichita River near Seymour (d) (c) (t)	07311900	164
Lake Kemp near Mabelle (e)	07312000	174
Wichita River near Mabelle (d) (c) (t)	07312100	176
South Side Canal near Dundee (d)	07312110	188
Wichita River at State Highway 25 near Kamay (d) (c) (t)	07312130	190
Beaver Creek:		
Lake Electra near Electra (e)	07312180	198
Beaver Creek near Electra (d) (c) (t)	07312200	200
North Fork Buffalo Creek Reservoir near Iowa Park (e)	07312380	208
Wichita River at Wichita Falls (d) (c) (t)	07312500	210
Wichita River near Charlie (d) (c) (t)	07312700	218
North Fork Little Wichita River:		
Lake Kickapoo near Archer City (e)	07314000	228
Little Wichita River near Archer City (d)	07314500	230
Lake Arrowhead near Henrietta (e)	07314800	232
Little Wichita River above Henrietta (d)	07314900	234
East Fork Little Wichita River near Henrietta (d)	07315200	236
Red River near Terral, OK (d) (c) (t) (b)	07315500	238
Lake Nocona near Nocona (e)	07315600	242
Moss Lake near Gainesville (e)	07315950	244
Red River near Gainesville (d) (c) (t)	07316000	246

	Station number	Page
LOWER MISSISSIPPI RIVER BASIN--Continued		
RED RIVER BASIN--Continued		
Red River:		
Red River at Denison Dam near Denison (d) (c) (t)	07331600	258
Shawnee Creek:		
Randell Lake near Denison (e)	07331700	268
Red River at Arthur City (d)	07335500	270
Red River at Index, AR (d) (c) (b) (t) (s)	07337000	272
Sulphur River:		
South Sulphur River at Commerce (d)	07342465	276
South Sulphur River near Commerce (c) (t) (b)	07342470	278
Middle Sulphur River at Commerce (d) (c) (t) (b)	07342480	280
Jim L. Chapman Lake near Cooper (e) (c) (t) (b)	07342495	284
South Sulphur River near Cooper (d) (c) (t)	07342500	294
North Sulphur River near Cooper (d)	07343000	298
Sulphur River near Talco (d) (c) (t)	07343200	300
White Oak Creek:		
Lake Sulphur Springs near Sulphur Springs (e)	07343460	304
White Oak Creek near Talco (d)	07343500	306
Wright Patman Lake near Texarkana (e)	07344200	308
Big Cypress Creek:		
Lake Cypress Springs near Mount Vernon (e)	07344484	310
Brushy Creek at Scroggins (d)	07344486	312
Monticello Reservoir near Mount Pleasant (e)	07344488	314
Lake Bob Sandlin near Mount Pleasant (e)	07344489	316
Big Cypress Creek near Pittsburg (d) (c) (t)	07344500	318
Lake O' the Pines near Jefferson (e) (c) (t) (b)	07345900	322
Big Cypress Creek near Jefferson (d) (c) (t)	07346000	332
Black Cypress Bayou at Jefferson (d)	07346045	336
Little Cypress Creek near Ore City (d)	07346050	338
Little Cypress Creek near Jefferson (d)	07346070	340
WESTERN GULF OF MEXICO BASINS		
SABINE RIVER BASIN		
Sabine River:		
Cowleech Fork Sabine River at Greenville (d)	08017200	344
South Fork Sabine River near Quinlan (d)	08017300	346
Lake Tawakoni near Wills Point (e)	08017400	348
Sabine River near Wills Point (d)	08017410	350
Sabine River near Mineola (d)	08018500	352
Lake Fork Creek:		
Lake Fork Reservoir near Quitman (e)	08018800	354
Lake Fork Creek near Quitman (d)	08019000	356
Sabine River near Hawkins (d)	08019200	358
Big Sandy Creek near Big Sandy (d)	08019500	360
Sabine River near Gladewater (d)	08020000	362
Sabine River above Longview (d)	08020450	364
Sabine River below Longview (d)	08020900	366
Sabine River near Beckville (d)	08022040	368
Martin Creek:		
Martin Lake near Tatum (e)	08022060	370
Sabine River at Logansport, LA (e)	08022500	374
Toledo Bend Reservoir near Burkeville (e)	08025350	376
Sabine River at Toledo Bend Reservoir near Burkeville (d)	08025360	378
Sabine River near Burkeville (d)	08026000	380
Sabine River near Bon Wier (d) (c) (t)	08028500	382
Big Cow Creek near Newton (d)	08029500	386
Sabine River near Ruliff (d)	08030500	388

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

	Station number	Page
WESTERN GULF OF MEXICO BASINS--Continued		
NECHES RIVER BASIN		
Neches River:		
Flat Creek:		
Lake Athens near Athens (e)	08031290	392
Lake Palestine near Frankston (e)	08031400	394
Neches River near Neches (d) (c) (t)	08032000	396
Talls Creek:		
Gum Creek:		
Lake Jacksonville near Jacksonville (e)	08032200	400
Neches River near Diboll (d)	08033000	402
Neches River near Rockland (d) (c) (t)	08033500	404
Angelina River:		
Mud Creek:		
Lake Tyler near Whitehouse (e)	08034000	408
Angelina River near Alto (d)	08036500	410
Bayou Loco:		
Lake Nacogdoches near Nacogdoches (e)	08036700	412
Attoyac Bayou near Chireno (d)	08038000	414
Ayish Bayou near San Augustine (d)	08039100	416
Sam Rayburn Reservoir near Jasper (e)	08039300	418
B.A. Steinhagen Lake at Town Bluff (e)	08040000	420
Neches River near Town Bluff (d)	08040600	422
Neches River at Evadale (d) (c) (t)	08041000	424
Village Creek near Kountze (d)	08041500	428
Pine Island Bayou near Sour Lake (d)	08041700	430
TAYLOR BAYOU BASIN		
Taylor Bayou near LaBelle (e)	08042000	434
Hillebrandt Bayou near Lovell Lake (e)	08042500	436

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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Middle Pease River near Kirkland (e)	07307780	1,250	1973-79
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 near Electra (d)	07312200*	652	1960-99
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	1942-93, 2000
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
Sanders Creek near Chicota (d)	07335400	175	1968-86
Little Pine Creek near Kanawha (d)	07336750	75.40	1969-80
Pecan Bayou near Clarksville (d)	07336800	100	1962-77
Red River near DeKalb (d)	07336820	47,348	1967-98
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Sabine River near Longview (d)	08020500	2,947	1904-07, 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 (d)	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
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
Ayish Bayou at San Augustine (d)	08039000	15.80	1924-25

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
Hillebrandt Bayou near Lovell Lake (d)	08042500	128	1954-84
West Fork Double Bayou near Anahuac (e)	08042550	4.43	1967-74
North Creek SWS No. 28-A near Jermyn (e)	08042650	6.82	1972-80
North Creek near Jacksboro (d)	08042700	21.60	1956-80
Beans Creek at Wizard Wells (e)	08042900	29.60	1993-95
West Fork Trinity River at Bridgeport (d)	08043100	1,113	1984-89
West Fork Trinity River at Bridgeport (d)	08043500	1,147	1908-30
Big Sandy Creek near Bridgeport (d)	08044000	333	1937-95
Garrett Creek near Paradise (e)	08044135	52.5	1992-95
Salt Creek near Paradise (e)	08044140	52.7	1992-95
Walker Creek near Boyd (e)	08044200	2.95	1965-74
West Fork Trinity River at Lake Worth, Fort Worth (d)	08045500	2,069	1924-34
Clear Fork Trinity River near Aledo (d)	08046000	251	1947-75
Marine Creek at Fort Worth (d)	08048500	16.80	1950-58
Sycamore Creek at I.H. 35W, Fort Worth (d)	08048520	17.70	1970-76
Sycamore Creek Trib. above Seminary South, Fort Worth (d)	08048530	0.97	1970-76
Sycamore Creek Trib. at I.H. 35W, Fort Worth (d)	08048540	1.35	1970-76
Dry Branch at Fain Street at Fort Worth (d)	08048600	2.15	1969-76
Big Fossil Creek at Haltom City (d)	08048800*	52.8	1959-73
Little Fossil Creek at I.H. 820, Fort Worth (e)	08048820	5.64	1969-73
Little Fossil Creek at Mesquite Street, Fort Worth (d)	08048850	12.30	1969-76
Deer Creek Tributary near Crowley (e)	08048900	5.86	1967-74
Village Creek at Kennedale (d)	08048980	100	1986-89
Village Creek near Handley (d)	08049000	126	1925-30
Big Bear Creek near Grapevine (d)	08049550	29.6	1967-79
Trigg Branch at DFW Airport near Euless (d)	08049565	1.73	1983-87
Mountain Creek near Cedar Hill (d)	08049600	119	1961-84
Mountain Creek above Duncanville (e)	08049850	224	1986-87
Mountain Creek near Duncanville (e)	08049900	225	1971-90
Mountain Creek near Grand Prairie (d)	08050000	273	1925-33
Elm Fork Trinity River SWS 6-O near Muenster (e)	08050200	0.77	1957-73
Elm Fork Trinity River near Muenster (d)	08050300	46	1957-73
Elm Fork Trinity River near Sanger (d)	08050500	381	1949-85
Isle Du Bois Creek near Pilot Point (d)	08051000	266	1949-85
Elm Fork Trinity River near Pilot Point (d)	08051130	692	1985-92
Elm Fork Trinity River above Aubrey (e)	08051190	684	1981-89
Elm Fork Trinity River near Denton (d)	08052000	1,084	1924-27
Lake Dallas near Lake Dallas (e)	08052500	1,165	1929-57
Little Elm Creek SWS #10 near Gunter (e)	08052630	2.10	1966-72
Little Elm Creek near Celina (d)	08052650	46.70	1966-76
Hickory Creek at Denton (d)	08052780	129	1985-87
Indian Creek at Hebron Parkway at Carrollton (d)	08053010	15.0	1987-90
Furneaux Creek at Josey Lane at Carrollton (d)	08053030	4.10	1987-90
Hutton Branch at Broadway at Carrollton (e)	08053090	9.10	1987-90
Jones Valley Creek Tributary near Forestburg (e)	08053100	1.70	1966-74
Denton Creek near Roanoke (d)	08054000	621	1924-28, 1939-55
Gamble Branch near Argyle (e)	08054200	0.50	1965-74
Denton Creek near Grapevine (d)	08055000	705	1948-91
Joe's Creek at Royal Lane, Dallas (e)	08055580	1.94	1973-78
Joes Creek near Dallas (e)	08055600	7.4	1964-79
Bachman Branch at Dallas (d)	08055700	10	1964-79
Turtle Creek at Dallas (d)	08056500	7.98	1952-80, 1984-91
Coombs Creek at Sylvan Avenue, Dallas (e)	08057020	4.75	1965-78
Cedar Creek at Bonnie View Road, Dallas (e)	08057050	9.42	1965-78

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
White Rock Creek at Keller Springs Road, Dallas (d)	08057100	29.40	1961-79
Spanky Branch at McCallum Lane at Dallas (e)	08057120	6.77	1962-78
Rush Branch at Arapaho Road, Dallas (e)	08057130	1.22	1973-78
Newton Creek at Interstate Highway 635, Dallas (e)	08057135	5.91	1974-78
Cottonwood Creek at Forest Lane, Dallas (e)	08057140	8.50	1962-78
Floyd Branch at Forrest Lane, Dallas (e)	08057160	4.17	1962-78
White Rock Creek at White Rock Lake, Dallas (d)	08057300	100	1963-79
Ash Creek at Highland Road, Dallas (e)	08057320	6.92	1963-78
Forney Creek at Lawnview Avenue, Dallas (e)	08057340	1.84	1963-72
White Rock Creek at Scyene Road, Dallas (d)	08057400	122	1963-79
Trinity River below Dallas (d)	08057410	6,278	1956-98
Elm Creek at Seco Boulevard, Dallas (e)	08057415	1.25	1973-78
Fivemile Creek at Kiest Boulevard, Dallas (e)	08057418	7.65	1974-78
Fivemile Creek at US Highway 77 West, Dallas (e)	08057420	14.30	1965-78
Woody Branch at US Highway 77 West, Dallas (e)	08057425	10.30	1965-78
Fivemile Creek at Lancaster Road, Dallas (e)	08057430	37.90	1965-78
White Branch at Interstate Highway 635, Dallas (e)	08057440	2.53	1974-78
Tenmile Creek at State Highway 342 at Lancaster (d)	08057450	52.80	1970-79
Honey Creek SWS #11 near McKinney (e)	08057500	2.14	1952-73
Honey Creek SWS #12 near McKinney (e)	08058000	1.26	1952-77
Honey Creek near McKinney (d)	08058500	39	1951-73
East Fork Trinity River near McKinney (d)	08059000	190	1949-75
Arls Branch near Westminster (e)	08059200	0.52	1965-74
Sister Grove Creek near Princeton (d)	08059500	113	1949-75
East Fork Trinity River above Pilot Grove near Lavon (d)	08060000	324	1949-53
East Fork Trinity River near Lavon (d)	08061000	773	1954-89
East Fork Trinity River near Rockwall (d)	08061500	840	1924-54
Duck Creek at Buckingham Road, Garland (e)	08061620	8.05	1969-76
Duck Creek near Garland (d)	08061700	31.6	1958-93
South Mesquite Creek at State Highway 352, Mesquite (e)	08061920	13.40	1969-76
South Mesquite Creek at Mercury Road near Mesquite (d)	08061950	23	1969-79
Cedar Creek Reservoir Spillway Outflow near Trinidad (d)	08062650	1,007	1966-82
Cedar Creek near Kemp (d)	08062800	189	1963-87
Bachelor Creek near Terrell (e)	08062850	13.0	1967-74
Kings Creek near Kaufman (d)	08062900	233	1963-87
Lacey Fork near Mabank (d)	08062980	118	1983-84
Cedar Creek near Mabank (d)	08063000	733	1939-66
South Twin Creek near Eustace (d)	08063003	27.40	1983-84
Red Oak Branch near Eustace (e)	08063005	0.90	1966-74
Cedar Creek at Trinidad (d)	08063020	1,011	1965-71
Briar Creek Tributary near Corsicana (e)	08063180	0.72	1966-74
Pin Oak Creek near Hubbard (d)	08063200	17.60	1956-72
Richland Creek near Richland (d)	08063500	734	1939-88
Alvarado Branch near Alvarado (e)	08063550	0.84	1966-74
Kings Branch near Reagor Springs (e)	08063620	0.62	1966-74
Chambers Creek near Corsicana (d)	08064500	963	1939-84
Richland Creek near Fairfield (d)	08064600	1,957	1972-83
Saline Branch Tributary near Bethel (e)	08064630	0.22	1967-74
Catfish Creek near Tennessee Colony (d)	08064800	207	1962-89
Mayes Branch near Latexo (e)	08065320	4.26	1967-74
Trinity River near Midway (d)	08065500	14,450	1939-71
Caney Creek near Madisonville (d)	08065700	112	1963-77
Nelson Creek near Riverside (e)	08065950	86.4	1949, 1965, 1970-74
Harmon Creek near Huntsville (e)	08065975	89.2	1973-81
West Carolina Creek near Oakhurst (e)	08066050	15.2	1949, 1966-73
White Rock Creek near Trinity (e)	08066100	222	1974-85
White Rock Creek near Trinity (e)	08066130	228	1966-74
Tantaboque Creek near Trinity (e)	08066140	61.3	1966-73

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Caney Creek near Groveton (e)	08066145	41.4	1966-73
Brushy Creek near Onalaska (d)	08066150	29.1	1966-70
Rocky Creek near Onalaska (e)	08066180	40.6	1966-73
Livingston Reservoir outflow weir near Goodrich (d)	08066191	16,583	1969-94
Long King Creek near Goodrich (d)	08066210	220	1972-81
Bluff Creek Tributary near Livingston (e)	08066280	0.62	1965-74
Big Creek near Shepherd(e)	08066400	38.80	1966-89
Gaylor Creek near Moss Hill (e)	08066800	32.3	1966-73
Devers Canal near Liberty (d)	08067080	N/A	1972-82
Cedar Bayou at Crosby (d)	08067500*	65.0	1972-91
Goose Creek near McNair (e)	08067520	6.7	1963-65,
Welch Branch near Huntsville (e)	08067550	2.35	1965-74
Lake Conroe near Montgomery (e)	08067580	445	1973-76
Lake Conroe at Outflow Weir near Conroe (d)	08067610	445	1974, 1977-89
Caney Creek near Dobbin (d)	08067700	40.40	1963-65
Landrum Creek Tributary near Montgomery (e)	08067750	0.13	1965-74
Lake Creek near Conroe (e)	08067900	291	1969-89
West Fork San Jacinto River near Porter (e)	08068100	970	1970-76
Mill Creek Tributary near Dobbin (e)	08068300	4.07	1967-73
Swale No. 8 at Woodlands (e)	08068438	0.55	1975-76, 1980-88
Spring Creek at Spring (d)	08068520	419	1975-95
Spring Creek near Humble (e)	08068600	435	1971-76
Cypress Creek at Sharp Road near Hockley (d)	08068700	80.7	1975-85
Cypress Creek near Cypress (e)	08068750*	138	1971-76
Little Cypress Creek near Cypress (d)	08068780*	41.0	1983-92
Cypress Creek at Grant Road near Houston (d)	08068800*	214	1983-92
Cypress Creek at Stuebner-Airline Road near Westfield (d)	08068900*	248	1982-87
Cypress Creek near Humble (e)	08069200	319	1971-76
West Fork San Jacinto River near Humble (d)	08069500	1,741	1929-54
Bear Creek near Cleveland (e)	08069850	1.46	1967-73
Caney Creek near New Caney (e)	08070600	178	1970-76
Peach Creek near New Caney (e)	08071100	155	1970-76
Tarkington Bayou near Dayton (e)	08071200	142	1964-76
Luce Bayou near Huffman (e)	08071300	226	1971-76
San Jacinto River near Huffman (d)	08071500	2,800	1937-53
Buffalo Bayou at Clodine (e)	08072400	84.2	1974-85
Langham Creek at West Little York Road, Addicks (d)	08072760*	25.0	1977-85
Bettina Street Ditch at Houston (e)	08073630	1.37	1979-85
Stony Brook Street Ditch at Houston (e)	08073750	0.50	1967-72
Bering Ditch at Woodway Drive, Houston (e)	08073800	2.77	1965-73
Cole Creek at Guhn Road at Houston (e)	08074100	7.05	1964-72
Bingle Road Storm Sewer at Houston (e)	08074145	0.21	1980-88
Cole Creek at Deihl Road at Houston (d)	08074150*	7.50	1964-86
Brickhouse Gully at Clarblak Street at Houston (e)	08074200	2.56	1965-83
Brickhouse Gully at Costa Rica Street at Houston (d)	08074250*	11.4	1964-81
Lazybrook Street Storm Sewer, Houston (e)	08074400	0.13	1978-88
Little White Oak Bayou at Houston (e)	08074550	20.9	1971-79
Buffalo Bayou at Main St., Houston (d)	08074600*	469	1962-94
Buffalo Bayou at McKee Street, Houston (d)	08074610	469	1992-2000
Buffalo Bayou at 69th Street, Houston (e)	08074700	476	1961-86
Brays Bayou at Addicks-Clodine Rd., Houston (e)	08074750	0.87	1974-77
Brays Bayou at Alief Road, Alief (e)	08074760*	12.9	1977-85
Keegans Bayou at Keegans Road near Houston (e)	08074780*	7.47	1964-71
Keegans Bayou at Roark Road near Houston (d)	08074800*	13.0	1964-85
Bintliff Ditch at Bissonnet Street, Houston (e)	08074850	4.38	1968-82
Willow Waterhole Bayou at Landsdowne Street, Houston (e)	08074900	3.81	1965-72
Hummingbird Street Ditch at Mullins Street, Houston (e)	08074910	0.32	1979-84
Brays Bayou at Scott Street, Houston (e)	08075100	106	1971-81

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Sims Bayou at Carlsbad Street, Houston (e)	08075300	3.81	1964-72
Sims Bayou at MLK Blvd., Houston (e)	08075470	48.4	1978-89
Berry Bayou at Gilpin Street, Houston (e)	08075550	2.87	1965-84
Berry Bayou Tributary at Globe Street, Houston (e)	08075600	1.58	1965-72
Berry Bayou at Forest Oaks Street, Houston (e)	08075650*	10.7	1968-82
Berry Bayou at Galveston Road, Houston (e)	08075700	4.86	1965-72
Huntington Bayou Tributary at Cavalcade Street, Houston (e)	08075750	1.20	1965-72
Huntington Bayou at Falls Street, Houston (e)	08075760	2.75	1964-84
Halls Bayou at Deertrail Street at Houston (e)	08076200	8.69	1965-84
Carpenters Bayou at Cloverleaf (e)	08076900	25.8	1964, 1971-93
Clear Creek near Pearland (d)	08077000	38.8	1944-45, 1946-60, 1963-94
Clear Creek Tributary at Hall Road, Houston (e)	08077100	1.31	1965-86
Clear Creek at Friendswood (d)	08077540	99.6	1994-97
Cowart Creek near Friendswood (e)	08077550	18	1965-74
Clear Creek near Friendswood (e)	08077600	126	1966-94
Armand Bayou near Genoa (e)	08077620	18.2	1968, 1971-73
Highland Bayou at Hitchcock (e)	08077700	15.6	1963-82
Highland Bayou Tributary near Texas City (e)	08077750	1.97	1966-73
Highland Bayou near Texas City (e)	08077780	20.8	1965-88
Flores Bayou near Danbury (e)	08078700	23.3	1967-72
Oyster Creek near Angleton (d)	08079000	171	1945-80
North Fork Double Mountain Fork Brazos River at Lubbock (d)	08079500	5,300	1940-49,
North Fork Double Mountain Fork Brazos River above Buffalo Springs nr Lubbock (e)	08079530	29.3	1952-54, 1957, 1962, 1967-76
Buffalo Springs Lake near Lubbock (e)	08079550	236	1967-77
Barnum Springs Draw near Post (e)	08079570	4.99	1965-73
North Fork Double Mountain Fork Brazos River near Post (d)	08079575	438	1984-93
Rattlesnake Creek near Post (e)	08079580	2.75	1966-74
Double Mountain Fork Brazos River near Rotan (d)	08080000	8,536	1950-51
Guest-Flowers Draw near Aspermont (e)	08080510	3.02	1965-74
McDonald Creek near Post (d)	08080540	103	1966-78
Running Water Draw at Plainview (d)	08080700	1,291	1939-53, 1957-78
Callahan Draw near Lockney (e)	08080750	37.5	1966-77
White River near Crosbytown (e)	08080800	529	1951-64
White River below falls near Crosbytown (e)	08080900	529	1951-64
Salt Fork Brazos River at Farm Road 1081 near Clairemont (e)	08080916	1,135	1968-77
Red Mud Creek near Spur (e)	08080918	65.1	1967-74
Salt Fork Brazos River at State Highway 208 near Clairemont (e)	08080940	1,357	1968-77
Duck Creek near Girard (d)	08080950	431	1965-89
Salt Fork Brazos River at U.S. Highway 380 near Jayton (e)	08080959	1,797	1968-77
Salt Fork Brazos River near Peacock (d)	08081000	4,619	1950-51, 1965-86
Short Croton Creek at mouth near Jayton (e)	08081050	18.1	1959-82
Croton Creek below Short Croton Creek near Jayton (e)	08081100	250	1959-82
Croton Creek near Jayton (d)	08081200	290	1959-86
Salt Croton Creek at Weir D near Aspermont (e)	08081400	55.5	1957-76
Haystack Creek at Weir E near Aspermont (e)	08081450	15.1	1957-77
Salt Croton Creek near Aspermont (d)	08081500	64.30	1957-77
Stinking Creek near Aspermont (d)	08082100	88.80	1966-83
North Croton Creek near Knox City (d)	08082180	251	1965-86
North Elm Creek near Throckmorton (e)	08082900	3.58	1965-77
Elm Creek near Profitt (e)	08082950	275	1969-85
Brazos River near Graham (d)	08083000	16,830	1916-20
Clear Fork Brazos River at Hawley (d)	08083240	1,416	1968-89

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Mulberry Creek near Hawley (d)	08083245	205	1968-89
Elm Creek near Abilene (d)	08083300	133	1964-79
Little Elm Creek near Abilene (d)	08083400	39.10	1964-79
Elm Creek at Abilene (d)	08083430	422	1980-83
Cedar Creek at Abilene (d)	08083470	119	1971-84
Paint Creek near Haskell (d)	08085000	914	1950-51
Humphries Draw near Haskell (e)	08085300	3.51	1965-77
Clear Fork Brazos River at Crystall Falls (d)	08086000	4,323	1922-29
Hubbard Creek near Sedwick (d)	08086015	128	1964-66
Hubbard Creek at Highway 380 near Moran (e)	08086020	152	1963-76
Deep Creek near Putnam (e)	08086030	33.8	1963-66
Brushy Creek near Putnam (e)	08086040	27.6	1963-66
Mexia Creek near Putnam (e)	08086045	67.0	1963-66
Deep Creek at Moran (d)	08086050	228	1963-75
Hubbard Creek near Albany (d)	08086100	454	1962-75
Salt Prong Hubbard Creek below Lake McCarty near Albany (e)	08086110	45.5	1963-66
Salt Prong Hubbard Creek at U.S. 380 near Albany (d)	08086120	61	1964-68
Cook Creek near Albany (e)	08086130	11.3	1963-76
North Fork Hubbard Creek near Albany (d)	08086150	39.3	1963-90
Salt Prong Hubbard Creek near Albany (d)	08086200	115	1962-63
Snailum Creek near Albany (d)	08086210	22.90	1964-66
Big Sandy Creek near Eolian (e)	08086220	91.4	1963-76
Battle Creek near Putnam (e)	08086230	32.0	1963-66
Battle Creek near Moran (d)	08086235	108	1967-68
Battle Creek near Eolian (e)	08086240	137	1963-66
Pecan Creek at FM 1853 near Eolian (e)	08086250	6.95	1963-66
Pecan Creek near Eolian (d)	08086260	26.40	1967-75
Big Sandy Creek near Breckenridge (e)	08086300	288	1962-75
Hubbard Creek near Breckenridge (d)	08086500	1,089	1955-86
Clear Fork Brazos River near Crystal Falls (e)	08087000	5,658	1916-20, 1928-51
Clear Fork Brazos River near Eliasville (d)	08087300	5,697	1916-20, 1924-25, 1928-51, 1962-82
Salt Creek at Olney (d)	08088100	11.80	1958-77
Salt Creek near Newcastle (d)	08088200	120	1958-60
Briar Creek near Graham (d)	08088300	24.20	1958-89
Brazos River at Farm Road 1287 near Graham (e)	08088420	13,432	1970-77
Big Cedar Creek near Ivan (d)	08088450	97	1965-89
Brazos River at Morris Sheppard Dam near Graford (d)	08088600	14,030	1990-94
Elm Creek Tributary near Graford (e)	08089100	1.10	1965-74
Lake Palo Pinto near Santo (e)	08090300	461	1964-82
Palo Pinto Creek near Santo (d)	08090500	573	1925, 1951-76
Cidwell Branch near Granbury (e)	08090850	3.37	1966-73
Morris Branch near Bluff Dale (e)	08091200	0.06	1965-73
Panther Branch near Tolar (e)	08091700	7.82	1966-74
Lake Pat Cleburne near Cleburne (d)	08091900	100	1965-85
Nolan River at Blum (d)	08092000*	282.0	1924-87
Brazos River near Whitney (d)	08093000	17,648	1939-74
Bond Branch near Hillsboro (e)	08093200	0.36	1965-74
Hackberry Creek at Hillsboro (d)	08093250	57.9	1980-92
Hackberry Creek below Hillsboro (e)	08093260	86.8	1980-92
Aquilla Creek above Aquilla (d)	08093360*	255.0	1980-92
Cobb Creek near Abbott (d)	08093400	12.40	1967-79
Aquilla Creek at RR bridge near Aquilla (e)	08093530	345	1976-85
Aquilla Creek at Farm Road 2114 near Aquilla (e)	08093540	351	1976-85
Aquilla Creek at Farm Road and 1858 near Ross (e)	08093560	392	1976-85
Aquilla Creek at Farm Road 933 near Ross (e)	08093580	397	1976-85
North Bosque River at Stephenville (d)	08093700	95.90	1958-79

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Green Creek SWS #1 near Dublin (d)	08094000	4.19	1955-77
Green Creek near Alexander (d)	08094500	45.40	1958-73
South Bosque River near McGregor (e)	08095220	15.9	1967-73
Willow Branch at McGregor (e)	08095250	2.52	1966-73
Middle Bosque River near McGregor (d)	08095300*	182.0	1959-86
Hog Creek near Crawford (d)	08095400*	78.0	1959-86
South Bosque River near Speegleville (d)	08095500	386	1924-30
Bosque River near Waco (d)	08095600	1,656	1960-82
Box Branch at Robinson (e)	08096550	0.34	1965-73
Cow Bayou SWS No. 4 (inflow) near Bruceville (e)	08096800	5.04	1958-75
Cow Bayou at Mooreville (d)	08097000	83.50	1958-75
Brazos River near Marlin (d)	08097500	30,211	1939-51
Deer Creek at Chilton (d)	08098000	84.50	1934-36
Little Pond Creek at Burlington (d)	08098300	23	1963-82
Leon River near De Leon (d)	08099100*	479.0	1960-87
Sabana River near De Leon (d)	08099300*	264.0	1960-87
Sabana River Tributary near De Leon (e)	08099350	0.48	1966-74
Leon River near Hasse (d)	08099500	1,261	1939-91
Eidson Creek near Hamilton (e)	08100100	2.91	1965-73
Bermuda Branch near Gatesville (e)	08100400	0.50	1966-73
Hoffman Branch near Hamilton (e)	08100800	5.56	1966-74
Cowhouse Creek near Killeen (d)	08101500	667	1925, 1939-42
Nolan Creek at Belton (d)	08102600	112	1974-82
School Branch near Lampasas (e)	08102900	0.90	1966-73
Fleece Branch near Lampasas (e)	08103450	1.08	1965-74
Lampasas River at Youngsport (d)	08104000	1,240	1924-80
Lampasas River near Belton (d)	08104100*	1,321	1963-89
Salado Creek above Salado (e)	08104290*	134	1985-88
Salado Creek below Salado Springs (d)	08104310*	136	1985-87
N. Fork San Gabriel River upstream from State Highway 418 at Georgetown (e)	08104795*	271	1985-88
North Fork San Gabriel River at Georgetown (d)	08104800	268	1964-68
South Fork San Gabriel River near Bertram (e)	08104850	8.9	1967-74
San Gabriel River at Georgetown (d)	08105000*	405	1924-25, 1934-73, 1984-87
Berry Creek at State Hwy. 971 near Georgetown (d)	08105200*	117	1985-87
San Gabriel River near Weir (d)	08105300*	563	1977-90
San Gabriel River near Circleville (d)	08105400	599	1924-34, 1967-77
Avery Branch near Taylor (e)	08105900	3.52	1966-73
Brushy Creek at Coupland (d)	08106000	205.0	1924-26
Brushy Creek near Rockdale (d)	08106300	505	1967-80
San Gabriel River near Rockdale (d)	08106310	1,359	1975-92
Big Elm Creek near Temple (d)	08107000	74.70	1934-36
Big Elm Creek near Buckholts (d)	08107500	171	1934-36
North Elm Creek near Ben Arnold (d)	08108000	32.20	1935-36
North Elm Creek near Cameron (d)	08108200	44.80	1963-73
Little Branch near Bryan (e)	08108800	0.14	1966-73
Brazos River near Bryan (d)	08109000	39,515	1899-1903, 1918-92
Brazos River near College Station (d)	08109500	30,033	1899-1902, 1918-25
Yegua Creek near Somerville (d)	08110000	1,009	1924-92
Brazos River at Washington (e)	08110200	41,192	1966-95
Plummers Creek at Mexia (e)	08110350	4.42	1965-73
Navasota River near Groesbeck (d)	08110400	311	1965-79
Navasota River near Bryan (d)	08111000	1,454	1951-94, 1994-97
Navasota River near College Station (d)	08111010	1,809	1977-85
Burton Creek at Villa Maria Road, Bryan (d)	08111025	1.33	1968-70
Hudson Creek near Bryan (d)	08111050	1.94	1968-70

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Winkleman Creek near Brenham (e)	08111100	0.75	1965-73
Piney Creek near Bellville (e)	08111600	30.7	1948, 1955, 1958, 1964-89
West Fork Mill Creek near Industry (e)	08111650	15.3	1964-89
Mill Creek near Bellville (d)	08111700	376	1963-93
Brazos River near San Felipe (d)	08112000	35,100	1939-57
Brazos River near Wallis (e)	08112200	44,700	1974-75
Brazos River Authority Canal A near Fulshear (d)	08112500	N/A	1932-54, 1958-73
Richmond Irrigation Co. Canal near Richmond (d)	08113500	N/A	1932-54, 1956-78
Brazos River near Juliff (d)	08114500	45,084	1949-69
Seabourne Creek near Rosenberg (e)	08114900	5.78	1968-74
Fairchild Creek near Needville (d)	08115500	26.20	1947-55
Big Creek near Guy (d)	08116000	116	1947-50
Dry Creek near Rosenberg (d)	08116400	8.65	1959-79
Dry Creek near Richmond (d)	08116500	12.20	1947-50, 1957-58
San Bernard River near West Columbia (e)	08117700	766	1949, 1971-77
Mound Creek Tributary at Guy (e)	08117800	1.48	1966-73
Big Boggy Creek near Wadsworth (d)	08117900	10.30	1970-77
Bull Creek near Ira (d)	08118500	26.30	1948-54, 1959-62
Colorado River below Bull Creek near Ira (e)	08118600	3,524	1975-78
Bluff Creek near Ira (d)	08119000	42.60	1948-65
Bluff Creek at mouth near Ira (e)	08119100	44.1	1975-78
Colorado River near Ira (d)	08119500	3,483	1948-52, 1959-89
Morgan Creek near Westbrook (d)	08121500	273	1954-63
Graze Creek near Westbrook (d)	08122000	21.70	1954-59
Morgan Creek near Colorado City (d)	08122500	313	1947-49
Champlin Creek near Colorado City (d)	08123500	198	1948-59
Sulphur Springs Draw near Wellman (e)	08123620	41.80	1966-74
Beals Creek above Big Spring (d)	08123650	9,319	1959-79
Beals Creek at Big Spring (d)	08123700	9,341	1957-59
Beals Creek near Coahoma (d)	08123720	9,383	1983-88
Coahoma Draw Tributary near Big Spring (e)	08123750	2.38	1966-74
Bull Creek Tributary near Forsan (e)	08123760	0.4	1966-74
Colorado River near Silver (d)	08123900	14,997	1957-70
Bitter Creek near Silver (e)	08123920	4.3	1967-74
Salt Creek Tributary near Hylton (e)	08125450	0.25	1966-74
Oak Creek Reservoir near Blackwell (e)	08125500	238	1953-83
Fish Creek Tributary near Hylton (e)	08126300	0.25	1966-71
Colorado River at Ballinger (d)	08126500	16,413	1907-79
Dry Creek near Christoval (e)	08127100	0.79	1965-73
South Concho Irrigation Co. Canal at Christoval (d)	08127500	N/A	1940-83
Middle Concho River near Tankersley (d)	08128500	2,653	1930-61
Spring Creek above Tankersley (d)	08129300*	424.7	1961-95
Dove Creek Springs near Knickerbocker (d)	08129500*	N/A	1944-58
Dove Creek at Knickerbocker (d)	08130500*	226.43	1961-95
Spring Creek near Tankersley (d)	08131000	699	1930-60
South Concho River above Gardner Dam near San Angelo (e)	08131190	434	1966-74, 2000
South Concho River above Pecan Creek near San Angelo (e)	08131300	470	1963-84
Tom Green Co. WCID No. 1 Canal near San Angelo (d)	08131600	N/A	1963-81
South Concho River at San Angelo (d)	08132500	3,866	1932-53
Quarry Creek near Sterling City (e)	08133300	3.25	1965-73
North Concho River at Sterling City (d)	08133500*	588.0	1939-87

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Broome Creek near Broome (e)	08133800	0.29	1965-73
Nolke Station Creek near San Angelo (e)	08134300	0.59	1965-73
Gravel Pit Creek near San Angelo (e)	08134400	0.19	1965-74
North Concho River at San Angelo (d)	08135000	1,525	1916-31, 1947-90
Concho River near Veribest (e)	08136150	5,610	1970-74, 1998-2000
Puddle Creek near Veribest (e)	08136200	12.0	1966-73
Frog Pond Creek near Eden (e)	08136300	1.96	1967-73
Mukewater Creek SWS No. 10A near Trickham (e)	08136900	15.3	1965-72
Mukewater Creek SWS No. 9 near Trickham (e)	08137000	4.02	1961-72
Mukewater Creek at Trickham (d)	08137500	70	1951-73
Deep Creek SWS No. 3 near Placid (e)	08139000	3.42	1954-60
Deep Creek near Mercury (d)	08139500	43.90	1954-73
Deep Creek SWS No. 8 near Mercury (e)	08140000	5.14	1952-71
Dry Prong Deep Creek near Mercury (d)	08140500	8.31	1951-71
Lake Clyde near Clyde (e)	08140600	36.9	1970-85
Pecan Bayou near Cross Cut (d)	08140700	532	1968-79
Jim Ned Creek near Coleman (d)	08140800	333	1965-80
McCall Branch near Coleman (e)	08141100	2.17	1966-73
Hords Creek near Valera (d)	08141500	54.20	1947-91
Hords Creek at Coleman (d)	08142000	107	1941-70
Brown County WID No. 1 Canal near Brownwood (d)	08142500	N/A	1950-83
Pecan Bayou at Brownwood (d)	08143500	1,660	1917-18, 1924-83
Brown Creek Tributary near Goldthwaite (e)	08143700	2.48	1966-73
Noyes Canal at Menard (d)	08144000	N/A	1924-83
Brady Creek near Eden (d)	08144800	101	1962-85
Brady Creek Tributary near Brady (e)	08145100	4.05	1967-73
Lake Buchanan near Burnet (e)	08148000	31,910	1937-90
Llano River Tributary near London (e)	08150200	0.58	1966-73
Stone Creek Tributary near Art (e)	08150900	0.40	1966-73
Llano River near Castell (d)	08151000	3,747	1924-39
Johnson Creek near Valley Spring (e)	08151300	5.66	1967-73
Sandy Creek near Kingsland (d)	08152000	327	1967-93
Little Flatrock Creek near Marble Falls (e)	08152700	3.20	1966-74
Spring Creek near Fredericksburg (e)	08152800	15.20	1967-73
Pedernales River at Stonewall (d)	08153000	647	1924-34
Cane Branch at Stonewall (e)	08153100	1.37	1965-71
Pedernales River near Spicewood (d)	08154000	1,294	1924-39
Lake Travis near Austin (d)	08154500	38,755	1940-90
Colorado River below Mansfield Dam, Austin (d)	08154510	38,755	1975-90
West Bull Creek at Loop 360 near Austin (e)	08154750	6.77	1976-82
Bull Creek at FM 2222, Austin (e)	08154760	30.4	1975-78
Bee Creek at West Lake Drive near Austin (e)	08154950	3.28	1980-82
Barton Creek near Camp Craft Road near Austin (d)	08155260	109	1982-89
Skunk Hollow Creek below Pond 1 at Austin (e)	08155400	0.12	1982-84
West Bouldin Creek at Riverside Drive, Austin (e)	08155550	3.12	1976-82
Shoal Creek at Steck Avenue, Austin (e)	08156650	2.79	1975-82
Shoal Creek at Northwest Park at Austin (d)	08156700	6.52	1975-84
Shoal Creek at White Rick Drive, Austin (e)	08156750	12.30	1975-82
Waller Creek at 38th Street, Austin (d)	08157000	2.31	1955-80
Waller Creek at 23rd Street, Austin (d)	08157500	4.13	1955-80
Walnut Creek at Farm-Market 1325 near Austin (e)	08158100	12.60	1975-88
Walnut Creek at Dessau Road, Austin (e)	08158200	26.20	1975-88
Ferguson Branch at Springdale Road, Austin (e)	08158300	1.63	1978-82
Little Walnut Creek at Georgian Drive, Austin (e)	08158380	5.22	1975-88
Little Walnut Creek at IH 35, Austin (e)	08158400	5.57	1975-82
Little Walnut Creek at Manor Road, Austin (e)	08158500	12.1	1975-82
Walnut Creek at Southern Pacific Railroad bridge, Austin (e)	08158640	53.5	1975-86

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Onion Creek at Buda (e)	08158800	166	1961-78,
" " " (d)			1979-83,
			1992-95
Bear Creek at Farm-Market Road 1626 near Manchaca (e)	08158820	24.0	1979-83
Little Bear Creek at Farm-Market Road 1626 near Manchaca (d)	08158825	21.0	1979
Slaughter Creek at FM 2304 near Austin (e)	08158860	23.1	1978-83
Boggy Creek (South) at Circle S Road, Austin (e)	08158880	3.58	1976-88
Fox Branch near Oak Hill (e)	08158900	0.12	1965-73
Williamson Creek at Oak Hill (d)	08158920	6.30	1978-93
Williamson Creek at Jimmy Clay Road, Austin (d)	08158970	27.60	1975-85
Onion Creek below Del Valle (e)	08159100	339	1962-75
Wilbarger Creek near Pflugerville (d)	08159150	4.6	1963-80
Big Sandy Creek near McDade (d)	08159165	38.70	1979-85
Big Sandy Creek near Elgin (d)	08159170	63.80	1979-85
Dogwood Creek near McDade (e)	08159180	0.53	1980-85
Dogwood Creek at Highway 95 near McDade (e)	08159185	5.03	1980-85
Reeds Creek near Bastrop (e)	08159450	5.22	1967-73
Dry Creek at Buescher Lake near Smithville (d)	08160000	1.48	1940-66
Colorado River at La Grange (d)	08160500	40,430	1939-55
Colorado River above Columbus (d)	08160700	41,403	1983-85
Dry Branch Tributary near Altair (e)	08161580	0.68	1966-73
Little Robin Slough near Matagorda (e)	08162530	3.4	1969
Cashs Creek near Blessing (e)	08162650	14.8	1969-77
East Carancahua Creek near Blessing (e)	08162700	81.2	1968,
			1970-83
West Carancahua Creek near Laward (e)	08162800	57.1	1970-76
Navidad River near Speaks (d)	08164350	437	1982-89,
			1995-2000
Navidad River at Morales (d)	08164370	549	1995-2000
Navidad River near Ganado (d)	08164500	826	1939-80
Guadalupe River above Kerrville (e)	08166150	488	1976-79
Turtle Creek Tributary near Kerrville (e)	08166300	0.46	1966-74
Guadalupe River near Comfort (d)	08166500	762	1918-32
Rebecca Creek near Spring Branch (d)	08167600	10.90	1960-79
Blieders Creek at New Braunfels (e)	08168600	16.0	1962-89
Panther Canyon at New Braunfels (e)	08168700	0.73	1962-89
Trough Creek near New Braunfels (e)	08168720	0.48	1966-74
W.P. Dry Comal Creek Tributary near New Braunfels (e)	08168750	0.32	1966-74
Dry Comal Creek at New Braunfels (e)	08168800	N/A	1962-74
Walnut Branch near Seguin (e)	08169750	5.46	1967-74
East Pecan Branch near Gonzales (e)	08169850	0.24	1965-74
San Marcos River at San Marcos (d)	08169950	83.7	1915-21
West Elm Creek near Niederwald (e)	08172100	0.44	1965-74
Plum Creek near Lockhart (d)	08172500	184	1925-30
San Marcos River at Ottine (d)	08173500	1,249	1915-43
Guadalupe River below Cuero (d)	08176000	4,923	1903-07,
			1916-19,
			1921-36
Irish Creek near Cuero (e)	08176200	15.5	1967-74
Three Mile Creek near Cuero (e)	08176600	0.48	1966-74
Coleto Creek Reservoir inflow (Guadalupe diversion) near Schroeder (d)	08176990	357	1980-94
Coleto Creek near Schroeder (d)	08177000	369	1930-34,
			1953-79
Olmos Creek Tributary at FM 1535 at Savano Park (e)	08177600	0.33	1969-81
Olmos Reservoir at San Antonio (e)	08177800	32.4	1968-71,
			1976-89.
			1992-95
San Antonio River at Woodlawn Avenue, San Antonio (e)	08177860	36.4	1989-95
San Antonio River at Dolorosa, San Antonio (d)	08177920	N/A	1980-86

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
San Antonio River at San Antonio (d)	08178000	41.8	1895-1906, 1915-29, 1939-97
Alazan Creek at St. Cloud Street, San Antonio (e)	08178300	3.26	1969-79
San Pedro Creek at Furnish St., San Antonio (d)	08178500*	2.60	1916-29
Harlandale Creek at W. Harding Street, San Antonio (e)	08178555	2.43	1977-81
Panther Springs Creek at FM 2696 near San Antonio (e)	08178600	9.54	1969-77
Lorence Creek at Thousand Oaks Blvd., San Antonio (e)	08178620	4.05	1980-84
West Elm Creek at San Antonio (e)	08178640	2.45	1976-88
East Elm Creek at San Antonio (e)	08178645	2.33	1976-81
Salado Creek Tributary at Bitters Road, San Antonio (e)	08178690	0.26	1969-81
Salado Creek at Rittman Road, San Antonio (e)	08178720	137.1	1968-81
Salado Creek Tributary at Bee Street, San Antonio (e)	08178736	0.45	1970-77
Salado Creek at E. Houston Street, San Antonio (e)	08178740	181	1968-81
Salado Creek at U.S. Highway 87, San Antonio (e)	08178760	186	1968-81
Salado Creek at Southcross Blvd., San Antonio (e)	08178780	188	1968-81
Bandera Creek Tributary near Bandera (e)	08178900	0.27	1966-74
Medina River near Pipe Creek (d)	08179000	474	1923-35, 1953-82
Red Bluff Creek near Pipe Creek (d)	08179100	56.30	1956-81
Medina River Tributary near Pipe Creek (e)	08179200	0.30	1966-74
Medina River at La Coste (d)	08180640	805	1987-2000
Medio Creek at Pearsall Road, San Antonio (e)	08180750	47.9	1987-95
Leon Creek Tributary at FM 1604, San Antonio (e)	08181000	5.57	1968-80
French Creek Tributary near Helotes (e)	08181200	1.08	1966-74
Ranch Creek near Helotes (d)	08181410		1978
Leon Creek Tributary at Kelly Air Force Base (d)	08181450	1.19	1969-79
Calaveras Creek SWS No. 6 (inflow) near Elmendorf (e)	08182400	7.01	1957-77
Calaveras Creek near Elmendorf (d)	08182500	77.20	1954-71
San Antonio River at Calaveras (d)	08183000	1,786	1918-25
Cibolo Creek near Boerne (d)	08183900	68.4	1963-95
Cibolo Creek near Bulverde (d)	08184000	198	1946-66
Cibolo Creek above Bracken (d)	08184500	250	1946-51
Cibolo Creek at Sutherland Springs (d)	08185500	665	1924-29
Ecleto Creek near Runge (d)	08186500	239	1962-89
Escondido Creek SWS No. 1 (inflow) near Kenedy (e)	08187000	3.29	1955-73
Escondido Creek at Kenedy (d)	08187500	72.40	1954-73
Escondido Creek SWS No. 11 (inflow) near Kenedy (e)	08187900	8.45	1959-77
Dry Escondido Creek near Kenedy (d)	08188000	9.43	1954-59
Baugh Creek at Goliad (e)	08188400	3.02	1966-74
Guadalupe-Blanco River Authority Calhoun Canal-Flume No. 2 near Long Mott (d)	08188750	N/A	1972-86
Guadalupe River at State Highway 35 near Tivoli (e)	08188810	10,280	1975-82
Medio Creek near Beeville (d)	08189300	204	1962-77
Olmos Creek Tributary near Skidmore (e)	08189600	0.58	1966-73
Chiltipin Creek at Sinton (d)	08189800	128	1970-91
Nueces River near Uvalde (d)	08191500	1,930	1928-39
Nueces River near Cinonia (d)	08192500	2,150	1915-25
Plant Creek near Tilden (e)	08194550	0.36	1965-74
Nueces River at Simmons (d)	08194600	8,561	1965-77
Frio River at Knippa (d)	08195700	N/A	1953
Dry Frio River at Knippa (d)	08196500	179	1953
East Elm Creek near Sabinal (e)	08198900	10.6	1967-74
Frio River near Frio Town (d)	08199700	1,460	1924-27
Hondo Creek near Hondo (d)	08200500	132	1953-64
Bone Creek near Hondo (e)	08200900	0.19	1965-74
Seco Creek near Utopia (d)	08202000	53.20	1952-61
Seco Creek Reservoir inflow near Utopia (d)	08202450	59.5	1991-98
Seco Creek near D'Hanis (d)	08202500	87.40	1952-64
Parkers Creek Reservoir (d)	08202800	10.0	1991-99

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Leona River Tributary near Uvalde (e)	08203500	1.21	1966-74
Leona River Spring Flow near Uvalde (d)	08204000*	1.21	1939-77
Leona River near Divot (d)	08204500	565	1924-29
Frio River at Calliham (d)	08207000	5,491	1925-26, 1932-81
Rutledge Hollow Creek near Poteet (e)	08207200	9.33	1966-74
Rutledge Hollow at 7th Street, Poteet (d)	08207220	N/A	1979-2000
Atascoas River at U.S. Highway 281, Pleasanton (d)	08207300	N/A	1973-2000
Atascosa River near McCoy (d)	08207500	530	1951-57
Lucas Creek near Pleasanton (e)	08207700	32.80	1966-73
Ramirena Creek near George West (d)	08210300	84.40	1968-72
Lagarto Creek near George West (d)	08210400	155	1972-89
Nueces River below Mathis (d)	08211100	16,726	1966-67
Rincon Bayou Channel near Calallen (d)	08211503	N/A	1996-2000
Pintas Creek Tributary near Banquete (e)	08211550	3.28	1966-74
Hamon Creek near Freer (e)	08211600	0.73	1965-73
San Diego Creek at Alice (d)	08211800	319	1964-89
Lake Alice at Alice (e)	08211850	150	1965-86
San Fernando Creek near Alice (d)	08212000	518	1962-63
North Las Animas Creek Tributary near Freer (e)	08212320	0.07	1969-74
Rio Grande at Vinton Bridge near Anthony (d)	08363840	28,680	1969-74
Northgate Reservoir at El Paso (e)	08365540	6.89	1973-75
Range Reservoir at El Paso (e)	08365545	11.89	1973-75
Franklin Canal at El Paso (d)	08365550	N/A	1969-72
McKelligon Canyon at El Paso (d)	08365600	2.30	1958-77
Government Ditch at El Paso (d)	08365800	6.40	1958-77
Rio Grande at Jaurez, MX (d)	08366000	29,350	1938-56
Riverside Canal near Socorro (d)	08366400	37,830	1969-72
Rio Grande at Island Station near El Paso (d)	08366500	29,743	1938-60
Rio Grande at Tornillo Branch near Fabens (d)	08367000	N/A	1924-38
Tornillo Drain at mouth near Tornillo (d)	08368000	N/A	1969-72
Tornillo Canal near Tornillo (d)	08368300	N/A	1969-72
Hudspeth Feeder Canal near Tornillo (d)	08368900	N/A	1969-72
Rio Grande at County Line Station near El Paso (d)	08369500	30,610	1938-60
Camo Rice Arroyo Tributary near Fort Hancock (e)	08370200	2.35	1966-74
Wild Horse Creek Tributary near Van Horn (e)	08370800	0.74	1966-73
Cibolo Creek near Presidio (d)	08373200	276	1971-77
Rio Grande above Presidio (lower Station) (d)	08373500	N/A	1901-13, 1924-54
Rio Grande at Langtry (d)	08377500	84,795	1900-14, 1920, 1924-60
Rio Grande Tributary near Langtry (e)	08377600	0.32	1966-74
Delaware River Tributary near Orla (e)	08407800	1.6	1966-74
Pecos River near Angeles (d)	08409500	20,540	1914-37
Salt Screwbean Draw near Orla (d)	08411500	464	1939-41, 1944-57
Pecos River near Mentone (d)	08414000	21,650	1922-26, 1969-73
Reeves County WID No. 2 Canal near Mentone (d)	08414500	N/A	1922-25, 1939-57, 1964-90
Ward County WID No. 3 Canal near Barstow (d)	08415000	N/A	1939-57, 1964-90
Pecos River above Barstow (d)	08416500	21,800	1916-21
Ward County Irrigation District No. 1 Canal near Barstow (d)	08418000	N/A	1922-25, 1939-57, 1964-90
Pecos River at Pecos (d)	08420500	22,100	1898-1907, 1914-15, 1922-26, 1939-55

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Madera Canyon near Toyahvale (d)	08424500	53.80	1932-49
Phantom Lake Spring near Toyahvale (d)	08425500*	N/A	1932-34, 1942-66
Giffin Springs at Toyahvale (d)	08427000*	N/A	1932-33
San Solomon Springs at Toyahvale (d)	08427500*	N/A	1932-34, 1941-65
West Sandia Spring at Balmorhea (d)	08429000	N/A	1932-33
East Sandia Spring at Balmorhea (d)	08430000	N/A	1932-33
Toyah Creek near Pecos (d)	08431000	1,024	1940-41, 1944-45
Salt Draw near Pecos (d)	08431500	1,882	1939-41, 1944-45
Limpia Creek below Fort Davis (d)	08431800	227	1962-77
Limpia Creek near Fort Davis (d)	08432000	303	1925-32
Barrilla Draw near Saragosa (d)	08433000	612	1925-26, 1932, 1976-83
Toyah Creek below Toyah Lake near Pecos (d)	08434000	3,709	1939-51
Grandfalls-Big Valley Canal near Barstow (d)	08435000	N/A	1922-26, 1939-57, 1964-76
Pecos River below Barstow (d)	08435500	25,980	1939-41
Toronto Creek near Alpine (d)	08435600	27.90	1971-76
Alpine Creek at Alpine (d)	08435620	18.10	1971-76
Moss Creek near Alpine (d)	08435660	11.30	1971-76
Sunny Glen Canyon near Alpine (d)	08435700	29.70	1968-77
Coyanosa Draw near Fort Stockton (d)	08435800	1,182	1964-77
Pecos County WID No. 2 (Upper Div.) Canal near Grandfalls (d)	08436500	N/A	1922-25, 1939-57, 1964-90
Courtney Creek Tributary near Fort Stockton (e)	08436800	0.44	1966-74
Pecos County WID No. 2 Canal near Imperial (d)	08437500	N/A	1940-57, 1964-90
Lake Leon Tributary near Fort Stockton (e)	08437550	1.59	1966-74
Pecos County WID No. 3 Canal near Imperial (d)	08437600	N/A	1940-57, 1964-90
Monument Draw Tributary at Pyote (e)	08437650	178	1966-74
Ward County WID No. 2 Canal near Grand Falls (d)	08437700	N/A	1939-57, 1964-90
Pecos River near Grand Falls (d)	08438100	27,810	1916-26
Pecos River below Grand Falls (d)	08441500	27,820	1921-26, 1939-56
Three Mile Mesa Creek near Fort Stockton (e)	08444400	1.04	1966-74
Comanche Springs at Fort Stockton (d)	08444500	N/A	1936-64
Pecos River near Sheffield (d)	08447000	31,600	1922-25, 1940-49
Independence Creek near Sheffield (d)	08447020	763	1974-85
Howards Creek Tributary near Ozona (e)	08447200	7.53	1967-73
Pecos River near Shumla (d)	08447400	35,162	1955-60
Pecos River near Comstock (d)	08447500	35,298	1900-54
Goodenough Springs near Comstock (e)	08448500	N/A	1929-60
Sonora Field Creek at Sonora (e)	08448800	2.60	1965-71
Devils River near Juno (d)	08449000	2,730	1925-49, 1964-73
Devils River near Comstock (d)	08449300	3,903	1955-58
Rough Canyon Tributary near Del Rio (e)	08449470	7.90	1967-73
Devils River near Del Rio (d)	08449500	4,185	1900-14, 1924-57
Evans Creek Tributary near Del Rio (e)	08449600	0.39	1966-73
Devils River near mouth, Del Rio (d)	08450500	4,305	1954-60

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Rio Grande near Del Rio (d)	08452500	123,303	1900-15, 1920, 1924-54
San Felipe Creek near Del Rio (e)	08453000	46.0	1931-60
Zorro Creek near Del Rio (e)	08453100	10.0	1966-74
East Perdido Creek near Brackettville (e)	08454900	3.39	1965-74
Pinto Creek near Del Rio (d)	08455000	249	1929-69, 1971-72
Rio Grande at San Antonio Crossing (d)	08458700	129,226	1952-60
Arroyo San Bartolo at Zapata (e)	08459600	0.61	1966-74
Rio Grande near Zapata (d)	08460500	163,344	1932-53
International Falcon Reservoir near Falcon Heights (d)	08461200	N/A	1953-60
Rio Grande at Roma (d)	08462500	166,464	1900-13, 1923-54
Rio Grande near Rio Grande City (d)	08465500	180,941	1932-54
Rio Grande Tributary near Rio Grande City (e)	08466100	1.20	1966-74
Rio Grande Tributary near Sullivan City (e)	08466200	0.40	1966-74
North Floodway South of McAllen (d)	08468000	N/A	1928-60
South Floodway South of McAllen (d)	08470000	N/A	1929-60
Rio Grande at Hildalgo (d)	08471500	176,100	1928-32, 1935, 1939, 1941-51
Rio Grande near Progreso Bridge (d)	08473300	176,228	1953-60
Rio Grande near San Beniot (d)	08473700	176,304	1953-60
Rio Grande at Matamoros, MX (d)	08474500	182,211	1900-13, 1923-54
Rio Grande near Brownsville (d)	08475000	176,333	1935-50

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 2000 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
Pease River near Vernon	07308200	3,488	SC,T	1999
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
Beaver Creek near Electra	07312200	652	SC,T	1969-70
				1996-99
Little Wichita River near Archer City	07314500	481	SC	1953-55,
			T	1953-54
Little Wichita River near Henrietta	07314900	1,037	SC, DO	1999
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

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
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
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 near Beckville	08022040	3,589	SC, T	1952-98
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	1955-78,
			SC, T	1955-
Attoyac Bayou near Chireno	08038000	503	SC, T	1984-99
Sam Rayburn Reservoir near Jasper	08039300	3,449	SC, T	1964-84,
				1993-99
Angelina River below Sam Rayburn Dam near Jasper	08039400	3,449	SC, T	1964-79
Angelina River at SH 63 near Ebenezer	08039500	3,435	SC, T	1994-99
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
Big Sandy Creek near Bridgeport	08044000	333	SC, T, S	1968-77,
Lake Worth above Fort Worth	08045400	2,064	pH, Cl	
Clear Fork Trinity River at Fort Worth	08047500	518	SC, pH, Cl	1949-52,
			T	1948-62

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Village Creek at Everman	08048970	84.5	SC, pH, T, DO	1990
Elm Fork Trinity River SWS # 6-0 near Muenster	08050200	0.77	S	1957-66
Elm Fork Trinity River near Muenster	08050300	46	SC	1967-68,
			T	1957-58, 1966-68,
			S	1957-68
Clear Creek near Sanger	08051500	295	SC, T, S	1968-77
Little Elm Creek near Celina	08052650	46.70	SC	1967-75,
			T, S	1966-75
Little Elm Creek near Aubrey	08052700	75.50	SC	1967-75,
			T, S	1967-75
Elm Fork Trinity River near Lewisville	08053000	1,673	SC	1982-86,
			T	1976-86
White Rock Creek at Greenville Avenue, Dallas	08057200	66.4	SC, pH, T, DO	1997-2000
Trinity River below Dallas	08057410	6,278	SC, T	1968-2000,
			S	1972-75, 1998-2000
			Cl	1970-81, 1998-99
Lavon Lake near Lavon	08060500	770	SC,T,CL	1969-74, 1975,82, 1995-99
Duck Creek near Garland	08061700	31.6	SC, pH, T, DO	1988-89
East Fork Trinity River above Seagoville	08061970	1,183	SC, T, pH, DO	1987-93
East Fork Trinity River at Seagoville	08061980	1,224	SC, pH, T, DO	1987-96
East Fork Trinity River near Crandall	08062000	1,256	SC, T	1968-1981, 1987-2000
			pH, DO	1977, 1986-2000
			Cl	1964-81, 1986-2000
Trinity River at Trinidad	08062700	8,538	SC, T	1967-81 1986-2000
			pH, DO	1967-81, 1986-2000
			Cl	1966-94
			S	1978-94
Cedar Creek near Mabank	08063000	733	SC, T, pH, Cl	1956-57
Pin Oak Creek near Hubbard	08063200	17.60	SC	1967-72,
			T	1957-60, 1965-72,
			S	1957-60, 1962-72
Richland Creek near Richland	08063500	734	SC, T, pH, Cl	1968-69,
			SC, T	1983-89
Chambers Creek near Corsicana	08064500	963	SC, T, pH, Cl	1961-70
Richland Creek near Fairfield	08064600	1,957	SC, T, pH, Cl	1956-66, 1972,
			SC, T	1973-83
Trinity River near Oakwood	08065000	12,833	SC, T, pH, Cl	1948-54,
			SC, T, S	1977-81
Bedias Creek near Madisonville	08065800	321	SC, T	1985-87,
			S	1986
Long King Creek at Livingston	08066200	141	SC, T, pH, Cl	1963-72
Trinity River near Goodrich	08066250	16,844	SC, T	1970-73
Trinity River near Moss Bluff	08067100	17,738	SC, pH, Cl	1950-65
Old River near Cove	08067200	19.0	SC, pH, Cl	1950-65,
			T	1965

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Trinity River at Anahuac	08067300	17,912	SC, pH, Cl	1950-65
West Fork San Jacinto River near Conroe	08068000	828	SC, T	1962-90,
			DO	1979-81
Panther Branch near Spring	08068450	34.50	S	1975-76
West Fork San Jacinto River near Humble	08069500	1,741	SC, Cl	1945-46
East Fork San Jacinto River near New Caney	08070200	388	SC,T	1984-99
San Jacinto River near Huffman	08071500	2,800	SC	1945-54,
			T	1949-54
Buffalo Bayou at West Belt Drive at Houston	08073600	307	SC, T	1979-81
Buffalo Bayou at Houston	08074000	358	SC, pH, T, DO	1986-2000
			Cl	1969-81
Whiteoak Bayou at Main Street, Houston	08074598	127	SC, T, DO	1992-97
Buffalo Bayou at Main Street, Houston	08074600	469	SC, T, DO	1986-92
Buffalo Bayou at McKee Street, Houston	08074610	469	SC, T, DO	1992-2000
			pH	1998-2000
Sims Bayou at Houston	08075500	63.0	SC, T, DO	1994-97
Chocolate Bayou near Alvin	08078000	87.70	SC, T	1978-81
North Fork Double Mountain Fork Brazos River near Post	08079575	438	SC, T	1984-93
Double Mountain Fork Brazos River near Rotan	08080000	8,536	SC, T	1950-51
Double Mountain Fork Brazos River near Aspermont	08080500	8,796	SC, T, S	1949-51
			SC, T	1957-95
McDonald Creek near Post	08080540	103	SC, T	1964-78
Salt Fork Brazos River near Peacock	08081000	4,619	SC, T	1950-51,
				1965-86
Croton Creek near Jayton	08081200	290	SC, T	1961-80
Salt Croton Creek near Aspermont	08081500	64.30	SC	1969-77,
			T	1972-73
Salt Fork Brazos River near Aspermont	08082000	5,130	SC, T, pH, Cl	1949-51,
			SC, T	1957-82
Stinking Creek near Aspermont	08082100	88.80	T	1950,
			SC, T	1966-69
North Croton Creek near Knox City	08082180	251	SC, T	1966-86
Brazos River at Seymour	08082500	15,538	SC, T	1960-95
Medina River near Somerset	08082800	967	SC, T, Cl	1998-2000
Clear Fork Brazos River at Hawley	08083240	1,416	SC, T	1968-79,
				1982-84
Clear Fork Brazos River at Nugent	08084000	2,199	SC, T, pH, Cl	1948-53
California Creek near Stamford	08084800	478	SC, T	1963-79
Paint Creek near Haskell	08085000	914	SC, T	1950-5
Clear Fork Brazos River at Fort Griffin	08085500	3,988	SC, T, S	1950-51,
			SC, T	1968-79,
				1982-84
Hubbard Creek near Sedwick	08086015	128	SC, T	1964-66
Deep Creek at Moran	08086050	228	SC, T	1963-75
Hubbard Creek near Albany	08086100	454	SC, T	1962-75
Salt Prong Hubbard Creek at U.S. Highway 380 near Albany	08086120	61	SC, T	1964-68
North Fork Hubbard Creek near Albany	08086150	39.30	SC, T	1964-90
Salt Prong Hubbard Creek near Albany	08086200	115	SC, T	1962-63
Snailum Creek near Albany	08086210	22.90	SC, T	1964-66
Battle Creek near Moran	08086235	108	SC, T	1967-68
Pecan Creek near Eolian	08086260	26.40	SC, T	1967-75
Big Sandy Creek near Breckenridge	08086300	288	SC, T	1962-77
Hubbard Creek near Breckenridge	08086500	1,089	SC, T	1955-75
Clear Fork Brazos River at Eliasville	08087300	5,697	SC, T	1962-82
Brazos River near South Bend	08088000	22,673	SC, Cl	1942-48,
			SC, T	1978-81
Salt Creek at Olney	08088100	11.80	SC, T	1958-60

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Salt Creek near Newcastle	08088200	120	SC, T	1958-60
Brazos River at Morris Sheppard Dam near Graford	08088600	23,596	SC	1942-91,
			T	1950-55, 1966-91
Brazos River near Dennis	08090800	25,237	SC, T	1971-95
Brazos River at Whitney Dam near Whitney	08092600	27,189	SC, T	1947-97
Aquilla Creek above Aquilla	08093360	255	SC, T	1980-83
Aquilla Creek near Aquilla	08093500	308	SC, T	1966, 1968-82
Brazos River near Highbank	08098290	30,436	T	1968-84
Leon River near Eastland	08098500	235	SC, T	1950-53
Leon River near Hasse	08099500	1,261	SC, T	1980-82, 1990-97
Leon River near Belton	08102500	3,542	T	1957-72
South Fork Rocky Creek near Briggs	08103900	33.30	S	1963-65
Lampasas River at Youngsport	08104000	1,240	SC, T	1961-64
Little River near Little River	08104500	5,228	SC, T	1965-73, 1980-82
Little River near Cameron	08106500	7,065	SC, T	1959-97
San Gabriel River near Weir	08105300	563	T	1977-82
San Gabriel River at Laneport	08105700	738	T	1977-82
Brazos River at State Highway 21 near Bryan	08108700	39,049	SC, T	1961-65
Brazos River near Bryan	08109000	39,515	SC, T	1966
Brazos River near College Station	08109500	39,599	SC, T	1961-84
Yegua Creek near Somerville	08110000	1,009	SC, T	1961-67
Navasota River above Groesbeck	08110325	239	SC, T	1968-89
Navasota River near Groesbeck	08110400	311	SC, T	1968-78
Navasota River near Easterly	08110500	968	SC	1942-43, 1947
Navasota River near Bryan	08111000	1,454	SC, T	1959-81,
			S	1976-81
Brazos River near Richmond	08114000	45,007	S	1966-86,
			SC	1942-95,
			T	1951-95
Brazos River near Rosharon	08116650	45,399	SC, T	1969-80
Brazos River at Harris Reservoir near Angleton	08116700	44,000	SC	1962-77,
			T	1967-77
Brazos River at Brazoria Reservoir near Brazoria	08117200	44,000	SC	1962-77,
			T	1967-77
San Bernard River near Boling	08117500	727	SC, T	1978-81
Colorado River above Bull Creek near Knapp	08118200	N/A	SC, T, Cl	1950-52
Bull Creek near Ira	08118500	26.30	SC, T, pH, Cl	1950-51
Bluff Creek near Ira	08119000	42.60	SC, T, pH, Cl	1950
Colorado River near Ira	08119500	3,483	SC, T	1950-52, 1959-70, 1975-82,
			Cl	1951-52
Deep Creek near Dunn	08120500	198	SC, T	1953-54
Morgan Creek near Westbrook	08121500	273	T	1954-55
Graze Creek near Westbrook	08122000	21.70	T	1954-55
Morgan Creek near Colorado City	08122500	313	T	1947-49
Lake Colorado City near Colorado City	08123000	340	T	1954-55
Beals Creek above Big Spring	08123650	9,319	SC, T	1973-78
Beals Creek near Big Spring	08123700	9,341	SC, T	1956-57
Beals Creek near Coahoma	08123720	9,383	SC, T	1983-88
Colorado River near Silver	08123900	14,997	SC, T	1957-68
Colorado River at Robert Lee	08124000	15,307	SC, T, pH, Cl	1948-51,
			S	1949-51

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Oak Creek near Blackwell	08126000	209	SC, T	1950
Colorado River at Ballinger	08126500	16,413	SC, T	1961-79,
			S	1978-79
Pecan Bayou at Brownwood	08143500	1,660	SC, T	1948-49
Pecan Bayou near Mullin	08143600	2,073	SC, T	1968-91
San Saba River near San Saba	08145500	N/A	SC, T	1962-65
San Saba River at San Saba	08146000	3,046	SC	1962-69,
			T	1963-70
Colorado River near San Saba	08147000	37,217	SC, T	1947-92,
			S	1951-62
Llano River at Llano	08151500	4,197	SC, T	1979-81
Lake Austin at Austin	08154900	38,240	SC, T	1965-80
Barton Creek below Barton Springs at Austin	08155505	125	SC, T,	1965,
				1975-83,
				1989-91,
				1994-97
Waller Creek at 23rd Street at Austin	08157500	4.13	T	1955-60
East Bouldin Creek at South 1st Street, Austin	08157600	2.4	Cl	1997-2000
Colorado River at Austin	08158000	39,009	SC, T	1948-91
Colorado River above Columbus	08160700	41,403	SC, T	1983-86
Colorado River at Columbus	08161000	41,640	SC	1967-73,
			T	1957-59,
				1961-68
			S	1957-73
Colorado River at Wharton	08162000	42,003	SC	1945-92,
			T	1946-48,
Lavaca River near Edna	08164000	817	SC, T	1978-81
Navidad River near Speaks	08164350	437	SC, T, pH, Cl	1996-97
Navidad River near Ganado	08164500	826	SC, T	1960-80
Guadalupe River near Spring Branch	08167500	1,315	SC	1942-45
Guadalupe River at Sattler	08167800	1,436	T	1984-87
Blanco River at Wimberley	08171000	355	T	1977-78
Plum Creek near Luling	08173000	309	SC, T	1968-86
Sandies Creek near Westhoff	08175000	549	S	1966
			Cl	1962-99
Guadalupe River at Victoria	08176500	5,198	SC	1946-81,
			T	1951-81
Coleto Creek Reservoir (Condenser No. 1) near Fannin	08177360	414	T	1980-94
Coleto Creek Reservoir (outflow) near Victoria	08177410	494	T	1980-94
Olmos Creek at Dresden Drive, San Antonio	08177700	21.2	SC, pH, T, DO	1969-99
			S	1973
San Antonio River at San Antonio	08178000	41.8	SC, T	1991-92,
				1996-97
San Antonio River at Mitchell Street, San Antonio	08178050	42.4	SC, pH, T, DO	1992-99
San Antonio River at Loop 410 at San Antonio	08178565	125	SC, pH, T, DO	1987-2000
Medina River near Macdona	08180700	885	SC, pH, T, DO	1998-2000
Medina River at La Coste	08180640	805	SC, pH, T, DO	1987-95
Medio Creek at Pearsall Rd. at San Antonio	08180750	47.9	SC, pH, T, DO	1987-95
Ingram Road Outfall at Leon Creek Tributary at San Antonio	08181410	0.02	SC, pH, T, DO	1994-2000
Leon Creek at Interstate Highway 35 at San Antonio	08181480	219	SC, pH, T, DO	1985-2000
Medina River at San Antonio	08181500	1,317	SC, pH, T, DO	1987-2000
			Cl	1965-2000
San Antonio River near Falls City	08183500	2,113	SC, pH, T, DO	1987-96
Cibolo Creek near Falls City	08186000	827	SC, T	1969-91
Escondido Creek SWS #1 near Kenedy	08187000	3.29	S	1955-65
Guadalupe River at Tivoli	08188800	10,128	SC, T	1966-82
Mission River at Refugio	08189500	690	SC, T	1961-81
Nueces River at Cotulla	08194000	5,171	SC	1942

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Nueces River near Tilden	08194500	8,093	SC, T, S	1950
Frio River at Calliham	08207000	5,491	SC, T	1968-81
Nueces River near Three Rivers	08210000	15,427	SC	1945-47,
			SC, T, pH, Cl, S	1951-52,
			SC, T	1975-81
Nueces River at Bluntzer	08211000	16,772	SC, T	1948-91
Los Olmos Creek near Falfurrias	08212400	480	SC, T	1975-81
Rio Grande at El Paso	08364000	29,267	SC, pH, T, DO	1930-2000
Rio Grande at Fort Quitman	08370500	31,944	SC, T	1975-78.
Rio Grande at Foster Ranch near Langtry	08377200	80,742	SC, T	1975-81
Pecos River below Red Bluff Dam near Orla	08410100	20,720	SC	1937-69,
			T	1953-69
Salt Draw near Orla	08411500	464	SC, T	1943-48
Pecos River near Mentone	08414000	21,650	SC	1939
Pecos River at Pecos	08420500	22,100	SC	1939-41
Toyah Creek near Pecos	08431000	1,024	SC	1940,
				1944
Salt Draw near Pecos	08431500	1,882	SC	1940,
				1944
Toyah Creek below Toyah Lake near Pecos	08434000	3,709	SC	1940-50,
			Cl	1940
Pecos River below Grand Falls	08441500	27,820	SC	1939-42,
				1947-56
Pecos River near Girvin	08446500	29,560	SC	1940-41,
				1947,
				1954-82
			T	1954-59,
				1964-82
Pecos River near Sheffield	08447000	31,600	SC	1940-41,
				1947
Pecos River near Langtry	08447410	35,179	SC, T	1971-76,
				1981-85
Devils River at Pafford Crossing near Comstock	08449400	3,961	SC, T	1978-85
Rio Grande at Laredo	08459000	132,578	SC	1975-86,
			T	1974-76
Rio Grande at Roma	08462500	166,464	SC	1942-43
Rio Grande at Fort Ringgold, Rio Grande City	08464700	174,362	SC, pH, T	1959-2000
Rio Grande near Los Ebanos	08466300	N/A	SC, pH, T	1977-2000
Rio Grande at Mission Pumping Plant	08468000	171,800	SC	1945-50
Rio Grande below Anzalduas Dam	08469200	176,112	SC, pH, T	1967-72,
				1959-2000
Rio Grande at Cameron Co. WID #2 near San Benito	08473800	N/A	SC	1942-43
Rio Grande at Los Fresnos Pumping Plant near Brownsville	08474130	N/A	SC	1945-46
Rio Grande near Brownsville	08475000	176,333	SC	1943-44,
			SC, T	1967-83
			S	1966-83

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WATER RESOURCES DATA—TEXAS, 2001

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 68 gaging stations; stage only at 3 gaging stations; stage and contents at 30 lakes and reservoirs; and water quality at 40 gaging stations. Also included are data for 12 partial-record stations comprised of 6 flood-hydrograph and 6 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-01-1." 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 Texas 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 2001 are:

- Corps of Engineers, U.S. Army.
- International Boundary and Water Commission United States and Mexico, U.S. Section.
- National Park Service
- 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 Conservation District; Brazos River Authority; Canadian Municipal Water Authority; Coastal Water Authority; Colorado River Municipal Water District; Dallas Public Works Department; Dallas Water Utilities; Edwards Underground Aquifer Authority; 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 Municipal Water Authority; Northeast Texas Municipal Water District; North Texas Municipal Water District; Orange County; Pecos River Commission; Red Bluff Water Power Control District; Red River Authority of Texas; 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 Colorado 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 above normal during water year 2001.

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,481,000 acre-feet, increased from 67 percent at the end of September 2000 to 76 percent at the end of September 2001. Records from these reservoirs indicate that storage increased in 54, decreased in 20, and remained the same in 3.

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 above normal during water year 2001. Streamflow for water year 2001 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 2001 averaged above normal. Monthly mean discharges for water year 2001 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 November through March, June, and September and normal for the remaining 5 months. The station North Bosque River near Clifton had above normal streamflow during November, January, February and March, below normal streamflow during June and August, and normal streamflow for the remaining 6 months. The station North Concho River near Carlsbad had above normal streamflow for October and November, below normal streamflow for May, and normal streamflow for the remaining 9 months. Streamflow for the station Guadalupe River near Spring Branch was above normal for November through April and September, and normal for the remaining 5 months of water year 2001.

Conservation storage in 22 selected reservoirs in this area of the State, with a total combined conservation capacity of

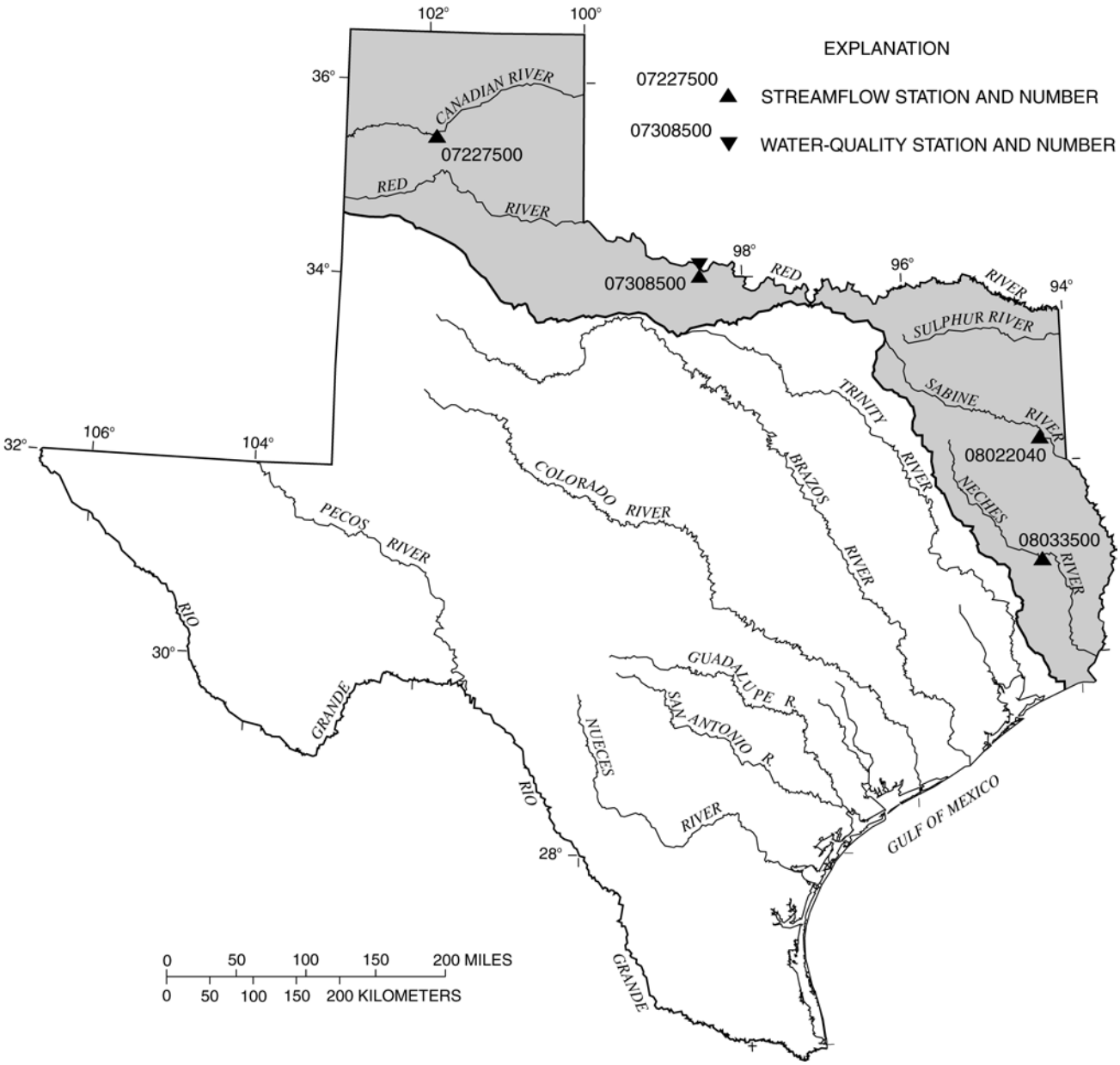


Figure 1. Area of Texas covered by volume 1 (shaded) and location of selected streamflow and water-quality stations in volume 1.

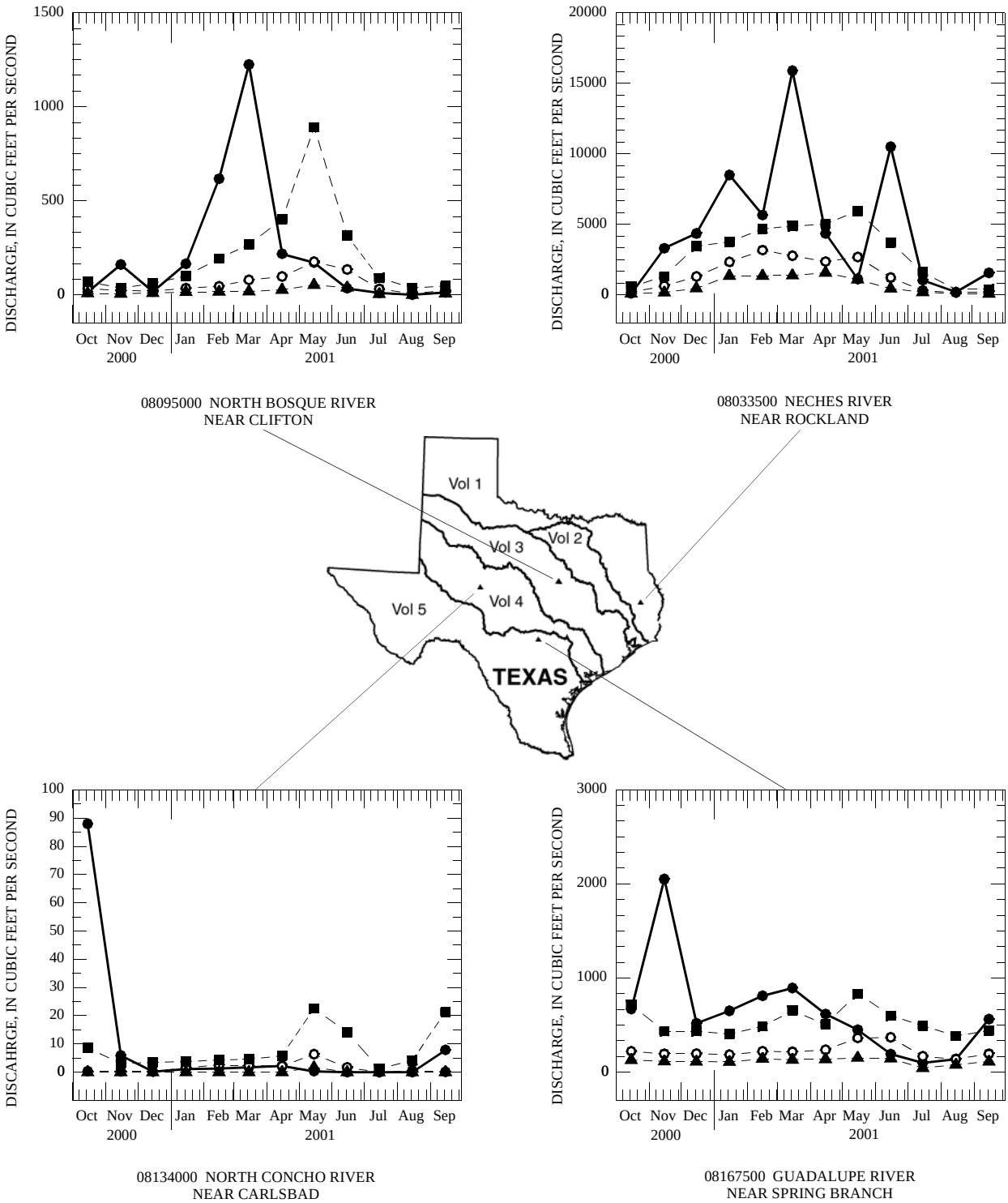


Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 2001 water year and median of the monthly mean discharges for 1961–90 water years.

14,654,000 acre-feet, increased from 79 percent of capacity at the end of September 2000 to 83 percent of capacity at the end of September 2001. Records from these reservoirs indicate that storage increased in 14, decreased in 5, and remained the same in 3 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 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 2001 are compared with those for water years 1997-2001 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 2001 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, TX	12,500	0	62	135,000	0	275 (1939-2001)
Red River Basin						
07308500 Red River near Burkburnett, TX	18,200	13	1,177	174,000	0	1,258 (1960-2001)
Sabine River Basin						
08022040 Sabine River near Beckville, TX	25,400	109	5,103	49,400	2.4	2,601 (1961-2001)
Neches River Basin						
08033500 Neches River near Rockland, TX1/	28,200	92	4,715	42,300	18	2,402 (1962-2001)

1/ Hydrologic index station.

Table 2. Comparison of records of discharge-weighted-average concentrations of dissolved solids for the 2001 and 1997-2001 water years

Station no. and name	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	2001	1997-2001	2001	1997-2001
Red River Basin				
07308500 Red River near Burkburnett, TX	1,177	1,670	2,770	2,664

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 streamflow representative of 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. At 10 of these sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program can be found at http://water.usgs.gov/hbn/.

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

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 225 precipitation-chemistry monitoring sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. 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.

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

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

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

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 three NAWQA Programs operating in Texas; the Trinity NAWQA, the South Central Texas NAWQA, and the southern portion of the High Plains Ground-Water NAWQA.

Additional information about the NAWQA Programs are available through the world wide web at:

http://wwwrvares.er.usgs.gov/nawqa/nawqa_home.html
http://tx.usgs.gov/trin
http://tx.usgs.gov/sctx
http://co.water.usgs.gov/nawqa/hpgw

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 2001 water year that began October 1, 2000, and ended September 30, 2001. A calendar of the water year is provided on the inside of the front cover. The records contain stage and 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 daily-mean 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 5, 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-mean 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 errors in published water-quality records are discovered after publication, appropriate updates are made in the U.S. Geological Survey's distributed data system, NWIS, and subsequently to its web-based National data system, NWISWeb [http://water.usgs.gov/nwis/nwis]. 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 NWIS or NWISWeb to ensure the most recent updates. Updates to NWISWeb are currently made on an annual basis.

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. A1, A3, and A4; Book 9, Chap. A1-A9. 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.

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 (2001) 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 in the U.S. Geological Survey's distributed data system, NWIS, and subsequently to its web-based National data system, NWISWeb [http://water.usgs.gov/nwis/nwis]. 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 NWIS or NWISWeb to ensure the most recent updates. Updates to NWISWeb are currently made on an annual basis.

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

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.
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant.
M	Presence of material verified but not quantified.

Dissolved Trace-Element Concentrations

***NOTE**:--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (µg/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 µg/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 Program Office, Illinois State Water Survey, 2204 Griffith Drive, Champaign, IL 61820-7495 (217-333-7873).

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:

Source solution blank – a blank solution that is transferred to a sample bottle in an area of the office laboratory with an atmosphere that is relatively clean and protected with respect to target analytes.

Ambient blank – a blank solution that is put in the same type of bottle used for an environmental sample, kept with the set of sample bottles before sample collection, and opened at the site and exposed to the ambient conditions.

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.

Pump blank – a blank solution that is processed through the same pump-and-tubing system used for an environmental sample.

Standpipe blank – a blank solution that is poured from the containment vessel (stand-pipe) before the pump is inserted to obtain the pump blank.

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.

Canister blank – a blank solution that is taken directly from a stainless steel canister just before the VOC sampler is submerged to obtain a field blank 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:

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

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.

Concurrent sample – a type of spike sample that is collected at the same time with the same sampling and compositing devices then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

Split sample – a type of spike sample in which a sample is split into subsamples contemporaneous in time and space then spiked with the same spike solution containing laboratory-certified concentrations of selected analytes.

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

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. 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 a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also “Annual runoff”)

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

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

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

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

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 to September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of polychlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type and the last two digits represent the weight percent of the hydrogen substituted chlorine.

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

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

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

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

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

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

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

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

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

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

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

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

Blue-green algae (*Cyanophyta*) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also "Phytoplankton")

Bottom material See "Bed material".

Cells/volume refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and are generally reported as cells or units per milliliter (mL) or liter (L).

Cells volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements on cell dimensions (for example,

length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

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

pi is the ratio of the circumference to the diameter of a circle; pi = 3.14159…

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal

datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or UTM coordinates. (See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988")

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

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

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

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

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

Dissolved-solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

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

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

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

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

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

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (See also "Ash mass," "Biomass," and "Wet mass")

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

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

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

Escherichia coli (E. coli) are bacteria present in the intestine and feces of warm-blooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium. Their concentra-

tions are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

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

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

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

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

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

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

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

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

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

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

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

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

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

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

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

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

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

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

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

Horizontal datum (See "Datum")

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Minimum Reporting Level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method (Timme, 1995).

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

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

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

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

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

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

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

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of Formazin. Turbidity measured in NTU uses nephelo-

metric methods that depend on passing specific light of a specific wavelength through the sample.

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

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

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

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. (See also "Ash mass," "Biomass," and "Dry mass")

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

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

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

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

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

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

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

Classification	Size (mm)	Method of analysis
Clay	0.00024 - 0.004	Sedimentation
Silt	0.004 - 0.062	Sedimentation
Sand	0.062 - 2.0	Sedimentation/sieve
Gravel	2.0 - 64.0	Sieve

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

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

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

Percent shading is determined by using a clinometer to estimate left and right bank shading. The values are added together and divided by 180 to determine percent shading relative to a horizontal surface.

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

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, proto-

zoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

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

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 are termed "acidic," and solutions with a pH greater than 7 are termed "basic." Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

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

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

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

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

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

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

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

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

Radioisotopes are isotopic forms of an element that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight, but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

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

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or non-exceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most

of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the non-exceedances of the $7Q_{10}$ occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

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

Return period (See "Recurrence interval")

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

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

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

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "fluvial sediment." Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Seven-day 10-year low flow (7Q10) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-run average. The recurrence interval of the 7Q10 is 10 years; the chance that the annual 7-day minimum flow will be less than the 7Q10 is 10 percent in any given year. (See also "Recurrence interval" and "Annual 7-day minimum")

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

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

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

Stage (See "Gage height")

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

Surficial bed material is the upper surface (0.1 to 0.2 ft) of the bed material such as that material which 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 operationally defined as the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also "Suspended")

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

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also "Sediment" and "Suspended sediment")

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

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

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

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

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

Taxa richness is the total number of distinct species or groups and usually decreases with pollution. (See also "Percent Shading")

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

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

Temperature preferences:

Cold – preferred water temperature for the species is less than 20 °C or spawning temperature preference less than 16 °C and native distribution is considered to be predominantly north of 45° N. latitude.

Warm – preferred water temperatures for the species is greater than 20 °C or spawning temperature preference greater than 16 °C and native distribution is considered to be predominantly south of 45° N. latitude.

Cool – intermediate between cold and warm water temperature preferences.

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

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

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

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons per day.

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

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

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

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

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

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

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

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

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

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

Trophic group:

Filter feeder – diet composed of suspended plant and/or animal material.

Herbivore – diet composed predominantly of plant material.

Invertivore – diet composed predominantly of invertebrates.

Omnivore – diet composed of at least 25-percent plant and 25-percent animal material.

Piscivore – diet composed predominantly of fish.

Turbidity is the reduction in the transparency of a solution due to the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to EPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values. Consequently, the method of measurement and type of instrument used to derive turbidity records should be included in the "REMARKS" column of the Annual Data Report.

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

Vertical datum (See "Datum")

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

Water table is the level in the saturated zone at which the pressure is equal to the atmospheric pressure.

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

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2001, is called the "2001 water year."

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

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

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

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

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

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

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.
3-B8. *System and boundary conceptualization in ground-water flow simulation,* by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI book 3, Chapter B8. 2001. 29 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-A4. *National Field Manual for the Collection of Water-Quality Data: Collection of Water Samples,* edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI Book 9, Chapter A5. 1999. 156 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 and 1999. Variously paginated.

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

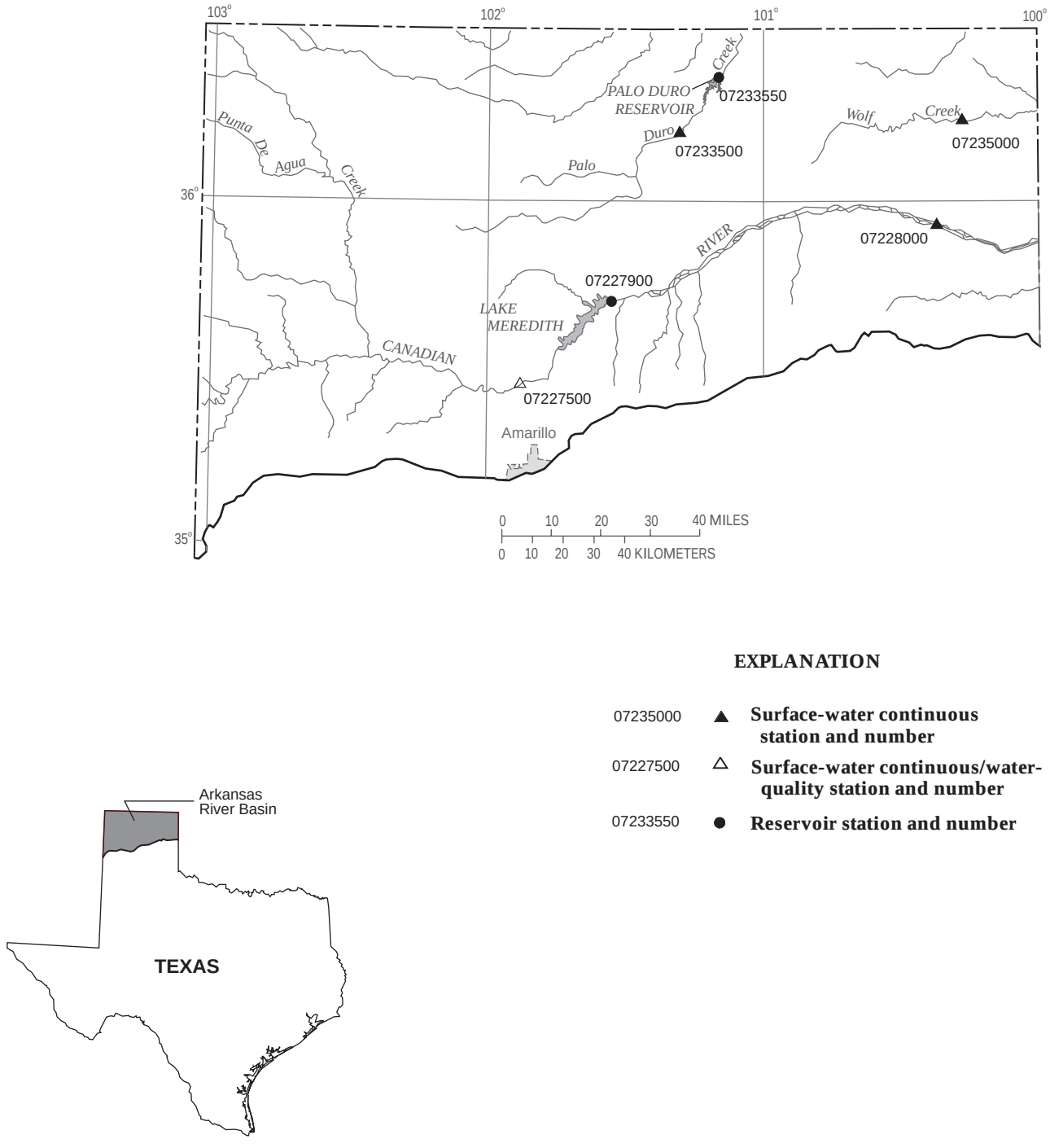


Figure 3.--Map showing location of gaging stations in the Arkansas River Basin

07227500 Canadian River near Amarillo, TX 34
07227900 Lake Meredith near Sanford, TX 42
07228000 Canadian River near Canadian, TX 44
07233500 Palo Duro Creek near Spearman, TX 46
07233550 Palo Duro Reservoir near Spearman, TX 48
07235000 Wolf Creek at Lipscomb, TX 50

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 June 1, 1938, nonrecording gage at site of old bridge 20 ft upstream at same datum. June 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 in Jan. 1924, at least 10% of contributing drainage area has been regulated. Conchas and Bell Ranch Canals divert water from Conchas Reservoir upstream for irrigation. No flow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	147	34	30	73	41	89	14	176	2.7	.00	19
2	e.00	114	27	28	78	54	71	13	66	3.1	.00	12
3	e.00	84	28	25	86	57	63	14	17	3.2	.00	7.0
4	.00	83	29	35	99	58	56	18	14	4.2	.00	20
5	.00	82	28	44	117	57	54	128	13	4.9	.00	13
6	.00	67	24	114	115	64	46	106	12	4.7	.00	17
7	.00	67	25	e98	102	70	59	102	12	4.5	.00	11
8	.00	77	27	e89	99	262	47	85	12	3.6	.00	6.3
9	.00	83	26	79	191	484	37	91	12	2.7	.00	4.5
10	.00	85	27	77	178	466	38	87	e12	2.6	.00	5.3
11	.00	80	28	91	149	352	29	72	e12	2.2	51	4.7
12	.00	69	15	104	118	264	30	62	e12	1.8	22	5.3
13	.00	85	13	88	99	204	29	54	12	2.2	43	6.0
14	.00	78	14	77	89	180	28	44	12	2.3	16	3.8
15	.00	90	19	69	79	154	26	37	e10	1.4	9.4	2.8
16	.00	63	30	67	73	126	22	35	e9.3	.05	6.2	4.3
17	.00	59	32	63	66	112	19	45	e8.3	e.11	5.8	102
18	.00	45	26	61	64	107	19	129	e7.6	e.09	6.1	4.7
19	.00	44	26	61	63	108	25	58	e7.0	e.08	5.9	3.3
20	.00	47	25	59	57	90	28	54	e6.4	e.07	2.5	3.6
21	.00	43	21	57	50	86	28	47	e5.5	e.05	1.6	2.8
22	59	40	20	53	49	79	24	43	e4.7	e.07	1.6	3.2
23	57	41	17	53	51	82	22	40	e4.4	e.10	1.6	2.8
24	4810	36	19	52	58	119	19	29	e4.0	e.11	1.7	4.3
25	648	32	20	49	49	85	15	27	e3.3	e.11	1.9	4.3
26	345	31	18	51	43	72	16	29	3.0	e.11	55	3.0
27	251	29	17	50	36	65	14	26	2.9	e.12	39	2.8
28	171	29	20	70	39	61	14	23	2.8	.11	29	3.9
29	326	28	20	55	---	62	14	34	3.0	.03	33	2.2
30	407	32	21	139	---	88	13	29	2.6	.00	98	1.9
31	214	---	27	72	---	128	---	36	---	.00	116	---
TOTAL	7288.00	1890	723	2060	2370	4237	994	1611	478.8	47.31	546.30	286.8
MEAN	235	63.0	23.3	66.5	84.6	137	33.1	52.0	16.0	1.53	17.6	9.56
MAX	4810	147	34	139	191	484	89	129	176	4.9	116	102
MIN	.00	28	13	25	36	41	13	13	2.6	.00	.00	1.9
AC-FT	14460	3750	1430	4090	4700	8400	1970	3200	950	94	1080	569

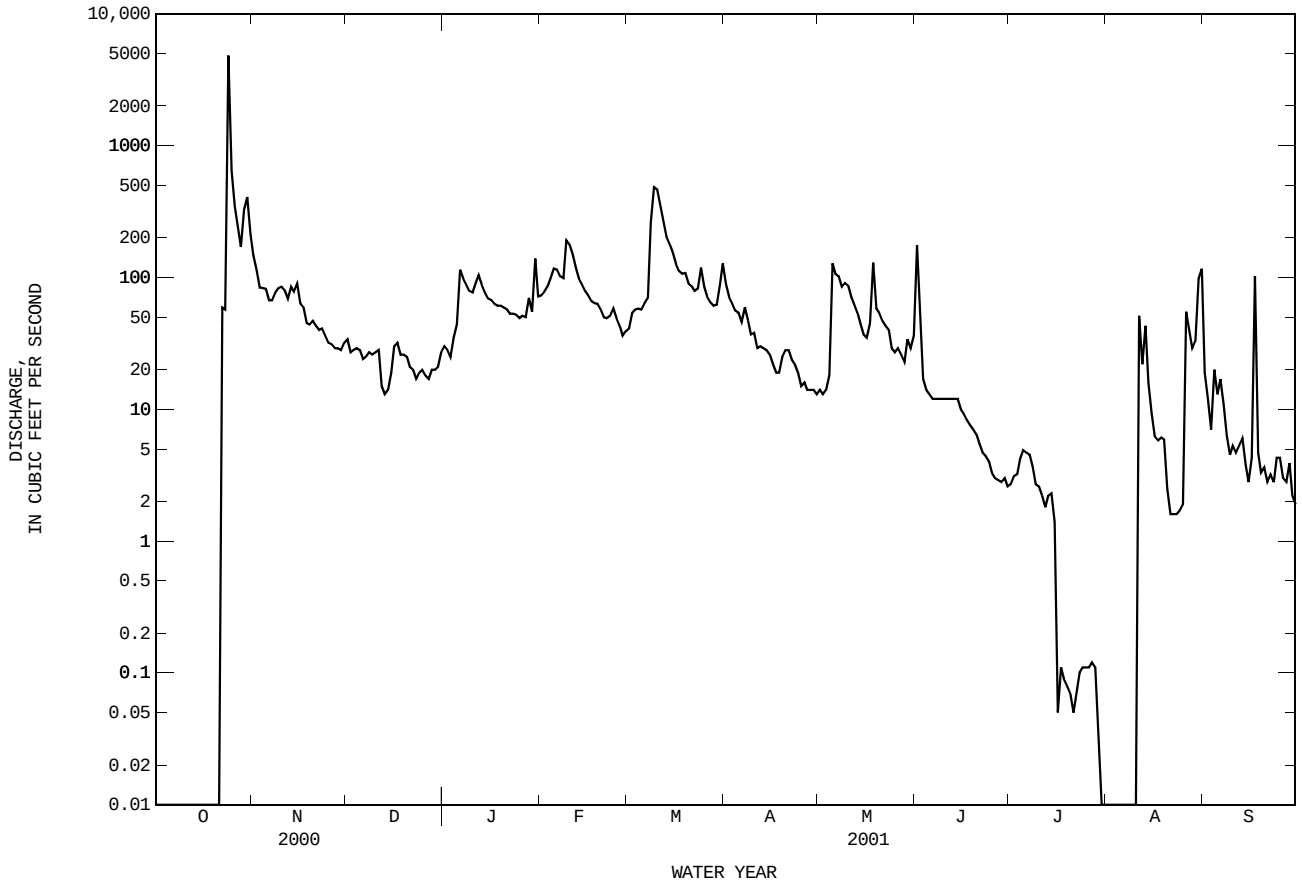
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2001, BY WATER YEAR (WY)

MEAN	306	78.6	50.2	56.0	50.5	53.7	177	432	497	553	518	510
MAX	5663	812	458	519	287	608	5988	6804	5288	4880	3007	8016
(WY)	1942	1942	1942	1943	2000	2000	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	.000
(WY)	1981	1978	1984	1978	1939	1940	1978	1945	1990	1998	1983	2000

07227500 Canadian River near Amarillo, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1939 - 2001	
ANNUAL TOTAL	51990.05		22532.21			
ANNUAL MEAN	142		61.7		275	
HIGHEST ANNUAL MEAN					2351	1941
LOWEST ANNUAL MEAN					37.7	1984
HIGHEST DAILY MEAN	4810	Oct 24	4810	Oct 24	79600	Sep 23 1941
LOWEST DAILY MEAN	.00	Aug 18	.00	Oct 1	.00	Aug 7 1940
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 18	.00	Oct 1	.00	Sep 3 1983
MAXIMUM PEAK FLOW			12500	Oct 24	135000	Jul 25 1941
MAXIMUM PEAK STAGE			6.78	Oct 24	15.70	Jul 25 1941
INSTANTANEOUS LOW FLOW					.00	Oct 1 1977
ANNUAL RUNOFF (AC-FT)	103100		44690		199000	
10 PERCENT EXCEEDS	514		106		470	
50 PERCENT EXCEEDS	26		28		27	
90 PERCENT EXCEEDS	.00		.06		3.9	

e Estimated



07227500 Canadian River near Amarillo, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: July 1948 to Oct. 1949, Feb. 1950 to Sept. 1997, Oct. 1998 to current year.
BIOCHEMICAL DATA: Mar. 1968 to Sept. 1997.
PESTICIDE DATA: Mar. 1968 to June 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 Sept. 1952.

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

REMARKS.--Records poor. 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. The computation of the selected constituent loads might include estimated discharge or specific conductance data. New regression equations were developed based on data from water years 1992 to 2001. The standard error of estimate for dissolved solids is 5%, chloride is 37%, sulfate is 21% and for hardness is 27%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request. No flow Oct. 1-21, July 30-Aug. 10.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 9,180 microsiemens/cm, June 8, 1990; minimum daily, 103 microsiemens/cm, Oct. 22, 2001.
WATER TEMPERATURE: Maximum daily, 39.0°C July. 7, 1973; minimum, -0.9°C, on Nov. 19, 2000.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 7,920 microsiemens/cm, June 14; minimum, 103 microsiemens/cm, Oct. 22.
WATER TEMPERATURE: Maximum, 35.2°C, July 8; minimum, -0.9°C, Nov. 19.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
DEC													
07...	1105	28	4850	8.3	2.5	--	--	603	390	142	60.2	910	16.1
FEB													
27...	1730	36	4720	8.4	3.0	15.8	132	652	444	146	70.1	822	14.0
APR													
18...	1535	19	4400	8.3	21.0	8.4	106	573	381	131	59.6	681	12.4
MAY													
22...	1435	48	3300	8.3	23.0	8.0	104	448	282	100	48.3	511	10.5
JUN													
13...	1000	12	1970	8.1	21.0	8.4	107	362	236	96.9	29.2	253	5.77
AUG													
29...	1055	77	3550	8.2	22.5	7.5	97.1	382	--	84.2	41.7	600	13.4

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)
DEC													
07...	6.07	--	220	544	1120	.5	13.4	2920	--	<.006	.115	<.041	.13
FEB													
27...	6.43	208	--	509	1070	.7	12.7	2760	--	E.003	.208	<.041	.16
APR													
18...	6.67	192	--	530	1030	.6	13.3	2570	--	<.006	.194	<.041	.17
MAY													
22...	6.69	166	--	422	687	.6	11.2	1880	--	--	--	--	--
JUN													
13...	4.85	126	--	271	356	.3	8.4	1100	.738	.020	.758	<.040	.20
AUG													
29...	8.44	139	--	380	823	.5	8.6	2290	--	E.013	E.333	<.040	.32

07227500 Canadian River near Amarillo, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
DEC		
07...	<.060	<.018
FEB		
27...	<.060	<.018
APR		
18...	<.060	<.018
MAY		
22...	--	--
JUN		
13...	<.060	<.020
AUG		
29...	<.060	<.020

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	7288	754	432	8490	120	2430	100	2060	95
NOV.	2000	1890	2910	1700	8690	600	3060	380	1930	380
DEC.	2000	723	4800	2840	5540	1100	2160	600	1160	640
JAN.	2001	2060	4320	2550	14160	960	5360	540	3030	570
FEB.	2001	2370	3650	2140	13720	780	5020	470	2990	480
MAR.	2001	4237	2540	1480	16920	510	5830	330	3800	330
APR.	2001	994	3620	2120	5700	770	2060	470	1250	470
MAY	2001	1611	2900	1690	7370	590	2560	380	1650	380
JUNE	2001	478.8	2220	1290	1670	430	553	290	380	290
JULY	2001	47.31	2700	1580	201	550	70.2	350	45.0	350
AUG.	2001	546.3	1780	1030	1520	330	492	240	352	230
SEPT	2001	286.8	1620	939	727	310	236	220	168	210
TOTAL		22532.21	**	**	84710	**	29830	**	18810	**
WTD.AVG.		62	2380	1390	**	490	**	310	**	310

07227500 Canadian River near Amarillo, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	1110	922	1010	4860	4050	4560	4560	4370	4450
2	---	---	---	1230	971	1100	4850	4610	4720	4430	4040	4260
3	---	---	---	1610	1220	1390	4910	4600	4850	4830	4170	4370
4	---	---	---	2060	1610	1850	4960	4740	4910	4470	3470	3950
5	---	---	---	2560	2060	2320	5010	4810	4950	4310	3290	3780
6	---	---	---	2830	2360	2580	5070	4660	4920	4130	3410	3880
7	---	---	---	2650	2130	2350	4920	4590	4740	---	---	e4100
8	---	---	---	2760	2200	2490	4910	4540	4700	---	---	e4000
9	---	---	---	3050	2360	2690	4850	4550	4640	4150	---	e3930
10	---	---	---	3090	2540	2820	4830	4320	4590	4410	4150	4270
11	---	---	---	3540	2870	3280	4660	3750	4310	4610	4110	4330
12	---	---	---	3310	2790	3010	---	---	e4500	4890	4220	4530
13	---	---	---	---	---	e3490	5170	---	e4730	4380	3890	4210
14	---	---	---	---	---	e4250	5250	---	e4990	3890	3520	3620
15	---	---	---	3960	3000	3490	5110	4440	4880	4040	3680	3860
16	---	---	---	3450	2730	3120	5070	4270	4710	4200	4040	4150
17	---	---	---	3350	3110	3260	5060	4160	4560	4330	4200	4260
18	---	---	---	3580	3130	3340	4910	4550	4820	4550	4260	4400
19	---	---	---	4050	3580	3870	5460	4460	4880	4540	4270	4420
20	---	---	---	4040	3970	4000	4970	4470	4800	4720	4110	4500
21	---	---	---	3990	3610	3850	5240	4590	4950	4700	4590	4640
22	2270	103	648	4060	3990	4040	4980	4700	4900	4790	4640	4730
23	763	287	579	4260	4060	4160	4970	4780	4920	4850	4730	4790
24	1150	272	627	4350	4260	4310	5030	4790	4950	4820	4730	4770
25	1430	803	1090	4360	4180	4280	---	---	e4970	4940	4780	4870
26	1170	766	927	4430	4200	4320	---	---	e4980	5050	4930	4990
27	1140	759	947	4590	4420	4520	---	---	e4990	5030	4310	4770
28	1190	1110	1150	4740	4590	4670	---	---	e4990	4620	4300	4490
29	1230	594	1050	4790	4670	4740	5450	5110	5270	4840	4460	4670
30	1370	854	1010	4870	4790	4830	5640	4550	5180	4790	4260	4630
31	1000	865	924	---	---	---	4950	4250	4580	4340	3910	4160
MONTH	---	---	---	---	---	3310	---	---	4820	---	---	4350

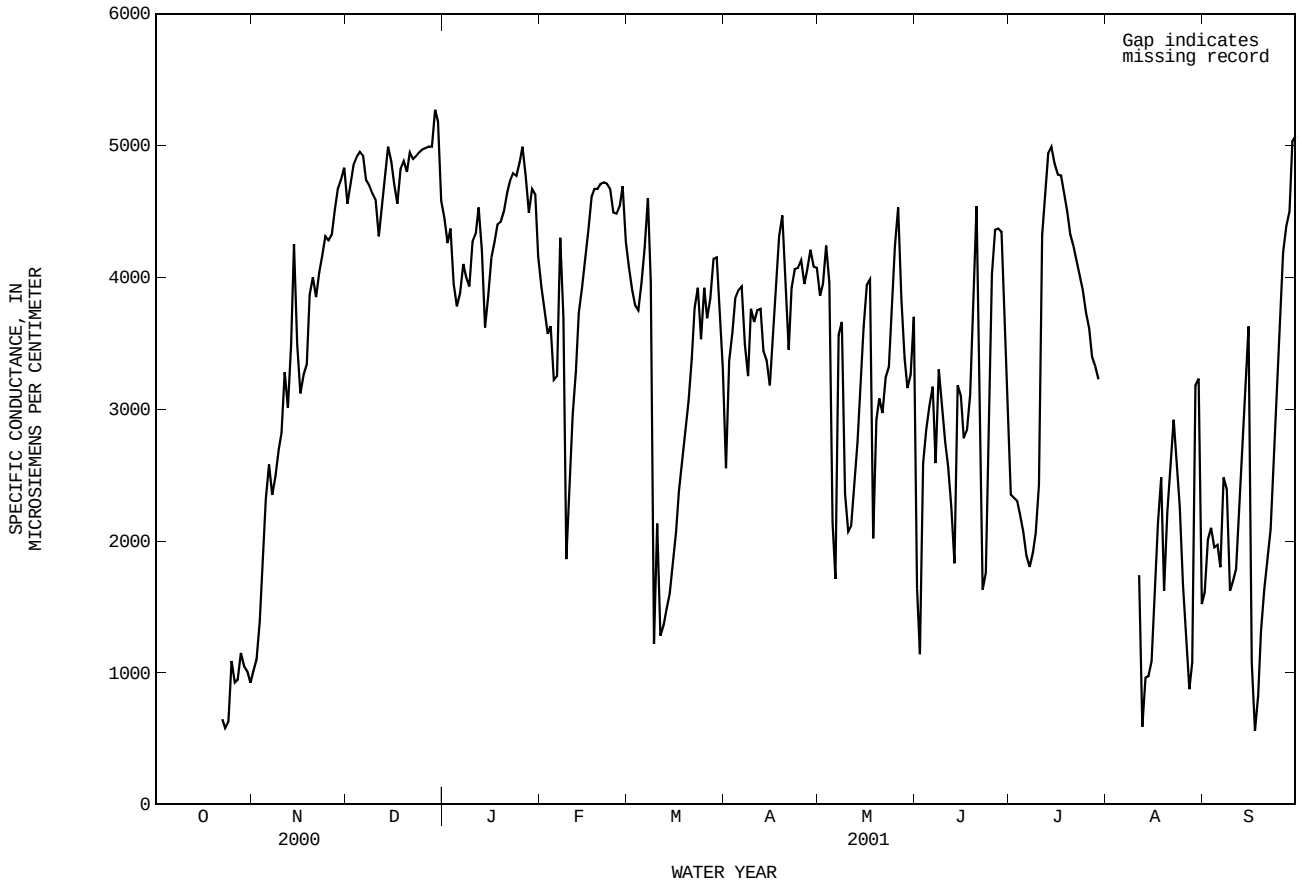
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4210	3450	3930	4220	3960	4070	3080	2130	2550	4120	3630	3860
2	3880	3540	3750	4070	3720	3900	3620	3080	3370	4100	3850	3950
3	3860	3320	3570	4050	3570	3790	3790	3340	3580	5050	3860	4240
4	3970	3170	3630	3900	3540	3750	3960	3740	3840	4460	3540	3960
5	3870	2370	3220	4080	3860	3960	3950	3820	3900	4430	1500	2140
6	4120	2350	3250	4420	4080	4230	4090	3720	3930	2500	1450	1710
7	4990	2980	4300	5190	4280	4600	4070	2720	3490	3920	2500	3560
8	4180	3260	3690	5190	1320	3960	3920	2300	3250	4050	2820	3660
9	3350	1250	1860	2770	941	1220	3850	3720	3760	2820	2100	2360
10	2990	1540	2380	3110	1310	2130	3740	3550	3660	2130	1990	2070
11	3330	2550	2960	1320	1260	1280	3830	3690	3750	2280	1990	2110
12	3520	2750	3290	1410	1290	1360	3890	3500	3760	2570	2270	2460
13	3970	3350	3730	1520	1410	1480	3530	3350	3440	2920	2570	2750
14	4030	3840	3920	1700	1520	1600	3520	3190	3370	3390	2920	3150
15	4260	4030	4150	1960	1690	1830	3370	3030	3180	3780	3390	3620
16	4500	4260	4360	2230	1960	2070	3780	3350	3530	4000	3780	3940
17	4730	4370	4610	2520	2230	2380	4110	3780	3950	4160	1380	3980
18	4730	4480	4670	2720	2520	2610	4460	4110	4310	3000	849	2020
19	4730	4570	4670	2960	2690	2820	4620	4290	4470	3400	2300	2920
20	4740	4630	4710	3200	2910	3060	4290	3500	4000	3360	2680	3080
21	4740	4700	4720	3580	3200	3380	3570	3380	3450	3250	2590	2970
22	4730	4700	4710	3900	3580	3770	4240	3560	3920	3350	3090	3240
23	4730	4630	4670	4190	3000	3920	4180	3930	4060	3540	3210	3320
24	4650	4420	4490	3850	3150	3530	4210	3960	4070	4020	3530	3780
25	4550	4350	4480	4040	3610	3920	4270	4020	4130	4430	4020	4240
26	4650	4450	4540	3990	3490	3690	4120	3700	3950	4680	4380	4530
27	4710	4650	4690	3990	3610	3840	4340	3750	4060	4480	3000	3840
28	4700	3970	4270	4260	3980	4140	4330	4060	4210	---	2940	e3390
29	---	---	---	4230	4080	4150	4240	3960	4080	---	1320	e3160
30	---	---	---	4160	2600	3670	4210	3870	4070	4680	1970	3260
31	---	---	---	4070	2170	3310	---	---	---	4690	2760	3700
MONTH	4990	1250	3970	5190	941	3140	4620	2130	3770	---	849	3260

07227500 Canadian River near Amarillo, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2760	728	1640	---	---	e2350	---	---	---	1890	1110	1610
2	1840	708	1140	---	---	e2330	---	---	---	2240	1840	2010
3	2970	1840	2590	---	---	e2300	---	---	---	2400	1580	2100
4	3120	2600	2850	---	---	e2200	---	---	---	2970	1130	1950
5	3150	2920	3030	---	---	e2070	---	---	---	2730	1130	1970
6	3380	2610	3170	---	---	e1880	---	---	---	2180	1060	1800
7	2690	2480	2590	---	---	e1800	---	---	---	2950	2000	2480
8	4380	2690	3300	---	---	e1910	---	---	---	3350	1460	2390
9	---	---	e3000	---	---	e2060	---	---	---	1820	1430	1620
10	---	---	e2750	---	---	e2420	---	---	---	1800	1550	1690
11	---	---	e2570	---	---	e4320	2330	703	1740	---	---	e1790
12	---	---	e2260	---	---	e4650	703	534	588	---	---	e2120
13	2110	1380	1830	---	---	e4940	1060	566	962	---	---	e2550
14	7920	1320	3180	---	---	e4990	1030	945	973	---	---	e3140
15	6510	2570	3100	---	---	e4860	1300	946	1090	---	---	e3630
16	2910	2580	2780	---	---	e4780	1900	1300	1520	---	---	e1080
17	2910	2700	2840	---	---	e4770	3230	1540	2140	---	---	e559
18	3510	2890	3110	---	---	e4650	3520	1740	2480	1090	510	826
19	4300	3510	3920	---	---	e4510	1810	1380	1620	1520	1090	1320
20	5050	4210	4540	---	---	e4320	2460	1780	2210	1700	1480	1630
21	5570	1090	3590	---	---	e4230	2870	2360	2590	1940	1700	1860
22	2020	1080	1630	---	---	e4140	3350	2640	2920	2220	1920	2090
23	2470	1350	1760	---	---	e4020	3000	2190	2630	2740	2150	2440
24	3750	2470	3250	---	---	e3900	2690	1590	2260	3210	2590	2860
25	4490	3740	4020	---	---	e3730	2280	1290	1670	4080	2970	3390
26	---	---	e4360	---	---	e3610	---	---	e1260	5070	3780	4190
27	---	---	e4370	---	---	e3390	1090	609	875	5480	3640	4390
28	---	---	e4340	---	---	e3320	1600	946	1080	5350	3830	4500
29	---	---	e3790	---	---	e3230	3940	1600	3180	5520	4290	5030
30	---	---	e3130	---	---	---	3980	2360	3230	5780	4070	5070
31	---	---	---	---	---	---	2400	1030	1520	---	---	---
MONTH	---	---	3010	---	---	---	---	---	---	---	---	2470

e Estimated



07227500 Canadian River near Amarillo, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

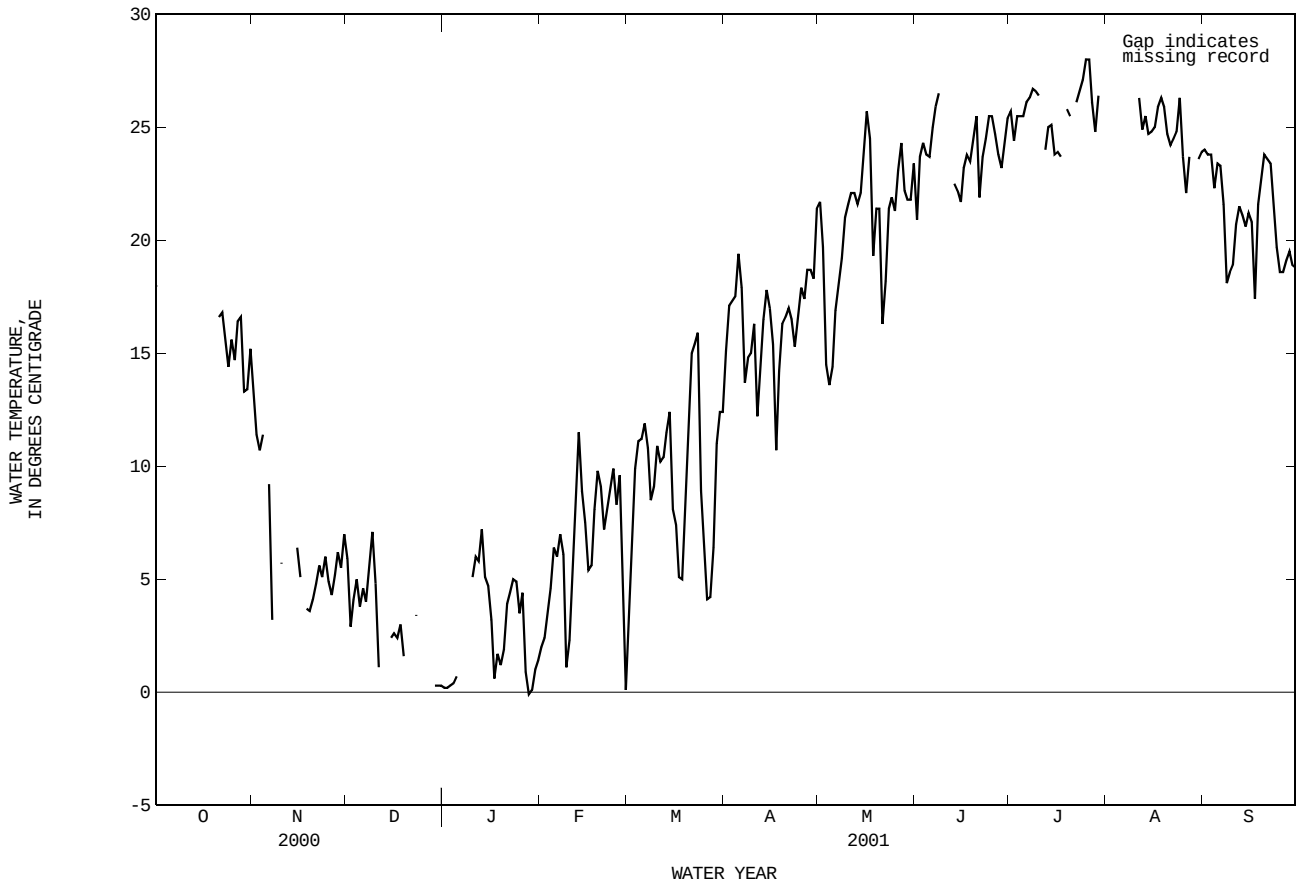
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	15.0	11.5	13.2	9.5	3.1	5.9	.6	.1	.2
2	---	---	---	14.4	8.4	11.4	5.9	.2	2.9	1.1	-.1	.2
3	---	---	---	11.6	9.3	10.7	8.9	1.1	4.1	1.9	-.2	.3
4	---	---	---	12.4	10.5	11.4	10.0	1.7	5.0	2.2	-.2	.4
5	---	---	---	16.0	10.5	---	7.1	.1	3.8	3.5	-.2	.7
6	---	---	---	11.3	7.2	9.2	9.1	.7	4.6	3.8	-.1	---
7	---	---	---	7.3	.8	3.2	8.0	.2	4.0	---	---	---
8	---	---	---	7.6	---	---	10.6	1.8	5.6	---	---	---
9	---	---	---	8.4	.6	---	12.8	3.1	7.1	7.1	---	---
10	---	---	---	9.3	2.5	5.7	6.8	3.3	4.8	6.5	4.3	5.1
11	---	---	---	12.1	5.2	---	3.3	-.2	1.1	10.5	2.6	6.0
12	---	---	---	7.9	2.5	---	.3	---	---	9.7	2.3	5.8
13	---	---	---	---	---	---	3.1	---	---	10.2	4.9	7.2
14	---	---	---	---	---	---	4.0	---	---	9.7	1.2	5.1
15	---	---	---	10.9	3.4	6.4	6.1	-.1	2.4	8.9	.7	4.7
16	---	---	---	9.0	2.0	5.1	6.4	.0	2.6	5.7	.7	3.2
17	---	---	---	8.3	.7	---	6.8	-.1	2.4	1.7	-.1	.6
18	---	---	---	6.6	1.7	3.7	6.8	.1	3.0	5.1	-.1	1.7
19	---	---	---	9.0	-.9	3.6	5.4	-.3	1.6	5.0	-.1	1.2
20	---	---	---	8.5	.2	4.1	8.1	.0	---	6.6	-.2	1.9
21	16.6	15.5	16.6	10.0	.0	4.8	5.7	---	---	9.4	.0	3.9
22	19.0	14.7	16.8	9.2	3.0	5.6	7.8	---	---	9.7	-.2	4.4
23	16.6	14.8	15.6	6.8	3.6	5.1	8.7	.0	3.4	6.6	3.6	5.0
24	15.8	13.3	14.4	10.3	2.7	6.0	2.4	-.1	---	9.1	2.4	4.9
25	17.3	14.4	15.6	8.7	1.7	4.9	---	---	---	6.3	1.7	3.5
26	16.6	12.9	14.7	9.3	.0	4.3	---	---	---	10.2	-.2	4.4
27	18.8	14.4	16.4	10.2	1.4	5.2	---	---	---	4.2	-.1	.9
28	18.2	13.6	16.6	10.6	2.7	6.2	1.3	.0	---	-.1	-.1	-.1
29	16.4	10.5	13.3	10.1	1.3	5.5	1.2	-.2	.3	.7	-.2	.1
30	15.7	11.1	13.4	13.0	2.5	7.0	1.5	-.2	.3	6.3	-.2	1.0
31	18.2	13.3	15.2	---	---	---	.7	.1	.3	5.3	-.1	1.4
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.7	-.1	2.0	8.7	-.1	3.6	22.7	10.2	15.1	29.5	15.8	21.7
2	7.3	-.1	2.4	11.5	3.4	7.3	24.1	12.1	17.1	26.6	15.2	19.7
3	8.4	-.1	3.6	16.0	5.8	9.9	23.7	12.3	17.3	17.0	13.3	14.5
4	9.3	.5	4.6	17.1	6.9	11.1	22.3	12.5	17.5	15.0	12.5	13.6
5	11.7	1.9	6.4	17.5	5.7	11.2	24.4	15.6	19.4	19.0	10.5	14.4
6	7.9	4.6	6.0	17.0	7.9	11.9	23.2	12.1	17.9	22.6	11.3	16.9
7	12.6	2.3	7.0	15.6	7.8	10.8	20.0	8.5	13.7	22.3	14.4	18.0
8	8.8	.9	6.1	10.7	7.3	8.5	20.7	9.7	14.8	24.0	14.9	19.2
9	3.8	-.1	1.1	13.1	5.6	9.1	20.8	9.9	15.0	26.7	16.9	21.0
10	6.2	-.1	2.3	15.3	7.6	10.9	19.3	14.0	16.3	28.3	16.6	21.6
11	9.9	.7	4.8	12.6	8.4	10.2	18.7	6.2	12.2	27.2	18.0	22.1
12	13.3	3.0	7.9	14.9	6.7	10.4	21.8	8.2	14.3	26.1	19.3	22.1
13	15.1	8.7	11.5	16.0	7.3	11.5	24.7	10.6	16.5	26.5	17.8	21.6
14	11.6	4.7	8.9	17.3	8.5	12.4	24.0	13.9	17.8	27.9	17.4	22.1
15	13.6	3.6	7.5	10.5	6.3	8.1	24.0	11.9	17.0	31.8	17.3	23.9
16	8.2	3.1	5.4	12.0	3.3	7.4	21.8	10.9	15.4	32.8	19.2	25.7
17	12.2	.1	5.6	7.2	4.1	5.1	13.7	8.8	10.7	31.2	7.8	24.5
18	13.0	4.7	8.1	6.4	3.9	5.0	22.2	7.9	14.2	28.6	7.8	19.3
19	16.2	4.7	9.8	15.1	4.5	9.1	21.4	12.6	16.3	24.6	19.1	21.4
20	13.0	5.5	9.1	18.9	6.2	12.2	21.4	12.4	16.6	27.0	16.3	21.4
21	9.6	5.7	7.2	20.8	9.8	15.0	23.8	10.8	17.0	21.8	11.5	16.3
22	13.0	5.2	8.1	20.0	11.3	15.4	19.0	11.8	16.5	25.8	11.6	18.2
23	9.8	8.0	9.0	21.8	11.7	15.9	23.6	8.7	15.3	29.2	14.4	21.4
24	13.6	7.5	9.9	14.0	7.1	8.9	24.9	9.9	16.7	29.5	15.6	21.9
25	14.2	4.3	8.3	7.8	5.5	6.7	26.4	11.3	17.9	29.2	14.9	21.3
26	12.9	7.0	9.6	5.5	3.6	4.1	24.3	11.4	17.4	32.2	16.1	23.1
27	9.8	-.1	5.0	5.3	3.3	4.2	26.5	12.7	18.7	30.4	19.5	24.3
28	.4	-.1	.1	8.7	4.6	6.4	26.1	13.0	18.7	25.9	18.8	22.2
29	---	---	---	17.5	5.8	11.0	25.2	13.3	18.3	30.8	17.3	21.8
30	---	---	---	17.0	9.1	12.4	30.8	14.7	21.4	30.8	16.0	21.8
31	---	---	---	17.8	8.2	12.4	---	---	---	31.2	17.2	23.4
MONTH	16.2	-.1	6.3	21.8	-.1	9.6	30.8	6.2	16.4	32.8	7.8	20.7

07227500 Canadian River near Amarillo, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	24.2	17.6	20.9	32.2	20.9	25.7	---	---	---	30.3	19.2	24.0
2	29.5	19.1	23.7	30.5	20.5	24.4	---	---	---	31.2	19.4	23.8
3	30.9	18.9	24.3	32.4	20.6	25.5	---	---	---	32.4	18.8	23.8
4	31.3	17.7	23.8	32.4	19.8	25.5	---	---	---	25.9	19.2	22.3
5	30.4	19.1	23.7	34.1	18.7	25.5	---	---	---	29.5	19.5	23.4
6	31.7	20.6	25.0	34.0	19.6	26.1	---	---	---	29.0	20.1	23.3
7	32.6	21.3	25.9	35.0	19.8	26.3	---	---	---	27.6	18.0	21.6
8	34.1	20.6	26.5	35.2	19.2	26.7	---	---	---	24.9	13.8	18.1
9	---	---	---	34.0	20.0	26.6	---	---	---	26.1	13.4	18.6
10	---	---	---	33.6	19.8	26.4	---	---	---	25.0	13.7	18.9
11	---	---	---	---	20.0	---	28.6	24.1	26.3	27.5	15.4	20.7
12	---	---	---	31.8	19.5	24.0	29.6	22.2	24.9	27.2	16.3	21.5
13	30.2	17.2	22.5	30.6	22.2	25.0	29.2	22.8	25.5	24.7	16.6	21.1
14	31.1	15.0	22.2	31.1	22.3	25.1	29.3	21.2	24.7	23.6	18.5	20.6
15	27.4	16.1	21.7	28.4	21.2	23.8	30.3	21.3	24.8	27.3	17.1	21.2
16	30.5	17.7	23.2	30.9	21.3	23.9	34.3	20.2	25.0	24.6	19.0	20.8
17	30.1	18.6	23.8	30.6	21.3	23.7	33.2	20.0	25.9	21.4	9.8	17.4
18	30.1	18.5	23.5	---	21.2	---	32.2	21.7	26.3	29.3	17.9	21.6
19	32.8	18.1	24.5	33.4	21.4	25.8	33.4	20.0	25.9	30.2	18.2	22.7
20	35.2	19.2	25.5	31.0	20.2	25.5	32.6	19.6	24.7	31.5	18.8	23.8
21	26.4	17.8	21.9	---	20.6	---	30.9	19.4	24.2	32.2	17.9	23.6
22	30.0	18.9	23.7	32.5	20.3	26.1	32.6	19.5	24.5	30.8	18.0	23.4
23	32.0	18.8	24.5	34.8	20.6	26.6	33.0	20.3	24.8	26.2	18.2	21.6
24	33.2	20.2	25.5	34.5	19.1	27.1	34.8	19.8	26.3	26.4	15.1	19.7
25	33.4	20.0	25.5	34.0	19.6	28.0	28.2	21.1	23.7	24.5	14.5	18.6
26	32.1	18.8	24.7	34.4	20.7	28.0	28.6	17.8	22.1	24.1	14.2	18.6
27	28.2	18.8	23.8	32.2	21.7	26.1	29.6	19.0	23.7	26.3	13.5	19.1
28	27.4	18.1	23.2	31.1	22.0	24.8	---	19.1	---	26.4	14.3	19.5
29	30.0	18.8	24.3	32.9	20.8	26.4	29.0	---	---	24.0	15.3	18.9
30	32.5	21.1	25.4	---	---	---	29.2	19.7	23.6	23.5	15.0	18.8
31	---	---	---	---	---	---	28.8	20.0	23.9	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	32.4	9.8	21.0



07227900 Lake Meridith near Sanford, TX

LOCATION.--Lat 35°42'38", long 101°33'03", Hutchinson County, Hydrologic Unit 11090105, in outlet tower near right end of dam on Canadian River 1.2 mi northwest of Sanford, and 508.5 mi upstream from mouth.

DRAINAGE AREA.--20,220 mi^2, of which 4,172 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct. 1964 to Sept. 1987, Oct. 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Aug. 1965, nonrecording gage read daily at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 6,410 ft long. The dam was completed and storage began in Oct. 1964. The service spillway is an uncontrolled concrete drop inlet located near the left end of the dam. The spillway discharges into a 22-ft diameter conduit that is designed to discharge 19,300 ft^3/s at an elevation of 3,004.9 ft. The dam was built by the U.S. Bureau of Reclamation and is owned by the Canadian River Municipal Authority and used for flood control, and municipal and industrial supply for the cities of Amarillo, Borger, Brownfield, Lamesa, Levelland, Lubbock, O'Donnell, Pampa, Plainview, Slaton, and Tahoka. The area-capacity curves are based on sediment resurvey by the Texas Water Development Board. Conservation pool storage is 779,560 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	3,011.0
Design flood	3,004.9
Crest drop inlet	2,965.0
Top of conservation pool	2,935.2
Lowest gated outlet (invert)	2,850.0

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 546,100 acre-ft, Apr. 28, 1973, elevation, 2,914.91 ft; minimum contents after initial filling, 165,500 acre-ft, May 27, 1981, elevation, 2,876.17 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 352,600 acre-ft, Apr. 11, elevation, 2,901.21 ft; minimum contents, 283,300 acre-ft, Sept. 30, elevation, 2,893.86 ft.

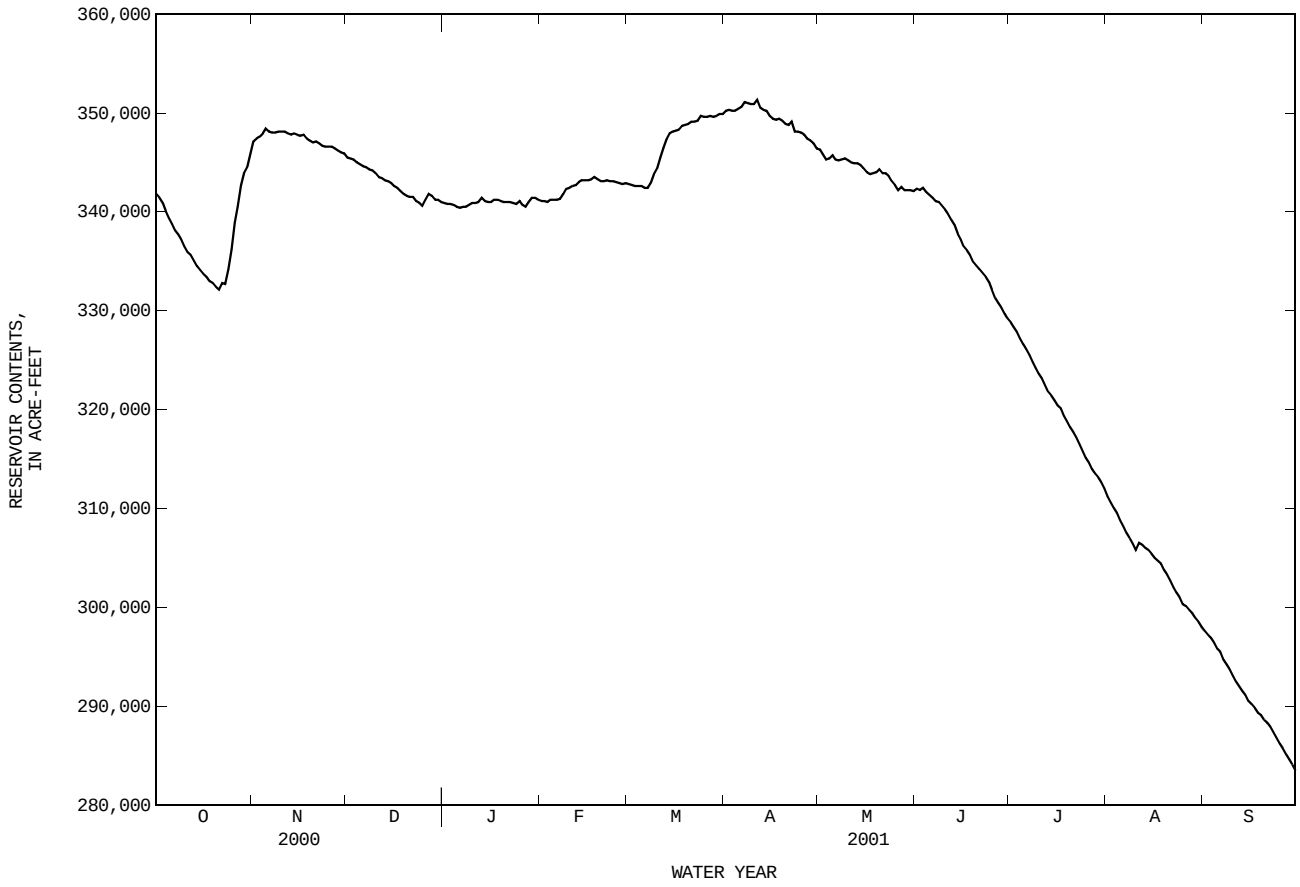
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	341800	347100	345500	340900	341100	342800	350200	346300	342300	328800	311200	297600
2	341400	347400	345400	340800	341100	342700	350300	345800	342200	328300	310600	297200
3	340900	347600	345300	340800	341000	342600	350200	345300	342400	327800	310000	296900
4	340100	347900	345000	340700	341200	342600	350200	345400	342000	327200	309500	296400
5	339400	348400	344800	340500	341200	342600	350400	345700	341700	326600	308800	295800
6	338800	348100	344600	340400	341200	342400	350600	345300	341400	326100	308200	295500
7	338100	348000	344500	340500	341300	342400	351100	345200	341100	325500	307500	294700
8	337700	348000	344300	340500	341800	342900	351000	345300	341000	324800	307000	294200
9	337200	348100	344200	340700	342300	343800	350900	345400	340600	324200	306400	293700
10	336500	348100	343900	340900	342400	344400	350900	345200	340200	323600	305800	293100
11	335900	348100	343500	340900	342600	345500	351300	345000	339800	323100	306500	292500
12	335600	347900	343400	341000	342700	346500	350500	344900	339200	322400	306300	292000
13	335100	347800	343200	341400	343000	347300	350300	344900	338700	321800	306000	291500
14	334500	347900	343100	341100	343200	347900	350200	344700	337800	321400	305800	291100
15	334100	347800	342900	341000	343200	348100	349700	344400	337200	320900	305400	290500
16	333700	347700	342600	341000	343200	348200	349400	344000	336500	320400	305000	290200
17	333400	347800	342400	341200	343300	348300	349300	343800	336100	320100	304700	289800
18	333000	347400	342100	341200	343500	348700	349400	343900	335600	319400	304400	289300
19	332800	347200	341800	341100	343300	348800	349200	344000	334900	318800	303800	289100
20	332400	347000	341600	341000	343100	348900	348900	344300	334500	318200	303300	288600
21	332100	347100	341500	341000	343100	349100	348800	343900	334200	317700	302700	288300
22	332800	346900	341500	341000	343200	349100	349100	343900	333800	317200	302000	287900
23	332700	346700	341100	340900	343100	349200	348100	343600	333400	316500	301500	287300
24	334200	346600	340900	340800	343100	349700	348100	343100	332900	315800	301000	286800
25	336200	346600	340600	341100	343000	349600	348000	342700	332100	315100	300300	286200
26	338900	346600	341200	340700	342900	349600	347800	342200	331300	314600	300100	285700
27	340500	346400	341800	340500	342800	349700	347400	342500	330800	314000	299700	285100
28	342600	346200	341600	341000	342900	349600	347200	342200	330300	313500	299400	284600
29	343900	346000	341200	341400	---	349700	346900	342200	329700	313100	298900	284100
30	344500	345900	341200	341400	---	349900	346400	342200	329200	312600	298500	283500
31	345900	---	341000	341200	---	349900	---	342100	---	312000	298000	---
MEAN	337300	347300	342800	340900	342500	346900	349400	344200	336800	320400	304500	290600
MAX	345900	348400	345500	341400	343500	349900	351300	346300	342400	328800	311200	297600
MIN	332100	345900	340600	340400	341000	342400	346400	342100	329200	312000	298000	283500
(+)	2900.58	2900.57	2900.12	2900.14	2900.29	2900.96	2900.63	2900.22	2898.88	2897.03	2895.05	2893.89
(@)	+9500	0	-4900	+200	+1700	+7000	-3500	-4300	-12900	-17200	-14000	-14500
(++)	6665	4857	5099	4467	4023	6055	4788	6961	8916	10427	9389	8023

CAL YR 2000 MAX 407500 MIN 332100 (@) -45600
WTR YR 2001 MAX 351300 MIN 283500 (@) -52900

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use diverted by the Canadian River Municipal Water Authority.

07227900 Lake Meridith near Sanford, TX--Continued



07228000 Canadian River near Canadian, TX

LOCATION.--Lat 35°56'06", long 100°22'13", Hemphill County, Hydrologic Unit 11090106, on downstream side of 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.--July 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 Sept. 1994. Biochemical data: Aug. 1966 to Sept. 1994. Pesticide data: Oct. 1970 to June 1982. Specific conductance: Oct. 1974 to Sept. 1981. Water temperature: Oct. 1974 to Sept. 1981.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,301.50 ft above sea level. July 1, 1924, to Aug. 31, 1925, and Apr. 21 to Dec. 15, 1938, nonrecording gage; Dec. 16, 1938, to Sept. 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. Extreme low flow is maintained by springs that enter river about 600 ft upstream from the gage. No flow at times.

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 Company.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	63	48	82	172	156	120	69	69	28	3.0	8.1
2	3.8	62	48	e84	180	180	115	67	64	28	2.6	7.6
3	4.0	63	49	87	179	185	112	68	59	27	2.2	7.2
4	4.2	58	50	91	174	174	108	95	55	26	1.8	7.8
5	5.3	56	51	95	168	159	109	102	54	24	1.3	11
6	6.3	57	53	98	158	147	110	91	97	23	1.2	11
7	6.8	56	54	99	150	139	122	89	81	21	1.0	9.4
8	7.3	54	54	97	150	142	119	91	70	20	.92	8.7
9	7.8	52	54	96	169	163	109	82	62	20	.79	8.3
10	8.3	51	54	96	166	171	105	102	58	20	1.0	8.0
11	8.7	50	56	103	188	180	125	86	51	19	3.1	7.5
12	9.2	50	53	103	211	168	106	81	48	17	5.4	7.1
13	10	49	49	103	213	150	100	76	52	17	5.7	6.8
14	11	49	50	102	203	138	93	71	46	17	4.9	6.7
15	13	49	68	101	177	127	87	67	42	32	4.5	7.2
16	21	48	64	100	157	118	82	64	38	35	4.4	7.8
17	20	47	62	102	144	111	79	62	36	58	6.8	7.9
18	20	47	62	103	138	110	78	65	35	30	6.9	7.4
19	19	47	62	104	136	113	79	161	34	16	5.8	7.5
20	19	47	62	104	133	114	78	778	32	12	4.6	7.3
21	20	47	62	104	130	112	75	295	34	10	3.5	7.5
22	27	47	61	103	127	109	75	152	34	8.4	2.7	7.3
23	29	47	62	101	130	108	73	142	45	7.3	2.1	7.0
24	36	47	62	101	177	108	73	107	42	6.3	1.7	7.2
25	58	47	61	99	180	109	73	86	37	5.8	2.6	7.3
26	62	47	46	99	166	126	72	74	35	5.3	9.1	7.2
27	61	48	47	97	158	133	72	72	33	4.9	12	6.8
28	52	48	75	116	152	130	72	102	31	4.9	10	6.6
29	59	48	85	116	---	129	72	82	30	4.7	9.3	6.4
30	62	48	85	122	---	126	70	88	29	5.0	8.7	6.3
31	55	---	82	151	---	128	---	77	---	3.7	8.4	---
TOTAL	729.3	1529	1831	3159	4586	4263	2763	3644	1433	556.3	138.01	229.9
MEAN	23.5	51.0	59.1	102	164	138	92.1	118	47.8	17.9	4.45	7.66
MAX	62	63	85	151	213	185	125	778	97	58	12	11
MIN	3.6	47	46	82	127	108	70	62	29	3.7	.79	6.3
AC-FT	1450	3030	3630	6270	9100	8460	5480	7230	2840	1100	274	456

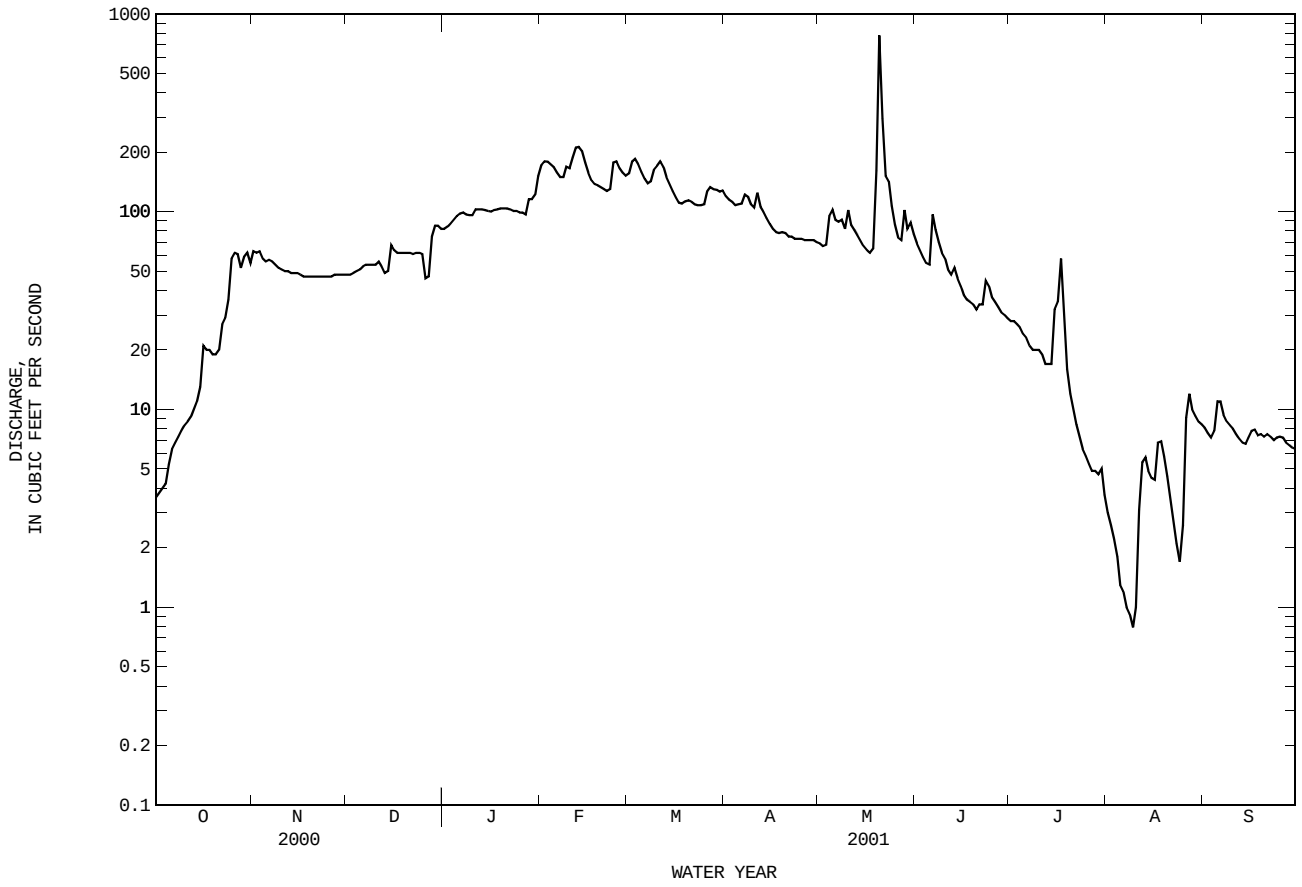
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2001, BY WATER YEAR (WY)

MEAN	363	87.6	94.8	117	106	117	208	584	604	448	314	378
MAX	10210	1397	694	541	380	592	5978	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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1938 - 2001	
ANNUAL TOTAL	21198.00		24861.51			
ANNUAL MEAN	57.9		68.1		277	
HIGHEST ANNUAL MEAN					2963	1941
LOWEST ANNUAL MEAN					34.5	1964
HIGHEST DAILY MEAN	719	Jun 29	778	May 20	60600	Sep 24 1941
LOWEST DAILY MEAN	.45	Sep 9	.79	Aug 9	.00	Jan 4 1941
ANNUAL SEVEN-DAY MINIMUM	.64	Sep 5	1.1	Aug 4	.00	Apr 8 1941
MAXIMUM PEAK FLOW			1730	May 20	38900	Oct 9 1968
MAXIMUM PEAK STAGE			4.91	May 20	9.83	Apr 15 1973
INSTANTANEOUS LOW FLOW					.00	Oct 11 1965
ANNUAL RUNOFF (AC-FT)	42050		49310		200500	
10 PERCENT EXCEEDS	100		148		323	
50 PERCENT EXCEEDS	53		58		40	
90 PERCENT EXCEEDS	3.4		6.3		.70	

e Estimated

07228000 Canadian River near Canadian, TX--Continued



07233500 Palo Duro Creek near Spearman, TX

LOCATION.--Lat 36°12′08", long 101°18′20", Hansford County, Hydrologic Unit 11100104, on right bank at downstream side of bridge on State Highway 15, 6 mi west of Spearman, and 18 mi upstream from Horse Creek.

DRAINAGE AREA.--1,076 mi^2.

PERIOD OF RECORD.--Aug. 1945 to Sept. 1979, June 1999 to current year.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,959.63 ft above sea level. Aug. 1, 1945, to May 8, 1968, water-stage recorder at present site and at datum 2.00 ft higher than current datum. May 8, 1968, to Dec. 4, 1969, water-stage recorder at site 5 mi downstream at different datum. Dec. 4, 1969 to Sept. 30, 1979, water-stage recorder at present site and at datum 2.00 ft higher than current datum. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. Small diversion upstream for irrigation. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1936, 22.5 ft from floodmark, discharge 34,000 ft^3/s. Flood of June 4, 1936, reached a stage of 21 ft from floodmark, discharge 26,100 ft^3/s from rating curve extended above 20,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	62	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	2.9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	1.4	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00
5	.00	.94	.00	.00	.00	.00	.02	.00	.00	.00	.00	.72
6	.00	.29	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	284	.00	.00	.14	.00	.00	.00	.00
8	.00	.00	.00	.00	17	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.19	.12	.15	.00	.00	.00	.00
11	.00	.01	.00	.00	.00	.01	.08	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.68	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.34	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10
17	.00	.00	.00	.00	.00	.00	.00	.35	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.29	e.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.62	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.34	.37	.00	.00	.00
21	.25	.00	.00	.00	.00	.00	.00	.32	.43	.00	.01	.00
22	.29	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	.00
23	.38	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00
24	.76	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	58	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00	1.5	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.38	.00
28	.79	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	22	.00	.00	.00	---	.00	.00	.21	.00	.00	.00	.00
30	6.4	.00	.00	.00	---	.05	.00	.12	.00	.00	.00	.00
31	8.4	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	39.27	88.54	0.00	0.00	302.02	0.38	0.72	2.54	0.91	0.00	59.89	0.82
MEAN	1.27	2.95	.000	.000	10.8	.012	.024	.082	.030	.000	1.93	.027
MAX	22	62	.00	.00	284	.19	.25	.62	.43	.00	58	.72
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	78	176	.00	.00	599	.8	1.4	5.0	1.8	.00	119	1.6

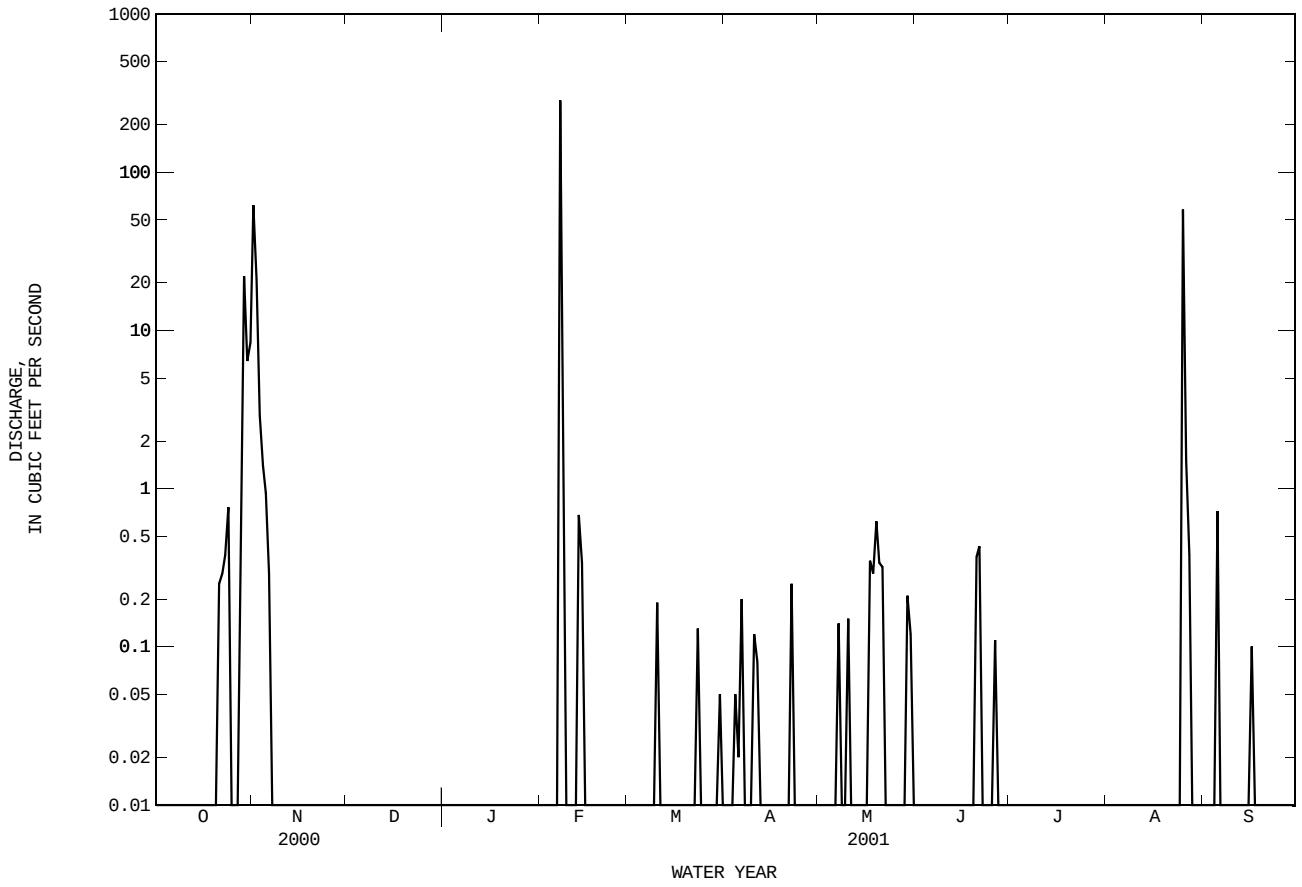
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2001h, BY WATER YEAR (WY)

MEAN	37.9	7.51	1.14	.70	.99	1.85	8.62	31.8	52.3	31.7	18.6	17.5
MAX	835	213	7.99	3.00	10.8	36.6	106	349	879	188	91.8	188
(WY)	1947	1972	1960	1947	2001	1973	1955	1951	1965	1953	1950	1960
MIN	.000	.000	.000	.000	.000	.000	.000	.007	.030	.000	.000	.000
(WY)	1953	1956	1956	1965	1965	1965	1965	2000	2001	1974	1964	1947

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1945 - 2001h	
ANNUAL TOTAL	1942.73		495.09			
ANNUAL MEAN	5.31		1.36		17.8	
HIGHEST ANNUAL MEAN					89.9	1965
LOWEST ANNUAL MEAN					1.36	2001
HIGHEST DAILY MEAN	547	Jun 26	284	Feb 7	11400	Oct 7 1946
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Aug 1 1945
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Aug 1 1945
MAXIMUM PEAK FLOW			5540	Feb 7	21200	Oct 7 1946
MAXIMUM PEAK STAGE			18.19	Feb 7	19.87	Oct 7 1946
ANNUAL RUNOFF (AC-FT)	3850		982		12870	
10 PERCENT EXCEEDS	.11		.12		8.0	
50 PERCENT EXCEEDS	.00		.00		.50	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
h See PERIOD OF RECORD paragraph.

07233500 Palo Duro Creek near Spearman, TX--Continued



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.--1,415 mi^2

PERIOD OF RECORD.--June 1999 to current year.

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

REMARKS.--Records fair. 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. 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 (top of conservation pool)	2,892.0

COOPERATION.--Area-capacity curves developed by Freese and Nichols, Inc. and provided by the Palo Duro River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,910 acre-ft, July 1, 1999, elevation, 2,877.89 ft; minimum contents, 7,440 acre-ft, Sept. 30, 2001, elevation, 2,853.95 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,760 acre-ft, Oct. 1, elevation, 2,864.61 ft; minimum contents, 7,440 acre-ft, Sept. 30, elevation, 2,853.95 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

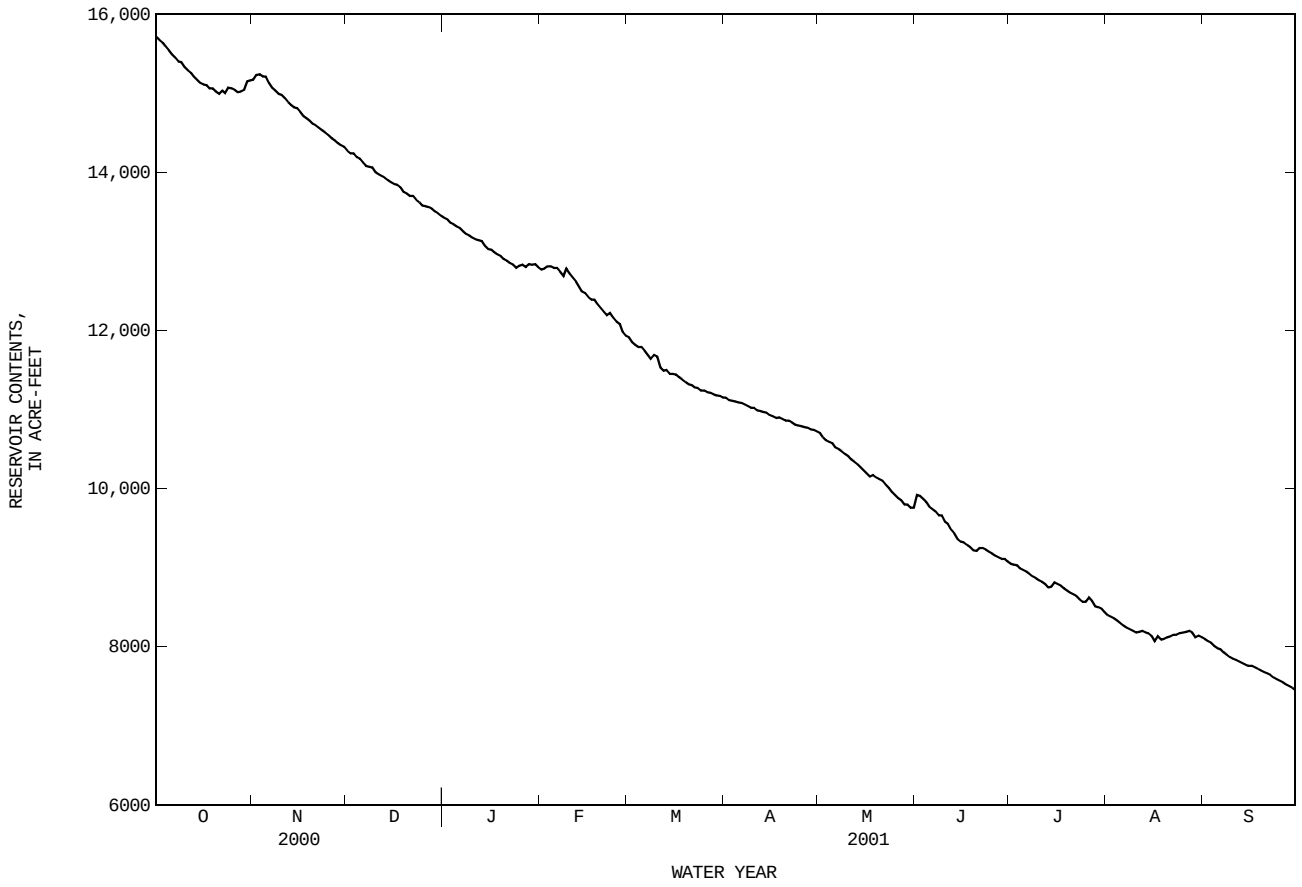
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15710	15170	14270	13420	12770	11910	11150	10700	9920	9050	8400	8100
2	15670	15230	14240	13400	12780	11850	11120	10650	9910	9040	8380	8070
3	15640	15240	14240	13360	12810	11820	11110	10610	9870	9030	8360	8050
4	15590	15210	14190	13340	12810	11790	11100	10590	9830	8990	8330	8010
5	15540	15210	14170	13310	12790	11790	11090	10570	9770	8970	8300	7980
6	15490	15130	14120	13290	12790	11740	11080	10520	9740	8950	8270	7970
7	15450	15070	14080	13250	12740	11690	11060	10500	9710	8920	8240	7930
8	15400	15030	14070	13220	12690	11640	11040	10470	9660	8890	8220	7900
9	15390	14990	14060	13200	e12780	11690	11020	10440	9660	8870	8200	7870
10	15330	14980	14000	13170	e12720	11670	11020	10410	9580	8840	8180	7850
11	15290	14940	13970	13150	e12670	11530	10990	10370	9550	8820	8190	7830
12	15260	14890	13950	13140	e12620	11490	10980	10340	9480	8790	8200	7810
13	15210	14850	13930	13130	e12560	11500	10970	10310	9430	8750	8180	7790
14	15170	14820	13900	13070	e12490	11450	10960	10270	9360	8760	8170	7770
15	15130	14810	13870	13030	12470	11450	10930	10230	9330	8810	8140	7760
16	15110	14760	13850	13020	12420	11440	10910	10190	9320	8790	8070	7760
17	15100	14710	13840	12990	12390	11410	10890	10150	9290	8770	8130	7740
18	15060	14680	13810	12960	12390	11380	10900	10170	9260	8740	8090	7720
19	15060	14650	13750	12940	12330	11350	10880	10140	9220	8710	8100	7700
20	15020	14610	13730	12900	12280	11320	10860	10120	9210	8680	8120	7680
21	14990	14590	13700	12880	12230	11310	10860	10100	9250	8660	8130	7660
22	15030	14560	13700	12850	12190	11280	10840	10050	9250	8640	8150	7640
23	15000	14530	13650	12830	12220	11270	10810	10010	9230	8600	8150	7610
24	15070	14500	13620	12790	12160	11240	10800	9960	9200	8570	8170	7590
25	15060	14470	13580	12820	12110	11240	10790	9920	9180	8570	8180	7570
26	15040	14430	13570	12830	12080	11220	10780	9880	9150	8620	8190	7550
27	15010	14400	13560	12800	11980	11210	10770	9850	9130	8580	8200	7520
28	15020	14370	13540	12840	11930	11190	10750	9800	9110	8510	8180	7500
29	15040	14340	13500	12830	---	11180	10740	9800	9110	8500	8120	7480
30	15150	14320	13480	12840	---	11170	10720	9760	9080	8480	8140	7450
31	15160	---	13450	12800	---	11150	---	9760	---	8440	8120	---
MEAN	15230	14780	13850	13050	12470	11460	10930	10210	9430	8750	8190	7760
MAX	15710	15240	14270	13420	12810	11910	11150	10700	9920	9050	8400	8100
MIN	14990	14320	13450	12790	11930	11150	10720	9760	9080	8440	8070	7450
(+)	2863.94	2863.02	2862.07	2861.37	2860.42	2859.43	2858.84	2857.49	2856.54	2855.64	2855.20	2853.99
(@)	-550	-840	-870	-650	-870	-780	-430	-960	-680	-640	-320	-670

CAL YR 2000 MAX 18840 MIN -5390
WTR YR 2001 MAX 15710 MIN 7450 (@) -8260

e Estimated

(+) Gage height, 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 11100202, 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 Sept. 1942, Oct. 1961 to current year. Prior to 1942, 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 Sept. 30, 1942, water-stage recorder at present site at datum 5.77 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct. 1937, at least 10% of contributing drainage area has been regulated. There are small diversions upstream from station for irrigation and recreation. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1938-42), 39.7 ft^3s, 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 June 23, 1957, present site and datum, from floodmarks. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

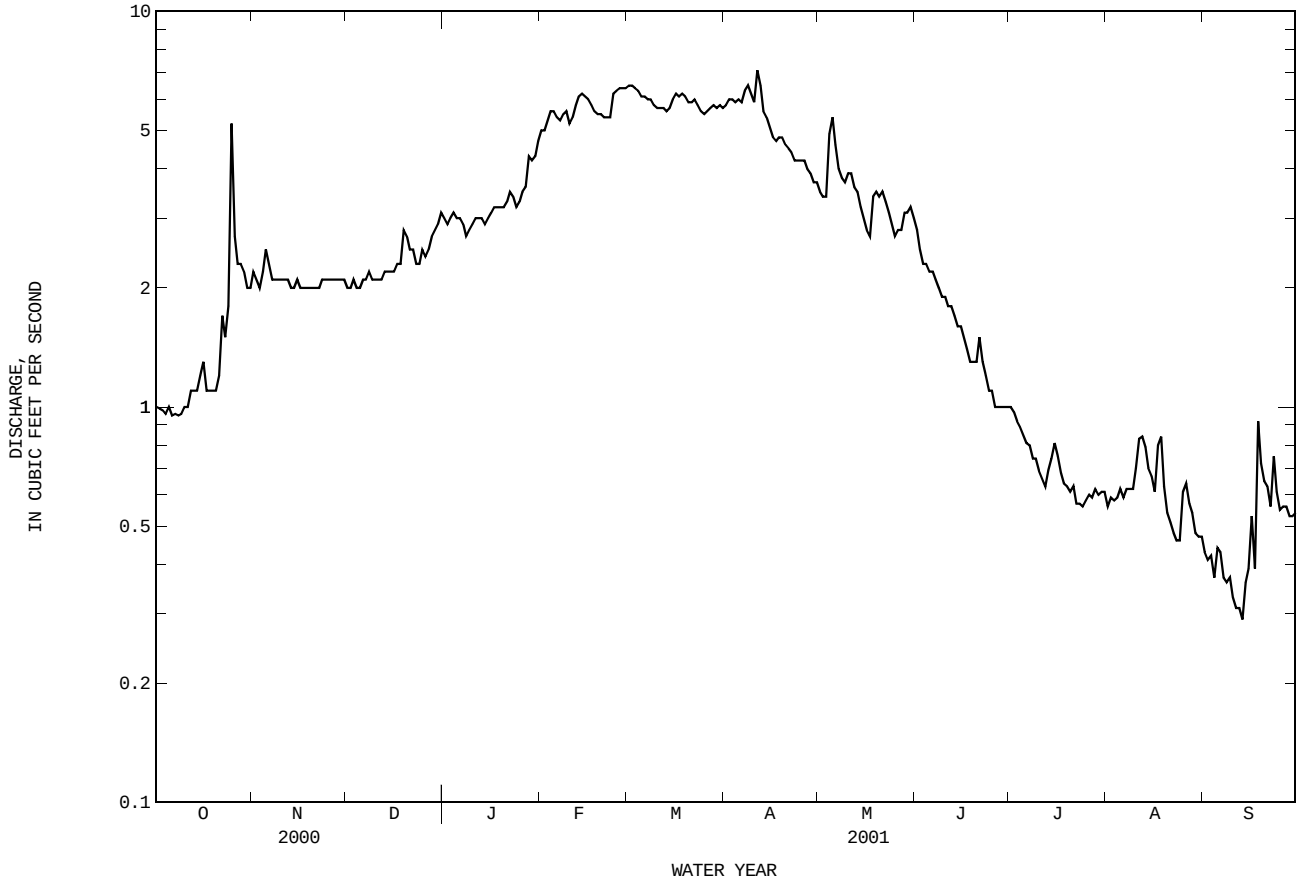
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.2	2.0	3.0	5.0	6.5	5.8	3.5	2.8	1.0	.56	.43
2	.99	2.1	2.0	2.9	5.0	6.5	6.0	3.4	2.5	.97	.59	.41
3	.98	2.0	2.1	3.0	5.3	6.4	6.0	3.4	2.3	.92	.58	.42
4	.96	2.2	2.0	3.1	5.6	6.3	5.9	4.9	2.3	.89	.59	.37
5	1.0	2.5	2.0	3.0	5.6	6.1	6.0	5.4	2.2	.85	.62	.44
6	.95	2.3	2.1	3.0	5.4	6.1	5.9	4.6	2.2	.81	.59	.43
7	.96	2.1	2.1	2.9	5.3	6.0	6.3	4.0	2.1	.80	.62	.37
8	.95	2.1	2.2	2.7	5.5	6.0	6.5	3.8	2.0	.74	.62	.36
9	.96	2.1	2.1	2.8	5.6	5.8	6.2	3.7	1.9	.74	.62	.37
10	1.0	2.1	2.1	2.9	5.2	5.7	5.9	3.9	1.9	.69	.70	.33
11	1.0	2.1	2.1	3.0	5.4	5.7	7.1	3.9	1.8	.66	.83	.31
12	1.1	2.1	2.1	3.0	5.8	5.7	6.5	3.6	1.8	.63	.84	.31
13	1.1	2.0	2.2	3.0	6.1	5.6	5.6	3.5	1.7	.69	.79	.29
14	1.1	2.0	2.2	2.9	6.2	5.7	5.4	3.2	1.6	.74	.70	.36
15	1.2	2.1	2.2	3.0	6.1	6.0	5.1	3.0	1.6	.81	.67	.39
16	1.3	2.0	2.2	3.1	6.0	6.2	4.8	2.8	1.5	.75	.61	.53
17	1.1	2.0	2.3	3.2	5.8	6.1	4.7	2.7	1.4	.68	.80	.39
18	1.1	2.0	2.3	3.2	5.6	6.2	4.8	3.4	1.3	.64	.84	.92
19	1.1	2.0	2.8	3.2	5.5	6.1	4.8	3.5	1.3	.63	.63	.72
20	1.1	2.0	2.7	3.2	5.5	5.9	4.6	3.4	1.3	.61	.54	.65
21	1.2	2.0	2.5	3.3	5.4	5.9	4.5	3.5	1.5	.63	.51	.63
22	1.7	2.0	2.5	3.5	5.4	6.0	4.4	3.3	1.3	.57	.48	.56
23	1.5	2.1	2.3	3.4	5.4	5.8	4.2	3.1	1.2	.57	.46	.75
24	1.8	2.1	2.3	3.2	6.2	5.6	4.2	2.9	1.1	.56	.46	.61
25	5.2	2.1	2.5	3.3	6.3	5.5	4.2	2.7	1.1	.58	.61	.55
26	2.7	2.1	2.4	3.5	6.4	5.6	4.2	2.8	1.0	.60	.64	.56
27	2.3	2.1	2.5	3.6	6.4	5.7	4.0	2.8	1.0	.59	.57	.56
28	2.3	2.1	2.7	4.3	6.4	5.8	3.9	3.1	1.0	.62	.54	.53
29	2.2	2.1	2.8	4.2	---	5.7	3.7	3.1	1.0	.60	.48	.53
30	2.0	2.1	2.9	4.3	---	5.8	3.7	3.2	1.0	.61	.47	.54
31	2.0	---	3.1	4.7	---	5.7	---	3.0	---	.61	.47	---
TOTAL	45.85	62.8	72.3	101.4	159.4	183.7	154.9	107.1	48.7	21.79	19.03	14.62
MEAN	1.48	2.09	2.33	3.27	5.69	5.93	5.16	3.45	1.62	.70	.61	.49
MAX	5.2	2.5	3.1	4.7	6.4	6.5	7.1	5.4	2.8	1.0	.84	.92
MIN	.95	2.0	2.0	2.7	5.0	5.5	3.7	2.7	1.0	.56	.46	.29
AC-FT	91	125	143	201	316	364	307	212	97	43	38	29
CFSM	.00	.00	.00	.01	.01	.01	.01	.01	.00	.00	.00	.00
IN.	.00	.00	.01	.01	.01	.01	.01	.01	.00	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001, BY WATER YEAR (WY)

MEAN	6.60	5.68	3.70	3.92	4.80	7.33	11.3	18.5	16.9	7.92	7.85	13.5
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1962 - 2001	
ANNUAL TOTAL	1383.30		991.59			
ANNUAL MEAN	3.78		2.72		9.00	
HIGHEST ANNUAL MEAN					30.5	1965
LOWEST ANNUAL MEAN					1.44	1986
HIGHEST DAILY MEAN	24	Mar 24	7.1	Apr 11	5800	Sep 19 1996
LOWEST DAILY MEAN	.91	Aug 31	.29	Sep 13	.00	May 24 1964
ANNUAL SEVEN-DAY MINIMUM	.92	Aug 29	.33	Sep 8	.00	Jul 22 1964
MAXIMUM PEAK FLOW			19	Oct 25	10300	Sep 19 1996
MAXIMUM PEAK STAGE			2.39	Oct 25	12.44	Sep 19 1996
INSTANTANEOUS LOW FLOW					.00	Jul 22 1964
ANNUAL RUNOFF (AC-FT)	2740		1970		6520	
ANNUAL RUNOFF (CFSM)	.008		.006		.019	
ANNUAL RUNOFF (INCHES)	.11		.08		.26	
10 PERCENT EXCEEDS	7.2		5.8		11	
50 PERCENT EXCEEDS	3.3		2.2		2.6	
90 PERCENT EXCEEDS	1.0		.57		.52	



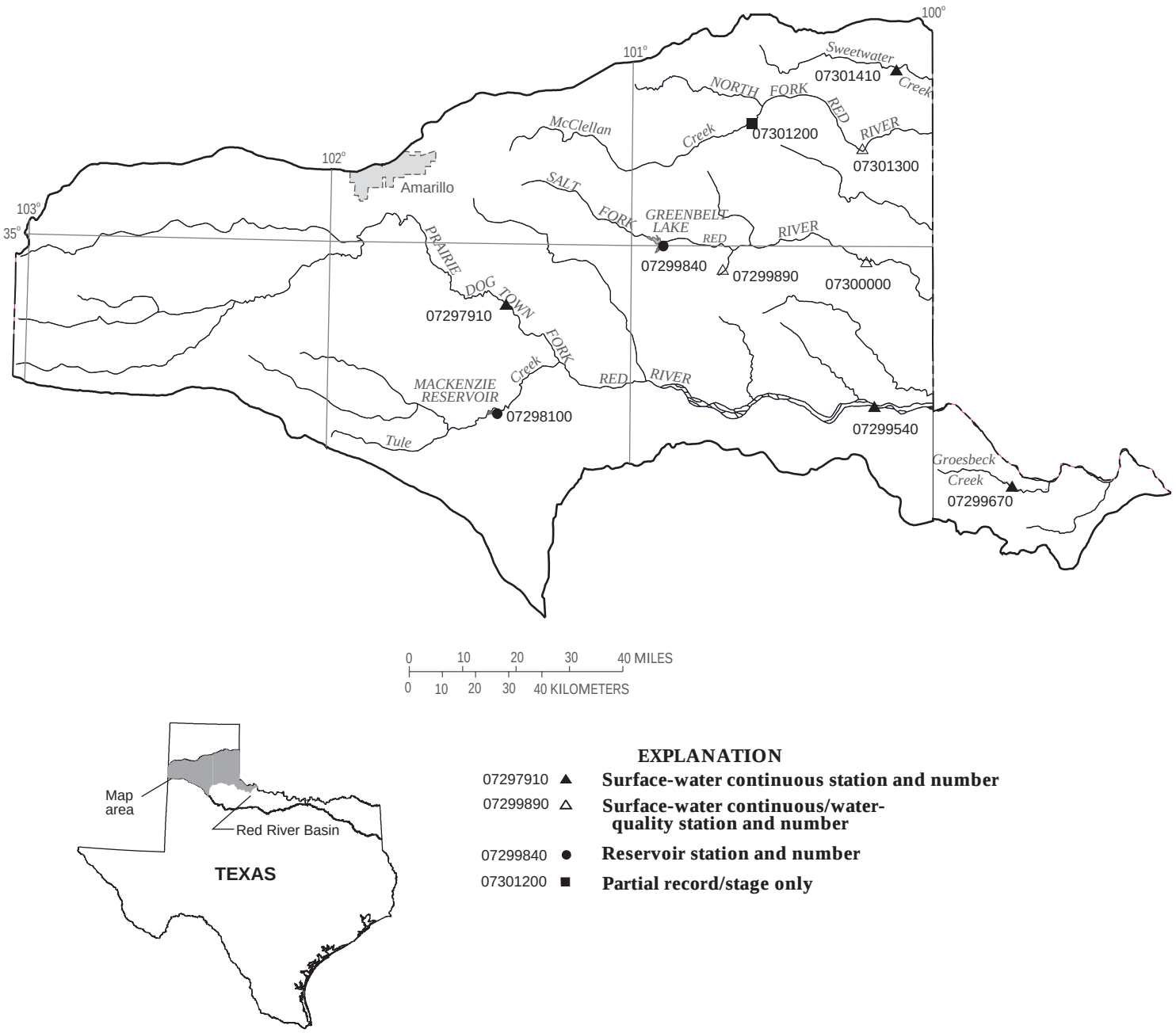


Figure 4.--Map showing location of gaging stations in the first section of the Red River Basin

07297910 Prairie Dog Town Fork Red River near Wayside, TX 54
07298100 MacKenzie Reservoir near Silverton, TX 56
07299540 Prairie Dog Town Fork Red River near Childress, TX 58
07299670 Groesbeck Creek at State Highway 6 near Quanah, TX 60
07299840 Greenbelt Lake near Clarendon, TX 62
07299890 Lelia Lake Creek below Bell Creek near Hedley, TX 64
07300000 Salt Fork Red River near Wellington, TX 72
07300500* Salt Fork Red River at Mangum, OK 76
07301200 McClellan Creek near McLean, TX 78
07301300 North Fork Red River near Shamrock, TX 80
07301410 Sweetwater Creek near Kelton, TX 84

* 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 State Highway 207, 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 Sept. 1981. Water temperature: Oct. 1969 to Sept. 1981.

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

REMARKS.--Records fair except those for daily discharges below 1 ft^3/s, which are poor. No estimated daily discharges. No known regulation. There are several small diversions upstream from station. Wastewater effluent is released into river above station by the city of Amarillo. No flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

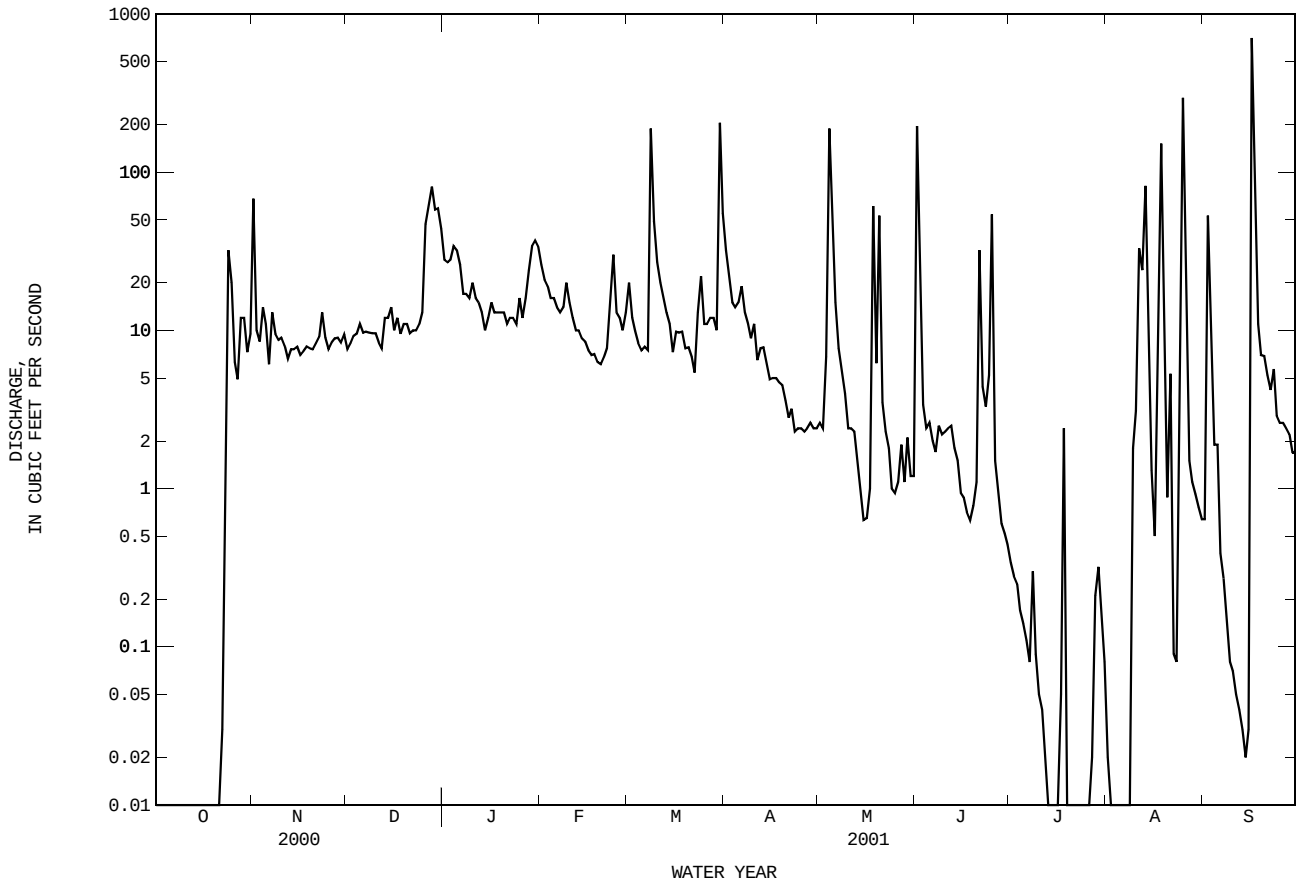
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	68	7.6	28	26	20	32	2.6	196	.34	.02	.64
2	.00	10	8.3	27	21	12	22	2.4	18	.28	.00	53
3	.00	8.5	9.2	28	19	9.9	15	6.8	3.4	.25	.00	14
4	.00	14	9.5	34	16	8.3	14	188	2.4	.17	.00	1.9
5	.00	11	11	32	16	7.5	15	38	2.6	.14	.00	1.9
6	.00	6.1	9.7	26	14	7.9	19	15	2.0	.11	.00	.39
7	.00	13	9.8	17	13	7.5	13	7.7	1.7	.08	.00	.27
8	.00	9.5	9.7	17	14	188	11	5.5	2.5	.30	.00	.15
9	.00	8.7	9.6	16	20	49	8.9	4.0	2.2	.09	1.8	.08
10	.00	9.0	9.6	20	15	27	11	2.4	2.3	.05	3.1	.07
11	.00	8.0	8.4	16	12	20	6.5	2.4	2.4	.04	33	.05
12	.00	6.6	7.7	15	10	16	7.7	2.3	2.5	.02	24	.04
13	.00	7.6	12	13	10	13	7.8	1.4	1.8	.01	82	.03
14	.00	7.6	12	10	8.9	11	6.2	.90	1.5	.01	10	.02
15	.01	7.9	14	12	8.5	7.3	4.9	.63	.94	.01	1.3	.03
16	.01	7.0	10	15	7.5	9.8	5.0	.65	.88	.00	.50	704
17	.00	7.4	12	13	7.0	9.7	5.0	1.0	.71	.05	8.0	159
18	.00	7.9	9.5	13	7.1	9.8	4.7	61	.63	2.4	151	11
19	.00	7.7	11	13	6.3	7.7	4.5	6.2	.78	.00	7.4	7.0
20	.00	7.6	11	13	6.1	7.8	3.6	53	1.1	.00	.88	6.9
21	.01	8.3	9.6	11	6.8	6.8	2.8	3.5	32	.00	5.3	5.2
22	.03	9.1	10	12	7.7	5.4	3.2	2.3	4.4	.00	.09	4.2
23	4.0	13	10	12	15	13	2.3	1.8	3.3	.00	.08	5.7
24	32	9.0	11	11	30	22	2.4	1.0	5.2	.00	1.1	2.9
25	20	7.6	13	16	13	11	2.4	.94	54	.00	294	2.6
26	6.3	8.4	47	12	12	11	2.3	1.1	1.5	.00	26	2.6
27	4.9	8.9	62	16	10	12	2.4	1.9	.97	.02	1.5	2.4
28	12	9.0	81	24	13	12	2.6	1.1	.60	.21	1.1	2.2
29	12	8.4	58	34	---	10	2.4	2.1	.52	.32	.92	1.7
30	7.3	9.4	59	37	---	205	2.4	1.2	.44	.15	.76	1.7
31	9.5	---	44	34	---	55	---	1.2	---	.08	.64	---
TOTAL	108.06	324.2	606.2	597	364.9	812.4	242.0	420.02	349.27	5.13	654.49	991.67
MEAN	3.49	10.8	19.6	19.3	13.0	26.2	8.07	13.5	11.6	.17	21.1	33.1
MAX	32	68	81	37	30	205	32	188	196	2.4	294	704
MIN	.00	6.1	7.6	10	6.1	5.4	2.3	.63	.44	.00	.00	.02
AC-FT	214	643	1200	1180	724	1610	480	833	693	10	1300	1970

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2001, BY WATER YEAR (WY)

MEAN	26.7	11.8	6.15	5.81	5.37	9.17	25.3	62.3	54.6	30.2	82.9	25.0
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	.12	.000
(WY)	1976	1971	1971	1971	1976	1971	1978	1984	1998	1974	2000	1975

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1968 - 2001	
ANNUAL TOTAL	7969.09		5475.34			
ANNUAL MEAN	21.8		15.0		29.0	
HIGHEST ANNUAL MEAN					137	1968
LOWEST ANNUAL MEAN					1.90	1983
HIGHEST DAILY MEAN	1320	Jun 2	704	Sep 16	22700	Aug 29 1968
LOWEST DAILY MEAN	.00	Aug 23	.00	Oct 1	.00	Jul 30 1968
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 23	.00	Oct 1	.00	Jul 30 1968
MAXIMUM PEAK FLOW			12300	Sep 16	58000	Aug 28 1968
MAXIMUM PEAK STAGE			10.01	Sep 16	13.00	Aug 28 1968
ANNUAL RUNOFF (AC-FT)	15810		10860		20970	
10 PERCENT EXCEEDS	23		27		24	
50 PERCENT EXCEEDS	9.0		7.3		2.4	
90 PERCENT EXCEEDS	.00		.01		.08	

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 from mouth.

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

PERIOD OF RECORD.--Oct. 1974 to Sept. 1986, Apr. 1999 to current year.

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

REMARKS.--Records fair. The reservoir is formed by a rolled earthfill dam 2,100 ft long. The dam was completed in Aug. 1974, and storage began in June 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. The dam is owned by MacKenzie Municipal Water Authority and the water is used for municipal, industrial, and recreational purposes by the cities of Floydada, Silverton, and Tulia. Conservation pool storage is 46,250 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	3,127
Crest of spillway	3,111
Crest of spillway with ogee weir (top of conservation pool)	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, elevation, 3,065.08 ft; minimum since first appreciable storage, 598 acre-ft, Oct. 1, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,960 acre-ft, May 13, elevation, 3,032.18 ft; minimum contents, 7,900 acre-ft, Feb. 20, elevation, 3,025.48 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

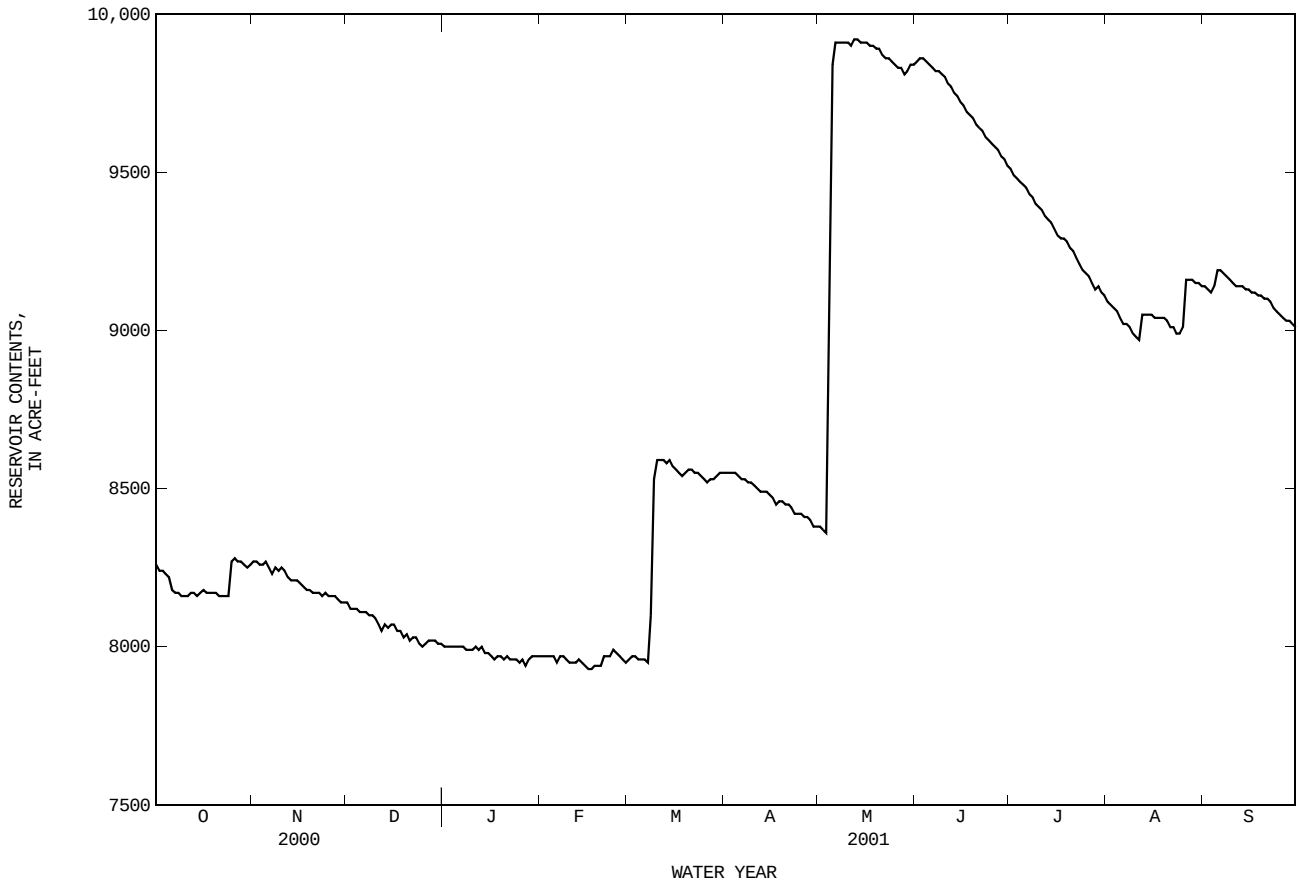
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8260	8270	8140	8000	7970	7960	8550	8380	9850	9510	9090	9140
2	8240	8270	8120	8000	7970	7970	8550	8370	9860	9490	9080	9130
3	8240	8260	8120	8000	7970	7970	8550	8360	9860	9480	9070	9120
4	8230	8260	8120	8000	7970	7960	8550	9170	9850	9470	9060	9140
5	8220	8270	8110	8000	7970	7960	8540	9840	9840	9460	9040	9190
6	8180	8250	8110	8000	7950	7960	8530	9910	9830	9450	9020	9190
7	8170	8230	8110	8000	7970	7950	8530	9910	9820	9430	9020	9180
8	8170	8250	8100	7990	7970	8100	8520	9910	9820	9420	9010	9170
9	8160	8240	8100	7990	7960	8530	8520	9910	9810	9400	8990	9160
10	8160	8250	8090	7990	7950	8590	8510	9910	9800	9390	8980	9150
11	8160	8240	8070	8000	7950	8590	8500	9900	9780	9380	8970	9140
12	8170	8220	8050	7990	7950	8590	8490	9920	9770	e9360	9050	9140
13	8170	8210	8070	8000	7960	8580	8490	9920	9750	e9350	9050	9140
14	8160	8210	8060	7980	7950	8590	8490	9910	9740	e9340	9050	9130
15	8170	8210	8070	7980	7940	8570	8480	9910	9720	e9320	9050	9130
16	8180	8200	8070	7970	7930	8560	8470	9910	9710	e9300	9040	9120
17	8170	8190	8050	7960	7930	8550	8450	9900	9690	9290	9040	9120
18	8170	8180	8050	7970	7940	8540	8460	9900	9680	9290	9040	9110
19	8170	8180	8030	7970	7940	8550	8460	9890	9670	9280	9040	9110
20	8170	8170	8040	7960	7940	8560	8450	9890	9650	9260	9030	9100
21	8160	8170	8020	7970	7970	8560	8450	9870	9640	9250	9010	9100
22	8160	8170	8030	7960	7970	8550	8440	9860	9630	9230	9010	9090
23	8160	8160	8030	7960	7970	8550	8420	9860	9610	9210	8990	9070
24	8160	8170	8010	7960	7990	8540	8420	9850	9600	9190	8990	9060
25	8270	8160	8000	7950	7980	8530	8420	9840	9590	9180	9010	9050
26	8280	8160	8010	7960	7970	8520	8410	9830	9580	9170	9160	9040
27	8270	8160	8020	7940	7960	8530	8410	9830	9570	9150	9160	9030
28	8270	8150	8020	7960	7950	8530	8400	9810	9550	9130	9160	9030
29	8260	8140	8020	7970	---	8540	8380	9820	9540	9140	9150	9020
30	8250	8140	8010	7970	---	8550	8380	9840	9520	9120	9150	9010
31	8260	---	8010	7970	---	8550	---	9840	---	9110	9140	---
MEAN	8200	8200	8060	7980	7960	8410	8470	9710	9710	9310	9050	9110
MAX	8280	8270	8140	8000	7990	8590	8550	9920	9860	9510	9160	9190
MIN	8160	8140	8000	7940	7930	7950	8380	8360	9520	9110	8970	9010
(+)	3026.69	3026.30	3025.85	3025.71	3025.64	3027.67	3027.11	3031.84	3030.87	3029.55	3029.67	3029.21
(@)	-10	-120	-130	-40	-20	+600	-170	+1460	-320	-410	+30	-130
(++)	65	62	57	52	45	48	62	85	92	125	110	69

CAL YR 2000 MAX 9780 MIN 8000 (@) -1770 (++) 1002
WTR YR 2001 MAX 9920 MIN 7930 (@) +740 (++) 890

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 Sept. 1982, Oct. 1994 to Sept. 1997. Pesticide data: Oct. 1994 to Sept. 1997. Specific conductance: Oct. 1968 to Sept. 1982, Oct. 1994 to Sept. 1997. Water temperature: Oct. 1968 to Sept. 1982, Oct. 1994 to Sept. 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 except those for estimated daily discharges, which are poor. Since water year 1974, at least 10% of contributing drainage area has been regulated. 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. No flow at times.

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 June 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 June 1957, from information by local residents and State Department of Highways and Public Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.98	42	14	66	53	83	e77	33	62	1.4	2.0	53
2	1.2	13	14	57	58	80	e68	492	250	1.4	2.2	39
3	1.6	13	e15	67	71	75	53	975	272	1.3	2.4	72
4	1.9	23	15	194	64	63	51	11900	58	1.1	2.6	264
5	2.6	53	18	144	51	55	48	6920	25	1.2	2.5	1560
6	2.7	e52	18	112	46	52	46	1890	15	1.2	2.8	284
7	3.2	e41	15	137	47	48	44	869	11	.95	3.2	152
8	4.0	e30	17	96	54	350	41	591	7.4	.84	4.2	125
9	5.2	e28	15	72	188	2020	43	400	5.5	.93	4.3	90
10	5.1	e25	16	95	63	905	44	315	3.9	.98	7.0	73
11	6.1	e24	17	158	73	150	44	e271	2.9	.97	18	53
12	6.3	e23	15	94	60	52	72	336	15	.87	484	42
13	6.5	e22	18	92	59	45	34	303	12	1.2	936	35
14	6.6	e21	47	38	71	45	35	426	2.8	1.9	119	36
15	6.7	e20	37	34	59	44	33	231	2.7	2.2	64	30
16	13	20	31	34	53	43	34	150	1.5	1.3	83	32
17	9.4	15	19	99	48	41	35	137	1.1	1.1	35	661
18	8.0	15	17	96	46	43	36	1460	1.1	1.1	109	225
19	7.7	14	17	66	44	47	38	2750	1.2	1.2	57	99
20	7.6	14	17	54	41	44	41	2100	1.5	1.3	70	121
21	9.4	14	18	49	41	44	42	1340	1.6	1.5	48	63
22	65	15	18	40	42	42	45	516	2.1	1.4	45	56
23	379	42	19	38	49	42	34	207	2.1	1.3	142	49
24	193	723	19	40	359	43	46	41	1.5	1.4	562	28
25	987	161	22	38	104	44	41	33	1.3	1.5	804	21
26	510	109	22	40	75	67	36	29	1.4	1.7	1300	15
27	130	71	67	47	55	97	31	28	1.2	1.9	1130	11
28	156	40	411	291	64	76	32	27	1.1	2.7	212	8.5
29	342	25	249	363	---	e185	32	45	1.1	2.8	117	7.5
30	81	15	118	81	---	e155	32	43	1.1	2.3	87	7.1
31	37	---	77	58	---	e100	---	40	---	2.0	70	---
TOTAL	2995.78	1723	1432	2890	2038	5180	1288	34898	766.1	44.94	6525.2	4312.1
MEAN	96.6	57.4	46.2	93.2	72.8	167	42.9	1126	25.5	1.45	210	144
MAX	987	723	411	363	359	2020	77	11900	272	2.8	1300	1560
MIN	.98	13	14	34	41	41	31	27	1.1	.84	2.0	7.1
AC-FT	5940	3420	2840	5730	4040	10270	2550	69220	1520	89	12940	8550

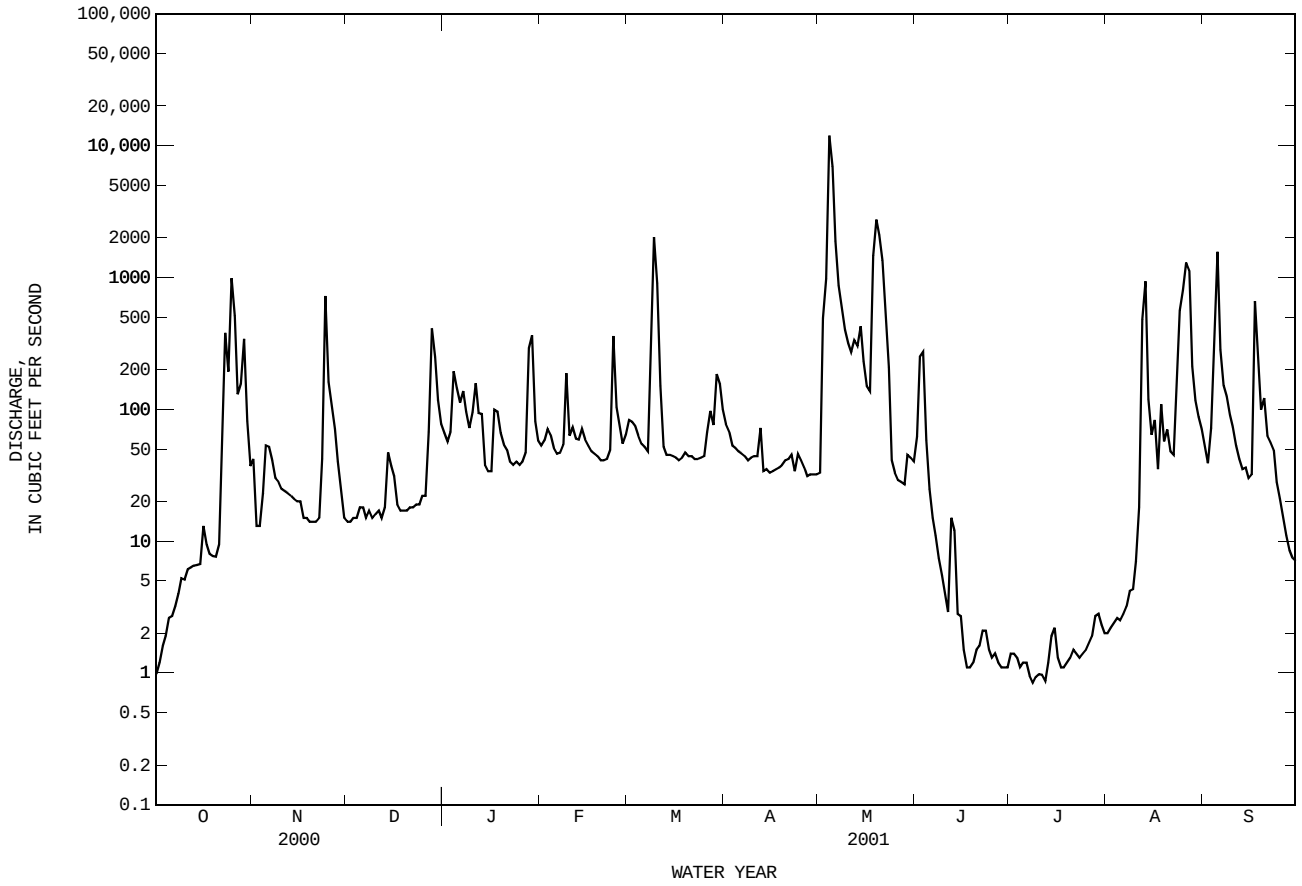
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2001z, BY WATER YEAR (WY)

MEAN	115	57.3	43.6	44.8	49.1	67.3	115	316	362	99.1	125	110
MAX	1279	377	265	296	358	500	735	1835	1297	342	535	378
(WY)	1987	1987	1993	1993	1998	1998	1997	1978	1995	1982	1997	1986
MIN	3.14	1.85	2.27	5.04	2.00	4.00	2.95	1.18	3.46	.66	1.56	3.39
(WY)	1985	1978	1983	1978	1974	1980	1978	1988	1994	1974	1980	1984

07299540 Prairie Dog Town Fork Red River near Childress, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1974 - 2001z	
ANNUAL TOTAL	62472.78		64093.12			
ANNUAL MEAN	171		176		125	
HIGHEST ANNUAL MEAN					286	1987
LOWEST ANNUAL MEAN					27.6	1994
HIGHEST DAILY MEAN	7400	Jun 3	11900	May 4	34200	May 28 1978
LOWEST DAILY MEAN	.98	Oct 1	.84	Jul 8	.00	Mar 11 1983
ANNUAL SEVEN-DAY MINIMUM	2.0	Oct 1	.96	Jul 6	.00	Jun 7 1988
MAXIMUM PEAK FLOW			24800	May 4	86400	May 28 1978
MAXIMUM PEAK STAGE			10.88	May 4	13.94	May 21 1977
ANNUAL RUNOFF (AC-FT)	123900		127100		90820	
10 PERCENT EXCEEDS	162		296		184	
50 PERCENT EXCEEDS	13		41		11	
90 PERCENT EXCEEDS	5.5		1.5		1.4	

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 mouth.

DRAINAGE AREA.--303 mi^2.

PERIOD OF RECORD.--Nov. 1961 to current year. Prior to Oct. 1974, published as "Groesbeck Creek 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 except those for estimated daily discharges which are poor. No known regulation. There are several diversions upstream from station for farm and ranch use and for a gypsum plant. No flow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	23	21	25	23	24	23	20	33	15	14	27
2	14	21	20	27	22	24	24	21	21	15	14	24
3	15	23	20	26	21	22	21	23	20	15	14	24
4	17	24	19	26	27	21	20	48	18	15	14	26
5	15	28	19	28	23	21	20	144	18	15	14	40
6	14	23	19	29	23	20	20	175	18	15	14	30
7	15	25	19	28	23	20	20	53	18	14	14	24
8	19	27	19	28	24	25	20	28	17	14	14	24
9	16	24	19	29	26	56	20	22	17	14	14	31
10	16	23	19	29	24	31	20	20	17	14	18	25
11	17	23	19	30	25	26	19	19	17	14	16	25
12	17	23	19	28	24	25	19	19	16	13	22	e25
13	17	22	20	29	24	21	19	18	22	14	23	e24
14	18	23	19	28	25	20	19	18	23	15	57	e25
15	20	23	19	31	25	20	19	18	18	15	36	e25
16	18	23	19	28	24	20	19	18	18	14	22	e25
17	18	23	19	28	23	20	19	18	17	13	21	e25
18	27	23	19	28	23	20	19	19	16	13	26	e25
19	29	23	19	27	23	20	19	45	16	13	121	e25
20	29	23	19	27	20	20	19	70	16	14	102	e25
21	31	23	19	23	20	21	20	71	16	15	40	e30
22	28	26	19	22	20	26	20	44	16	15	29	e27
23	24	27	19	22	23	26	19	21	16	15	23	e29
24	30	31	19	22	158	26	19	19	28	14	20	e26
25	27	30	19	21	126	26	19	19	34	13	21	e26
26	50	25	20	22	63	26	19	18	19	15	279	e26
27	67	25	19	22	34	27	18	51	17	14	246	e26
28	39	25	19	26	27	28	18	46	16	16	134	e26
29	33	26	19	28	---	28	19	24	16	17	51	e26
30	28	22	25	27	---	27	19	100	15	14	36	e26
31	27	---	26	25	---	24	---	56	---	14	30	---
TOTAL	750	730	608	819	943	761	588	1285	569	446	1499	792
MEAN	24.2	24.3	19.6	26.4	33.7	24.5	19.6	41.5	19.0	14.4	48.4	26.4
MAX	67	31	26	31	158	56	24	175	34	17	279	40
MIN	14	21	19	21	20	20	18	18	15	13	14	24
AC-FT	1490	1450	1210	1620	1870	1510	1170	2550	1130	885	2970	1570

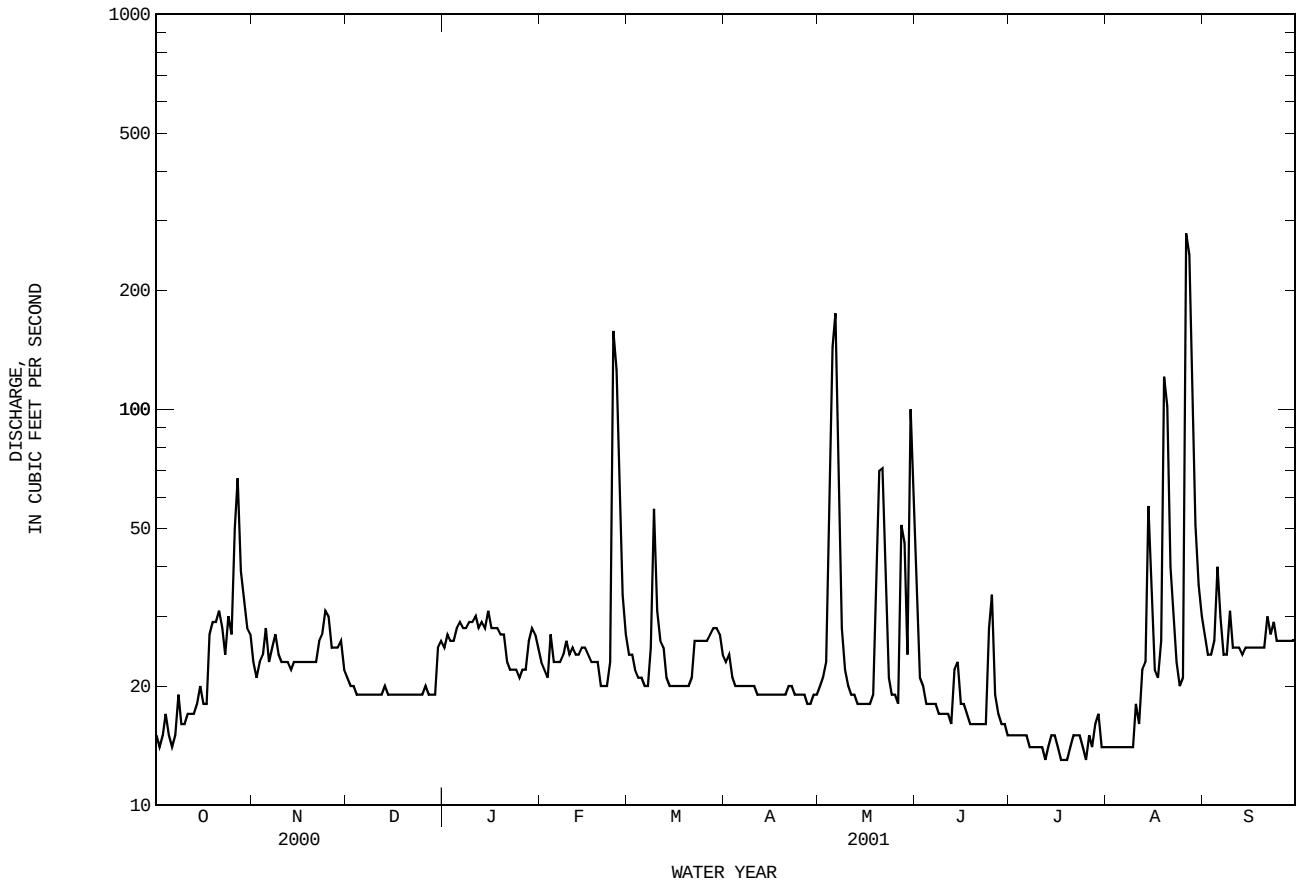
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001, BY WATER YEAR (WY)

MEAN	32.8	11.5	10.8	9.61	11.6	14.2	21.6	31.2	55.6	21.2	26.9	46.4
MAX	393	31.3	43.0	26.4	62.0	91.2	271	163	502	228	545	286
(WY)	1984	1995	1992	2001	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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1962 - 2001	
ANNUAL TOTAL	11705		9790			
ANNUAL MEAN	32.0		26.8		24.0	
HIGHEST ANNUAL MEAN					112	1995
LOWEST ANNUAL MEAN					2.97	1964
HIGHEST DAILY MEAN	1020	Jun 3	279	Aug 26	9570	Oct 20 1983
LOWEST DAILY MEAN	10	Sep 20	13	Jul 12	.00	Jul 7 1964
ANNUAL SEVEN-DAY MINIMUM	11	Sep 16	14	Jul 7	.00	Jul 7 1964
MAXIMUM PEAK FLOW			646	Aug 26	18000	Oct 20 1983
MAXIMUM PEAK STAGE			12.28	Aug 26	24.78	Oct 20 1983
ANNUAL RUNOFF (AC-FT)	23220		19420		17420	
10 PERCENT EXCEEDS	35		31		26	
50 PERCENT EXCEEDS	19		22		7.4	
90 PERCENT EXCEEDS	14		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.--Records good except those for estimated daily contents, which are fair. 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. Conservation pool storage is 58,200 acre-ft. 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	2,663.7
Top of conservation pool	2,663.2
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, June 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, 26,840 acre-ft, June 1, elevation, 2,643.10 ft; minimum contents, 22,770 acre-ft, Oct. 21, elevation, 2,639.38 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

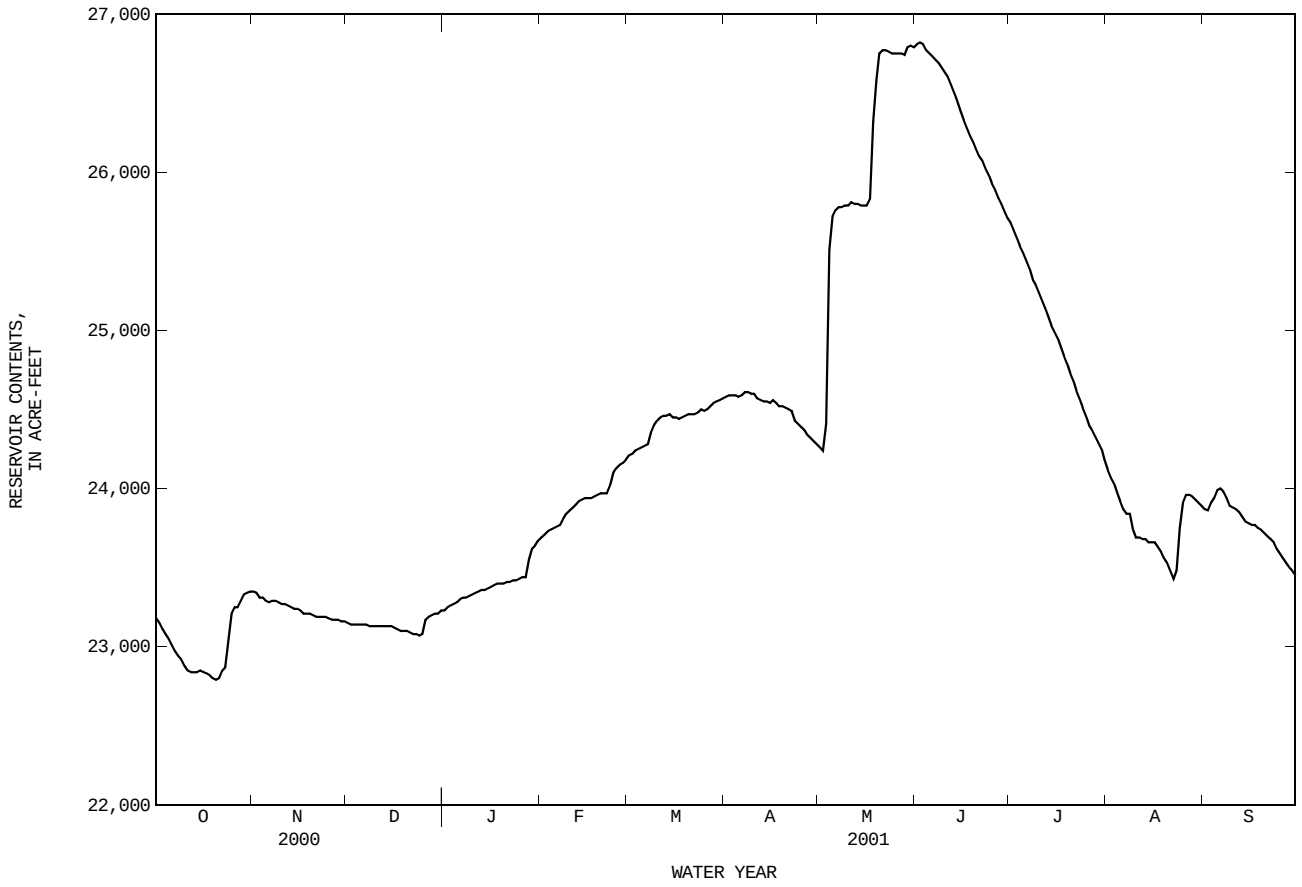
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23180	23350	23150	23230	23690	24210	24580	24260	26810	25680	24120	23870
2	23150	23340	23140	23250	23710	24220	24590	24240	26820	25630	24070	23860
3	23110	23310	23140	23260	23730	24240	24590	24410	26810	25580	24030	23910
4	23080	23310	e23140	23270	23740	24250	24590	25510	26770	25530	23970	23940
5	23050	23290	e23140	23280	23750	24260	24580	25720	26750	25490	23920	23990
6	23010	23280	e23140	23300	23760	24270	24590	25760	26730	25440	23870	24000
7	22970	23290	23140	23310	23770	24280	24610	25780	26710	25390	23840	23980
8	22940	23290	23130	23310	23810	24350	24610	25780	26690	25320	23840	23940
9	22920	23280	23130	23320	23840	24400	24600	25790	26660	25290	23740	23890
10	22880	23270	23130	23330	23860	24430	24600	25790	26630	25240	23690	23880
11	22850	23270	e23130	23340	23880	24450	24570	25810	26600	25190	23690	23870
12	22840	23260	e23130	23350	23900	24460	24560	25800	26550	25140	23680	23850
13	22840	23250	e23130	23360	23920	24460	24550	25800	26500	25090	23680	23820
14	22840	23240	23130	23360	23930	24470	24550	25790	26440	25030	23660	23790
15	22850	23240	23130	23370	23940	24450	24540	25790	26380	24990	e23660	23780
16	22840	23230	23120	23380	23940	24450	24560	25790	26330	24950	e23660	23770
17	22830	23210	23110	23390	23940	24440	24540	25830	26280	24890	23630	23770
18	22820	23210	23100	23400	23950	24450	24520	26320	26230	24840	23600	23750
19	22800	23210	23100	23400	23960	24460	24520	26580	26190	24790	23560	23740
20	22790	23200	23100	23400	23970	24470	24510	26750	26140	24730	23530	23720
21	22800	23190	23090	23410	23970	24470	24500	26770	26100	24680	23480	23700
22	22850	23190	23080	23410	23970	24470	24490	26770	26070	24620	23430	23680
23	22870	23190	23080	23420	24020	24480	24430	26760	26020	24570	23480	23660
24	23030	23190	23070	23420	24100	24500	24410	e26750	25980	24510	23750	23620
25	23210	23180	23080	23430	24130	24490	24390	e26750	25930	24460	23910	23590
26	23250	23170	23170	23440	24150	24500	24370	e26750	25890	24400	23960	23560
27	23250	23170	23190	e23440	24160	24520	24340	26750	25840	24370	23960	23530
28	23290	23170	23200	e23550	24180	24540	24320	26740	25800	24330	23950	23500
29	23330	23160	23210	e23620	---	24550	24300	26790	25750	24290	23930	23480
30	23340	23160	23210	23640	---	24560	24280	26800	25710	24250	23910	23450
31	23350	---	23230	23670	---	24570	---	26790	---	24180	23890	---
MEAN	23010	23240	23130	23390	23920	24420	24510	26060	26340	24930	23780	23760
MAX	23350	23350	23230	23670	24180	24570	24610	26800	26820	25680	24120	24000
MIN	22790	23160	23070	23230	23690	24210	24280	24240	25710	24180	23430	23450
(+)	2639.94	2639.76	2639.83	2640.24	2640.72	2641.08	2640.81	2643.06	2642.12	2640.72	2640.45	2640.04
(@)	+90	-190	+70	+440	+510	+390	-290	+2520	-1080	-1530	-290	-440
(++)	368	324	302	311	306	323	320	434	366	480	582	495

CAL YR 2000 MAX 27140 MIN 22790 (@) -2220 (++) 4598
WTR YR 2001 MAX 26820 MIN 22790 (@) 190 (++) 4430

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 11120201, right downstream side of bridge of FM 2471 1.0 mi downsteam from Bell Creek. and 5 mi north of Hedley.

DRAINAGE AREA.--74 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug. 1964 to Sept. 1995 (miscellaneous measurements), Aug. 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,408.55 ft above sea level. Satellite telemeter at site.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.37	1.3	2.2	2.8	3.1	3.6	4.5	1.5	1.9	.56	.01	.42
2	.37	1.2	2.2	2.7	2.9	3.8	4.4	1.5	1.8	.59	.01	.41
3	.38	1.3	2.2	2.9	2.9	3.6	4.0	1.7	1.4	.53	e.00	.48
4	.40	1.3	2.3	3.1	2.6	3.8	3.9	63	1.3	.44	e.00	.47
5	.47	1.4	2.3	3.3	2.6	3.7	4.0	11	1.2	.42	e.00	.84
6	.53	1.4	2.3	3.4	2.6	3.8	4.1	4.9	1.2	.38	e.00	.73
7	.62	1.5	2.3	3.2	2.6	3.9	4.1	3.3	1.2	.32	e.00	.61
8	.67	2.0	2.4	3.0	2.8	5.2	3.5	2.3	1.1	.34	.00	.57
9	.74	2.2	2.4	3.0	3.1	6.2	3.2	2.2	1.1	.28	.00	.59
10	.75	2.4	2.4	3.1	2.8	4.9	3.3	2.1	1.0	.26	.00	.58
11	.77	2.4	2.4	3.1	2.9	4.6	3.2	2.0	1.0	.23	.00	.58
12	.81	2.6	2.3	3.0	2.8	4.7	3.2	2.0	.98	.18	.00	.58
13	.81	2.8	2.4	3.0	2.9	4.7	3.0	1.9	.93	.19	.00	.54
14	.81	e2.3	2.4	2.9	3.0	4.8	2.8	1.8	.90	.28	.04	.49
15	.85	e1.8	2.6	2.9	2.9	5.1	2.7	1.7	.85	.33	.18	.50
16	1.1	1.6	2.6	3.0	2.8	4.7	2.5	1.7	.76	.20	.24	.49
17	.90	1.6	2.6	3.1	2.6	4.7	2.5	1.7	.73	.23	.17	.60
18	.91	1.6	2.6	3.1	2.7	4.6	2.6	2.0	.70	.14	.21	.50
19	.87	1.7	2.6	3.1	2.9	4.7	2.6	1.8	.66	.11	.15	.52
20	.88	1.7	2.7	3.0	2.9	4.8	2.5	2.1	.71	.07	.05	.50
21	1.0	1.7	2.6	3.0	3.1	4.6	2.5	1.8	.80	.04	.01	.42
22	1.8	1.7	2.4	2.9	3.0	4.5	2.3	1.7	.89	.02	.01	.47
23	1.1	1.8	2.5	2.9	3.5	4.6	2.2	1.5	.81	.02	.65	.54
24	1.4	1.8	2.5	2.8	5.8	4.8	2.1	1.4	.74	.02	.97	.48
25	2.0	1.7	2.5	2.8	4.5	4.5	2.0	1.4	.71	.02	.40	.56
26	1.5	2.0	2.6	2.9	3.7	4.9	1.8	1.4	.67	.02	.90	.55
27	1.2	2.1	2.9	3.0	3.6	4.8	1.6	1.5	.69	.01	.59	.46
28	1.4	2.1	2.8	e3.5	3.4	4.9	1.6	1.4	.57	.01	.49	.46
29	1.8	2.1	2.8	4.0	---	4.9	1.5	2.8	.55	.01	.41	.44
30	1.3	2.2	2.9	4.0	---	4.8	1.5	3.0	.56	.01	.43	.50
31	1.3	---	2.9	3.5	---	4.8	---	2.0	---	.01	.43	---
TOTAL	29.81	55.3	77.6	96.0	87.0	142.0	85.7	132.1	28.41	6.27	6.35	15.88
MEAN	.96	1.84	2.50	3.10	3.11	4.58	2.86	4.26	.95	.20	.20	.53
MAX	2.0	2.8	2.9	4.0	5.8	6.2	4.5	63	1.9	.59	.97	.84
MIN	.37	1.2	2.2	2.7	2.6	3.6	1.5	1.4	.55	.01	.00	.41
AC-FT	59	110	154	190	173	282	170	262	56	12	13	31

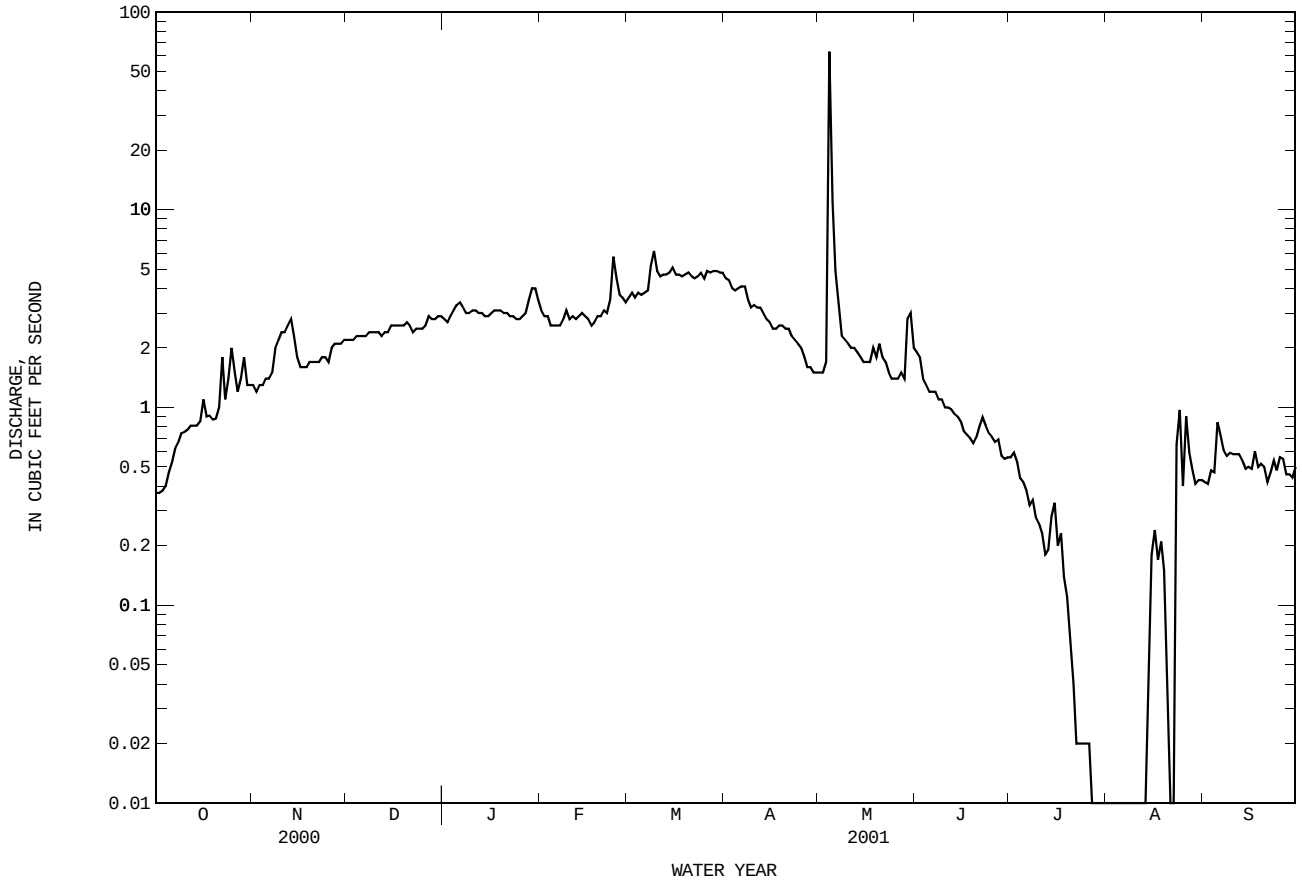
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2001, BY WATER YEAR (WY)

MEAN	2.14	2.62	3.13	3.57	4.35	8.29	5.45	4.16	3.38	.78	1.18	1.30
MAX	3.41	4.00	5.04	5.70	7.72	13.5	7.48	4.41	8.71	1.37	3.87	4.11
(WY)	1998	1998	1998	1998	1998	1998	1998	2000	2000	2000	1997	1997
MIN	.94	1.25	1.62	1.72	2.69	4.20	2.86	3.93	.95	.20	.20	.28
(WY)	2000	2000	2000	2000	2000	1999	2001	1998	2001	2001	2001	2000

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1997 - 2001	
ANNUAL TOTAL	1307.56		762.42			
ANNUAL MEAN	3.57		2.09		3.24	
HIGHEST ANNUAL MEAN					4.57	1998
LOWEST ANNUAL MEAN					2.09	2001
HIGHEST DAILY MEAN	111	Mar 23	63	May 4	111	Mar 23 2000
LOWEST DAILY MEAN	.21	Sep 7	.00	Aug 3	.00	Aug 3 2001
ANNUAL SEVEN-DAY MINIMUM	.22	Sep 5	.00	Aug 3	.00	Aug 3 2001
MAXIMUM PEAK FLOW			197	May 4	338	Mar 23 2000
MAXIMUM PEAK STAGE			5.27	May 4	5.95	Mar 23 2000
ANNUAL RUNOFF (AC-FT)	2590		1510		2350	
10 PERCENT EXCEEDS	7.8		4.0		6.1	
50 PERCENT EXCEEDS	2.2		1.8		2.7	
90 PERCENT EXCEEDS	.35		.20		.47	

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 RECORD.--
CHEMICAL DATA: Aug. 1997 to current year.

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.--Records fair. Interruption in the record was caused by malfunctions of the instrument. No flow Aug. 3-13.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 18,900 microsiemens/cm, May 26, 1996; minimum, 166 microsiemens/cm, Aug. 3, 1999.
TEMPERATURE: Maximum, 36.5°C, July 13, 1998; minimum, 0.0°C, Dec. 21-26, 1998, Jan. 4, 1999, Dec. 19, 24, 2000, Jan. 3, 2001, Feb. 10, 2001.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,330 microsiemens/cm, Oct. 22; minimum, 243 microsiemens/cm, May 4.
WATER TEMPERATURE: Maximum, 33.0°C, Aug. 23; minimum, 0.0°C, Dec. 19, 24, Jan. 3, Feb. 10.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1030	1010	1020	1120	1100	1110	1080	1050	1070	1130	1090	1110
2	1040	1000	1020	1120	1100	1100	1080	1050	1060	1140	1110	1120
3	1030	990	1010	1120	1100	1110	1080	1050	1060	1130	1110	1120
4	1040	1010	1020	1110	1090	1100	1080	1040	1070	1120	1090	1110
5	1040	1020	1030	1110	1070	1090	1080	1060	1070	1120	1100	1110
6	1060	1040	1040	1110	1080	1090	1090	1050	1070	1160	1120	1140
7	1070	1030	1050	1100	1060	1080	1080	1050	1070	1160	1120	1140
8	1070	1040	1050	1090	1070	1080	1080	1050	1070	1120	1090	1110
9	1070	1040	1050	1090	1060	1080	1070	1040	1060	1120	1090	1100
10	1070	1040	1050	1100	1070	1090	1080	1050	1060	1110	1090	1100
11	1060	1030	1040	1110	1080	1100	1080	1060	1070	1110	1080	1100
12	1060	1040	1050	1100	1080	1090	1080	1070	1070	1110	1090	1100
13	1060	1030	1050	1100	1080	1090	1080	1060	1070	1110	1080	1100
14	1060	1020	1040	1090	1070	1080	1070	1050	1060	1100	1070	1090
15	1120	1030	1060	1090	1060	1080	1070	1040	1060	1100	1080	1090
16	1280	1120	1180	1100	1060	1080	1080	1060	1070	1100	1070	1090
17	1160	1090	1130	1100	1070	1080	1090	1070	1070	1080	1070	1070
18	---	---	e1080	1100	1070	1080	1080	1060	1070	1100	1080	1080
19	---	---	e1060	1080	1060	1080	1080	1060	1070	1110	1090	1100
20	---	---	e1050	1090	1060	1070	1080	1060	1070	1100	1070	1090
21	1170	1040	1080	1090	1050	1070	1090	1070	1070	1110	1070	1090
22	1330	1120	1170	1090	1050	1070	1090	1060	1070	1100	1070	1080
23	1120	1060	1100	1090	1070	1080	1090	1060	1070	1100	1080	1090
24	1140	1090	1110	1100	1060	1080	1080	1060	1070	1100	1050	1080
25	1150	1010	1110	1090	1060	1080	1080	1050	1070	1100	1080	1090
26	1150	1080	1130	1100	1060	1080	1070	1030	1050	1100	1060	1080
27	1170	1150	1160	1100	1050	1080	1050	996	1020	---	---	e1070
28	1170	1100	1150	1090	1050	1070	1050	1020	1030	---	---	e1050
29	1120	1090	1110	1090	1050	1070	1080	1050	1060	---	---	e1080
30	1120	1060	1090	1080	1050	1070	1100	1070	1080	1130	1100	1120
31	1130	1070	1110	---	---	---	1110	1080	1090	1130	1090	1110
MONTH	---	---	1080	1120	1050	1080	1110	996	1070	---	---	1100

07299890 Lelia Lake Creek below Bell Creek near Hedley, TX--Continued

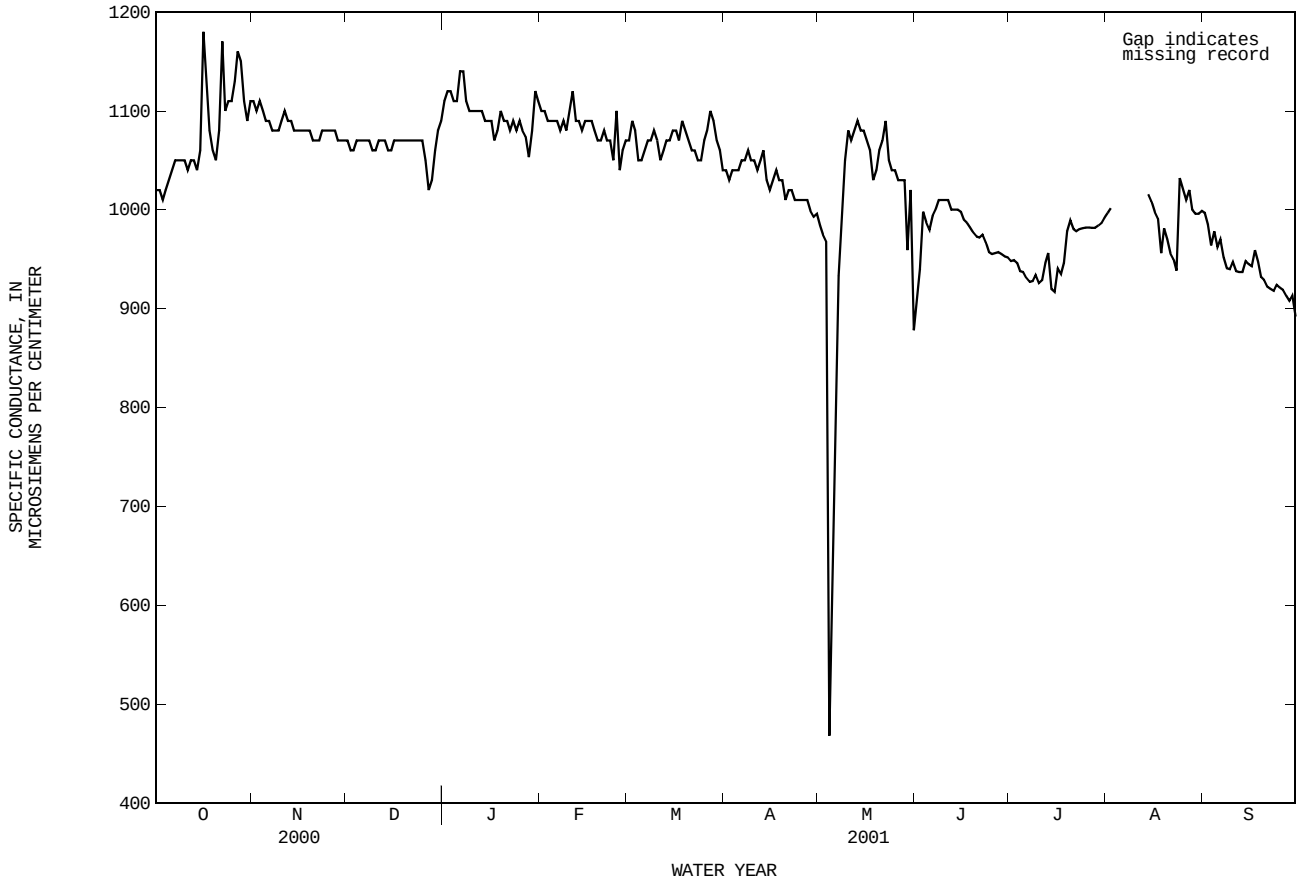
SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1120	1090	1100	1080	1050	1070	1070	997	1040	1010	948	984
2	1110	1100	1100	1130	1060	1090	1060	984	1030	996	941	975
3	1100	1080	1090	1130	1030	1080	1060	1010	1040	991	775	968
4	1100	1070	1090	1080	1020	1050	1070	987	1040	940	243	468
5	1100	1070	1090	1070	1020	1050	1060	1000	1040	---	---	e613
6	1100	1060	1090	1090	1030	1060	1060	1040	1050	---	---	e795
7	1110	1060	1080	1100	1040	1070	1090	1010	1050	---	---	e933
8	1110	1060	1090	1100	1030	1070	1090	1010	1060	1020	980	996
9	1100	1060	1080	1140	1030	1080	1090	991	1050	1070	1020	1050
10	1140	1090	1100	1140	1030	1070	1060	1030	1050	1080	1060	1080
11	1150	1100	1120	1080	1020	1050	1080	992	1040	1090	1060	1070
12	1110	1070	1090	1100	1010	1060	1090	1000	1050	1080	1080	1080
13	1110	1060	1090	1100	1030	1070	1100	1020	1060	1100	1080	1090
14	1110	1060	1080	1100	1020	1070	1080	976	1030	1090	1060	1080
15	1100	1070	1090	1100	1050	1080	1050	977	1020	1080	1070	1080
16	1100	1070	1090	1100	1040	1080	1060	994	1030	1100	1070	1070
17	1100	1060	1090	1090	1040	1070	1070	1010	1040	1070	641	1060
18	1090	1060	1080	1100	1080	1090	1060	986	1030	1070	641	1030
19	1100	1050	1070	1100	1050	1080	1070	976	1030	1050	877	1040
20	1090	1040	1070	1100	1030	1070	1040	973	1010	1080	877	1060
21	1100	1050	1080	1100	1020	1060	1050	976	1020	1080	1060	1070
22	1090	1030	1070	1100	1010	1060	1040	976	1020	1100	1070	1090
23	1080	1060	1070	1080	1000	1050	1040	976	1010	1070	1040	1050
24	1100	954	1050	1070	1010	1050	1030	978	1010	1040	1030	1040
25	1160	1040	1100	1090	1040	1070	1040	977	1010	1040	1030	1040
26	1060	1010	1040	1100	1070	1080	1040	979	1010	1040	1030	1030
27	1070	1040	1060	1110	1090	1100	1030	970	1010	1030	1020	1030
28	1080	1060	1070	1110	1060	1090	1020	967	999	1040	1020	1030
29	---	---	---	1110	1020	1070	1020	959	993	1040	387	959
30	---	---	---	1080	1020	1060	1020	966	996	1170	867	1020
31	---	---	---	1060	998	1040	---	---	---	913	859	878
MONTH	1160	954	1080	1140	998	1070	1100	959	1030	---	---	992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	924	878	910	966	919	948	---	---	e997	1010	962	997
2	970	923	940	961	925	949	---	---	e1000	1000	940	985
3	1020	970	998	963	915	946	---	---	---	984	936	964
4	---	---	e987	953	914	938	---	---	---	985	970	978
5	---	---	e980	956	910	937	---	---	---	---	---	e962
6	1010	966	994	953	899	931	---	---	---	994	939	970
7	1020	991	1000	962	886	927	---	---	---	984	903	952
8	1020	995	1010	970	872	928	---	---	---	960	907	941
9	1020	982	1010	974	883	934	---	---	---	958	908	940
10	1020	994	1010	964	878	926	---	---	---	966	912	947
11	1020	989	1010	964	886	929	---	---	---	960	903	938
12	1020	982	1000	963	924	946	---	---	---	960	901	937
13	1010	990	1000	975	941	956	---	---	---	960	896	937
14	1010	990	1000	961	866	920	---	---	e1020	958	934	948
15	1010	981	998	956	881	917	---	---	e1010	968	906	945
16	1000	974	990	966	918	941	1020	976	998	959	910	943
17	996	973	987	955	914	935	1010	972	991	980	931	959
18	995	967	982	972	915	946	990	925	956	---	---	e947
19	990	961	977	997	939	978	1000	958	981	---	---	e932
20	985	957	973	1010	938	989	---	---	e970	943	901	929
21	985	964	972	---	---	e980	---	---	e956	933	903	922
22	989	962	975	---	---	e978	---	---	e950	932	897	920
23	986	947	967	---	---	e980	---	---	e938	928	906	918
24	969	939	957	---	---	e981	---	---	e1030	935	903	924
25	969	939	955	---	---	e982	---	---	e1020	937	899	921
26	970	943	956	---	---	e982	1080	932	1010	932	896	919
27	973	940	957	---	---	e982	1040	988	1020	933	886	913
28	966	938	955	---	---	e982	1020	966	1000	933	878	908
29	966	931	953	---	---	e984	1010	961	996	931	887	913
30	965	928	952	---	---	e987	1010	959	996	920	837	892
31	---	---	---	---	---	e992	1020	967	999	---	---	---
MONTH	---	---	978	---	---	956	---	---	---	---	---	940

e Estimated

07299890 Lelia Lake Creek below Bell Creek near Hedley, TX--Continued



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.2	15.5	18.6	17.8	14.1	16.3	9.3	6.1	7.7	3.1	.9	1.7
2	23.3	16.2	19.5	15.9	11.0	13.5	6.3	3.0	4.7	4.1	.4	1.8
3	23.2	16.0	19.5	13.9	13.1	13.4	6.8	3.7	5.1	---	.0	---
4	22.5	18.0	20.0	14.7	13.0	13.7	9.4	4.9	6.8	7.5	1.1	4.0
5	21.2	17.3	18.9	16.9	13.6	14.9	6.3	2.8	4.8	8.5	2.6	5.1
6	17.3	11.8	14.1	14.4	10.2	12.5	8.1	4.1	6.1	8.2	2.9	5.2
7	11.8	10.0	10.8	10.2	5.5	7.3	9.3	2.5	5.9	8.0	3.9	5.6
8	12.6	9.6	10.8	8.8	5.8	6.9	9.7	5.4	7.3	8.1	1.9	4.8
9	12.5	7.2	9.8	9.8	4.4	7.0	10.8	5.7	7.9	7.8	1.5	4.6
10	14.0	8.3	11.0	11.0	5.3	8.1	8.1	5.8	7.0	5.8	4.7	5.3
11	16.1	9.9	12.9	12.0	8.6	9.8	6.4	.4	3.9	9.9	5.3	6.9
12	17.2	14.4	15.5	9.0	5.4	7.0	---	---	---	7.6	3.2	5.6
13	20.7	16.3	18.1	8.2	2.7	5.4	---	---	---	10.0	6.4	7.5
14	21.4	17.3	19.2	8.0	2.2	5.3	---	---	---	9.2	3.7	6.1
15	19.7	17.2	18.3	10.0	5.3	7.5	7.8	2.2	4.9	8.5	2.2	5.3
16	20.1	15.3	17.6	9.8	5.2	7.3	6.7	2.8	4.9	6.3	3.8	4.9
17	18.6	16.2	17.4	7.7	2.7	5.2	---	---	---	3.8	2.4	3.1
18	20.1	15.2	17.4	6.7	4.6	5.5	6.8	2.2	4.3	6.7	2.5	3.8
19	18.8	14.3	16.8	8.4	2.2	5.2	6.1	.0	3.2	5.3	.6	2.5
20	19.5	14.3	17.1	8.0	2.6	5.1	7.4	1.9	4.5	4.8	---	---
21	18.7	17.5	18.1	9.2	2.2	5.5	---	---	---	8.1	1.1	3.9
22	19.7	17.0	18.1	8.3	4.2	6.3	---	---	---	8.3	.3	4.2
23	20.3	18.2	19.1	8.8	7.4	8.1	6.8	.3	3.6	6.8	4.1	5.4
24	19.3	18.2	18.6	9.8	6.4	8.2	3.4	.0	1.4	9.5	3.6	6.1
25	19.4	17.4	18.5	10.0	6.4	8.1	---	---	---	4.7	1.6	3.6
26	20.1	17.7	18.7	9.4	3.6	6.6	---	---	---	10.2	2.4	5.6
27	20.4	17.5	18.9	9.2	4.1	6.6	---	---	---	---	.7	---
28	20.0	16.5	18.8	9.7	4.2	6.9	---	---	---	---	---	---
29	18.7	14.1	16.2	9.4	4.2	6.8	---	---	---	6.1	.1	2.3
30	17.8	12.7	15.5	10.3	4.5	7.3	---	---	---	8.3	1.0	3.8
31	18.5	15.8	17.1	---	---	---	3.2	.4	1.5	8.7	1.8	4.4
MONTH	23.3	7.2	16.8	17.8	2.2	8.2	---	---	---	---	---	---

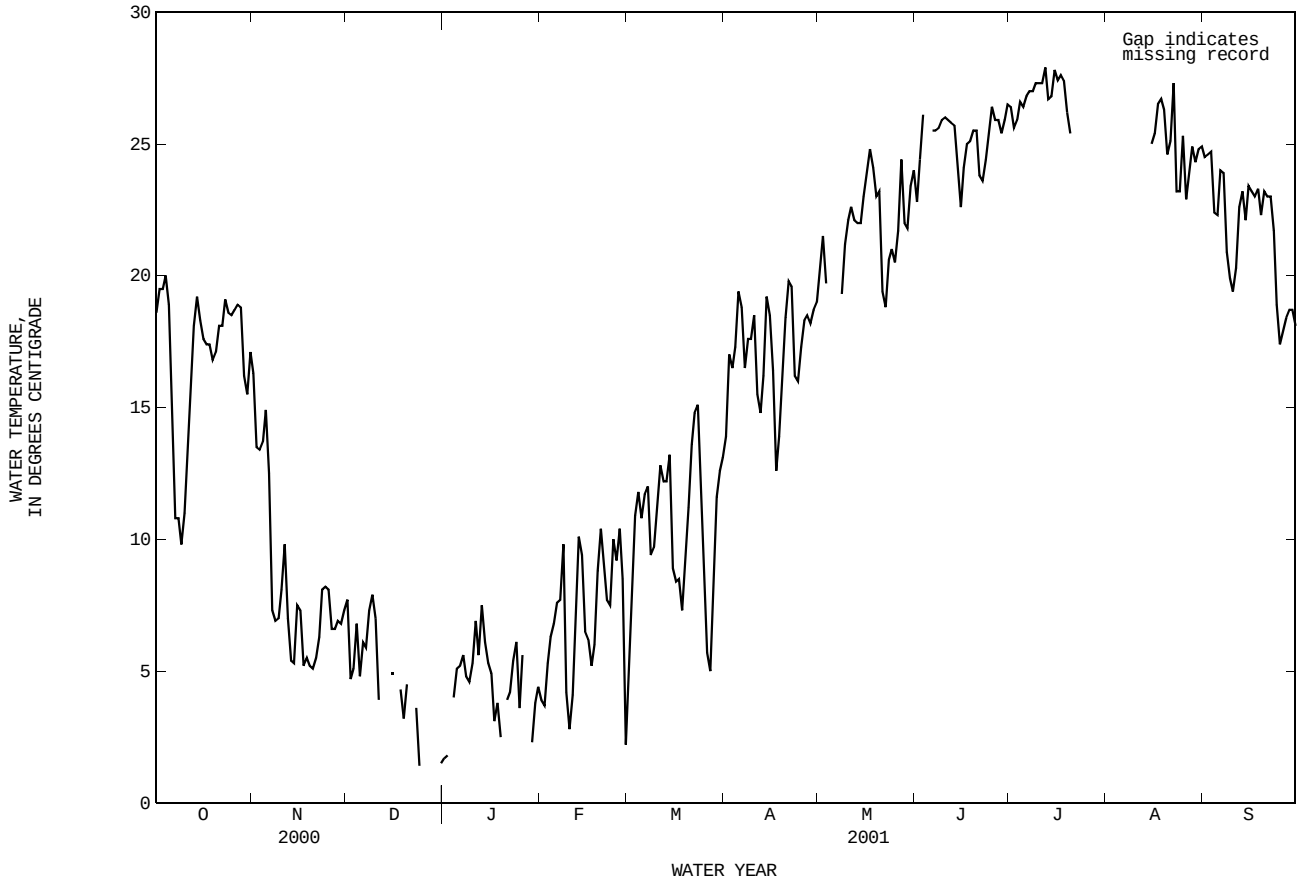
07299890 Lelia Lake Creek below Bell Creek near Hedley, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.5	2.0	3.9	11.2	2.0	5.9	19.7	9.9	13.9	24.2	16.2	20.2
2	8.4	.2	3.7	11.8	6.5	8.8	21.8	13.1	17.0	25.4	18.0	21.5
3	9.6	2.5	5.3	15.4	7.7	10.9	20.7	13.1	16.5	22.0	17.3	19.7
4	10.7	3.3	6.3	16.0	8.8	11.8	22.2	12.5	17.3	---	15.3	---
5	12.2	2.9	6.8	15.7	6.7	10.8	21.7	17.8	19.4	---	---	---
6	12.1	4.4	7.6	14.9	8.8	11.7	20.0	16.2	18.8	---	---	---
7	11.4	4.3	7.7	16.2	8.7	12.0	21.7	12.0	16.5	---	18.5	---
8	12.6	6.8	9.8	11.9	7.8	9.4	22.6	13.4	17.6	24.0	15.3	19.3
9	7.0	1.7	4.2	13.9	6.2	9.7	22.1	13.2	17.6	26.0	17.4	21.2
10	7.2	.0	2.8	15.4	8.3	11.3	19.5	17.4	18.5	26.7	18.4	22.1
11	8.3	1.1	4.1	16.7	10.6	12.8	19.6	11.0	15.5	26.7	19.5	22.6
12	11.5	3.9	7.2	17.1	8.4	12.2	19.5	10.6	14.8	24.8	20.4	22.1
13	12.2	8.5	10.1	17.5	7.9	12.2	21.3	11.3	16.2	26.2	18.5	22.0
14	10.6	6.5	9.4	18.5	9.0	13.2	23.8	15.8	19.2	25.5	19.1	22.0
15	9.3	4.8	6.5	11.7	6.1	8.9	22.4	15.0	18.5	28.0	19.2	23.0
16	9.9	3.7	6.2	13.9	4.2	8.4	19.7	13.0	16.4	29.3	19.3	23.9
17	9.7	1.6	5.2	11.2	6.5	8.5	15.3	11.3	12.6	29.4	21.4	24.8
18	9.9	3.4	6.0	8.0	6.8	7.3	18.5	10.5	13.9	29.0	20.2	24.1
19	14.5	4.3	8.8	13.8	6.7	9.5	20.0	13.2	16.5	25.1	21.2	23.0
20	15.4	6.3	10.4	17.6	6.0	11.2	21.5	15.2	18.4	28.1	19.8	23.2
21	11.1	7.3	9.0	19.2	8.7	13.6	23.3	16.8	19.8	23.1	15.9	19.4
22	10.0	6.2	7.7	19.7	11.2	14.8	21.3	17.4	19.6	24.7	13.9	18.8
23	8.4	6.8	7.5	19.3	11.7	15.1	20.3	12.2	16.2	26.5	15.5	20.6
24	14.0	7.8	10.0	14.5	8.7	12.0	20.6	11.5	16.0	24.6	17.3	21.0
25	13.9	5.6	9.2	10.4	7.3	8.9	21.8	12.8	17.3	25.6	16.2	20.5
26	13.3	8.3	10.4	7.3	4.7	5.7	21.9	14.5	18.3	26.7	17.5	21.7
27	11.4	3.7	8.5	5.7	4.3	5.0	22.2	14.6	18.5	29.6	20.1	24.4
28	3.7	1.3	2.2	11.0	5.3	7.8	21.4	14.5	18.2	24.6	20.9	22.0
29	---	---	---	16.6	8.1	11.6	22.0	15.3	18.7	24.9	19.6	21.8
30	---	---	---	15.3	10.6	12.6	21.6	16.2	19.0	28.5	19.7	23.4
31	---	---	---	18.4	9.0	13.1	---	---	---	28.5	20.6	24.0
MONTH	15.4	.0	7.0	19.7	2.0	10.5	23.8	9.9	17.2	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	26.0	20.4	22.8	31.1	22.3	26.4	---	---	---	29.5	20.6	24.5
2	29.8	20.2	24.4	30.1	22.1	25.6	---	---	---	29.9	20.6	24.6
3	31.0	22.4	26.1	31.0	21.5	25.9	---	---	---	29.9	20.9	24.7
4	---	22.1	---	31.9	22.0	26.6	---	---	---	24.3	21.5	22.4
5	29.9	---	---	31.4	21.9	26.4	---	---	---	26.0	20.3	22.3
6	28.8	22.9	25.5	31.5	22.7	26.8	---	---	---	28.5	21.1	24.0
7	29.6	21.7	25.5	31.6	23.1	27.0	---	---	---	28.6	21.2	23.9
8	29.7	22.0	25.6	31.7	22.9	27.0	---	---	---	25.9	17.5	20.9
9	31.0	21.8	25.9	32.3	23.0	27.3	---	---	---	25.0	16.3	19.9
10	30.9	21.7	26.0	32.2	22.9	27.3	---	---	---	24.8	15.0	19.4
11	30.7	21.9	25.9	32.2	23.0	27.3	---	---	---	25.1	16.1	20.3
12	30.2	22.5	25.8	32.2	23.9	27.9	---	---	---	27.8	18.5	22.6
13	30.2	22.4	25.7	28.9	24.1	26.7	---	---	---	27.3	19.6	23.2
14	28.5	20.4	24.2	30.6	24.0	26.8	---	---	---	23.4	20.8	22.1
15	28.1	17.5	22.6	32.3	24.1	27.8	27.7	21.8	25.0	28.3	20.0	23.4
16	29.6	19.8	24.1	30.7	24.6	27.4	28.8	22.5	25.4	27.1	20.7	23.2
17	30.0	21.1	25.0	31.4	24.6	27.6	30.8	23.0	26.5	27.6	20.1	23.0
18	30.0	21.4	25.1	30.1	24.8	27.4	31.0	23.3	26.7	27.3	20.7	23.3
19	30.7	21.6	25.5	28.3	24.9	26.2	30.6	22.8	26.3	26.2	19.9	22.3
20	30.8	21.3	25.5	28.8	23.6	25.4	27.0	22.2	24.6	28.4	19.5	23.2
21	26.8	21.8	23.8	---	---	---	30.2	20.9	25.1	27.6	19.4	23.0
22	29.0	19.6	23.6	---	---	---	32.2	23.5	27.3	27.7	19.7	23.0
23	29.7	20.2	24.4	---	---	---	33.0	10.5	23.2	25.5	19.1	21.7
24	30.8	21.1	25.4	---	---	---	29.6	18.2	23.2	23.1	15.5	18.9
25	31.3	22.5	26.4	---	---	---	31.0	22.0	25.3	22.2	13.3	17.4
26	30.7	21.7	25.9	---	---	---	24.1	21.5	22.9	22.6	14.2	17.9
27	30.5	21.9	25.9	---	---	---	29.6	20.4	23.9	23.0	14.4	18.4
28	30.5	21.1	25.4	---	---	---	30.1	21.1	24.9	23.2	14.6	18.7
29	31.2	21.0	25.9	---	---	---	28.8	21.0	24.3	23.0	15.1	18.7
30	31.8	21.9	26.5	---	---	---	29.5	21.4	24.8	22.8	14.1	18.1
31	---	---	---	---	---	---	29.1	22.1	24.9	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	29.9	13.3	21.6

07299890 Lelia Lake Creek below Bell Creek near Hedley, TX--Continued



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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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1952 to current year.

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

REMARKS.--Records fair. Since water year 1967, at least 10% of contributing drainage area has been regulated. 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 June 19, 1952.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	24	19	36	176	85	40	12	29	5.2	1.8	3.6
2	5.6	20	19	40	76	143	40	12	33	5.0	1.9	3.7
3	5.5	18	19	37	47	99	33	20	25	4.6	1.9	8.0
4	5.5	19	19	59	45	59	32	1920	18	4.4	1.8	7.3
5	5.9	21	19	219	46	49	28	1080	13	4.1	1.8	6.7
6	6.3	23	20	169	49	45	30	498	12	4.1	1.8	4.9
7	6.9	26	19	81	43	43	34	231	11	4.0	1.7	4.3
8	6.7	28	19	45	50	114	50	98	10	3.6	1.8	4.0
9	e6.6	25	20	39	240	399	33	63	10	3.4	2.2	3.6
10	e6.5	22	20	41	130	235	28	96	9.7	3.3	2.6	3.3
11	e6.2	21	18	45	80	170	31	155	8.7	3.1	2.6	3.5
12	6.4	20	15	e45	66	131	29	91	8.3	2.9	4.3	3.5
13	6.4	19	15	e43	64	86	26	52	8.9	3.2	3.2	3.6
14	6.4	19	18	e40	61	62	24	45	7.6	3.4	2.8	4.1
15	7.2	19	19	36	50	53	21	44	7.0	3.4	3.0	4.5
16	7.2	19	24	37	42	38	19	42	6.5	4.7	2.8	4.6
17	6.9	19	21	45	38	31	19	41	6.3	4.4	2.5	4.2
18	6.8	19	21	45	35	37	20	59	6.2	3.2	3.1	4.1
19	6.7	19	19	33	37	43	20	274	6.1	3.0	2.5	4.2
20	6.9	19	19	26	42	46	19	392	5.9	2.9	1.9	4.4
21	10	19	18	35	40	46	19	301	6.4	2.8	1.6	4.5
22	10	19	18	41	40	43	20	56	6.2	2.5	3.5	4.4
23	13	20	19	43	138	40	17	41	5.9	2.4	2.5	4.2
24	35	20	19	51	375	34	15	24	6.1	2.1	2.2	3.9
25	80	19	18	54	294	31	15	18	5.9	2.1	2.6	4.0
26	103	17	24	59	208	36	13	16	5.8	2.0	5.7	3.7
27	27	17	21	55	141	46	13	22	5.5	2.1	4.2	3.1
28	25	17	23	208	89	62	12	17	5.2	2.1	4.0	3.0
29	31	18	23	285	---	58	12	91	5.4	2.2	3.7	2.9
30	24	19	24	247	---	52	11	354	5.2	1.9	3.7	2.8
31	21	---	36	221	---	44	---	48	---	1.9	3.6	---
TOTAL	507.1	604	625	2460	2742	2460	723	6213	299.8	100.0	85.3	126.6
MEAN	16.4	20.1	20.2	79.4	97.9	79.4	24.1	200	9.99	3.23	2.75	4.22
MAX	103	28	36	285	375	399	50	1920	33	5.2	5.7	8.0
MIN	5.5	17	15	26	35	31	11	12	5.2	1.9	1.6	2.8
AC-FT	1010	1200	1240	4880	5440	4880	1430	12320	595	198	169	251

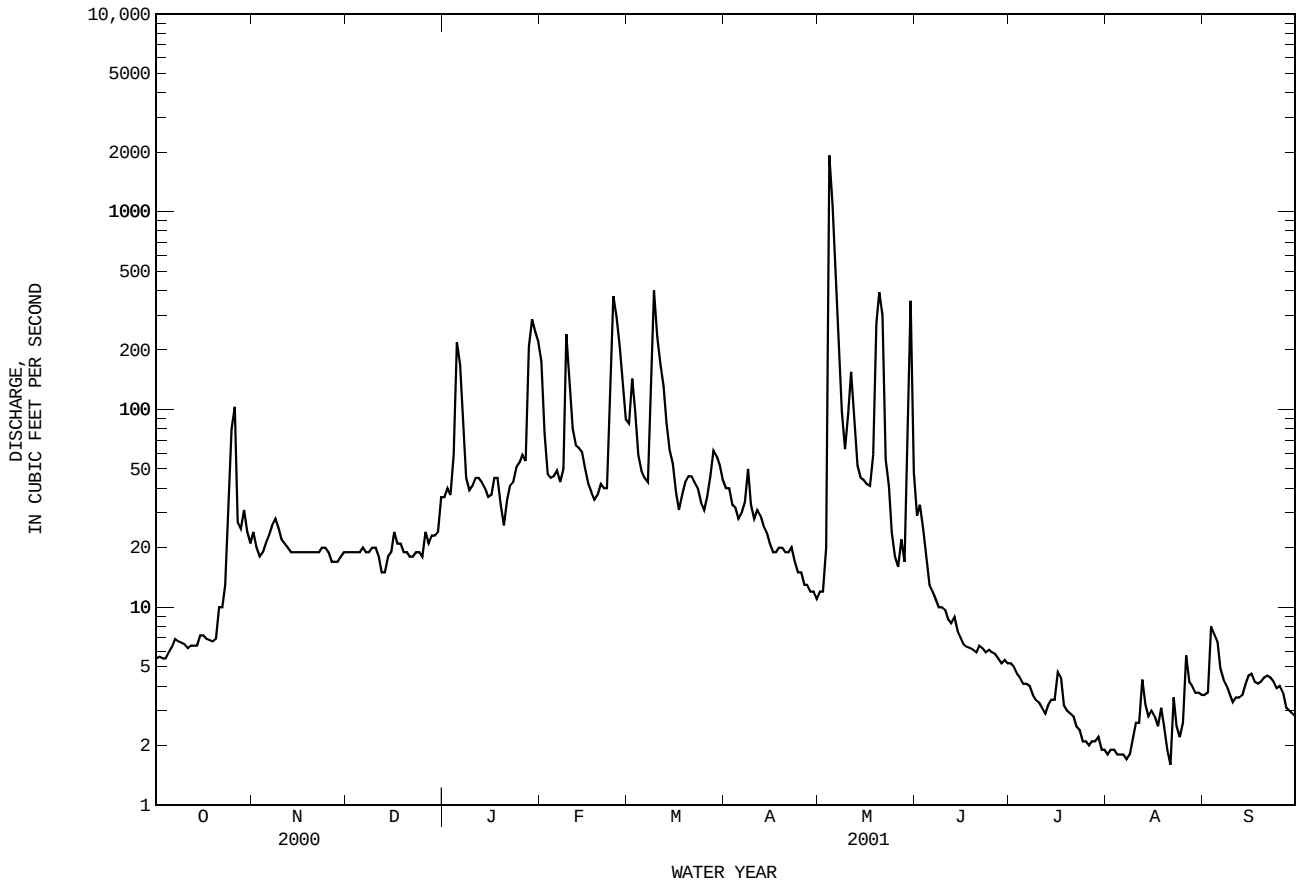
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2001z, BY WATER YEAR (WY)

MEAN	30.7	28.3	28.0	32.6	39.8	48.3	92.2	112	145	29.0	27.3	30.0
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1967 - 2001z	
ANNUAL TOTAL	15879.4		16945.8			
ANNUAL MEAN	43.4		46.4		53.4	
HIGHEST ANNUAL MEAN					165	1997
LOWEST ANNUAL MEAN					10.5	1971
HIGHEST DAILY MEAN	1530	Mar 23	1920	May 4	17500	Apr 3 1997
LOWEST DAILY MEAN	1.8	Aug 29	1.6	Aug 21	.40	Jun 2 1985
ANNUAL SEVEN-DAY MINIMUM	1.9	Sep 1	1.8	Aug 1	.73	May 27 1985
MAXIMUM PEAK FLOW			5360	May 4	81100	Apr 3 1997
MAXIMUM PEAK STAGE			6.28	May 4	17.10	Apr 3 1997
ANNUAL RUNOFF (AC-FT)	31500		33610		38710	
10 PERCENT EXCEEDS	66		87		73	
50 PERCENT EXCEEDS	20		19		17	
90 PERCENT EXCEEDS	3.9		3.0		4.2	

e Estimated
z Period of regulated streamflow.

07300000 Salt Fork Red River near Wellington, TX--Continued



07300000 Salt Fork Red River near Wellington, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Feb. 1951 to Oct. 1954, Oct. 1967 to Sept. 1997, Oct. 1999 to current year.
BIOLOGICAL DATA: Oct. 1974 to Sept. 1997, Oct. 1999 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1952 to Sept. 1954, Oct. 1967 to Sept. 1991.
TEMPERATURE: June 1952 to Sept. 1954, Oct. 1967 to Sept. 1991.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	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)
FEB													
08...	1500	48	2910	8.2	14.0	9.4	100	770	580	1160	1000	330	81.0
APR													
19...	1155	21	3340	8.1	19.0	8.5	99.6	58	42	1520	1370	464	88.8
MAY													
23...	1310	43	2560	7.9	25.5	7.9	105	57	60	926	772	258	68.2
AUG													
09...	1130	2.2	3080	8.0	29.9	7.7	110	370	470	1650	1520	518	86.1

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 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)	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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
FEB													
08...	216	2.76	4.51	157	1030	296	.8	18.6	2080	15	--	E.005	.764
APR													
19...	206	2.29	3.88	150	1400	295	.7	19.4	2570	<10	1.53	.011	1.54
MAY													
23...	205	2.94	5.52	154	836	274	.8	26.1	1770	44	--	--	--
AUG													
09...	140	1.50	4.04	124	1540	198	.6	24.2	2600	<10	1.90	.025	1.92

DATE	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, 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)
FEB									
08...	.073	1.10	.263	.167	.24	.34	.015	<.006	<.018
APR									
19...	<.041	1.73	--	--	E.08	.20	.004	<.006	<.018
MAY									
23...	--	--	--	--	--	.26	--	--	--
AUG									
09...	.072	2.18	.182	.171	.24	.25	.004	<.006	<.020

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

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

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

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	40	23	e29	120	112	88	19	182	.00	.00	.00
2	.00	34	22	e30	107	103	83	17	126	.00	.00	.00
3	.00	33	22	e32	96	102	74	38	97	.00	.00	.00
4	.00	32	23	e40	86	118	69	676	82	.00	.00	.00
5	.00	32	24	e45	78	105	63	1320	63	.00	.00	.00
6	.00	33	25	e50	74	99	61	394	51	.00	.00	.00
7	.00	37	25	e90	69	95	59	284	41	.00	.00	.00
8	.00	45	25	97	69	98	58	184	35	.00	.00	.00
9	e.00	41	26	79	86	112	59	142	31	.00	.00	.00
10	e.00	38	26	70	112	182	67	115	27	.00	.00	.00
11	.00	36	25	68	136	166	63	114	22	.00	.00	.00
12	.00	32	e24	64	113	141	56	119	18	.00	4.9	.00
13	.00	28	e22	66	101	123	56	128	21	.00	.13	.00
14	.00	26	e24	62	97	109	56	108	18	.00	.00	.00
15	.00	26	43	57	92	93	54	77	14	.00	.00	.00
16	.00	24	50	53	86	80	48	61	12	.00	.00	25
17	.00	22	44	52	83	75	45	49	8.9	.00	.00	5.7
18	.00	22	34	51	77	71	45	55	6.1	.00	2.8	3.5
19	.00	20	35	51	73	75	42	358	5.4	.00	5.3	1.9
20	.00	21	32	53	71	81	42	446	4.6	.00	.12	.82
21	.00	21	31	52	72	83	42	301	4.3	.00	.00	.28
22	e1.6	22	31	48	71	84	43	240	3.8	.00	.00	.06
23	1.3	22	29	47	75	80	40	167	5.1	.00	.00	.00
24	9.7	29	28	49	170	75	38	122	6.0	.00	.00	.00
25	65	31	27	48	242	73	35	92	4.9	.00	.00	.00
26	131	27	e27	48	189	74	30	73	3.1	.00	.00	.00
27	115	23	e27	48	136	78	26	65	.50	.00	.00	.00
28	80	23	e29	61	123	87	24	58	.27	.00	.00	.00
29	66	23	e30	86	---	92	21	59	.09	.00	.00	.00
30	43	23	e31	144	---	96	20	192	.01	.00	.00	.00
31	45	---	e30	131	---	92	---	259	---	.00	.00	---
TOTAL	557.60	866	894	1901	2904	3054	1507	6332	893.07	0.00	13.25	37.26
MEAN	18.0	28.9	28.8	61.3	104	98.5	50.2	204	29.8	.000	.43	1.24
MAX	131	45	50	144	242	182	88	1320	182	.00	5.3	25
MIN	.00	20	22	29	69	71	20	17	.01	.00	.00	.00
AC-FT	1110	1720	1770	3770	5760	6060	2990	12560	1770	.00	26	74

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2001, BY WATER YEAR (WY)

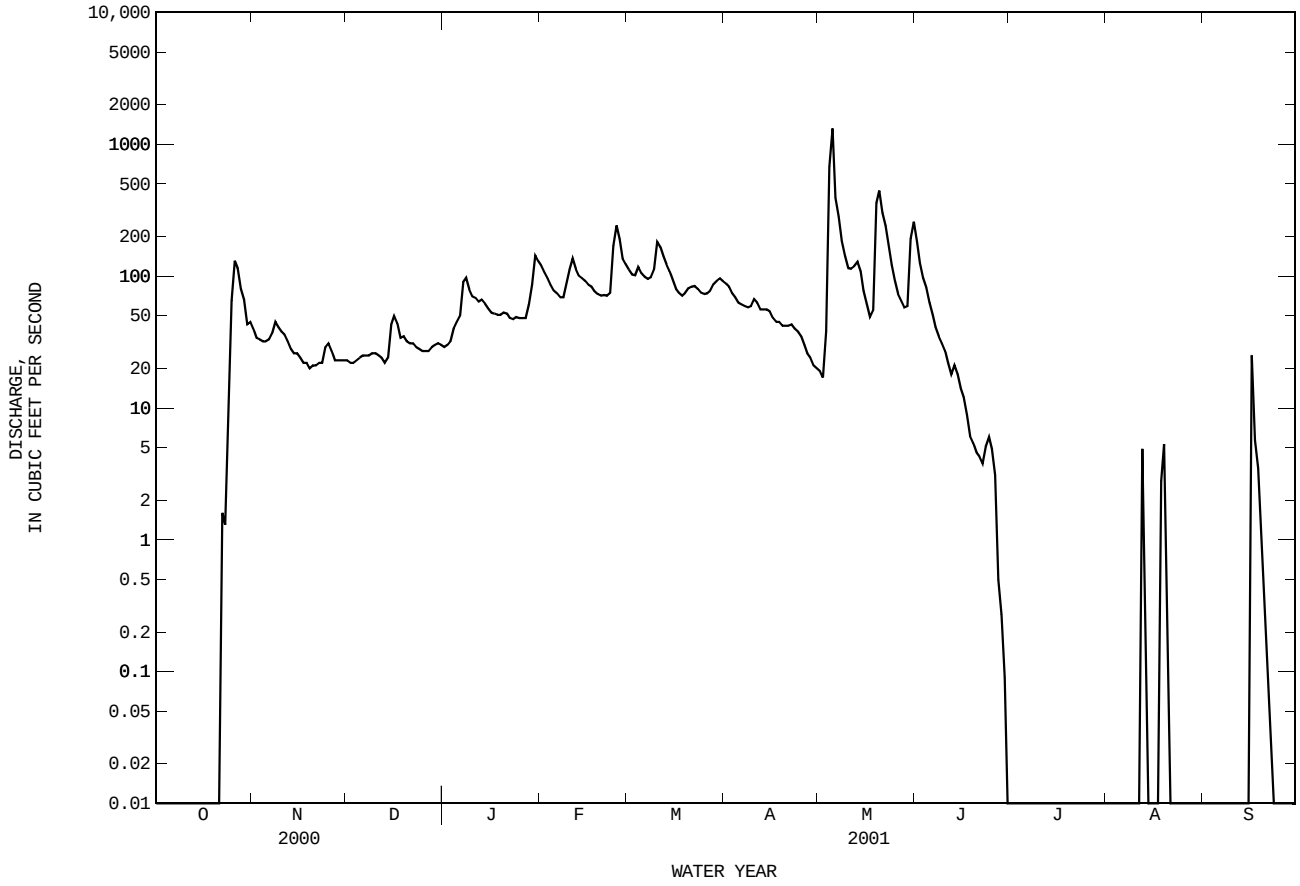
MEAN	76.7	32.0	38.5	47.6	57.4	56.5	105	260	236	64.2	39.6	50.1
MAX	919	196	148	199	263	344	1292	1389	1602	575	539	424
(WY)	1961	1987	1992	1960	1998	1998	1997	1957	1941	1953	1995	1995
MIN	.000	.000	.000	.000	.000	.12	.000	.000	.000	.000	.000	.000
(WY)	1941	1940	1940	1940	1953	1971	1955	1953	1952	1963	1943	1939

e Estimated

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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1938 - 2001	
ANNUAL TOTAL	21249.68		18959.18			
ANNUAL MEAN	58.1		51.9		88.7	
HIGHEST ANNUAL MEAN					277	1941
LOWEST ANNUAL MEAN					12.3	1940
HIGHEST DAILY MEAN	835	Mar 24	1320	May 5	22600	May 28 1978
LOWEST DAILY MEAN	.00	at times	.00	at times	[a].00	Oct 2 1937
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 11	.00	Oct 1	.00	Aug 14 1938
MAXIMUM PEAK FLOW			2790	May 5	72000	May 16 1957
MAXIMUM PEAK STAGE			8.43	May 5	14.70	Jun 16 1938
ANNUAL RUNOFF (AC-FT)	42150		37610		64260	
10 PERCENT EXCEEDS	134		113		130	
50 PERCENT EXCEEDS	27		30		19	
90 PERCENT EXCEEDS	.00		.00		.00	

[a]No flow at times in most years.



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 Sept. 1980 (continuous record), Oct. 1981 to Sept. 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. 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

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.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1951 to Sept. 1963 (miscellaneous measurements). Oct. 1964 to Sept. 1991, Oct. 1992 to Sept. 2000 (peak discharge greater than base discharge), Oct. 2000 to current year.

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in Oct. 1951, at least 10% of contributing drainage area has been regulated. 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. No flow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	4.3	28	321	90	43	42	9.7	24	.23	.00	.00
2	.03	5.1	e30	297	81	74	49	7.0	20	.23	.00	.00
3	.03	5.7	e30	256	76	81	47	19	17	.20	.00	.00
4	.03	6.5	e30	111	68	59	43	680	14	.19	.00	.43
5	.03	8.2	e31	82	46	47	48	113	11	.18	.00	.04
6	.03	8.8	e27	91	47	23	49	84	8.2	.15	.00	.00
7	.03	11	e25	106	55	37	63	55	6.7	.11	.00	.00
8	.03	12	e27	87	66	72	51	55	3.8	.09	.00	.00
9	.03	13	e33	80	120	114	48	45	3.1	.09	.00	.00
10	.03	13	e33	64	94	64	41	46	2.1	.08	.01	.00
11	.03	13	e46	74	76	45	57	64	1.4	.06	.00	.00
12	.03	14	e74	75	76	63	44	49	1.8	.03	.00	.00
13	.03	15	e84	72	72	52	44	42	1.8	.03	.00	.00
14	.03	15	e127	53	70	47	40	38	1.1	.07	.00	.00
15	.03	15	e172	59	72	47	32	31	.79	.04	.00	.00
16	.03	16	e202	50	73	45	24	28	.59	.05	.00	.12
17	.03	17	223	57	55	52	23	24	.49	1.0	.00	.00
18	.03	17	226	45	65	51	24	190	.39	.07	.00	.00
19	.03	18	209	41	63	55	26	206	.35	.00	.00	.00
20	.03	19	187	48	72	57	25	259	.34	.00	.00	.00
21	.04	19	176	63	74	55	23	103	.92	.00	.00	.00
22	.04	20	166	55	68	55	20	61	.65	.00	.00	.00
23	.05	21	153	47	76	57	17	53	.88	.00	.00	.38
24	100	21	142	43	165	56	15	49	.50	.00	.00	.00
25	44	22	132	42	90	56	16	42	.34	.00	.00	.00
26	2.7	23	136	44	46	65	15	32	.31	.00	.01	.00
27	2.9	24	155	39	41	75	14	34	.28	.00	.00	.00
28	2.8	24	172	86	34	63	13	26	.24	.00	.00	.00
29	3.4	25	213	88	---	55	12	88	.24	.00	.00	.00
30	3.7	26	255	124	---	53	11	96	.23	.00	.00	.00
31	3.9	---	308	101	---	43	---	53	---	.00	.00	---
TOTAL	164.13	471.6	3852	2801	2031	1761	976	2681.7	123.54	2.90	0.02	0.97
MEAN	5.29	15.7	124	90.4	72.5	56.8	32.5	86.5	4.12	.094	.001	.032
MAX	100	26	308	321	165	114	63	680	24	1.0	.01	.43
MIN	.03	4.3	25	39	34	23	11	7.0	.23	.00	.00	.00
AC-FT	326	935	7640	5560	4030	3490	1940	5320	245	5.8	.04	1.9

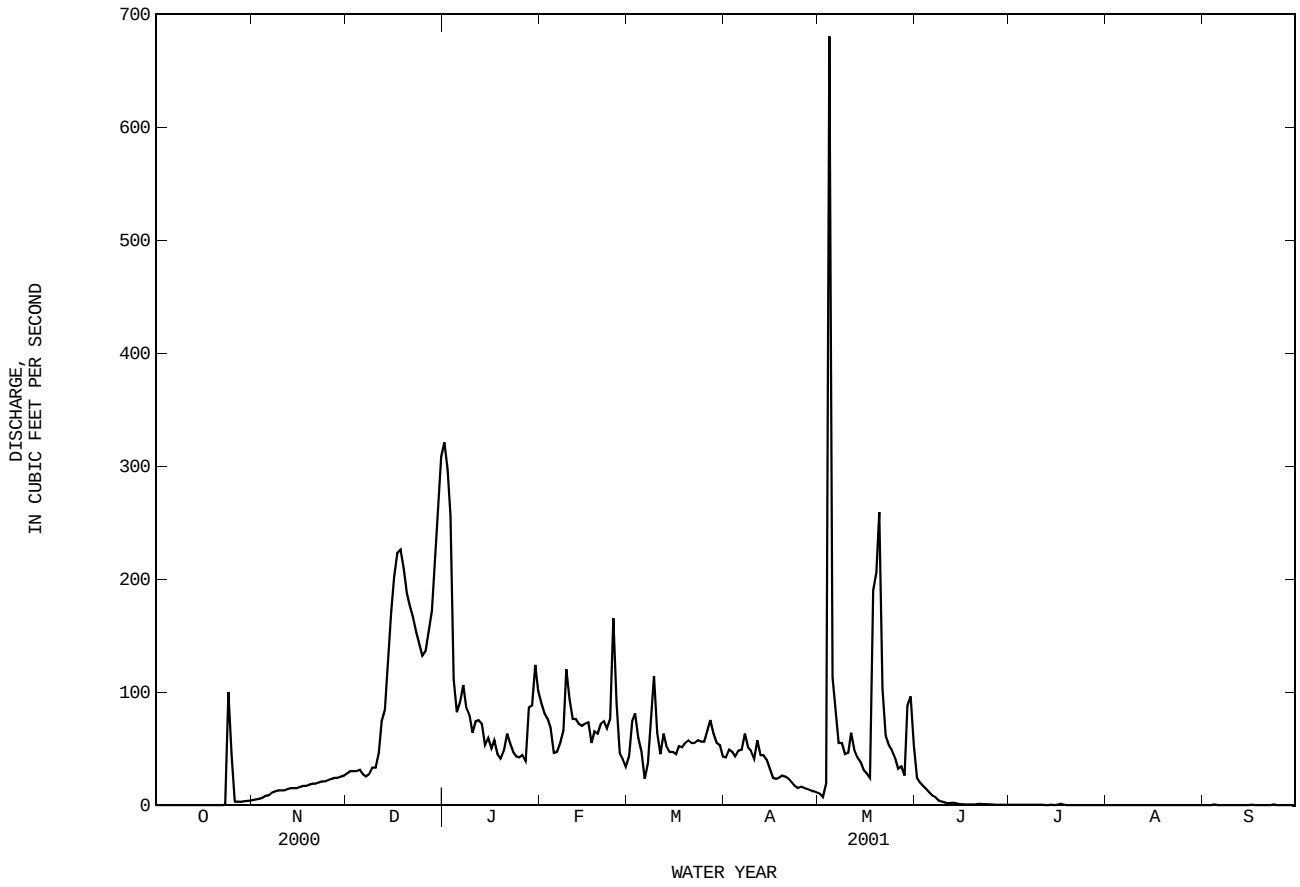
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2001h, BY WATER YEAR (WY)

MEAN	17.7	15.4	20.3	27.3	31.6	38.4	47.1	88.8	80.8	12.0	6.23	14.9
MAX	155	75.2	124	158	97.1	116	252	609	369	73.6	55.5	60.9
(WY)	1986	1976	2001	1988	1988	1987	1973	1977	1965	1967	1969	1966
MIN	.000	.000	.000	.000	.48	.061	.000	.36	.000	.000	.000	.000
(WY)	1967	1967	1971	1971	1981	1972	1971	1984	1966	1969	1965	1970

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1965 - 2001h	
ANNUAL TOTAL			14865.86			
ANNUAL MEAN			40.7		33.3	
HIGHEST ANNUAL MEAN					91.7	1977
LOWEST ANNUAL MEAN					3.68	1971
HIGHEST DAILY MEAN	308	Dec 31	680	May 4	14200	Feb 2 1996
LOWEST DAILY MEAN	.03	Oct 1	.00	Jul 19	.00	Oct 1 1964
ANNUAL SEVEN-DAY MINIMUM	.03	Oct 1	.00	Jul 19	.00	Oct 1 1964
MAXIMUM PEAK FLOW			2530	May 4	2530	May 4 2001
MAXIMUM PEAK STAGE			3.17	May 4	3.17	May 4 2001
ANNUAL RUNOFF (AC-FT)			29490		24140	
10 PERCENT EXCEEDS	175		95		66	
50 PERCENT EXCEEDS	17		20		1.5	
90 PERCENT EXCEEDS	.03		.00		.00	

e Estimated
h See PERIOD OF RECORD paragraph.

07301300 North Fork Red River near Shamrock, TX--Continued



07301300 North Fork Red River near Shamrock, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1999 to current year.
BIOLOGICAL DATA: Oct. 1999 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	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)
FEB													
08...	1123	77	2290	8.3	11.0	10.4	104	26	28	656	496	198	39.0
APR													
19...	0935	29	2420	8.3	12.5	9.7	100	42	30	707	578	211	43.8
MAY													
23...	0953	53	2300	7.9	17.0	9.2	103	63	46	687	515	203	44.1
JUN													
21...	1123	1.0	3140	7.9	24.5	8.0	101	450	350	1400	1280	445	71.2

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 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)	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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
FEB													
08...	202	3.43	4.06	160	371	410	.6	18.0	1340	36	--	<.006	.073
APR													
19...	215	3.52	4.09	129	452	427	.7	20.5	1450	<10	--	<.006	.049
MAY													
23...	203	3.38	4.11	172	420	384	.7	23.9	1390	11	--	--	--
JUN													
21...	218	2.53	5.01	128	1150	373	.6	20.3	2360	<10	.220	.009	.229

DATE	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, 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)
FEB									
08...	<.041	.253	--	--	.18	.18	.026	E.004	<.018
APR									
19...	<.041	.209	--	--	.13	.16	.005	<.006	<.018
MAY									
23...	--	--	--	--	--	.30	--	--	--
JUN									
21...	.042	.459	.188	.167	.21	.23	.006	<.006	<.020

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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.--Nov. 1961 to current year.
Water-quality records.--Chemical data: Oct. 1969 to June 1985.

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

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are many small diversions upstream from the station for ranch use. No flow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

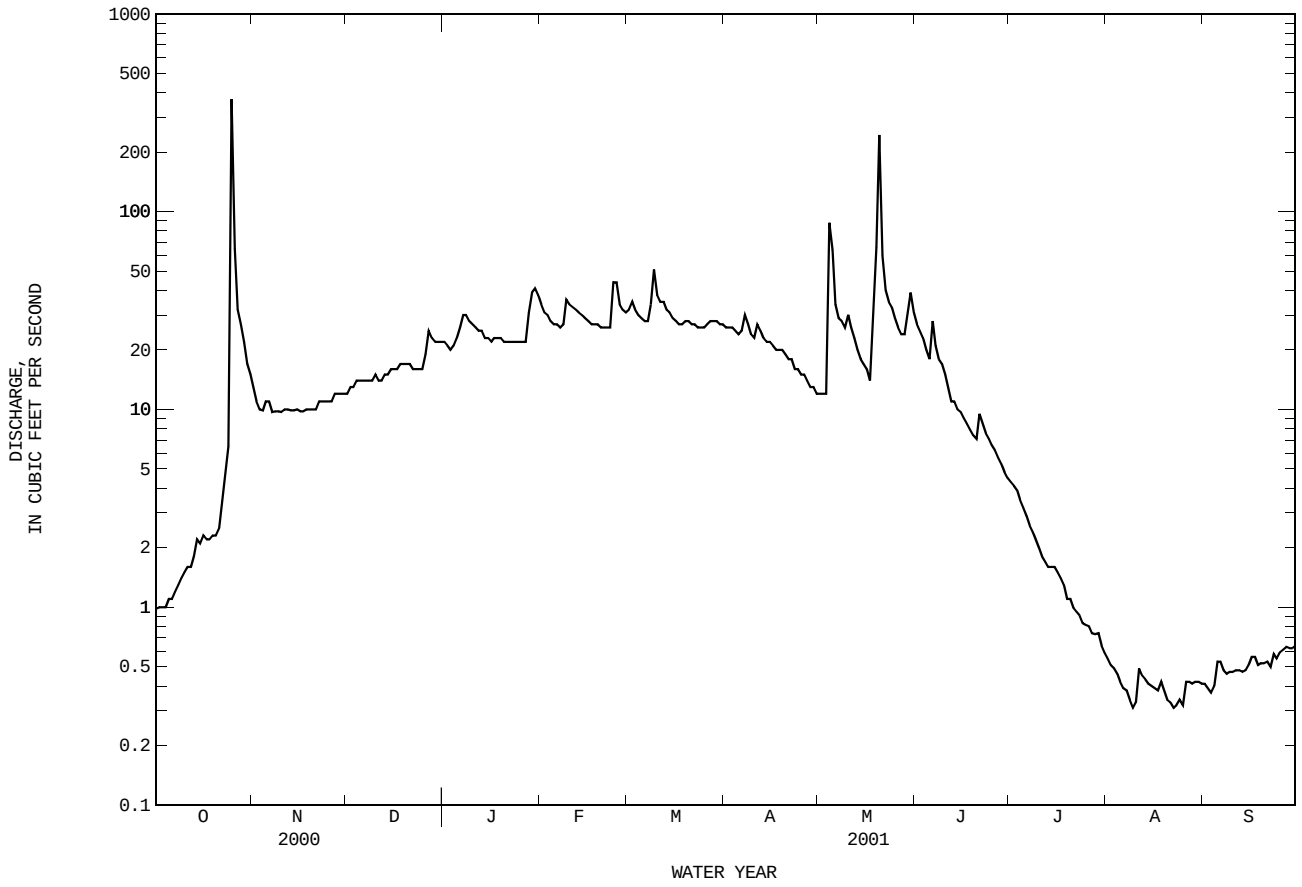
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.98	13	12	22	34	32	26	12	27	4.3	.55	.41
2	1.0	11	13	21	31	35	26	12	25	4.1	.51	.39
3	1.0	10	13	20	30	32	26	12	23	3.9	.49	.37
4	1.0	9.9	14	21	28	30	25	88	20	3.5	.46	.40
5	1.1	11	14	23	27	29	24	64	18	3.2	.42	.53
6	1.1	11	14	26	27	28	25	34	28	2.9	.39	.53
7	1.2	9.7	14	30	26	28	30	29	21	2.6	.38	.48
8	1.3	9.8	14	30	27	34	27	28	18	2.4	.34	.46
9	1.4	9.8	14	28	36	51	24	26	17	2.2	.31	.47
10	1.5	9.7	15	27	34	38	23	30	15	2.0	.33	.47
11	1.6	10	14	26	33	35	27	26	13	1.8	.49	.48
12	1.6	10	14	25	32	35	25	23	11	1.7	.45	.48
13	1.8	9.9	15	25	31	32	23	20	11	1.6	.43	.47
14	2.2	9.9	15	23	30	31	22	18	10	1.6	.41	.48
15	2.1	10	16	23	29	29	22	17	9.7	1.6	.40	.51
16	2.3	9.8	16	22	28	28	21	16	9.1	1.5	.39	.56
17	2.2	9.8	16	23	27	27	20	14	8.5	1.4	.38	.56
18	2.2	10	17	23	27	27	20	28	7.9	1.3	.42	.51
19	2.3	10	17	23	27	28	20	66	7.4	1.1	.38	.52
20	2.3	10	17	22	26	28	19	244	7.1	1.1	.34	.52
21	2.5	10	17	22	26	27	18	60	9.5	.99	.33	.53
22	3.5	11	16	22	26	27	18	40	8.5	.95	.31	.50
23	4.6	11	16	22	26	26	16	35	7.6	.91	.32	.58
24	6.5	11	16	22	44	26	16	33	7.1	.83	.34	.55
25	371	11	16	22	44	26	15	29	6.6	.81	.32	.59
26	65	11	19	22	34	27	15	26	6.2	.80	.42	.61
27	32	12	25	22	32	28	14	24	5.7	.74	.42	.63
28	27	12	23	31	31	28	13	24	5.3	.73	.41	.62
29	22	12	22	39	---	28	13	30	4.8	.74	.42	.62
30	17	12	22	41	---	27	12	39	4.5	.64	.42	.64
31	15	---	22	38	---	27	---	31	---	.59	.41	---
TOTAL	598.28	317.3	508	786	853	934	625	1178	372.5	54.53	12.39	15.47
MEAN	19.3	10.6	16.4	25.4	30.5	30.1	20.8	38.0	12.4	1.76	.40	.52
MAX	371	13	25	41	44	51	30	244	28	4.3	.55	.64
MIN	.98	9.7	12	20	26	26	12	12	4.5	.59	.31	.37
AC-FT	1190	629	1010	1560	1690	1850	1240	2340	739	108	25	31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001, BY WATER YEAR (WY)

MEAN	8.50	10.5	12.2	13.5	16.3	18.9	22.3	26.4	23.1	6.08	5.22	7.23
MAX	42.1	34.5	27.1	27.6	30.5	42.2	100	196	86.3	32.3	42.7	40.9
(WY)	1987	1975	1998	1998	2001	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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1962 - 2001	
ANNUAL TOTAL	4466.36		6254.47			
ANNUAL MEAN	12.2		17.1		14.0	
HIGHEST ANNUAL MEAN					33.5	1997
LOWEST ANNUAL MEAN					4.89	1984
HIGHEST DAILY MEAN	371	Oct 25	371	Oct 25	1820	May 21 1977
LOWEST DAILY MEAN	.34	Sep 12	.31	Aug 9	.00	Jul 29 1964
ANNUAL SEVEN-DAY MINIMUM	.37	Sep 7	.33	Aug 19	.00	Jul 29 1964
MAXIMUM PEAK FLOW			828	Oct 25	2890	May 20 1977
MAXIMUM PEAK STAGE			13.50	Oct 25	15.73	May 20 1977
INSTANTANEOUS LOW FLOW					.00	Jul 29 1964
ANNUAL RUNOFF (AC-FT)	8860		12410		10140	
10 PERCENT EXCEEDS	22		31		23	
50 PERCENT EXCEEDS	8.2		14		10	
90 PERCENT EXCEEDS	.76		.48		.88	

07301410 Sweetwater Creek near Kelton, TX--Continued



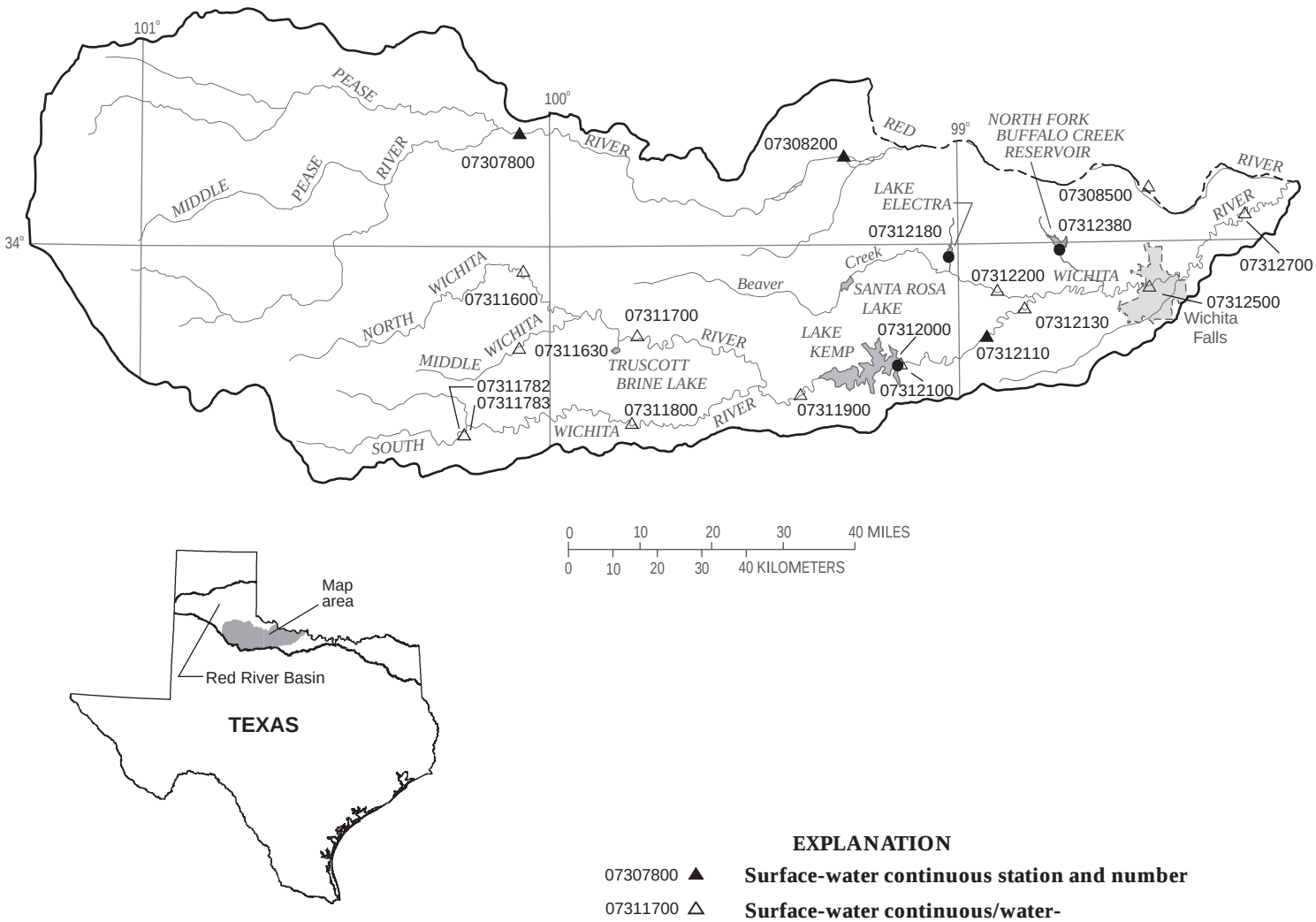


Figure 5.--Map showing location of gaging stations in the second section of the Red River Basin

07307800 Pease River near Childress, TX 88
07308200 Pease River near Vernon, TX 90
07308500 Red River near Burkburnett, TX 92
07311600 North Wichita River near Paducah, TX 102
07311630 Middle Wichita River near Guthrie, TX 112
07311700 North Wichita River near Truscott, TX 124
07311782 South Wichita River at low-flow dam near Guthrie, TX 136
07311783 South Wichita River below low-flow dam near Guthrie, TX 148
07311800 South Wichtia River near Benjamin, TX 154
07311900 Wichita River near Seymour, TX 164
07312000 Lake Kemp near Mabelle, TX 174
07312100 Wichita River near Mabelle, TX 176
07312110 South Side Canal near Dundee, TX 188
07312130 Wichita River at State Highway 25 near Kamay, TX 190
07312180 Lake Electra near Electra, TX 198
07312200 Beaver Creek near Electra, TX 200
07312380 North Fork Buffalo Creek Reservoir near Iowa Park, TX 208
07312500 Wichita River at Wichita Falls, TX 210
07312700 Wichita River near Charlie, TX 218

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 State Highway 207, 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 Sept. 1962, Oct. 1967 to current year.
Water-quality records.--Chemical data: July 1968 to Sept. 1982, Oct. 1994 to Sept. 1997. Pesticide data: Oct. 1994 to Sept. 1997. Specific conductance: Oct. 1994 to Sept. 1997. Water temperature: Oct. 1994 to Sept. 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 daily discharges below 1 ft^3/s, 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 floodwater-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. No flow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	12	8.3	14	14	19	11	2.8	6.8	1.2	.45	10
2	1.2	9.8	7.4	13	14	16	11	3.7	6.7	1.2	.45	11
3	1.3	14	7.9	13	14	15	9.3	172	3.5	1.0	.44	21
4	1.3	22	8.0	16	12	13	7.8	1230	2.5	.98	.44	18
5	1.6	18	8.6	14	11	12	7.2	932	1.5	.92	.46	16
6	2.2	15	8.5	14	11	12	7.5	358	2.6	.73	.47	13
7	2.6	17	8.0	13	11	11	6.4	164	2.4	.71	.47	10
8	5.0	27	8.3	12	13	106	5.6	105	1.1	.74	.49	8.8
9	7.5	19	8.0	11	21	227	5.4	42	1.2	.73	.46	13
10	8.0	15	8.4	15	18	133	5.8	24	1.1	.73	.52	14
11	7.7	13	8.0	19	16	82	5.5	19	1.0	.70	.52	10
12	8.9	11	8.4	16	15	43	4.6	18	1.0	.66	1.0	10
13	5.4	10	10	15	15	26	4.7	12	14	.66	38	11
14	5.3	9.5	11	12	15	20	4.6	11	6.2	.61	30	14
15	33	8.7	11	12	14	15	5.5	8.8	3.0	.64	22	18
16	7.1	8.6	9.6	12	14	12	7.1	8.6	1.3	.56	4.1	17
17	4.8	8.6	8.6	16	13	10	7.4	4.7	.57	.56	3.1	38
18	4.5	8.6	8.3	15	13	10	6.9	11	.65	.57	286	18
19	4.4	8.6	8.0	14	12	11	7.4	14	.81	.64	135	15
20	4.3	8.0	8.0	12	11	8.7	7.3	94	.72	.69	18	14
21	5.6	8.0	8.0	12	12	8.5	7.0	105	.90	.68	11	177
22	6.4	8.6	8.0	e11	13	7.8	6.4	22	1.4	.62	12	80
23	6.7	11	8.4	e11	15	6.9	4.6	13	3.1	.61	13	91
24	15	26	8.6	11	125	6.4	4.7	7.4	2.2	.64	10	16
25	176	18	10	12	67	6.3	4.8	5.5	2.3	.60	12	14
26	58	13	9.5	12	25	6.5	4.4	6.7	1.3	.56	127	15
27	16	11	12	13	18	11	3.9	5.1	1.2	.65	37	15
28	11	e10	15	26	18	13	3.8	4.1	1.0	.56	18	16
29	21	e10	19	29	---	11	2.7	7.2	1.2	.56	14	22
30	12	9.6	17	21	---	12	2.5	8.5	1.0	.52	12	19
31	11	---	15	17	---	12	---	10	---	.44	8.6	---
TOTAL	455.9	388.6	302.8	453	570	903.1	182.8	3429.1	74.25	21.67	816.97	764.8
MEAN	14.7	13.0	9.77	14.6	20.4	29.1	6.09	111	2.47	.70	26.4	25.5
MAX	176	27	19	29	125	227	11	1230	14	1.2	286	177
MIN	1.1	8.0	7.4	11	11	6.3	2.5	2.8	.57	.44	.44	8.8
AC-FT	904	771	601	899	1130	1790	363	6800	147	43	1620	1520
CFSM	.01	.01	.00	.01	.01	.01	.00	.05	.00	.00	.01	.01
IN.	.01	.01	.01	.01	.01	.02	.00	.06	.00	.00	.01	.01

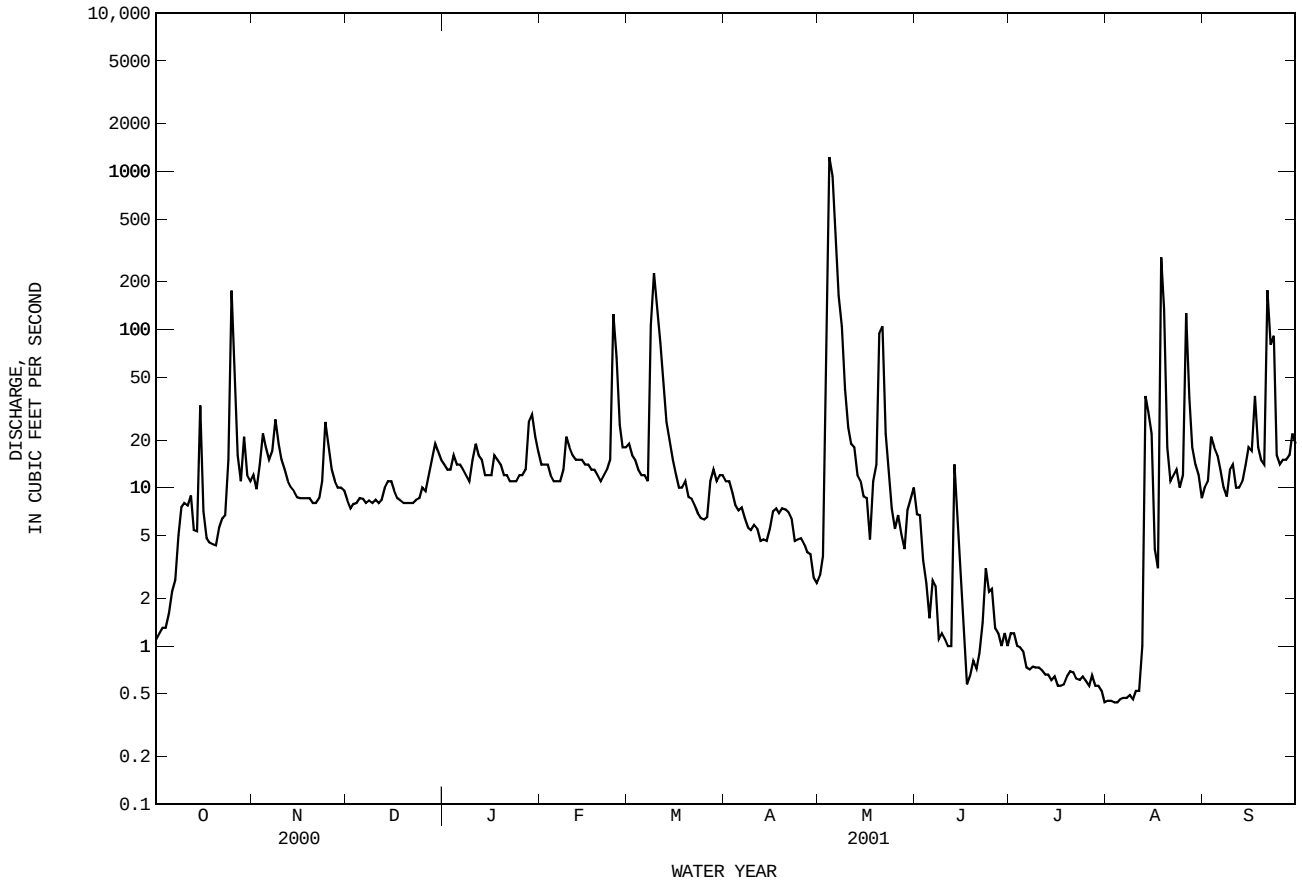
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001h, BY WATER YEAR (WY)

MEAN	93.7	21.7	20.0	20.4	25.8	34.1	58.3	91.2	205	49.6	62.9	85.7
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	2.87	3.67	2.47	.28	.13	.58
(WY)	1981	1978	1979	1971	1971	1971	1960	1961	2001	1980	1980	2000

07307800 Pease River near Childress, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001h	
ANNUAL TOTAL	10932.96		8362.99			
ANNUAL MEAN	29.9		22.9		63.5	
HIGHEST ANNUAL MEAN					204	1995
LOWEST ANNUAL MEAN					15.8	1994
HIGHEST DAILY MEAN	1050	Mar 23	1230	May 4	14800	Oct 20 1983
LOWEST DAILY MEAN	.43	Sep 20	.44	Jul 31	.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	.48	Sep 17	.45	Jul 31	.00	Aug 10 1969
MAXIMUM PEAK FLOW			2660	May 4	28500	Jun 5 1995
MAXIMUM PEAK STAGE			10.06	May 4	17.12	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	21690		16590		46000	
ANNUAL RUNOFF (CFSM)	.014		.010		.029	
ANNUAL RUNOFF (INCHES)	.19		.14		.39	
10 PERCENT EXCEEDS	64		23		93	
50 PERCENT EXCEEDS	7.4		10		9.1	
90 PERCENT EXCEEDS	1.1		.73		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.

PERIOD OF RECORD.--Dec. 1959 to Sept. 1982, Oct. 1982 to Sept. 1987 (annual maximums), Mar. 1992 to current year.
Water-quality records.--Chemical data: Nov. 1967 to Sept. 1981. Specific conductance: Oct. 1998 to Sept. 1999. Temperature: Oct. 1998 to Sept. 1999.

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

REMARKS.--Records poor. 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. There are four small diversions for irrigation above station. No flow at times.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	290	187	124	144	135	88	22	e90	4.9	12	11
2	.25	309	177	131	137	133	83	20	e75	4.9	13	6.8
3	.27	2080	160	162	125	122	79	20	e58	5.1	13	4.0
4	.21	1620	155	181	110	120	73	178	41	5.3	14	3.3
5	.26	810	150	175	52	111	69	1900	32	5.6	14	7.0
6	.03	553	141	165	36	98	70	867	28	5.7	14	2.9
7	.05	360	144	156	35	85	59	624	27	6.0	14	4.1
8	.32	479	144	157	35	192	53	427	25	6.2	15	3.1
9	.46	601	129	157	133	1180	55	311	24	6.3	15	.81
10	.39	447	126	152	94	760	50	258	22	6.3	16	.22
11	.36	342	117	147	73	668	50	224	21	6.5	16	.21
12	.49	285	108	145	53	509	43	213	20	6.7	17	.21
13	.68	257	134	144	52	369	41	217	18	7.2	17	.30
14	.71	234	119	136	50	297	42	188	14	7.2	18	.30
15	2.2	231	96	130	58	272	39	172	12	7.6	18	.41
16	1.8	221	90	124	53	210	32	157	12	7.8	18	.36
17	1.1	225	97	122	43	198	28	147	11	8.3	18	.30
18	.89	221	89	119	38	189	29	142	11	8.4	19	.29
19	.61	186	108	115	36	169	30	133	11	8.6	19	.20
20	.56	196	118	117	32	201	29	174	10	8.6	20	.20
21	2.3	209	94	115	25	228	28	165	8.8	9.1	20	.20
22	11	220	68	102	24	125	27	146	3.3	9.1	21	.20
23	133	246	52	89	144	97	27	184	3.3	9.7	22	.20
24	13	467	47	86	571	82	27	153	3.2	9.8	22	2.3
25	1010	454	83	69	301	86	26	134	3.6	10	24	35
26	1450	340	104	57	191	141	26	123	3.7	10	25	22
27	861	265	93	97	160	103	25	154	4.1	11	26	14
28	620	229	84	109	159	96	24	167	4.3	11	27	e9.9
29	439	218	81	333	---	95	23	129	4.6	11	27	5.3
30	365	203	119	207	---	94	23	116	4.7	11	26	e2.8
31	311	---	126	153	---	93	---	104	---	12	16	---
TOTAL	5227.18	12798	3540	4276	2964	7258	1298	7969	605.6	246.9	576	137.91
MEAN	169	427	114	138	106	234	43.3	257	20.2	7.96	18.6	4.60
MAX	1450	2080	187	333	571	1180	88	1900	90	12	27	35
MIN	.03	186	47	57	24	82	23	20	3.2	4.9	12	.20
AC-FT	10370	25380	7020	8480	5880	14400	2570	15810	1200	490	1140	274

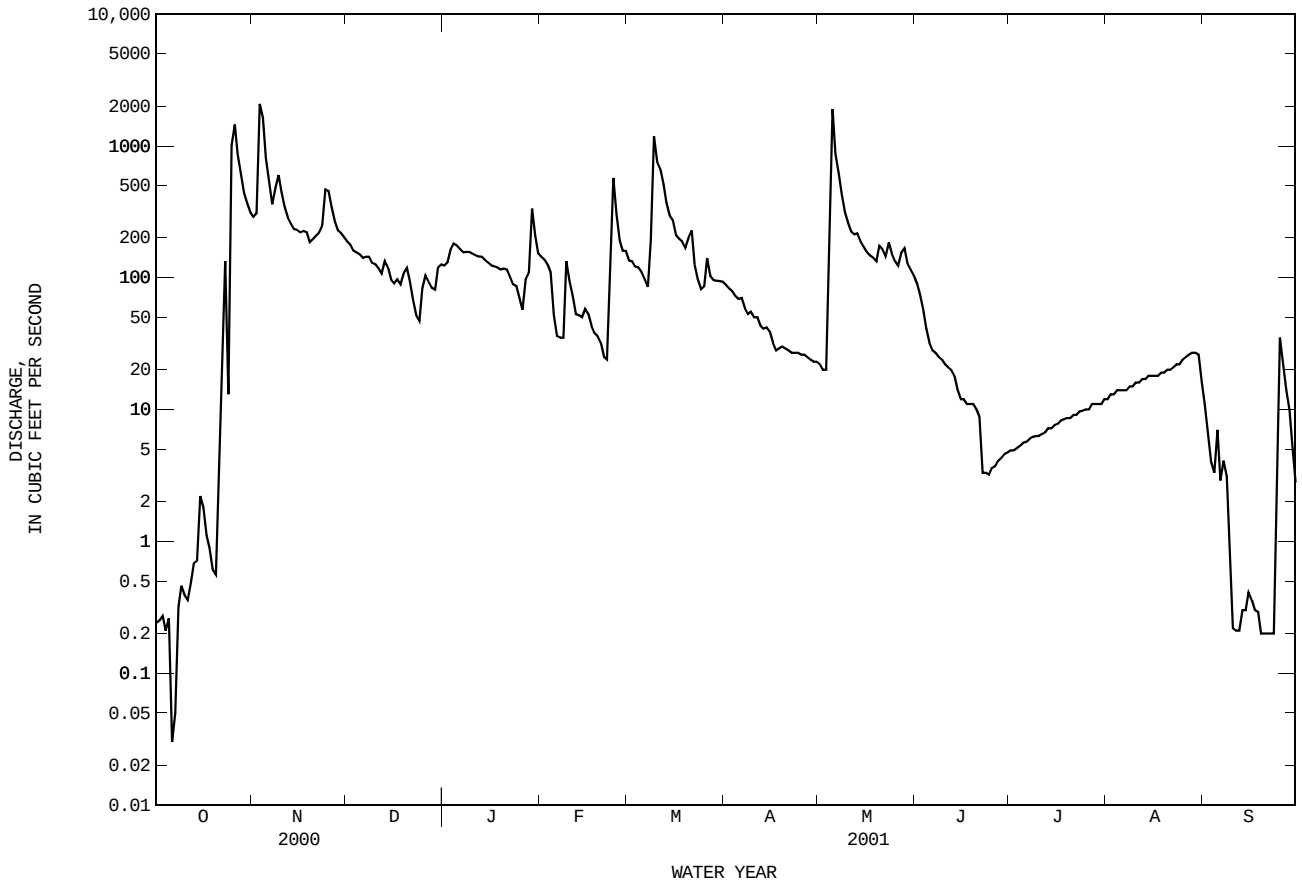
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001h, BY WATER YEAR (WY)

MEAN	97.7	52.2	25.9	25.0	28.4	47.2	65.8	189	317	117	108	179
MAX	1057	427	163	138	172	269	359	777	2196	1185	1657	895
(WY)	1961	2001	1960	2001	1993	1973	1973	1977	1995	1975	1995	1965
MIN	.000	.000	.000	.000	.000	.000	.000	6.12	6.86	.000	.000	.20
(WY)	1964	1971	1971	1971	1971	1971	1971	1961	1998	1964	1980	1980

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001h	
ANNUAL TOTAL	23576.08		46896.59			
ANNUAL MEAN	64.4		128		102	
HIGHEST ANNUAL MEAN					441	1995
LOWEST ANNUAL MEAN					7.23	2000
HIGHEST DAILY MEAN	2080	Nov 3	2080	Nov 3	20400	Jun 5 1995
LOWEST DAILY MEAN	.03	Oct 6	.03	Oct 6	.00	Aug 7 1960
ANNUAL SEVEN-DAY MINIMUM	.19	Oct 1	.19	Oct 1	.00	Aug 7 1960
MAXIMUM PEAK FLOW			4010	Nov 3	40500	Oct 2 1983
MAXIMUM PEAK STAGE			11.63	Nov 3	20.15	Oct 2 1983
ANNUAL RUNOFF (AC-FT)	46760		93020		74120	
10 PERCENT EXCEEDS	190		277		151	
50 PERCENT EXCEEDS	7.3		53		9.6	
90 PERCENT EXCEEDS	6.8		2.3		.00	

e Estimated
h See PERIOD OF RECORD paragraph

07308200 Pease River near Vernon, TX--Continued



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

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	1900	673	619	1620	1700	710	350	8180	313	105	301
2	40	1280	619	597	1300	1530	723	346	4600	354	108	245
3	28	4860	596	586	1080	1430	719	383	3960	341	107	225
4	20	8760	574	575	964	1310	715	578	3340	312	100	225
5	15	3100	561	576	932	1230	713	3590	2930	290	93	257
6	13	2310	561	604	1020	1170	726	12100	2680	268	94	236
7	13	1730	564	648	1030	1110	662	9040	2260	247	95	373
8	15	1680	548	758	996	1120	665	7010	1590	231	96	916
9	15	2220	539	897	1070	1230	649	4690	1330	216	89	664
10	16	1740	529	911	1220	2430	645	3750	1230	210	82	420
11	16	1250	521	928	1320	1730	832	3150	1180	207	82	313
12	16	959	513	967	1350	2380	762	2690	1040	206	90	240
13	16	794	498	923	1290	1780	648	2340	875	200	e172	210
14	20	702	506	871	1280	1480	618	2280	775	195	288	193
15	41	667	517	824	1930	1180	552	2050	726	187	266	188
16	60	597	539	745	2000	1070	506	1900	672	e194	255	193
17	123	567	540	711	1530	1010	476	1800	635	192	285	228
18	292	537	540	698	1260	985	465	1820	567	186	428	383
19	302	506	544	e675	1180	930	450	1860	534	178	273	445
20	207	492	546	e660	1030	894	439	5230	495	162	261	560
21	188	e280	528	e640	951	843	428	14300	467	155	365	589
22	609	e200	516	e610	913	794	409	12500	438	154	359	363
23	3390	e1700	506	e590	931	762	365	7950	408	153	325	282
24	2600	e1000	492	572	1140	724	362	5880	381	157	212	255
25	3320	e700	508	562	1910	704	360	4130	366	161	169	202
26	11300	e480	577	544	4640	725	356	3790	347	149	156	177
27	15600	e740	556	557	2640	753	352	3760	334	144	190	156
28	7100	1110	518	763	2210	762	349	1360	324	133	313	140
29	5170	943	503	1430	---	727	351	1530	351	139	881	119
30	3200	784	539	1690	---	724	349	2180	332	126	793	106
31	2430	---	587	1800	---	708	---	3480	---	112	434	---
TOTAL	56226	44588	16858	24531	40737	35925	16356	127817	43347	6272	7566	9204
MEAN	1814	1486	544	791	1455	1159	545	4123	1445	202	244	307
MAX	15600	8760	673	1800	4640	2430	832	14300	8180	354	881	916
MIN	13	200	492	544	913	704	349	346	324	112	82	106
AC-FT	111500	88440	33440	48660	80800	71260	32440	253500	85980	12440	15010	18260

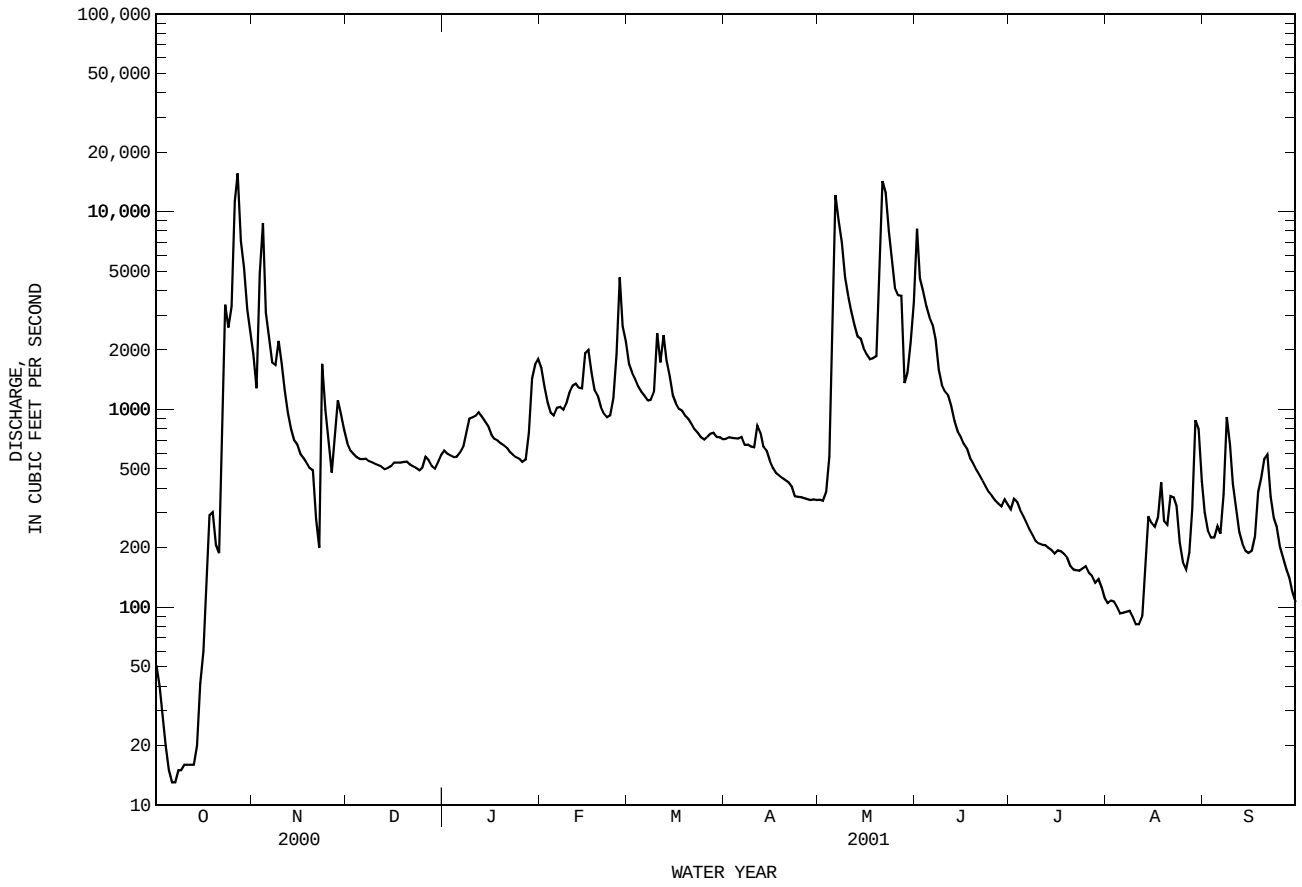
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001, BY WATER YEAR (WY)

MEAN	1516	700	580	510	736	990	1115	2413	3406	872	870	1336
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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001	
ANNUAL TOTAL	333495		429427			
ANNUAL MEAN	911		1177		1258	
HIGHEST ANNUAL MEAN					4424	1987
LOWEST ANNUAL MEAN					178	1964
HIGHEST DAILY MEAN	18500	Mar 25	15600	Oct 27	144000	Jun 6 1995
LOWEST DAILY MEAN	13	Oct 6	13	Oct 6	.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	15	Oct 5	15	Oct 5	.00	Jul 19 1964
MAXIMUM PEAK FLOW			18200	Oct 27	174000	Jun 6 1995
MAXIMUM PEAK STAGE			8.04	Oct 27	16.90	Oct 21 1983
INSTANTANEOUS LOW FLOW					.00	Jul 19 1964
ANNUAL RUNOFF (AC-FT)	661500		851800		911200	
10 PERCENT EXCEEDS	2150		2500		2500	
50 PERCENT EXCEEDS	321		587		315	
90 PERCENT EXCEEDS	86		142		55	

e Estimated

07308500 Red River near Burkburnett, TX--Continued



07308500 Red River near Burkburnett, TX--Continued

WATER-QUALITY RECORDS

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

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

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

REMARKS.--Records fair. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. The computation of the selected constituent loads might include estimated discharge or specific conductance data. New regression equations were developed based on data from water years 1992 to 2001. The standard error of estimate for dissolved solids is 3%, chloride is 7%, sulfate is 16% and for hardness is 10%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 17,400 microsiemens/cm, July 30, 1972; minimum, 462 microsiemens/cm, Feb. 24, 1997.
WATER TEMPERATURE: Maximum, 38.0°C, July 24, 2001; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 11,400 microsiemens/cm, Sept. 8; minimum, 616 microsiemens/cm, Nov. 3.
WATER TEMPERATURE: Maximum, 38.0°C, July 24; minimum, 0.0°C, Jan. 2, 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
04...	1535	19	6670	8.1	29.4	8.0	111	1300	1200	328	128	1010	12
NOV													
30...	1400	821	7880	7.8	8.9	10.8	98	1200	1000	311	101	1240	16
DEC													
21...	1245	525	9780	7.6	4.7	12.3	101	1500	1300	398	128	1480	16
JAN													
29...	1415	1700	3320	8.1	6.9	11.2	97	600	490	153	53.8	498	9
FEB													
05...	1200	914	7750	8.1	6.5	9.1	78	1300	1100	343	113	1240	15
MAR													
30...	1120	728	7110	8.3	12.2	11.2	111	1400	1200	349	123	1050	12
APR													
25...	1415	348	7800	8.2	22.6	11.5	140	1500	1400	372	136	1180	13
JUN													
01...	1245	9500	2040	7.2	23.4	8.0	97	470	360	125	37.4	251	5
18...	1120	565	5310	8.1	24.8	7.8	99	1000	950	261	96.5	724	10
JUL													
12...	1240	210	5730	8.0	28.8	7.6	104	1100	1000	260	110	811	11
AUG													
09...	1220	88	5160	7.9	29.1	7.6	104	1100	980	245	111	755	10
SEP													
21...	1020	657	3820	7.9	22.1	7.3	88	660	570	171	56.0	502	9

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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)	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)
OCT													
04...	11.4	100	1220	1590	.4	8.6	4350	35	--	<.006	<.047	E.030	--
NOV													
30...	8.65	180	940	2050	.4	10.7	4780	67	1.14	.012	1.16	E.021	1.8
DEC													
21...	1.50	260	1170	2270	.4	8.7	5590	31	1.32	.026	1.35	.092	2.5
JAN													
29...	5.17	112	425	824	.3	6.3	2040	576	1.14	.019	1.16	.090	3.6
FEB													
05...	7.95	183	1050	2030	.4	9.2	4910	178	1.55	.024	1.57	E.027	2.7
MAR													
30...	7.25	190	1150	1760	.4	5.4	4540	93	.605	.012	.617	<.041	1.7
APR													
25...	9.28	97	1320	1900	.4	.7	4970	59	--	<.006	<.047	<.041	--
JUN													
01...	6.06	106	348	378	.3	--	1210	<10	.531	.007	.538	E.021	3.7
18...	8.34	98	928	1150	.4	7.7	3240	500	--	<.006	<.050	<.040	--
JUL													
12...	9.25	94	983	1260	.4	6.6	3500	44	--	<.006	<.050	<.040	--
AUG													
09...	9.48	87	1010	1190	.5	12.3	3380	30	--	<.006	<.050	.065	--
SEP													
21...	7.54	92	535	845	<.8	--	2170	1520	.749	.016	.765	.051	4.4

07308500 Red River near Burkburnett, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT													
04...	--	1.0	E.055	<.060	<.018	--	5	4.4	114	100	<.11	<.14	5
NOV													
30...	--	.59	.125	.080	.072	.221	4	3.1	166	156	<.22	<.28	<1
DEC													
21...	1.0	1.1	E.056	<.060	.028	.086	3	2.3	113	126	<.44	<.14	<1
JAN													
29...	2.4	2.5	.521	.074	--	--	5	E1.7	278	--	.12	<.28	8
FEB													
05...	--	1.1	.236	E.039	.031	.095	4	3.1	146	127	<.33	<.42	8
MAR													
30...	--	1.0	.128	<.060	<.018	--	3	2.5	102	91.9	<.33	<.42	2
APR													
25...	--	.97	.093	<.060	<.018	--	E2	2.1	96.0	86.3	<.14	E.03	2
JUN													
01...	--	3.2	1.36	E.059	.057	.175	13	4.0	577	98.9	.39	<.04	26
18...	--	.79	.113	<.060	<.020	--	4	3.2	174	163	<.11	<.08	<1
JUL													
12...	--	1.0	.088	<.060	<.020	--	4	3.7	147	132	<.11	<.10	2
AUG													
09...	.97	1.0	E.051	<.060	<.020	--	7	5.5	114	103	<.11	<.10	<1
SEP													
21...	3.6	3.7	1.24	<.060	.018	.055	12	2.3	371	103	.44	<.07	17

DATE	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)	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)
OCT													
04...	<.8	2.1	E1.3	210	<50	<1	<1.00	65	24.6	<.14	.33	<2	<2.40
NOV													
30...	<.8	2.0	E.9	590	<50	2	<1.00	56	24.3	<.14	<.23	2	<2.40
DEC													
21...	<.8	E.9	<1.3	110	<100	<1	<3.00	53	39.2	<.14	<.23	E1	<2.40
JAN													
29...	1.1	9.6	E.9	7810	<30	10	<1.00	379	39.6	<.10	<.20	13	E1.39
FEB													
05...	<1.6	3.9	<2.6	2300	<100	1	<2.00	108	55.8	<.14	<.23	4	<4.80
MAR													
30...	<.8	E1.8	<2.6	630	<50	<2	<2.00	49	11.3	<.01	<.01	E3	<4.80
APR													
25...	1.6	4.1	6.4	190	<50	<4	.22	41	18.6	<.01	<.01	19	<.03
JUN													
01...	E.5	24.8	3.7	16200	<10	23	E.05	1130	.5	.03	<.01	30	.23
18...	<.8	6.1	6.5	510	<30	<3	<.20	73	4.6	<.01	<.01	9	<.20
JUL													
12...	E.5	3.1	6.2	320	<10	<3	<.20	53	5.0	.01	<.01	5	1.76
AUG													
09...	<.8	3.5	7.3	210	<30	<3	<.20	41	5.9	<.01	<.01	5	<.20
SEP													
21...	E.4	29.4	5.7	14300	<10	23	E.08	1040	<.2	.02	<.01	33	<.10

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)
OCT													
04...	3.7	3.1	<.43	<.2	<93	<100	--	--	--	--	--	--	--
NOV													
30...	3.9	3.6	<.86	<.2	<93	<100	--	--	--	--	--	--	--
DEC													
21...	4.1	5.1	<.86	.5	<93	<200	--	--	--	--	--	--	--
JAN													
29...	E1.3	E1.5	<.40	<.2	33	<60	--	--	--	--	--	--	--
FEB													
05...	E2.2	4.5	<.86	<.3	<93	<200	--	--	--	--	--	--	--
MAR													
30...	4.8	3.0	<.86	<.3	<93	<100	--	--	--	--	--	--	--
APR													
25...	4.4	4.0	<.20	<1.0	4	6	--	--	--	--	--	--	--
JUN													
01...	2.2	1.9	.10	<1.0	105	2	<.040	<.10	<1	<.1	<.1	<.1	<.1
18...	5.0	4.1	<.15	<3.0	7	8	<.040	<.10	<1	<.1	<.1	<.1	<.1
JUL													
12...	3.6	4.7	<.15	<3.0	5	5	<.040	<.10	<1	<.1	<.1	<.1	<.1
AUG													
09...	2.6	3.4	<.15	<3.0	6	6	--	--	--	--	--	--	--
SEP													
21...	4.6	3.1	.12	<2.0	322	4	--	--	--	--	--	--	--

DATE	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
01...	<.1	<.020	<.6	<.060	<.2	<.030	<.800	<.030	113	<2	<.1	<.03	107
18...	.7	.215	<.6	.239	<.2	.036	<.800	.092	13	<2	.1	.05	41
JUL													
12...	<.1	<.020	<.6	<.060	<.2	<.030	<.800	<.030	103	<2	<.1	<.03	114
AUG													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--

07308500 Red River near Burkburnett, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT								
04...	--	--	--	--	--	--	--	--
NOV								
30...	--	--	--	--	--	--	--	--
DEC								
21...	--	--	--	--	--	--	--	--
JAN								
29...	--	--	--	--	--	--	--	--
FEB								
05...	--	--	--	--	--	--	--	--
MAR								
30...	--	--	--	--	--	--	--	--
APR								
25...	--	--	--	--	--	--	--	--
JUN								
01...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
18...	.24	.15	E.1	<.09	E.1	E.04	<.1	E.1
JUL								
12...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
AUG								
09...	--	--	--	--	--	--	--	--
SEP								
21...	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	56226	1570	1010	152800	300	45770	340	51060	380
NOV.	2000	44588	2310	1480	178100	470	56770	470	56020	530
DEC.	2000	16858	7590	4790	217900	1800	83460	1200	54510	1400
JAN.	2001	24531	8000	5030	333200	2000	132500	1200	78400	1400
FEB.	2001	40737	5330	3380	372000	1200	133000	930	102500	1100
MAR.	2001	35925	4170	2660	257800	900	87440	780	75850	900
APR.	2001	16356	8510	5350	236300	2100	93760	1300	55820	1500
MAY	2001	127817	4330	2750	949700	960	329800	790	271600	910
JUNE	2001	43347	3390	2170	253700	710	83280	660	77410	760
JULY	2001	6272	5750	3650	61770	1300	21930	1000	17190	1200
AUG.	2001	7566	5980	3790	77380	1400	28130	1000	20870	1200
SEPT	2001	9204	7950	5000	124400	2000	48840	1200	29890	1400
TOTAL		429427	**	**	3215100	**	1144700	**	891100	**
WTD.AVG.		1180	4370	2770	**	990	**	770	**	890

07308500 Red River near Burkburnett, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	5650	4740	5000	2310	2190	2220	8190	8090	8140	6710	6510	6620
2	6300	5630	5860	2790	2310	2560	8130	7950	8020	8100	6680	7410
3	6850	6290	6510	3100	616	1840	8010	7710	7860	9440	8100	8740
4	7160	6850	6980	1610	801	1110	7710	7150	7410	10000	9440	9590
5	7300	7130	7210	1130	803	933	7360	6980	7180	10500	10000	10300
6	7570	7210	7370	1530	1130	1360	7200	7070	7110	10500	9680	10000
7	7780	7570	7660	1650	1500	1550	7230	7070	7160	10100	9680	9870
8	7810	7600	7680	1780	1640	1720	7190	7130	7150	10400	9990	10200
9	7950	7670	7760	1770	1680	1730	7200	7090	7130	10500	10100	10300
10	8010	7500	7760	1980	1680	1800	7230	7180	7210	10500	9810	10200
11	8040	7910	7980	2400	1980	2190	7280	7180	7250	9830	8050	9150
12	8070	7960	8010	2820	2400	2610	7380	7230	7310	8880	7880	8520
13	8010	7900	7950	2930	2820	2880	7740	7350	7520	8640	7590	8400
14	7910	7460	7720	3150	2920	3020	7800	7710	7750	8740	8360	8630
15	7490	6410	6770	3390	3140	3270	7780	7540	7640	---	---	e8840
16	7110	6430	6830	3600	3390	3500	7550	7130	7230	---	---	e8760
17	6990	5980	6370	3720	3600	3660	7380	7050	7240	9300	8710	9070
18	6490	6080	6270	3810	3720	3760	7300	7120	7220	9340	8740	9210
19	6250	6170	6200	3900	3800	3850	7550	7130	7470	9400	8780	9130
20	6240	2550	5120	3980	3890	3930	7890	7500	7720	9170	8540	8950
21	2550	2530	2540	4010	3960	3980	8550	7890	8370	9070	8420	8860
22	2730	2280	2520	4020	3960	4000	8550	8010	8280	9150	8870	9030
23	2520	919	1360	3970	3250	3920	8320	7910	8070	9020	8570	8770
24	1580	920	1300	---	---	e1290	8490	7940	8310	9200	8660	8990
25	2060	860	1530	---	---	e2400	8370	8040	8250	9210	8600	8990
26	1160	793	944	---	---	e3600	8330	7940	8210	9030	8540	8750
27	1500	967	1310	---	---	e5000	8150	7440	7870	9040	7870	8820
28	2100	1450	1810	6440	5820	6260	7870	7480	7690	9020	6760	7890
29	2100	1710	1860	7240	6440	6790	7560	6860	7400	6760	3240	4470
30	1990	1770	1860	8120	7240	7770	7550	6800	7190	---	---	e4000
31	2210	1990	2150	---	---	---	7290	6570	6900	---	---	e3500
MONTH	8070	793	5100	---	---	3150	8550	6570	7590	---	---	8510

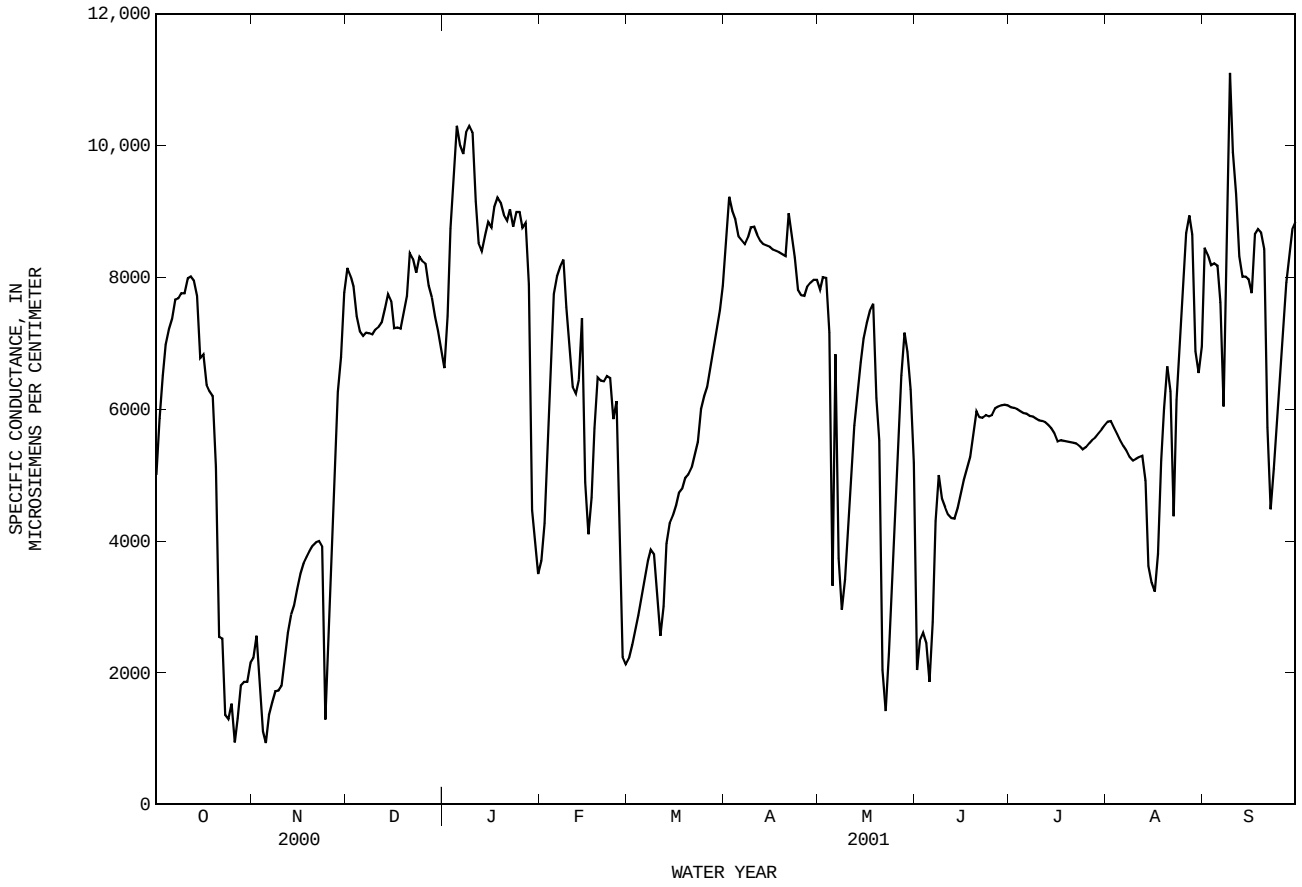
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e3700	2330	2100	e2220	9010	8080	8530	7990	7730	7810
2	---	---	e4260	2520	2330	2420	9380	9010	9220	8060	7910	8000
3	---	---	e5730	2740	2520	2630	9150	8840	9000	8080	7830	7990
4	---	---	e6790	3020	2740	2870	9000	8740	8880	8020	3020	7160
5	---	---	e7750	3300	3020	3160	8770	8480	8620	7980	1690	3320
6	---	---	e8010	3590	3300	3430	8600	8530	8560	8380	4830	6830
7	8370	7870	8160	3820	3590	3700	8540	8480	8500	5450	2870	3730
8	8380	7980	8270	3920	3820	3870	8700	8510	8610	---	---	e2950
9	---	---	e7550	3850	3700	3800	8830	8650	8760	---	---	e3420
10	---	---	e7000	3700	2640	3210	8800	8740	8770	---	---	e4340
11	---	---	e6340	2640	2520	2560	8760	8580	8640	---	---	e5070
12	---	---	e6240	3610	2630	3010	8650	8510	8550	---	---	e5750
13	---	---	e6440	4230	3610	3960	8540	8480	8500	---	---	e6220
14	7830	6760	7380	---	4230	e4270	8500	8450	8480	---	---	e6710
15	7160	3440	4890	---	---	e4380	8480	8450	8460	---	---	e7070
16	4420	3870	4100	---	---	e4540	8460	8380	8420	---	---	e7310
17	4870	4300	4660	---	---	e4730	8430	8370	8400	---	---	e7500
18	6460	4870	5710	---	---	e4790	8410	8340	8380	---	---	e7600
19	6600	6220	6480	---	---	e4960	8380	8320	8350	---	---	e6160
20	6490	6410	6430	---	---	e5020	8340	8300	8320	---	---	e5520
21	6500	6340	6420	---	---	e5110	---	---	e8970	3660	1480	2040
22	6560	6380	6500	---	---	e5290	---	---	e8640	---	---	e1420
23	6550	6330	6470	---	---	e5500	---	---	e8300	---	---	e2280
24	6470	4940	5850	---	---	e6000	7860	7740	7810	---	---	e3480
25	6510	4740	6120	---	---	e6200	7840	7600	7730	---	---	e4500
26	4770	2650	3540	---	---	e6330	7840	7650	7720	---	---	e5580
27	2650	1940	2240	---	---	e6630	7910	7800	7860	---	---	e6520
28	---	1900	e2130	---	---	e6920	8010	7870	7920	---	---	e7160
29	---	---	---	---	---	e7200	8020	7860	7960	---	---	e6870
30	---	---	---	---	---	e7500	8040	7800	7960	---	---	e6290
31	---	---	---	8080	7750	7870	---	---	---	---	---	e5190
MONTH	---	---	5900	---	---	4650	---	---	8430	---	---	5540

07308500 Red River near Burkburnett, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e2040	6060	6010	6030	5850	5760	5810	8910	6720	8450
2	---	---	e2490	6050	5990	6020	5900	5740	5820	8780	8120	8340
3	---	---	e2600	6040	5970	6000	5790	5640	5720	8230	8130	8180
4	---	---	e2450	6000	5940	5970	5700	5540	5620	8230	8180	8210
5	---	---	e1860	5980	5920	5940	5600	5450	5530	8230	---	e8180
6	---	---	e2770	5950	5900	5930	5500	5380	5440	---	---	e7620
7	---	---	e4300	5940	5880	5900	5430	5290	5370	7530	4940	6040
8	5180	4700	5000	5920	5860	5890	5340	5210	5270	11400	5080	7960
9	4800	4580	4640	5890	5830	5860	5250	5170	5220	11400	10200	11100
10	4590	4460	4510	5860	5810	5830	5280	5190	5240	10200	9700	9900
11	4460	4340	4400	5840	5790	5820	5300	5230	5270	9820	8620	9270
12	4460	4240	4350	5830	5790	5800	5330	5240	5290	8640	8050	8320
13	4380	4310	4340	5790	5720	5760	---	---	e4910	8190	7830	8010
14	4610	4400	4500	5750	5660	5710	---	---	e3620	8090	7960	8010
15	4810	4600	4720	---	---	e5630	3590	3210	3370	8040	7910	7970
16	5000	4810	4920	---	---	e5510	3480	2560	3230	8370	7460	7760
17	5200	4990	5100	5560	5490	5530	---	---	e3810	9020	8100	8650
18	5310	5200	5270	5550	5470	5520	---	---	e5220	8890	8390	8730
19	6160	5250	5610	5550	5460	5510	---	---	e6010	8770	8490	8680
20	6020	5940	5970	5550	5450	5500	---	---	e6650	8500	8210	8430
21	6000	5800	5880	5540	5430	5490	---	---	e6270	---	---	e5720
22	5930	5830	5870	5530	5420	5480	---	---	e4370	---	---	e4480
23	5960	5870	5910	5500	5370	5440	---	---	e6140	---	---	e5100
24	5930	5860	5890	5440	5330	5390	---	---	e7000	---	---	e5830
25	5980	5880	5910	5460	5380	5420	---	---	e7710	---	---	e6520
26	6050	5980	6010	5510	5440	5480	---	---	e8670	---	---	e7230
27	6070	6020	6040	5560	5490	5530	---	---	e8940	---	---	e7920
28	6090	6040	6060	5610	5520	5570	---	---	e8650	---	---	e8350
29	6100	6040	6070	5670	5590	5630	7800	---	e6880	8920	8320	8730
30	6080	6020	6060	5740	5640	5690	7380	6030	6550	8940	8700	8840
31	---	---	---	5800	5700	5750	8670	6470	6950	---	---	---
MONTH	---	---	4720	---	---	5690	---	---	5820	---	---	7880

e Estimated



07308500 Red River near Burkburnett, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

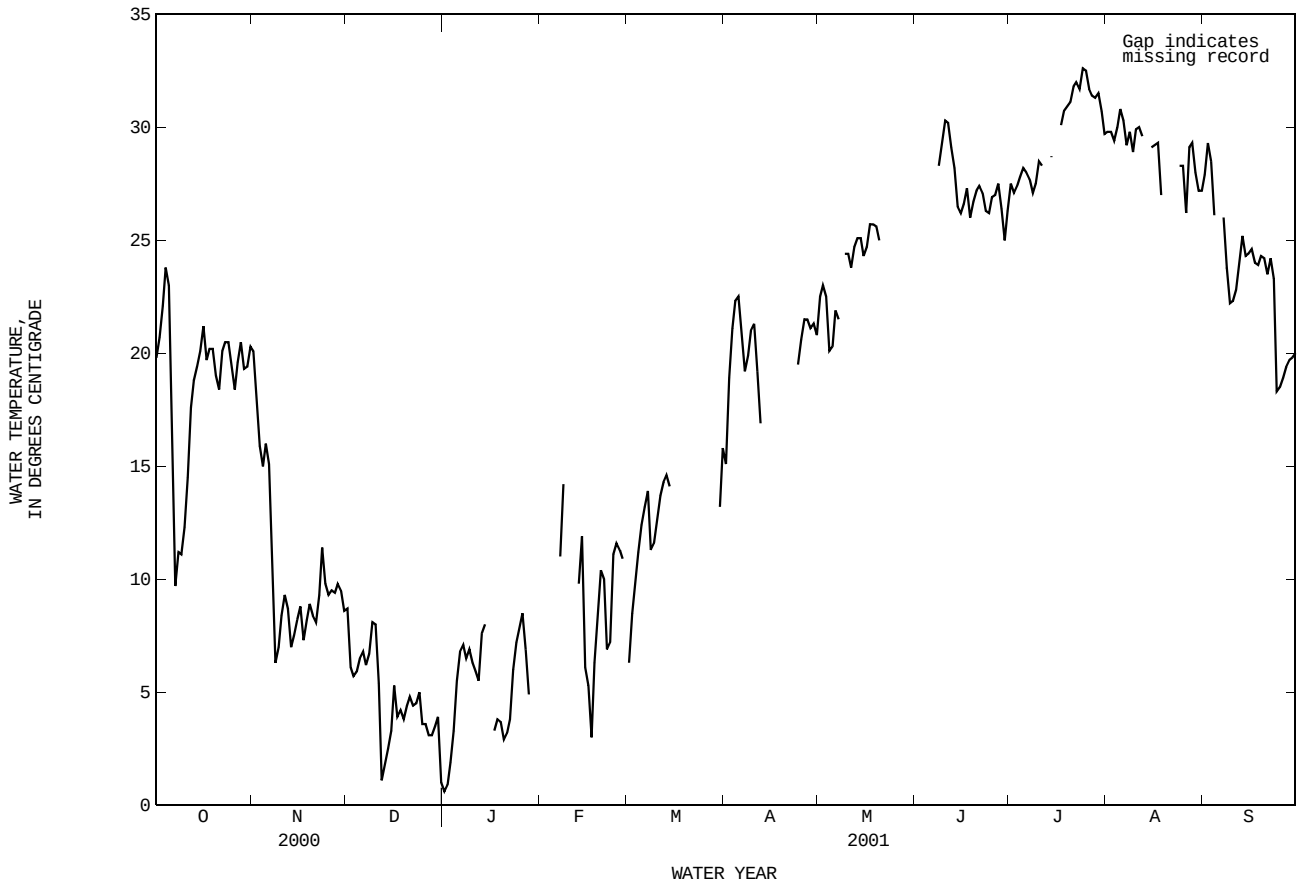
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.9	15.7	19.8	21.4	18.4	20.1	11.1	6.9	8.7	1.2	.3	.6
2	26.6	16.2	20.7	19.8	16.2	18.1	7.2	5.3	6.1	2.4	.0	.9
3	27.9	17.6	22.1	17.8	14.8	15.9	7.9	4.1	5.7	5.6	.0	1.9
4	29.9	19.4	23.8	15.3	14.6	15.0	7.8	4.7	5.9	7.1	1.6	3.3
5	29.5	18.1	23.0	16.7	15.3	16.0	7.5	5.7	6.5	8.8	3.5	5.5
6	18.1	11.6	15.0	16.4	13.4	15.1	7.4	5.8	6.8	9.9	4.5	6.8
7	11.6	8.6	9.7	13.4	8.4	10.6	8.9	3.9	6.2	9.7	5.2	7.1
8	16.3	8.6	11.2	8.4	5.6	6.3	8.4	6.0	6.7	9.6	3.9	6.5
9	17.5	6.1	11.1	9.3	5.3	7.0	10.2	6.6	8.1	9.8	4.4	6.9
10	17.4	8.7	12.3	10.8	6.4	8.4	9.6	7.3	8.0	7.1	5.5	6.3
11	20.3	11.1	14.5	10.6	8.1	9.3	8.2	2.4	5.4	7.3	5.1	5.9
12	22.2	13.8	17.6	10.4	6.9	8.7	2.4	.4	1.1	6.3	4.4	5.5
13	20.7	17.2	18.8	9.5	4.9	7.0	2.2	1.3	1.8	11.0	5.7	7.6
14	22.3	17.5	19.4	10.5	4.8	7.5	2.9	2.1	2.5	10.8	5.2	8.0
15	22.8	18.0	20.1	10.1	6.3	8.2	3.7	2.9	3.3	---	---	---
16	25.2	18.4	21.2	11.4	6.7	8.8	6.5	3.6	5.3	6.5	---	---
17	21.5	17.4	19.7	9.5	5.3	7.3	6.1	2.1	3.9	4.9	2.7	3.3
18	23.9	17.5	20.2	11.1	6.3	8.2	6.1	2.7	4.2	6.7	2.3	3.8
19	23.0	17.4	20.2	12.4	6.1	8.9	6.0	2.5	3.8	6.1	1.8	3.7
20	20.3	18.5	19.0	11.2	6.2	8.4	6.1	2.6	4.4	5.3	1.2	2.9
21	19.5	17.5	18.4	12.0	5.0	8.1	5.6	4.1	4.8	6.1	2.3	3.2
22	22.7	18.4	20.1	11.2	7.5	9.3	5.2	2.8	4.4	5.8	2.7	3.8
23	20.9	20.0	20.5	12.5	10.6	11.4	5.8	3.8	4.5	6.5	5.1	6.0
24	21.1	19.6	20.5	11.3	9.1	9.8	6.2	4.5	5.0	7.9	5.9	7.2
25	20.2	18.1	19.4	11.1	7.9	9.3	4.6	3.3	3.6	9.0	7.4	7.9
26	19.0	17.9	18.4	11.5	7.6	9.5	3.7	3.6	3.6	9.1	7.5	8.5
27	21.0	18.5	19.6	11.4	7.7	9.4	3.5	2.7	3.1	9.1	5.7	6.9
28	21.2	20.0	20.5	12.4	7.6	9.8	3.3	2.9	3.1	5.9	4.0	4.9
29	20.1	18.2	19.3	11.9	7.4	9.5	3.8	3.2	3.5	---	3.3	---
30	21.0	17.8	19.4	10.9	6.8	8.6	4.4	2.2	3.9	---	---	---
31	21.3	19.4	20.3	---	---	---	2.2	.4	1.0	---	---	---
MONTH	29.9	6.1	18.6	21.4	4.8	10.3	11.1	.4	4.7	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	10.2	3.4	6.3	17.5	12.9	15.1	27.6	18.4	22.5
2	---	---	---	10.4	6.9	8.5	23.4	15.7	18.9	27.8	19.1	23.0
3	---	---	---	13.1	7.1	9.7	24.2	18.5	21.1	25.1	20.7	22.5
4	---	---	---	15.5	7.8	11.2	25.6	19.8	22.3	22.4	18.4	20.1
5	---	---	---	16.8	8.9	12.4	23.6	21.3	22.5	23.8	18.0	20.3
6	13.7	---	---	16.4	10.6	13.2	22.2	20.2	20.9	24.1	20.0	21.9
7	14.0	8.4	11.0	18.5	11.2	13.9	20.8	17.3	19.2	22.9	20.6	21.5
8	16.5	12.4	14.2	14.5	9.6	11.3	21.2	19.0	19.9	---	---	---
9	---	---	---	16.2	7.7	11.6	22.3	19.9	21.0	26.7	22.4	24.4
10	---	---	---	15.0	10.9	12.6	22.0	20.8	21.3	26.2	22.9	24.4
11	---	---	---	15.9	12.3	13.7	21.1	17.6	19.2	25.3	22.3	23.8
12	---	---	---	17.1	12.1	14.3	18.3	15.5	16.9	27.7	22.3	24.7
13	11.4	8.7	9.8	18.0	11.8	14.6	---	---	---	26.4	23.5	25.1
14	13.6	8.6	11.9	15.9	13.0	14.1	---	---	---	25.9	24.2	25.1
15	8.7	4.7	6.1	---	---	---	---	---	---	25.4	23.1	24.3
16	8.1	3.7	5.3	---	---	---	---	---	---	26.0	23.4	24.7
17	6.7	1.5	3.0	---	---	---	---	---	---	26.9	24.6	25.7
18	8.4	4.3	6.3	---	---	---	---	---	---	27.1	24.2	25.7
19	11.7	5.8	8.6	---	---	---	---	---	---	27.0	24.0	25.6
20	11.3	10.1	10.4	---	---	---	---	---	---	27.9	23.2	25.0
21	11.4	8.2	10.0	---	---	---	---	---	---	---	---	---
22	8.2	6.5	6.9	---	9.2	---	---	---	---	---	---	---
23	7.5	7.0	7.2	---	---	---	---	---	---	---	---	---
24	14.8	7.5	11.1	---	---	---	24.5	14.8	19.5	---	---	---
25	14.2	9.7	11.6	---	---	---	25.8	16.1	20.6	---	---	---
26	12.6	10.0	11.3	---	---	---	25.9	17.4	21.5	---	---	---
27	12.2	7.0	10.9	---	---	---	25.7	17.6	21.5	---	---	---
28	7.0	---	---	---	---	---	24.3	17.8	21.1	---	---	---
29	---	---	---	---	---	---	25.5	17.6	21.3	---	---	---
30	---	---	---	16.4	10.2	13.2	24.3	17.8	20.8	---	---	---
31	---	---	---	19.4	12.6	15.8	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07308500 Red River near Burkburnett, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	29.1	25.9	27.5	35.3	25.6	29.8	31.8	24.9	27.9
2	---	---	---	28.8	25.3	27.1	35.1	26.5	29.8	34.0	25.3	29.3
3	---	---	---	29.4	25.6	27.4	34.6	25.4	29.4	32.0	26.2	28.5
4	---	---	---	29.7	25.7	27.8	35.7	25.5	30.0	27.8	25.0	26.1
5	---	---	---	29.6	26.5	28.2	36.9	26.1	30.8	---	23.6	---
6	---	---	---	29.6	26.2	28.0	35.1	26.6	30.3	30.4	---	---
7	---	---	---	29.1	26.0	27.7	34.5	25.5	29.2	30.0	23.0	26.0
8	31.1	26.1	28.3	28.9	25.2	27.1	34.2	26.4	29.8	25.6	22.3	23.8
9	32.1	26.6	29.3	29.5	25.7	27.5	33.9	25.6	28.9	24.8	19.6	22.2
10	33.6	27.5	30.3	30.0	26.9	28.5	35.4	25.7	29.9	26.3	18.9	22.3
11	33.0	27.9	30.2	29.5	26.7	28.3	35.6	26.6	30.0	26.5	20.4	22.8
12	31.9	26.9	29.1	---	---	---	35.2	26.0	29.6	26.8	22.1	24.0
13	30.0	26.9	28.2	---	---	---	---	---	---	29.2	22.4	25.2
14	27.4	25.7	26.5	31.0	26.9	28.7	32.8	---	---	25.7	22.8	24.3
15	28.7	23.9	26.2	---	---	---	33.6	25.5	29.1	25.5	23.6	24.4
16	29.2	24.3	26.6	---	---	---	34.7	26.7	29.2	27.6	22.7	24.6
17	29.3	25.5	27.3	34.2	27.1	30.1	33.4	26.4	29.3	25.5	22.5	24.0
18	27.2	24.6	26.0	35.1	27.5	30.7	32.9	24.0	27.0	25.5	22.5	23.9
19	30.8	24.1	26.7	35.6	27.4	30.9	---	---	---	27.2	22.0	24.3
20	30.9	24.1	27.2	36.3	27.3	31.1	---	---	---	26.9	22.5	24.2
21	30.9	24.5	27.4	37.2	27.8	31.8	---	---	---	27.2	21.1	23.5
22	31.9	23.2	27.1	37.6	27.8	32.0	---	---	---	27.7	21.5	24.2
23	29.5	23.5	26.3	37.4	27.7	31.7	---	---	---	26.5	20.1	23.3
24	31.1	22.3	26.2	38.0	28.9	32.6	33.6	24.6	28.3	21.7	15.4	18.3
25	31.6	23.2	26.9	37.7	28.7	32.5	33.9	24.0	28.3	23.1	14.6	18.5
26	31.1	23.5	27.0	36.2	28.0	31.7	29.0	23.8	26.2	23.2	15.5	18.9
27	30.9	24.4	27.5	36.2	28.0	31.4	34.7	25.4	29.1	24.1	15.6	19.4
28	28.4	24.4	26.4	36.5	28.1	31.3	32.9	26.5	29.3	23.8	16.3	19.7
29	27.8	23.0	25.0	37.4	28.2	31.5	29.5	26.6	28.0	24.5	16.2	19.8
30	28.8	24.1	26.3	35.7	27.2	30.7	28.8	25.8	27.2	25.4	15.7	20.0
31	---	---	---	35.0	25.8	29.7	30.4	25.2	27.2	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---



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), July 1961 to Sept. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	12	11	10	9.7	e24	e10	9.0	9.9	7.8	7.4	11
2	7.1	12	11	10	9.5	e25	e10	9.4	e9.0	8.5	7.4	9.7
3	7.8	21	11	10	9.2	e23	e9.9	10	e8.0	9.6	7.4	9.5
4	7.8	16	11	9.9	9.0	e18	9.8	13	e7.5	7.9	7.3	9.1
5	7.4	14	11	9.5	9.6	e19	e11	12	e7.0	7.3	6.6	9.6
6	7.8	12	11	9.6	11	e15	e10	9.9	e6.5	8.8	7.3	9.8
7	7.8	12	11	9.4	9.1	e64	10	10	6.5	6.9	7.5	7.6
8	8.0	13	11	9.5	8.9	e152	e13	9.8	7.5	7.2	8.1	7.2
9	8.2	13	11	9.5	9.2	e250	e11	10	6.5	7.1	8.2	7.8
10	8.5	12	11	9.5	9.5	e194	e11	9.6	6.6	6.9	8.5	8.6
11	8.6	12	10	9.5	9.4	e96	10	9.5	6.7	6.7	7.8	8.7
12	8.6	12	13	9.5	9.4	e54	11	9.2	7.6	5.9	7.6	9.2
13	8.9	14	13	9.5	9.7	e25	13	9.4	7.0	6.6	19	9.7
14	8.7	14	11	9.4	9.9	e12	14	9.6	8.0	8.6	17	9.1
15	9.2	13	11	9.6	9.9	e12	15	8.8	7.9	10	84	9.7
16	9.9	12	10	9.8	9.9	e12	15	8.5	6.8	8.8	11	9.7
17	10	12	12	9.5	10	e11	15	8.4	6.8	7.2	9.4	11
18	9.6	12	10	9.5	11	e14	16	8.5	e8.6	7.1	33	10
19	10	12	11	9.6	11	e18	14	8.9	6.4	8.1	42	10
20	10	13	10	11	11	e16	11	e9.6	6.3	8.9	13	11
21	10	13	11	9.3	11	e14	10	e11	e6.2	8.2	10	53
22	11	12	11	9.8	e14	e11	9.7	e8.5	e6.2	7.1	9.8	25
23	12	13	10	9.2	e32	e31	8.8	8.3	e6.4	6.3	11	19
24	14	17	10	9.1	e51	e63	9.3	8.5	e6.5	6.6	10	12
25	13	14	10	9.2	e46	e41	8.8	9.1	e6.7	6.7	9.9	11
26	13	13	e10	9.1	e32	e25	9.6	9.5	6.9	6.8	10	12
27	12	12	10	9.1	e27	e17	9.0	34	7.5	7.1	9.8	10
28	12	12	10	10	e22	e14	8.8	14	7.2	7.4	10	8.7
29	12	12	10	10	---	e10	8.9	11	8.0	8.0	9.8	8.3
30	12	12	10	9.8	---	e10	8.9	10	8.8	8.9	11	7.8
31	12	---	10	9.7	---	e10	---	9.4	---	8.5	11	---
TOTAL	304.3	393	333	298.1	430.9	1300	331.5	326.4	217.5	237.5	431.8	354.8
MEAN	9.82	13.1	10.7	9.62	15.4	41.9	11.1	10.5	7.25	7.66	13.9	11.8
MAX	14	21	13	11	51	250	16	34	9.9	10	84	53
MIN	7.1	12	10	9.1	8.9	10	8.8	8.3	6.2	5.9	6.6	7.2
AC-FT	604	780	661	591	855	2580	658	647	431	471	856	704

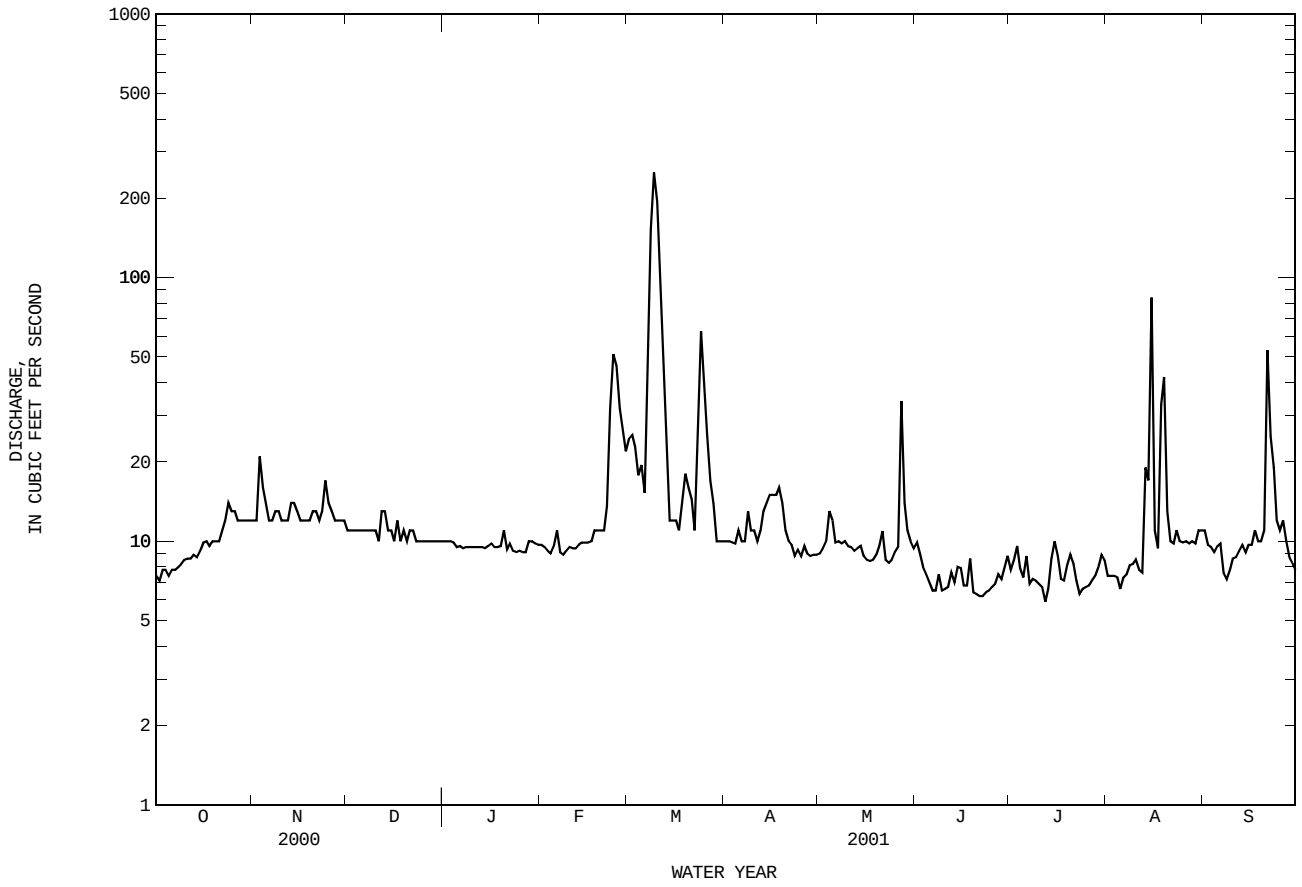
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2001h, BY WATER YEAR (WY)

MEAN	18.8	12.6	11.8	10.9	11.4	15.0	26.2	42.5	64.9	15.0	34.8	32.8
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	7.25	2.12	1.98	2.06
(WY)	1964	1965	1965	1965	1965	1965	1964	1966	2001	1966	1964	1964

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1961 - 2001h	
ANNUAL TOTAL	6097.3		4958.8			
ANNUAL MEAN	16.7		13.6		24.9	
HIGHEST ANNUAL MEAN					75.5	1995
LOWEST ANNUAL MEAN					6.10	1964
HIGHEST DAILY MEAN	681	Jun 3	250	Mar 9	8930	Jun 5 1995
LOWEST DAILY MEAN	7.1	Oct 2	5.9	Jul 12	.50	Sep 2 1964
ANNUAL SEVEN-DAY MINIMUM	7.6	Oct 1	6.4	Jun 19	.74	Aug 31 1964
MAXIMUM PEAK FLOW			297	Aug 15	18100	Jun 5 1995
MAXIMUM PEAK STAGE			4.66	Aug 15	19.76	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	12090		9840		18040	
10 PERCENT EXCEEDS	19		16		22	
50 PERCENT EXCEEDS	11		9.9		11	
90 PERCENT EXCEEDS	8.8		7.3		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.--Records fair. 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. The computation of the selected constituent loads might include extimated discharge or specific conductance data. New regression equations were developed based on data from water years 1995 to 2001. The standard error of estimate for dissolved solids is 4%, chloride is 7%, sulfate is 5% 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.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 30,900 microsiemens/cm, May 27, 2001; minimum, 318 microsiemens/cm, May 27, 1999.
WATER TEMPERATURE: Maximum, 35.4°C, Aug. 10, 2001; minimum, 0.0°C, several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 30,900 microsiemens/cm, May 27; minimum, 2,260 microsiemens/cm, Mar. 9.
WATER TEMPERATURE: Maximum, 35.4°C, Aug. 10; minimum, 0.2°C, Dec. 27.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
17...	1150	10	24900	7.4	19.7	7.1	88	2800	2700	842	174	4660	38
NOV													
28...	1215	12	22300	7.4	10.0	10.6	105	2700	2500	796	164	4170	35
DEC													
21...	1350	11	23800	7.5	6.3	11.8	107	2800	2600	820	171	4490	37
FEB													
06...	1145	11	22700	7.7	9.6	10	101	2700	2500	790	167	4320	36
MAR													
06...	1500	15	21700	7.9	15.2	10.9	124	4900	4800	415	946	2970	18
22...	1200	11	21600	7.8	16.9	8.8	104	2500	2400	752	160	3970	34
APR													
04...	1330	9.8	22200	7.8	22.2	8.6	113	2600	2500	772	165	4400	38
JUN													
05...	1245	7.0	23000	7.8	26.6	7.7	110	2600	2500	770	169	4520	38
19...	1250	6.4	25900	7.7	27.1	7.7	112	3000	2900	865	192	5110	41
JUL													
24...	1145	6.6	26900	7.5	28.3	6.7	100	3000	2900	881	194	5440	43
AUG													
06...	1150	7.3	27100	7.9	31.0	--	--	3100	3000	913	204	5710	44
SEP													
25...	1250	11	12000	7.8	20.0	8.9	107	1500	1400	447	89.4	2120	24

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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)	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)
OCT													
17...	1.64	133	109	2510	7490	.6	4.7	15700	26	.447	.010	.457	.161
NOV													
28...	1.52	178	146	2320	6700	.5	7.8	14300	26	.637	.006	.643	.086
DEC													
21...	13.8	191	156	2390	6890	.6	9.2	14900	14	1.10	.015	1.11	.090
FEB													
06...	14.8	176	144	2420	6990	.6	6.1	14800	15	.866	.017	.883	.085
MAR													
06...	13.6	157	129	2300	6730	.6	5.5	13500	16	.662	.011	.673	.090
22...	14.3	176	144	2230	6330	.6	6.2	13500	12	.678	.010	.688	.122
APR													
04...	29.4	147	121	2310	6780	.6	4.9	14500	25	.462	.010	.471	.078
JUN													
05...	15.8	112	91	2490	7160	.5	1.8	15200	10	.284	.013	.297	.077
19...	16.4	104	87	2730	7630	.6	3.0	16600	16	.285	.015	.300	.082
JUL													
24...	18.1	106	88	2820	8520	.6	6.3	17900	32	.253	.019	.272	.106
AUG													
06...	39.0	98	82	2880	9080	.6	7.2	18900	<10	.218	.015	.233	.113
SEP													
25...	13.6	132	110	1320	3430	.4	4.1	7500	<10	.238	.012	.250	.154

07311600 North Wichita River near Paducah, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT													
17...	.71	.09	.25	<.060	<.060	<.018	<2	<6.0	2.7	26.4	<2.20	<2.80	9
NOV													
28...	.81	.08	.17	<.060	<.060	<.018	<6	<6.0	23.0	28.6	<.77	<.70	<3
DEC													
21...	1.3	.14	.23	<.060	<.060	<.018	<6	<6.0	21.5	43.0	<.88	<.70	<3
FEB													
06...	1.2	.18	.27	<.060	.929	<.018	<6	<6.0	20.2	22.4	<.88	<1.12	9
MAR													
06...	1.1	.35	.45	<.060	E.030	<.018	E4	<6.0	32.2	33.9	<1.10	<1.40	3
22...	1.0	.23	.35	<.060	<.060	<.018	<6	<6.0	54.5	57.2	<.55	<.70	<3
APR													
04...	.79	.24	.32	<.060	<.060	<.018	<4	<.2	40.4	<1.0	<.04	<.04	<3
JUN													
05...	.61	.23	.31	<.060	<.060	<.020	5	3.2	51.1	52.6	<.35	.04	<3
19...	.50	.12	.20	<.060	<.060	E.009	6	<.4	42.6	38.4	<.39	.10	2
JUL													
24...	.60	.22	.33	<.060	<.060	<.020	E5	E1.7	34.7	37.7	<.39	<.40	<3
AUG													
06...	.36	.01	.13	<.060	<.060	<.020	E4	<.4	35.2	32.8	<.42	.31	<3
SEP													
25...	.64	.23	.39	<.060	<.060	<.020	4	1.6	103	113	<.18	<.20	<2

DATE	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)	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)
OCT													
17...	<4.0	<2.4	E1.2	<280	<100	<4	3.88	E15	E20.0	<.14	<.23	<4	5.83
NOV													
28...	<2.4	<1.2	7.2	<280	<150	3	<3.00	E19	16.3	<.14	<.23	M	<7.20
DEC													
21...	<2.4	<6.0	1.6	<280	<200	2	<5.00	E16	12.1	<.14	<.23	<9	<12.0
FEB													
06...	<3.2	<6.0	<6.5	<280	<200	<5	1.82	52	57.2	<.14	E.18	<9	<12.0
MAR													
06...	<2.4	<6.0	<6.5	<160	<200	<5	<5.00	91	83.8	<.14	<.23	<9	<12.0
22...	<2.4	<6.0	<6.5	<160	<200	<5	E3.24	107	88.7	.01	.01	<9	<12.0
APR													
04...	E1.3	11.2	<.2	<160	<200	<1	.97	87	<.1	.01	<.01	14	<.06
JUN													
05...	2.7	6.7	8.9	<130	<200	<10	.09	37	35.1	<.01	<.01	<10	6.62
19...	<.8	8.9	17.4	150	<150	<11	E.10	33	30.6	<.01	<.01	<11	<.10
JUL													
24...	3.3	E3.7	21.2	E100	<150	<11	<.90	52	53.8	.05	.03	16	<.70
AUG													
06...	E1.7	E6.5	14.0	E80	<150	<12	.58	58	45.2	.02	.01	16	<.70
SEP													
25...	E1.1	4.6	4.2	<10	<100	<5	<.40	29	29.4	<.01	<.01	10	<.30

07311600 North Wichita River near Paducah, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)
OCT													
17...	7.0	7.7	<1.72	<.6	<279	<200	--	--	--	--	--	--	--
NOV													
28...	9.0	10.1	<2.15	.5	<279	<300	--	--	--	--	--	--	--
DEC													
21...	<7.8	8.9	<2.15	.2	<279	<400	--	--	--	--	--	--	--
FEB													
06...	E5.0	<7.2	<2.15	<.8	<279	<400	--	--	--	--	--	--	--
MAR													
06...	E5.9	E4.2	<2.15	<.8	<155	<400	--	--	--	--	--	--	--
22...	E6.7	E6.6	<2.15	<.8	<155	<400	--	--	--	--	--	--	--
APR													
04...	9.7	<.3	<.05	<1.0	11	<1	<.040	<.10	<1	<.1	<.1	<.1	<.1
JUN													
05...	10.3	9.8	<.50	<1.0	<10	14	<.040	<.10	<1	<.1	<.1	<.1	<.1
19...	10.4	9.3	<.55	<2.0	19	17	<.040	<.10	<1	<.1	<.1	<.1	<.1
JUL													
24...	8.3	7.8	<.55	<11.0	<11	26	--	--	--	--	--	--	--
AUG													
06...	6.9	10.6	<.60	<2.0	<12	13	--	--	--	--	--	--	--
SEP													
25...	6.4	5.3	<.25	<5.0	<5	8	--	--	--	--	--	--	--

DATE	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)
OCT													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
04...	<.1	<.020	<.6	<.060	<.2	<.030	<.800	<.030	94	<2	<.1	<.03	65
JUN													
05...	<.1	<.020	<.6	<.060	<.2	<.030	<.800	<.030	103	<2	<.1	<.03	84
19...	<.1	<.020	<.6	<.060	<.2	<.030	<.800	<.030	101	<2	<.1	<.03	104
JUL													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--

07311600 North Wichita River near Paducah, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT								
17...	--	--	--	--	--	--	--	--
NOV								
28...	--	--	--	--	--	--	--	--
DEC								
21...	--	--	--	--	--	--	--	--
FEB								
06...	--	--	--	--	--	--	--	--
MAR								
06...	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--
APR								
04...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUN								
05...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
19...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL								
24...	--	--	--	--	--	--	--	--
AUG								
06...	--	--	--	--	--	--	--	--
SEP								
25...	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	304.3	23850	15490	12730	7300	5990	2500	2040	2900
NOV.	2000	393	21300	14030	14880	6500	6860	2400	2520	2800
DEC.	2000	333	23060	15050	13530	7000	6320	2500	2210	2900
JAN.	2001	298.1	22250	14580	11740	6800	5450	2400	1950	2800
FEB.	2001	430.9	21940	14400	16750	6700	7760	2400	2800	2800
MAR.	2001	1300	12740	8610	30220	3800	13350	1600	5600	1900
APR.	2001	331.5	22270	14590	13060	6800	6060	2400	2170	2800
MAY	2001	326.4	20700	13600	11990	6300	5540	2300	2020	2700
JUNE	2001	217.5	23380	15200	8930	7100	4200	2500	1440	2800
JULY	2001	237.5	26480	16970	10880	8200	5240	2600	1650	3000
AUG.	2001	431.8	15160	10060	11730	4600	5330	1800	2040	2000
SEPT	2001	354.8	19120	12610	12080	5800	5550	2200	2060	2500
TOTAL		4958.8	**	**	168500	**	77640	**	28520	**
WTD.AVG.		14	19120	12590	**	5800	**	2100	**	2500

07311600 North Wichita River near Paducah, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25900	25500	25700	22000	21500	21700	22800	22600	22700	22800	22100	22500
2	25800	25200	25500	22100	22000	22000	23200	22800	23000	22500	22300	22400
3	25600	25200	25400	22000	19900	20700	23300	23000	23100	23000	21900	22500
4	25600	25100	25400	21500	19500	20500	23300	23100	23200	22400	22000	22300
5	25500	25000	25200	20100	18000	19300	23600	23200	23500	22500	22200	22300
6	26000	25500	25800	18000	17500	17700	23500	23200	23400	22400	22200	22300
7	26000	25500	25800	19000	17900	18600	23600	23000	23300	22400	22100	22300
8	25600	25400	25600	19500	19000	19200	23300	22900	23100	22400	22000	22300
9	25600	25000	25400	20900	19500	20300	23400	22800	23200	22500	22200	22300
10	25600	25100	25400	21300	20900	21200	23300	22800	23100	22300	21700	22000
11	25700	25100	25500	21400	20700	21100	23600	23100	23400	22100	21900	22000
12	25500	25200	25300	21100	20700	20900	23900	23500	23800	22400	21800	22200
13	25500	25200	25300	21300	20900	21100	23600	23000	23300	22300	21800	22100
14	25300	24500	25100	21400	21000	21200	23700	23100	23500	22700	22200	22400
15	25000	24400	24700	21600	21300	21400	23600	23200	23400	22200	21700	21900
16	24800	24400	24600	21600	21300	21500	23500	22900	23300	22200	21800	22000
17	25100	24800	25000	21900	21600	21800	23500	23000	23200	22600	21900	22300
18	25000	24500	24800	22000	21700	21900	23400	23100	23200	22700	21900	22300
19	24800	24200	24600	22000	21800	21900	23600	22800	23400	22400	22100	22300
20	24500	24000	24300	22000	21800	21900	23500	23000	23300	22600	22100	22400
21	24300	23600	24000	22200	21900	22000	23300	22900	23100	22700	22200	22500
22	23700	22600	23400	22400	22100	22300	23300	22900	23200	23000	22200	22600
23	23700	23100	23400	22800	21600	22500	23100	22700	22900	22600	22200	22400
24	23300	22800	23100	22400	21600	22000	23300	22600	23000	22500	22000	22200
25	22800	19800	21700	23100	22400	22800	22900	22500	22800	22500	22000	22300
26	23200	22000	22900	23600	22400	23200	---	---	e22200	22400	22000	22200
27	23000	22300	22700	22400	21600	21800	22300	21800	22200	22700	21800	22300
28	22400	20100	21200	22400	21600	22100	22500	22100	22300	22100	21400	21900
29	20100	19700	19900	22600	22000	22300	22600	22300	22400	21900	21500	21800
30	20900	20100	20500	22700	22400	22600	22500	22100	22300	22500	21800	22300
31	21500	20400	20900	---	---	---	22600	22200	22500	22500	22000	22200
MONTH	26000	19700	24100	23600	17500	21300	---	---	23000	23000	21400	22300

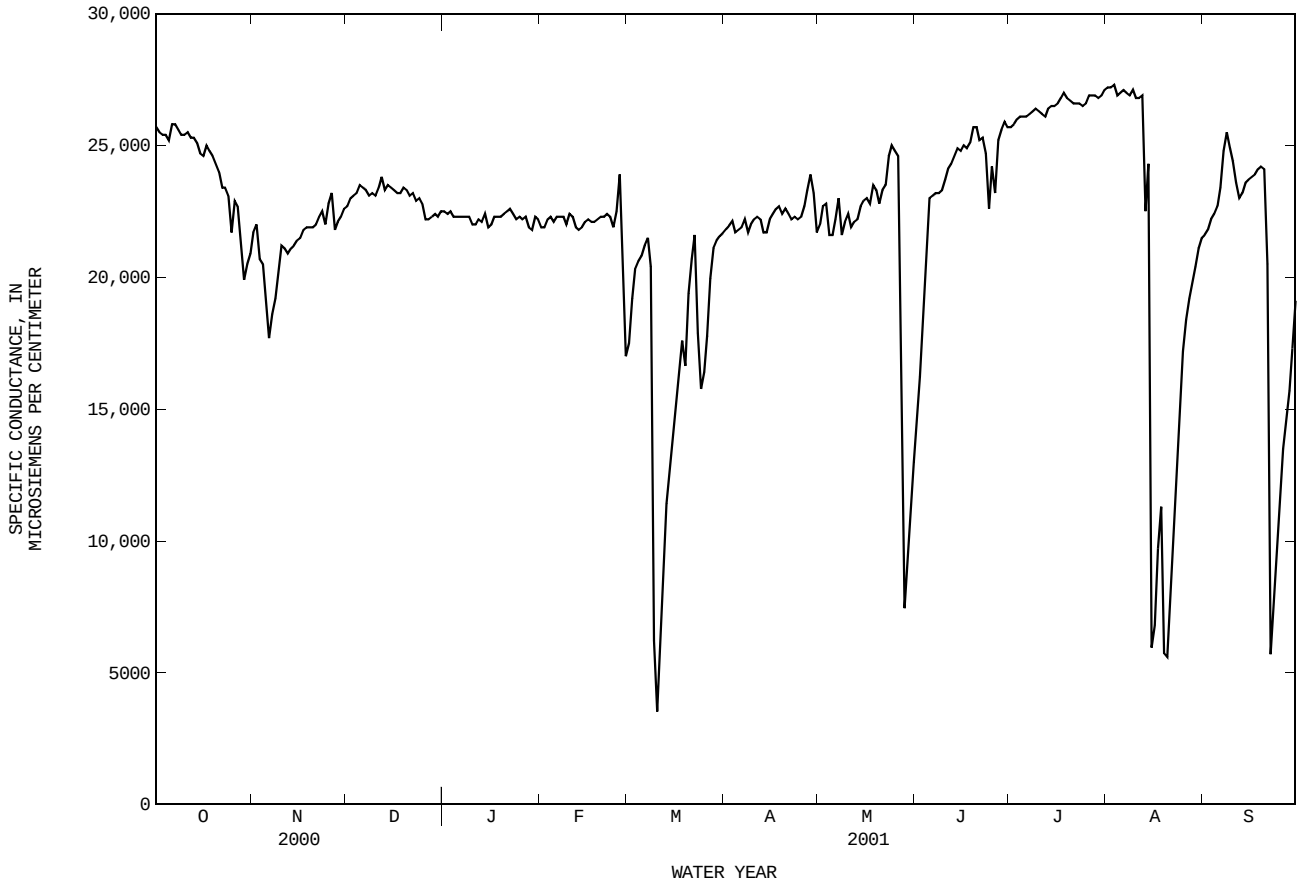
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	22200	21500	21900	18300	16700	17500	---	---	e21800	22800	21400	22000
2	22100	21600	21900	19700	18300	19200	---	---	e22000	23100	22500	22700
3	22400	22000	22200	20500	19700	20300	---	---	e22100	23000	22500	22800
4	22600	21800	22300	20800	20300	20600	21900	21200	21700	23000	19400	21600
5	22300	21800	22100	21000	20500	20800	---	---	e21800	22400	20900	21600
6	22600	22000	22300	21400	20800	21200	---	---	e21900	22600	22100	22200
7	22700	22000	22300	21900	21300	21500	---	---	e22200	23400	22300	23000
8	22600	21400	22300	21700	18300	20400	---	---	e21700	22300	21100	21600
9	22400	21800	22000	21000	2260	6210	---	---	e22000	22300	21500	22100
10	22900	21900	22400	5170	2480	3530	---	---	e22200	22700	22100	22400
11	22600	21900	22300	7790	5170	6570	---	---	22300	22100	21500	21900
12	22400	21300	21900	10200	7790	8860	22500	21600	22200	22400	21600	22100
13	22100	21500	21800	12500	10200	11400	21900	21200	21700	22300	22100	22200
14	22200	21300	21900	---	---	e12500	21900	21200	21700	23000	22300	22700
15	22200	21900	22100	---	---	e13800	22400	21900	22200	23200	22700	22900
16	22300	22100	22200	---	---	e15000	22600	22100	22400	23200	22900	23000
17	22400	21800	22100	---	---	e16300	22800	22200	22600	23100	22600	22800
18	22300	21900	22100	---	---	e17600	23000	22000	22700	23900	22800	23500
19	22400	22000	22200	---	---	e16600	22600	22000	22400	23400	23000	23300
20	22600	21900	22300	---	---	e19400	23100	22300	22600	---	---	e22800
21	22500	22000	22300	---	---	e20700	22600	22100	22400	23700	22700	23300
22	22600	22100	22400	---	---	e21600	22300	21800	22200	---	---	e23500
23	22500	22100	22300	---	---	e17900	22500	21800	22300	24800	24000	24600
24	22200	21700	21900	---	---	e15800	22600	21800	22200	25100	24700	25000
25	24000	21800	22500	---	---	e16400	22600	21900	22300	25100	24500	24800
26	24500	23300	23900	---	---	e17800	22900	22300	22700	24800	24500	24600
27	24400	17800	20600	---	---	e20000	23600	22600	23300	30900	7000	19400
28	17800	16500	17000	---	---	e21100	24400	23300	23900	7940	7000	7450
29	---	---	---	---	---	e21400	23700	22100	23200	9900	8250	8950
30	---	---	---	---	---	e21600	22100	21500	21700	12000	9900	10900
31	---	---	---	---	---	e21700	---	---	---	13800	12000	13000
MONTH	24500	16500	22000	---	---	16900	---	---	22300	---	---	21100

07311600 North Wichita River near Paducah, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15000	13800	14500	25800	25600	25700	27500	27000	27200	21800	21600	21600
2	---	---	e16200	25900	25700	25800	27500	26900	27200	22100	21600	21800
3	---	---	e19000	26100	25800	26000	27600	27100	27300	22500	21800	22200
4	---	---	e21000	26300	26000	26100	27200	26700	26900	22600	21700	22400
5	---	---	e23000	26300	26000	26100	27200	26800	27000	22800	22600	22700
6	---	---	e23100	26200	25900	26100	27400	26800	27100	23900	22800	23400
7	23400	23000	23200	26300	26100	26200	27200	26800	27000	25700	23900	24800
8	23300	23100	23200	26500	26100	26300	27100	26600	26900	25700	25200	25500
9	23500	23200	23300	26400	26200	26400	27300	26900	27100	25200	24600	24900
10	23900	23500	23700	26500	26000	26300	27100	26600	26800	24700	24100	24400
11	24200	23900	24100	26600	25900	26200	26900	26600	26800	24100	23200	23600
12	24400	24200	24300	26300	26000	26100	27100	26700	26900	23200	22800	23000
13	24800	24300	24600	26600	26300	26400	26800	16900	22500	23400	23000	23200
14	25100	24500	24900	26700	26300	26500	29000	14100	24300	23700	23400	23600
15	25000	24500	24800	26700	26100	26500	27600	3270	5950	23800	23600	23700
16	25300	24600	25000	26700	26400	26600	8480	4900	6800	23900	23600	23800
17	25300	24700	24900	26900	26500	26800	11100	8480	9720	24000	23800	23900
18	---	---	e25100	27200	26800	27000	12600	8790	11300	24300	24000	24100
19	25800	25500	25700	27100	26400	26800	12400	3890	5730	24300	24100	24200
20	25800	25600	25700	27000	26500	26700	7170	4300	5590	24300	23700	24100
21	---	---	e25200	26900	26400	26600	9630	7170	8380	30100	6510	20500
22	---	---	e25300	26900	26300	26600	11900	9630	10800	6520	5150	5700
23	---	---	e24700	26800	26400	26600	14000	11900	12900	9160	6520	7960
24	---	---	e22600	26700	26300	26500	16200	14000	15100	11000	9160	9940
25	---	---	e24200	26800	26400	26600	17900	16200	17200	12700	11000	11900
26	24200	22900	23200	27100	26700	26900	18800	17900	18400	14200	12700	13500
27	25500	24200	25200	27000	26600	26900	19600	18800	19200	15000	14200	14600
28	25800	25400	25600	27100	26600	26900	20000	19600	19800	16300	15000	15700
29	26000	25600	25900	26900	26500	26800	20900	19800	20400	18200	16300	17300
30	25900	25500	25700	27100	26600	26900	21300	20900	21100	19800	18200	19100
31	---	---	---	27300	26900	27100	21600	21300	21500	---	---	---
MONTH	---	---	23600	27300	25600	26500	29000	3270	19400	30100	5150	20200

e Estimated



07311600 North Wichita River near Paducah, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

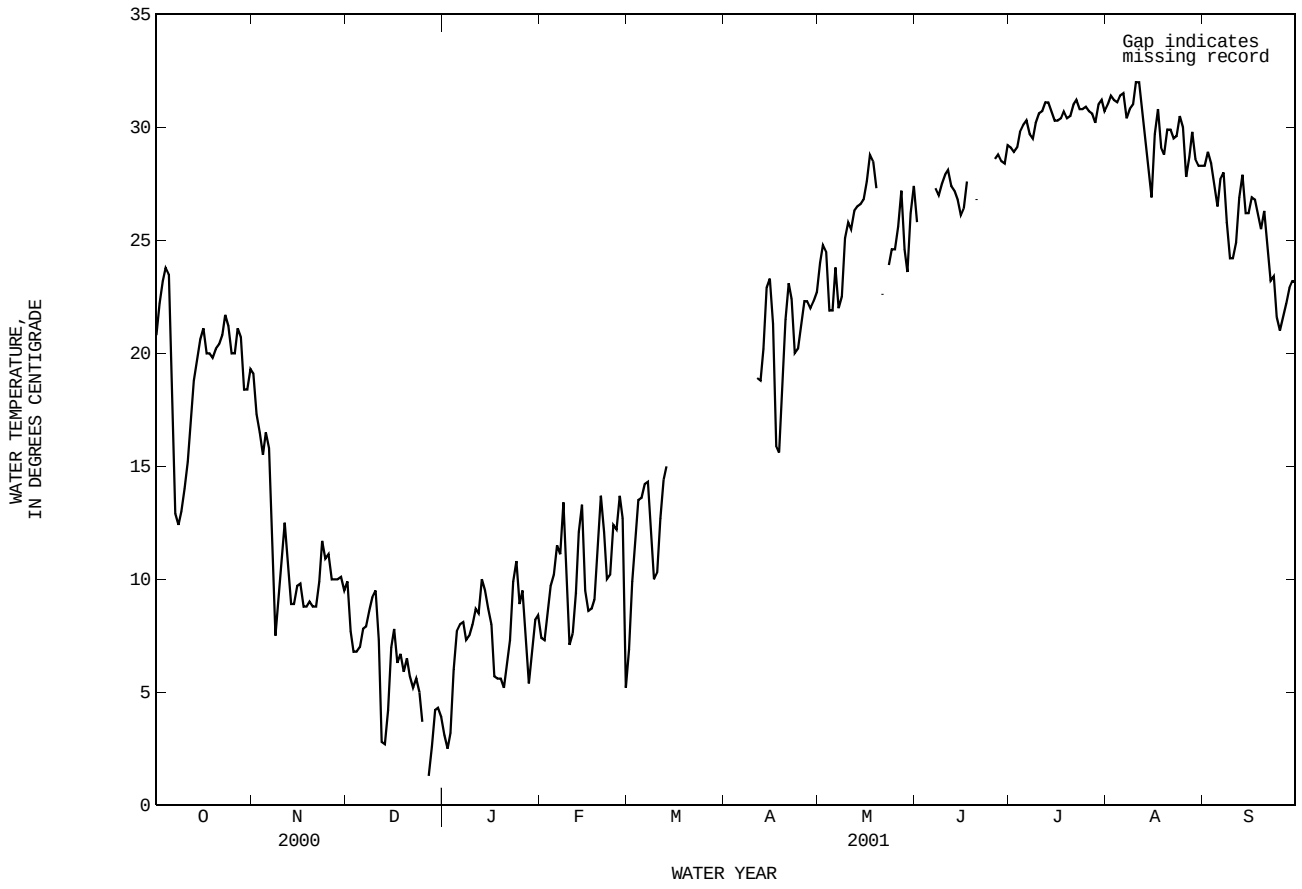
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.4	17.8	20.8	20.6	17.5	19.1	11.2	8.7	9.9	3.4	2.5	3.1
2	25.0	19.2	22.2	18.9	15.0	17.3	9.0	7.0	7.7	3.1	2.0	2.5
3	26.0	20.4	23.2	17.8	15.7	16.5	7.4	6.2	6.8	5.9	.8	3.2
4	26.4	21.1	23.8	15.7	15.2	15.5	7.6	6.1	6.8	8.7	3.6	6.0
5	25.3	21.7	23.5	17.8	15.4	16.5	7.5	6.3	7.0	9.8	5.6	7.7
6	21.9	14.9	17.5	17.0	14.4	15.8	9.2	6.4	7.8	9.9	5.9	8.0
7	14.9	12.2	12.9	14.4	7.7	10.9	9.9	5.7	7.9	9.4	6.9	8.1
8	13.8	11.1	12.4	8.5	6.4	7.5	10.1	7.0	8.6	9.4	5.1	7.3
9	15.5	10.6	13.0	11.6	6.5	9.0	11.1	7.2	9.2	9.6	5.3	7.5
10	16.5	11.4	14.0	13.1	8.3	10.6	10.7	8.2	9.5	8.3	7.8	8.0
11	17.8	12.9	15.2	14.7	10.8	12.5	9.5	4.6	7.3	10.3	7.7	8.7
12	18.3	15.6	16.9	12.6	9.0	10.6	4.6	1.4	2.8	9.8	7.1	8.5
13	20.0	17.7	18.8	10.7	6.9	8.9	5.0	.7	2.7	11.7	8.8	10.0
14	21.5	18.2	19.7	11.0	6.5	8.9	5.7	2.8	4.2	11.2	7.5	9.5
15	22.2	19.0	20.6	10.9	8.4	9.7	9.4	4.9	7.0	10.4	6.7	8.7
16	22.9	19.3	21.1	11.3	8.1	9.8	9.0	6.7	7.8	9.3	7.0	8.0
17	21.4	19.2	20.0	9.9	7.3	8.8	7.7	4.5	6.3	7.0	5.1	5.7
18	22.1	17.8	20.0	9.9	7.9	8.8	8.1	5.4	6.7	7.0	4.6	5.6
19	21.4	17.5	19.8	11.1	6.8	9.0	7.4	4.1	5.9	7.5	3.7	5.6
20	21.9	18.6	20.2	10.4	6.9	8.8	8.3	4.9	6.5	7.1	3.3	5.2
21	21.2	19.4	20.4	10.9	6.3	8.8	6.9	4.1	5.7	8.6	4.1	6.3
22	22.5	19.1	20.8	11.2	8.5	9.9	6.8	3.4	5.2	9.7	4.6	7.3
23	22.9	20.6	21.7	12.5	11.0	11.7	7.3	3.9	5.6	11.7	8.2	9.9
24	22.1	20.2	21.2	11.5	10.1	10.9	6.0	4.6	5.0	12.3	9.5	10.8
25	21.2	19.2	20.0	12.7	9.6	11.1	4.6	2.5	3.7	10.3	7.7	8.9
26	21.7	18.8	20.0	11.7	8.2	10.0	---	---	---	11.7	7.1	9.5
27	22.9	19.5	21.1	11.6	8.2	10.0	2.5	.2	1.3	10.2	5.8	7.2
28	21.7	19.0	20.7	12.0	8.1	10.0	4.9	.5	2.6	5.8	5.0	5.4
29	20.0	16.4	18.4	11.6	8.4	10.1	6.3	2.4	4.2	9.3	4.5	6.7
30	20.7	15.8	18.4	11.3	7.6	9.5	6.0	2.7	4.3	10.9	5.9	8.2
31	20.2	18.5	19.3	---	---	---	4.4	3.4	3.9	10.8	6.1	8.4
MONTH	26.4	10.6	19.3	20.6	6.3	11.2	---	---	---	12.3	.8	7.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.8	6.1	7.4	10.5	3.7	6.9	---	---	---	27.6	20.4	24.0
2	9.9	4.5	7.3	11.0	8.9	9.9	---	---	---	28.5	21.5	24.8
3	11.1	6.0	8.5	15.0	8.7	11.6	---	---	---	26.9	22.0	24.5
4	12.0	7.2	9.7	16.1	11.2	13.5	---	---	---	24.5	20.5	21.9
5	13.0	7.2	10.2	16.7	10.5	13.6	---	---	---	25.7	18.8	21.9
6	13.6	9.5	11.5	15.9	12.5	14.2	---	---	---	27.4	20.2	23.8
7	13.0	9.0	11.1	17.0	11.7	14.3	---	---	---	25.0	21.0	22.0
8	15.1	12.1	13.4	15.4	10.5	12.3	---	---	---	26.5	18.9	22.5
9	13.3	7.4	10.1	11.2	8.5	10.0	---	---	---	28.6	21.9	25.1
10	8.9	5.2	7.1	11.2	8.9	10.3	---	---	---	28.9	22.8	25.8
11	9.9	5.6	7.6	15.5	10.7	12.7	22.4	15.7	18.9	28.6	22.6	25.5
12	11.5	7.7	9.4	17.5	11.7	14.4	22.5	15.2	18.8	28.6	23.9	26.3
13	13.8	10.7	12.1	18.3	12.0	15.0	22.8	---	20.2	29.5	23.2	26.5
14	14.6	11.8	13.3	---	---	---	26.7	19.9	22.9	29.2	23.6	26.6
15	11.8	8.2	9.5	---	---	---	25.6	20.8	23.3	30.3	23.4	26.8
16	10.6	6.8	8.6	---	---	---	23.9	18.8	21.3	31.3	23.9	27.6
17	11.3	6.0	8.7	---	---	---	19.3	14.9	15.9	32.0	25.4	28.8
18	11.5	6.9	9.1	---	---	---	18.4	13.6	15.6	32.0	24.7	28.5
19	14.7	8.2	11.3	---	---	---	22.5	15.0	18.6	29.5	25.5	27.3
20	16.8	10.6	13.7	---	---	---	24.5	18.9	21.5	29.2	---	---
21	14.5	10.3	12.1	---	---	---	25.7	21.1	23.1	25.8	20.1	22.6
22	11.3	8.8	10.0	---	---	---	23.8	21.0	22.4	---	---	---
23	11.3	9.5	10.2	---	---	---	23.0	16.6	20.0	27.6	19.8	23.9
24	14.2	11.2	12.4	---	---	---	23.9	16.6	20.2	27.4	21.2	24.6
25	14.6	10.1	12.2	---	---	---	25.1	17.1	21.2	27.8	21.3	24.6
26	15.7	11.8	13.7	---	---	---	25.7	18.8	22.3	29.4	22.0	25.6
27	14.2	8.5	12.7	---	---	---	25.8	18.7	22.3	29.8	24.9	27.2
28	8.5	4.0	5.2	---	---	---	24.6	18.9	22.0	27.6	23.5	24.6
29	---	---	---	---	---	---	25.8	18.9	22.3	25.2	22.6	23.6
30	---	---	---	---	---	---	26.2	19.9	22.7	30.7	22.5	26.2
31	---	---	---	---	---	---	---	---	---	30.4	24.7	27.4
MONTH	16.8	4.0	10.3	---	---	---	---	---	---	---	---	---

07311600 North Wichita River near Paducah, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.6	23.8	25.8	31.5	27.0	29.1	33.9	28.0	31.0	30.4	26.1	28.3
2	---	---	---	32.1	26.3	28.9	34.6	28.3	31.4	32.3	25.6	28.9
3	---	---	---	32.2	25.8	29.1	34.1	28.4	31.2	30.3	26.5	28.4
4	---	---	---	33.2	26.5	29.8	34.1	28.1	31.1	28.6	26.1	27.4
5	---	---	---	33.1	27.0	30.1	34.8	27.9	31.4	28.1	25.3	26.5
6	---	---	---	33.3	27.4	30.3	34.1	28.8	31.5	31.0	24.8	27.7
7	29.9	24.6	27.3	32.7	27.0	29.7	32.2	28.4	30.4	30.5	25.7	28.0
8	29.8	24.4	27.0	32.7	26.5	29.5	34.3	27.7	30.8	27.7	23.6	25.8
9	30.8	24.4	27.5	33.5	27.0	30.2	34.0	28.3	31.0	26.7	21.6	24.2
10	31.2	24.6	27.9	34.0	27.4	30.6	35.4	28.8	32.0	27.4	20.7	24.2
11	30.9	25.2	28.1	33.8	27.6	30.7	34.3	30.1	32.0	27.7	21.7	24.9
12	30.5	24.6	27.4	34.5	28.1	31.1	33.5	28.5	30.7	30.2	23.7	26.9
13	30.4	24.5	27.2	34.1	28.3	31.1	32.0	27.2	29.5	30.3	25.0	27.9
14	29.7	24.5	26.8	33.7	28.5	30.7	29.9	26.9	28.3	28.3	25.3	26.2
15	29.5	22.7	26.1	33.5	27.3	30.3	29.3	24.4	26.9	28.7	24.3	26.2
16	29.7	23.4	26.4	33.5	27.7	30.3	33.0	27.0	29.7	29.5	24.3	26.9
17	30.5	24.4	27.6	33.8	27.7	30.4	34.2	28.1	30.8	28.5	25.0	26.8
18	30.6	---	---	33.7	28.0	30.7	31.4	25.5	29.1	27.8	24.4	26.1
19	30.4	---	---	33.2	27.9	30.4	31.5	26.0	28.8	27.6	23.4	25.5
20	30.2	23.8	26.8	33.2	27.8	30.5	32.8	27.3	29.9	29.2	24.0	26.3
21	---	---	---	34.5	28.1	31.0	32.7	27.4	29.9	26.3	23.4	24.7
22	---	---	---	34.3	28.6	31.2	31.9	27.5	29.5	24.6	21.5	23.2
23	---	---	---	33.7	28.2	30.8	33.1	26.4	29.6	25.1	21.9	23.4
24	---	---	---	33.8	28.1	30.8	33.2	27.7	30.5	24.1	19.2	21.6
25	---	---	---	33.8	28.3	30.9	32.9	27.0	30.0	24.2	17.6	21.0
26	31.9	25.3	28.6	33.5	28.2	30.7	29.6	26.4	27.8	24.5	18.4	21.6
27	31.9	26.0	28.8	33.5	28.4	30.6	31.5	25.9	28.7	25.1	19.0	22.2
28	31.2	25.7	28.5	32.9	28.3	30.2	32.4	27.2	29.8	25.5	19.9	22.9
29	31.3	25.4	28.4	34.4	28.4	31.0	30.6	26.3	28.6	25.7	20.5	23.2
30	32.9	26.2	29.2	33.8	28.7	31.2	30.7	25.9	28.3	25.9	20.3	23.2
31	---	---	---	33.7	28.0	30.7	30.1	26.5	28.3	---	---	---
MONTH	---	---	---	34.5	25.8	30.4	35.4	24.4	30.0	32.3	17.6	25.3



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 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.--June 1994 to Sept. 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 except those for estimated daily discharges, which are poor. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	8.2	7.8	7.8	6.0	6.0	6.5	e5.2	4.8	4.9	4.7	3.8
2	5.8	7.8	7.8	7.7	5.8	6.0	6.6	5.4	4.8	4.6	4.9	3.8
3	6.0	44	7.9	7.6	5.7	6.0	6.5	5.5	4.8	e4.6	4.9	4.7
4	6.0	14	8.0	7.5	5.5	5.9	6.4	10	4.7	5.0	5.1	14
5	6.4	9.4	8.0	7.4	5.4	5.9	6.7	6.3	4.5	5.0	5.1	25
6	7.0	8.2	8.1	7.4	5.3	6.0	6.7	5.6	4.6	e5.2	4.9	5.8
7	7.1	8.7	8.1	7.6	5.2	6.0	6.6	e6.4	4.7	e5.3	5.1	4.3
8	6.3	10	8.1	7.7	5.2	11	6.6	5.0	4.8	e5.4	5.4	4.2
9	5.5	8.9	8.1	7.6	5.3	6.7	6.9	5.3	4.8	e5.3	5.0	4.2
10	5.5	8.3	8.2	8.2	5.1	5.7	7.4	5.4	4.9	5.2	5.0	4.2
11	5.4	8.2	8.1	8.1	5.1	5.7	7.1	5.2	4.9	5.2	5.1	4.2
12	5.4	8.0	8.1	7.9	5.1	5.5	6.8	5.2	4.7	5.4	5.2	4.3
13	5.8	8.0	8.3	7.9	5.2	5.6	6.8	5.3	4.8	5.3	13	4.3
14	6.2	8.1	e5.1	7.7	5.4	5.6	6.7	5.1	4.6	5.4	71	4.4
15	5.9	8.2	e6.5	7.7	5.4	6.0	6.7	5.1	4.8	5.5	28	4.5
16	5.8	8.3	7.7	8.0	5.3	6.1	6.7	5.1	4.8	4.9	5.6	4.3
17	6.0	8.3	7.9	8.1	5.2	6.2	6.4	5.0	4.9	5.0	e3.6	4.3
18	5.6	8.3	e5.9	8.1	5.2	6.7	6.5	4.8	5.0	5.1	e13	4.3
19	5.7	8.2	e6.7	8.0	5.2	6.5	6.4	12	5.0	5.2	5.3	e4.0
20	5.5	e5.8	7.1	8.0	5.2	6.6	6.2	4.7	5.1	7.6	4.4	e3.9
21	5.6	e6.4	7.2	8.0	5.2	6.7	6.3	4.6	5.2	5.0	4.3	e3.6
22	5.5	8.1	7.3	7.9	5.1	6.6	6.2	4.6	5.2	4.9	4.3	4.7
23	5.8	10	7.5	8.0	5.2	e4.9	5.8	4.5	6.6	4.9	4.3	4.9
24	6.5	24	7.5	7.8	5.3	e5.6	5.9	4.4	5.2	5.0	e3.3	4.9
25	76	8.2	7.6	e4.3	5.0	6.4	6.1	4.3	5.0	4.9	e3.2	5.1
26	30	7.9	e7.7	7.0	4.9	6.5	6.3	e3.9	5.1	5.0	3.9	5.2
27	10	7.8	7.8	7.2	5.6	6.7	5.8	13	5.1	4.9	e19	5.1
28	8.8	7.8	8.0	7.5	6.0	6.6	5.9	4.5	e20	5.1	e3.0	5.1
29	7.9	7.8	7.9	7.4	---	6.6	5.9	e3.7	4.7	5.1	e3.4	5.2
30	7.8	7.8	7.8	6.5	---	6.7	6.0	e3.4	4.9	4.8	e3.6	5.3
31	7.9	---	7.8	6.1	---	6.5	---	4.3	---	4.8	e3.6	---
TOTAL	290.5	302.7	235.6	233.7	149.1	195.5	193.4	172.8	163.0	159.5	260.2	165.6
MEAN	9.37	10.1	7.60	7.54	5.33	6.31	6.45	5.57	5.43	5.15	8.39	5.52
MAX	76	44	8.3	8.2	6.0	11	7.4	13	20	7.6	71	25
MIN	5.4	5.8	5.1	4.3	4.9	4.9	5.8	3.4	4.5	4.6	3.0	3.6
AC-FT	576	600	467	464	296	388	384	343	323	316	516	328

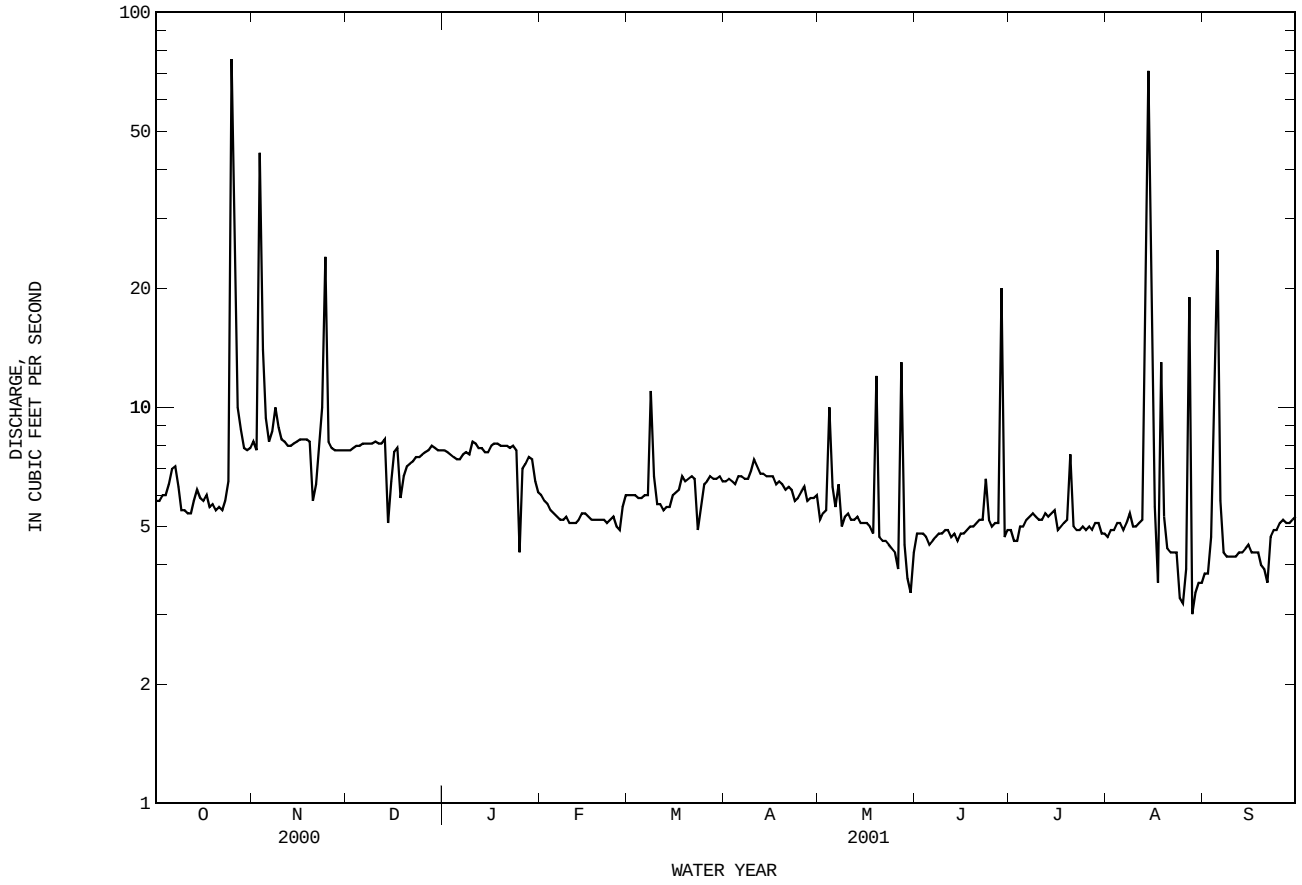
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001h, BY WATER YEAR (WY)

MEAN	6.93	6.67	6.50	6.45	6.18	8.81	6.78	7.09	6.15	6.34	6.86	6.28
MAX	9.37	10.1	8.22	7.54	7.58	24.1	7.77	11.5	7.59	8.25	9.65	8.57
(WY)	2001	2001	1998	2001	1997	2000	1999	1999	1997	1999	1994	1995
MIN	4.98	4.85	4.79	4.70	4.73	4.61	5.76	5.55	4.31	5.01	4.71	3.79
(WY)	2000	1999	1999	1995	1995	1995	1998	1998	1998	1998	1998	1999

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1994 - 2001h	
ANNUAL TOTAL	3130.0		2521.6			
ANNUAL MEAN	8.55		6.91		6.76	
HIGHEST ANNUAL MEAN					7.75	2000
LOWEST ANNUAL MEAN					6.20	1998
HIGHEST DAILY MEAN	514	Mar 23	76	Oct 25	514	Mar 23 2000
LOWEST DAILY MEAN	4.0	Mar 6	3.0	Aug 28	1.8	Sep 19 1999
ANNUAL SEVEN-DAY MINIMUM	4.3	Mar 4	3.7	Aug 28	3.5	Sep 18 1999
MAXIMUM PEAK FLOW			345	Aug 14	5630	Aug 2 1995
MAXIMUM PEAK STAGE			10.55	Aug 14	16.02	Aug 2 1995
ANNUAL RUNOFF (AC-FT)	6210		5000		4900	
10 PERCENT EXCEEDS	8.2		8.2		8.3	
50 PERCENT EXCEEDS	6.2		5.8		6.0	
90 PERCENT EXCEEDS	5.3		4.5		4.4	

e Estimated
h See PERIOD OF RECORD paragraph

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 current year.

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.--Records good. 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. The computation of the selected constituent loads might include estimated discharge or specific conductance data. New regression equations were developed based on data from water years 1993 to 2001. The standard error of estimate for dissolved solids is 3%, chloride is 4%, sulfate is 3% 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, 18,900 microsiemens/cm, May 26, 1996; minimum, 210 microsiemens/cm, May 10, 1999.
TEMPERATURE: Maximum, 35.0°C, July 9, 10, 1995; minimum, 0.0°C, Dec. 22, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 14,000 microsiemens/cm, July 10, 11, 12, 13, 26; minimum, 2,060 microsiemens/cm, Aug. 15.
WATER TEMPERATURE: Maximum, 33.4°C, Aug. 13; minimum, 1.1 °C, Dec. 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
18...	1345	5.6	12900	7.9	20.2	9.0	107	2400	2300	740	133	1920	17
NOV													
20...	1200	5.8	12300	7.6	9.2	10.4	96	2300	2200	720	133	1790	16
DEC													
20...	1145	6.9	11800	7.7	6.3	10.5	92	2500	2300	762	135	1850	16
JAN													
23...	1330	7.8	12000	7.4	9.3	11.0	103	2500	2300	766	142	2000	17
FEB													
06...	1415	5.3	12200	7.9	10.6	9.2	91	2400	2300	743	141	1950	17
MAR													
22...	1600	6.7	12100	7.9	23.1	8.2	107	2500	2300	755	145	1940	17
APR													
12...	1245	7.0	12400	7.9	17.4	9.6	111	2600	2500	817	146	2050	17
MAY													
24...	1230	4.5	12800	7.8	23.5	9.7	126	2500	2400	767	147	2090	18
JUN													
22...	1100	5.3	13100	7.9	26.6	8.5	116	2500	2400	760	148	2090	18
JUL													
05...	1130	5.3	13000	7.8	29.2	7.9	112	2500	2400	756	143	2050	18
AUG													
08...	1210	5.5	13400	8.0	27.2	7.6	105	2400	2300	738	142	2080	18
SEP													
19...	1155	4.6	12500	7.9	21.2	11.9	148	2500	2400	768	145	1980	17

07311630 Middle Wichita River near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	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, TOTAL (MG/L AS N) (00600)
OCT													
18...	11.3	142	2310	3050	.5	10.2	8260	19	.315	.014	.329	.196	.75
NOV													
20...	20.9	178	2280	2910	.5	12.6	7980	48	.772	.011	.783	.120	1.8
DEC													
20...	10.8	187	2300	2960	.5	12.3	8150	14	.850	.012	.862	.122	1.0
JAN													
23...	11.6	184	2280	2960	.5	10.5	8290	16	.817	.009	.826	.117	.99
FEB													
06...	11.1	178	2320	3000	.6	9.1	8280	11	.708	.014	.722	.092	.98
MAR													
22...	10.7	161	2310	3000	.5	6.9	8260	22	.452	.016	.468	.186	.87
APR													
12...	11.3	161	2350	3090	.5	9.2	8570	84	.417	.017	.434	.165	.89
MAY													
24...	12.7	150	2310	3140	.6	9.6	8570	11	--	--	--	--	--
JUN													
22...	11.7	113	2340	3180	.5	6.9	8610	<100	--	.011	E.033	.093	--
JUL													
05...	12.2	112	2360	3300	.5	6.9	8700	14	--	.013	E.034	.128	--
AUG													
08...	12.2	111	2300	3450	.6	7.0	8800	13	.046	.007	.053	.142	.50
SEP													
19...	10.8	158	2260	3110	<4.0	10	8390	10	.306	.011	.317	.291	.55

DATE	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)	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)	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)
OCT													
18...	.22	.42	<.060	<.060	<.018	M	<4.0	17.6	16.9	<.11	<.70	9	<2.0
NOV													
20...	.93	1.1	.070	<.060	<.018	<4	<4.0	20.9	17.8	<.33	<.42	<2	<1.6
DEC													
20...	.03	.15	<.060	<.060	<.018	<4	<4.0	17.3	E13.5	<.55	<.42	6	5.7
JAN													
23...	.04	.16	<.060	<.060	<.018	<4	<4.0	16.7	17.8	<.44	<.70	<2	<1.6
FEB													
06...	.17	.26	<.060	<.060	<.018	<4	<4.0	17.9	20.3	<.55	<.70	10	<2.4
MAR													
22...	.22	.40	<.060	<.060	<.018	<4	<4.0	22.7	20.0	<.33	<.42	<2	<1.6
APR													
12...	.29	.45	<.060	<.060	<.018	E3	1.5	28.6	19.3	<.17	.06	3	3.1
MAY													
24...	--	.34	<.060	--	--	<4	<4.0	21.3	22.4	<.30	<.40	<3	<2.4
JUN													
22...	.14	.24	<.060	<.060	<.020	<4	<1.0	20.5	22.3	.04	<.20	4	3.1
JUL													
05...	.26	.39	<.060	<.060	<.020	2	1.7	22.0	20.9	<.21	<.20	5	3.0
AUG													
08...	.30	.45	<.060	<.060	<.020	E3	E.2	22.4	20.3	<.21	<.11	E2	<1.6
SEP													
19...	--	.23	<.060	<.060	<.020	E3	<.9	22.0	21.5	<.07	<.20	<2	<1.6

07311630 Middle Wichita River near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT													
18...	<2.4	<1.3	<90	<50	<2	<2.00	9	E8.1	<.14	<.23	<4	<12.0	9.5
NOV													
20...	2.8	<3.9	180	<100	<3	<3.00	16	11.0	<.14	<.23	2	<7.20	11.0
DEC													
20...	<3.6	<3.9	<90	<200	1	<3.00	E5	<3.2	<.14	1.25	<5	<7.20	11.0
JAN													
23...	<3.6	<3.9	<90	<150	1	<3.00	E8	8.9	<.14	<.23	<5	<7.20	10.1
FEB													
06...	<3.6	<3.9	<90	<150	<3	<3.00	10	14.3	<.14	.51	<5	<7.20	8.5
MAR													
22...	<3.6	<3.9	210	<150	<3	<3.00	25	14.5	<.01	<.01	<5	<7.20	9.8
APR													
12...	7.2	13.1	490	<100	<5	.33	26	14.4	.01	<.01	30	<.03	15.9
MAY													
24...	<4.0	<4.0	120	<100	<3	<3.00	11	<32.0	<.01	<.03	<5	<7.00	7.0
JUN													
22...	5.0	16.1	120	<100	<1	<.50	14	14.7	<.01	<.01	23	<.40	13.4
JUL													
05...	12.3	13.3	150	<100	<6	<.50	16	15.5	<.01	<.01	22	<.40	13.8
AUG													
08...	5.4	16.9	110	<100	<6	.35	8	7.3	<.01	<.01	11	<.40	10.6
SEP													
19...	6.3	10.2	<10	<100	<2	<.40	16	12.9	<.01	<.01	10	3.01	13.1

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)
OCT													
18...	9.4	<.86	<.2	<93	<100	--	--	--	--	--	--	--	--
NOV													
20...	12.3	<1.29	<.5	<93	<200	--	--	--	--	--	--	--	--
DEC													
20...	10.4	<1.29	<.5	<93	<400	--	--	--	--	--	--	--	--
JAN													
23...	10.1	<1.29	<.5	<93	<300	--	--	--	--	--	--	--	--
FEB													
06...	10.0	<1.29	<.5	<93	<300	--	--	--	--	--	--	--	--
MAR													
22...	11.3	<1.72	<.5	<93	<300	--	--	--	--	--	--	--	--
APR													
12...	12.6	<.25	<1.0	13	13	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
MAY													
24...	8.3	<1.29	<.5	<93	<200	--	--	--	--	--	--	--	--
JUN													
22...	13.1	<.05	<6.0	14	17	--	--	--	--	--	--	--	--
JUL													
05...	13.1	<.30	<6.0	7	14	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
AUG													
08...	11.7	<.30	<6.0	<6	11	--	--	--	--	--	--	--	--
SEP													
19...	11.3	<.10	<5.0	7	<10	--	--	--	--	--	--	--	--

07311630 Middle Wichita River near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)
OCT													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	88	<2	<.1	<.03	78	<.04
MAY													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
05...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	111	<2	<.1	<.03	119	<.04
AUG													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT							
18...	--	--	--	--	--	--	--
NOV							
20...	--	--	--	--	--	--	--
DEC							
20...	--	--	--	--	--	--	--
JAN							
23...	--	--	--	--	--	--	--
FEB							
06...	--	--	--	--	--	--	--
MAR							
22...	--	--	--	--	--	--	--
APR							
12...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
24...	--	--	--	--	--	--	--
JUN							
22...	--	--	--	--	--	--	--
JUL							
05...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
AUG							
08...	--	--	--	--	--	--	--
SEP							
19...	--	--	--	--	--	--	--

07311630 Middle Wichita River near Guthrie, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	290.5	10190	7260	5700	2500	1990	2100	1660	2300
NOV.	2000	302.7	10690	7640	6240	2700	2180	2200	1830	2400
DEC.	2000	235.6	11670	8150	5190	2900	1860	2300	1460	2500
JAN.	2001	233.7	11580	8110	5120	2900	1830	2300	1450	2500
FEB.	2001	149.1	11540	8090	3260	2900	1170	2300	923	2500
MAR.	2001	195.5	10790	7710	4070	2700	1420	2300	1190	2400
APR.	2001	193.4	11910	8270	4320	3000	1570	2300	1200	2500
MAY	2001	172.8	11550	8080	3770	2900	1350	2300	1060	2500
JUNE	2001	163	12070	8340	3670	3000	1340	2300	1010	2500
JULY	2001	159.5	13380	8920	3840	3400	1470	2300	988	2500
AUG.	2001	260.2	9380	6770	4760	2300	1630	2000	1420	2200
SEPT	2001	165.6	10370	7430	3320	2600	1150	2200	977	2300
TOTAL		2521.6	**	**	53240	**	18970	**	15180	**
WTD.AVG.		6.9	11120	7820	**	2800	**	2200	**	2400

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13000	12900	12900	11100	10900	11000	11500	11300	11400	11700	11600	11600
2	13000	12900	12900	11300	11000	11100	11600	11400	11500	11600	11600	11600
3	13000	12900	13000	11300	7690	9560	11600	11400	11500	11700	11500	11600
4	13000	12900	12900	8490	7020	7810	11600	11500	11500	11500	11300	11500
5	13000	12900	12900	9350	8490	8900	11600	11500	11500	11500	11400	11500
6	13000	12500	12800	9860	9350	9590	11700	11500	11500	11500	11400	11400
7	13100	12800	12900	10300	9860	10100	11800	11500	11600	11500	11300	11500
8	12900	12700	12800	10400	10200	10300	11700	11500	11600	11600	11300	11500
9	13000	12800	12900	10600	10300	10400	11800	11600	11700	11600	11400	11600
10	13000	12600	12900	10900	10600	10700	11700	11600	11700	11500	11100	11400
11	13000	12900	13000	11100	10800	10900	11900	11700	11700	11200	11000	11100
12	13000	12900	13000	11400	11100	11200	12000	11800	11900	11600	11200	11400
13	13000	12900	12900	11600	11400	11500	12000	11800	11900	11700	11500	11600
14	13000	12700	12900	11800	11500	11700	12000	11900	12000	11800	11400	11700
15	12800	12700	12700	11900	11700	11800	12100	12000	12000	11900	11400	11700
16	12800	12600	12700	12100	11800	11900	12100	12000	12100	11800	11500	11700
17	13000	12800	12900	12200	12000	12100	12200	12100	12100	11600	11400	11500
18	13000	12800	12900	12300	12100	12200	---	---	e12300	11800	11300	11600
19	12900	12800	12800	12400	12200	12300	---	---	e12100	11900	11600	11800
20	12900	12600	12800	12800	12200	12400	---	---	e11800	12000	11500	11900
21	12700	12300	12600	12700	12400	12500	11700	11500	11600	12000	11900	12000
22	12500	12200	12400	12800	12600	12700	11800	11600	11700	12100	11800	12000
23	12400	12100	12200	12800	12400	12700	11600	11500	11600	12100	11800	12000
24	12400	12100	12300	12400	7330	9210	11600	11500	11500	12000	11800	11900
25	12200	2990	7140	11000	9860	10600	11600	11500	11600	12000	11600	11800
26	8440	4010	6360	11300	11000	11100	---	---	e11400	11600	11300	11400
27	9600	7050	8350	11400	11200	11300	11200	11100	11100	11600	11400	11500
28	9480	8450	8730	11400	11200	11300	11600	11200	11500	11500	10800	11200
29	10600	9300	10100	11400	11200	11300	11600	11500	11500	11200	10900	11000
30	10800	10600	10700	11400	11300	11400	11600	11500	11600	11600	11000	11300
31	11000	10800	10900	---	---	---	11600	11600	11600	11900	11600	11700
MONTH	13100	2990	11900	12800	7020	11100	---	---	11700	12100	10800	11600

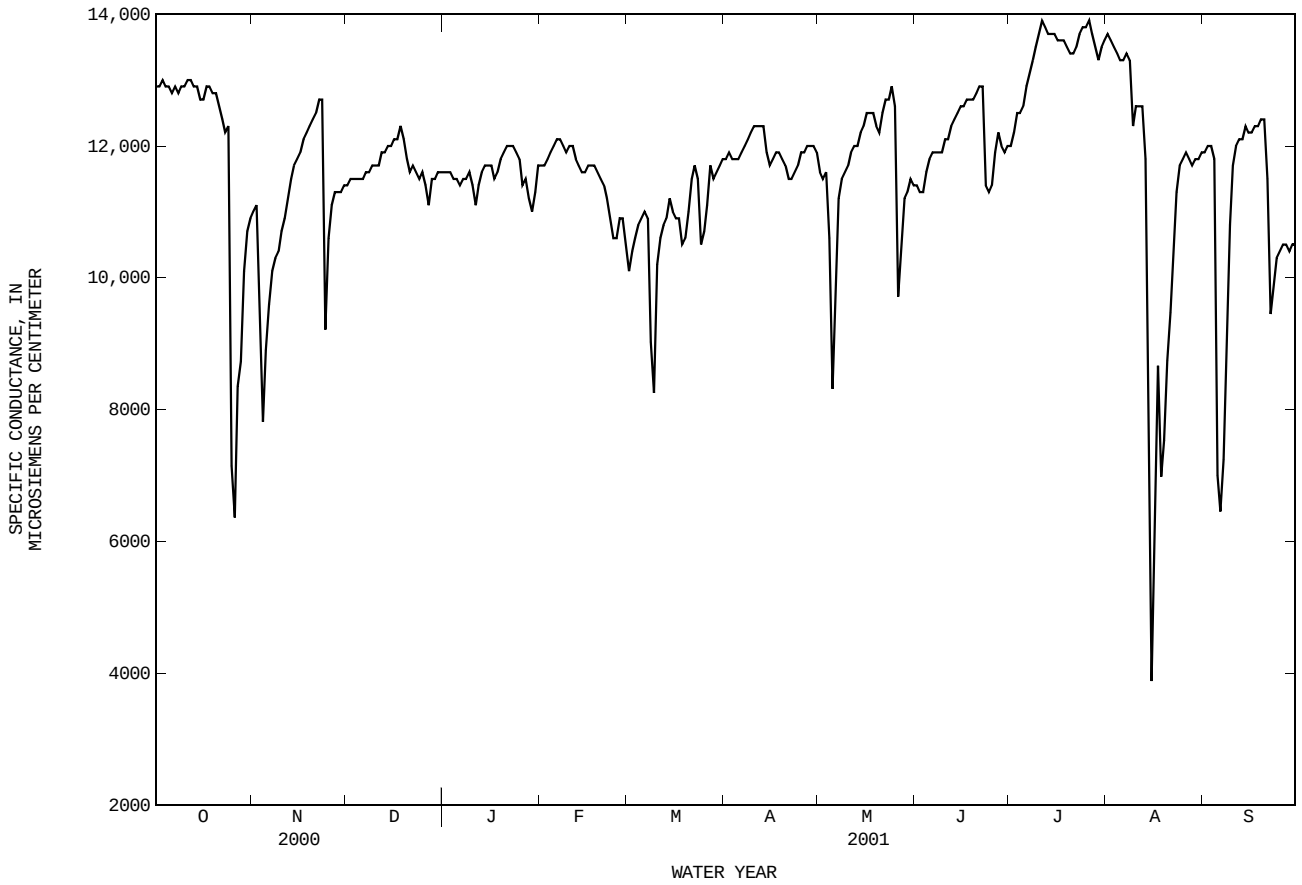
07311630 Middle Wichita River near Guthrie, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11800	11600	11700	10300	10000	10100	11900	11700	11800	12000	10500	11600
2	11800	11700	11700	10600	10300	10400	11900	11800	11900	11600	11200	11500
3	11900	11800	11800	10800	10500	10600	11900	11600	11800	11700	11500	11600
4	12000	11900	11900	10900	10600	10800	11900	11800	11800	11700	8790	10600
5	12100	12000	12000	11000	10800	10900	11900	11800	11800	9510	7080	8310
6	12200	12100	12100	11000	10900	11000	11900	11900	11900	10800	8730	9890
7	12200	12100	12100	11000	10900	10900	12100	11800	12000	11600	10800	11200
8	12100	11700	12000	11000	5160	9020	12200	12000	12100	11500	11400	11500
9	11900	11800	11900	9510	5430	8250	12400	12100	12200	11700	11500	11600
10	12200	11800	12000	10600	9450	10200	12400	12200	12300	11900	11600	11700
11	12200	11800	12000	10900	10400	10600	12400	12200	12300	12000	11900	11900
12	11800	11700	11800	11000	10400	10800	12400	12300	12300	12000	12000	12000
13	11800	11600	11700	11200	10700	10900	12300	12100	12300	12100	12000	12000
14	11700	11600	11600	11400	11000	11200	12100	11800	11900	12300	12100	12200
15	11600	11600	11600	11300	10800	11000	11800	11700	11700	12500	12200	12300
16	11800	11500	11700	11400	10600	10900	11800	11700	11800	12600	12400	12500
17	11800	11700	11700	11100	10800	10900	12000	11800	11900	12600	12500	12500
18	11800	11600	11700	10800	10400	10500	12000	11900	11900	12600	12500	12500
19	11600	11500	11600	10800	10400	10600	12000	11700	11800	12700	11900	12300
20	11500	11500	11500	11500	10400	11000	11700	11600	11700	12400	12000	12200
21	11500	11300	11400	11800	11100	11500	11700	11500	11500	12700	12400	12500
22	11400	11000	11200	12100	11300	11700	11600	11400	11500	12900	12600	12700
23	11000	10700	10900	11800	11200	11500	11600	11500	11600	12900	12600	12700
24	10700	10400	10600	11200	7640	10500	12000	11500	11700	13200	12600	12900
25	10700	10400	10600	11100	10400	10700	12000	11800	11900	12800	12300	12600
26	11000	10700	10900	11600	10700	11100	12000	11900	11900	12400	8500	9710
27	11000	10800	10900	11800	11600	11700	12000	11900	12000	10800	9260	10400
28	10800	10100	10500	11600	11400	11500	12100	12000	12000	11300	10800	11200
29	---	---	---	11800	11300	11600	12100	11900	12000	11500	11200	11300
30	---	---	---	11800	11500	11700	12000	11900	11900	11700	11300	11500
31	---	---	---	11800	11700	11800	---	---	---	11400	11300	11400
MONTH	12200	10100	11500	12100	5160	10800	12400	11400	11900	13200	7080	11600

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11400	11300	11400	12100	11900	12000	13800	13600	13700	12000	11900	11900
2	11400	11200	11300	12400	12000	12200	13700	13500	13600	12000	12000	12000
3	11500	11300	11300	---	---	e12500	13600	13400	13500	12000	12000	12000
4	11800	11500	11600	12700	12400	12500	13500	13300	13400	12000	9810	11800
5	11900	11800	11800	12900	12400	12600	13400	13200	13300	9860	6260	7000
6	11900	11800	11900	---	---	e12900	13500	13200	13300	6710	6300	6450
7	11900	11800	11900	---	---	e13100	13600	13300	13400	7930	6710	7240
8	11900	11800	11900	---	---	e13300	13500	12600	13300	9990	7930	8970
9	12000	11900	11900	---	---	e13500	12600	11600	12300	11400	9990	10800
10	12100	12000	12100	14000	13500	13700	12700	12500	12600	12000	11400	11700
11	12200	12000	12100	14000	13700	13900	12700	12600	12600	12100	11900	12000
12	12400	12200	12300	14000	13700	13800	12700	12500	12600	12200	12000	12100
13	12500	12400	12400	14000	13600	13700	12600	10900	11800	12300	12000	12100
14	12500	12400	12500	13900	13600	13700	11900	2610	7120	12300	12200	12300
15	12600	12500	12600	13900	13600	13700	5620	2060	3880	12200	12000	12200
16	12700	12500	12600	13800	13500	13600	7710	5620	6630	12300	12000	12200
17	12700	12600	12700	13700	13500	13600	9080	7710	8660	12400	12200	12300
18	12700	12600	12700	13700	13400	13600	9060	4790	6980	12400	12200	12300
19	12800	12600	12700	13700	13400	13500	8660	5360	7530	12500	12300	12400
20	12900	12800	12800	13600	13200	13400	8980	8660	8740	---	---	e12400
21	12900	12800	12900	13600	13200	13400	10000	8980	9470	---	---	e11500
22	13200	12500	12900	13700	13300	13500	10900	10000	10500	9650	9000	9450
23	12500	10500	11400	13900	13500	13700	11600	10900	11300	10100	9650	9920
24	11500	11100	11300	13900	13700	13800	11900	11600	11700	10300	10100	10300
25	11600	11100	11400	13900	13700	13800	11800	11700	11800	10500	10300	10400
26	12200	11600	11900	14000	13700	13900	12000	11800	11900	10500	10400	10500
27	12200	12100	12200	13900	13500	13700	12000	11700	11800	10500	10400	10500
28	12200	11600	12000	13700	13400	13500	---	---	e11700	10500	10400	10400
29	12000	11700	11900	13500	13300	13300	11800	11700	11800	10500	10400	10500
30	12000	11800	12000	13600	13400	13500	11800	11800	11800	10500	10500	10500
31	---	---	---	13800	13500	13600	11900	11900	11900	---	---	---
MONTH	13200	10500	12100	---	---	13400	---	---	11100	---	---	10900

e Estimated



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.9	19.2	20.2	21.6	15.5	18.9	12.8	8.9	10.7	4.7	3.6	4.2
2	22.7	20.1	21.3	19.3	12.6	16.0	8.9	6.4	7.6	3.6	2.7	3.4
3	24.0	21.4	22.3	16.5	15.1	15.7	8.6	6.5	7.4	4.8	2.5	3.5
4	24.4	22.3	23.2	15.8	14.8	15.3	9.0	6.8	8.0	7.3	4.4	6.2
5	24.6	22.3	23.6	19.6	15.6	17.3	9.8	8.2	8.9	8.7	6.8	8.0
6	22.3	16.2	19.4	17.8	13.1	15.6	11.4	7.7	9.3	9.2	7.7	8.4
7	16.2	11.9	13.7	13.1	5.7	9.2	11.6	5.8	8.5	9.3	7.7	8.6
8	12.4	11.0	11.6	8.8	4.0	6.7	12.1	7.8	9.5	8.6	6.2	7.6
9	13.9	10.9	12.1	13.5	6.5	9.6	12.7	7.2	9.5	8.3	6.1	7.3
10	14.8	11.8	13.2	15.1	7.9	11.1	12.3	8.5	10.1	8.8	6.9	8.3
11	16.3	13.3	14.8	16.9	11.2	13.5	10.3	3.8	7.6	9.7	8.5	8.9
12	17.4	15.3	16.8	12.4	8.2	10.5	3.8	1.6	5.8	9.5	8.4	9.0
13	19.3	17.3	18.6	11.9	5.8	8.4	7.3	1.1	3.7	10.8	8.5	9.9
14	20.7	19.0	19.8	12.1	5.3	8.4	6.7	3.5	4.9	10.3	8.6	9.9
15	21.6	20.0	20.7	11.9	8.4	10.1	8.2	5.0	6.5	8.8	7.9	8.5
16	21.9	20.7	21.2	12.9	7.6	10.0	9.1	7.7	8.6	9.2	7.6	8.5
17	21.4	19.5	20.7	10.4	5.8	8.1	7.7	5.5	6.9	7.6	4.9	6.2
18	20.6	18.8	19.5	11.3	7.8	9.3	7.6	4.5	6.2	6.1	4.8	5.3
19	20.4	18.7	19.3	12.7	6.5	9.2	6.9	4.1	6.0	6.5	4.9	5.7
20	20.4	18.8	19.6	11.5	5.9	8.1	6.9	4.7	5.8	6.3	4.4	5.3
21	21.0	19.7	20.4	8.4	3.4	6.7	6.5	4.5	5.9	7.1	4.4	5.8
22	21.6	19.8	20.6	10.5	8.0	9.4	5.6	4.1	4.8	8.3	5.9	7.0
23	22.5	21.3	21.7	12.9	10.5	11.8	6.4	4.3	5.5	10.2	7.3	9.3
24	21.8	21.0	21.5	12.9	10.1	11.4	6.5	4.7	5.6	11.2	9.8	10.8
25	21.4	18.1	19.4	13.6	9.3	11.3	---	---	---	9.8	8.0	9.1
26	22.3	17.7	19.4	13.2	7.4	10.1	---	---	---	9.8	7.6	8.5
27	23.4	18.8	20.8	13.0	8.2	10.3	---	---	---	9.1	---	---
28	22.4	17.8	20.3	13.5	7.8	10.3	3.9	2.2	3.1	---	4.2	4.8
29	21.1	15.0	17.7	12.9	8.1	10.1	6.0	3.1	4.9	7.2	4.6	5.8
30	21.3	14.1	17.7	12.9	6.9	9.6	5.6	4.0	5.2	8.7	6.4	7.8
31	20.7	18.2	19.2	---	---	---	5.5	4.0	4.8	9.2	7.3	8.2
MONTH	24.6	10.9	19.0	21.6	3.4	11.1	---	---	---	---	---	---

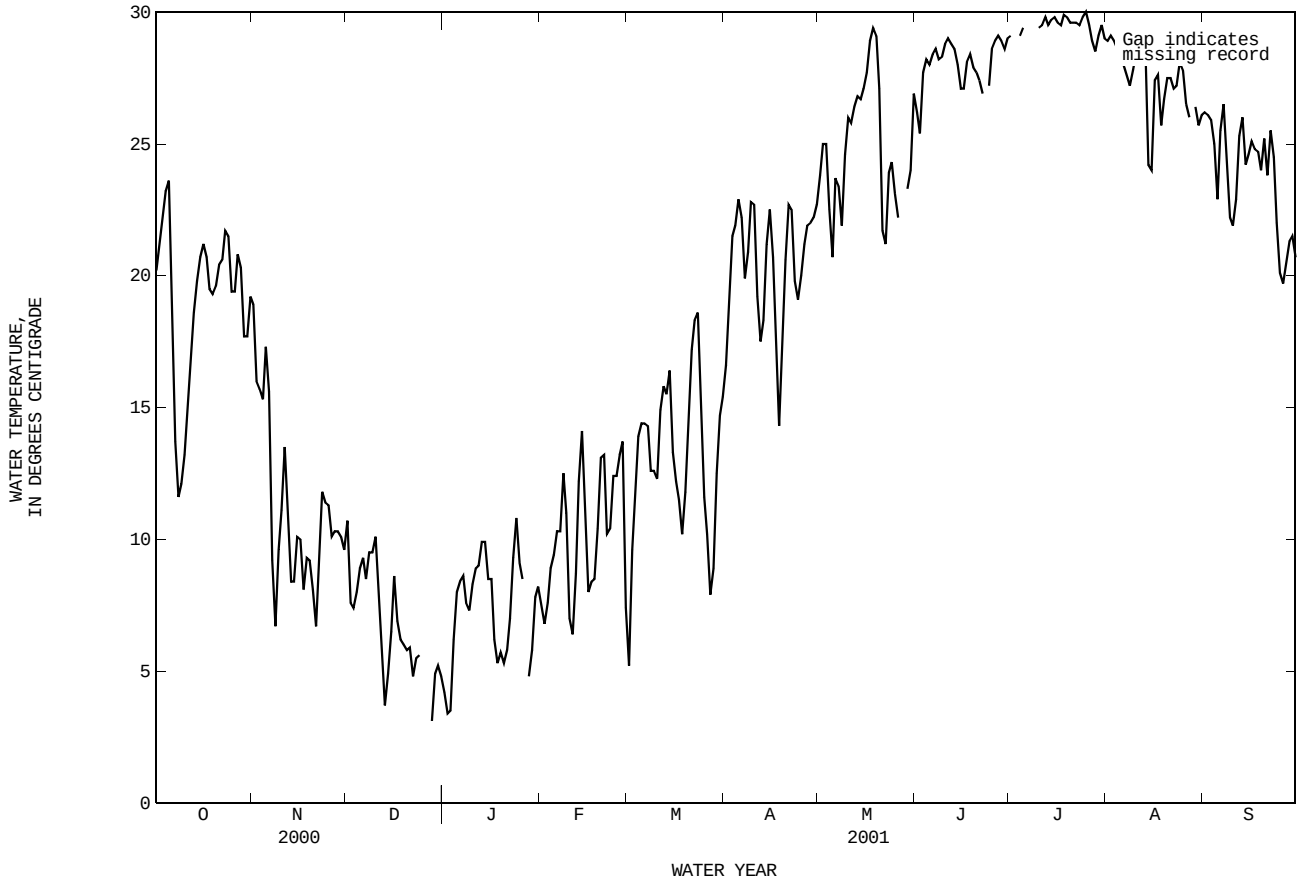
07311630 Middle Wichita River near Guthrie, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.2	6.0	7.5	8.1	3.6	5.2	17.9	15.9	16.6	26.0	22.4	23.8
2	7.9	5.8	6.8	10.2	8.1	9.6	21.6	17.5	19.4	26.7	23.8	25.0
3	8.7	6.1	7.6	13.1	10.2	11.4	22.2	20.8	21.5	25.6	24.0	25.0
4	10.0	7.5	8.9	15.1	13.1	13.9	24.1	20.6	21.9	24.0	20.4	22.5
5	10.6	8.5	9.4	15.9	13.6	14.4	23.9	22.2	22.9	23.1	18.3	20.7
6	11.2	9.4	10.3	15.1	13.8	14.4	22.8	20.4	22.2	26.0	22.1	23.7
7	11.0	9.8	10.3	15.0	13.7	14.3	21.2	18.9	19.9	24.7	21.8	23.4
8	13.9	10.4	12.5	15.0	10.0	12.6	22.7	19.1	20.9	23.7	20.4	21.9
9	13.2	8.1	11.0	17.1	9.8	12.6	24.1	21.9	22.8	26.2	23.4	24.6
10	8.1	5.4	7.0	14.0	10.5	12.3	23.4	21.7	22.7	27.1	25.0	26.0
11	7.4	5.3	6.4	20.2	11.8	14.9	21.7	17.2	19.2	27.5	25.1	25.8
12	10.4	6.5	8.7	21.5	11.6	15.8	18.5	16.7	17.5	27.4	25.3	26.4
13	13.7	10.4	12.2	20.9	11.0	15.5	19.8	17.4	18.3	28.2	25.9	26.8
14	14.6	12.7	14.1	21.0	13.3	16.4	22.9	19.2	21.2	28.3	25.7	26.7
15	12.7	8.4	10.9	17.5	10.2	13.3	23.4	21.2	22.5	28.8	26.1	27.1
16	8.8	7.4	8.0	18.4	7.6	12.2	21.8	19.4	20.7	29.3	26.4	27.7
17	9.8	7.4	8.4	13.8	9.8	11.5	19.5	14.4	17.1	30.4	27.8	28.9
18	9.7	7.4	8.5	10.8	9.6	10.2	15.7	13.2	14.3	30.5	28.2	29.4
19	12.5	8.6	10.4	15.5	9.8	11.8	19.1	14.6	17.0	32.2	25.7	29.1
20	13.9	12.1	13.1	21.5	8.4	14.2	22.1	19.1	20.6	32.0	23.6	27.1
21	14.2	11.2	13.2	23.8	12.2	17.2	23.7	21.6	22.7	26.2	18.0	21.7
22	---	9.4	10.2	23.3	14.3	18.3	23.1	20.9	22.5	28.8	14.4	21.2
23	11.1	9.4	10.4	24.6	14.2	18.6	20.9	18.9	19.8	31.2	17.5	23.9
24	13.4	11.1	12.4	18.9	12.5	15.5	20.2	18.1	19.1	29.8	19.9	24.3
25	12.7	11.8	12.4	12.5	11.0	11.6	21.8	18.7	20.0	29.2	18.4	23.1
26	14.4	11.8	13.2	11.4	8.5	10.2	22.8	20.0	21.2	25.6	19.2	22.2
27	15.0	11.1	13.7	8.5	7.4	7.9	23.7	20.8	21.9	---	---	---
28	11.1	3.9	7.4	10.6	7.3	8.9	23.4	21.1	22.0	---	23.0	---
29	---	---	---	14.4	10.6	12.5	23.7	21.2	22.2	26.3	22.0	23.3
30	---	---	---	15.7	13.7	14.7	24.4	21.8	22.7	26.9	21.0	24.0
31	---	---	---	16.5	14.6	15.4	---	---	---	27.9	25.9	26.9
MONTH	---	3.9	10.2	24.6	3.6	13.1	24.4	13.2	20.4	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.1	24.6	26.2	29.6	28.7	29.1	30.8	27.7	28.9	26.6	25.8	26.2
2	27.6	23.8	25.4	---	---	---	31.1	28.0	29.1	26.9	25.3	26.1
3	29.0	26.2	27.7	---	---	---	30.6	27.9	28.9	26.5	25.5	25.9
4	30.1	26.8	28.2	31.1	27.7	29.1	30.3	27.4	28.6	25.9	22.9	25.0
5	29.9	26.5	28.0	31.2	28.2	29.4	29.8	27.0	28.3	25.2	21.5	22.9
6	29.5	27.4	28.4	---	---	---	28.8	27.2	28.0	30.8	21.8	25.5
7	28.9	28.2	28.6	---	---	---	28.4	26.8	27.6	31.2	23.2	26.5
8	28.7	27.7	28.2	---	---	---	29.0	25.9	27.2	28.3	20.7	24.1
9	29.4	27.4	28.3	---	---	---	29.5	26.3	27.8	26.4	19.1	22.2
10	30.7	27.4	28.8	31.6	28.1	29.4	30.1	27.1	28.4	27.7	17.1	21.9
11	30.6	27.9	29.0	31.5	28.3	29.5	30.4	28.4	28.9	27.8	18.9	22.9
12	30.4	27.7	28.8	31.7	28.6	29.8	29.1	27.9	28.5	30.6	21.3	25.3
13	30.1	27.7	28.6	30.2	28.8	29.5	33.4	24.3	28.5	31.1	22.0	26.0
14	29.2	27.3	28.0	30.5	29.1	29.7	28.1	21.9	24.2	26.0	22.3	24.2
15	28.7	25.9	27.1	31.5	28.4	29.8	28.0	21.4	24.0	28.5	22.4	24.6
16	29.1	25.6	27.1	31.2	28.5	29.6	32.7	24.0	27.4	29.1	22.1	25.1
17	29.8	26.9	28.1	31.5	28.1	29.5	31.4	24.5	27.6	28.1	22.4	24.8
18	30.0	27.2	28.4	31.7	28.7	29.9	28.1	21.7	25.7	28.3	22.2	24.7
19	29.8	26.6	27.9	31.7	28.7	29.8	32.1	22.6	26.7	28.5	20.3	24.0
20	29.7	26.6	27.7	31.2	28.6	29.6	32.5	23.6	27.5	31.2	22.2	25.2
21	28.1	26.6	27.4	31.4	28.5	29.6	31.8	24.1	27.5	27.8	19.8	23.8
22	27.9	26.2	26.9	31.3	28.5	29.6	30.9	24.2	27.1	27.2	24.6	25.5
23	27.3	---	---	31.4	28.4	29.5	32.6	23.2	27.2	25.0	23.3	24.5
24	29.3	25.5	27.2	31.7	28.6	29.8	32.6	24.5	28.1	23.3	20.8	22.0
25	30.5	27.3	28.6	31.7	29.0	30.0	28.9	24.7	27.8	21.5	18.9	20.1
26	30.7	27.8	28.9	30.7	28.7	29.5	27.6	25.9	26.5	21.1	18.7	19.7
27	30.7	28.0	29.1	30.3	28.3	28.9	29.0	24.9	26.0	21.9	19.4	20.5
28	32.1	27.8	28.9	30.2	27.8	28.5	---	---	---	22.9	20.2	21.3
29	30.4	27.4	28.6	31.2	27.9	29.1	27.4	25.6	26.4	22.7	20.7	21.5
30	30.4	27.9	29.0	31.0	28.5	29.5	26.3	25.4	25.7	21.3	20.2	20.7
31	---	---	---	30.7	27.8	29.0	26.5	25.8	26.1	---	---	---
MONTH	32.1	---	---	---	---	---	---	---	---	31.2	17.1	23.8

07311630 Middle Wichita River near Guthrie, TX--Continued



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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 Sept. 1919; the next highest flood occurred in May 1954, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

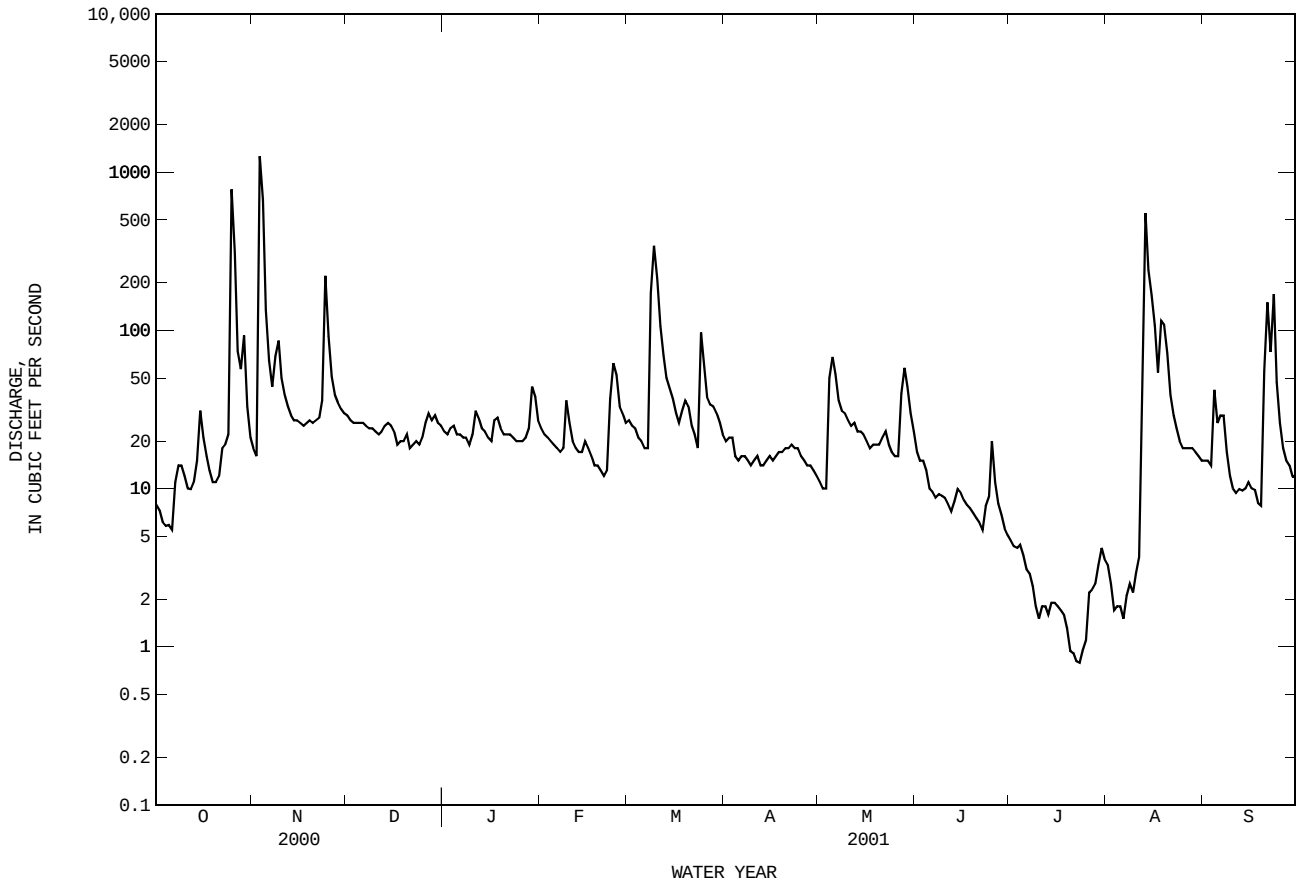
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	18	29	23	24	27	20	11	17	4.7	3.3	15
2	7.3	16	27	22	22	25	21	10	15	4.3	2.5	15
3	6.1	1260	26	24	21	24	21	10	15	4.2	1.7	14
4	5.8	666	26	25	20	21	16	50	13	4.4	1.8	42
5	5.9	134	26	22	19	20	15	68	10	3.8	1.8	26
6	5.5	65	26	22	18	18	16	53	9.5	3.1	1.5	29
7	11	44	25	21	17	18	16	36	8.8	2.9	2.1	29
8	14	69	24	21	18	172	15	31	9.2	2.4	2.5	17
9	14	86	24	19	36	343	14	30	9.0	1.8	2.2	12
10	12	50	23	22	26	214	15	27	8.7	1.5	2.9	10
11	10	39	22	31	20	107	16	25	8.0	1.8	3.7	9.4
12	9.9	33	23	28	18	69	14	26	7.2	1.8	18	9.9
13	11	29	25	24	17	50	14	23	8.3	1.6	550	9.7
14	15	27	26	23	17	43	15	23	9.9	1.9	241	10
15	31	27	25	21	20	37	16	22	9.4	1.9	168	11
16	21	26	23	20	18	30	15	20	8.5	1.8	108	10
17	16	25	19	27	16	26	16	18	7.9	1.7	54	9.8
18	13	26	20	28	14	31	17	19	7.5	1.6	115	8.1
19	11	27	20	24	14	36	17	19	7.0	1.3	109	7.8
20	11	26	22	22	13	33	18	19	6.5	.94	72	55
21	12	27	18	22	12	25	18	21	6.1	.91	39	150
22	18	28	19	22	13	22	19	23	5.5	.81	29	73
23	19	36	20	21	37	18	18	19	7.8	.79	24	169
24	22	221	19	20	62	97	18	17	8.9	.95	20	47
25	776	92	21	20	52	59	16	16	20	1.1	18	26
26	312	51	26	20	33	38	15	16	11	2.2	18	18
27	74	39	30	21	30	34	14	40	8.0	2.3	18	15
28	57	35	27	24	26	33	14	58	6.8	2.5	18	14
29	93	32	29	44	---	30	13	44	5.6	3.3	17	12
30	33	30	26	38	---	26	12	30	5.1	4.2	16	12
31	21	---	25	27	---	22	---	23	---	3.6	15	---
TOTAL	1675.4	3284	741	748	653	1748	484	847	280.2	72.10	1693.0	885.7
MEAN	54.0	109	23.9	24.1	23.3	56.4	16.1	27.3	9.34	2.33	54.6	29.5
MAX	776	1260	30	44	62	343	21	68	20	4.7	550	169
MIN	5.5	16	18	19	12	18	12	10	5.1	.79	1.5	7.8
AC-FT	3320	6510	1470	1480	1300	3470	960	1680	556	143	3360	1760

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001, BY WATER YEAR (WY)

MEAN	100	32.6	27.6	24.9	29.2	37.9	51.1	114	150	46.0	79.2	98.9
MAX	1170	109	120	68.5	149	162	340	771	737	317	1266	818
(WY)	1984	2001	1992	1992	1992	2000	1997	1987	1995	1975	1966	1965
MIN	3.90	10.4	11.8	8.23	6.16	5.49	7.61	16.4	9.34	.72	1.17	3.51
(WY)	1964	1968	1964	1965	1965	1965	1964	1965	2001	1964	1964	1968

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001	
ANNUAL TOTAL	18140.6		13111.40			
ANNUAL MEAN	49.6		35.9		65.7	
HIGHEST ANNUAL MEAN					193	1966
LOWEST ANNUAL MEAN					17.2	1983
HIGHEST DAILY MEAN	2470	Mar 23	1260	Nov 3	19400	Sep 19 1965
LOWEST DAILY MEAN	3.2	Sep 20	.79	Jul 23	.02	Aug 22 1974
ANNUAL SEVEN-DAY MINIMUM	3.8	Sep 15	.97	Jul 19	.13	Jul 30 1965
MAXIMUM PEAK FLOW			1970	Nov 3	28900	Sep 19 1965
MAXIMUM PEAK STAGE			14.43	Nov 3	21.96	Sep 19 1965
ANNUAL RUNOFF (AC-FT)	35980		26010		47570	
10 PERCENT EXCEEDS	50		52		66	
50 PERCENT EXCEEDS	20		20		20	
90 PERCENT EXCEEDS	5.2		3.8		7.5	

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, July 1968 to Dec. 1989, Sept. 1990 to June 1992, Oct. 1994 to current year.
BIOCHEMICAL DATA: Sept. 1990 to current year.
PESTICIDE DATA: Sept. 1996 to current year.
SEDIMENT DATA: Apr. 1978 to Dec. 1989.

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

INSTRUMENTATION.--Water-quality monitor July 1968 to Dec. 1989, Sept. 1990 to June 1992, Oct. 1994 to current year.

REMARKS.--Records fair. 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. The computation of the selected constituent loads might include estimated discharge or specific conductance data. New regression equations were developed based on data from water years 1992 to 2001. The standard error of estimate for dissolved solids is 6%, chloride is 13%, sulfate is 9% and for hardness is 10%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 35,800 microsiemens/cm, Oct. 9, 1982; minimum, 400 microsiemens/cm, June 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, 32,400 microsiemens/cm, Aug. 1; minimum, 857 microsiemens/cm, Nov. 3.
WATER TEMPERATURE: Maximum, 38.9°C, July 27; minimum, 0.1°C, Dec. 12, 29.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
05...	1410	8.8	25500	8.5	21.8	9.5	123	3100	3100	843	240	4470	35
NOV													
13...	1155	29	12400	8.1	7.6	12.9	117	2000	1800	559	136	2020	20
DEC													
20...	1330	22	11800	7.7	6.7	10.9	97	2700	2500	775	174	3090	26
JAN													
22...	1250	22	16100	7.2	6.6	11.7	103	2600	2500	753	185	2930	25
FEB													
26...	1345	34	11800	7.9	13.8	10.1	106	2200	2100	596	180	2050	19
MAR													
26...	1315	44	8760	8.1	7.9	10.7	97	1800	1700	479	149	1350	14
APR													
24...	1300	18	18300	7.9	20.2	8.6	104	3000	2900	835	214	3450	28
MAY													
31...	1452	23	22200	7.8	30.3	--	--	3000	3000	880	201	4220	33
JUN													
13...	1220	8.6	16700	8.0	28.4	7.7	111	2600	2500	737	184	2930	25
JUL													
31...	1310	2.8	31600	8.5	33.9	9.2	152	4500	4400	1280	307	6140	40
AUG													
08...	0955	2.5	30700	8.3	27.0	7.6	110	4200	4200	1210	288	5930	40
SEP													
12...	1310	11	19400	7.7	29.1	7.0	101	2900	2900	850	193	3650	29

07311700 North Wichita River near Truscott, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	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, TOTAL (MG/L AS N) (00600)
OCT													
05...	20.0	40	3220	7620	.5	<.5	16400	24	--	<.006	<.047	.109	--
NOV													
13...	11.7	113	1680	3220	.3	5.2	7700	31	--	E.004	.083	E.022	.29
DEC													
20...	13.8	137	2400	5260	.4	5.4	11800	33	.493	.012	.505	.083	.77
JAN													
22...	13.7	152	2250	4590	.4	3.0	10800	22	.421	.009	.430	.078	.72
FEB													
26...	12.6	123	1940	3250	.4	3.8	8120	39	--	E.004	.141	E.038	.52
MAR													
26...	10.5	114	1660	2220	.3	3.5	5940	40	--	E.004	.113	E.021	.47
APR													
24...	17.2	99	2600	5340	.4	1.3	12500	16	--	<.006	<.047	.043	--
MAY													
31...	16.1	71	2690	6750	.5	.6	14800	31	--	<.006	<.050	.054	--
JUN													
13...	14.6	56	2460	4770	.4	1.1	11100	25	--	<.006	E.025	.051	--
JUL													
31...	28.6	46	3980	9750	.5	.8	21500	24	--	<.006	E.029	.123	--
AUG													
08...	25.5	48	3930	10300	.6	E.4	21700	28	--	<.006	E.024	.181	--
SEP													
12...	14.9	57	2670	5880	.4	1.6	13300	88	--	<.006	E.025	<.040	--

DATE	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)	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)	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)
OCT													
05...	.18	.29	<.060	<.060	<.018	3	2.5	41.6	37.8	<.55	<.56	<4	<4.0
NOV													
13...	--	.21	<.060	<.060	<.018	<4	<4.0	73.2	72.2	<.55	.21	8	<1.6
DEC													
20...	.18	.26	<.060	<.060	<.018	<4	<4.0	29.9	23.6	<.66	<.56	<2	2.2
JAN													
22...	.21	.29	<.060	<.060	<.018	<4	<4.0	25.7	30.3	<.66	<.84	12	13.3
FEB													
26...	--	.38	E.050	<.060	<.018	E4	E3.4	105	90.2	<.33	<.56	3	1.7
MAR													
26...	--	.36	<.060	<.060	<.018	4	3.2	67.6	68.0	<.33	<.28	M	<.8
APR													
24...	.19	.24	<.060	<.060	<.018	<4	.7	43.2	40.6	<.28	.05	4	4.4
MAY													
31...	.23	.29	<.060	<.060	<.020	4	1.9	54.7	45.2	<.32	<.30	<5	<3.2
JUN													
13...	.23	.28	<.060	<.060	<.020	5	3.5	52.8	56.1	<.25	E.06	<2	<1.6
JUL													
31...	.11	.23	<.060	<.060	<.020	E6	3.1	51.1	55.8	<.46	<.50	E3	<3.2
AUG													
08...	.15	.33	<.060	<.060	<.020	8	2.8	50.8	49.7	<.42	<.40	4	<2.4
SEP													
12...	--	.17	<.060	<.060	<.020	7	2.1	75.7	63.8	<.28	<.30	4	<2.4

07311700 North Wichita River near Truscott, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT													
05...	3.4	1.9	<310	<150	<4	1.98	E14	5.0	<.14	1.69	2	<24.0	9.0
NOV													
13...	2.2	2.6	200	<100	<3	2.33	30	E19.6	<.14	<.23	<5	<4.80	<5.2
DEC													
20...	E1.4	2.1	<160	<200	2	<4.00	25	17.4	<.14	<.23	2	E2.29	8.6
JAN													
22...	1.9	<3.9	<120	<200	2	<3.00	19	11.4	<.14	.96	<7	<7.20	7.9
FEB													
26...	2.5	2.7	580	<150	2	1.19	36	10.0	<.14	<.23	E1	E1.65	E3.6
MAR													
26...	E2.0	E1.2	360	<100	<2	E1.36	29	E19.4	<.01	<.01	<4	<4.80	5.8
APR													
24...	7.7	14.6	<160	<100	<8	.50	13	9.0	.04	.03	31	<.03	9.1
MAY													
31...	7.7	9.8	E110	<200	<9	E.46	18	7.6	.03	<.05	<9	1.77	8.7
JUN													
13...	9.8	16.3	<60	<100	<7	E.15	12	10.2	<.01	<.01	12	4.05	4.9
JUL													
31...	10.3	15.1	5950	<250	<13	<1.00	15	15.0	.03	.03	26	<.80	E2.9
AUG													
08...	8.5	13.1	<130	<250	<12	<1.00	24	19.3	.01	<.01	15	<.70	<4.3
SEP													
12...	12.9	10.6	320	<150	<8	<.60	29	11.3	<.01	<.01	18	<.50	6.0

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)
OCT													
05...	9.2	<1.72	<8.0	<310	<300	--	--	--	--	--	--	--	--
NOV													
13...	<4.8	<1.29	<.3	<93	<200	--	--	--	--	--	--	--	--
DEC													
20...	8.2	<1.72	.3	<155	<400	--	--	--	--	--	--	--	--
JAN													
22...	7.1	<1.72	<.5	<124	<400	--	--	--	--	--	--	--	--
FEB													
26...	6.1	<1.29	<.5	<93	<300	--	--	--	--	--	--	--	--
MAR													
26...	3.4	<.86	<.3	<93	<200	--	--	--	--	--	--	--	--
APR													
24...	3.1	<.40	<1.0	17	13	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
MAY													
31...	7.5	<.45	<9.0	18	19	--	--	--	--	--	--	--	--
JUN													
13...	4.1	<.35	<2.0	9	17	--	--	--	--	--	--	--	--
JUL													
31...	E2.2	<.65	<13.0	<13	14	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
AUG													
08...	E3.1	<.60	<12.0	<12	13	--	--	--	--	--	--	--	--
SEP													
12...	5.3	<.40	<8.0	13	9	--	--	--	--	--	--	--	--

07311700 North Wichita River near Truscott, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)
OCT													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	81	<2	<.1	<.03	64	<.04
MAY													
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
31...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	95	<2	<.1	<.03	97	<.04
AUG													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT							
05...	--	--	--	--	--	--	--
NOV							
13...	--	--	--	--	--	--	--
DEC							
20...	--	--	--	--	--	--	--
JAN							
22...	--	--	--	--	--	--	--
FEB							
26...	--	--	--	--	--	--	--
MAR							
26...	--	--	--	--	--	--	--
APR							
24...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
31...	--	--	--	--	--	--	--
JUN							
13...	--	--	--	--	--	--	--
JUL							
31...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
AUG							
08...	--	--	--	--	--	--	--
SEP							
12...	--	--	--	--	--	--	--

07311700 North Wichita River near Truscott, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	1675.4	9670	6560	29680	2700	12180	1500	6810	1700
NOV.	2000	3284	5320	3600	31960	1400	12470	890	7930	1000
DEC.	2000	741	17500	11890	23780	5100	10110	2600	5130	2900
JAN.	2001	748	17020	11560	23340	4900	9880	2500	5080	2800
FEB.	2001	653	15060	10220	18020	4200	7490	2300	4040	2600
MAR.	2001	1748	7790	5280	24920	2100	9760	1300	6160	1500
APR.	2001	484	16380	11120	14530	4700	6120	2400	3190	2700
MAY	2001	847	17940	12190	27870	5200	11920	2600	5950	2900
JUNE	2001	280.2	19800	13460	10180	5900	4440	2800	2090	3100
JULY	2001	72.1	28320	19280	3750	9000	1760	3400	658	3700
AUG.	2001	1693	7180	4870	22260	1900	8900	1200	5330	1300
SEPT	2001	885.7	8430	5720	13670	2300	5580	1300	3170	1500
TOTAL		13111.4	**	**	244000	**	100600	**	55540	**
WTD.AVG.		36	10160	6890	**	2800	**	1600	**	1800

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	26400	25900	26100	8950	7580	8270	15600	14900	15300	17500	17000	17200
2	26100	25600	25900	9960	8950	9560	16400	15500	16100	17700	17300	17500
3	26000	25500	25900	9960	857	2410	16800	15400	16600	17900	16900	17600
4	26000	25500	25800	4440	1040	2550	16800	15200	16300	17900	17400	17700
5	26000	25300	25800	5420	4390	5000	16100	15500	15900	18100	16700	17700
6	26400	26000	26300	6300	4970	5430	16500	15500	16300	18100	16900	17900
7	26500	25000	25800	---	---	e6540	17000	14900	16000	18000	17700	17900
8	25700	24900	25200	---	---	e7240	17300	16900	17100	18300	18000	18100
9	25400	24200	24900	---	---	e8000	17500	17300	17400	18400	17900	18100
10	24800	24500	24700	---	---	e8900	17600	17500	17500	18000	17300	17700
11	24800	23900	24400	---	---	e9700	17900	17600	17800	17400	16600	16900
12	23900	23000	23400	---	---	e10800	18300	17900	18100	17300	16800	17200
13	23200	23000	23100	---	---	e11500	18300	18000	18200	17100	16600	16800
14	23400	22500	23000	13000	12200	12600	18200	17100	17800	17200	16600	16900
15	22600	16100	21100	14100	13000	13600	18000	17700	17800	17400	17200	17300
16	20500	13400	17000	14900	14100	14600	17800	17500	17700	17300	17000	17100
17	20800	19100	20500	16200	14900	15700	17900	17600	17700	17000	16700	16800
18	20800	20500	20700	16700	16200	16500	18300	17700	18000	17300	16600	17000
19	20800	20400	20600	16800	16600	16700	19100	18300	18800	17400	16900	17100
20	21100	20700	20900	17000	16700	16800	19000	18100	18500	17500	17100	17300
21	21400	20800	21200	17100	16900	17000	18500	18300	18400	17700	17300	17500
22	21600	20400	21200	17300	17100	17200	18500	17600	18200	17800	16600	17200
23	20700	20400	20500	17300	10400	16700	19300	18300	19000	16800	16500	16700
24	20700	20100	20400	11300	3580	5320	18900	18600	18800	17100	16600	16800
25	20600	1180	8510	8620	5660	7030	18800	18600	18800	17500	17100	17300
26	4910	2670	4470	11200	8620	9820	---	---	e18500	17500	17300	17400
27	4770	4290	4420	12400	11200	11800	---	---	e18200	17600	17200	17400
28	5460	4250	4710	12900	11900	12600	---	---	e17800	17500	15400	16900
29	5330	3640	4320	14000	12600	13200	17600	17500	17600	16300	15500	15900
30	6230	4470	5240	15000	14000	14600	17800	17000	17300	15500	14900	15300
31	7580	6230	6790	---	---	---	17700	17000	17400	14900	14600	14700
MONTH	26500	1180	19100	---	---	10900	---	---	17600	18400	14600	17100

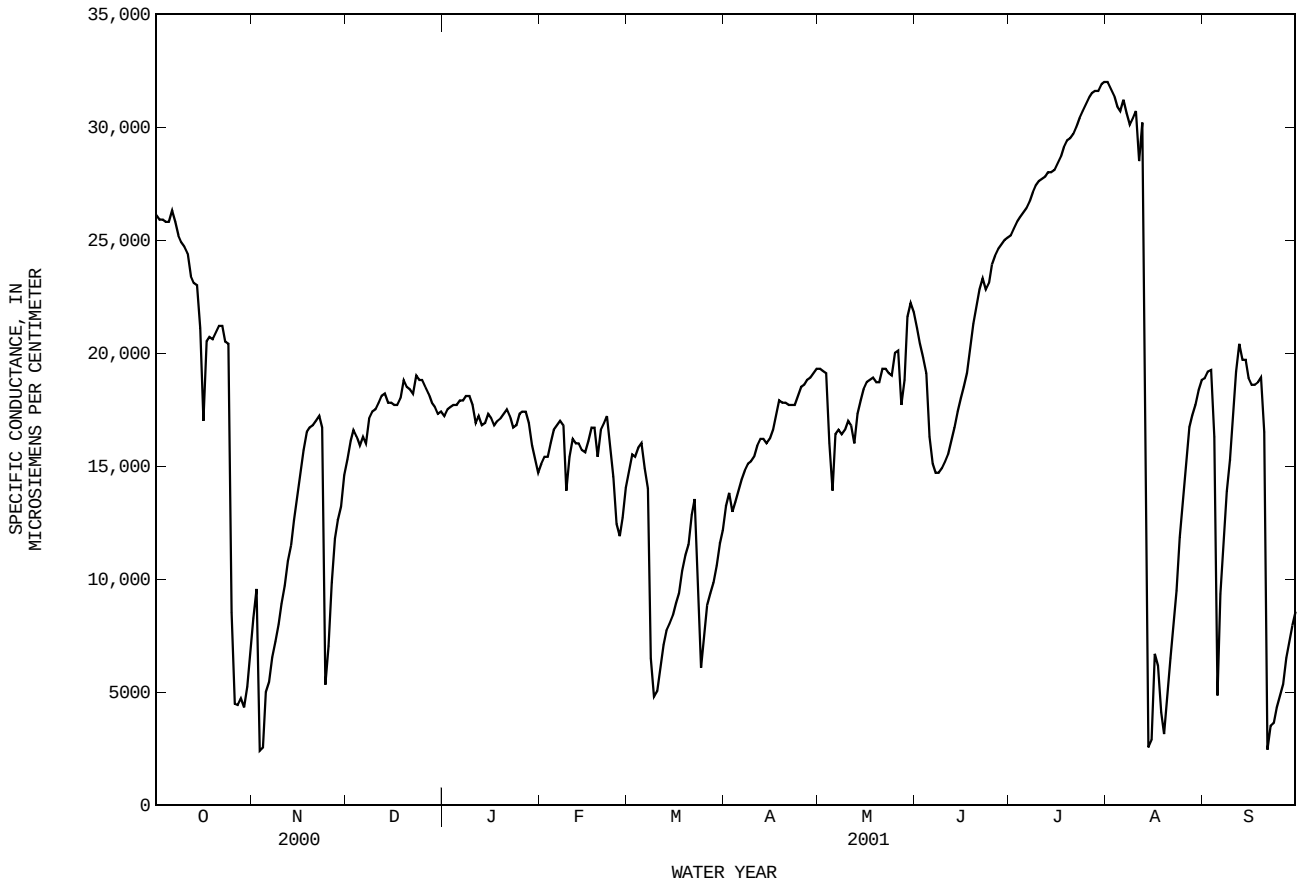
07311700 North Wichita River near Truscott, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	15300	14900	15100	---	---	e14800	---	---	e13200	19500	19100	19300
2	15700	15200	15400	---	---	e15500	---	---	e13800	19400	19000	19200
3	16000	14200	15400	15500	14900	15400	---	---	e13000	19400	18800	19100
4	16300	15700	16000	15900	15500	15800	13700	13100	13400	19000	8180	16000
5	16800	16300	16600	16200	15800	16000	14200	13700	13900	15600	8180	13900
6	16900	16600	16800	15800	14400	14900	14700	14200	14400	16900	15000	16400
7	17100	16900	17000	14400	13700	14000	15200	14700	14800	16900	16300	16600
8	17000	14600	16800	---	---	e6490	15300	15000	15100	16600	16200	16400
9	16400	9160	13900	---	---	e4780	15300	15100	15200	16900	15700	16600
10	16400	14100	15400	---	---	e5020	15700	15200	15400	17100	16800	17000
11	16500	15900	16200	---	---	e6020	16100	15600	15900	17000	16600	16800
12	16200	15600	16000	---	---	e7100	16400	16100	16200	16800	13100	16000
13	16200	15500	16000	---	---	e7720	16400	16000	16200	17700	16800	17300
14	16000	15300	15700	---	---	e8030	16200	15900	16000	18300	17700	17900
15	16000	14900	15600	---	---	e8380	16500	16000	16200	18700	18200	18400
16	16400	15800	16100	---	---	e8930	16800	16400	16600	18900	18500	18700
17	16800	16400	16700	---	---	e9360	18000	16700	17300	19000	18700	18800
18	16900	16300	16700	---	---	e10400	18100	17700	17900	19200	18600	18900
19	16800	13500	15400	---	---	e11000	17900	17600	17800	19000	17700	18700
20	16800	16400	16600	---	---	e11500	17900	17600	17800	18900	18500	18700
21	17100	16700	16900	---	---	e12800	17900	17500	17700	19500	18900	19300
22	17200	17100	17200	---	---	e13500	17800	17600	17700	19500	19100	19300
23	---	---	e15800	---	---	e9380	17900	17400	17700	19400	18900	19100
24	---	---	e14500	---	---	e6080	18400	17800	18100	19500	18800	19000
25	---	---	e12400	---	---	e7400	18700	18300	18500	20300	19500	20000
26	---	---	e11900	---	---	e8830	18800	18400	18600	20300	19800	20100
27	---	---	e12700	---	---	e9360	19000	18600	18800	21700	11700	17700
28	---	---	e14000	---	---	e9850	19100	18800	18900	21600	13600	18800
29	---	---	---	---	---	e10600	19300	18900	19100	---	---	e21600
30	---	---	---	---	---	e11600	19500	19200	19300	---	---	e22200
31	---	---	---	---	---	e12100	---	---	---	---	---	e21800
MONTH	---	---	15500	---	---	10400	---	---	16500	---	---	18400

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e21100	25500	25000	25200	32400	31600	32000	---	---	e18900
2	---	---	e20400	25800	25200	25500	31900	31500	31700	---	---	e19200
3	---	---	e19800	26000	25500	25800	31900	31100	31400	---	---	e19200
4	---	---	e19100	26200	25800	26000	31400	30600	30900	---	---	e16300
5	17600	15500	16300	26400	26000	26200	31100	30400	30700	8630	2030	4840
6	15600	14800	15100	26700	26100	26400	31500	30700	31200	11100	5760	9330
7	14900	14600	14700	27000	26300	26700	31500	28200	30600	---	---	e11700
8	14800	14700	14700	27400	26900	27100	30300	29800	30100	---	---	e13900
9	15000	14800	14900	27500	27100	27400	30800	30100	30400	---	---	e15300
10	15300	15000	15200	27700	27400	27600	31200	28900	30700	---	---	e17200
11	15800	15300	15500	28000	27400	27700	30900	24500	28500	---	---	e19200
12	16500	15800	16100	28000	27500	27800	30800	29500	30200	---	---	e20400
13	17100	16400	16700	28200	27600	28000	30600	2360	8310	19900	19600	19700
14	17800	17100	17400	28200	27700	28000	3000	2100	2540	20100	19200	19700
15	18400	17700	18000	28300	27700	28100	5150	2040	2870	19300	18500	18900
16	18900	18300	18500	28800	28100	28400	7070	5150	6680	18700	18400	18600
17	19800	18800	19100	29000	28400	28700	6790	5550	6150	19000	18400	18600
18	20900	19700	20200	29600	28800	29100	5710	2220	4110	18900	18600	18700
19	21800	20900	21300	29800	29000	29400	4150	2580	3140	19200	18800	18900
20	22600	21800	22100	29800	29100	29500	5580	3770	4690	19200	983	16500
21	23200	22500	22800	30000	29400	29700	7150	5580	6500	3030	2010	2440
22	23600	23100	23300	30200	29700	30000	8790	7140	7970	5460	2220	3510
23	23700	22400	22800	30700	30100	30400	---	---	e9490	5840	2830	3640
24	23200	22800	23100	31000	30400	30700	---	---	e11800	4780	3310	4300
25	24300	23200	23900	31400	30700	31000	---	---	e13600	5040	4670	4820
26	24800	24100	24300	31500	31000	31300	---	---	e15100	6090	4970	5330
27	24800	24400	24600	31600	31100	31500	---	---	e16700	6880	6090	6510
28	25000	24600	24800	31800	31300	31600	---	---	e17200	7590	6880	7230
29	25200	24800	25000	32200	31300	31600	---	---	e17700	---	---	e7940
30	25300	24800	25100	32200	31500	31900	---	---	e18300	---	---	e8550
31	---	---	---	32300	31600	32000	---	---	e18800	---	---	---
MONTH	---	---	19900	32300	25000	28700	---	---	18100	---	---	13000

e Estimated



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.1	17.9	21.1	21.1	17.3	19.5	10.3	7.8	9.0	1.6	.5	1.2
2	26.8	18.9	22.5	18.2	14.4	16.7	7.9	5.3	6.4	.9	.1	.4
3	28.3	20.5	23.9	17.0	12.6	15.0	6.2	4.6	5.3	3.6	---	---
4	29.1	21.8	25.0	15.0	14.6	14.8	6.0	4.6	5.4	6.6	1.6	4.2
5	29.4	21.6	24.8	17.1	14.9	15.9	6.8	4.1	6.2	7.9	3.9	6.0
6	21.6	14.9	17.8	16.9	14.3	15.4	8.5	5.8	7.1	8.4	4.1	6.4
7	14.9	12.3	13.0	---	---	---	8.7	4.4	6.8	8.5	5.7	7.0
8	14.6	10.8	12.4	7.4	---	---	9.5	6.7	8.0	7.7	3.5	5.8
9	15.4	9.5	12.2	9.0	4.7	6.8	9.7	6.3	8.0	7.8	3.8	6.1
10	17.3	11.0	13.6	10.8	---	---	9.9	---	---	7.4	6.8	7.1
11	19.6	13.2	15.6	13.5	10.0	11.5	8.5	.3	6.3	8.7	6.5	7.3
12	20.3	16.4	17.9	12.2	---	---	3.2	.1	1.1	8.2	5.3	7.0
13	21.5	18.5	19.6	8.8	5.7	7.3	2.6	---	---	11.1	8.1	9.3
14	23.5	18.9	20.6	8.7	4.8	7.0	2.6	.3	1.7	9.7	6.6	8.4
15	23.5	20.4	21.5	9.6	7.0	8.4	7.7	2.6	5.2	8.8	5.4	7.3
16	23.9	20.4	21.8	10.0	7.1	8.6	8.0	5.3	6.8	8.1	6.1	7.3
17	21.3	19.3	20.0	7.9	5.8	7.0	6.2	2.7	4.7	6.1	3.8	4.3
18	23.9	18.1	20.6	8.8	6.5	7.5	7.4	4.2	5.6	5.8	3.4	4.4
19	22.8	17.7	20.3	9.3	5.6	7.5	6.2	2.8	4.7	5.7	2.3	4.0
20	23.9	19.7	21.3	8.4	5.3	6.9	7.4	3.4	5.3	5.5	1.4	3.7
21	22.5	20.2	21.1	8.7	4.3	6.8	5.7	2.7	4.3	7.3	3.1	5.2
22	23.9	19.7	21.5	9.6	7.3	8.6	5.3	1.6	3.5	7.3	3.3	5.6
23	24.5	21.6	22.9	11.6	9.6	10.6	6.3	2.6	4.4	10.7	6.4	8.4
24	23.3	21.2	22.3	10.5	8.5	9.3	4.7	3.3	4.0	10.6	8.1	9.1
25	21.9	17.8	19.6	10.9	7.9	9.5	3.3	---	---	8.1	5.1	6.7
26	20.8	18.1	19.2	9.8	6.6	8.5	---	---	---	10.2	5.7	7.8
27	22.8	19.6	21.0	9.7	7.0	8.5	---	---	---	8.3	3.7	5.4
28	22.2	18.9	21.0	10.1	6.6	8.5	2.7	---	---	4.0	3.4	3.6
29	19.1	16.2	17.8	10.2	7.4	8.9	---	.1	---	6.8	2.7	4.7
30	20.2	15.6	18.1	9.6	6.2	8.1	3.5	.2	2.0	8.2	4.0	6.3
31	21.6	18.7	20.0	---	---	---	2.8	1.4	2.3	8.3	4.4	6.4
MONTH	29.4	9.5	19.7	---	---	---	---	---	---	11.1	---	---

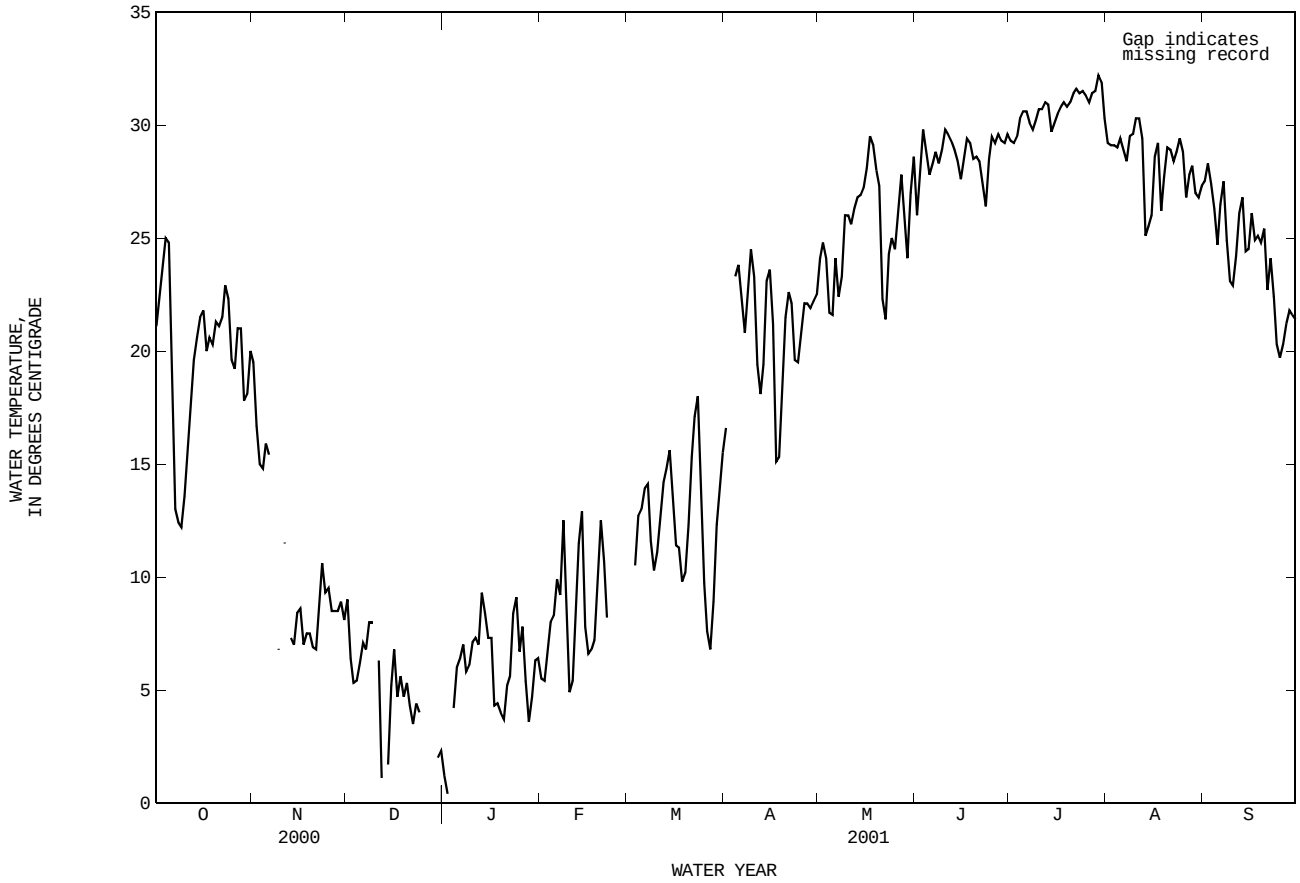
07311700 North Wichita River near Truscott, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.7	4.0	5.5	---	---	---	20.2	13.6	16.6	28.4	20.1	24.1
2	7.7	2.9	5.4	9.9	---	---	---	---	---	29.1	21.0	24.8
3	9.0	4.3	6.7	13.6	7.9	10.5	24.9	---	---	26.2	22.1	24.1
4	10.1	5.8	8.0	15.7	10.0	12.7	27.2	19.2	23.3	23.4	20.2	21.7
5	10.9	5.2	8.3	15.8	9.6	13.0	25.6	22.1	23.8	25.3	18.5	21.6
6	11.8	8.0	9.9	15.6	12.0	13.9	24.0	20.3	22.2	28.5	20.1	24.1
7	11.0	7.0	9.2	17.0	11.1	14.1	24.7	16.9	20.8	25.7	20.7	22.4
8	14.2	10.9	12.5	15.5	9.0	11.6	26.9	19.3	22.8	28.8	18.7	23.3
9	11.8	6.0	8.3	12.8	8.7	10.3	27.5	21.3	24.5	29.8	22.3	26.0
10	6.3	3.2	4.9	11.9	10.1	11.1	25.0	22.1	23.3	29.7	22.7	26.0
11	7.2	3.5	5.4	15.6	10.7	12.6	22.1	15.8	19.4	29.7	22.2	25.6
12	9.6	6.6	8.1	16.8	11.4	14.2	21.3	14.6	18.1	29.8	22.8	26.3
13	13.6	9.6	11.5	17.4	11.6	14.8	23.4	15.4	19.4	30.4	23.0	26.8
14	14.0	10.8	12.9	17.6	13.6	15.6	26.8	20.4	23.1	30.4	23.6	26.9
15	10.8	6.0	7.8	16.0	11.4	13.3	26.7	20.5	23.6	31.7	23.2	27.2
16	8.9	4.9	6.6	14.7	7.8	11.4	25.1	18.0	21.2	32.7	23.9	28.1
17	9.3	4.2	6.8	12.7	10.2	11.3	19.0	13.5	15.1	33.7	25.6	29.5
18	9.6	5.0	7.2	10.7	9.2	9.8	19.0	12.5	15.3	33.4	24.9	29.1
19	13.1	6.3	9.7	12.1	8.8	10.2	23.4	14.9	18.8	31.3	26.0	28.0
20	15.5	9.3	12.5	16.1	8.2	12.3	24.2	18.9	21.5	30.9	24.4	27.3
21	12.9	8.5	10.7	19.1	11.6	15.3	25.0	21.0	22.6	27.2	19.3	22.3
22	9.8	6.6	8.2	20.3	13.7	17.1	23.8	20.4	22.1	26.1	16.5	21.4
23	---	---	---	21.2	14.8	18.0	23.4	15.5	19.6	29.3	19.1	24.3
24	---	---	---	19.0	10.5	13.8	23.7	15.3	19.5	29.0	21.1	25.0
25	---	---	---	11.0	8.5	9.7	25.3	16.0	20.8	28.8	20.3	24.5
26	---	---	---	9.4	5.8	7.6	26.2	18.1	22.1	31.2	21.8	26.1
27	---	---	---	7.1	6.4	6.8	26.3	18.0	22.1	31.5	24.4	27.8
28	---	---	---	11.4	7.0	8.9	25.2	18.4	21.9	29.3	24.1	25.7
29	---	---	---	15.2	10.2	12.3	26.4	18.3	22.2	25.3	23.3	24.1
30	---	---	---	16.0	12.5	14.1	26.5	19.3	22.5	32.3	22.6	27.0
31	---	---	---	19.3	11.9	15.5	---	---	---	32.1	25.3	28.6
MONTH	---	---	---	---	---	---	---	---	---	33.7	16.5	25.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	28.5	23.9	26.0	33.0	26.6	29.3	34.7	25.1	29.2	30.9	24.2	27.5
2	33.2	23.0	28.0	34.7	25.5	29.2	34.2	25.3	29.1	32.9	24.0	28.3
3	34.2	26.2	29.8	34.7	24.9	29.5	35.6	24.8	29.1	30.4	25.4	27.4
4	33.1	25.5	28.8	35.4	25.8	30.3	35.2	24.5	29.0	30.0	23.9	26.3
5	32.7	23.8	27.8	35.9	26.2	30.6	36.0	24.2	29.4	26.6	23.0	24.7
6	32.8	24.4	28.3	35.8	26.6	30.6	35.2	24.4	28.9	30.3	23.2	26.5
7	32.8	25.4	28.8	35.3	26.1	30.1	33.6	24.7	28.4	31.2	24.4	27.5
8	32.4	25.0	28.3	35.7	25.3	29.8	35.7	25.4	29.5	27.8	22.4	24.9
9	34.0	24.7	28.9	36.3	25.5	30.2	35.0	26.0	29.6	26.9	20.0	23.1
10	34.9	25.5	29.8	37.2	25.8	30.7	37.0	26.3	30.3	27.6	18.4	22.9
11	34.0	26.0	29.6	37.0	26.1	30.7	36.5	26.8	30.3	28.9	19.8	24.2
12	34.3	25.6	29.3	37.6	26.4	31.0	32.9	26.1	29.4	29.5	22.8	26.1
13	34.0	26.1	28.9	37.4	26.6	30.9	29.9	21.8	25.1	30.9	23.2	26.8
14	32.9	26.0	28.4	34.5	27.1	29.7	26.8	23.7	25.5	26.8	22.7	24.4
15	33.1	22.9	27.6	36.5	25.5	30.1	29.3	23.7	26.0	28.9	21.7	24.5
16	34.5	24.2	28.5	36.6	26.4	30.5	32.0	26.2	28.6	29.9	22.9	26.1
17	35.0	25.5	29.4	37.2	26.7	30.8	31.5	26.7	29.2	28.1	23.0	24.9
18	34.8	25.1	29.2	37.7	26.8	31.0	29.4	21.6	26.2	27.9	22.8	25.1
19	34.7	24.2	28.5	37.4	26.4	30.8	31.0	24.6	27.7	28.6	21.5	24.8
20	34.9	24.3	28.6	38.2	26.7	31.0	32.1	26.0	29.0	30.1	20.3	25.4
21	33.4	24.5	28.4	38.1	26.7	31.4	32.0	25.9	28.9	26.0	20.0	22.7
22	32.7	22.9	27.4	38.0	26.8	31.6	31.5	25.5	28.4	26.4	22.0	24.1
23	31.7	23.0	26.4	37.9	26.5	31.4	32.9	25.1	28.8	25.6	20.2	22.4
24	34.0	24.1	28.5	38.8	26.9	31.5	33.2	26.0	29.4	22.8	17.5	20.3
25	33.5	26.0	29.5	38.5	27.1	31.3	32.2	25.5	28.8	22.9	16.1	19.7
26	33.5	25.4	29.2	37.4	26.9	31.0	28.7	25.4	26.8	23.5	16.8	20.3
27	34.0	26.0	29.6	38.9	27.1	31.4	32.0	24.2	27.8	24.4	17.7	21.2
28	34.1	25.5	29.3	38.0	28.2	31.5	31.1	25.4	28.2	24.9	18.3	21.8
29	33.6	25.3	29.2	38.7	28.2	32.2	30.0	24.5	27.0	24.4	18.5	21.6
30	35.6	25.6	29.6	37.2	28.2	31.9	30.5	24.4	26.8	24.4	17.7	21.4
31	---	---	---	34.7	26.9	30.3	30.9	24.9	27.3	---	---	---
MONTH	35.6	22.9	28.7	38.9	24.9	30.7	37.0	21.6	28.3	32.9	16.1	24.2

07311700 North Wichita River near Truscott, TX--Continued



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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 mouth.

DRAINAGE AREA.--223 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1984 to Sept. 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.--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.

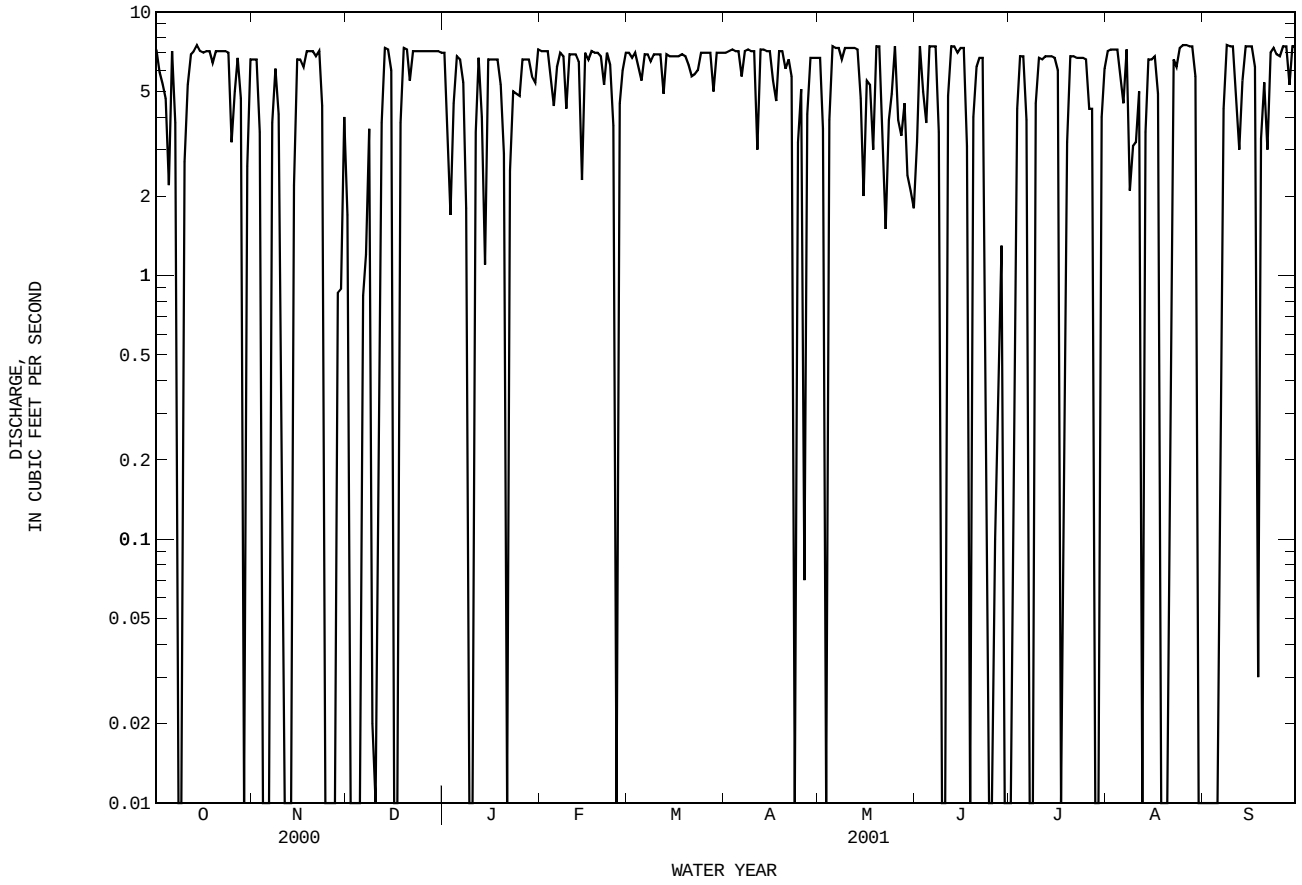
COOPERATION.--Discharge data furnished by the U.S. Army Corps of Engineers, Tulsa District.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	6.6	1.7	7.0	7.1	7.0	7.0	6.7	3.2	.00	7.1	.00
2	5.9	6.6	.00	3.8	7.1	6.7	7.1	3.6	7.4	.16	7.2	.00
3	5.3	3.5	.00	1.7	7.1	7.0	7.2	.00	5.0	4.3	7.2	.00
4	4.7	.00	.00	4.5	5.6	6.2	7.1	3.9	3.8	6.8	7.2	.00
5	2.2	.00	.00	6.8	4.4	5.5	7.1	7.4	7.4	6.8	5.7	.00
6	7.1	.00	.84	6.6	6.2	6.9	5.7	7.3	7.4	3.9	4.5	.17
7	3.8	3.8	1.2	5.4	7.0	6.9	7.1	7.3	7.4	.00	7.2	4.3
8	.00	6.1	3.6	1.8	6.8	6.5	7.2	6.6	3.5	.00	2.1	7.5
9	.00	4.1	.02	.00	4.3	6.9	7.1	7.3	.00	4.5	3.1	7.4
10	2.7	.98	.00	.00	6.9	6.9	e7.1	7.3	.00	6.7	3.2	7.4
11	5.3	.00	.22	3.5	6.9	6.9	e3.0	7.3	4.8	6.6	5.0	4.5
12	6.9	.00	3.8	6.7	6.9	4.9	7.2	7.3	7.4	6.8	.00	3.0
13	7.1	.00	7.3	4.0	6.5	6.9	7.2	7.2	7.4	6.8	3.5	5.5
14	7.5	2.2	7.2	1.1	2.3	6.8	7.1	4.7	7.0	6.8	6.6	7.4
15	7.1	6.6	6.0	6.6	7.0	6.8	7.1	2.0	7.3	6.7	6.6	7.4
16	7.0	6.6	.00	6.6	6.6	6.8	5.5	5.5	7.3	6.0	6.8	7.4
17	7.1	6.2	.00	6.6	7.1	6.8	4.6	5.3	3.1	.00	4.9	6.2
18	7.1	7.1	3.8	6.6	7.0	6.9	7.1	3.0	.00	.08	.00	.03
19	6.4	7.1	7.3	5.3	7.0	6.8	7.1	7.4	4.0	3.2	.00	3.3
20	7.1	7.1	7.2	2.9	6.8	6.3	6.1	7.4	6.2	6.8	.00	5.4
21	7.1	6.8	5.5	.00	5.3	5.7	6.6	3.7	6.7	6.8	1.1	e3.0
22	7.1	7.1	7.1	2.5	7.0	5.8	5.7	1.5	6.7	6.7	6.6	7.0
23	7.1	4.4	7.1	5.0	6.3	6.0	.00	3.9	1.8	6.7	6.2	7.3
24	7.0	.00	7.1	4.9	3.7	7.0	3.2	4.9	.00	6.7	7.3	6.9
25	3.2	.00	7.1	4.8	.00	7.0	5.1	7.4	.00	6.6	7.5	6.8
26	5.0	.00	7.1	6.6	4.5	7.0	.07	3.9	.10	4.3	7.5	7.4
27	6.7	.00	7.1	6.6	6.0	7.0	4.1	3.4	.24	4.3	7.4	7.4
28	4.7	.86	7.1	6.6	7.0	5.0	6.7	4.5	1.3	.00	7.4	5.3
29	.00	.89	7.1	5.7	---	7.0	6.7	2.4	.00	.00	5.7	7.4
30	2.6	4.0	7.1	5.4	---	7.0	6.7	2.1	.00	4.0	.00	7.4
31	6.6	---	7.0	7.2	---	7.0	---	1.8	---	6.1	.00	---
TOTAL	164.60	98.63	126.58	142.80	166.40	203.9	176.57	154.00	116.44	135.14	144.60	142.80
MEAN	5.31	3.29	4.08	4.61	5.94	6.58	5.89	4.97	3.88	4.36	4.66	4.76
MAX	7.5	7.1	7.3	7.2	7.1	7.0	7.2	7.4	7.4	6.8	7.5	7.5
MIN	.00	.00	.00	.00	.00	4.9	.00	.00	.00	.00	.00	.00
AC-FT	326	196	251	283	330	404	350	305	231	268	287	283

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: Sept. 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.--Records good. 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. The computation of the selected constituent loads might include estimated discharge or specific conductance data. New regression equations were developed based on data from water years 1992 to 2001. The standard error of estimate for dissolved solids is 7%, chloride is 11%, sulfate is 7% 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 0.5 mi upstream from the collection pool. No flow through the pipeline Oct. 8,9,29, Nov. 4-6,11-13, 24-27, Dec. 2-5,10,16,17, Jan. 9,10,21, Feb. 25, Apr. 23, May 3, Jun. 9,10,18, 24,25,29,30, Jul, 1,7,8,17,28,29, Aug. 12, 18-20,30,31, Sep. 1-5.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 51,600 microsiemens/cm, Aug. 15, 2001; minimum, 200 microsiemens/cm, July 3, 1986.
WATER TEMPERATURE: Maximum, 36.0°C, July 5, 11-13, 21, 1996; minimum, 0.0°C, Dec. 23, 1989, Dec. 22, 1990.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 51,600 microsiemens/cm, Aug. 15; minimum, 27,000 microsiemens/cm, Oct. 27.
WATER TEMPERATURE: Maximum, 38.1°C, June 30; minimum, -0.3°C, Nov. 13.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1345	5.3	51300	7.8	15.2	9.8	124	4600	4500	1310	323	11900	76
NOV													
14...	1220	2.2	51500	8.1	9.6	13.6	155	4200	4100	1200	301	10400	70
DEC													
18...	1430	3.8	49000	7.4	9.2	11.4	125	4200	4000	1180	294	10500	71
JAN													
08...	1445	1.7	49800	7.5	9.8	11.2	125	4200	4000	1180	296	10600	72
MAR													
05...	1300	5.5	49500	7.8	13.6	10.3	127	4400	4300	1250	309	10500	69
15...	1245	6.8	47000	7.8	13.7	11.1	138	4100	4000	1150	291	10000	68
APR													
10...	1345	7.1	51400	7.8	22.2	10.2	154	4500	4400	1270	312	10800	70
MAY													
22...	1145	1.5	53300	7.7	18.9	6.8	95	4400	4300	1250	311	11700	77
JUN													
12...	1352	7.4	58100	7.6	28.4	8.9	152	4900	4800	1370	351	13000	81
JUL													
10...	1255	6.7	60300	7.5	28.5	6.5	112	4900	4700	1370	346	14200	88
AUG													
07...	1225	7.2	61100	7.4	27.1	3.6	60	4900	4800	1390	357	14500	90
SEP													
13...	1140	5.5	57000	7.4	24.8	6.0	95	4800	4700	1350	343	13400	84

07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITROGEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)
OCT													
11...	46.4	102	3350	19900	.4	4.8	36900	51	.155	.080	.235	.136	.33
NOV													
14...	38.1	109	3030	17100	.5	2.2	32200	41	.030	.082	.112	.129	--
DEC													
18...	38.5	124	3150	16700	.4	7.0	31900	29	.212	.113	.325	.165	.71
JAN													
08...	40.8	121	3050	17700	.5	5.0	33000	87	.213	.120	.333	.203	.73
MAR													
05...	38.1	121	3100	18100	.4	5.9	33300	19	.130	.088	.218	.139	.68
15...	40.2	120	3000	17100	.4	5.1	31700	43	.049	.065	.114	.205	.35
APR													
10...	39.3	112	3150	18000	.4	4.3	33700	39	.020	.035	.055	.099	.67
MAY													
22...	45.2	95	3180	19700	.5	2.7	36300	44	.022	.025	.047	.211	.35
JUN													
12...	46.9	100	3330	20900	.4	6.2	39000	43	--	.016	E.037	.313	--
JUL													
10...	50.3	114	3390	23100	.4	12.9	42500	37	--	E.003	<.050	.145	--
AUG													
07...	92.5	110	3590	22800	.5	13.0	42800	46	.098	.077	.175	.644	.85
SEP													
13...	44.2	111	3460	21400	.4	10.3	40100	51	.145	.091	.236	.658	.74

DATE	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 DIS-SOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (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)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)
OCT													
11...	--	.09	<.060	<.060	<.018	<2	<4.0	19.8	1.3	<1.10	<5.60	<10	2.5
NOV													
14...	--	E.05	<.060	<.060	<.018	<10	<10.0	32.0	38.0	.29	.68	13	<4.0
DEC													
18...	.22	.38	<.060	<.060	<.018	<10	<10.0	32.1	E47.7	<2.20	<1.40	<5	10.0
JAN													
08...	.20	.40	E.032	<.060	<.018	<10	<10.0	32.5	E29.1	<1.65	<1.40	<6	<4.8
MAR													
05...	.32	.46	<.060	<.060	<.018	<19	<10.0	26.5	E37.1	<2.20	<2.80	<5	5.6
15...	.03	.24	<.060	1.11	<.018	<10	<10.0	29.1	29.3	<1.32	<3.50	6	<4.0
APR													
10...	.52	.61	<.060	<.060	<.018	<11	<3.1	35.0	29.2	<.88	<.63	2	<4.8
MAY													
22...	.09	.30	<.060	<.060	<.020	<11	<4.0	41.2	36.6	<.77	<.80	E5	E6.7
JUN													
12...	.22	.53	<.060	<.060	<.020	<11	<4.0	34.3	<22.0	<.77	<.80	<1	<.8
JUL													
10...	.78	.93	<.060	<.060	<.020	<11	<4.0	37.1	34.7	<.88	<.90	22	E4.7
AUG													
07...	.03	.68	<.060	<.060	<.020	<11	<5.0	41.6	40.1	<.88	.93	<6	E2.8
SEP													
13...	--	.51	<.060	<.060	<.020	<11	<4.0	32.3	30.3	<.81	<.90	<6	<4.8

07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT													
11...	2.2	2.5	<930	<10	5	E13.3	10	<3.2	<.14	<.23	3	2.83	3.9
NOV													
14...	3.7	11.2	<370	<300	4	<1.21	E20	17.8	<.14	<.23	<18	E2.39	<13.0
DEC													
18...	2.4	8.3	<370	<500	7	<10.0	<34	34.2	<.14	<.23	3	3.09	<13.0
JAN													
08...	6.4	<13.0	<460	<500	3	2.70	113	51.9	<.14	E.17	<18	<28.8	<13.0
MAR													
05...	<12.0	<13.0	<370	<500	<10	<10.0	95	E94.6	<.14	<.23	<18	<24.0	<26.0
15...	<12.0	<13.0	<370	<250	<10	<10.0	97	96.7	<.14	<.23	<18	<24.0	<13.0
APR													
10...	9.9	9.7	<370	<500	<25	1.72	212	135	<.01	<.01	18	<1.02	<.4
MAY													
22...	17.4	37.1	<210	<300	<22	<2.00	32	34.1	.21	.14	27	22.6	<7.9
JUN													
12...	E7.7	<5.0	<210	<500	<22	<2.00	97	3.9	.01	.01	<22	<1.00	<7.9
JUL													
10...	E10.4	35.8	<210	<300	<25	E1.18	324	310	.04	.03	<25	1.73	E8.4
AUG													
07...	E8.1	33.1	<210	<500	<25	<2.00	181	170	.02	.02	31	<2.00	<9.0
SEP													
13...	20.3	16.1	<210	<300	<23	<2.00	108	107	<.01	<.01	34	7.66	9.9

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)
OCT													
11...	5.1	<2.15	<1.6	<930	<20	--	--	--	--	--	--	--	--
NOV													
14...	<12.0	<4.30	.5	<372	<600	--	--	--	--	--	--	--	--
DEC													
18...	<12.0	<4.30	.4	<372	<1000	--	--	--	--	--	--	--	--
JAN													
08...	<12.0	<8.60	<1.6	<465	<1000	--	--	--	--	--	--	--	--
MAR													
05...	<12.0	<4.30	<1.6	<372	<1000	--	--	--	--	--	--	--	--
15...	<12.0	<4.30	<1.6	<372	<500	--	--	--	--	--	--	--	--
APR													
10...	<5.6	.08	<1.0	19	19	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
MAY													
22...	21.0	<1.10	<22.0	22	27	--	--	--	--	--	--	--	--
JUN													
12...	<7.0	<1.10	<22.0	<22	<22	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
JUL													
10...	14.3	<1.30	<24.0	<25	35	--	--	--	--	--	--	--	--
AUG													
07...	10.8	<1.30	<25.0	<25	43	--	--	--	--	--	--	--	--
SEP													
13...	12.6	<1.20	<23.0	<23	<25	--	--	--	--	--	--	--	--

07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	48	<2	<.1	<.03	39	<.04
MAY													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	101	<2	<.1	<.03	116	<.04
JUL													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT							
11...	--	--	--	--	--	--	--
NOV							
14...	--	--	--	--	--	--	--
DEC							
18...	--	--	--	--	--	--	--
JAN							
08...	--	--	--	--	--	--	--
MAR							
05...	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--
APR							
10...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
22...	--	--	--	--	--	--	--
JUN							
12...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL							
10...	--	--	--	--	--	--	--
AUG							
07...	--	--	--	--	--	--	--
SEP							
13...	--	--	--	--	--	--	--

07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	164.6	44210	30310	13470	15800	7040	3100	1360	4200
NOV.	2000	98.63	41760	28640	7630	14900	3960	3000	798	4100
DEC.	2000	126.58	43120	29570	10110	15400	5260	3100	1050	4200
JAN.	2001	142.8	43120	29570	11400	15400	5930	3100	1180	4200
FEB.	2001	166.4	42710	29290	13160	15200	6840	3100	1370	4200
MAR.	2001	203.9	42260	28980	15950	15000	8280	3000	1670	4100
APR.	2001	176.57	43340	29720	14170	15500	7380	3100	1460	4200
MAY	2001	154	43020	29500	12270	15300	6380	3100	1270	4200
JUNE	2001	116.44	46240	31700	9970	16600	5230	3100	984	4300
JULY	2001	135.14	48500	33240	12130	17500	6390	3200	1160	4400
AUG.	2001	144.6	47400	32490	12690	17100	6670	3200	1230	4400
SEPT	2001	142.8	43820	30040	11580	15700	6040	3100	1180	4200
TOTAL		1772.46	**	**	144500	**	75400	**	14710	**
WTD.AVG.		4.9	44040	30200	**	15800	**	3100	**	4200

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	49000	47500	48100	38700	36300	37800	43500	43200	43300	43500	41800	42800
2	48000	46800	47300	40900	38700	39800	44000	43100	43600	43600	41800	42800
3	47600	46500	47000	---	---	e37500	44700	44000	44300	43300	41600	42700
4	47200	46700	47000	---	---	e30000	---	---	e43400	43100	42500	42700
5	48000	47000	47500	---	---	e25000	---	---	e40800	43400	42300	42800
6	48700	47900	48100	---	---	e28200	41800	41400	41600	43400	42000	42900
7	49900	48700	49500	29200	28600	28800	42000	41700	41900	43400	42100	42800
8	50100	49600	49900	33000	29200	30600	43400	42000	42300	---	---	e43200
9	49900	49400	49600	36100	33000	35100	44000	43400	43700	---	---	e43200
10	50100	49200	49600	---	---	e35900	44300	42400	43900	---	---	e45000
11	51200	50100	50600	---	---	e37500	45000	43000	44300	---	---	e43300
12	51200	48700	49500	---	---	e39000	45000	44400	44700	44000	42900	43600
13	48800	47100	48100	---	---	e41500	44800	43800	44300	43400	39700	41900
14	---	---	e46700	---	---	e43100	44900	44200	44600	42600	41900	42300
15	---	---	e46700	45100	43600	44600	44900	43700	44300	43000	42000	42400
16	47200	45500	46800	45300	45000	45200	44400	39600	42300	44100	42800	43600
17	47100	46400	46700	45400	45000	45200	43400	42600	43100	44400	43600	44100
18	46400	45800	46100	45400	44000	44800	43500	42900	43200	44800	43400	44300
19	46600	46100	46400	45800	44900	45300	43600	42900	43400	43700	42600	43200
20	46600	45700	46300	46200	44700	45700	43500	42800	43100	43800	43400	43600
21	47000	46200	46500	45900	44900	45500	43800	42900	43300	43400	42000	42500
22	---	---	e45100	45600	44600	45100	43900	43200	43500	43000	42400	42600
23	---	---	e38200	45400	41100	44000	44100	42600	43300	43400	41800	42900
24	42400	40900	41900	43200	41200	42400	44000	43200	43600	43300	41300	42700
25	42600	29700	39600	---	---	e42200	43900	41800	43200	43400	43000	43300
26	36700	29900	35300	---	---	e41200	43300	42100	43000	43500	42800	43100
27	29900	27000	28000	---	---	e40600	43500	41800	42500	44000	42900	43600
28	30200	28300	29000	41300	40600	40900	43600	40500	42800	---	---	e44000
29	31400	30200	31100	42700	41300	41900	42600	39300	41400	---	---	e43300
30	34400	31400	32600	43500	42700	43100	42300	41500	42100	44000	43000	43200
31	37800	34400	36500	---	---	---	42500	40000	41500	43000	41200	42100
MONTH	---	---	43900	---	---	39600	---	---	43100	---	---	43100

07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued

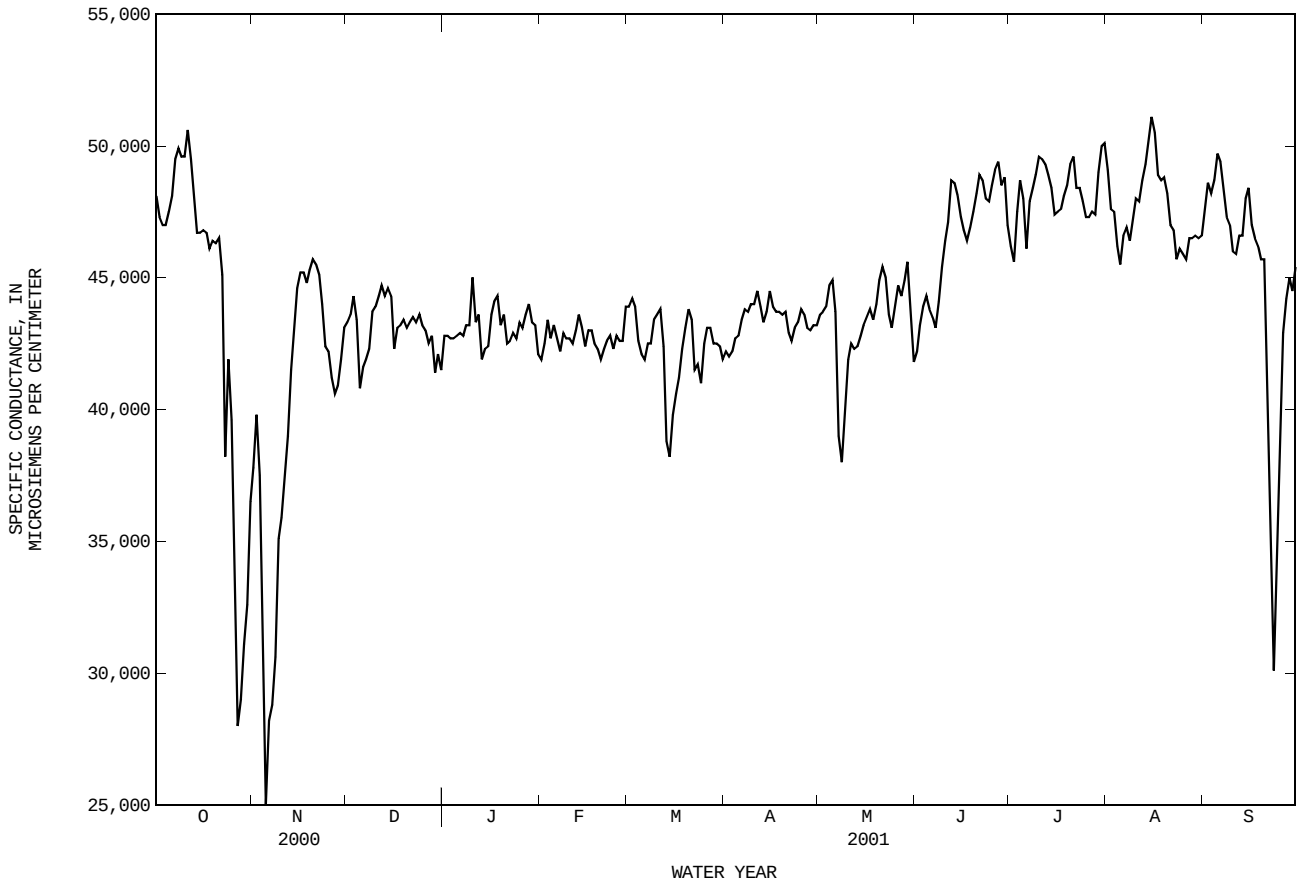
SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	42200	41500	41900	44200	43600	43900	42600	41900	42200	44300	42900	43600
2	42900	42000	42500	44400	43900	44200	42400	41400	42000	44400	43000	43700
3	43800	42800	43400	44500	43200	43900	42600	42000	42200	44300	43200	43900
4	43400	41900	42700	43800	41000	42600	43800	42500	42700	45100	44000	44700
5	43600	42800	43200	42600	41700	42100	43400	42500	42800	45300	43900	44900
6	43500	42000	42700	42300	41500	41900	43900	42600	43400	44700	42400	43700
7	42600	41900	42200	42700	41800	42500	44800	42900	43800	43000	35400	39000
8	43200	42500	42900	42700	42300	42500	44400	42800	43700	39500	36700	38000
9	43000	42500	42700	43700	42500	43400	44700	43500	44000	41000	38600	40000
10	42900	42200	42700	---	---	e43600	---	---	e44000	42400	41000	41900
11	42900	41800	42500	---	---	e43800	---	---	e44500	43100	41700	42500
12	43400	41800	43000	---	---	e42400	44700	43200	43900	42900	41600	42300
13	44000	43200	43600	41700	36300	38800	43700	43000	43300	43200	41600	42400
14	43800	40500	43100	40000	37000	38200	44400	43000	43700	43600	42100	42800
15	43400	40600	42400	40500	38700	39800	45400	43600	44500	43600	42300	43200
16	43200	42700	43000	40800	40000	40600	44800	42900	43900	44000	43000	43500
17	43300	42400	43000	41800	40800	41200	44600	43000	43700	44400	43200	43800
18	43000	42200	42500	---	---	e42300	44100	43200	43700	43800	43100	43400
19	42800	41400	42300	---	---	e43100	44100	43300	43600	44400	43700	44000
20	42600	41300	41900	44200	43300	43800	44500	43100	43700	45200	44400	44900
21	42900	41400	42300	43600	43000	43400	43200	42300	42900	45900	44800	45400
22	42800	42400	42600	43100	41000	41500	43100	42000	42600	45800	44200	45000
23	43400	42100	42800	43000	41100	41700	43500	42200	43100	44200	42700	43600
24	43800	41200	42300	42600	40500	41000	43800	42600	43300	43800	42500	43100
25	43400	41900	42800	42900	41600	42500	---	---	e43800	44500	43000	43900
26	42800	42400	42600	43300	42800	43100	---	---	e43600	45400	44000	44700
27	43500	41300	42600	43500	42600	43100	43900	42500	43100	45000	43400	44300
28	44300	43400	43900	42900	42200	42500	43400	42500	43000	45200	44600	44900
29	---	---	---	42700	42300	42500	43700	42800	43200	45800	45200	45600
30	---	---	---	43000	41900	42400	43800	42500	43200	45800	41800	43800
31	---	---	---	42300	41600	41900	---	---	---	42500	40900	41800
MONTH	44300	40500	42700	---	---	42300	---	---	43400	45900	35400	43300

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	42600	41700	42200	---	---	e46200	50200	48700	49100	48500	46700	47500
2	44300	42400	43200	---	---	e45600	48900	45400	47600	49000	48100	48600
3	44400	42800	43900	48200	46700	47500	48600	46600	47500	49100	47100	48200
4	44900	43600	44300	49000	48200	48700	47100	45200	46200	49500	47100	48700
5	44600	42800	43800	49000	46800	48000	46400	42800	45500	50100	49300	49700
6	44400	42500	43500	47400	43900	46100	47600	45100	46600	49900	47700	49400
7	44300	41800	43100	48400	47400	47900	48100	45100	46900	49100	47300	48300
8	45100	42900	44100	48700	47900	48400	47700	44400	46400	47900	46100	47300
9	45900	45100	45400	49600	48400	48900	47900	46200	47200	47400	46300	47000
10	46600	45900	46400	50800	48900	49600	48600	47300	48000	47400	44800	46000
11	48100	46600	47100	50500	48300	49500	48700	46800	47900	47500	44600	45900
12	49000	48100	48700	49900	48600	49300	49200	47500	48700	47700	45000	46600
13	49200	48100	48600	49500	48200	48900	49600	48900	49300	48200	45200	46600
14	48500	47400	48100	48900	47700	48400	50900	49600	50100	48700	47300	48000
15	47600	46900	47300	47800	47100	47400	51600	50600	51100	49200	47300	48400
16	47400	46200	46800	48000	46800	47500	51300	49800	50500	48500	45300	47000
17	47000	45900	46400	47800	47400	47600	50000	47200	48900	47900	45400	46500
18	47200	46000	46900	48200	47600	48100	49400	45300	48700	47300	45200	46200
19	47800	47100	47500	48700	48200	48500	49300	48300	48800	46700	44700	45700
20	48800	47800	48200	50200	48700	49300	49000	47200	48200	47200	39100	45700
21	49400	48500	48900	50300	48500	49600	48500	47000	47000	40800	37500	39800
22	49000	48300	48700	49400	47500	48400	48000	45100	46800	37500	32100	35300
23	48600	47500	48000	48900	48000	48400	46600	43800	45700	32300	28000	30100
24	48300	47500	47900	48500	47500	47900	46700	45200	46100	37800	32300	35000
25	49200	47900	48500	47800	46600	47300	46900	44700	45900	41100	37800	39800
26	49400	48700	49100	47700	47000	47300	46900	43800	45700	44100	41100	42900
27	49900	48800	49400	48100	46500	47500	47600	44500	46500	45400	42800	44200
28	49100	47500	48500	47900	47100	47400	47200	45800	46500	45500	43500	45000
29	---	---	e48800	50000	47900	49000	47500	45800	46600	45900	42700	44500
30	---	---	e47000	50400	49600	50000	46800	45300	46500	46500	42900	45400
31	---	---	---	50400	49800	50100	47100	45800	46600	---	---	---
MONTH	---	---	46700	---	---	48200	51600	42800	47500	50100	28000	45000

e Estimated

07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.1	18.6	21.1	20.3	19.0	19.4	12.5	10.5	11.7	8.5	6.5	7.7
2	25.3	19.0	22.0	19.5	17.1	18.2	11.2	8.9	10.0	---	---	---
3	26.0	20.3	22.8	18.5	14.1	16.9	10.1	9.6	9.8	9.7	7.4	8.7
4	26.8	20.9	23.6	14.5	13.2	14.0	9.8	4.0	6.4	10.3	8.3	9.3
5	26.1	22.3	23.9	18.0	13.9	15.9	10.9	4.8	7.9	11.8	7.4	9.9
6	22.3	17.9	19.2	17.9	7.8	13.7	11.0	8.2	9.8	12.3	10.4	11.3
7	17.9	14.6	15.5	16.1	9.4	12.8	9.9	7.8	8.9	11.9	9.5	10.8
8	14.6	12.7	13.7	11.7	9.4	10.6	11.9	8.2	9.7	---	---	---
9	15.3	12.2	13.5	12.7	11.6	12.2	12.5	10.3	11.6	---	---	---
10	16.1	12.7	14.2	13.9	12.6	13.1	13.4	11.2	12.6	---	---	---
11	17.4	14.3	15.5	14.0	12.8	13.5	12.8	7.9	10.6	---	---	---
12	18.6	15.4	17.1	13.9	2.7	6.8	7.9	5.3	6.4	14.0	12.5	13.2
13	20.0	18.2	19.0	12.2	-.3	4.6	9.4	5.2	6.8	12.7	11.7	12.1
14	---	---	---	11.5	9.3	10.2	10.9	9.0	10.1	13.2	12.0	12.6
15	---	---	---	11.1	9.3	10.3	11.8	9.0	10.7	13.3	10.9	11.9
16	24.3	20.2	22.0	12.3	8.9	10.6	11.5	7.9	9.8	12.5	10.0	11.9
17	21.9	20.0	20.6	11.1	9.9	10.5	9.5	7.7	8.8	11.3	9.6	10.6
18	---	---	---	11.4	9.2	10.6	9.6	7.5	8.8	10.8	7.6	9.6
19	22.7	18.0	20.2	12.8	9.7	11.1	10.0	7.1	8.7	9.5	6.1	7.8
20	24.1	19.2	21.0	12.9	10.1	11.4	10.4	7.6	9.0	10.0	7.9	9.1
21	21.6	19.2	20.2	13.4	10.2	11.7	9.4	7.7	8.6	9.0	6.1	7.8
22	---	---	---	12.2	10.5	11.5	9.3	8.1	8.7	11.7	7.9	9.5
23	---	---	---	13.2	7.8	12.2	9.8	6.5	8.6	13.3	10.6	12.1
24	22.2	20.2	21.0	11.6	4.2	9.0	9.3	7.4	8.7	13.4	10.4	12.5
25	20.5	18.2	19.9	12.3	4.7	10.9	8.2	5.0	7.2	12.3	11.1	11.6
26	20.9	18.4	19.4	13.0	.1	6.0	5.7	2.9	3.7	14.3	10.8	12.2
27	21.6	19.0	20.3	14.4	.0	8.4	6.4	2.9	4.4	13.8	9.7	11.7
28	20.8	16.9	19.9	13.1	10.7	11.8	9.3	6.1	7.4	---	---	---
29	19.9	17.9	18.9	13.2	10.5	11.8	10.0	5.9	8.5	---	---	---
30	19.1	17.6	18.5	12.6	11.2	11.9	10.1	7.4	8.8	10.6	7.2	9.3
31	19.7	19.0	19.4	---	---	---	10.1	6.5	8.3	11.1	8.7	9.8
MONTH	---	---	---	20.3	-.3	11.7	13.4	2.9	8.7	---	---	---

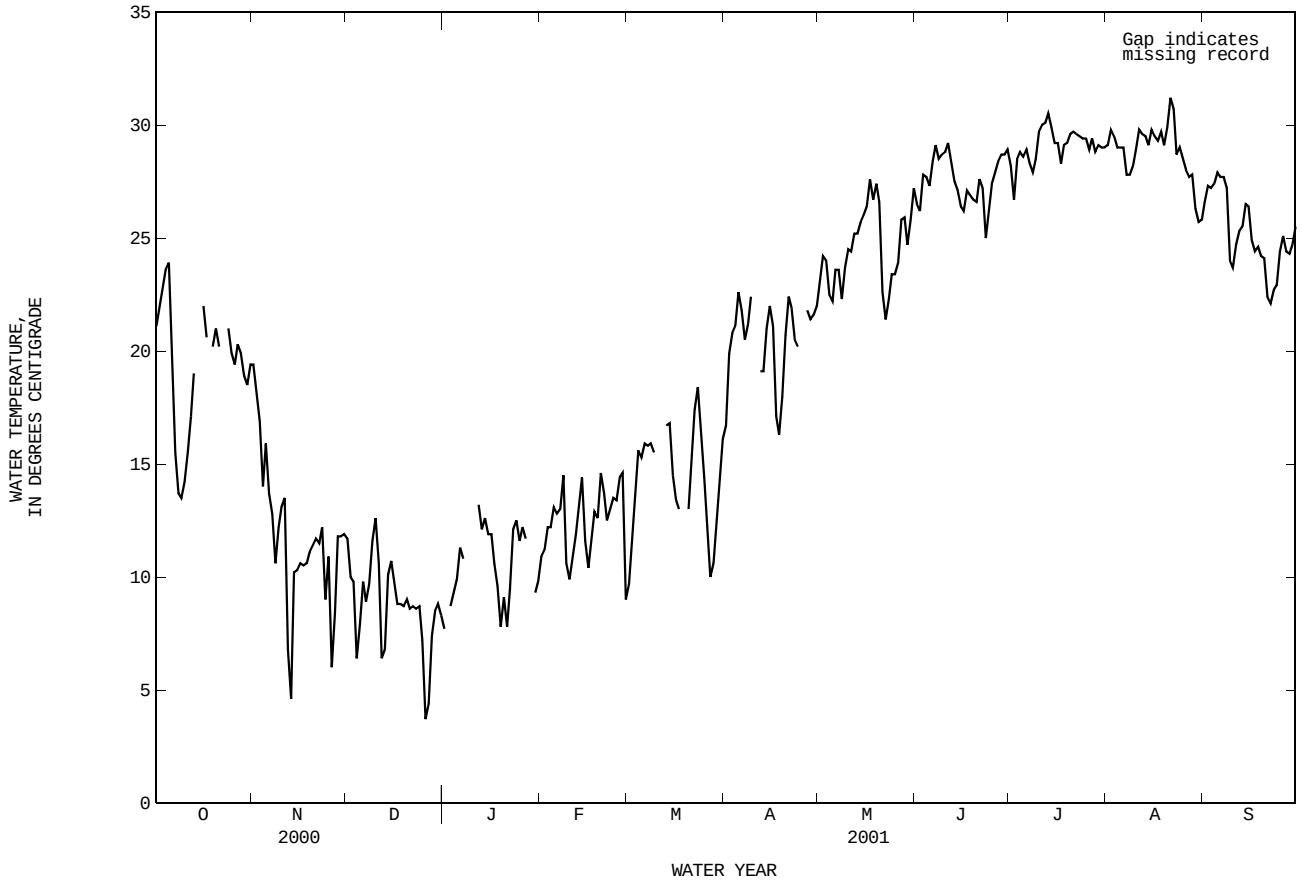
07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.2	9.8	10.9	11.9	7.8	9.7	19.8	14.9	16.7	27.5	20.6	23.1
2	12.3	9.8	11.2	12.6	11.6	12.0	23.4	17.5	19.9	28.0	21.3	24.2
3	13.2	11.2	12.2	15.1	12.6	13.7	23.4	19.2	20.8	25.0	22.2	24.0
4	13.2	10.2	12.2	17.2	14.9	15.6	24.9	19.3	21.1	23.4	21.6	22.5
5	15.6	11.2	13.1	17.2	13.5	15.3	24.2	21.0	22.6	23.2	21.3	22.2
6	14.5	10.6	12.8	17.3	14.7	15.9	23.4	20.7	21.8	25.6	21.8	23.6
7	14.9	11.2	13.0	17.5	14.0	15.8	23.5	18.5	20.5	25.3	21.5	23.6
8	15.6	13.3	14.5	16.8	15.5	15.9	25.1	19.3	21.2	25.5	20.1	22.3
9	13.3	8.8	10.6	15.7	15.1	15.5	26.0	20.0	22.4	27.9	21.0	23.7
10	11.1	8.8	9.9	---	---	---	---	---	---	28.1	21.8	24.5
11	12.1	9.3	10.9	---	---	---	---	---	---	28.6	22.0	24.4
12	12.5	10.7	11.9	---	---	---	23.0	16.3	19.1	28.4	23.2	25.2
13	14.2	12.3	13.1	17.5	15.7	16.7	22.9	16.2	19.1	29.1	22.5	25.2
14	15.1	13.0	14.4	18.4	15.1	16.8	24.4	18.4	21.0	30.0	23.1	25.7
15	13.0	9.7	11.6	17.0	13.3	14.5	26.0	19.4	22.0	29.5	24.2	26.0
16	12.6	8.8	10.4	15.6	11.4	13.4	24.4	18.8	21.1	30.6	23.3	26.4
17	13.6	10.2	11.7	14.4	11.8	13.0	20.6	15.2	17.1	31.9	24.3	27.6
18	13.7	11.8	12.9	---	---	---	19.2	14.7	16.3	30.2	25.1	26.7
19	15.1	9.9	12.6	---	---	---	22.1	14.6	18.0	29.1	26.2	27.4
20	17.2	12.5	14.6	14.2	11.5	13.0	25.3	17.8	20.7	28.8	24.3	26.6
21	15.2	11.7	13.7	17.1	14.0	15.6	25.8	20.3	22.4	26.6	20.3	22.6
22	13.6	11.7	12.5	20.0	15.2	17.4	24.2	20.7	21.9	24.2	19.7	21.4
23	13.5	12.3	13.0	20.4	16.9	18.4	22.7	18.0	20.5	24.5	20.5	22.3
24	14.6	12.3	13.5	19.4	14.3	16.3	23.0	17.9	20.2	25.6	21.6	23.4
25	14.2	11.7	13.4	15.4	13.5	14.4	---	---	---	26.0	21.7	23.4
26	16.0	12.9	14.4	14.0	10.8	12.0	---	---	---	25.3	22.8	23.9
27	15.8	12.1	14.6	10.8	9.5	10.0	24.9	19.2	21.8	27.2	24.8	25.8
28	12.1	7.8	9.0	12.2	9.7	10.6	25.1	18.6	21.4	26.9	25.0	25.9
29	---	---	---	14.6	11.7	12.5	25.2	18.8	21.6	25.7	21.9	24.7
30	---	---	---	16.0	13.4	14.3	26.1	19.0	22.0	31.9	18.7	25.8
31	---	---	---	19.0	14.0	16.1	---	---	---	30.6	24.2	27.2
MONTH	17.2	7.8	12.4	---	---	---	---	---	---	31.9	18.7	24.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	28.9	25.1	26.5	35.9	22.8	28.2	31.3	26.9	29.1	27.4	25.8	26.6
2	28.7	24.4	26.2	31.5	19.1	26.7	32.4	26.6	29.8	28.2	26.2	27.3
3	30.0	25.9	27.8	30.9	26.5	28.5	32.2	26.2	29.5	28.3	26.2	27.2
4	30.3	26.2	27.7	31.9	26.4	28.8	31.6	27.1	29.0	28.1	26.7	27.4
5	30.3	24.9	27.3	31.9	26.2	28.6	32.0	26.5	29.0	28.2	27.6	27.9
6	32.0	25.9	28.4	32.3	26.2	28.9	31.4	26.8	29.0	28.7	26.8	27.7
7	31.9	26.7	29.1	29.8	26.6	28.3	30.8	26.3	27.8	28.9	26.5	27.7
8	31.0	26.3	28.5	29.2	26.6	27.9	30.5	26.1	27.8	28.7	25.8	27.2
9	30.0	27.5	28.7	30.3	27.0	28.5	30.5	26.3	28.2	25.8	22.0	24.0
10	29.7	27.7	28.8	32.1	27.8	29.7	30.7	27.6	28.9	26.2	21.8	23.7
11	30.8	27.9	29.2	32.6	27.7	30.0	31.8	28.1	29.8	26.3	23.1	24.7
12	29.7	27.1	28.4	32.5	27.6	30.1	30.9	28.4	29.6	26.7	23.9	25.3
13	30.2	25.4	27.5	33.6	27.8	30.5	31.5	28.1	29.5	27.0	23.5	25.5
14	29.4	25.4	27.1	33.1	28.2	29.9	30.0	28.0	29.1	27.2	25.6	26.5
15	29.5	23.9	26.4	32.0	27.2	29.2	30.5	28.9	29.8	27.1	24.7	26.4
16	30.1	23.5	26.2	33.3	27.0	29.2	30.3	28.6	29.5	27.1	23.1	24.9
17	30.1	24.4	27.1	30.5	26.5	28.3	30.3	28.0	29.3	26.1	22.9	24.4
18	28.2	25.5	26.9	30.9	27.7	29.1	30.2	26.8	29.7	26.3	22.9	24.6
19	28.9	25.0	26.7	31.0	27.9	29.2	29.8	28.4	29.1	25.2	23.4	24.2
20	29.3	24.6	26.6	31.5	27.8	29.6	30.8	29.2	29.9	25.9	25.9	24.1
21	30.1	25.3	27.6	31.8	27.6	29.7	32.0	30.6	31.2	22.8	22.1	22.4
22	29.8	25.1	27.2	32.5	26.5	29.6	31.6	29.9	30.7	22.4	21.7	22.1
23	26.9	23.2	25.0	32.2	27.1	29.5	30.1	25.8	28.7	23.5	22.1	22.7
24	27.6	25.0	26.2	32.5	27.0	29.4	30.2	27.6	29.0	23.7	22.2	22.9
25	28.7	26.2	27.4	32.6	27.3	29.4	30.5	26.0	28.5	26.6	22.0	24.4
26	29.2	26.7	27.9	31.9	26.8	28.9	29.3	26.0	28.0	25.8	24.2	25.1
27	29.7	27.3	28.4	32.5	27.4	29.4	29.2	25.2	27.7	25.3	23.7	24.4
28	30.6	26.5	28.7	29.5	27.9	28.8	29.4	26.6	27.8	25.2	23.5	24.3
29	35.4	25.8	28.7	29.6	28.6	29.1	27.7	25.0	26.3	26.3	23.8	24.7
30	38.1	21.0	28.9	30.7	27.6	29.0	26.6	24.9	25.7	27.2	24.1	25.5
31	---	---	---	30.7	27.2	29.0	26.5	25.0	25.8	---	---	---
MONTH	38.1	21.0	27.6	35.9	19.1	29.1	32.4	24.9	28.8	28.9	21.7	25.2

07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued



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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 mouth.

DRAINAGE AREA.--223 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Sept. 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. No flow at times.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.04	5.6	.15	.11	.07	.12	.03	.03	8.0	.05	2.6
2	.02	.04	11	.27	.14	.10	.14	.04	.03	3.0	.07	3.7
3	.02	60	11	8.4	.22	.15	.19	9.1	.04	.03	.06	4.0
4	.02	24	20	5.6	.16	.21	e.04	1.1	.04	.04	.06	5.2
5	.02	17	6.7	.20	5.9	.25	e.03	.02	.05	.04	.05	8.2
6	.03	6.1	.02	.09	.04	.25	e.03	.02	.10	.04	.05	5.6
7	.04	.04	4.5	2.3	.04	.21	e.03	.02	.11	.04	.06	2.2
8	1.4	.06	6.7	e4.0	.04	5.3	e.02	.02	4.9	.04	.05	.05
9	16	9.4	10	e1.0	.03	5.7	e.02	.03	.04	.04	.05	.05
10	12	12	12	e.50	.04	5.0	e.02	.02	1.2	.05	.04	.04
11	1.2	13	12	e.30	.04	6.8	e.02	.02	3.3	.10	.04	.03
12	.05	37	7.1	.24	.05	8.2	.02	.01	.06	.09	.04	.03
13	.05	9.5	.45	.28	.03	3.1	.04	.01	.07	.07	2.2	.04
14	.05	.03	.07	8.9	.07	.26	.08	.01	.08	.06	.11	.05
15	.05	.02	.25	3.7	.07	3.8	.10	.02	.12	.04	.06	.05
16	.05	.03	9.6	.61	.10	.01	.13	.02	.13	.04	.06	.07
17	.06	.03	11	6.4	.18	.03	.09	.02	.10	.05	.08	.09
18	.04	.04	7.5	6.9	.07	.08	.14	.02	.12	.06	11	.16
19	.03	.04	.17	6.4	.13	.09	.08	.02	.07	.11	6.9	.27
20	.03	.12	.04	10	.16	.13	.04	.02	.06	.17	4.1	.36
21	.02	.04	.05	15	.22	1.6	.03	.02	.06	.21	4.7	e.04
22	.02	.04	.06	11	.21	2.9	.03	.03	.07	.25	.50	e.04
23	e.04	9.1	.05	5.6	.24	2.0	.02	.35	.09	.21	.25	e.05
24	.04	7.4	.07	4.9	.27	4.5	3.6	1.6	1.2	.08	.08	e.04
25	14	13	.14	4.3	9.1	.12	8.4	.03	3.8	.05	.07	.06
26	4.6	16	.14	1.7	5.4	.10	9.2	.74	4.2	.04	.05	.13
27	.04	5.7	.06	.06	2.1	.09	.09	4.1	4.9	.04	.05	.07
28	13	.04	.08	4.6	.08	1.6	.03	3.1	5.9	.04	.05	.11
29	.15	14	.09	5.6	---	.33	.03	16	19	.05	.04	.11
30	.23	.03	.12	5.0	---	.23	.03	8.1	9.5	3.5	.05	.09
31	.04	---	.12	.25	---	.27	---	.02	---	.05	.05	---
MEAN	2.04	8.46	4.41	4.01	.90	1.73	.76	1.44	1.98	.54	1.00	1.12
MAX	16	60	20	15	9.1	8.2	9.2	16	19	8.0	11	8.2
MIN	.02	.02	.02	.06	.03	.01	.02	.01	.03	.03	.04	.03
AC-FT	126	503	271	246	50	106	45	89	118	33	62	67

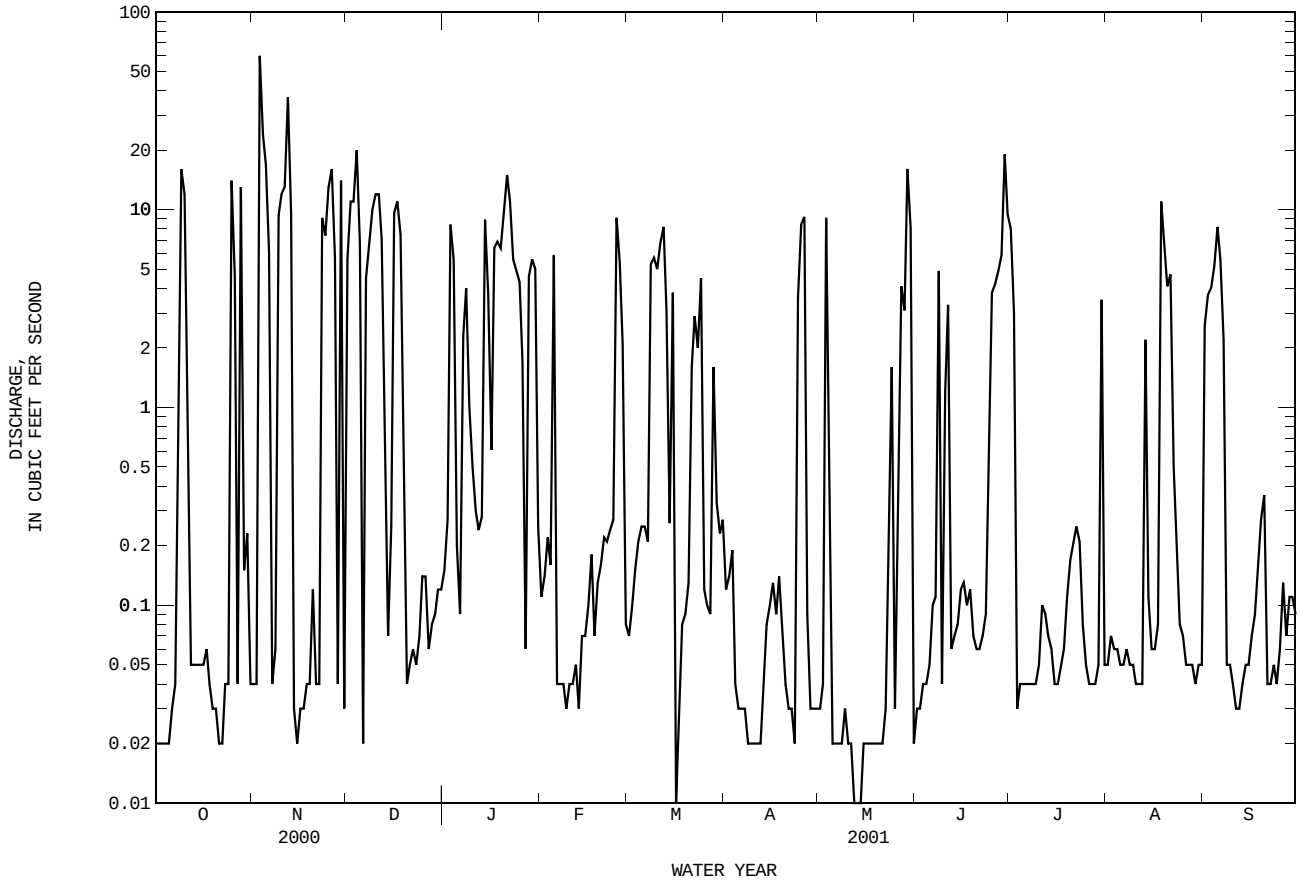
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2001, BY WATER YEAR (WY)

MEAN	4.38	1.71	2.34	2.81	2.81	1.83	2.12	7.90	3.88	11.6	3.08	11.8
MAX	30.6	8.51	9.34	9.16	17.8	5.30	10.4	53.2	13.8	154	15.7	90.1
(WY)	1987	1987	1992	1990	1992	2000	1997	1987	1991	1986	1995	1996
MIN	.027	.018	.028	.073	.038	.016	.011	.043	.097	.025	.021	.016
(WY)	2000	1997	1989	1989	1995	1991	1996	1988	1998	1993	1994	1990

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1986 - 2001	
ANNUAL MEAN	3.41		2.37		4.70	
HIGHEST ANNUAL MEAN					20.8	1986
LOWEST ANNUAL MEAN					.75	1988
HIGHEST DAILY MEAN	115	Mar 23	60	Nov 3	3520	Jul 3 1986
LOWEST DAILY MEAN	.00	Sep 15	.01	Mar 16	.00	Jan 4 1986
ANNUAL SEVEN-DAY MINIMUM	.01	Sep 10	.02	May 10	.01	Sep 10 2000
MAXIMUM PEAK FLOW			475	Nov 12	13100	Jul 3 1989
MAXIMUM PEAK STAGE			6.47	Nov 12	19.01	Jul 3 1989
ANNUAL RUNOFF (AC-FT)	2480		1720		3400	
10 PERCENT EXCEEDS	7.7		8.4		7.2	
50 PERCENT EXCEEDS	.12		.09		.06	
90 PERCENT EXCEEDS	.02		.03		.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 Sept. 1989, Oct. 1990 to Sept. 1991, Oct. 1996 to current year.
PESTICIDE DATA: Oct. 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1987 to Sept. 1989.
WATER TEMPERATURE: May 1987 to Sept. 1989.

INSTRUMENTATION.--Water-quality monitor May 1987 to Sept. 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 41,600 microsiemens/cm, Aug. 17, 1989; minimum, 350 microsiemens/cm, May 28, 1987.
WATER TEMPERATURE: Maximum, 34.5°C, June 8, 1988; minimum, 0.0°C, Feb. 5-8, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
11...	1245	.04	46800	7.4	15.0	5.5	68	4500	4400	1310	304	9960	64
NOV													
14...	1130	.03	38000	7.7	12.2	10.1	114	4000	3800	1140	278	8480	59
DEC													
18...	1150	5.3	42900	7.5	9.4	9.6	103	4000	3900	1150	283	9090	62
JAN													
08...	1400	4.0	43200	7.5	11.3	7.7	86	3800	3700	1080	266	8480	60
MAR													
05...	1200	.25	39600	7.4	14.0	8.0	95	4200	4100	1220	291	8440	56
15...	1200	5.6	39600	7.7	14.5	9.8	120	3800	3700	1100	266	8030	56
APR													
10...	1200	.02	43200	7.5	21.7	7.2	103	4300	4200	1250	296	8610	57
MAY													
22...	1045	.03	42300	7.4	19.2	11.2	150	4400	4300	1270	302	9160	60
JUN													
12...	1219	.06	46400	7.5	27.8	6.9	111	4900	4800	1400	351	11000	68
JUL													
10...	1240	.05	46300	7.7	29.3	8.9	146	4500	4400	1290	314	9510	62
AUG													
07...	1155	.05	46100	7.7	27.8	9.1	144	4500	4400	1280	324	10200	66
SEP													
13...	1045	.04	45200	7.4	24.4	10.0	150	4400	4300	1270	311	9710	63

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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)	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)
OCT													
11...	39.1	132	3260	16900	.5	9.3	31800	42	.031	.019	.050	.191	.37
NOV													
14...	32.9	141	2990	14400	.5	9.1	27400	45	--	.017	E.027	.153	--
DEC													
18...	35.1	129	3070	14300	.5	6.3	28000	35	.126	.056	.182	.182	.40
JAN													
08...	36.9	123	2890	14700	.5	5.0	27500	38	.123	.070	.193	.171	.57
MAR													
05...	32.2	130	3070	14800	.4	3.6	27900	27	--	E.003	<.047	.148	--
15...	33.6	128	2930	13700	.4	5.1	26200	38	--	E.003	<.047	.183	--
APR													
10...	33.3	129	3080	14400	.4	10.1	27700	57	--	<.006	<.047	.100	--
MAY													
22...	38.8	138	3260	15100	.4	10.3	29200	38	--	<.006	<.050	.182	--
JUN													
12...	38.3	115	3180	15800	.5	8.5	31900	33	--	E.003	<.050	.222	--
JUL													
10...	42.2	142	3200	16000	.4	12.8	30500	73	.051	.047	.098	.653	.99
AUG													
07...	76.2	150	3360	16500	.4	14.1	31800	37	--	E.003	E.023	.223	--
SEP													
13...	37.1	151	3340	16000	.4	14.5	30800	79	--	.006	E.034	.154	--

07311783 South Wichita River below low-flow dam near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
OCT													
11...	.13	.32	<.060	<.060	<.018	2	2.3	22.5	1.1	<1.10	<5.60	8	1.5
NOV													
14...	.09	.24	<.060	<.060	<.018	<10	<10.0	28.1	36.3	.14	.30	13	<3.2
DEC													
18...	.04	.22	<.060	<.060	<.018	<10	<10.0	34.8	50.5	<2.20	<1.40	<5	9.4
JAN													
08...	.20	.37	E.038	<.060	<.018	<10	<10.0	29.8	E37.8	<1.10	<1.26	<5	<4.0
MAR													
05...	.18	.33	<.060	<.060	<.018	<19	<8.0	24.9	E34.4	<2.20	<2.80	<5	5.8
15...	.16	.34	<.060	<.060	<.018	<8	<8.0	29.3	29.3	<1.32	<3.50	7	<3.2
APR													
10...	.37	.47	E.042	<.060	<.018	<10	<3.8	33.5	28.2	<.70	<.78	2	<4.0
MAY													
22...	.23	.41	<.060	<.060	<.020	<19	5.7	37.8	34.5	<.63	<.70	<10	<4.8
JUN													
12...	.40	.62	E.045	<.060	<.020	<10	<4.0	32.8	<20.0	<.67	<.70	<1	<.8
JUL													
10...	.24	.89	E.030	<.060	<.020	<10	<3.0	35.3	34.7	<.63	<.70	7	4.5
AUG													
07...	.38	.60	<.060	<.060	<.020	<10	<3.0	37.0	39.1	<.67	E.42	<5	<4.0
SEP													
13...	.40	.56	<.060	<.060	<.020	E7	<3.0	30.6	29.4	<.63	<.70	E3	E2.4

DATE	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)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT													
11...	5.3	<13.0	<930	<10	4	5.04	151	5.0	<.14	.67	<18	<24.0	5.6
NOV													
14...	<10.8	<5.2	<310	<300	2	6.12	93	92.7	<.14	<.23	<16	<12.0	<13.0
DEC													
18...	<12.0	<11.7	<370	<500	5	<9.00	50	E68.4	<.14	<.23	3	4.74	<13.0
JAN													
08...	<10.8	<11.7	<370	<500	2	2.02	47	E59.3	<.14	<.23	<16	3.77	<13.0
MAR													
05...	<12.0	<13.0	<370	<500	<10	<10.0	173	176	<.14	<.23	<18	<24.0	<26.0
15...	<12.0	<13.0	<310	<200	<10	<10.0	253	249	<.14	<.23	<18	<24.0	E6.4
APR													
10...	E12.0	15.5	<310	<400	<20	<1.68	708	616	<.01	<.01	19	<1.26	7.8
MAY													
22...	16.9	--	250	<300	<18	E.86	338	365	<.01	<.01	18	12.9	<6.5
JUN													
12...	12.8	<5.0	E130	<500	<19	<2.00	256	13.4	.01	<.01	26	<1.00	8.1
JUL													
10...	E10.1	32.2	470	<250	<18	<1.00	387	373	<.01	<.01	22	3.26	E5.9
AUG													
07...	E8.4	17.5	380	<250	<19	<2.00	295	305	<.01	.01	23	<1.00	<6.8
SEP													
13...	18.6	15.1	<140	<300	<18	<1.00	276	277	<.01	<.01	26	2.61	10.2

07311783 South Wichita River below low-flow dam near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)
OCT													
11...	6.3	<4.30	<1.6	<930	<20	--	--	--	--	--	--	--	--
NOV													
14...	<12.0	<3.87	.3	<310	<600	--	--	--	--	--	--	--	--
DEC													
18...	<12.0	<3.87	<1.6	<372	<1000	--	--	--	--	--	--	--	--
JAN													
08...	<12.0	<4.30	<1.4	<372	<1000	--	--	--	--	--	--	--	--
MAR													
05...	<9.6	<4.30	<1.6	<372	<1000	--	--	--	--	--	--	--	--
15...	<9.6	<4.30	<1.6	<310	<400	--	--	--	--	--	--	--	--
APR													
10...	<6.9	<.05	<1.0	18	21	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
MAY													
22...	16.6	E.65	<20.0	29	21	--	--	--	--	--	--	--	--
JUN													
12...	<7.0	<.95	<20.0	<19	<20	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
JUL													
10...	14.5	<.90	<18.0	<18	29	--	--	--	--	--	--	--	--
AUG													
07...	7.6	<.95	<19.0	<19	<19	--	--	--	--	--	--	--	--
SEP													
13...	11.2	<.90	<18.0	<18	<18	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)
OCT													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	66	<2	<.1	<.03	59	<.04
MAY													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	101	<2	<.1	<.03	112	<.04
JUL													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--

07311783 South Wichita River below low-flow dam near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT							
11...	--	--	--	--	--	--	--
NOV							
14...	--	--	--	--	--	--	--
DEC							
18...	--	--	--	--	--	--	--
JAN							
08...	--	--	--	--	--	--	--
MAR							
05...	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--
APR							
10...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
22...	--	--	--	--	--	--	--
JUN							
12...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL							
10...	--	--	--	--	--	--	--
AUG							
07...	--	--	--	--	--	--	--
SEP							
13...	--	--	--	--	--	--	--

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 mouth.

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.--Records good. No known regulation. There are low flow diversions upstream on the South Wichita River at Low Flow Dam near Guthrie (station 07311782) to Truscott Brine Lake near Truscott (station 07311669). There were other minor diversions upstream from station during the year. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903 occurred in Sept. 1919 (stage and discharge unknown), from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.82	4.3	18	7.8	32	19	1.1	.26	.00	.00	.00
2	.00	.31	2.1	8.9	6.6	29	18	.82	.63	.00	.00	.00
3	.00	693	2.1	1.3	6.4	24	16	1.0	.35	.00	.00	.00
4	.00	458	1.5	.42	6.1	18	14	92	.12	.00	.00	33
5	.00	128	1.5	.34	4.5	11	11	36	.09	.00	.00	108
6	.00	50	7.7	.34	4.2	10	13	19	.09	.00	.00	.62
7	.00	34	10	.35	3.7	9.4	11	14	.13	.00	.00	.01
8	.00	42	6.4	.45	4.5	487	10	4.5	.12	.00	.00	.00
9	.00	39	3.0	.49	17	234	9.3	1.9	.04	.00	.00	.00
10	.00	23	1.7	.82	17	105	11	1.3	.00	.00	.00	.00
11	.00	19	8.2	1.0	4.8	82	16	1.0	.00	.00	.00	.00
12	.00	14	23	1.3	3.1	61	4.3	.78	.00	.00	.00	.00
13	.00	11	8.0	1.7	2.4	52	2.4	.70	.00	.00	.00	.00
14	.00	17	13	1.1	21	47	2.8	.58	.00	.00	279	.00
15	e.00	21	2.7	.99	87	40	2.3	.47	.00	.00	75	.00
16	e.00	15	1.5	1.1	21	31	2.0	.42	.00	.00	1.1	.00
17	e.00	8.8	3.9	1.3	3.3	27	1.5	.36	.00	.00	.00	.00
18	.00	4.5	.93	1.7	2.0	31	1.7	.29	.00	.00	39	.00
19	.00	2.5	.63	1.6	1.8	e38	1.8	.26	.00	.00	.72	.00
20	.00	1.7	.85	1.4	1.5	e34	2.0	.20	.00	.00	.00	.00
21	.00	1.4	1.0	1.3	1.1	e27	2.0	.12	.00	.00	.00	28
22	.00	1.3	.85	1.2	1.3	e25	2.0	.08	.00	.00	.00	72
23	.00	34	4.2	1.2	1.7	e22	1.5	.06	.00	.00	.00	131
24	.00	282	.51	1.4	2.1	104	1.2	e.05	.00	.00	.00	19
25	296	28	.46	3.0	1.5	85	1.0	e.04	.00	.00	.00	5.6
26	151	16	.53	3.3	8.3	44	.99	114	.00	.00	.00	1.4
27	59	13	.71	2.5	98	35	.79	34	.00	.00	.00	.89
28	45	13	.71	6.3	40	36	.72	14	.00	.00	.00	.57
29	67	11	1.0	24	---	33	.84	2.1	.00	.00	.00	.33
30	1.2	9.0	5.8	16	---	27	1.4	.96	.00	.00	.00	.09
31	.77	---	4.2	10	---	23	---	.41	---	.00	.00	---
TOTAL	619.97	1991.33	122.98	114.80	379.7	1863.4	181.54	342.50	1.83	0.00	394.82	400.51
MEAN	20.0	66.4	3.97	3.70	13.6	60.1	6.05	11.0	.061	.000	12.7	13.4
MAX	296	693	23	24	98	487	19	114	.63	.00	279	131
MIN	.00	.31	.46	.34	1.1	9.4	.72	.04	.00	.00	.00	.00
AC-FT	1230	3950	244	228	753	3700	360	679	3.6	.00	783	794
IN.	.04	.13	.01	.01	.02	.12	.01	.02	.00	.00	.03	.03

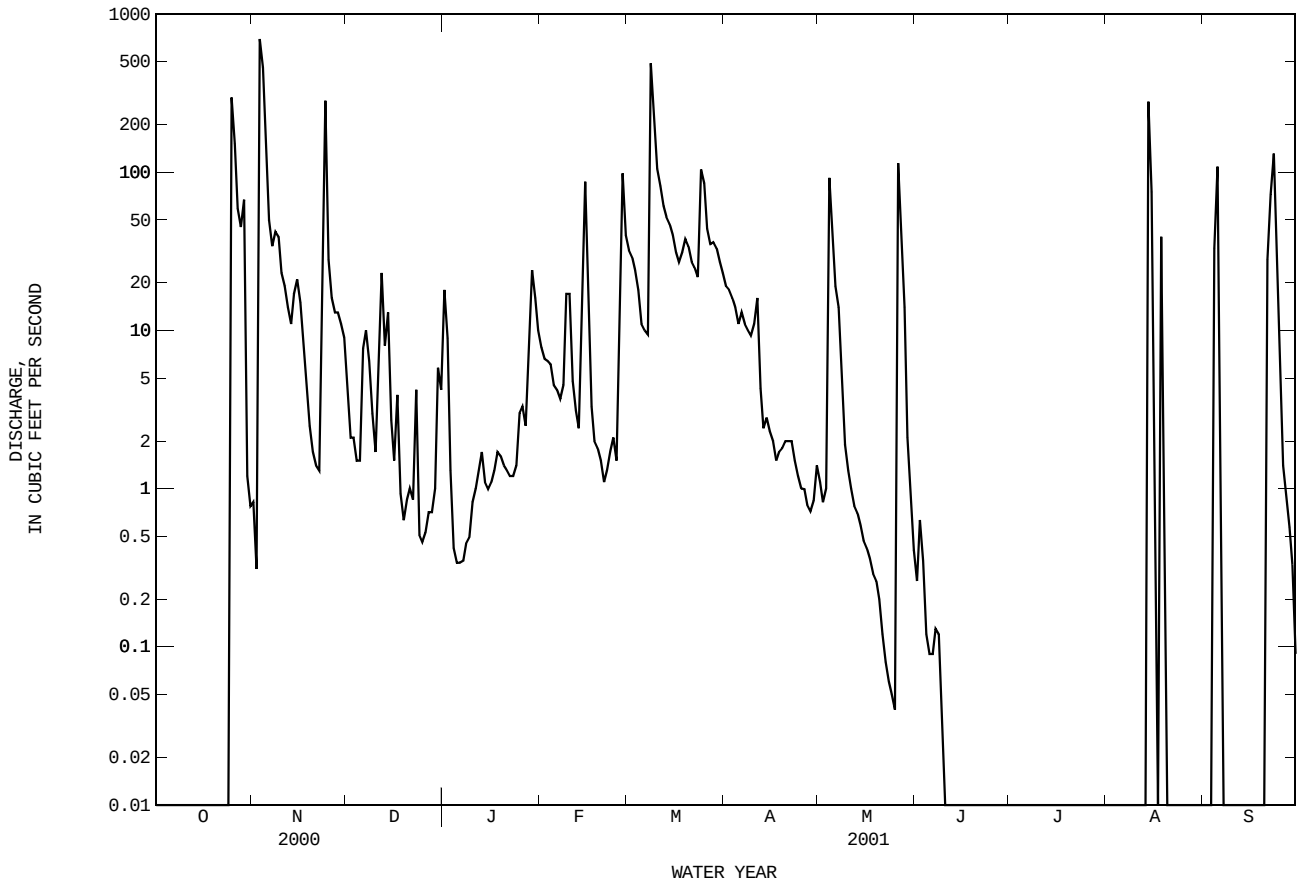
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001, BY WATER YEAR (WY)

MEAN	69.7	18.7	11.7	11.3	17.9	25.6	29.3	75.1	78.8	22.8	45.1	75.1
MAX	656	66.4	77.5	60.3	172	147	187	256	458	162	578	502
(WY)	1984	2001	1992	1992	1992	2000	1990	1989	1990	1986	1995	1966
MIN	.000	.000	.000	.000	.46	.97	.073	.92	.061	.000	.000	.000
(WY)	2000	2000	1999	2000	2000	1989	1989	1988	2001	2001	1963	1998

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001	
ANNUAL TOTAL	9026.43		6413.38			
ANNUAL MEAN	24.7		17.6		40.5	
HIGHEST ANNUAL MEAN					107	1966
LOWEST ANNUAL MEAN					11.2	1988
HIGHEST DAILY MEAN	2210	Mar 23	693	Nov 3	8260	Oct 20 1983
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	May 24 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Jun 27 1960
MAXIMUM PEAK FLOW			1490	Nov 3	14900	Jun 1 1990
MAXIMUM PEAK STAGE			13.09	Nov 3	17.07	Jun 1 1990
INSTANTANEOUS LOW FLOW					.00	May 24 1960
ANNUAL RUNOFF (AC-FT)	17900		12720		29370	
ANNUAL RUNOFF (INCHES)	.57		.41		.94	
10 PERCENT EXCEEDS	28		36		45	
50 PERCENT EXCEEDS	.02		1.1		6.6	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated

07311800 South Wichita River near Benjamin, TX--Continued



07311800 South Wichita River near Benjamin, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: July 1949 to Mar. 1959, July 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 Aug. 1968 to current year.

REMARKS.--Records good. 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. The computation of the selected constituent loads might include estimated discharge or specific conductance data. New regression equations were developed based on data from water years 1992 to 2001. The standard error of estimate for dissolved solids is 6%, chloride is 28%, sulfate is 16% and for hardness is 14%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request. No flow Oct. 1-24, June 11-Aug. 13, Aug. 20-Sept. 3 and Sept. 8-20.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 48,900 microsiemens/cm, May 13, 1971; minimum, 384 microsiemens/cm, Sept. 18, 1996.
WATER TEMPERATURE: Maximum, 39.0°C, July 31, 1989; minimum, -0.7°C, Dec. 14, 2000.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 28,900 microsiemens/cm, Dec. 22; minimum, 449 microsiemens/cm, Sept. 4.
WATER TEMPERATURE: Maximum, 36.1°C, June 6; minimum, -0.7°C, Dec. 14.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
27...	1400	45	7980	7.1	21.9	7.8	95	1800	1800	569	98.1	1600	16
NOV													
13...	1320	12	10400	8.0	8.7	12.1	111	1900	1800	542	124	1680	17
JAN													
03...	1130	.96	25100	7.3	.3	9.0	70	3200	3100	885	248	4080	31
22...	1430	1.4	15700	7.6	10.1	8.6	82	2900	2700	772	225	2570	21
FEB													
26...	1215	11	11200	8.3	13.3	8.5	88	2800	2600	660	268	1600	13
MAR													
26...	1415	41	6010	7.7	7.3	8.7	77	1700	1600	477	126	762	8
APR													
04...	1545	14	9060	8.0	27.2	5.0	68	2500	2400	622	234	1200	10
MAY													
17...	1215	.39	14900	7.9	33.3	7.2	112	3300	3200	861	281	2310	17
JUN													
08...	1100	.18	12700	7.9	30.3	7.3	106	3000	2900	810	227	1820	15
SEP													
05...	1235	115	700	8.1	22.9	7.3	89	390	350	125	17.9	50.2	1

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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)	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)
OCT													
27...	16.6	52	1430	2830	E.2	5.5	6590	568	.211	.011	.222	.092	1.3
NOV													
13...	12.6	103	1570	2890	.3	7.4	6890	40	--	E.003	.142	.044	.40
JAN													
03...	22.0	130	2450	7140	.2	3.4	14900	24	--	<.006	E.044	.066	--
22...	18.1	127	2270	4320	.3	3.0	10300	59	--	<.006	.173	.053	.39
FEB													
26...	18.1	144	2340	2700	.3	4.3	7680	94	--	<.006	.083	E.035	.45
MAR													
26...	10.8	95	1470	1330	.3	4.7	4240	342	--	E.004	.282	<.041	.90
APR													
04...	16.6	125	2240	1980	.4	4.5	6370	46	--	<.006	E.044	E.040	--
MAY													
17...	21.5	131	2690	4010	.3	4.3	10300	26	--	<.006	E.024	E.037	--
JUN													
08...	20.1	109	2380	3150	.3	4.9	8490	13	--	<.006	<.050	.055	--
SEP													
05...	6.21	33	344	89.4	.3	7.2	661	9320	--	<.006	E.032	.221	--

07311800 South Wichita River near Benjamin, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
OCT													
27...	1.0	1.1	.402	<.060	<.018	10	5.4	428	344	<.33	.15	11	4.5
NOV													
13...	.22	.26	<.060	<.060	<.018	5	<4.0	88.8	88.0	<.33	.18	9	<1.6
JAN													
03...	.11	.17	<.060	<.060	<.018	<6	<6.0	31.9	48.2	<.55	<.70	<3	<2.4
22...	.16	.22	<.060	<.060	<.018	<4	4.1	39.4	30.3	<.66	<.84	14	13.0
FEB													
26...	--	.36	.121	<.060	<.018	6	5.7	62.6	45.9	<.33	<.56	9	3.0
MAR													
26...	--	.61	.207	<.060	<.018	8	4.3	114	58.8	<.22	<.28	10	<.8
APR													
04...	--	.28	E.056	<.060	<.018	4	5.0	76.4	61.9	<.04	.07	5	<.8
MAY													
17...	--	.13	E.031	<.060	<.020	8	5.8	74.4	69.3	.04	<.30	5	<6.4
JUN													
08...	.44	.49	<.060	<.060	<.020	7	5.6	88.3	94.2	E.12	.25	<1	<.8
SEP													
05...	8.0	8.3	6.00	<.060	<.020	48	5.5	1100	73.4	.37	<.04	77	<.8

DATE	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)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT													
27...	10.3	1.7	5820	<50	6	<2.00	217	5.3	<.14	.65	16	<9.60	E2.2
NOV													
13...	4.7	1.4	380	<100	<3	2.36	14	3.6	<.14	<.23	2	<4.80	<5.2
JAN													
03...	1.9	<6.5	<280	<200	<5	<5.00	<25	<64.0	<.14	<.23	<9	<14.4	<7.8
22...	<7.2	1.4	830	<200	3	<3.00	17	5.7	<.14	.25	6	<7.20	<5.2
FEB													
26...	3.0	2.0	1590	<150	2	1.71	39	<3.2	<.14	<.23	3	2.99	E2.6
MAR													
26...	6.4	E1.5	4460	<50	3	<2.00	109	E2.1	<.01	<.01	11	<4.80	4.1
APR													
04...	12.2	14.0	1290	<100	<1	.74	24	2.7	<.01	<.01	9	.17	3.6
MAY													
17...	19.0	8.5	450	<150	<1	<.60	24	9.6	<.01	<.01	13	<.40	3.6
JUN													
08...	11.6	16.0	<40	<150	<5	2.50	22	19.8	.02	.01	10	.78	1.9
SEP													
05...	51.4	5.3	30900	<10	56	<.08	3840	1.5	<.01	<.01	148	<.06	3.2

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)
OCT													
27...	<4.8	<.64	<.3	<93	<100	--	--	--	--	--	--	--	--
NOV													
13...	<4.8	<1.30	<.3	<93	<200	--	--	--	--	--	--	--	--
JAN													
03...	<7.2	<2.15	<.8	<279	<400	--	--	--	--	--	--	--	--
22...	<4.8	<1.72	<.5	<124	<400	--	--	--	--	--	--	--	--
FEB													
26...	4.8	<1.29	<.5	<93	<300	--	--	--	--	--	--	--	--
MAR													
26...	E1.4	<.86	<.3	<93	<100	--	--	--	--	--	--	--	--
APR													
04...	6.0	<.05	<1.0	12	9	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
MAY													
17...	E1.5	E.03	<7.0	11	<7	--	--	--	--	--	--	--	--
JUN													
08...	2.6	<.25	<5.0	28	33	--	--	--	--	--	--	--	--
SEP													
05...	.6	.12	<1.0	140	2	--	--	--	--	--	--	--	--

07311800 South Wichita River near Benjamin, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)
OCT													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
04...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	89	<2	<.1	<.03	70	<.04
MAY													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT							
27...	--	--	--	--	--	--	--
NOV							
13...	--	--	--	--	--	--	--
JAN							
03...	--	--	--	--	--	--	--
22...	--	--	--	--	--	--	--
FEB							
26...	--	--	--	--	--	--	--
MAR							
26...	--	--	--	--	--	--	--
APR							
04...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
17...	--	--	--	--	--	--	--
JUN							
08...	--	--	--	--	--	--	--
SEP							
05...	--	--	--	--	--	--	--

07311800 South Wichita River near Benjamin, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	619.97	7890	5670	9500	1900	3140	1800	3050	2100
NOV.	2000	1991.33	3610	2630	14130	830	4460	890	4780	1000
DEC.	2000	122.98	18400	12170	4040	5300	1750	2500	831	3200
JAN.	2001	114.8	17270	11570	3580	4800	1500	2600	803	3300
FEB.	2001	379.7	8730	6200	6360	2100	2200	1900	1930	2200
MAR.	2001	1863.4	5940	4340	21820	1400	6820	1500	7450	1700
APR.	2001	181.54	9480	6760	3310	2300	1120	2100	1030	2500
MAY	2001	342.5	5800	4220	3900	1300	1230	1400	1310	1600
JUNE	2001	1.83	10120	7190	35.5	2500	12.2	2200	10.9	2600
JULY	2001	0	--	--	--	--	--	--	--	--
AUG.	2001	394.82	2910	2170	2310	620	662	810	860	910
SEPT	2001	400.51	1690	1270	1370	360	385	480	518	540
TOTAL		6413.38	**	**	70370	**	23280	**	22590	**
WTD.AVG.		18	5650	4060	**	1300	**	1300	**	1500

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	7570	4580	6380	18700	17500	17900	24100	22700	23400
2	---	---	---	8320	7570	8010	19500	18600	19100	24800	23200	24100
3	---	---	---	8510	758	2540	19600	19400	19500	24900	24000	24500
4	---	---	---	1880	898	1320	19500	18700	19100	25200	23200	24100
5	---	---	---	3110	1880	2500	19000	18200	18600	24700	23500	24100
6	---	---	---	5500	2760	4080	20600	19000	19700	23700	22700	23300
7	---	---	---	5970	5320	5720	24100	20600	22500	23400	22700	23000
8	---	---	---	6180	4400	5360	24600	24100	24300	23100	21900	22600
9	---	---	---	7090	5680	6050	24100	14800	19900	22700	21600	22200
10	---	---	---	5940	5460	5650	18800	15900	17600	22000	17000	19300
11	---	---	---	---	---	e7000	19900	12500	18000	17500	15500	16300
12	---	---	---	---	---	e8500	12500	8210	10300	19500	16900	18300
13	---	---	---	---	---	e10700	9040	8230	8550	20200	18700	19400
14	---	---	---	13000	10900	12000	25300	9040	17600	20300	19800	20100
15	---	---	---	13900	13000	13500	25500	24100	24900	21100	20300	20700
16	---	---	---	14900	13900	14400	26300	22500	25200	21100	18700	19800
17	---	---	---	15300	14900	15000	25600	22100	24200	19200	17100	17800
18	---	---	---	15400	15200	15300	25700	23100	24200	18500	16500	17500
19	---	---	---	15600	15000	15300	25600	23100	24500	19200	16600	18100
20	---	---	---	16100	15600	15800	24600	22600	23800	18500	14700	16900
21	---	---	---	16600	15100	16000	28200	21200	25000	16800	14300	15900
22	---	---	---	16000	15500	15800	28900	25600	27900	17400	14500	16300
23	---	---	---	15700	1180	12600	28100	25500	27100	17500	16200	17100
24	---	---	---	6440	1260	2690	27300	25800	26500	17600	16800	17100
25	---	---	e8350	5550	2780	4070	26200	25200	25600	18000	16700	17400
26	---	---	e9300	10200	5550	8030	27500	25400	26800	18100	16600	17600
27	---	---	e10300	14600	10200	12300	27200	24100	26200	18100	16600	17500
28	9070	879	6370	15300	14200	14700	26800	23600	25300	17700	8780	16300
29	2390	1310	1740	17400	15300	16600	23900	19000	22100	14300	7680	11200
30	2220	1530	1860	18100	17400	17800	23600	21300	22600	15800	14100	14900
31	4580	2220	3030	---	---	---	23600	22000	22800	16600	14400	15200
MONTH	---	---	---	---	---	9860	28900	8210	21800	25200	7680	19100

07311800 South Wichita River near Benjamin, TX--Continued

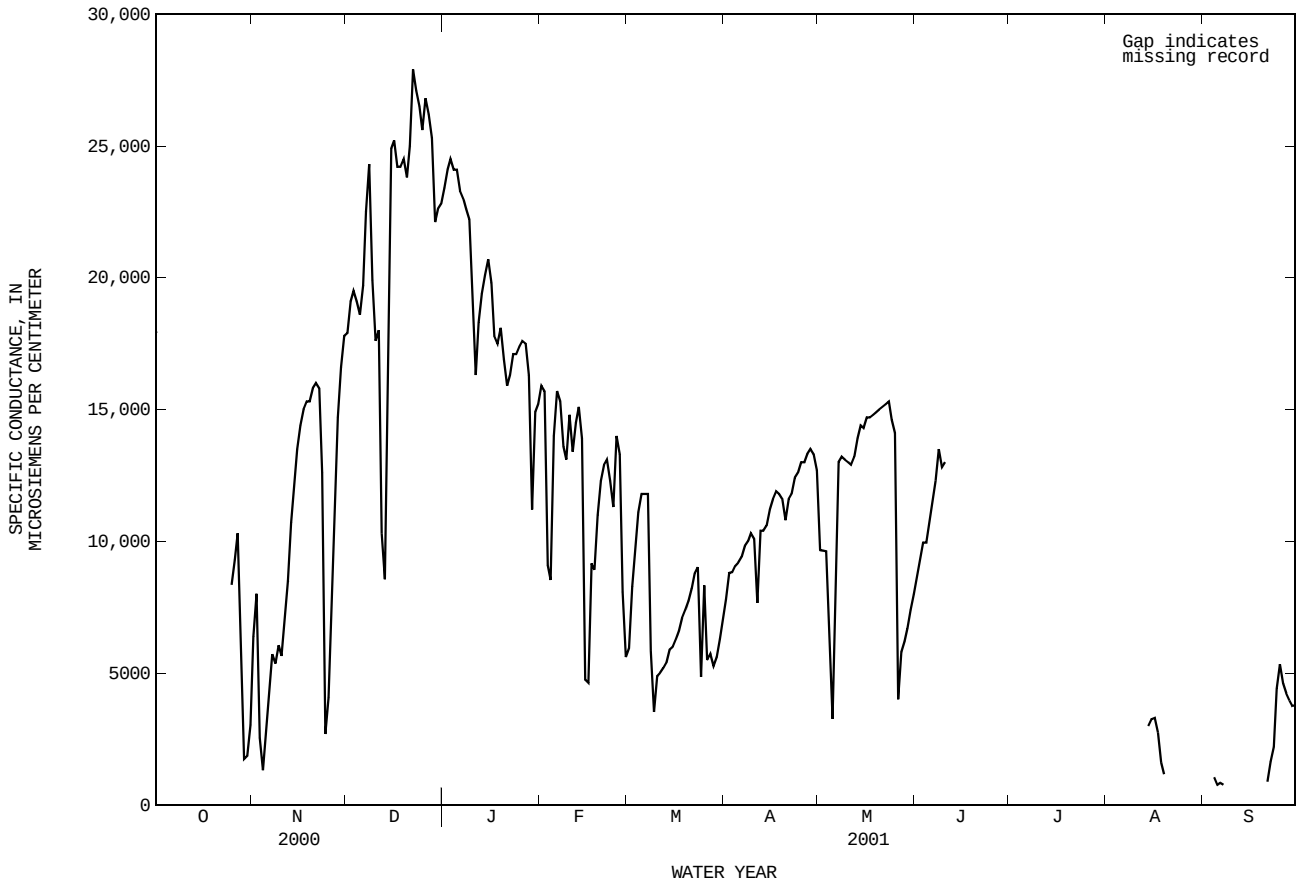
SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	18500	13700	15900	7360	3450	5950	---	---	e7800	9910	9350	9670
2	16400	12300	15700	9270	6670	8290	---	---	e8800	9900	9420	9650
3	12300	7270	9090	10100	9270	9710	---	---	e8830	9940	9270	9620
4	10500	7490	8530	11600	10100	11100	---	---	e9070	9270	3000	6440
5	17300	7340	14000	12000	11500	11800	9270	9070	9200	4190	2890	3260
6	17100	13900	15700	11900	11500	11800	9670	9260	9410	11700	3570	6490
7	16500	14000	15300	12000	11500	11800	10000	9400	9820	13300	11700	13000
8	14000	11800	13600	12100	1080	5840	10200	9900	10000	13400	13000	13200
9	15700	3320	13100	4920	1950	3530	10400	10200	10300	13300	12900	13100
10	17000	11400	14800	5600	3750	4890	10500	3540	10100	13300	12900	13000
11	14400	11500	13400	5710	4420	5020	10300	4330	7660	13100	12700	12900
12	15200	13700	14500	---	---	e5200	10500	10300	10400	13800	13000	13200
13	15500	14800	15100	---	---	e5400	10600	10200	10400	14100	13700	13900
14	15700	1480	13900	---	---	e5900	10900	10500	10600	14600	14100	14400
15	9060	2310	4760	---	---	e6000	11600	10900	11200	14600	14100	14300
16	7060	3060	4630	---	---	e6300	11900	11300	11600	15100	14400	14700
17	10300	7060	9160	---	---	e6600	12000	11900	11900	---	---	e14700
18	9950	7920	8920	---	---	e7100	11900	11600	11800	---	---	e14800
19	11900	9900	11000	---	---	e7400	12500	10800	11600	---	---	e14900
20	12800	11800	12300	---	---	e7740	11000	10600	10800	---	---	e15000
21	13200	12600	12900	---	---	e8220	12800	10700	11600	---	---	e15100
22	13300	12600	13100	---	---	e8770	12600	11300	11800	---	---	e15200
23	13200	9940	12300	---	---	e9020	12700	12200	12400	---	---	e15300
24	12200	9020	11300	8350	2160	4850	12800	12300	12600	15100	14300	14600
25	14900	11200	14000	11800	2600	8320	13300	12600	13000	14600	13800	14100
26	14500	12000	13300	6400	4580	5500	13400	12800	13000	---	---	e4000
27	14500	1290	8070	6350	5480	5730	13600	13000	13300	---	---	e5800
28	9660	3400	5600	---	5140	e5270	13800	13100	13500	---	---	e6200
29	---	---	---	---	---	e5600	13700	12800	13300	---	---	e6700
30	---	---	---	---	---	e6300	13400	9870	12700	---	---	e7400
31	---	---	---	---	---	e7000	---	---	---	---	---	e8000
MONTH	18500	1290	11900	---	---	7160	---	---	10900	---	---	11400

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e8700	---	---	---	---	---	---	---	---	---
2	---	---	e9300	---	---	---	---	---	---	---	---	---
3	---	---	e9950	---	---	---	---	---	---	---	---	---
4	---	---	e9950	---	---	---	---	---	---	1130	449	1050
5	---	---	e10700	---	---	---	---	---	---	901	701	765
6	---	---	e11500	---	---	---	---	---	---	878	797	832
7	---	---	e12300	---	---	---	---	---	---	910	481	763
8	---	---	e13500	---	---	---	---	---	---	---	---	---
9	13200	12400	12800	---	---	---	---	---	---	---	---	---
10	13200	12700	13000	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	e3000	---	---	---
15	---	---	---	---	---	---	3650	2290	3250	---	---	---
16	---	---	---	---	---	---	4020	2400	3300	---	---	---
17	---	---	---	---	---	---	3220	---	e2740	---	---	---
18	---	---	---	---	---	---	---	1090	e1600	---	---	---
19	---	---	---	---	---	---	1290	1080	1160	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	968	801	885
22	---	---	---	---	---	---	---	---	---	3420	916	1650
23	---	---	---	---	---	---	---	---	---	3050	1800	2200
24	---	---	---	---	---	---	---	---	---	5680	3020	4420
25	---	---	---	---	---	---	---	---	---	5760	4850	5340
26	---	---	---	---	---	---	---	---	---	4850	4410	4610
27	---	---	---	---	---	---	---	---	---	4420	4080	4230
28	---	---	---	---	---	---	---	---	---	4080	3760	3970
29	---	---	---	---	---	---	---	---	---	3810	3730	3760
30	---	---	---	---	---	---	---	---	---	3870	3670	3780
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

e Estimated

07311800 South Wichita River near Benjamin, TX--Continued



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	23.1	14.1	19.1	11.0	6.3	8.4	1.5	.0	.7
2	---	---	---	23.6	11.3	16.3	6.3	4.0	4.8	1.3	-.4	.2
3	---	---	---	15.8	14.5	14.8	5.3	3.5	4.3	7.2	-.2	2.0
4	---	---	---	14.9	14.4	14.6	5.2	3.6	4.6	9.5	.5	4.0
5	---	---	---	16.9	14.9	15.8	6.8	5.2	6.0	11.1	2.5	5.7
6	---	---	---	16.4	13.5	14.9	8.8	5.0	6.8	11.5	2.6	6.0
7	---	---	---	13.7	5.8	9.0	8.3	2.7	5.8	10.5	4.2	6.5
8	---	---	---	5.8	3.3	4.7	9.4	5.0	7.1	10.2	2.4	5.4
9	---	---	---	9.7	3.5	6.6	10.2	4.7	7.2	10.4	2.0	5.4
10	---	---	---	11.0	4.5	8.2	9.7	6.4	8.1	7.0	5.7	6.2
11	---	---	---	14.2	8.9	11.3	8.1	3.2	6.0	9.9	5.7	6.9
12	---	---	---	11.9	6.2	8.4	3.2	1.2	1.9	8.2	3.9	6.2
13	---	---	---	9.1	3.2	5.9	3.2	-.4	1.5	12.1	7.6	9.3
14	---	---	---	8.5	2.5	5.9	1.6	-.7	.3	11.1	5.5	7.8
15	---	---	---	9.1	5.6	7.5	9.1	1.5	5.1	10.1	4.1	6.6
16	---	---	---	10.1	5.6	7.8	8.9	4.1	6.3	7.1	5.2	6.5
17	---	---	---	7.6	4.0	5.6	7.3	1.5	4.0	5.2	2.5	3.1
18	---	---	---	8.6	4.9	6.2	8.3	3.2	5.1	5.2	2.1	3.2
19	---	---	---	11.8	3.6	6.5	7.4	2.4	4.4	7.0	1.1	3.3
20	---	---	---	10.9	2.9	5.8	7.7	2.4	4.4	6.0	.2	2.9
21	---	---	---	12.6	1.8	6.1	6.2	1.4	3.2	9.5	1.5	4.5
22	---	---	---	9.8	5.0	7.6	6.0	-.1	2.4	11.0	2.2	5.7
23	---	---	---	12.1	9.0	10.2	7.7	.9	3.4	14.1	6.1	9.0
24	---	---	---	10.1	8.4	9.3	3.6	2.3	2.9	11.8	7.0	9.1
25	---	---	---	10.8	7.2	9.1	2.4	.5	1.7	7.4	4.3	6.2
26	---	---	---	9.9	5.0	7.8	.7	-.2	.3	12.1	5.0	8.1
27	---	---	---	9.8	5.6	7.8	1.0	.0	.4	7.6	2.6	4.4
28	22.2	17.1	20.1	9.9	4.9	7.9	3.5	.1	.9	4.0	2.4	3.0
29	19.3	15.5	17.4	9.9	5.9	7.9	5.1	-.2	1.6	8.3	1.5	4.9
30	21.0	14.3	17.4	9.8	4.1	7.1	4.2	-.1	1.7	9.7	3.3	6.4
31	24.0	18.0	20.0	---	---	---	2.2	.8	1.4	9.6	3.4	6.5
MONTH	---	---	---	23.6	1.8	9.2	11.0	-.7	3.9	14.1	-.4	5.3

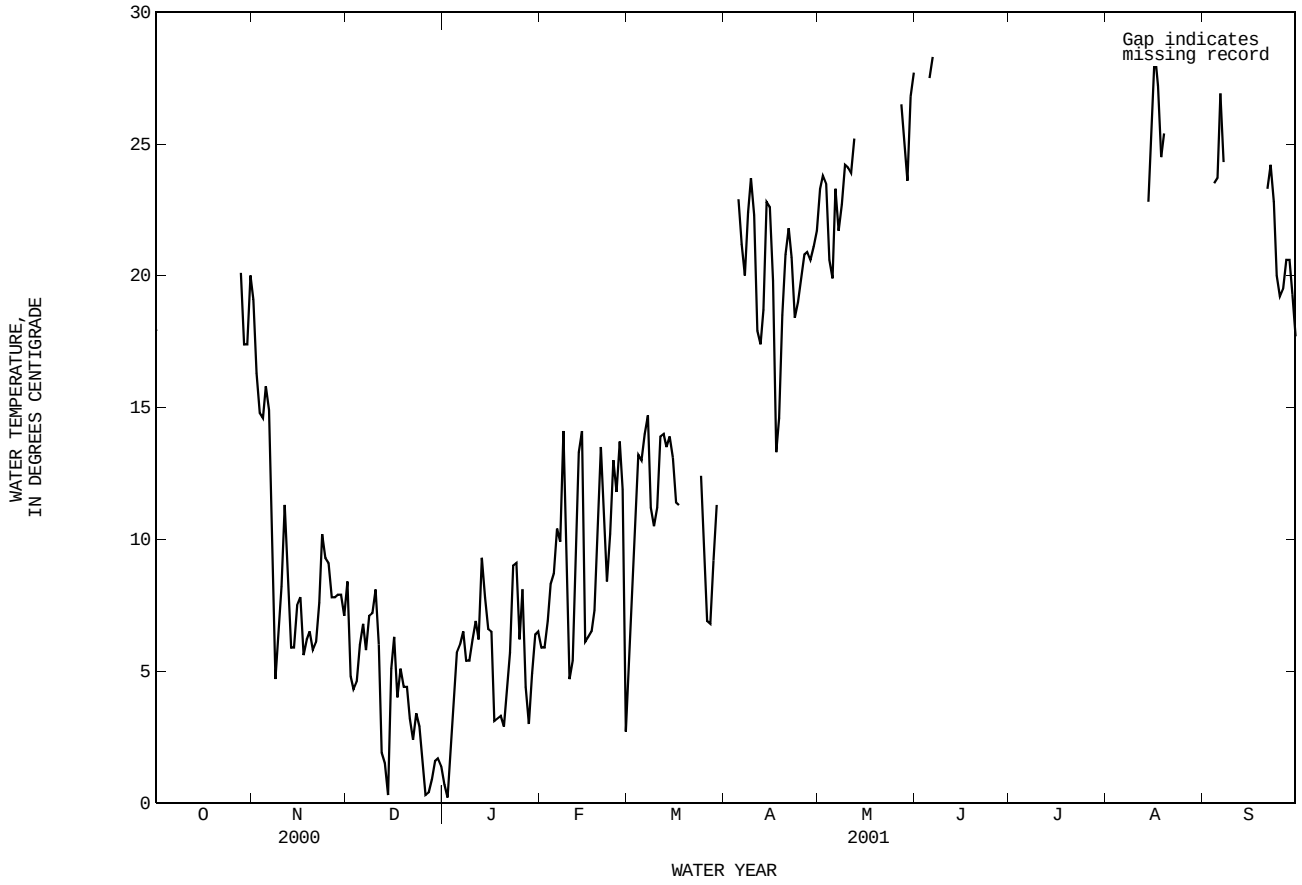
07311800 South Wichita River near Benjamin, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.8	3.2	5.9	11.0	1.7	5.8	---	---	---	28.8	19.2	23.3
2	9.3	3.0	5.9	11.2	6.7	9.0	---	---	---	29.2	20.0	23.8
3	10.6	3.3	6.9	15.2	7.4	11.2	---	---	---	26.3	21.3	23.5
4	12.1	5.5	8.3	17.0	9.2	13.2	---	---	---	23.0	18.8	20.6
5	13.5	4.6	8.7	16.9	7.7	13.0	25.2	20.8	22.9	22.4	17.7	19.9
6	14.9	7.7	10.4	16.9	10.3	14.0	23.3	19.3	21.2	27.9	19.5	23.3
7	13.4	6.7	9.9	18.6	9.8	14.7	24.8	15.0	20.0	25.3	19.8	21.7
8	16.5	11.8	14.1	16.8	8.6	11.2	27.8	17.6	22.4	26.4	19.0	22.7
9	12.8	5.9	8.4	13.3	8.5	10.5	27.6	19.4	23.7	27.2	21.3	24.2
10	7.8	1.5	4.7	12.5	9.6	11.2	24.1	20.1	22.3	26.9	21.5	24.1
11	8.6	2.5	5.4	18.4	10.9	13.9	21.0	13.4	17.9	27.3	21.4	23.9
12	10.4	6.7	8.8	16.7	11.4	14.0	22.5	12.3	17.4	27.8	22.9	25.2
13	17.3	10.4	13.3	15.3	11.9	13.5	22.6	13.7	18.7	---	---	---
14	15.7	7.7	14.1	14.9	13.3	13.9	27.4	18.9	22.8	---	---	---
15	7.7	4.7	6.1	14.3	12.2	13.1	26.4	18.7	22.6	---	---	---
16	9.6	4.0	6.3	12.8	10.3	11.4	25.4	15.2	19.8	---	---	---
17	11.2	2.1	6.5	12.2	10.9	11.3	17.2	11.9	13.3	---	---	---
18	11.7	3.6	7.3	---	---	---	19.4	11.5	14.6	---	---	---
19	15.9	5.6	10.7	---	---	---	24.2	13.5	18.5	---	---	---
20	18.7	9.2	13.5	---	---	---	23.6	17.8	20.8	---	---	---
21	13.1	7.5	10.4	---	---	---	25.2	20.0	21.8	---	---	---
22	12.0	5.7	8.4	---	---	---	23.7	18.6	20.7	---	---	---
23	12.1	8.8	10.2	---	---	---	23.8	13.8	18.4	---	---	---
24	15.7	10.4	13.0	18.6	9.7	12.4	25.0	13.5	19.0	---	---	---
25	16.4	7.4	11.8	11.7	8.3	9.7	25.9	14.6	19.9	---	---	---
26	16.0	10.5	13.7	8.6	6.0	6.9	26.6	16.6	20.8	---	---	---
27	15.2	6.7	11.9	8.0	5.5	6.8	26.4	16.8	20.9	31.2	22.1	26.5
28	6.7	1.3	2.7	11.3	7.7	9.2	25.2	17.2	20.6	28.8	23.6	25.1
29	---	---	---	13.3	9.6	11.3	26.6	17.0	21.1	25.1	22.5	23.6
30	---	---	---	---	---	---	26.8	18.1	21.7	32.8	22.1	26.8
31	---	---	---	---	---	---	---	---	---	32.0	24.2	27.7
MONTH	18.7	1.3	9.2	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	23.8	22.5	23.5
5	35.5	22.0	27.5	---	---	---	---	---	---	26.2	22.0	23.7
6	36.1	22.9	28.3	---	---	---	---	---	---	34.5	22.6	26.9
7	---	---	---	---	---	---	---	---	---	27.7	20.9	24.3
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	23.1	22.5	22.8	---	---	---
15	---	---	---	---	---	---	30.0	22.1	25.7	---	---	---
16	---	---	---	---	---	---	33.6	25.2	28.5	---	---	---
17	---	---	---	---	---	---	30.5	24.8	27.2	---	---	---
18	---	---	---	---	---	---	27.3	21.0	24.5	---	---	---
19	---	---	---	---	---	---	30.4	22.4	25.4	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	27.9	19.2	23.3
22	---	---	---	---	---	---	---	---	---	26.9	21.5	24.2
23	---	---	---	---	---	---	---	---	---	25.5	20.7	22.8
24	---	---	---	---	---	---	---	---	---	23.2	16.3	20.0
25	---	---	---	---	---	---	---	---	---	23.1	14.9	19.2
26	---	---	---	---	---	---	---	---	---	22.6	16.3	19.5
27	---	---	---	---	---	---	---	---	---	24.0	17.7	20.6
28	---	---	---	---	---	---	---	---	---	22.7	18.1	20.6
29	---	---	---	---	---	---	---	---	---	21.2	16.7	19.3
30	---	---	---	---	---	---	---	---	---	20.1	14.8	17.7
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07311800 South Wichita River near Benjamin, TX--Continued



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.--July 1952 to Sept. 1957 (occasional low-flow measurements made 4 mi downstream), Nov. 1959 to Sept. 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.--No estimated daily discharges. Records good. No known regulation or diversions. No flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	60	52	22	60	399	86	18	66	1.9	.00	2.1
2	.00	42	41	22	48	281	80	17	26	1.6	.00	1.8
3	.00	476	33	24	41	136	73	17	17	1.4	.00	1.3
4	.00	2490	26	28	37	96	69	316	13	.94	.00	1.2
5	.00	966	22	26	34	78	62	683	11	.57	.00	89
6	.00	441	18	25	32	69	60	218	10	.36	.00	339
7	.00	214	14	24	30	63	55	98	9.5	.22	.00	75
8	.00	381	12	22	30	1430	53	74	8.3	.13	.00	13
9	.00	398	11	22	85	2380	50	53	7.6	.04	.00	8.9
10	.00	174	8.6	48	70	1180	47	40	6.8	.00	.00	5.5
11	.00	111	6.4	108	48	565	80	33	6.3	.00	.00	3.8
12	.00	85	12	53	42	307	59	28	5.9	.00	.00	2.9
13	.00	71	7.7	40	37	199	44	33	5.6	.00	.00	2.1
14	.00	63	8.3	32	122	147	40	25	5.6	.00	590	1.8
15	1.0	59	8.9	29	1290	121	37	21	5.3	.00	649	7.3
16	.12	52	9.5	31	560	104	33	19	5.0	.00	440	2.0
17	.53	47	9.2	58	167	89	31	17	4.7	.00	181	1.7
18	1.2	45	9.2	49	98	85	30	17	4.3	.00	95	1.5
19	1.4	42	8.4	35	75	84	29	15	3.9	.00	121	1.6
20	69	40	8.8	30	64	83	28	19	3.6	.00	153	68
21	62	38	9.1	28	56	78	28	29	3.3	.00	95	768
22	216	37	10	26	52	70	27	16	3.2	.00	36	257
23	396	109	10	25	52	65	25	14	3.1	.00	19	106
24	385	2280	11	25	87	694	24	13	9.7	.00	10	385
25	336	887	12	23	117	347	23	12	6.0	.00	6.4	112
26	1680	296	40	24	85	207	21	11	3.1	.00	5.2	49
27	658	126	39	29	253	152	20	224	2.5	.00	4.7	26
28	239	91	28	58	438	134	19	162	3.1	.00	3.7	17
29	1010	71	29	358	---	120	18	73	2.6	.00	2.8	13
30	302	60	27	142	---	110	18	63	2.7	.00	2.5	10
31	93	---	25	80	---	96	---	154	---	.00	2.3	---
TOTAL	5450.25	10252	566.1	1546	4110	9969	1269	2532	264.7	7.16	2416.60	2372.5
MEAN	176	342	18.3	49.9	147	322	42.3	81.7	8.82	.23	78.0	79.1
MAX	1680	2490	52	358	1290	2380	86	683	66	1.9	649	768
MIN	.00	37	6.4	22	30	63	18	11	2.5	.00	.00	1.2
AC-FT	10810	20330	1120	3070	8150	19770	2520	5020	525	14	4790	4710

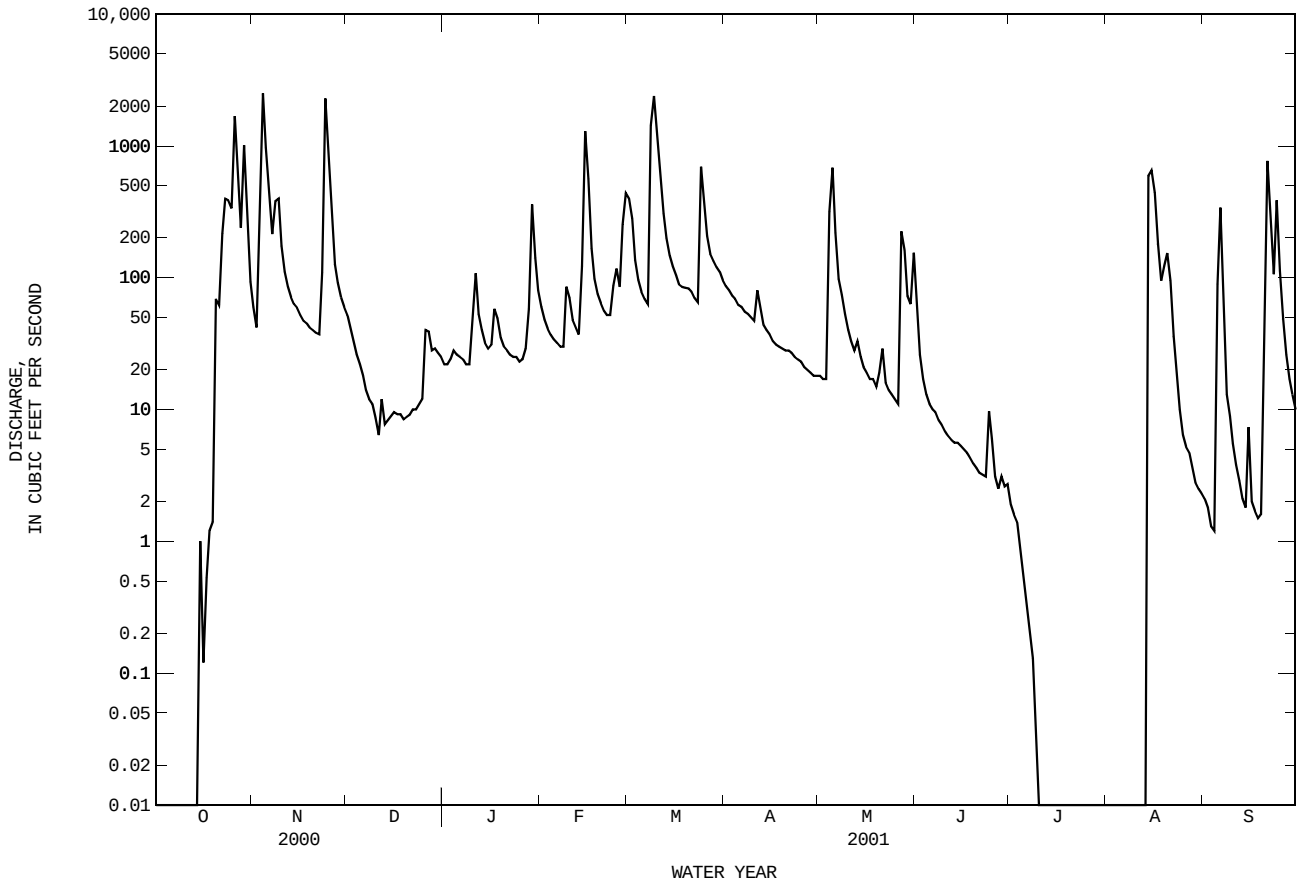
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001h, BY WATER YEAR (WY)

MEAN	210	94.3	46.7	52.6	64.6	127	150	256	264	129	163	309
MAX	1464	342	222	375	299	486	664	778	979	726	1353	1492
(WY)	1961	2001	1960	1968	1998	2000	1967	1999	1967	1967	1966	1966
MIN	2.89	9.29	13.5	11.5	12.5	8.10	7.36	32.3	8.82	.23	.56	.000
(WY)	1964	1971	1971	1964	1971	1965	1964	1962	2001	2001	2000	2000

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001h	
ANNUAL TOTAL	43800.97		40755.31			
ANNUAL MEAN	120		112		155	
HIGHEST ANNUAL MEAN					389	1966
LOWEST ANNUAL MEAN					71.6	1976
HIGHEST DAILY MEAN	4720	Mar 23	2490	Nov 4	16100	Oct 19 1965
LOWEST DAILY MEAN	.00	Aug 9	.00	Oct 1	.00	Jul 18 1964
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 9	.00	Oct 1	.00	Jul 18 1964
MAXIMUM PEAK FLOW			4390	Mar 8	23100	Sep 20 1965
MAXIMUM PEAK STAGE			13.72	Mar 8	17.75	Sep 20 1965
ANNUAL RUNOFF (AC-FT)	86880		80840		112300	
10 PERCENT EXCEEDS	225		287		225	
50 PERCENT EXCEEDS	16		28		30	
90 PERCENT EXCEEDS	.00		.00		5.7	

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 Sept. 1979, Oct. 1996 to current year.
PESTICIDE DATA: Oct. 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1967 to Sept. 1979, Oct. 1996 to current year.
WATER TEMPERATURE: Oct. 1967 to Sept. 1979, Oct. 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Aug. 1968 to Sept. 1979, Oct. 1996 to current year.

REMARKS.--Records good. 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. The computation of the selected constituent loads might include estimated discharge or specific conductance data. New regression equations were developed based on data from water years 1998 to 2001. The standard error of estimate for dissolved solids is 5%, chloride is 16%, sulfate is 13% and for hardness is 13%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request. No flow Oct. 1-14 and July 10-Aug. 13.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 30,800 microsiemens/cm, Feb. 12, 1969; minimum, 211 microsiemens/cm, Dec. 9, 1999.
WATER TEMPERATURE: Maximum, 39.4°C, July 13-14, 1998; minimum, 0.0°C, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 18,600 microsiemens/cm, Aug. 14; minimum, 325 microsiemens/cm, Oct. 15.
WATER TEMPERATURE: Maximum, 38.0°C, June 30; minimum, 0.0°C, Jan. 2.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
26...	1620	1550	1990	7.8	19.4	7.8	88	410	370	133	19.4	256	5
NOV													
16...	1220	54	8050	7.9	9.8	11.2	105	1300	1100	364	84.5	1260	15
JAN													
04...	1145	27	13600	7.3	4.6	12.0	100	2100	1900	601	143	2320	22
30...	1230	133	4010	8.0	7.3	11.2	98	740	650	209	51.9	604	10
FEB													
07...	1130	30	12700	8.0	9.1	11.0	104	2400	2200	654	177	2210	20
MAR													
29...	1230	119	7290	8.0	12.0	9.6	96	1600	1500	434	124	1010	11
APR													
06...	1300	61	11000	8.1	21.0	8.5	104	2200	2100	583	175	1710	16
MAY													
14...	1050	26	15200	7.9	26.5	8.8	120	2700	2500	731	201	2650	22
JUN													
06...	1245	11	16400	7.8	31.1	8.0	118	2600	2400	728	199	3210	27
JUL													
03...	1050	1.6	16600	7.9	29.6	8.8	127	2700	2700	732	212	2900	24
AUG													
15...	1140	872	2600	7.5	25.0	5.8	75	520	480	170	23.1	304	6
SEP													
05...	1030	1.5	12900	7.8	25.1	7.9	105	2000	1900	554	144	2150	21

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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)	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)
OCT													
26...	4.23	45	349	402	.3	5.1	1200	5610	.199	.009	.208	<.041	2.2
NOV													
16...	8.66	108	1110	2020	.3	6.9	4910	26	--	E.003	.156	<.041	.41
JAN													
04...	.94	152	1760	3710	.3	6.0	8630	66	.641	.010	.651	.080	.91
30...	5.28	88	641	941	.3	5.9	2520	1520	.992	.007	.999	.044	2.8
FEB													
07...	14.1	141	1950	3470	.3	4.5	8560	<10	--	<.006	.257	E.037	.46
MAR													
29...	10.1	130	1420	1740	.3	5.4	4830	172	.379	.009	.388	E.026	.75
APR													
06...	13.7	134	1900	2720	.3	5.2	7180	30	--	<.006	E.042	E.032	--
MAY													
14...	15.9	122	2220	4130	.3	5.0	10000	24	--	.007	E.039	E.034	--
JUN													
06...	15.6	214	2310	4770	.3	5.2	11400	19	--	<.006	<.050	E.025	--
JUL													
03...	27.8	52	2450	4810	.3	2.4	11200	16	--	.008	E.029	.086	--
AUG													
15...	5.39	43	504	542	.3	6.9	1580	12700	.631	.039	.670	E.040	9.2
SEP													
05...	14.1	98	1770	3550	.3	8.0	8250	12	.365	.014	.379	<.040	.65

07311900 Wichita River near Seymour, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
OCT													
26...	--	2.0	1.44	<.060	<.018	26	3.0	677	100	.12	<.14	40	1.1
NOV													
16...	--	.26	<.060	<.060	<.018	4	3.9	122	122	<.22	.16	5	2.0
JAN													
04...	.17	.25	.062	<.060	<.018	<4	<4.0	74.9	70.7	<.33	<.42	8	<1.6
30...	1.8	1.8	1.10	<.060	<.018	11	3.8	421	155	<.22	<.28	34	2.2
FEB													
07...	--	.20	<.060	<.060	<.018	E4	<4.0	57.8	58.4	<.55	<.70	3	<2.4
MAR													
29...	--	.36	.089	<.060	<.018	6	4.1	117	90.5	<.33	<.42	5	<.8
APR													
06...	--	.22	E.033	<.060	<.018	E3	3.6	86.0	78.5	<.17	.05	E2	2.3
MAY													
14...	--	.26	E.032	<.060	<.018	10	4.5	89.4	84.6	<.21	.06	<4	5.3
JUN													
06...	--	.19	<.060	<.060	<.020	7	4.8	91.8	93.7	<.25	.06	<2	<1.6
JUL													
03...	.15	.24	<.060	<.060	<.020	5	1.9	57.9	59.0	<.25	<.30	E2	4.5
AUG													
15...	--	8.5	6.36	<.060	<.020	37	2.9	735	99.1	.31	<.07	58	<.8
SEP													
05...	--	.27	<.060	<.060	<.020	8	4.5	82.5	97.5	<.21	<.20	E1	<1.6

DATE	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)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT													
26...	18.5	E1.1	23600	<10	27	<1.00	1070	E1.7	<.14	<.23	71	<9.60	<2.6
NOV													
16...	4.2	1.8	330	<30	<2	2.81	22	12.4	<.14	<.23	3	<4.80	E1.5
JAN													
04...	2.4	2.7	2530	<150	<3	<3.00	62	51.1	<.14	<.23	2	<7.20	<5.2
30...	10.3	<1.3	18000	<30	12	<1.00	398	E3.5	<.14	<.23	40	<2.40	E1.8
FEB													
07...	<3.6	<3.9	<90	<150	<3	1.75	34	E32.3	<.14	<.23	<5	<7.20	E3.6
MAR													
29...	2.5	<2.6	2730	<50	E1	<2.00	63	E10.6	<.01	<.01	6	<4.80	3.9
APR													
06...	5.5	9.4	<90	<100	<1	.30	42	26.6	<.01	<.01	9	2.23	6.6
MAY													
14...	13.6	12.3	180	<150	<6	.61	78	61.7	<.01	<.01	37	<.06	5.0
JUN													
06...	6.5	8.3	<60	<200	<7	.08	124	125	<.02	<.01	<7	4.94	4.0
JUL													
03...	E5.5	23.2	60	<100	<7	<.60	222	229	.01	.01	24	2.65	3.9
AUG													
15...	23.6	4.8	27900	<10	51	E.13	4250	.4	.05	<.01	136	<.10	3.4
SEP													
05...	8.4	5.2	<40	<100	<6	E.31	66	70.6	.01	.01	10	<.40	3.8

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)
OCT													
26...	<2.4	<.43	<.2	95	<20	--	--	--	--	--	--	--	--
NOV													
16...	3.7	<.86	<.3	<93	<60	--	--	--	--	--	--	--	--
JAN													
04...	5.0	<1.29	<.5	<93	<300	--	--	--	--	--	--	--	--
30...	E1.7	<.43	<.2	96	<60	--	--	--	--	--	--	--	--
FEB													
07...	<4.8	<1.29	<.5	<93	<300	--	--	--	--	--	--	--	--
MAR													
29...	E1.4	<.86	<.3	<93	<100	--	--	--	--	--	--	--	--
APR													
06...	3.6	<.25	<1.0	13	8	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
MAY													
14...	3.3	<.30	<1.0	9	10	--	--	--	--	--	--	--	--
JUN													
06...	3.5	<.35	<1.0	<7	7	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
JUL													
03...	4.7	<.35	<7.0	18	23	--	--	--	--	--	--	--	--
AUG													
15...	1.2	.14	<2.0	119	5	--	--	--	--	--	--	--	--
SEP													
05...	2.6	<.30	<6.0	6	7	--	--	--	--	--	--	--	--

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)
OCT													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
06...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	85	<2	<.1	<.03	71	<.04
MAY													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	111	<2	<.1	<.03	101	<.04
JUL													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--

07311900 Wichita River near Seymour, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT							
26...	--	--	--	--	--	--	--
NOV							
16...	--	--	--	--	--	--	--
JAN							
04...	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--
FEB							
07...	--	--	--	--	--	--	--
MAR							
29...	--	--	--	--	--	--	--
APR							
06...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
14...	--	--	--	--	--	--	--
JUN							
06...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL							
03...	--	--	--	--	--	--	--
AUG							
15...	--	--	--	--	--	--	--
SEP							
05...	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	5450.25	1500	974	14340	340	4990	290	4290	330
NOV.	2000	10252	2560	1670	46360	610	16780	470	13100	540
DEC.	2000	566.1	12450	8450	12910	3400	5260	1900	2960	2200
JAN.	2001	1546	8530	5730	23920	2300	9450	1400	5830	1600
FEB.	2001	4110	5050	3360	37280	1300	14300	860	9590	990
MAR.	2001	9969	2510	1650	44410	600	16280	460	12300	520
APR.	2001	1269	11400	7700	26370	3100	10580	1800	6240	2100
MAY	2001	2532	6780	4540	31010	1800	12100	1100	7740	1300
JUNE	2001	264.7	13600	9300	6650	3900	2770	2000	1450	2300
JULY	2001	7.16	16050	11040	213	4700	90.3	2300	44.9	2700
AUG.	2001	2416.6	3320	2190	14300	820	5330	590	3850	680
SEPT	2001	2372.5	3990	2630	16870	980	6270	710	4580	820
TOTAL		40755.31	**	**	274600	**	104200	**	71960	**
WTD.AVG.		112	3760	2500	**	950	**	650	**	750

07311900 Wichita River near Seymour, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	e3800	8500	7360	7750	14000	13200	13600
2	---	---	---	4710	---	e4450	9710	8480	9210	14800	13700	14500
3	---	---	---	4840	1640	3530	10400	9710	10100	15200	12000	14400
4	---	---	---	1640	857	1090	10800	10400	10600	14100	12000	13300
5	---	---	---	---	---	e1480	11400	10700	11100	13600	12300	12900
6	---	---	---	5220	1930	3170	11700	10600	11100	13800	13500	13700
7	---	---	---	5280	3730	4530	12200	10600	11400	14100	13800	13900
8	---	---	---	3730	2030	2650	13300	12100	12700	14400	14100	14300
9	---	---	---	3080	2080	2340	13500	13100	13300	14500	14200	14400
10	---	---	---	6140	3080	5140	13600	13300	13500	14500	6210	11300
11	---	---	---	6520	5840	6220	14000	13600	13900	6840	4760	6050
12	---	---	---	6820	6470	6640	14100	14000	14100	7490	4850	6240
13	---	---	---	6810	6680	6750	14000	13600	13800	11700	7490	9950
14	---	---	---	7320	6810	7020	14100	13000	13700	13200	11700	12600
15	400	325	325	7840	7320	7610	13500	13000	13300	13700	13200	13500
16	858	347	566	8410	7840	8080	14000	13200	13500	13700	11800	13200
17	1080	858	994	8820	8410	8680	14400	14000	14200	11800	7770	9350
18	1070	478	899	9310	8820	9040	15300	14000	14800	9310	9040	9190
19	480	363	393	9860	9310	9560	15400	15100	15300	11600	9290	10300
20	3190	383	1570	10100	9760	9960	15300	15100	15200	12700	11600	12300
21	1060	414	802	10600	10100	10300	15500	15200	15400	13300	12600	13100
22	1980	911	1240	11100	10600	10900	15600	15400	15500	13500	13200	13400
23	1360	888	1070	11300	1270	9820	15500	15200	15300	13400	13100	13300
24	1350	1010	1160	1910	1250	1490	15500	15300	15400	13200	12900	13000
25	1170	781	861	2650	1910	2380	15600	15400	15500	13100	13000	13000
26	2490	796	1650	3420	2590	3120	15400	14900	15100	13100	12900	13000
27	2190	1400	1690	4520	3100	3930	15200	13800	14800	13300	9740	12500
28	3030	1620	2470	5690	4520	5010	14600	10100	13400	9740	5990	8810
29	1690	775	1260	6890	5690	6270	14000	9920	12200	5990	2410	3400
30	2400	1630	1930	7540	6890	7340	13700	10900	12700	6040	3430	4520
31	---	2400	e3050	---	---	---	13600	12500	13100	9720	6040	7990
MONTH	---	---	---	---	---	5740	15600	7360	13300	15200	2410	11500

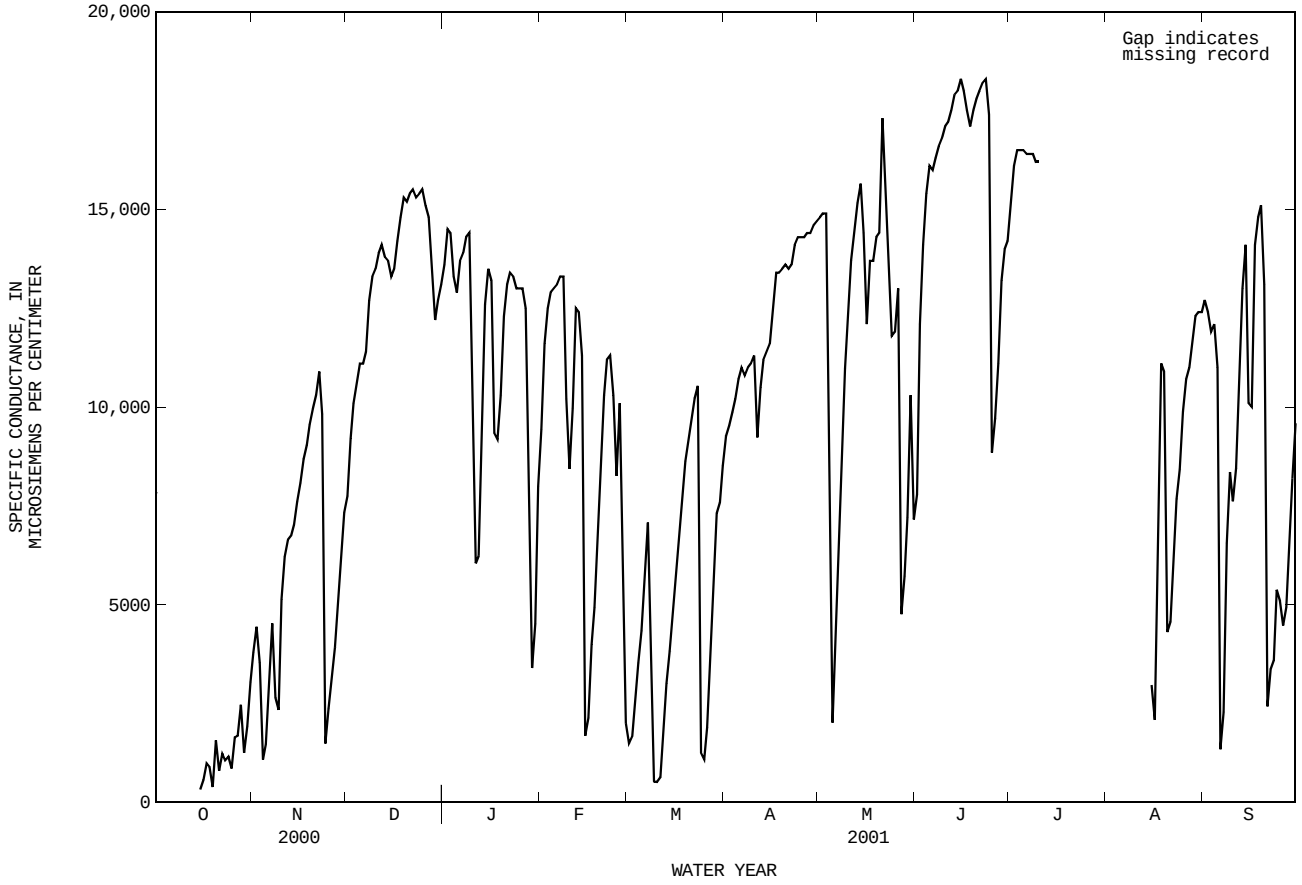
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11000	8270	9430	1760	1180	1490	9560	8950	9260	14900	14600	14800
2	12100	11000	11600	2080	1300	1670	9730	9240	9530	15100	14800	14900
3	12900	12100	12500	2960	2080	2520	10100	9730	9870	15100	14600	14900
4	13000	12800	12900	4070	2960	3530	10500	10100	10200	14600	1550	9440
5	13100	12900	13000	4730	4070	4350	10900	10500	10700	2890	1460	2020
6	13200	13000	13100	6690	4730	5520	11100	10800	11000	---	---	e3890
7	13400	13200	13300	7410	6690	7080	11000	10600	10800	---	---	e6030
8	13400	13100	13300	9230	654	4500	11100	10800	11000	---	---	e8280
9	13100	8880	10200	654	427	526	11300	10900	11100	---	---	e11000
10	8880	7880	8440	542	430	519	11400	10400	11300	---	---	e12400
11	12400	8000	9970	789	538	638	10900	5010	9230	---	---	e13700
12	13600	11000	12500	---	---	e1890	11600	9670	10500	---	---	e14400
13	13000	11600	12400	---	---	e3020	11500	11000	11200	---	---	e15200
14	13000	972	11300	---	---	e3830	11700	11300	11400	---	---	e15700
15	2300	817	1690	---	---	e5010	12100	11200	11600	15500	12800	14400
16	2700	1690	2140	---	---	e6090	13100	12100	12500	12800	11600	12100
17	4810	2700	3990	---	---	e6980	13400	13100	13400	14400	12500	13700
18	5940	4260	4930	---	---	e7880	13500	13300	13400	14700	11300	13700
19	7980	5940	7080	---	---	e8630	13600	13400	13500	14500	13700	14300
20	9570	7980	8710	---	---	e9190	13700	13400	13600	15900	14000	14400
21	10800	9570	10300	---	---	e9710	13600	13400	13500	17800	15900	17300
22	11400	10800	11200	---	---	e10200	13800	13500	13600	17000	15500	15900
23	11500	10700	11300	---	---	e10500	14300	13800	14100	15500	12100	13900
24	11300	9270	10300	---	---	e1270	14400	14100	14300	12100	11600	11800
25	11700	6120	8260	---	---	e1100	14500	14100	14300	12800	11600	11900
26	11000	9290	10100	---	---	e1900	14500	14100	14300	13300	12700	13000
27	10900	2280	6730	---	---	e3950	14600	14200	14400	12700	1050	4760
28	2280	1760	2010	---	---	e5700	14600	14300	14400	6610	3430	5730
29	---	---	---	---	---	e7310	14700	14400	14600	9140	5780	7210
30	---	---	---	8190	7350	7590	14800	14500	14700	11400	9140	10300
31	---	---	---	8950	8190	8520	---	---	---	11300	3160	7160
MONTH	13600	817	9380	---	---	4920	14800	5010	12200	---	---	11600

07311900 Wichita River near Seymour, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10300	4200	7790	16700	14100	15200	---	---	---	12700	12500	12700
2	13800	10200	12100	16800	15500	16100	---	---	---	12600	12200	12400
3	15100	13500	14100	16800	16200	16500	---	---	---	12200	11800	11900
4	15900	15100	15400	16700	16300	16500	---	---	---	12700	11800	12100
5	16300	15800	16100	16600	16300	16500	---	---	---	12900	3000	11000
6	16200	15800	16000	16500	16200	16400	---	---	---	3000	1020	1350
7	16600	16100	16300	16500	16200	16400	---	---	---	4170	1400	2290
8	16800	16400	16600	16500	16200	16400	---	---	---	8750	4170	6560
9	17000	16600	16800	16600	15500	16200	---	---	---	8930	6870	8360
10	17300	16800	17100	---	---	e16200	---	---	---	9290	6490	7620
11	17500	17100	17200	---	---	---	---	---	---	9290	7850	8450
12	---	---	e17500	---	---	---	---	---	---	12100	8700	10600
13	18200	17800	17900	---	---	---	---	---	---	14000	12100	13000
14	18200	17800	18000	---	---	---	---	---	---	14300	14000	14100
15	---	---	e18300	---	---	---	4630	1560	2970	14400	3580	10100
16	---	---	e18000	---	---	---	2860	1900	2090	13000	8410	10000
17	---	---	e17500	---	---	---	6660	2860	5200	14700	13000	14100
18	---	---	e17100	---	---	---	14600	6460	11100	15000	14600	14800
19	17800	17300	17500	---	---	---	15000	6330	10900	15400	15000	15100
20	18000	17600	17800	---	---	---	8820	2530	4310	15500	520	13100
21	18200	17800	18000	---	---	---	5380	3860	4570	5890	773	2430
22	18400	18000	18200	---	---	---	7280	4810	6320	5560	2600	3370
23	18400	18000	18300	---	---	---	7890	7280	7680	3810	2840	3600
24	18500	11300	17400	---	---	---	9240	7890	8430	7660	2570	5380
25	11300	8060	8850	---	---	---	10500	9240	9890	5290	4720	5100
26	10400	9150	9720	---	---	---	11100	10500	10700	4720	4360	4480
27	11600	10400	11100	---	---	---	11500	10800	11000	5650	4500	4940
28	13800	11600	13200	---	---	---	12200	11500	11600	7410	5650	6480
29	14300	13400	14000	---	---	---	12500	12200	12300	9020	7410	8190
30	14800	13600	14200	---	---	---	12500	12300	12400	10300	9020	9590
31	---	---	---	---	---	---	12500	12400	12400	---	---	---
MONTH	---	---	15600	---	---	---	---	---	---	15500	520	8770

e Estimated



07311900 Wichita River near Seymour, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

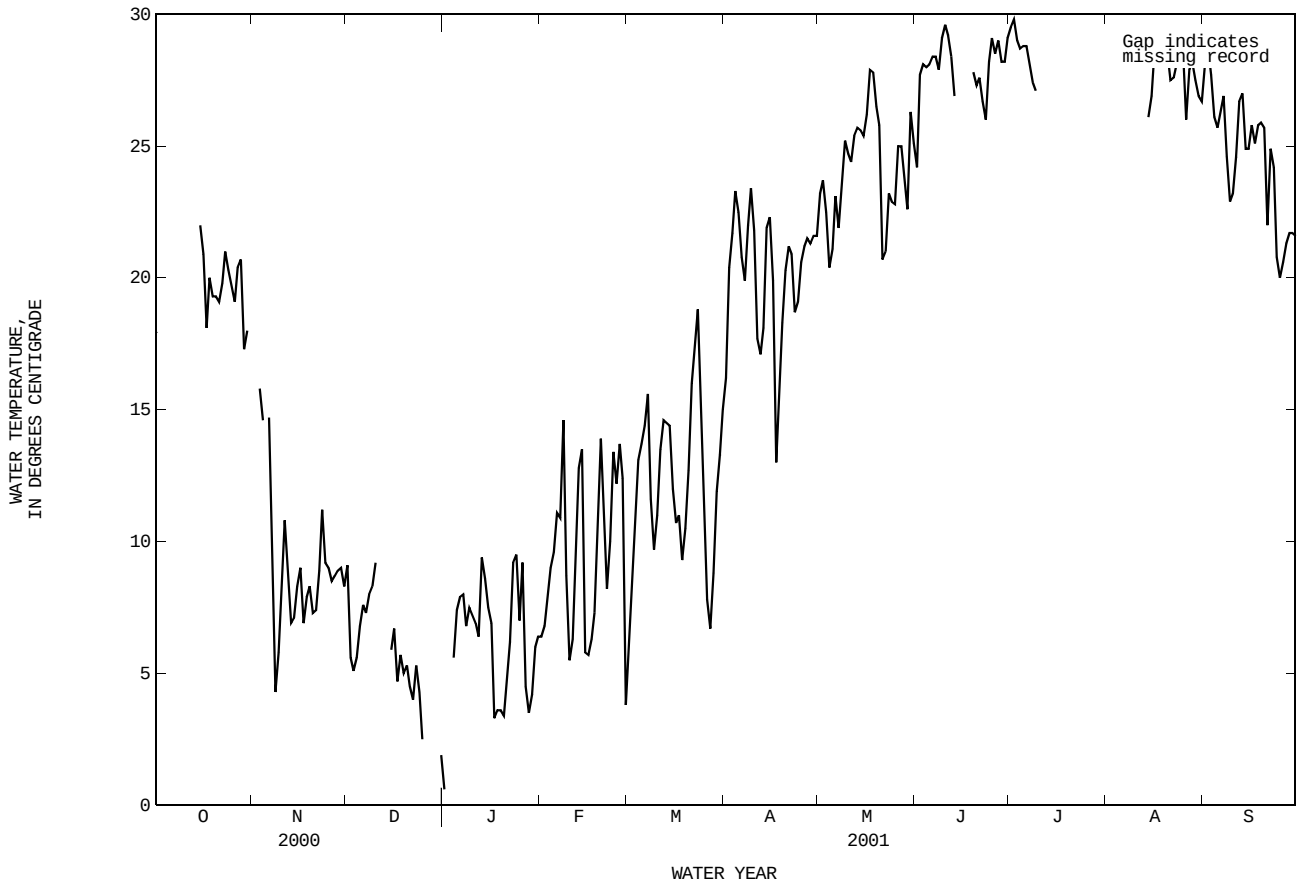
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	11.8	7.2	9.1	1.7	.0	.6
2	---	---	---	20.7	---	---	7.2	4.7	5.6	1.6	---	---
3	---	---	---	16.7	14.9	15.8	6.4	4.1	5.1	7.6	---	---
4	---	---	---	14.9	14.3	14.6	6.6	4.3	5.6	10.4	1.8	5.6
5	---	---	---	---	---	---	7.4	6.3	6.8	11.6	4.2	7.4
6	---	---	---	16.0	13.4	14.7	10.5	5.8	7.6	12.2	4.7	7.9
7	---	---	---	13.4	6.5	9.1	10.8	4.1	7.3	11.4	6.1	8.0
8	---	---	---	6.5	3.3	4.3	10.9	5.7	8.0	11.4	3.2	6.8
9	---	---	---	8.6	3.4	5.8	12.0	5.6	8.3	11.9	3.9	7.5
10	---	---	---	11.5	5.4	8.3	12.0	7.0	9.2	7.7	6.4	7.2
11	---	---	---	13.9	8.6	10.8	8.4	---	---	8.5	6.1	6.9
12	---	---	---	12.0	6.3	8.6	---	---	---	8.3	4.1	6.4
13	---	---	---	10.7	3.9	6.9	4.3	---	---	12.8	7.5	9.4
14	---	---	---	11.0	3.7	7.1	3.0	---	---	12.2	5.8	8.6
15	22.4	20.0	22.0	10.6	6.2	8.3	10.5	1.8	5.9	10.8	4.8	7.5
16	26.6	18.3	20.9	12.2	6.6	9.0	9.2	4.4	6.7	7.8	5.6	6.9
17	20.2	15.8	18.1	9.5	4.9	6.9	8.2	1.8	4.7	5.6	2.6	3.3
18	25.6	16.4	20.0	10.7	5.9	7.9	9.1	3.6	5.7	5.8	2.2	3.6
19	25.4	14.0	19.3	12.7	5.0	8.3	8.8	2.1	5.0	7.4	.7	3.6
20	21.7	18.2	19.3	10.9	4.7	7.3	9.6	2.7	5.3	7.1	.3	3.4
21	20.4	17.9	19.1	11.9	3.5	7.4	8.2	1.8	4.5	9.3	1.9	5.0
22	21.8	18.0	19.8	10.4	6.9	8.9	7.9	.9	4.0	11.0	2.1	6.2
23	22.6	19.5	21.0	12.8	10.0	11.2	9.6	2.3	5.3	12.9	6.7	9.2
24	21.5	19.3	20.3	10.7	8.7	9.2	5.4	3.4	4.3	12.0	7.4	9.5
25	20.5	18.8	19.7	10.0	8.1	9.0	3.4	1.5	2.5	9.2	4.4	7.0
26	19.8	18.5	19.1	10.2	6.5	8.5	---	---	---	13.9	5.9	9.2
27	22.0	18.9	20.4	11.0	6.6	8.7	---	---	---	8.4	3.0	4.5
28	22.4	18.2	20.7	11.8	6.1	8.9	---	---	---	4.3	2.9	3.5
29	18.4	16.2	17.3	11.8	6.5	9.0	6.1	---	---	6.1	2.4	4.2
30	20.1	15.7	18.0	11.3	5.6	8.3	5.5	---	---	8.9	3.4	6.0
31	---	---	---	---	---	---	2.6	.4	1.9	9.9	3.4	6.4
MONTH	---	---	---	---	---	---	---	---	---	13.9	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.2	2.8	6.4	10.3	3.3	6.4	21.5	12.4	16.2	30.3	17.8	23.2
2	11.1	3.2	6.8	11.2	7.7	9.4	26.2	15.8	20.4	30.9	18.5	23.7
3	12.2	4.3	8.0	15.2	8.2	11.4	26.0	18.3	21.7	26.1	20.1	22.5
4	13.2	5.8	9.0	17.7	9.2	13.1	28.9	18.5	23.3	21.7	19.6	20.4
5	14.6	5.4	9.6	18.1	9.2	13.7	24.5	20.7	22.5	24.5	18.7	21.1
6	15.0	8.4	11.1	17.4	11.5	14.4	22.5	18.6	20.8	27.6	19.4	23.1
7	14.6	7.5	10.9	21.0	11.0	15.6	25.5	15.6	19.9	24.3	20.0	21.9
8	17.1	12.6	14.6	16.5	9.0	11.6	27.9	17.8	22.0	29.8	18.5	23.5
9	13.6	5.6	8.7	11.4	8.4	9.7	28.3	19.5	23.4	30.9	20.6	25.2
10	8.8	2.6	5.5	12.1	9.5	11.0	23.5	20.2	21.8	30.2	20.2	24.7
11	9.6	3.2	6.3	16.0	11.7	13.5	20.7	14.0	17.7	31.2	19.9	24.4
12	11.5	6.9	9.2	17.1	12.2	14.6	22.2	12.6	17.1	30.8	21.1	25.4
13	16.1	10.4	12.8	17.5	11.5	14.5	21.6	14.2	18.1	31.8	20.6	25.7
14	15.3	7.3	13.5	16.4	13.0	14.4	26.7	18.7	21.9	32.0	20.8	25.6
15	7.3	4.7	5.8	14.9	9.6	12.0	26.5	19.1	22.3	32.7	20.2	25.4
16	8.1	4.3	5.7	15.0	6.6	10.7	26.1	15.7	19.9	33.7	20.8	26.2
17	10.1	2.9	6.3	12.9	9.2	11.0	16.0	11.4	13.0	35.5	21.8	27.9
18	10.9	4.2	7.3	10.0	8.6	9.3	20.1	11.3	15.1	35.0	21.8	27.8
19	15.8	5.9	10.6	14.3	8.3	10.5	25.2	13.0	18.3	31.8	23.1	26.5
20	18.5	9.9	13.9	18.1	7.4	12.7	24.0	17.2	20.3	31.1	21.8	25.8
21	13.8	7.7	10.8	21.2	11.5	16.0	24.9	19.5	21.2	25.3	16.7	20.7
22	11.1	5.6	8.2	22.1	13.2	17.4	24.5	18.5	20.9	29.0	14.1	21.0
23	11.7	8.9	10.0	23.1	14.7	18.8	24.6	13.6	18.7	30.6	16.7	23.2
24	15.6	11.7	13.4	19.2	10.9	13.5	25.9	13.1	19.1	29.3	17.6	22.9
25	15.4	9.2	12.2	11.5	8.7	10.1	28.1	14.6	20.6	29.7	17.0	22.8
26	16.4	11.0	13.7	9.8	6.5	7.8	28.2	15.9	21.2	33.3	18.7	25.0
27	14.7	8.4	12.4	7.3	6.2	6.7	28.6	16.0	21.5	29.5	20.0	25.0
28	8.4	1.9	3.8	10.9	7.0	8.8	27.0	16.5	21.3	27.0	22.4	23.7
29	---	---	---	15.0	9.5	11.9	28.4	16.4	21.6	24.1	21.8	22.6
30	---	---	---	15.4	10.9	13.3	27.9	17.0	21.6	32.6	21.1	26.3
31	---	---	---	19.8	11.0	15.0	---	---	---	28.8	21.5	25.1
MONTH	18.5	1.9	9.5	23.1	3.3	12.2	28.9	11.3	20.1	35.5	14.1	24.1

07311900 Wichita River near Seymour, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	28.1	21.8	24.2	34.8	25.2	29.5	---	---	---	34.9	22.6	28.0
2	35.5	21.4	27.7	36.7	24.1	29.8	---	---	---	36.4	23.5	28.8
3	34.8	23.4	28.1	35.0	24.2	29.0	---	---	---	32.2	23.9	27.7
4	35.5	22.9	28.0	35.5	23.0	28.7	---	---	---	31.4	22.7	26.1
5	36.0	22.4	28.1	34.3	23.7	28.8	---	---	---	29.4	23.0	25.7
6	35.3	22.7	28.4	34.8	23.9	28.8	---	---	---	29.7	23.4	26.3
7	34.3	24.1	28.4	32.5	24.2	28.1	---	---	---	32.0	23.6	26.9
8	34.2	23.1	27.9	31.4	23.5	27.4	---	---	---	30.7	21.1	24.6
9	36.4	22.8	29.1	30.4	23.6	27.1	---	---	---	29.1	18.6	22.9
10	37.4	23.2	29.6	---	---	---	---	---	---	31.1	16.9	23.2
11	36.5	23.4	29.2	---	---	---	---	---	---	32.7	18.4	24.6
12	35.3	22.9	28.4	---	---	---	---	---	---	34.4	21.1	26.7
13	32.9	23.7	26.9	---	---	---	---	---	---	34.3	21.5	27.0
14	---	24.1	---	---	---	---	28.5	25.1	26.1	29.2	21.7	24.9
15	---	20.3	---	---	---	---	29.6	24.6	26.9	29.7	22.5	24.9
16	---	---	---	---	---	---	31.8	26.5	28.8	32.0	21.8	25.8
17	---	---	---	---	---	---	32.8	27.0	29.3	30.8	21.1	25.1
18	---	---	---	---	---	---	33.7	24.2	28.5	31.2	21.7	25.8
19	35.7	22.0	27.8	---	---	---	32.9	24.5	28.8	33.0	21.1	25.9
20	34.2	21.7	27.3	---	---	---	33.0	25.4	28.6	34.1	20.7	25.7
21	33.7	23.0	27.6	---	---	---	32.2	24.4	27.5	24.7	19.5	22.0
22	33.2	20.9	26.7	---	---	---	32.6	24.1	27.6	27.8	22.7	24.9
23	33.3	21.4	26.0	---	---	---	35.2	23.4	28.1	28.0	21.3	24.2
24	36.4	22.0	28.2	---	---	---	35.6	23.9	28.6	22.9	18.5	20.8
25	36.8	23.2	29.1	---	---	---	36.8	23.0	28.7	24.7	15.8	20.0
26	35.8	22.5	28.5	---	---	---	29.6	23.2	26.0	26.1	16.4	20.6
27	36.3	23.5	29.0	---	---	---	34.1	23.8	27.9	27.9	16.5	21.3
28	35.2	22.6	28.2	---	---	---	34.2	23.8	28.2	28.5	16.9	21.7
29	34.8	22.6	28.2	---	---	---	34.0	23.3	27.5	28.5	16.6	21.7
30	38.0	23.3	29.1	---	---	---	32.2	23.9	26.9	28.9	16.3	21.6
31	---	---	---	---	---	---	31.8	23.5	26.7	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	36.4	15.8	24.5



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.--Records good. 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 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. Conservation pool storage is 319,600 acre-ft. 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	1,147.1
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, June 30, 1941, elevation, 1,152.0 ft, present datum; minimum since first appreciable storage, 26,160 acre-ft, June 30, 1953, elevation, 1,108.0 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 206,400 acre-ft, June 1, 3, elevation, 1,139.64 ft; minimum contents, 93,330 acre-ft, Oct. 19, 20, elevation, 1,125.46 ft.

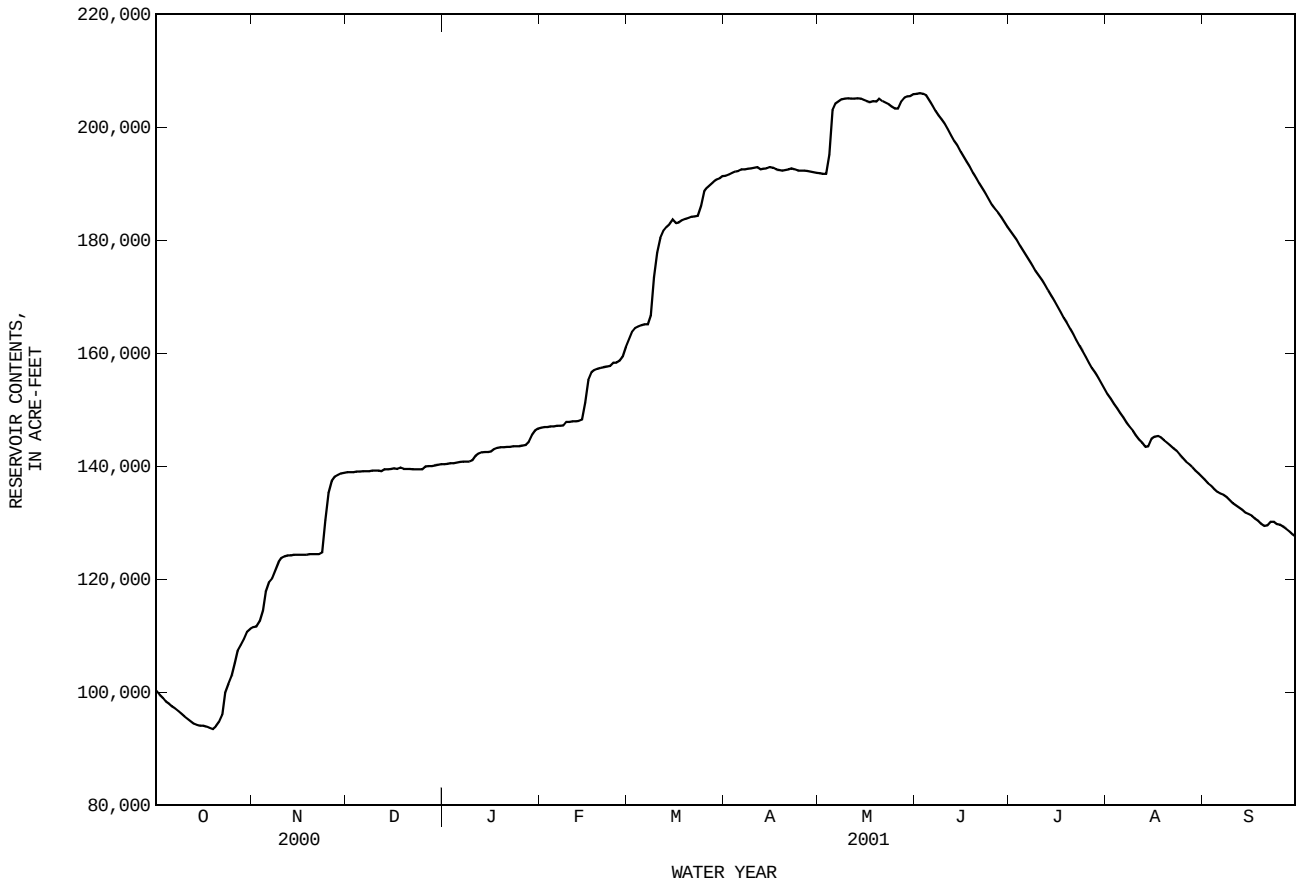
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100200	111500	138900	140300	146800	162400	191400	191800	205900	181500	152700	137600
2	99540	111600	138900	140400	146900	163800	191600	191700	206000	180700	151900	137000
3	98980	112500	138900	140500	146900	164400	191900	191700	205900	179900	151000	136500
4	98340	114400	139000	140500	147000	164700	192100	195100	205600	179000	150200	135900
5	97950	117800	139000	140600	147000	164900	192200	203000	204700	178100	149400	135400
6	97420	119400	139100	140700	147100	165100	192500	204100	203800	177200	148600	135100
7	97090	120100	139100	140800	147100	165100	192500	204500	202900	176300	147700	134900
8	96620	121500	139100	140800	147200	166600	192600	204900	202000	175400	146900	134500
9	96160	123000	139200	140800	147800	173400	192700	205000	201300	174500	146200	133900
10	95680	123700	139200	141000	147800	177800	192800	205100	200500	173700	145400	133400
11	95230	124000	139200	141800	147900	180400	192900	205000	199600	172900	144700	133000
12	94770	124200	139100	142200	147900	181700	192500	205000	198500	172000	144100	132600
13	94350	124200	139400	142400	148000	182300	192600	205100	197500	171100	143400	132200
14	94130	124300	139400	142500	148200	182800	192700	205000	196700	170100	143500	131700
15	94040	124300	139500	142500	151200	183600	192900	204800	195600	169200	144800	131500
16	94060	124300	139600	142600	155200	183000	192800	204600	194800	168200	145200	131200
17	93860	124300	139500	143000	156600	183100	192500	204400	193800	167200	145300	130700
18	93610	124300	139700	143200	157000	183500	192400	204600	192900	166200	145000	130300
19	93400	124400	139500	143300	157200	183700	192300	204500	191800	165300	144600	129800
20	93920	124400	139500	143300	157400	183900	192400	205000	190900	164300	144100	129400
21	94710	124400	139500	143400	157500	184100	192500	204600	190000	163300	143600	129500
22	95950	124400	139400	143400	157600	184200	192700	204300	189100	162300	143100	130100
23	99840	124700	139400	143500	157700	184300	192500	204000	188200	161300	142700	130100
24	101400	130400	139400	143500	158300	186000	192300	203600	187200	160300	142000	129700
25	102800	135200	139400	143500	158300	188600	192300	203300	186300	159300	141400	129600
26	105100	137300	139900	143600	158600	189300	192300	203300	185500	158200	140800	129300
27	107300	138100	140000	143700	159300	189800	192200	204500	184800	157300	140300	128900
28	108300	138400	140000	144300	161000	190300	192100	205200	184000	156500	139800	128400
29	109400	138700	140100	145500		190700	192000	205400	183100	155600	139200	127900
30	110700	138800	140200	146300		190900	191900	205500	182300	154600	138700	127500
31	111200		140300	146600		191300		205800		153700	138100	
MEAN	98900	125000	139400	142600	152400	179500	192400	203000	195000	167900	144700	131900
MAX	111200	138800	140300	146600	161000	191300	192900	205800	206000	181500	152700	137600
MIN	93400	111500	138900	140300	146800	162400	191400	191700	182300	153700	138100	127500
(+)	1128.53	1132.67	1132.87	1133.70	1135.42	1138.39	1138.45	1139.59	1137.59	1134.58	1132.58	1131.07
(@)	+10900	+27600	+1500	+6300	+14400	+30300	+600	+13900	-23500	-28600	-15600	-10600

CAL YR 2000 MAX 171900 MIN 93400 (@) -7800
WTR YR 2001 MAX 206000 MIN 93400 (@) +27200

(+) 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. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e180	.33	.59	.28	.24	2.0	.15	.43	e.47	225	277	231
2	e243	.33	.61	.27	.28	.62	.06	.48	e.47	224	277	233
3	e243	1.3	.64	.26	.27	.37	.05	.46	e.47	225	277	231
4	e243	.62	.67	.28	.35	.32	.08	.91	e92	224	278	232
5	e182	.61	.68	.29	.33	.28	.08	.56	234	223	278	233
6	e155	.53	.72	.27	.22	.31	.09	.98	235	223	279	204
7	e155	.67	.67	.32	.24	.32	.05	1.2	234	225	279	188
8	e155	2.1	.35	.27	.30	14	.08	1.0	233	227	279	184
9	e155	.68	.32	.26	.55	1.0	.18	.91	235	230	267	183
10	e155	.40	.33	.36	.33	.45	.36	.80	234	230	253	183
11	e155	.37	.33	.47	.33	.42	.35	.79	235	228	254	184
12	e155	.37	.33	.26	.36	.37	.31	.80	236	228	256	187
13	e71	.37	.36	.20	.38	.36	.26	.67	237	254	257	187
14	150	.38	.28	.19	.88	.31	.20	.55	237	275	257	188
15	87	.42	.31	.21	3.3	.36	.24	.51	237	275	229	186
16	22	.42	.29	.32	3.3	.35	.21	.58	235	274	214	184
17	51	.42	.28	.50	.58	.34	.20	.71	235	239	214	199
18	63	.42	.33	.36	.50	.38	.20	.64	235	276	215	210
19	3.4	.28	.31	.31	.49	.36	.08	.44	232	277	216	212
20	.46	.29	.29	.24	.59	.34	.06	e.47	228	303	217	202
21	.35	.28	.28	.28	.74	.31	.07	e.47	225	319	218	196
22	.33	.28	.22	.22	.79	.34	.07	.45	225	319	227	198
23	.30	.33	.25	.24	.70	.31	.24	.41	224	320	240	199
24	.35	.91	.28	.29	.49	.47	.30	.48	223	322	246	199
25	e.40	.62	e.31	.23	.47	.33	.31	.47	222	322	242	199
26	e.40	.47	e.31	.16	.38	.34	.37	.46	224	319	234	200
27	e.45	.47	e.32	.35	3.1	.35	.48	1.0	138	320	237	200
28	.48	.47	.32	.69	e1.0	.37	.39	.54	223	318	229	200
29	.46	.47	.39	1.5	---	.33	.41	.55	226	318	231	201
30	.31	.53	.35	.31	---	.30	1.0	.53	224	289	231	201
31	.29	---	.32	.28	---	.30	---	e.50	---	275	231	---
TOTAL	2627.98	16.14	12.04	10.47	21.49	27.01	6.93	19.75	5999.41	8326	7639	6034
MEAN	84.8	.54	.39	.34	.77	.87	.23	.64	200	269	246	201
MAX	243	2.1	.72	1.5	3.3	14	1.0	1.2	237	322	279	233
MIN	.29	.28	.22	.16	.22	.28	.05	.41	.47	223	214	183
AC-FT	5210	32	24	21	43	54	14	39	11900	16510	15150	11970

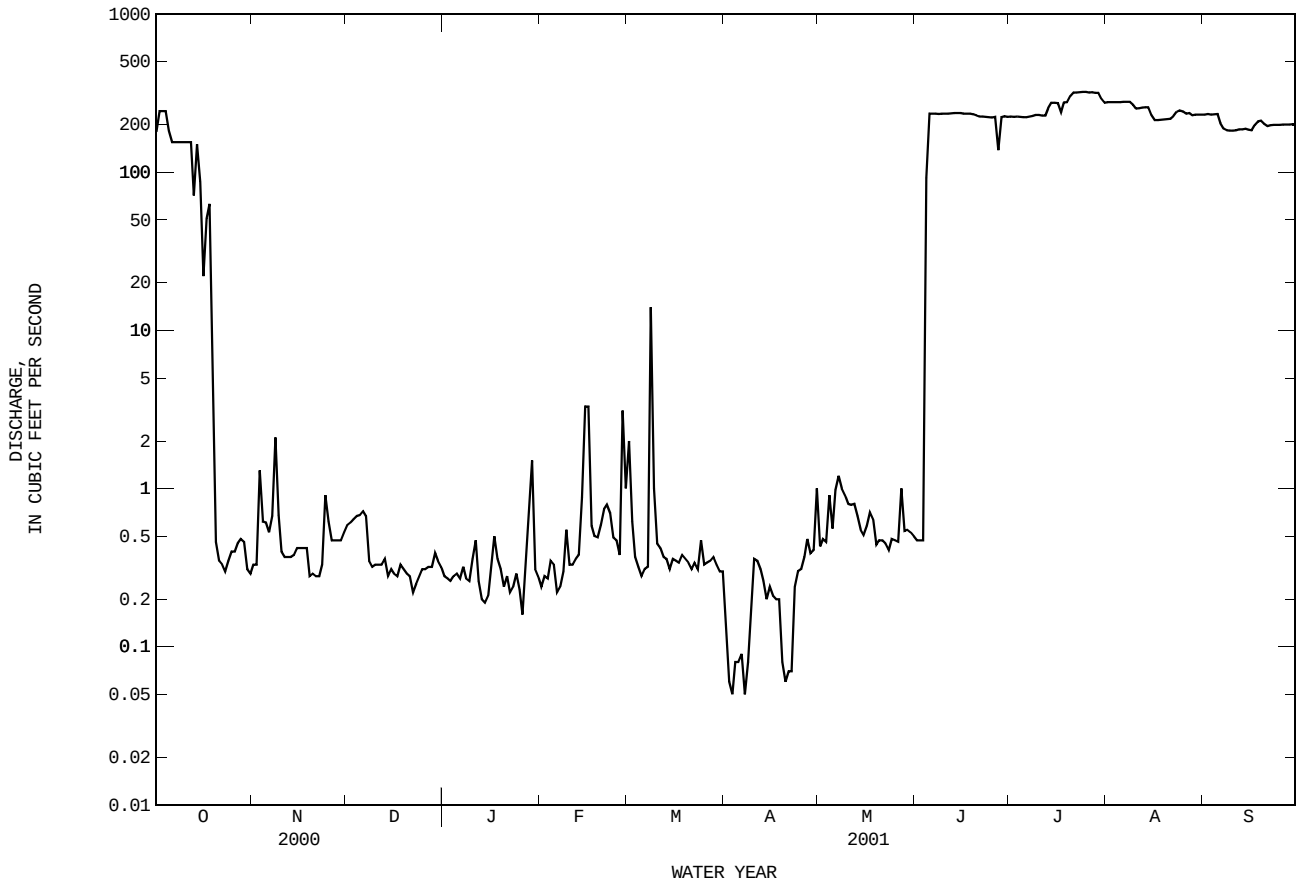
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001, BY WATER YEAR (WY)

MEAN	133	97.3	39.3	60.5	64.1	138	159	167	296	314	283	178
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	.34	.51	.50	.23	.64	2.59	140	30.9	1.66
(WY)	1985	1974	1997	2001	1979	1989	2001	2001	1989	1975	1978	1974

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001	
ANNUAL TOTAL	39133.27		30740.22			
ANNUAL MEAN	107		84.2		161	
HIGHEST ANNUAL MEAN					522	1987
LOWEST ANNUAL MEAN					59.9	1981
HIGHEST DAILY MEAN	585	Jul 29	322	Jul 24	3530	Jun 24 1992
LOWEST DAILY MEAN	.22	Dec 22	.05	Apr 3	.05	Apr 3 2001
ANNUAL SEVEN-DAY MINIMUM	.28	Dec 19	.07	Apr 2	.07	Apr 2 2001
MAXIMUM PEAK FLOW			332	Jul 24	4290	Mar 24 1976
MAXIMUM PEAK STAGE			3.22	Jul 24	10.47	Mar 24 1976
ANNUAL RUNOFF (AC-FT)	77620		60970		116800	
10 PERCENT EXCEEDS	260		242		393	
50 PERCENT EXCEEDS	66		.58		13	
90 PERCENT EXCEEDS	.37		.27		.66	

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: July 1968 to May 1993 (local observer), Oct. 1994 to current year.
WATER TEMPERATURE: July 1968 to May 1993 (local observer), Oct. 1994 to current year.

INSTRUMENTATION.--Water-quality monitor Oct. 1994 to current year.

REMARKS.--Records fair. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. The computation of the selected constituent loads might include estimated discharge or specific conductance data. New regression equations were developed based on data from water years 1992 to 2001. The standard error of estimate for dissolved solids is 3%, chloride is 4%, sulfate is 11% 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/cm, May 13, 14, 1980; minimum daily, 561 microsiemens/cm, May 28, 1975.
WATER TEMPERATURE: Maximum, 36.2°C, June 27, 2001; minimum daily, 0.0°C, Dec. 20, 1973, Feb. 9, 17, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 6,060 microsiemens/cm, Oct. 5; minimum, 875 microsiemens/cm, Nov. 23.
WATER TEMPERATURE: Maximum, 36.2°C, June 27; minimum, 2.2°C, Dec. 13, Jan. 1.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
OCT													
04...	1050	243	5910	8.1	20.4	9.3	110	1060	967	278	87.6	891	11.9
NOV													
16...	1445	.42	5050	7.9	14.8	12.8	132	931	748	241	79.6	756	10.8
DEC													
15...	1350	.33	4730	7.8	13.7	13.2	133	909	724	232	79.9	711	10.3
JAN													
30...	1530	.33	4510	8.0	14.2	10.0	103	917	725	239	77.5	700	10.1
FEB													
12...	1220	.37	5030	7.5	12.4	8.3	81.5	980	774	255	83.4	763	10.6
MAR													
27...	1330	.35	5210	7.7	9.6	11.4	105	930	714	240	80.1	703	10.0
APR													
30...	1130	.47	5370	7.8	18.7	9.8	110	1030	809	273	83.3	743	10.1
MAY													
14...	1355	.53	5160	7.8	28.5	10.3	140	943	801	252	76.1	711	10.1
JUN													
14...	1215	237	4430	8.2	25.5	8.2	106	763	677	209	58.8	612	9.64
JUL													
25...	1500	326	4730	8.2	28.2	8.0	108	805	718	218	63.1	688	10.5
AUG													
02...	1127	280	4670	8.1	27.8	8.4	112	808	723	220	62.6	663	10.2
SEP													
11...	1030	183	4760	8.0	24.9	8.1	103	858	766	236	65.1	700	10.4

07312100 Wichita River near Mabelle, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	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, TOTAL (MG/L AS N) (00600)
OCT													
04...	9.71	89	971	1370	.4	8.3	3670	11	--	<.006	<.047	E.031	--
NOV													
16...	5.64	182	743	1170	.3	10.1	3110	18	--	.006	E.043	.184	--
DEC													
15...	5.66	184	728	1100	.4	9.1	2980	54	--	E.003	.079	.204	.543
JAN													
30...	5.56	192	697	1100	.3	9.5	2950	96	--	E.005	.178	.249	.853
FEB													
12...	5.33	206	739	1170	.4	9.3	3150	84	--	E.003	.079	.280	.689
MAR													
27...	5.56	216	727	1160	.3	10.0	3050	23	--	<.006	.126	.296	.762
APR													
30...	5.64	217	742	1200	.3	12.3	3190	93	.042	.008	.050	.223	.686
MAY													
14...	6.75	142	775	1130	.4	9.1	3040	120	--	E.005	E.030	.118	--
JUN													
14...	7.11	86	680	977	.3	6.5	2600	<10	.163	.014	.177	<.040	.475
JUL													
25...	7.78	87	720	1040	.3	6.3	2800	<10	--	<.006	E.026	<.040	--
AUG													
02...	8.00	85	723	1090	.3	6.7	2820	<10	--	E.005	E.038	<.040	--
SEP													
11...	8.21	92	760	1110	.3	7.0	2940	11	--	<.006	E.024	<.040	--

DATE	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)	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)	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)
OCT													
04...	--	.40	<.060	<.060	<.018	4	3.3	127	124	<.22	<.14	3	<.8
NOV													
16...	.253	.44	<.060	<.060	<.018	5	3.7	30.8	27.7	<.22	.15	3	1.5
DEC													
15...	.260	.46	E.035	<.060	<.018	5	3.2	39.6	27.9	<.11	<.14	<1	<.8
JAN													
30...	.426	.68	.089	<.060	<.018	5	3.4	47.0	28.7	<.22	<.28	5	2.6
FEB													
12...	.330	.61	.082	<.060	<.018	5	3.5	47.3	23.7	<.22	<.28	4	1.4
MAR													
27...	.340	.64	<.060	<.060	<.018	5	3.5	24.4	22.0	E.13	<.28	M	<.8
APR													
30...	.413	.64	E.047	<.060	<.018	5	3.1	38.7	21.9	<.10	<.04	2	<.8
MAY													
14...	.700	.82	.077	<.060	<.018	4	3.3	75.7	68.6	<.07	E.03	M	1.0
JUN													
14...	--	.30	<.060	<.060	<.020	3	2.3	129	134	<.07	E.04	<1	<.8
JUL													
25...	--	.34	<.060	<.060	<.020	3	2.6	131	141	<.07	E.04	<1	E.7
AUG													
02...	--	.29	<.060	<.060	<.020	3	2.8	126	132	<.07	<.07	<1	E.5
SEP													
11...	--	.43	<.060	<.060	<.020	4	2.9	118	139	<.07	<.07	<1	<.8

07312100 Wichita River near Mabelle, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT													
04...	1.3	E.8	<90	<50	<1	<1.00	28	<2.2	<.14	<.23	<4	<4.80	<2.6
NOV													
16...	1.8	1.4	310	<30	<2	3.12	305	297	<.14	<.23	<4	<4.80	<2.6
DEC													
15...	2.3	<1.3	630	<30	1	<1.00	230	178	<.14	<.23	<4	<2.40	<2.6
JAN													
30...	2.5	<1.3	1460	<30	1	<1.00	388	260	<.14	<.23	5	<2.40	<2.6
FEB													
12...	3.3	<2.6	2160	<50	1	<2.00	484	345	<.14	<.23	3	<4.80	<2.6
MAR													
27...	E1.2	E1.2	340	<50	<2	<2.00	316	261	.02	<.01	E2	<4.80	<2.6
APR													
30...	5.6	4.2	1010	<50	<3	.12	324	82.3	<.01	<.01	13	<.06	1.4
MAY													
14...	4.5	4.9	760	<50	<2	.20	197	16.6	<.01	<.01	2	.79	1.3
JUN													
14...	3.7	4.9	<40	<10	<2	<.20	13	.7	<.01	<.01	3	.81	2.0
JUL													
25...	2.9	6.8	E30	<30	<2	E.12	24	.9	<.01	<.01	4	<.10	1.4
AUG													
02...	2.6	3.8	<40	<30	<2	<.20	32	.7	<.01	<.01	5	<.30	1.1
SEP													
11...	4.1	7.7	<40	<50	<2	<.20	30	1.2	<.01	<.01	4	1.18	1.7

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)
OCT													
04...	E1.7	<.43	.2	<93	<100	--	--	--	--	--	--	--	--
NOV													
16...	<2.4	<.86	<.3	<93	<60	--	--	--	--	--	--	--	--
DEC													
15...	<2.4	<.43	<.2	<93	<60	--	--	--	--	--	--	--	--
JAN													
30...	<2.4	<.43	<.2	<93	<60	--	--	--	--	--	--	--	--
FEB													
12...	<2.4	<.86	<.3	<93	<100	--	--	--	--	--	--	--	--
MAR													
27...	<2.4	<.86	<.3	<93	<100	--	--	--	--	--	--	--	--
APR													
30...	<.3	<.15	<1.0	6	4	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
MAY													
14...	2.7	<.10	<1.0	7	15	--	--	--	--	--	--	--	--
JUN													
14...	1.3	<.10	<2.0	3	5	<.040	<.10	<1	<.1	<.1	<.1	<.1	<.1
JUL													
25...	1.1	<.10	<2.0	3	6	--	--	--	--	--	--	--	--
AUG													
02...	1.2	<.10	<2.0	4	5	--	--	--	--	--	--	--	--
SEP													
11...	1.5	<.10	<2.0	4	5	--	--	--	--	--	--	--	--

07312100 Wichita River near Mabelle, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
30...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	58	<2	<.1	<.03	79	<.04
MAY													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
14...	<.020	<.6	<.060	<.2	<.030	<.800	<.030	120	<2	<.1	<.03	122	<.04
JUL													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT							
04...	--	--	--	--	--	--	--
NOV							
16...	--	--	--	--	--	--	--
DEC							
15...	--	--	--	--	--	--	--
JAN							
30...	--	--	--	--	--	--	--
FEB							
12...	--	--	--	--	--	--	--
MAR							
27...	--	--	--	--	--	--	--
APR							
30...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
14...	--	--	--	--	--	--	--
JUN							
14...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL							
25...	--	--	--	--	--	--	--
AUG							
02...	--	--	--	--	--	--	--
SEP							
11...	--	--	--	--	--	--	--

07312100 Wichita River near Mabelle, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2000 TO SEPTEMBER 2001

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.	2000	2627.98	5820	3600	25530	1400	9680	880	6260	1100
NOV.	2000	16.14	4230	2600	113	940	41.1	690	30.0	810
DEC.	2000	12.04	4960	3060	99.4	1100	36.4	790	25.8	940
JAN.	2001	10.47	4540	2790	78.9	1000	28.5	740	20.9	870
FEB.	2001	21.49	3990	2450	142	870	50.5	670	38.8	770
MAR.	2001	27.01	3940	2420	176	850	62.3	660	48.4	770
APR.	2001	6.93	5280	3250	60.9	1200	22.6	830	15.5	990
MAY	2001	19.75	4720	2910	155	1100	56.3	770	40.8	900
JUNE	2001	5999.41	4460	2740	44370	980	15920	730	11900	860
JULY	2001	8326	4570	2810	63230	1000	22810	750	16830	880
AUG.	2001	7639	4800	2960	60960	1100	22190	780	16000	910
SEPT	2001	6034	4800	2960	48160	1100	17530	780	12640	910
TOTAL		30740.22	**	**	243100	**	88440	**	63840	**
WTD.AVG.		84	4760	2930	**	1100	**	770	**	910

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	5740	5530	5630	5340	4610	5110	---	---	e4960	5190	4510	5070
2	5580	5510	5540	5390	5280	5340	---	---	e4790	5200	5000	5120
3	5510	5470	5490	5390	2350	3660	---	---	e4750	5190	4870	5090
4	---	5450	e5910	---	5030	e5030	---	---	e4760	5160	4880	5050
5	6060	---	e6050	---	---	e4930	---	---	e4780	5120	4930	5060
6	---	---	e5910	---	---	e5160	---	---	e5060	5150	4920	5080
7	---	---	e5880	---	---	e4270	---	---	e4860	5160	5070	5130
8	---	---	e5960	---	---	e1560	---	---	e5080	5160	5020	5070
9	---	---	e5940	---	---	e4320	---	---	e4960	5120	4950	5070
10	---	---	e5890	---	---	e5030	---	---	e5040	5130	4120	4830
11	---	---	e5890	---	---	e5100	---	---	e5140	4860	3920	4380
12	---	---	e5910	---	---	e5180	---	---	e5230	5050	4860	4990
13	---	---	e5900	---	---	e5230	5060	4850	4960	5000	4530	4710
14	5960	5910	5930	---	---	e5100	5160	4900	5110	5070	4740	5000
15	---	---	e5740	---	---	e5040	5190	4700	4930	5100	5000	5060
16	---	---	e5800	5180	5010	5120	5150	4770	5040	5060	4880	4970
17	---	---	e5890	5240	5120	5190	5170	4940	5120	4960	4430	4620
18	---	---	e5920	5240	5050	5200	5170	4910	5080	4880	4550	4710
19	---	---	e5070	5270	5040	5170	5150	5020	5110	5050	4780	4960
20	---	---	e5080	5350	5200	5310	5200	4870	5080	5100	4980	5020
21	---	---	e5110	5370	5120	5280	5190	5040	5150	5100	4920	5000
22	---	---	e4500	5390	5270	5350	5230	5140	5190	5050	4860	4990
23	---	---	e5210	5410	875	4620	5200	4980	5120	5020	4890	4960
24	---	---	e5190	3350	1030	1670	5180	5140	5160	4990	4890	4940
25	---	---	e1320	4860	3280	3990	---	---	e5100	5020	4920	4980
26	---	---	e4780	5030	4030	4590	---	---	e4740	4980	4780	4880
27	---	---	e5280	5360	5030	5230	---	---	e5020	5040	4200	4760
28	5430	1860	4860	5370	4960	5280	---	---	e5070	4310	2550	3870
29	5170	2250	4410	5430	5170	5340	4990	4090	4660	3860	1970	2880
30	5310	5070	5230	---	---	e5210	5060	4680	4930	4770	3840	4350
31	5380	5240	5310	---	---	---	5080	4620	4950	5060	4530	4820
MONTH	---	---	5370	---	---	4750	---	---	5000	5200	1970	4820

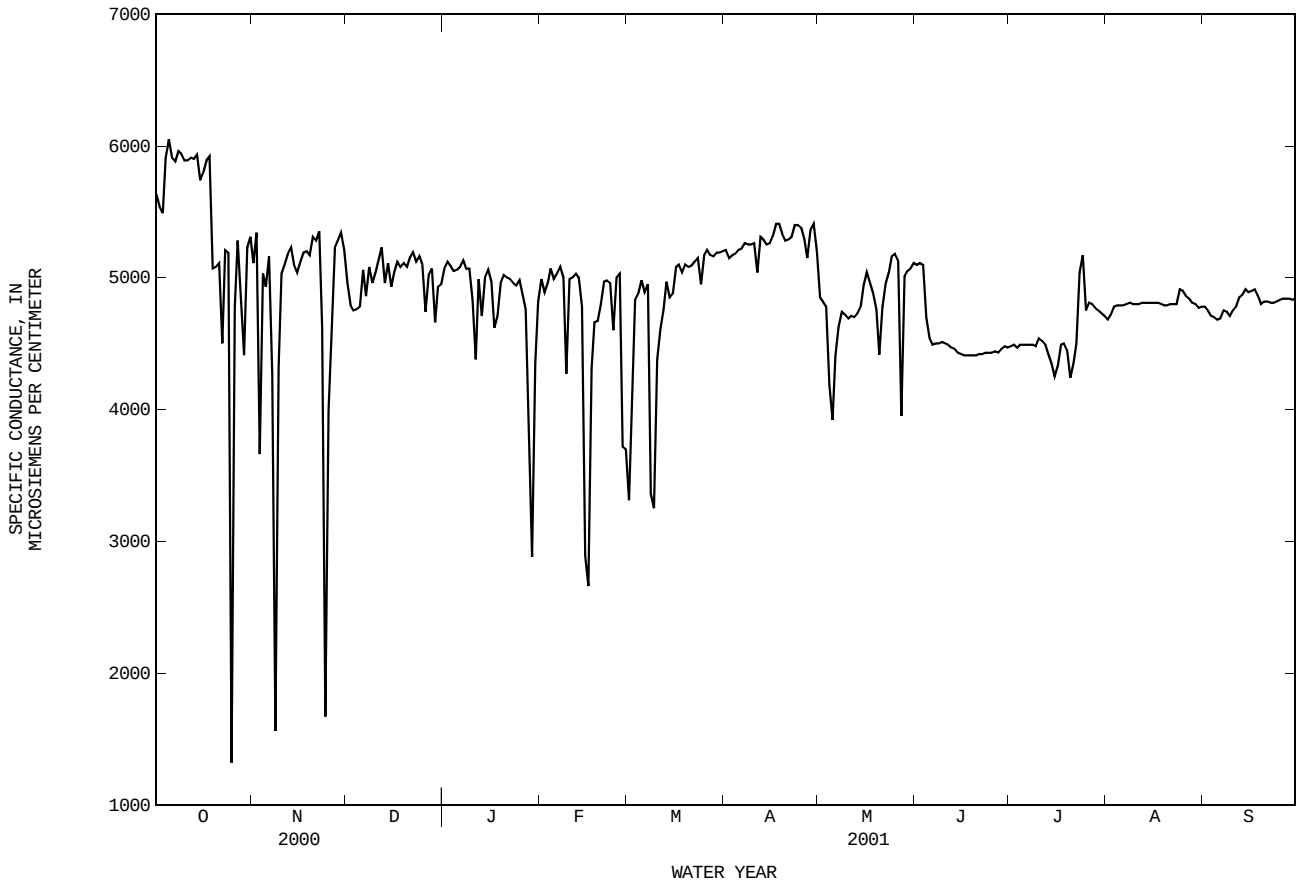
07312100 Wichita River near Mabelle, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5130	4660	4990	4180	2450	3310	5300	5100	5210	4910	4790	4850
2	5120	4670	4890	4570	3820	4250	5210	5070	5150	4880	4740	4820
3	5060	4830	4960	4980	4570	4830	5220	5130	5170	4870	4650	4780
4	5150	4990	5070	5010	4540	4880	5250	5080	5180	4810	2980	4190
5	5130	4810	4990	5060	4800	4980	5280	5100	5210	4350	2980	3920
6	5150	4910	5030	5040	4610	4890	5250	5080	5220	4700	4040	4410
7	5140	5000	5080	5040	4830	4950	5310	5080	5260	4800	4470	4630
8	5060	4450	5000	5100	1160	3360	5310	5180	5250	4880	4550	4740
9	4900	3360	4270	4530	2040	3250	5290	5180	5250	4880	4560	4720
10	5080	4840	4990	4840	3850	4380	5300	4800	5260	4750	4620	4690
11	5080	4800	5000	4900	4060	4610	5330	4190	5040	4860	4600	4710
12	5090	4980	5030	4900	4480	4760	5360	5220	5310	4830	4570	4700
13	5040	4910	5000	5030	4790	4970	5330	5220	5290	4870	4580	4730
14	5030	1990	4780	5030	4680	4850	5310	5180	5250	4970	4640	4780
15	3350	1590	2890	5000	4760	4880	5320	5220	5260	5070	4850	4940
16	3760	1970	2660	5170	4990	5080	5380	5240	5320	5230	4900	5040
17	4700	3660	4310	5150	5070	5100	5430	5380	5410	5220	4700	4960
18	4970	4040	4660	5100	4980	5040	5430	5380	5410	5040	4590	4880
19	4900	4370	4670	5130	5070	5100	5420	5210	5330	5100	3880	4760
20	4980	4610	4800	5160	4990	5080	5330	5230	5280	---	---	e4420
21	5020	4890	4970	5150	4970	5090	5320	5240	5290	---	---	e4780
22	5040	4560	4980	5190	5010	5120	5370	5230	5310	---	---	e4950
23	5030	4870	4960	5250	5060	5150	5440	5320	5400	5270	4860	5040
24	4930	4360	4600	5160	4730	4950	5460	5290	5400	5290	5000	5160
25	5080	4750	5000	5230	5120	5170	5440	5280	5380	5310	4970	5180
26	5070	4960	5030	5240	5190	5210	5440	4920	5290	5310	4850	5130
27	5030	1770	3720	5210	5140	5170	5410	4770	5150	5240	2390	3950
28	4070	---	e3700	5200	5140	5160	5430	5200	5360	5160	4820	5010
29	---	---	---	5230	5140	5190	5460	5340	5410	5200	4860	5050
30	---	---	---	5240	5160	5190	5480	4770	5200	5260	4810	5070
31	---	---	---	5250	5160	5200	---	---	---	---	---	e5110
MONTH	5150	---	4640	5250	1160	4810	5480	4190	5280	---	---	4780

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e5100	4500	4460	4480	4690	4650	4680	4800	4760	4780
2	---	---	e5110	4510	4470	4490	4790	4660	4720	4770	4720	4750
3	---	---	e5100	4500	4440	4470	4800	4760	4780	4730	4700	4710
4	---	---	e4700	4530	4440	4490	4800	4780	4790	4720	4670	4700
5	---	---	e4540	4510	4450	4490	4800	4770	4790	4690	4640	4680
6	4500	4470	4490	4520	4460	4490	4810	4780	4790	4700	4660	4690
7	4500	4490	4500	4510	4440	4490	4820	4780	4800	4780	4700	4750
8	4510	4500	4500	4530	4450	4490	4820	4790	4810	4780	4710	4740
9	4520	4500	4510	4520	4400	4480	4820	4790	4800	4720	4700	4710
10	4510	4490	4500	4570	4440	4540	4820	4790	4800	4770	4710	4750
11	4510	4470	4490	4560	4360	4520	4820	4790	4800	4830	4750	4780
12	4480	4460	4470	4560	4310	4490	4820	4790	4810	4870	4830	4850
13	4470	4440	4460	4480	4370	4420	4830	4790	4810	4890	4860	4870
14	4450	4410	4430	4400	4300	4350	4820	4780	4810	4920	4890	4910
15	4440	4410	4420	4320	4140	4250	4840	4800	4810	4910	4880	4890
16	4430	4400	4410	4530	4080	4330	4820	4790	4810	4910	4900	4900
17	4430	4400	4410	4570	4450	4490	4830	4790	4810	4920	4900	4910
18	4430	4400	4410	4520	4390	4500	4810	4780	4800	4910	4800	4860
19	4420	4390	4410	4480	4380	4450	4800	4770	4790	4820	4800	4800
20	4430	4400	4410	4440	4050	4240	4800	4780	4790	4830	4780	4820
21	4440	4370	4420	4430	4020	4350	4810	4790	4800	4820	4800	4820
22	4440	4420	4420	4590	4430	4500	4810	4790	4800	4820	4800	4810
23	4440	4410	4430	5870	4520	5040	4860	4740	4800	4820	4800	4810
24	4450	4420	4430	5550	4820	5170	4920	4860	4910	4830	4810	4820
25	4450	4410	4430	4850	4610	4750	4910	4870	4900	4840	4820	4830
26	4460	4390	4440	4820	4800	4810	4880	4840	4860	4840	4830	4840
27	---	---	e4430	4820	4780	4800	4860	4820	4840	4850	4830	4840
28	4480	4430	4460	4780	4760	4770	4830	4790	4810	4850	4830	4840
29	4490	4460	4480	4770	4740	4750	4830	4780	4800	4840	4820	4830
30	4490	4450	4470	4750	4710	4730	4790	4760	4770	4850	4830	4840
31	---	---	---	4730	4690	4710	4790	4770	4780	---	---	---
MONTH	---	---	4530	5870	4020	4560	4920	4650	4800	4920	4640	4800

e Estimated



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

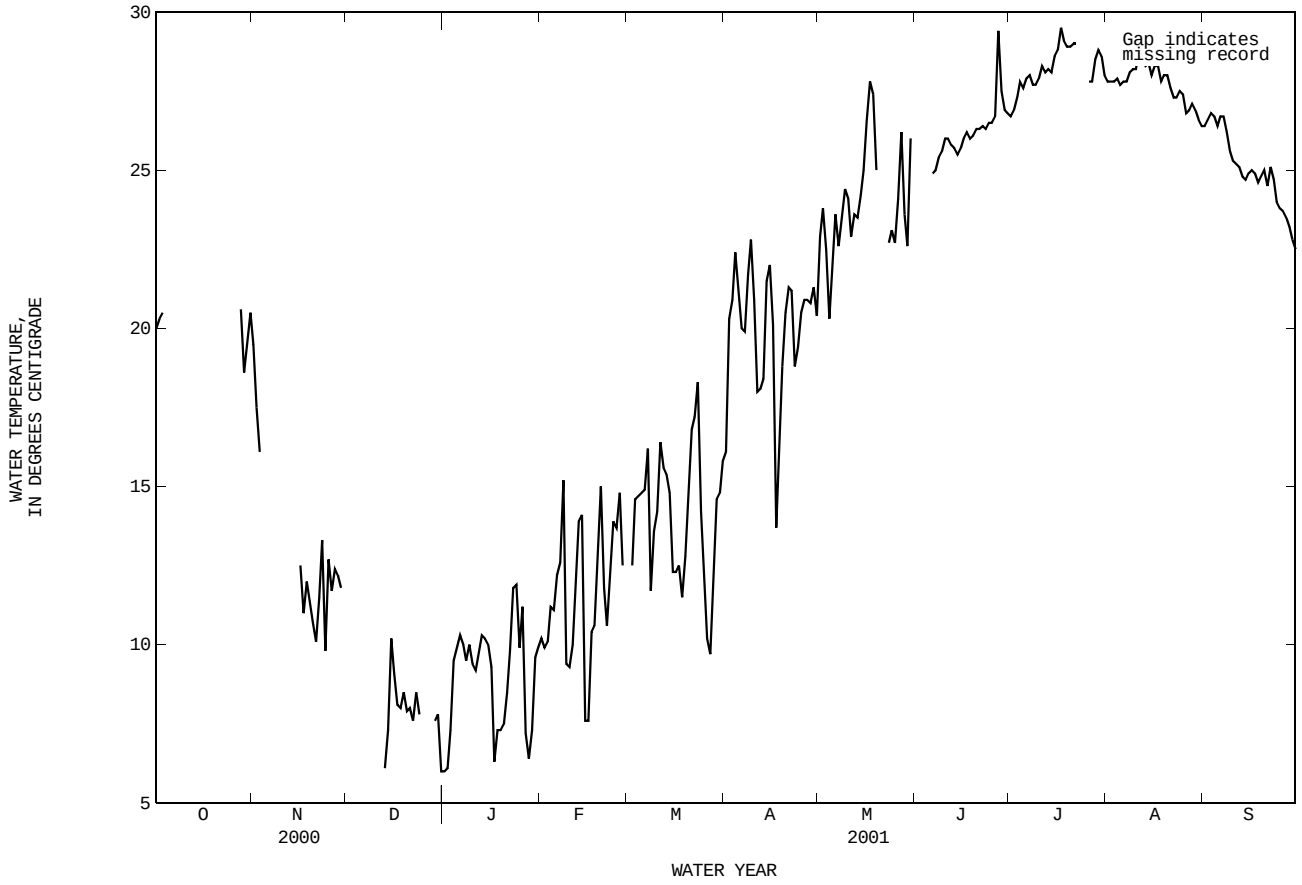
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.6	19.5	20.0	22.2	16.1	19.5	---	---	---	7.7	2.2	6.0
2	20.9	19.7	20.3	24.1	13.1	17.5	---	---	---	8.6	4.9	6.1
3	21.1	20.0	20.5	16.8	15.6	16.1	---	---	---	13.0	4.0	7.3
4	---	---	---	---	15.6	---	---	---	---	16.1	5.0	9.5
5	---	---	---	---	---	---	---	---	---	15.7	5.9	9.9
6	---	---	---	---	---	---	---	---	---	16.1	6.3	10.3
7	---	---	---	---	---	---	---	---	---	12.2	8.5	10.0
8	---	---	---	---	---	---	---	---	---	16.9	5.6	9.5
9	---	---	---	---	---	---	---	---	---	16.9	5.3	10.0
10	---	---	---	---	---	---	---	---	---	10.1	7.3	9.4
11	---	---	---	---	---	---	---	---	---	12.5	7.1	9.2
12	---	---	---	---	---	---	6.6	---	---	12.2	5.8	9.7
13	19.9	---	---	---	---	---	10.5	2.2	6.1	13.1	8.2	10.3
14	---	17.8	---	---	---	---	10.3	3.6	7.3	15.9	6.8	10.2
15	---	---	---	---	---	---	15.1	7.1	10.2	14.4	7.0	10.0
16	---	---	---	16.1	10.2	12.5	11.3	7.1	9.1	10.3	8.1	9.3
17	---	---	---	15.1	8.8	11.0	11.9	5.2	8.1	8.1	5.6	6.3
18	---	---	---	16.3	10.0	12.0	10.9	6.0	8.0	9.9	5.3	7.3
19	---	---	---	17.7	7.5	11.4	14.4	4.9	8.5	10.2	4.8	7.3
20	---	---	---	14.7	8.1	10.7	14.6	4.6	7.9	10.9	5.0	7.5
21	---	---	---	15.0	6.2	10.1	12.4	5.6	8.0	12.9	5.1	8.5
22	---	---	---	15.0	8.9	11.5	11.0	4.9	7.6	16.2	6.5	9.8
23	---	---	---	15.1	10.6	13.3	12.9	4.2	8.5	17.4	8.6	11.8
24	---	---	---	11.1	8.2	9.8	9.1	7.0	7.8	17.3	10.1	11.9
25	---	---	---	16.5	9.7	12.7	---	---	---	12.8	7.3	9.9
26	---	---	---	14.6	8.4	11.7	---	---	---	17.2	7.5	11.2
27	26.6	---	---	17.6	9.2	12.4	---	---	---	10.6	6.2	7.2
28	24.1	17.3	20.6	17.3	9.0	12.2	13.7	---	---	7.8	4.8	6.4
29	23.5	14.9	18.6	16.1	8.1	11.8	12.6	4.9	7.6	12.0	3.2	7.3
30	24.7	15.3	19.6	---	9.6	---	11.6	4.9	7.8	14.6	5.9	9.6
31	23.5	18.5	20.5	---	---	---	7.2	2.9	6.0	16.3	6.0	9.9
MONTH	---	---	---	---	---	---	---	---	---	17.4	2.2	9.0

07312100 Wichita River near Mabelle, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16.5	6.7	10.2	16.6	---	---	23.7	11.2	16.1	29.3	17.8	22.9
2	15.6	6.1	9.9	15.3	10.3	12.5	27.3	15.2	20.3	29.4	19.2	23.8
3	15.0	6.4	10.1	20.2	10.9	14.6	27.0	16.9	20.9	25.5	19.6	22.5
4	17.1	7.4	11.2	22.4	9.9	14.7	30.0	16.2	22.4	22.0	19.3	20.3
5	14.9	7.3	11.1	22.2	9.5	14.8	24.3	18.5	21.1	28.2	17.3	21.8
6	17.6	9.2	12.2	20.0	11.3	14.9	21.5	18.0	20.0	30.2	18.6	23.6
7	17.0	9.1	12.6	24.3	11.2	16.2	27.2	14.6	19.9	27.2	19.3	22.6
8	17.8	13.2	15.2	15.6	9.5	11.7	29.1	16.8	21.7	31.0	17.2	23.5
9	14.8	6.3	9.4	19.5	9.2	13.6	29.2	17.9	22.8	31.6	18.7	24.4
10	15.4	5.9	9.3	19.2	11.1	14.2	23.4	18.8	20.9	30.1	19.4	24.1
11	14.2	6.1	10.0	22.9	13.1	16.4	21.4	13.5	18.0	29.9	18.7	22.9
12	15.0	10.0	12.0	21.7	11.4	15.6	26.1	12.2	18.1	28.5	19.6	23.6
13	16.7	12.0	13.9	20.5	10.7	15.4	24.8	13.1	18.4	29.5	17.9	23.5
14	16.4	8.4	14.1	17.5	13.2	14.8	27.1	17.5	21.5	30.3	18.9	24.2
15	8.4	6.8	7.6	16.2	9.5	12.3	28.3	17.6	22.0	31.5	19.8	25.0
16	11.5	5.3	7.6	20.6	7.3	12.3	28.4	14.6	20.1	33.6	20.8	26.6
17	16.8	7.0	10.4	15.8	10.1	12.5	16.0	12.0	13.7	34.1	22.1	27.8
18	16.0	7.1	10.6	12.6	10.6	11.5	20.7	11.9	15.6	34.2	22.1	27.4
19	19.0	8.6	13.1	16.6	11.1	12.8	25.7	13.1	18.8	29.4	21.6	25.0
20	23.0	10.6	15.0	23.8	8.8	14.9	25.1	17.0	20.5	---	20.6	---
21	13.7	9.8	11.8	24.7	10.9	16.8	25.7	19.0	21.3	---	---	---
22	14.8	7.8	10.6	23.7	12.5	17.2	24.6	18.4	21.2	27.2	---	---
23	13.4	11.1	12.1	25.5	13.4	18.3	26.0	13.2	18.8	28.8	16.8	22.7
24	16.1	11.4	13.9	16.7	11.5	14.2	27.9	12.6	19.4	29.4	17.9	23.1
25	19.5	10.2	13.7	15.9	9.7	12.0	29.1	13.9	20.5	28.6	17.3	22.7
26	20.0	11.7	14.8	11.6	9.5	10.2	28.2	14.8	20.9	31.0	18.7	24.1
27	14.6	8.1	12.5	10.4	9.2	9.7	27.3	15.2	20.9	33.5	20.4	26.2
28	---	3.9	---	15.7	9.5	11.8	27.4	15.2	20.8	27.1	20.3	23.6
29	---	---	---	20.5	11.5	14.6	28.3	15.5	21.3	24.5	20.8	22.6
30	---	---	---	19.9	11.6	14.8	25.5	16.4	20.4	33.8	20.1	26.0
31	---	---	---	23.5	11.0	15.8	---	---	---	---	---	---
MONTH	---	3.9	---	25.5	---	---	30.0	11.2	19.9	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	26.9	26.5	26.7	28.7	27.2	27.8	26.8	26.1	26.4
2	---	---	---	27.6	26.3	26.9	28.6	27.2	27.8	26.9	26.3	26.6
3	---	---	---	28.1	26.7	27.3	28.7	27.2	27.8	27.2	26.4	26.8
4	---	---	---	28.2	27.2	27.8	28.6	27.4	27.9	27.1	26.1	26.7
5	25.7	---	---	27.9	27.3	27.6	27.9	27.5	27.7	26.9	26.1	26.4
6	25.2	24.7	24.9	28.5	27.4	27.9	28.2	27.6	27.8	27.3	26.2	26.7
7	25.3	24.8	25.0	28.8	27.3	28.0	28.2	27.4	27.8	27.1	26.2	26.7
8	25.7	25.1	25.4	28.8	27.1	27.7	28.7	27.6	28.1	26.5	26.0	26.2
9	26.0	25.3	25.6	28.2	27.2	27.7	28.8	27.6	28.2	26.0	25.3	25.6
10	26.8	25.6	26.0	28.2	27.6	27.9	29.3	27.7	28.2	25.7	25.0	25.3
11	26.8	25.5	26.0	29.0	28.0	28.3	29.0	28.5	28.8	25.8	24.7	25.2
12	26.1	25.4	25.8	28.7	27.8	28.1	28.9	28.1	28.6	25.5	24.8	25.1
13	26.1	25.1	25.7	29.0	27.7	28.2	28.7	27.8	28.3	25.1	24.6	24.8
14	25.8	25.2	25.5	28.6	27.7	28.1	28.7	28.0	28.4	25.5	24.2	24.7
15	26.5	25.4	25.7	29.7	27.7	28.6	28.4	27.7	28.0	25.3	24.7	24.9
16	26.8	25.2	26.0	29.4	28.1	28.8	28.6	28.1	28.3	25.6	24.5	25.0
17	26.7	25.7	26.2	35.8	28.2	29.5	28.8	28.0	28.3	25.1	24.6	24.9
18	26.4	25.4	26.0	30.0	28.6	29.1	28.2	27.4	27.8	24.8	24.3	24.6
19	26.6	25.7	26.1	29.6	28.5	28.9	28.2	27.7	28.0	25.1	24.5	24.8
20	27.1	25.6	26.3	29.7	28.4	28.9	28.7	27.5	28.0	25.8	24.2	25.0
21	26.7	26.0	26.3	29.7	28.6	29.0	28.1	27.3	27.6	25.0	24.2	24.5
22	26.8	26.1	26.4	29.7	28.6	29.0	27.7	26.8	27.3	25.7	24.6	25.1
23	26.8	25.9	26.3	---	28.5	---	28.1	26.7	27.3	25.1	24.1	24.7
24	27.1	26.0	26.5	---	---	---	28.2	26.9	27.5	24.3	23.7	24.0
25	27.2	25.7	26.5	28.6	---	---	28.2	26.8	27.4	24.2	23.4	23.8
26	28.4	26.0	26.7	28.4	27.5	27.8	27.3	26.5	26.8	24.1	23.1	23.7
27	36.2	25.8	29.4	28.8	27.2	27.8	27.3	26.6	26.9	24.0	22.9	23.5
28	28.0	27.0	27.5	29.1	28.0	28.5	27.8	26.7	27.1	23.6	22.8	23.2
29	27.3	26.4	26.9	29.3	28.4	28.8	27.3	26.5	26.9	23.3	22.5	22.8
30	27.3	26.3	26.8	29.3	28.0	28.6	26.9	26.4	26.6	22.7	22.1	22.5
31	---	---	---	28.5	27.5	28.0	26.6	26.2	26.4	---	---	---
MONTH	---	---	---	---	---	---	29.3	26.2	27.7	27.3	22.1	25.0


WATER TEMPERATURE, IN DEGREES CENTIGRADE
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WATER YEAR

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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. No flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	5.6	3.1	8.2	.97	1.8	3.1	61	53	157	159	181
2	130	5.6	2.4	7.9	1.1	1.7	3.1	62	53	150	158	189
3	128	5.8	2.5	8.0	1.0	1.2	3.2	62	66	144	157	184
4	126	5.8	2.9	6.3	1.1	1.6	3.1	65	77	146	157	197
5	125	6.1	2.8	1.8	.99	2.5	3.0	50	88	154	160	211
6	124	5.4	2.8	1.2	.91	3.3	3.1	39	94	163	160	212
7	122	e4.2	1.7	1.2	1.1	3.1	3.5	33	99	172	157	199
8	122	e4.3	.94	1.2	1.0	2.2	3.5	28	108	180	155	186
9	112	2.9	.89	1.3	.90	2.1	3.6	28	121	180	157	185
10	106	2.9	1.2	1.3	.87	2.0	3.5	28	129	184	159	187
11	104	3.0	1.3	1.5	1.2	2.2	3.9	28	128	191	212	185
12	98	2.9	1.4	1.5	1.6	2.1	3.8	28	115	208	249	184
13	95	2.7	1.0	1.5	1.7	2.7	3.8	37	116	237	229	184
14	95	2.4	3.7	1.3	1.8	3.1	3.8	55	122	252	232	183
15	96	2.0	7.5	1.3	1.7	1.9	3.6	64	130	254	220	185
16	90	1.9	7.1	1.3	2.1	1.3	2.8	69	132	251	194	183
17	84	1.9	7.2	1.6	2.9	1.8	2.8	78	141	248	194	188
18	83	1.8	8.0	1.4	2.9	2.4	3.3	78	150	249	195	184
19	77	1.7	8.1	.96	2.9	2.4	2.4	81	151	252	201	179
20	62	1.6	8.7	.93	2.9	2.5	1.3	73	165	251	196	169
21	54	1.6	7.3	.90	2.9	2.8	1.3	66	175	255	198	151
22	34	1.6	9.1	.85	3.0	3.1	1.5	66	178	259	228	136
23	17	1.9	12	.87	2.9	3.3	1.5	65	162	264	230	139
24	17	2.4	11	.89	2.9	e3.1	1.7	67	163	274	224	140
25	18	2.8	10	.93	2.7	e2.8	1.8	67	165	250	208	150
26	17	3.0	10	.98	2.9	2.6	1.8	67	161	188	209	159
27	12	2.9	9.9	1.1	1.7	2.5	1.5	68	155	167	211	159
28	5.8	2.8	9.5	1.2	1.9	2.7	1.4	61	157	158	212	171
29	5.3	2.6	8.4	1.2	---	2.5	34	54	159	156	201	177
30	4.9	2.7	8.6	.91	---	2.7	65	53	158	154	185	177
31	5.2	---	8.5	.93	---	3.1	---	53	---	158	185	---
TOTAL	2301.2	94.8	179.53	62.45	52.54	75.1	175.7	1734	3871	6306	5992	5314
MEAN	74.2	3.16	5.79	2.01	1.88	2.42	5.86	55.9	129	203	193	177
MAX	132	6.1	12	8.2	3.0	3.3	65	81	178	274	249	212
MIN	4.9	1.6	.89	.85	.87	1.2	1.3	28	53	144	155	136
AC-FT	4560	188	356	124	104	149	349	3440	7680	12510	11890	10540

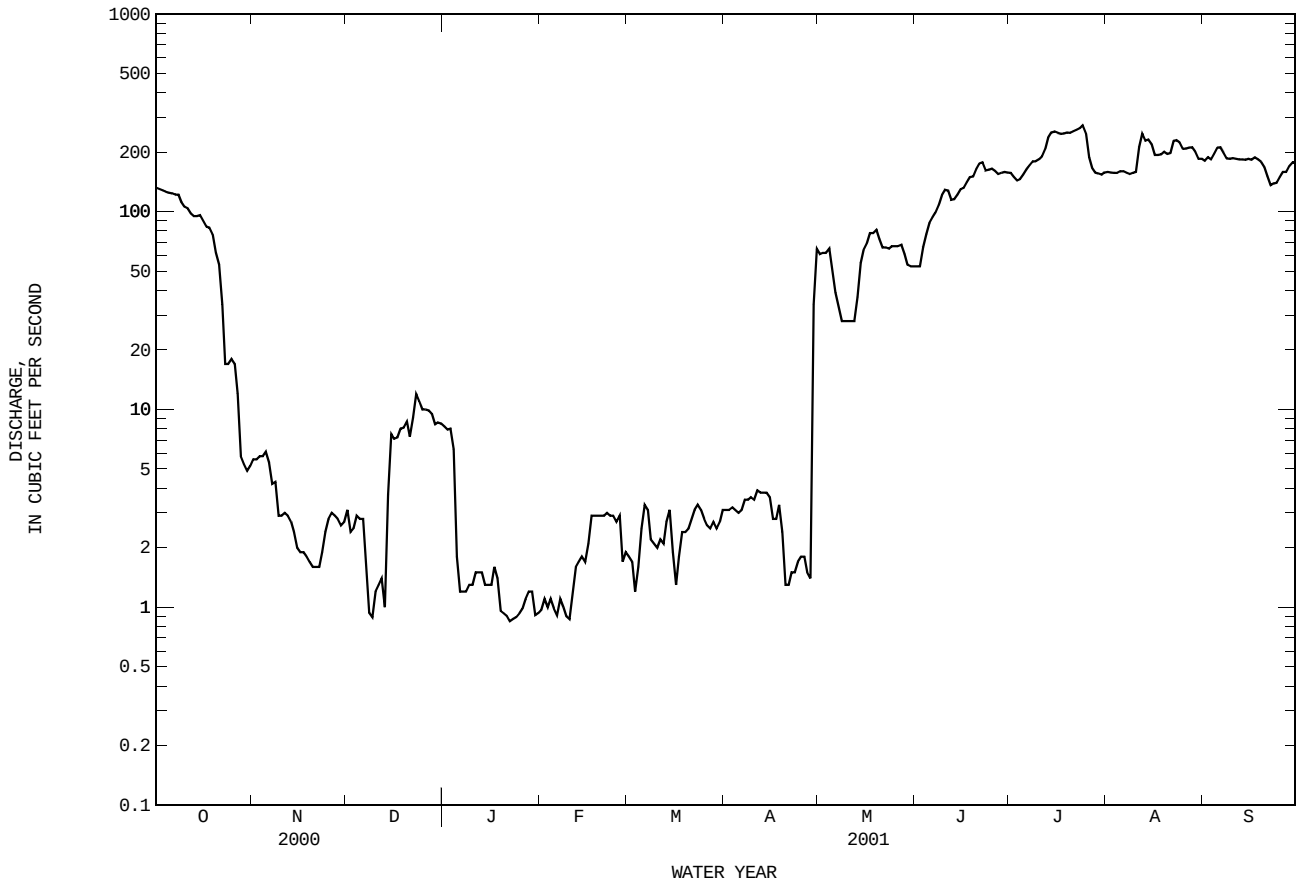
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2001, BY WATER YEAR (WY)

MEAN	76.6	10.5	13.7	19.6	11.2	26.5	59.5	79.7	126	200	183	123
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1972 - 2001	
ANNUAL TOTAL	23113.31		26158.32			
ANNUAL MEAN	63.2		71.7		77.9	
HIGHEST ANNUAL MEAN					120	1984
LOWEST ANNUAL MEAN					46.6	1989
HIGHEST DAILY MEAN	178	Aug 10	274	Jul 24	374	Jul 22 1974
LOWEST DAILY MEAN	.60	Apr 23	.85	Jan 22	.00	Oct 20 1973
ANNUAL SEVEN-DAY MINIMUM	.68	Apr 18	.90	Jan 19	.00	Oct 20 1973
MAXIMUM PEAK FLOW			289	Jul 24	374	Jul 22 1974
MAXIMUM PEAK STAGE			7.58	Jul 24	8.31	Jul 22 1974
ANNUAL RUNOFF (AC-FT)	45850		51890		56460	
10 PERCENT EXCEEDS	164		194		200	
50 PERCENT EXCEEDS	45		12		53	
90 PERCENT EXCEEDS	1.9		1.3		.30	

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.--June 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 923.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage in June 1996, at least 10% of contributing drainage area has been regulate. Since completion of Lake Kemp in 1923, no outflow has passed over the spillway. Water is diverted from Lake Diversion (conservaton pool 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 6,576 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses and Dundee State Fish Hatchery diverted 2,012 acre-ft. and returned 2,088 acre-ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	29	93	8.7	25	e242	23	7.4	7.2	e11	8.6	2.3
2	8.9	24	60	7.8	19	e330	28	7.3	7.4	e8.9	7.8	1.8
3	8.5	100	46	7.5	18	e263	30	7.3	7.0	e8.1	7.5	1.4
4	8.4	75	40	8.0	18	e177	25	e12	6.3	5.8	6.7	1.4
5	6.8	35	39	7.6	12	e121	18	e710	5.9	5.1	5.9	1.6
6	7.4	21	33	7.1	15	e84	19	e290	6.0	5.0	3.6	2.3
7	9.3	23	29	6.6	12	e59	27	e113	5.6	5.2	3.4	2.3
8	10	83	28	6.4	10	e45	24	e146	5.6	5.4	4.3	1.6
9	8.0	126	20	6.2	21	e146	21	e93	6.9	6.6	5.6	1.4
10	9.6	62	18	7.8	22	e660	18	e15	6.2	7.4	5.1	1.4
11	9.7	27	16	13	12	e218	43	9.8	5.6	7.3	3.0	2.0
12	11	20	14	9.6	9.2	e104	58	8.9	7.0	7.4	3.4	5.9
13	8.9	16	15	8.3	8.4	e89	18	8.0	6.9	7.4	4.9	7.5
14	15	14	17	11	9.1	e89	14	7.3	5.8	9.1	7.0	8.6
15	14	14	15	8.5	104	e77	14	6.9	12	13	2.8	12
16	12	15	17	7.1	507	e59	12	6.7	9.8	15	e7.5	12
17	10	12	16	10	613	e44	9.8	6.5	5.9	13	e8.0	6.6
18	11	9.1	14	10	336	e43	10	8.2	5.3	15	e6.0	3.8
19	9.4	8.1	16	8.6	198	e51	11	28	7.6	14	e4.2	3.3
20	63	8.4	12	7.3	135	e39	16	78	6.9	14	e3.4	2.8
21	44	8.0	15	6.5	86	e21	16	42	5.6	14	e4.2	2.9
22	e44	7.7	10	6.2	59	e19	12	22	5.5	15	e4.8	1.9
23	29	21	9.1	6.1	49	e18	17	14	6.1	14	e5.0	1.5
24	22	858	8.7	5.9	52	e18	11	11	10	14	e4.6	1.2
25	77	1860	8.6	6.0	90	e28	8.6	10	10	14	e3.7	1.1
26	157	1020	13	6.2	33	36	8.2	9.4	9.6	13	e3.7	1.1
27	70	540	11	8.0	33	34	8.2	7.8	11	11	e2.1	3.4
28	36	285	12	22	94	34	7.9	11	8.8	8.8	1.8	3.9
29	31	173	14	83	---	34	7.5	8.1	8.2	8.8	1.7	4.5
30	20	121	13	98	---	31	7.3	7.2	e10	10	1.6	4.9
31	15	---	11	44	---	26	---	6.5	---	9.3	2.0	---
TOTAL	793.7	5615.3	683.4	459.0	2599.7	3239	542.5	1718.3	221.7	315.6	143.9	108.4
MEAN	25.6	187	22.0	14.8	92.8	104	18.1	55.4	7.39	10.2	4.64	3.61
MAX	157	1860	93	98	613	660	58	710	12	15	8.6	12
MIN	6.8	7.7	8.6	5.9	8.4	18	7.3	6.5	5.3	5.0	1.6	1.1
AC-FT	1570	11140	1360	910	5160	6420	1080	3410	440	626	285	215

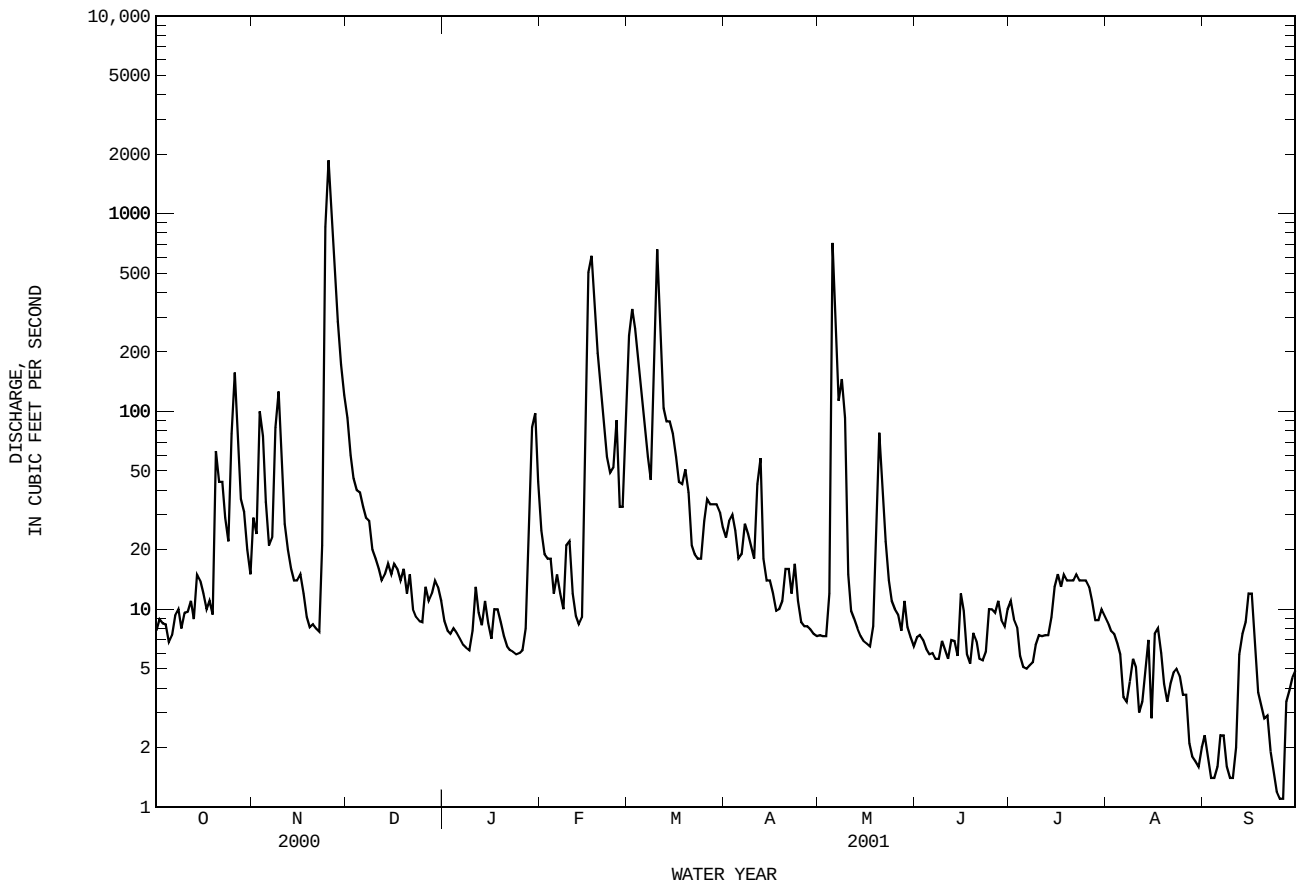
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

MEAN	12.8	44.3	9.40	7.58	58.7	85.4	69.8	135	16.1	9.61	10.1	12.9
MAX	25.6	187	22.0	14.8	182	265	304	598	41.5	14.2	15.3	36.9
(WY)	2001	2001	2001	2001	1998	1998	1998	1997	1997	1997	1996	1996
MIN	8.08	6.51	4.66	4.47	4.06	4.49	4.59	4.66	4.46	2.22	4.64	3.61
(WY)	2000	2000	1999	1997	1999	1997	2000	2000	2000	2000	2001	2001

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1996 - 2001	
ANNUAL TOTAL	8783.4		16440.5			
ANNUAL MEAN	24.0		45.0		38.8	
HIGHEST ANNUAL MEAN					69.6	1998
LOWEST ANNUAL MEAN					6.29	2000
HIGHEST DAILY MEAN	1860	Nov 25	1860	Nov 25	1960	May 21 1997
LOWEST DAILY MEAN	1.1	May 13	1.1	Sep 25	1.1	May 13 2000
ANNUAL SEVEN-DAY MINIMUM	1.1	Jul 7	1.7	Sep 3	1.1	Jul 7 2000
MAXIMUM PEAK FLOW			2120	Nov 25	2120	Nov 25 2000
MAXIMUM PEAK STAGE			13.04	Nov 25	13.04	Nov 25 2000
ANNUAL RUNOFF (AC-FT)	17420		32610		28080	
10 PERCENT EXCEEDS	24		87		34	
50 PERCENT EXCEEDS	5.9		11		8.1	
90 PERCENT EXCEEDS	2.0		4.2		3.7	

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: June 1996 to Sept. 1997.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1996 to current year.
WATER TEMPERATURE: June 1996 to current year.

INSTRUMENTATION.--Water-quality monitor June 1996 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 9,350 microsiemens/cm, Mar. 31, 1997; minimum, 176 microsiemens/cm, Mar. 23, 2000.
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, 8,940 microsiemens/cm, Sept. 26; minimum, 314 microsiemens/cm, Nov. 24.
WATER TEMPERATURE: Maximum, 36.5°C, July 10; minimum, 1.4°C, Dec. 26.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	e7130	5980	876	4210	5510	5230	5330	7390	7090	7220
2	---	---	e7170	5470	2320	4590	5680	5320	5520	7790	7130	7430
3	---	---	e7240	5470	409	2870	6020	5680	5840	8050	7790	7950
4	7260	6940	7070	3270	1720	2420	6100	6020	6070	8090	7780	7950
5	6980	6820	6910	3260	1740	2340	6260	6020	6080	7810	7680	7760
6	6920	6820	6870	4620	3150	3980	6550	6260	6380	7970	7810	7900
7	---	---	e6890	4900	3480	4560	6670	6470	6580	8060	7940	8010
8	---	---	e7050	4380	2120	3120	6610	6100	6290	8060	7900	8000
9	---	---	e7290	2260	1010	1610	7440	6610	7100	8030	7830	7960
10	7400	7230	7320	2640	1230	1820	7650	7440	7540	7910	7590	7810
11	7350	7220	7280	4410	2640	3540	7800	7630	7700	7630	6540	6940
12	7350	7120	7240	5620	4410	5110	7930	7790	7830	7120	6770	6960
13	7120	7050	7080	6550	5620	6150	7970	7710	7820	7310	7120	7230
14	7070	2780	6280	6750	6550	6700	8100	7080	7670	7410	5960	6840
15	6660	4820	6230	6900	6720	6780	7890	7200	7670	6660	5970	6380
16	6720	6650	6690	7030	6410	6800	7930	6560	7240	6940	6660	6830
17	6720	6580	6680	7170	6500	6840	6750	6410	6510	7000	6570	6850
18	6620	6550	6570	7580	7170	7400	7270	6690	7070	6670	6510	6570
19	6790	6620	6720	7770	7580	7670	6910	6290	6500	6850	6620	6730
20	6820	843	3920	7800	7560	7710	7500	6910	7260	6960	6850	6940
21	---	---	e3800	7790	7550	7660	7570	6390	6860	6980	6900	6930
22	---	---	e3540	7860	7730	7830	7890	6950	7490	7170	6980	7090
23	4430	3130	3950	7730	564	7010	8130	7890	8060	7390	7170	7300
24	4930	3000	4290	1970	314	887	8290	8030	8120	7610	7390	7520
25	5270	336	3820	5430	1330	4490	8420	8290	8350	7750	7610	7710
26	3010	891	2080	5370	3290	4320	8380	7870	8170	7710	7550	7630
27	2560	1640	2160	3770	3270	3470	8110	7930	7990	7570	7220	7490
28	3090	2150	2600	4900	3760	4420	8320	6200	7960	7240	5640	6140
29	4170	1450	3360	5060	4570	4800	7290	6170	6970	5740	1980	3470
30	5090	4140	4800	5510	5060	5410	7650	6700	7300	2310	1440	1900
31	5740	5010	5360	---	---	---	7650	7190	7420	3010	2310	2710
MONTH	---	---	5660	7860	314	4880	8420	5230	7120	8090	1440	6840

07312130 Wichita River at State Highway 25 near Kamay, TX--Continued

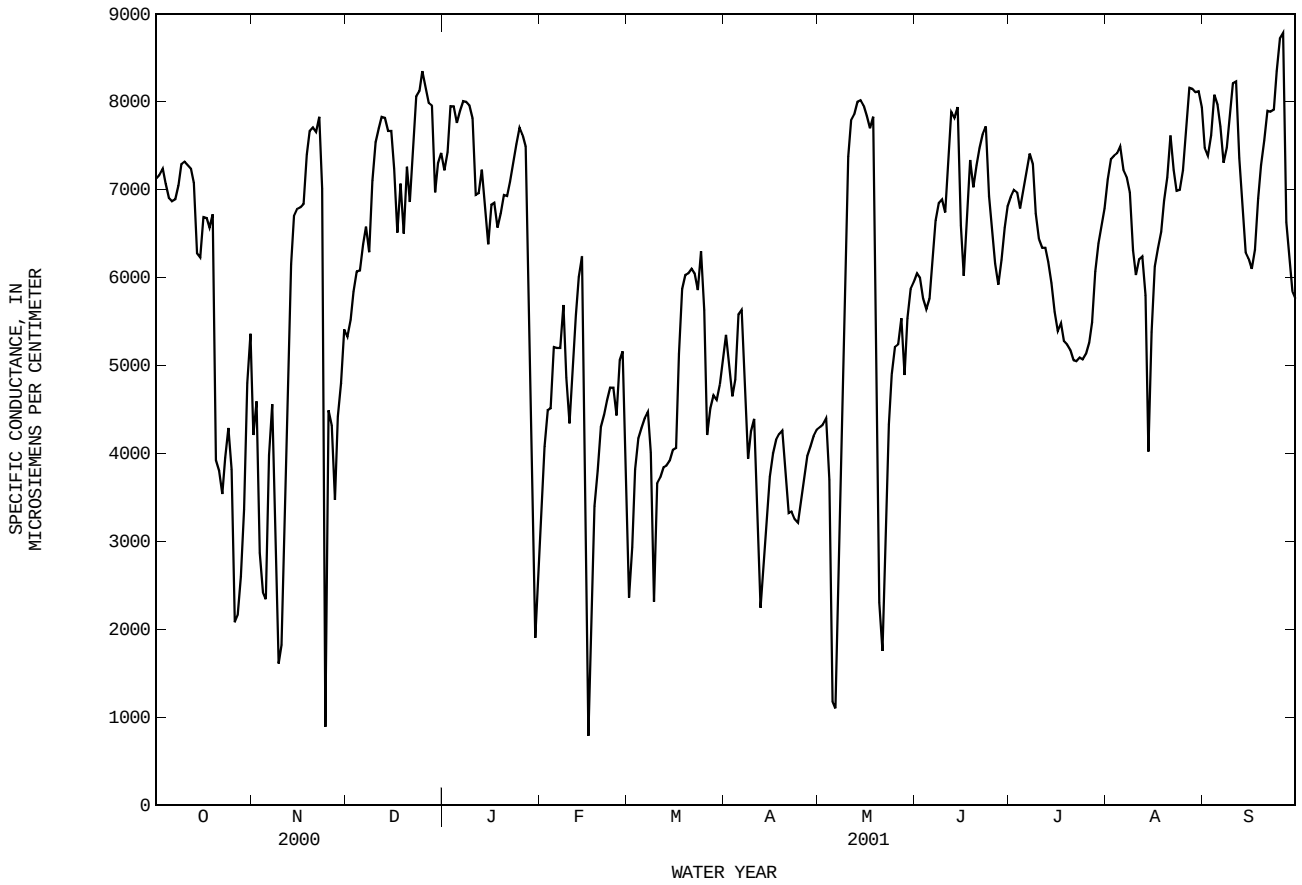
SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3790	3010	3400	2750	2170	2360	5470	5180	5350	4330	4260	4300
2	4410	3790	4080	3370	2720	2930	5480	4750	5020	4370	4300	4330
3	4520	4410	4490	4060	3370	3820	4800	4590	4650	4420	4370	4400
4	4880	4370	4510	4240	4060	4170	5240	4610	4840	4440	1880	3700
5	5490	4880	5210	4330	4240	4290	5780	5240	5580	1950	752	1180
6	5580	4900	5200	4470	4330	4400	5820	5490	5630	1550	745	1100
7	5560	4910	5200	4520	4440	4470	5570	3970	4830	3450	1550	2460
8	5780	5410	5690	4640	2760	4010	4170	3840	3940	5370	3450	4450
9	5500	3790	4860	3280	1540	2310	4330	4170	4250	6840	5370	6160
10	4590	4240	4340	3760	3280	3660	4590	4320	4390	7650	6840	7380
11	5300	4550	4950	3820	3650	3730	4590	2360	3320	7870	7650	7790
12	5820	5300	5580	3860	3820	3840	---	---	e2240	7910	7760	7860
13	6160	5820	6010	3890	3840	3860	---	---	e2810	8070	7910	8000
14	6310	5600	6240	---	---	e3910	---	---	e3300	8120	7880	8020
15	5600	1060	2710	---	---	e4040	---	---	e3740	8140	7670	7960
16	1270	649	785	4450	3950	4060	---	---	e4000	8030	7510	7840
17	3250	1120	2540	5630	4450	5130	---	---	e4160	7910	7330	7700
18	---	---	e3400	6100	5630	5870	4310	3990	4220	8490	6930	7830
19	---	---	e3800	6110	5990	6030	4320	4180	4260	6930	812	5550
20	---	---	e4300	6110	6010	6050	---	---	e3790	2940	1130	2300
21	4500	4420	4440	6200	6030	6100	3490	3230	3320	2670	860	1750
22	4680	4500	4600	6210	5910	6050	3450	3230	3340	3880	2480	3000
23	4820	4580	4750	6100	5750	5860	3470	3110	3250	4790	3880	4330
24	4870	4500	4750	6490	6100	6300	3340	3120	3210	5080	4760	4900
25	4610	4380	4430	6500	4300	5630	3620	3340	3480	5370	5080	5210
26	5410	4610	5060	4360	4160	4210	3890	3620	3750	5460	5090	5240
27	5610	3870	5160	4610	4360	4510	4010	3890	3970	5610	5460	5540
28	5100	2070	3520	4690	4610	4660	4160	4010	4080	5610	4060	4890
29	---	---	---	4740	4540	4610	4240	4160	4200	5780	5160	5540
30	---	---	---	4920	4740	4790	4300	4240	4270	6010	5720	5870
31	---	---	---	5180	4920	5060	---	---	---	6100	5780	5950
MONTH	---	---	4430	---	---	4540	---	---	4040	8490	745	5240

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6160	5930	6050	6990	6860	6920	7300	6970	7120	7660	7220	7480
2	6240	5680	6000	7050	6940	7000	7420	7260	7350	7520	7260	7390
3	6040	5340	5760	7110	6710	6970	7510	7240	7390	7740	7360	7620
4	5940	5240	5640	6910	6620	6790	7510	7310	7420	8250	7730	8080
5	6130	5380	5760	7130	6870	6980	7640	7120	7490	8060	7870	7970
6	6500	5670	6190	7290	7050	7190	7360	7070	7230	7920	7370	7720
7	6880	5750	6650	7860	7260	7410	7270	6990	7150	7420	7170	7310
8	7020	6600	6850	8050	6760	7290	7190	6640	6970	7610	7250	7480
9	7210	6220	6890	6880	6500	6730	6720	6010	6310	7980	7610	7840
10	7160	6010	6740	6640	6270	6440	6100	5870	6030	8330	7960	8210
11	7770	6710	7280	6470	6220	6340	6310	6020	6210	8320	8040	8230
12	8130	7580	7890	6420	6220	6340	6400	5910	6240	8040	6980	7360
13	7930	7630	7820	6270	6080	6180	6250	3520	5800	7210	6320	6790
14	8040	7790	7940	6090	5790	5940	4800	3020	4020	6390	6170	6290
15	8020	5680	6590	5800	5380	5610	5780	4660	5380	6300	6130	6220
16	6160	5870	6020	5460	5370	5390	---	---	e6130	6190	5930	6100
17	7130	6160	6610	5550	5390	5480	---	---	e6340	6580	5990	6320
18	7460	7130	7340	5410	5160	5280	---	---	e6520	7180	6580	6900
19	7490	6660	7030	5400	5160	5240	---	---	e6870	7360	7180	7280
20	7470	6990	7280	5260	5090	5180	---	---	e7140	7760	7350	7560
21	7580	7320	7470	5140	4690	5060	---	---	e7620	8120	7760	7900
22	7900	7430	7630	5120	4660	5050	---	---	e7230	8140	7680	7890
23	7930	7400	7720	5180	4780	5090	7180	6670	6990	7980	7780	7910
24	7580	6410	6930	5130	4950	5070	7100	6720	7000	8590	7960	8350
25	6660	6400	6540	5230	5060	5130	7280	7050	7220	8830	8590	8720
26	6400	5950	6160	5320	5210	5260	8060	7280	7730	8940	8440	8780
27	6020	5860	5920	5790	5290	5490	8300	8040	8160	8440	5880	6630
28	6440	6020	6200	6200	5790	6070	8290	8030	8150	7010	5630	6230
29	6690	6440	6570	6540	6200	6390	8220	7960	8110	6520	5530	5850
30	6880	6690	6810	6740	6280	6610	8240	7960	8120	6220	5450	5760
31	---	---	---	6970	6280	6790	8150	7610	7940	---	---	---
MONTH	8130	5240	6740	8050	4660	6090	---	---	6950	8940	5450	7340

e Estimated

07312130 Wichita River at State Highway 25 near Kamay, TX--Continued



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.2	18.7	21.6	21.1	17.8	19.6	10.1	8.5	9.2	3.5	2.8	3.1
2	25.5	19.5	22.5	19.4	15.2	17.5	8.6	7.4	8.0	4.5	2.7	3.5
3	25.6	20.8	23.2	17.8	14.5	15.6	8.0	6.8	7.4	7.0	2.5	4.6
4	27.0	21.5	24.2	15.8	14.5	15.1	8.6	7.2	8.0	9.4	4.8	6.9
5	26.9	22.3	24.5	16.7	15.3	15.9	8.7	8.3	8.5	9.9	5.9	7.9
6	23.2	16.1	18.7	16.2	13.9	15.1	9.7	7.9	8.7	10.7	6.4	8.5
7	---	---	---	13.9	8.4	10.7	10.5	6.9	8.6	10.3	8.1	9.2
8	---	---	---	8.4	3.6	5.1	10.6	7.8	9.1	9.5	6.2	8.0
9	15.8	---	---	7.4	3.7	5.6	11.9	8.1	9.8	9.7	6.3	8.2
10	16.3	11.7	14.0	10.6	5.4	7.8	11.7	8.8	10.3	8.9	7.4	8.2
11	18.5	14.1	16.2	11.9	8.8	10.1	10.4	5.1	7.9	8.3	6.5	7.3
12	20.9	16.1	18.5	11.1	8.1	9.5	5.1	3.5	4.1	7.5	5.4	6.6
13	20.7	18.9	19.9	10.7	6.3	8.3	6.1	2.2	4.0	11.1	7.5	9.1
14	21.3	19.0	20.0	11.0	6.1	8.5	6.0	3.1	4.5	10.5	7.4	9.1
15	21.9	19.4	20.7	10.9	8.1	9.5	10.8	5.0	7.8	9.5	6.3	8.1
16	22.8	19.6	21.1	11.8	8.7	10.1	9.5	6.8	8.3	9.0	7.1	8.1
17	21.4	18.6	19.6	9.7	7.0	8.4	8.2	5.0	6.6	7.1	4.2	5.0
18	22.0	18.0	19.9	11.4	7.8	9.5	9.2	5.9	7.3	7.1	4.0	5.4
19	20.9	17.1	19.4	12.0	7.7	9.8	8.6	5.1	6.7	6.6	4.0	5.5
20	20.2	17.4	18.4	10.6	7.2	8.9	9.2	5.3	7.0	5.8	3.2	4.7
21	---	17.7	---	11.0	6.0	8.6	8.0	5.1	6.5	7.8	4.4	6.1
22	---	---	---	11.1	8.6	9.9	7.7	4.2	5.8	8.9	5.3	7.1
23	22.4	19.8	21.0	12.7	10.5	11.8	9.6	5.1	7.1	11.3	8.0	9.5
24	21.7	19.7	20.8	10.5	8.6	9.1	7.9	5.9	6.5	12.3	10.3	11.1
25	20.6	16.9	19.2	10.0	8.5	9.2	6.1	4.6	5.3	10.8	8.0	9.3
26	20.2	16.7	18.3	9.7	8.1	9.0	4.6	1.4	2.4	11.7	8.5	10.1
27	22.2	18.8	20.3	9.8	8.1	9.0	4.1	1.6	2.9	11.2	5.5	7.5
28	22.3	19.3	20.8	10.2	8.5	9.4	6.4	2.4	4.0	5.5	4.6	5.1
29	21.2	16.7	19.0	10.2	9.0	9.6	6.4	2.2	4.1	8.4	3.4	5.9
30	21.6	16.9	19.2	9.2	8.4	8.8	5.4	2.3	3.9	9.1	5.5	7.0
31	21.6	19.1	20.2	---	---	---	4.4	2.9	3.5	9.6	5.2	7.1
MONTH	---	---	---	21.1	3.6	10.5	11.9	1.4	6.6	12.3	2.5	7.2

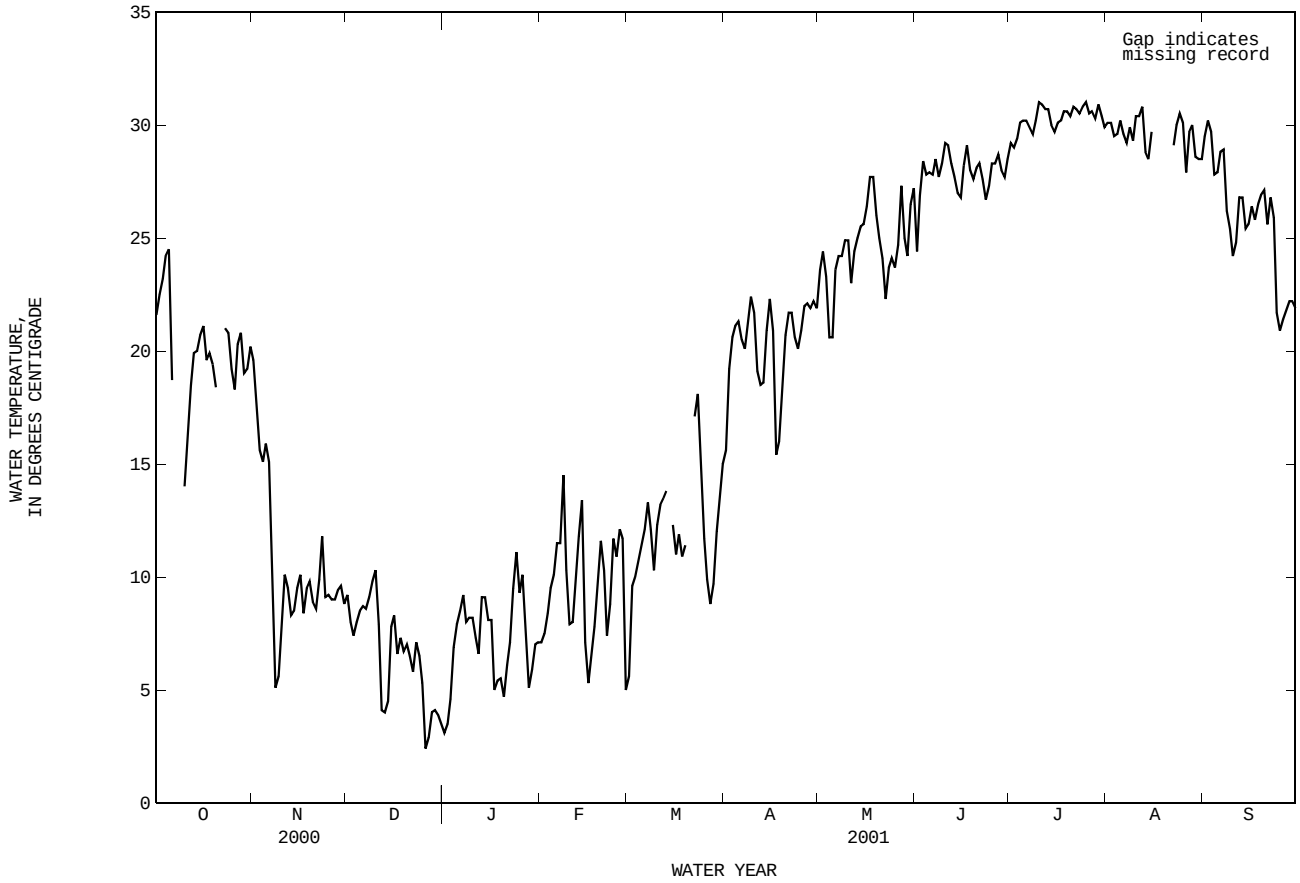
07312130 Wichita River at State Highway 25 near Kamay, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.4	5.0	7.1	8.8	3.0	5.6	18.8	13.1	15.6	28.7	19.8	23.6
2	10.1	5.0	7.5	10.4	8.8	9.6	23.2	16.1	19.2	29.4	20.6	24.4
3	11.0	6.0	8.4	11.2	8.8	10.0	22.9	18.7	20.6	25.3	21.8	23.3
4	12.2	7.0	9.5	11.8	9.4	10.7	24.4	18.5	21.1	22.6	19.2	20.6
5	13.5	7.0	10.1	12.3	10.2	11.4	22.6	20.0	21.3	23.4	18.5	20.6
6	13.8	9.5	11.5	13.0	11.3	12.1	21.4	19.6	20.5	26.6	21.4	23.6
7	13.9	9.0	11.5	15.4	11.5	13.3	23.1	17.7	20.1	26.7	22.1	24.2
8	16.1	13.0	14.5	14.1	9.5	12.1	24.7	19.0	21.3	28.2	20.4	24.2
9	14.9	8.0	10.3	12.7	7.9	10.3	24.8	19.9	22.4	28.1	21.6	24.9
10	9.9	6.2	7.9	13.3	11.0	12.3	22.8	20.8	21.7	28.5	21.9	24.9
11	10.3	5.9	8.0	14.5	12.2	13.2	21.3	16.5	19.1	25.2	21.1	23.0
12	11.6	8.4	9.9	14.3	12.2	13.5	20.7	16.6	18.5	28.0	21.2	24.4
13	13.2	10.7	11.8	14.8	12.6	13.8	21.3	15.4	18.6	28.7	21.7	25.0
14	14.6	11.1	13.4	14.5	---	---	23.2	19.1	20.9	29.4	22.3	25.5
15	11.1	5.4	7.1	13.3	10.9	12.3	25.7	19.4	22.3	30.2	21.9	25.6
16	6.6	4.1	5.3	12.7	9.2	11.0	25.1	17.6	20.9	31.5	22.5	26.4
17	8.6	5.2	6.7	13.5	10.4	11.9	19.0	14.3	15.4	32.4	24.0	27.7
18	8.8	6.8	7.8	11.7	10.6	10.9	19.7	13.0	16.0	31.6	23.6	27.7
19	11.4	7.8	9.5	13.6	9.9	11.4	23.1	14.7	18.6	28.5	21.3	26.0
20	12.3	10.7	11.6	---	---	---	23.1	18.3	20.7	29.0	21.1	25.0
21	11.9	7.9	10.3	19.1	---	---	24.1	20.2	21.7	27.0	21.9	24.1
22	8.1	6.5	7.4	20.4	14.1	17.1	24.0	19.7	21.7	26.0	18.7	22.3
23	10.0	8.0	8.8	21.2	15.1	18.1	24.0	17.2	20.6	27.8	19.5	23.7
24	13.4	10.0	11.7	19.0	12.8	15.2	24.7	15.9	20.1	27.7	20.6	24.1
25	12.0	9.8	10.9	12.8	10.8	11.7	25.7	16.6	20.9	27.3	20.0	23.7
26	13.9	10.4	12.1	11.0	9.1	9.9	26.6	18.1	22.0	28.8	21.0	24.7
27	12.9	8.6	11.7	9.1	8.5	8.8	26.5	18.2	22.1	32.3	23.2	27.3
28	8.6	3.0	5.0	11.0	8.8	9.7	25.7	18.3	21.9	27.6	21.6	25.0
29	---	---	---	14.1	10.5	12.0	27.0	18.4	22.2	25.3	23.3	24.2
30	---	---	---	15.5	11.4	13.5	25.4	19.2	21.9	31.8	22.4	26.5
31	---	---	---	18.7	12.0	15.0	---	---	---	31.6	23.7	27.2
MONTH	16.1	3.0	9.5	---	---	---	27.0	13.0	20.3	32.4	18.5	24.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	26.4	22.5	24.4	33.2	26.2	29.2	35.9	26.1	30.1	35.0	25.1	29.5
2	32.8	22.3	26.9	33.8	25.5	29.0	35.2	26.6	30.1	35.2	25.6	30.2
3	33.1	24.9	28.4	34.1	25.7	29.4	35.1	25.5	29.5	33.4	26.8	29.7
4	32.9	24.2	27.8	35.2	26.1	30.1	35.5	25.2	29.6	30.0	25.4	27.8
5	33.0	24.0	27.9	35.2	26.3	30.2	35.9	25.9	30.2	31.7	25.1	27.9
6	32.8	24.1	27.8	36.1	26.3	30.2	34.6	26.0	29.6	33.4	25.1	28.8
7	33.1	25.2	28.5	35.2	26.3	29.9	34.7	25.7	29.2	33.8	25.1	28.9
8	31.9	24.9	27.7	35.2	25.6	29.6	34.9	26.6	29.9	29.5	23.4	26.2
9	32.5	24.8	28.3	35.9	26.2	30.2	32.5	26.4	29.3	29.6	21.4	25.4
10	34.4	25.2	29.2	36.5	27.0	31.0	35.3	26.9	30.4	29.9	18.9	24.2
11	34.5	25.4	29.1	36.2	27.2	30.9	34.6	27.6	30.4	30.5	19.5	24.8
12	32.8	25.0	28.3	36.4	26.7	30.7	36.1	27.2	30.8	31.1	22.7	26.8
13	32.0	25.3	27.7	35.9	26.9	30.7	31.1	26.7	28.8	30.7	23.0	26.8
14	30.3	25.0	27.0	34.0	27.6	30.0	31.7	26.4	28.5	27.4	22.7	25.4
15	31.4	23.0	26.8	33.8	26.1	29.7	35.2	26.1	29.7	27.3	24.5	25.6
16	33.5	24.1	28.2	34.4	27.0	30.1	---	27.3	---	29.4	23.9	26.4
17	34.5	25.2	29.1	35.2	26.7	30.2	---	---	---	28.4	23.4	25.8
18	33.1	24.3	28.0	35.2	27.1	30.6	---	---	---	30.0	23.6	26.5
19	32.4	24.1	27.6	35.3	27.1	30.6	---	---	---	31.5	23.2	26.9
20	32.8	24.3	28.1	34.7	27.2	30.4	---	---	---	31.3	24.2	27.1
21	32.4	25.2	28.3	35.1	27.5	30.8	---	---	---	29.8	22.4	25.6
22	32.6	23.6	27.6	35.3	27.3	30.7	33.6	26.0	29.1	30.6	23.1	26.8
23	30.7	23.9	26.7	34.9	27.0	30.5	35.6	26.4	30.0	29.5	22.9	25.9
24	32.3	23.2	27.3	34.9	27.6	30.8	36.0	26.8	30.5	25.7	17.7	21.7
25	33.0	24.5	28.3	35.1	27.9	31.0	34.7	26.2	30.1	25.7	16.2	20.9
26	32.3	24.7	28.3	34.5	27.2	30.5	30.0	25.6	27.9	25.6	17.0	21.4
27	32.8	25.4	28.7	34.8	27.2	30.6	34.3	26.2	29.7	26.4	17.4	21.8
28	32.3	25.4	28.0	34.9	27.8	30.3	34.2	26.4	30.0	26.9	18.2	22.2
29	33.0	24.1	27.7	35.9	28.2	30.9	32.4	25.6	28.6	26.7	18.3	22.2
30	33.5	25.1	28.5	35.4	27.0	30.4	32.1	25.9	28.5	26.5	17.9	21.9
31	---	---	---	35.4	26.2	29.9	32.3	25.7	28.5	---	---	---
MONTH	34.5	22.3	27.9	36.5	25.5	30.3	---	---	---	35.2	16.2	25.7

07312130 Wichita River at State Highway 25 near Kamay, TX--Continued



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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 current year.

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

REMARKS.--Records fair except those for estimated daily contents, which are poor. 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. Conservation pool storage is 8,055 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,121.00
Top of conservation pool	1,114.15
Lowest gated outlet (invert)	1,110.00

COOPERATION.--Capacity curve and diversions for municipal use are provided by the city of Electra. The capacity curve, dated July 31, 1998, is entitled "Original Lake Electra Area Capacity Elevation Table" and was developed by Don Rauschuber and Associates Inc.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,570 acre-ft, May 7, elevation, 1,102.21 ft; estimated minimum contents, 353 acre-ft, Oct. 25, elevation, 1,095.84 ft.

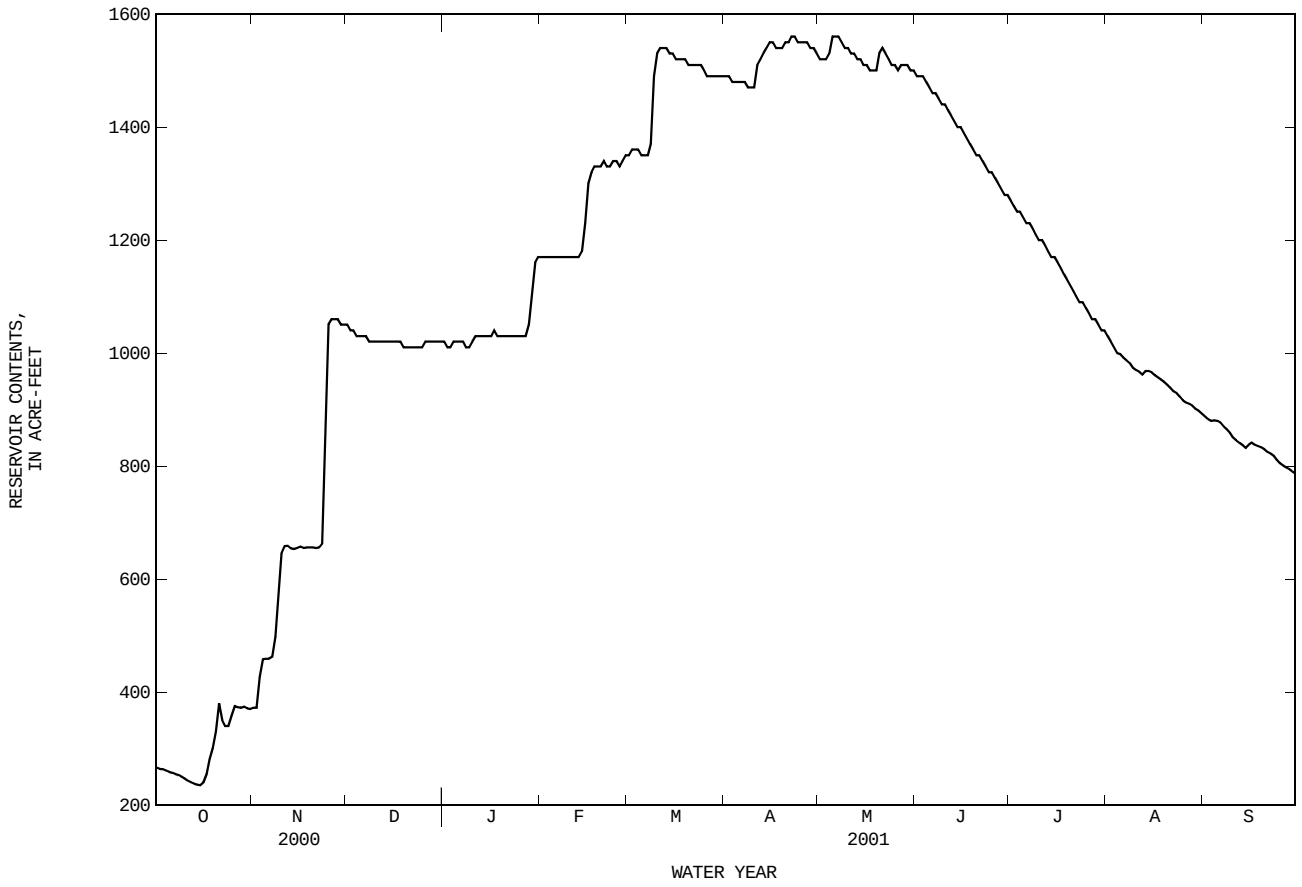
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e266	372	1050	1020	1170	1350	1490	1520	1490	1270	1030	888
2	e264	372	1040	1010	1170	1360	1490	1520	1490	1260	1020	883
3	e263	427	1040	1010	1170	1360	1480	1520	1490	1250	1010	880
4	e261	458	1030	1020	1170	1360	1480	1530	1480	1250	1000	881
5	e259	459	1030	1020	1170	1350	1480	1560	1470	1240	998	880
6	e257	459	1030	1020	1170	1350	1480	1560	1460	1230	992	877
7	e255	462	1030	1020	1170	1350	1480	1560	1460	1230	987	870
8	e253	498	1020	1010	1170	1370	1470	1550	1450	1220	982	865
9	e250	578	1020	1010	1170	1490	1470	1540	1440	1210	974	859
10	e247	645	1020	1020	1170	1530	1470	1540	1440	1200	970	851
11	e243	658	1020	1030	1170	1540	1510	1530	1430	1200	967	846
12	e240	659	1020	1030	1170	1540	1520	1530	1420	1190	962	841
13	e238	654	1020	1030	1170	1540	1530	1520	1410	1180	968	837
14	e236	653	1020	1030	1180	1530	1540	1520	1400	1170	968	832
15	e235	655	1020	1030	1230	1530	1550	1510	1400	1170	966	837
16	e240	657	1020	1030	1300	1520	1550	1510	1390	1160	961	841
17	e255	655	1020	1040	1320	1520	1540	1500	1380	1150	957	837
18	e280	656	1020	1030	1330	1520	1540	1500	1370	1140	953	835
19	e300	656	1010	1030	1330	1520	1540	1500	1360	1130	949	833
20	e330	656	1010	1030	1330	1510	1550	1530	1350	1120	944	830
21	e380	655	1010	1030	1340	1510	1550	1540	1350	1110	938	825
22	e350	656	1010	1030	1330	1510	1560	1530	1340	1100	932	822
23	e340	662	1010	1030	1330	1510	1560	1520	1330	1090	929	818
24	e340	891	1010	1030	1340	1510	1550	1510	1320	1090	923	811
25	e358	1050	e1010	1030	1340	1500	1550	1510	1320	1080	916	805
26	375	1060	e1020	1030	1330	1490	1550	1500	1310	1070	912	801
27	373	1060	1020	1030	1340	1490	1550	1510	1300	1060	910	797
28	372	1060	1020	1050	1350	1490	1540	1510	1290	1060	907	794
29	374	1050	1020	1110	---	1490	1540	1510	1280	1050	901	790
30	371	1050	1020	1160	---	1490	1530	1500	1280	1040	898	786
31	370	---	1020	1170	---	1490	---	1500	---	1040	893	---
MEAN	296	683	1020	1040	1250	1470	1520	1520	1390	1150	955	838
MAX	380	1060	1050	1170	1350	1540	1560	1560	1490	1270	1030	888
MIN	235	372	1010	1010	1170	1350	1470	1500	1280	1040	893	786
(+)	1096.00	1100.07	1099.91	1100.61	1101.36	1101.93	1102.07	1101.97	1101.08	1100.00	1099.28	1098.72
(@)	+102	+680	-30	+150	+180	+140	+40	-30	-220	-240	-147	-107

e Estimated

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

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 poor. Since installation of gage in Feb. 1960, at least 10% of contributing drainage area has been regulated. There are several diversions above station. No flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.49	9.0	72	147	50	153	23	3.2	3.1	1.6	2.7	4.4
2	.71	54	51	116	42	147	22	3.1	3.2	1.8	2.7	4.5
3	.77	e214	42	62	38	89	22	3.1	3.2	1.8	2.7	4.5
4	.43	e199	36	36	36	60	20	45	3.1	1.7	2.8	4.5
5	.85	e184	34	30	32	48	17	1050	3.2	1.7	3.0	5.2
6	.71	e168	31	21	30	41	16	467	2.9	1.6	3.5	6.0
7	1.1	225	28	13	29	37	15	45	4.0	1.5	4.2	7.7
8	1.9	700	27	10	26	119	15	20	5.1	2.0	4.7	7.4
9	1.4	1150	25	8.4	66	979	12	11	5.5	3.3	5.1	6.5
10	1.3	736	23	10	43	728	11	8.1	6.3	3.8	4.2	5.1
11	1.5	388	23	146	36	395	99	6.4	8.4	3.8	3.5	4.6
12	1.4	254	19	84	31	343	33	5.4	6.5	4.0	3.0	4.8
13	1.2	172	16	36	29	326	15	4.8	5.2	3.9	7.9	4.9
14	1.1	118	17	27	28	321	7.5	4.5	5.1	3.5	3.2	5.1
15	7.8	85	20	22	113	237	6.4	4.1	3.6	2.9	3.0	5.4
16	45	70	24	e16	466	108	5.5	3.7	3.0	2.5	2.8	8.2
17	8.1	52	19	e16	355	67	4.9	4.2	2.9	2.2	2.7	8.7
18	5.4	44	14	e35	206	52	4.5	4.4	4.2	2.1	2.7	6.8
19	3.7	36	14	27	156	46	4.5	27	4.5	2.8	2.8	5.7
20	6.6	29	12	20	101	42	4.4	323	4.4	3.4	3.0	5.4
21	66	25	11	15	71	37	4.6	46	3.6	3.6	3.1	5.8
22	300	22	9.9	13	53	34	4.6	13	3.1	3.5	3.2	5.5
23	768	32	8.7	11	47	32	3.8	5.9	2.6	3.0	3.3	6.0
24	323	763	8.5	12	58	28	3.1	4.2	2.4	2.3	3.3	5.8
25	252	1510	8.0	12	73	26	2.6	e2.9	2.2	1.6	3.2	5.3
26	1380	599	106	11	46	26	2.4	e3.0	2.5	1.5	4.8	5.3
27	537	343	249	13	54	25	2.1	e3.0	2.8	1.8	6.0	5.4
28	141	264	219	122	109	25	3.2	e3.0	2.1	2.3	6.4	5.6
29	125	169	119	514	---	26	3.2	e3.0	1.9	3.1	6.9	5.6
30	36	100	50	371	---	25	3.2	e3.1	1.6	3.5	6.2	5.7
31	11	---	26	85	---	24	---	3.2	---	3.0	4.8	---
TOTAL	4030.46	8714.0	1362.1	2061.4	2424	4646	390.5	2133.3	112.2	81.1	121.4	171.4
MEAN	130	290	43.9	66.5	86.6	150	13.0	68.8	3.74	2.62	3.92	5.71
MAX	1380	1510	249	514	466	979	99	1050	8.4	4.0	7.9	8.7
MIN	.43	9.0	8.0	8.4	26	24	2.1	2.9	1.6	1.5	2.7	4.4
AC-FT	7990	17280	2700	4090	4810	9220	775	4230	223	161	241	340

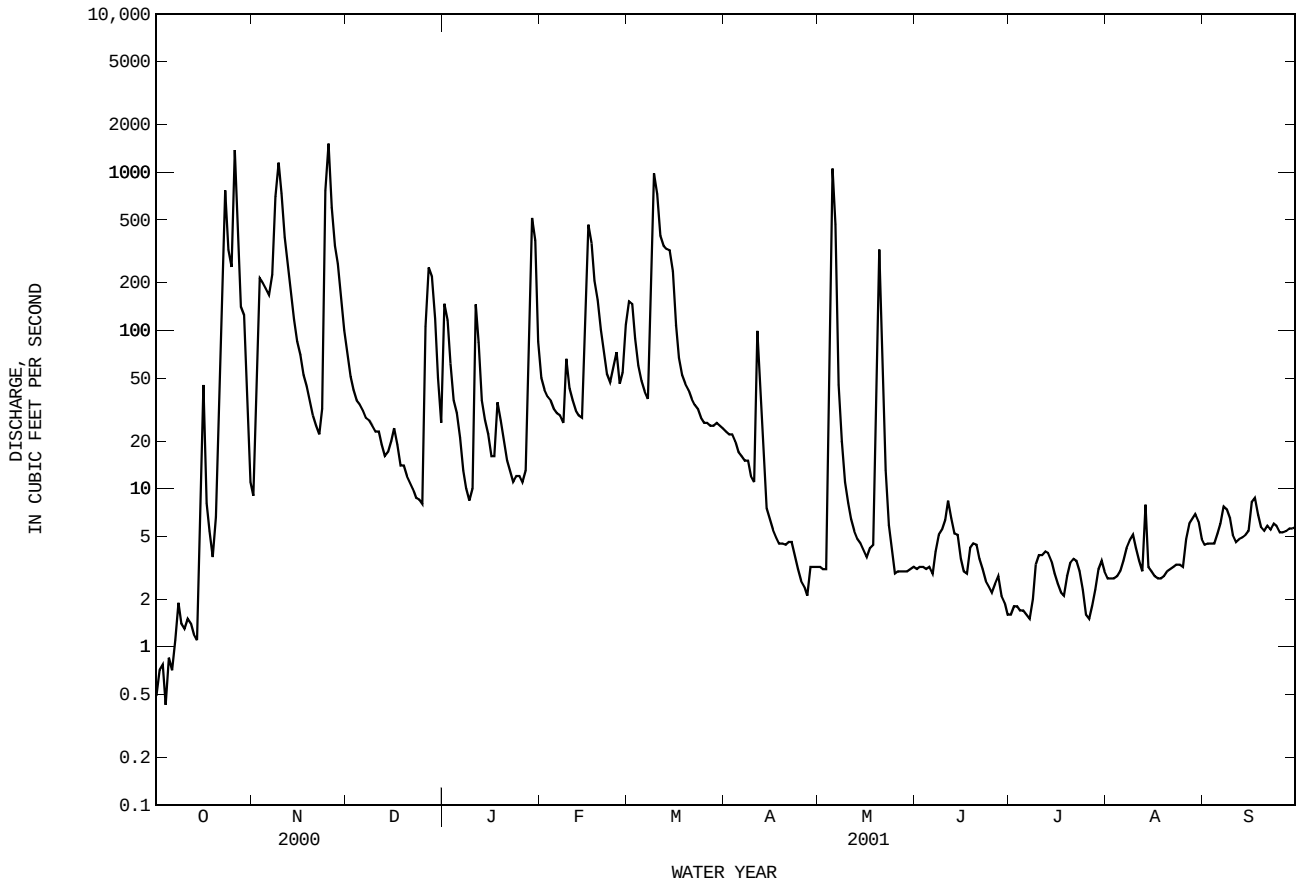
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001, BY WATER YEAR (WY)

MEAN	108	42.3	28.8	22.3	54.4	83.2	58.9	137	140	57.3	66.7	103
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001	
ANNUAL TOTAL	18376.10		26247.86			
ANNUAL MEAN	50.2		71.9		75.8	
HIGHEST ANNUAL MEAN					300	1995
LOWEST ANNUAL MEAN					11.4	1983
HIGHEST DAILY MEAN	1510	Nov 25	1510	Nov 25	11000	May 29 1987
LOWEST DAILY MEAN	.00	Sep 7	.43	Oct 4	.00	Jun 23 1960
ANNUAL SEVEN-DAY MINIMUM	.32	Sep 5	.72	Oct 1	.00	May 11 1962
MAXIMUM PEAK FLOW			2200	Nov 25	11700	Mar 17 1961
MAXIMUM PEAK STAGE			24.91	Nov 25	34.94	May 29 1987
ANNUAL RUNOFF (AC-FT)	36450		52060		54940	
10 PERCENT EXCEEDS	90		190		110	
50 PERCENT EXCEEDS	6.7		8.7		5.7	
90 PERCENT EXCEEDS	1.1		2.5		.70	

e Estimated

07312200 Beaver Creek near Electra, TX--Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1968 to June 1970, June 1996 to current year.
SEDIMENT DATA: Apr. 1966 to Sept. 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1968 to June 1970 (local observer), June 1996 to current year.
WATER TEMPERATURE: Oct. 1968 to June 1970 (local observer), June 1996 to current year.

INSTRUMENTATION.--Water-quality monitor June 1996 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 29,600 microsiemens, Apr. 19, 1970; minimum, 216 microsiemens/cm, Nov. 25.
WATER TEMPERATURE: Maximum, 37.3°C, Aug. 10, 1999; minimum, 0.0°C, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 11,200 microsiemens/cm, Aug. 13; minimum, 78 microsiemens/cm, Apr. 16.
WATER TEMPERATURE: Maximum, 37.3°C, July 7; minimum, 0.0°C, on several days in Dec., Jan 1, 2, 3.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6540	6390	6490	---	---	---	585	563	573	2250	1810	2110
2	6500	6400	6460	957	497	634	613	585	605	2040	1610	1720
3	6580	4600	5690	---	---	---	660	608	634	2250	1620	1910
4	4600	3340	3920	---	---	---	697	660	686	2480	1680	2130
5	3340	2630	2910	---	---	---	753	697	723	2290	1730	2010
6	2710	2550	2610	---	---	---	801	753	772	1980	1820	1880
7	2560	2470	2500	---	---	---	837	797	818	2860	1940	2600
8	2500	2340	2400	775	524	620	881	828	845	2460	2010	2260
9	2530	2350	2450	533	479	506	948	880	914	2060	1840	1940
10	2630	2530	2570	562	529	553	949	917	927	3110	1770	1920
11	2580	2340	2470	573	560	569	978	937	960	3140	1260	1840
12	2340	2130	2220	577	555	568	991	968	980	1280	958	1060
13	2130	2050	2080	559	512	534	1120	990	1060	1110	971	1030
14	2130	2060	2090	515	499	506	1130	1100	1120	2440	1070	1520
15	2380	2100	2170	521	510	516	1250	1120	1180	3240	2030	2700
16	3440	1770	2620	547	521	536	1770	1240	1490	---	---	---
17	2520	1580	1810	559	547	555	1480	1330	1370	---	---	---
18	1850	1610	1720	583	557	566	1500	1400	1480	2800	2340	2560
19	1950	1850	1920	614	583	600	1750	1490	1640	---	---	---
20	1950	1040	1640	639	614	627	1760	1510	1600	---	---	---
21	2320	800	1610	662	639	650	2030	1760	1960	---	---	---
22	1350	490	736	682	662	673	1850	1630	1720	---	---	---
23	540	230	349	1230	682	975	1650	1470	1500	---	---	---
24	490	250	353	790	217	274	1520	1460	1480	2280	2240	2260
25	560	320	475	365	216	252	1550	1510	1540	2400	2260	2320
26	---	---	---	513	365	474	1710	1540	1620	2520	2400	2470
27	---	---	---	520	492	508	1790	1690	1770	5160	2400	2890
28	629	408	477	522	493	510	1780	1700	1750	5160	3240	3790
29	---	---	---	549	522	539	3550	1680	2660	3280	1870	2640
30	---	---	---	563	538	553	2800	1740	2190	2720	2250	2400
31	---	---	---	---	---	---	2360	1800	2120	2840	2710	2820
MONTH	---	---	---	---	---	---	3550	563	1310	---	---	---

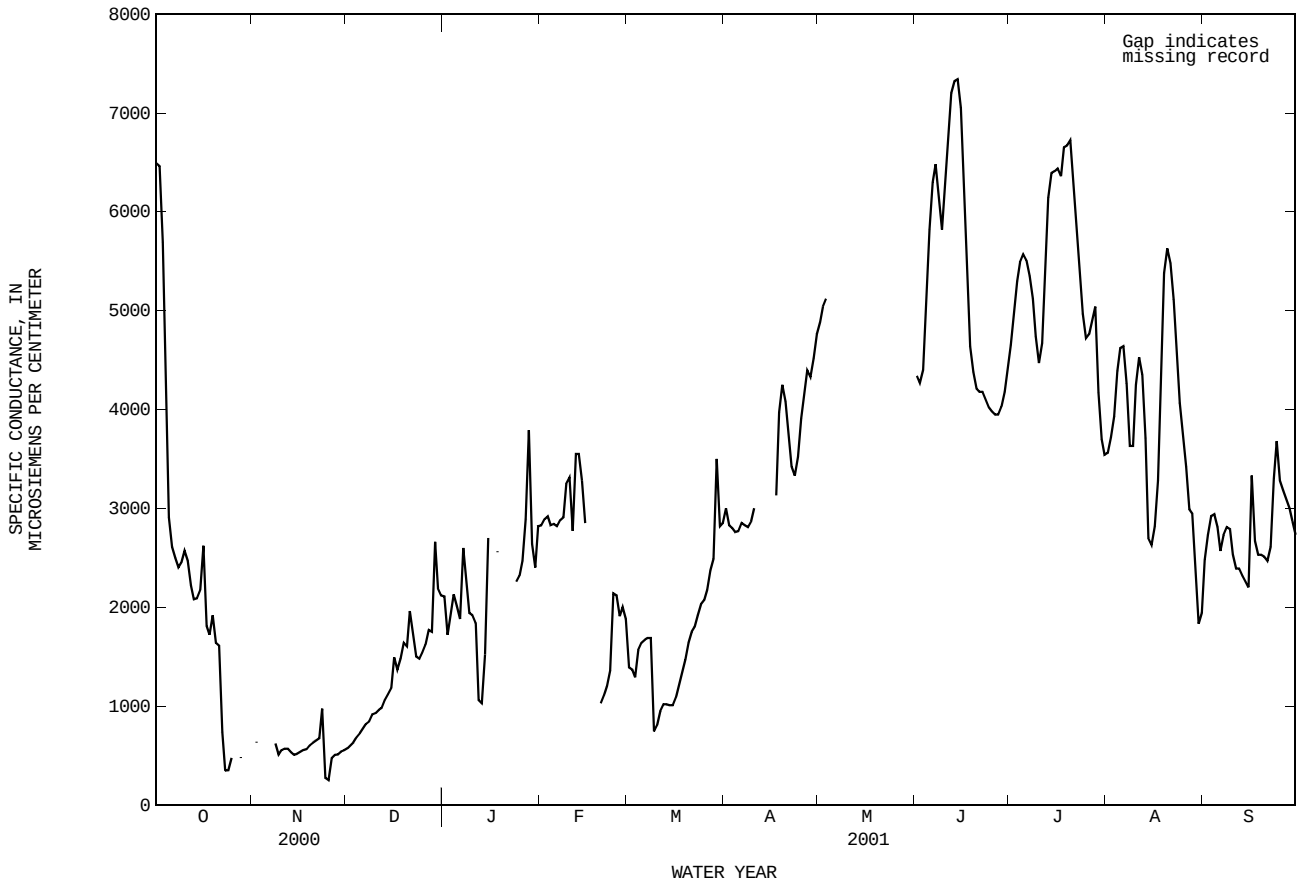
07312200 Beaver Creek near Electra, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2850	2820	2830	1750	1260	1390	3110	2870	3000	5000	4840	4880
2	2950	2830	2890	1730	1180	1370	2910	2770	2830	5100	5000	5040
3	2950	2860	2920	1430	1220	1290	2860	2720	2800	5210	5080	5120
4	2870	2780	2830	1670	1430	1570	2860	2680	2760	---	---	---
5	2890	2810	2840	1680	1620	1640	2850	2680	2770	---	---	---
6	2860	2800	2820	1710	1630	1670	2910	2790	2850	---	---	---
7	2920	2860	2880	1730	1630	1690	2880	2780	2830	---	---	---
8	2940	2860	2910	3790	951	1690	2850	2780	2810	---	---	---
9	4420	2740	3250	1380	501	743	2950	2810	2860	---	---	---
10	4080	2880	3310	918	576	808	3150	2920	3000	---	---	---
11	2890	2700	2770	997	903	951	---	---	---	---	---	---
12	4380	2850	3550	1040	997	1020	---	---	---	---	---	---
13	4320	3250	3550	1030	1010	1020	---	---	---	---	---	---
14	3360	3210	3280	1020	993	1010	---	---	---	---	---	---
15	4320	2220	2850	1060	987	1010	---	---	---	---	---	---
16	---	---	---	1130	1060	1090	---	---	---	---	---	---
17	---	---	---	1270	1120	1200	3490	2930	3130	---	---	---
18	---	---	---	1410	1270	1330	4290	3490	3970	---	---	---
19	---	---	---	1540	1410	1470	4310	4190	4250	---	---	---
20	1080	987	1030	1740	1530	1640	4200	3950	4080	---	---	---
21	1180	1080	1110	1900	1680	1750	3950	3570	3750	---	---	---
22	1260	1160	1200	1940	1700	1800	3580	3310	3420	---	---	---
23	1550	1250	1360	2010	1830	1920	3430	3220	3330	---	---	---
24	3300	1550	2140	2110	1930	2030	3790	3220	3520	---	---	---
25	2770	1750	2120	2120	1990	2070	4110	3770	3910	---	---	---
26	2270	1590	1910	2320	2060	2170	4350	4070	4180	---	---	---
27	3020	1620	2000	2460	2320	2370	4540	4210	4400	---	---	---
28	2520	1450	1880	2560	2450	2490	4470	4270	4330	---	---	---
29	---	---	---	4410	2560	3500	4640	4400	4520	---	---	---
30	---	---	---	2930	2730	2820	4840	4600	4760	---	---	---
31	---	---	---	2980	2730	2850	---	---	---	---	---	---
MONTH	---	---	---	4410	501	1660	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4420	4220	4340	4810	4510	4650	3620	3510	3560	2610	2350	2480
2	4390	4080	4270	5160	4810	4980	3760	3620	3720	2840	2610	2730
3	4760	4200	4400	5400	5160	5300	4120	3750	3930	2960	2840	2920
4	5450	4760	5030	5540	5400	5490	4750	4120	4390	2980	2910	2940
5	6190	5450	5820	5610	5520	5570	4910	4470	4620	2930	2400	2810
6	6410	6190	6300	5540	5430	5510	5020	4480	4620	2710	2320	2570
7	6540	6410	6480	5430	5250	5350	4480	3690	4140	2750	2430	2730
8	6530	5860	6180	5250	4950	5120	3690	3240	3430	2850	2740	2810
9	6010	5740	5820	4950	4530	4740	3480	3240	3320	2860	2660	2790
10	6350	6010	6240	4540	4400	4470	3970	3480	3790	2660	2440	2530
11	7130	6350	6730	4980	4430	4670	4030	3800	3950	2450	2330	2390
12	7260	7120	7200	5800	4980	5440	3800	3490	3660	2460	2350	2390
13	7380	7260	7320	6380	5800	6140	11200	1690	3220	2370	2270	2320
14	7410	7250	7340	6420	6350	6390	5990	2080	2710	2290	2220	2260
15	7250	6800	7050	6470	6350	6410	2860	2390	2660	2230	2170	2200
16	6800	5780	6250	6530	6310	6440	2930	2840	2870	4840	2150	3330
17	5780	4800	5280	6670	5710	6360	4030	2930	3340	3380	2380	2670
18	4800	4550	4640	6750	6450	6650	5170	4030	4730	2580	2500	2530
19	4570	4240	4380	6870	6450	6670	5650	5170	5500	2540	2510	2530
20	4270	4130	4210	6870	6500	6720	5810	5640	5710	2580	2410	2510
21	4220	4140	4180	6500	6140	6360	5680	5410	5560	2590	2410	2470
22	4240	4130	4180	6140	5810	5980	5410	5040	5260	2670	2580	2610
23	4150	4040	4100	5810	5150	5510	5040	4550	4820	5580	2670	3300
24	4070	3960	4020	5150	4810	4970	4550	4150	4340	4430	3350	3680
25	4040	3950	3980	4810	4660	4720	4150	3950	4070	3350	3210	3280
26	4010	3900	3950	4810	4730	4760	4040	3510	3810	3240	3150	3180
27	3980	3900	3950	4970	4810	4890	3510	3370	3420	3160	3040	3090
28	4130	3960	4030	5330	4600	5040	3560	3260	3470	3050	2950	3000
29	4270	4090	4180	4600	3910	4170	3260	2470	2850	2950	2800	2870
30	4510	4270	4410	3920	3580	3700	2470	2220	2320	2800	2670	2730
31	---	---	---	3580	3500	3540	2350	2220	2270	---	---	---
MONTH	7410	3900	5210	6870	3500	5380	11200	1690	3870	5580	2150	2760

07312200 Beaver Creek near Electra, TX--Continued



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.6	17.2	20.2	---	---	---	8.3	7.5	7.8	.2	.0	.1
2	25.3	18.4	21.5	18.7	17.9	18.1	7.6	6.5	7.1	.7	.0	.2
3	26.8	20.1	23.0	---	---	---	6.7	5.7	6.3	2.1	.0	.5
4	28.0	21.6	24.5	---	---	---	6.3	5.5	5.9	2.5	.1	1.0
5	28.2	22.1	24.3	---	---	---	6.5	6.2	6.3	3.6	1.2	2.3
6	22.2	16.0	18.9	---	---	---	7.1	6.0	6.5	4.9	2.2	3.4
7	16.0	12.9	14.0	12.4	10.6	11.9	7.3	5.2	6.1	5.8	3.2	4.4
8	14.3	11.5	12.8	10.6	6.3	7.9	7.6	6.1	6.6	5.5	2.8	4.1
9	13.6	9.5	11.5	7.8	5.8	6.8	8.1	6.2	6.9	5.6	2.6	4.0
10	14.9	10.1	12.3	9.0	7.8	8.4	8.2	6.3	7.2	5.3	4.4	4.7
11	17.9	12.9	15.0	9.9	8.9	9.4	7.3	3.9	5.9	5.8	4.6	5.3
12	20.2	15.9	17.9	9.9	8.6	9.5	3.9	1.1	2.6	5.3	4.4	4.8
13	20.7	18.4	19.5	8.6	7.2	7.8	2.3	.0	1.0	7.4	5.2	6.2
14	21.4	19.0	20.1	7.4	6.2	6.8	2.1	.0	.9	7.6	5.8	6.6
15	21.6	19.7	20.7	8.0	6.5	7.2	4.4	1.2	2.6	7.0	5.3	6.0
16	21.4	19.6	20.5	8.2	7.5	7.9	5.1	3.6	4.1	---	---	---
17	20.2	18.6	19.5	7.6	6.9	7.2	4.3	2.4	3.3	---	---	---
18	20.7	18.0	19.4	7.6	6.5	7.0	4.7	2.7	3.5	---	---	---
19	19.8	16.7	18.6	7.9	6.5	7.1	4.4	1.9	3.1	---	---	---
20	19.5	18.9	19.1	7.1	5.5	6.2	5.0	2.3	3.5	---	---	---
21	20.4	18.6	19.2	7.2	4.7	5.9	4.1	2.0	3.1	---	---	---
22	20.4	19.5	19.9	7.7	6.1	6.9	3.7	1.6	2.6	---	---	---
23	20.3	19.8	20.1	10.6	7.6	8.8	4.1	2.1	3.0	---	---	---
24	21.2	20.3	20.7	10.6	9.1	9.7	3.6	2.4	2.9	7.8	5.8	6.7
25	20.9	18.4	19.8	9.3	8.7	9.1	2.9	2.0	2.5	7.7	4.8	6.3
26	---	---	---	9.2	8.4	8.8	2.0	.0	.7	8.8	5.9	7.3
27	---	---	---	8.9	8.3	8.6	1.4	.1	.7	7.6	3.5	5.6
28	21.2	19.4	20.5	9.0	8.3	8.7	2.0	.0	.7	4.2	2.6	3.8
29	19.4	13.1	17.3	9.2	8.0	8.6	1.6	.0	.5	4.6	3.3	4.0
30	---	---	---	8.5	7.4	7.9	.7	.0	.3	6.1	4.1	5.1
31	---	---	---	---	---	---	.4	.0	.2	6.3	4.9	5.6
MONTH	---	---	---	---	---	---	8.3	.0	3.7	---	---	---

07312200 Beaver Creek near Electra, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

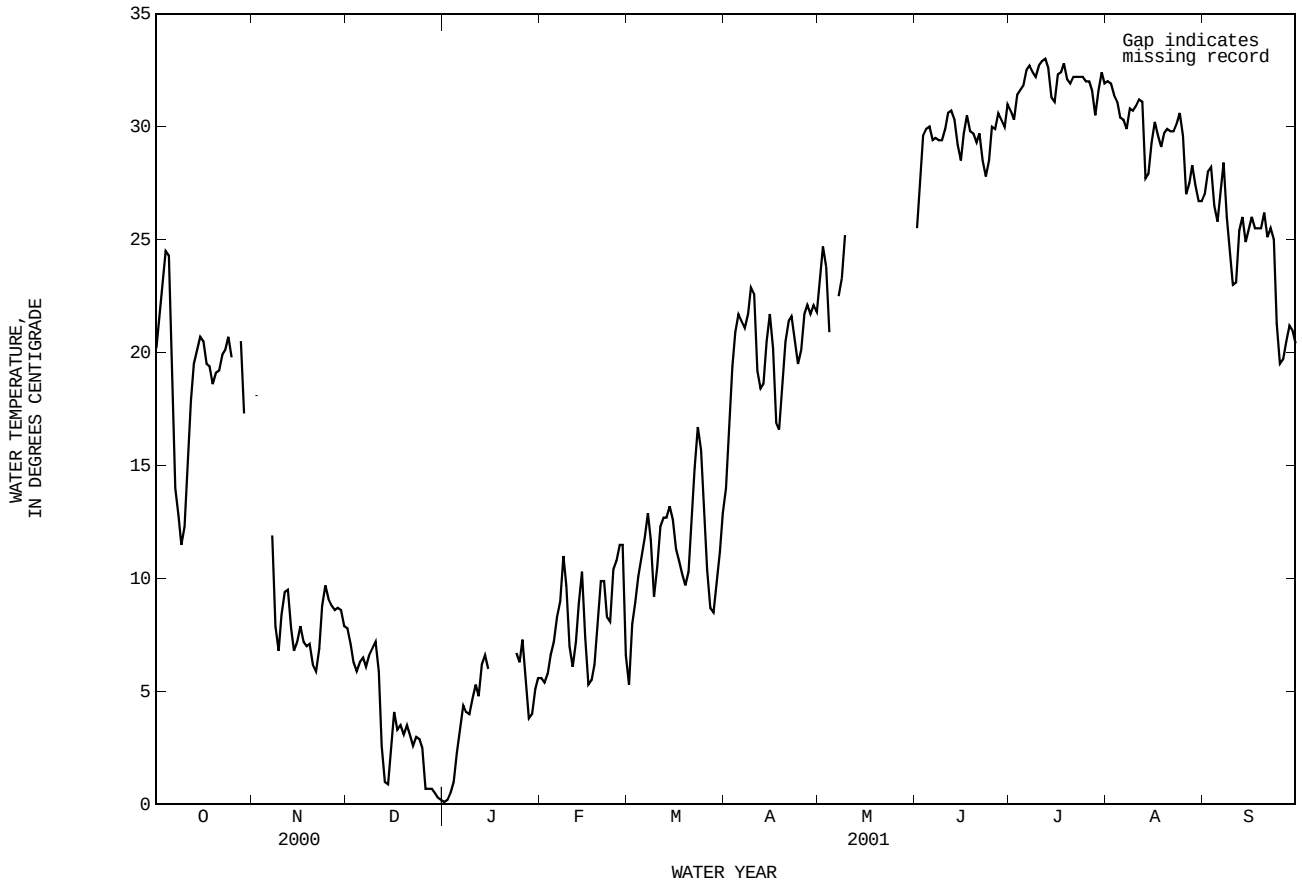
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.5	4.7	5.6	7.8	3.4	5.3	16.8	12.4	14.3	28.2	20.4	24.0
2	6.6	4.3	5.4	8.9	7.3	8.0	21.2	14.6	17.5	29.2	21.8	25.3
3	6.9	4.6	5.8	10.0	8.1	9.0	21.7	17.9	19.6	26.2	22.8	24.4
4	8.0	5.4	6.6	11.6	9.0	10.2	23.8	18.7	20.8	24.0	19.5	21.5
5	8.8	5.7	7.2	12.8	9.6	11.1	22.9	20.5	21.6	---	---	---
6	9.7	7.3	8.3	13.2	10.5	11.9	22.0	20.7	21.3	---	---	---
7	10.3	7.8	9.0	14.8	11.5	13.0	23.9	18.9	21.0	24.9	22.6	23.3
8	12.3	9.7	11.0	13.5	9.5	11.8	24.5	19.8	21.7	27.3	21.6	24.1
9	12.0	8.6	9.7	10.0	8.4	9.3	24.9	20.8	22.8	---	---	---
10	8.6	6.1	7.0	12.2	9.5	10.6	23.5	21.9	22.6	---	---	---
11	7.1	5.0	6.1	13.1	11.9	12.4	22.0	17.6	19.1	---	---	---
12	8.1	6.4	7.2	13.4	12.3	12.8	20.8	16.8	18.4	---	---	---
13	9.8	8.0	8.9	13.5	12.2	12.9	20.8	16.6	18.6	---	---	---
14	11.0	9.8	10.3	13.9	13.1	13.4	22.6	19.1	20.5	---	---	---
15	9.8	5.5	7.4	13.4	11.8	12.8	24.8	20.0	21.7	---	---	---
16	5.9	4.8	5.3	12.6	10.3	11.5	23.8	15.8	20.2	---	---	---
17	6.5	4.6	5.5	11.5	10.3	11.0	20.5	15.4	16.9	---	---	---
18	7.3	5.2	6.2	11.0	9.4	10.4	19.1	14.3	16.6	---	---	---
19	9.4	6.6	7.9	11.1	9.1	9.9	22.0	15.7	18.8	---	---	---
20	11.2	8.9	9.9	12.7	8.7	10.5	22.2	19.1	20.7	---	---	---
21	11.0	9.1	10.0	15.3	10.7	12.8	23.2	20.4	21.6	---	---	---
22	9.1	8.0	8.4	17.3	13.5	15.2	23.4	20.2	21.8	---	---	---
23	8.6	8.0	8.2	19.1	15.3	17.0	23.5	18.0	20.8	---	---	---
24	12.0	8.6	10.5	17.6	14.0	16.0	23.3	16.2	19.7	---	---	---
25	11.6	10.0	10.9	14.0	11.9	13.1	24.5	16.6	20.4	---	---	---
26	12.4	10.7	11.6	11.9	9.4	10.6	26.3	18.6	22.1	---	---	---
27	12.0	9.5	11.5	9.4	8.3	8.8	26.6	19.0	22.5	---	---	---
28	9.5	4.2	6.6	9.4	8.0	8.6	25.1	18.9	22.1	---	---	---
29	---	---	---	11.8	8.7	10.0	26.3	18.9	22.5	---	---	---
30	---	---	---	13.2	9.9	11.5	24.8	19.8	22.3	---	---	---
31	---	---	---	16.6	11.0	13.2	---	---	---	---	---	---
MONTH	12.4	4.2	8.1	19.1	3.4	11.4	26.6	12.4	20.4	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	28.2	23.8	25.5	34.1	28.0	30.7	36.0	28.7	32.0	30.0	25.0	27.0
2	32.3	23.2	27.4	34.1	27.3	30.3	36.0	28.4	31.9	31.4	25.6	28.0
3	33.6	26.3	29.6	35.9	27.5	31.4	35.7	28.0	31.4	30.7	26.8	28.2
4	33.9	26.6	29.9	36.2	27.8	31.6	35.7	27.3	31.1	27.4	25.3	26.5
5	33.9	26.9	30.0	36.2	28.1	31.8	33.9	27.2	30.4	28.0	24.9	25.8
6	32.9	26.5	29.4	37.2	28.7	32.5	32.8	27.7	30.3	30.1	24.5	27.0
7	32.5	26.7	29.5	37.3	29.1	32.7	32.8	27.1	29.9	30.6	25.8	28.4
8	32.7	26.8	29.4	37.1	28.8	32.4	33.8	27.8	30.8	28.7	24.0	26.0
9	32.6	26.4	29.4	35.5	29.5	32.2	32.5	28.1	30.7	26.4	22.4	24.5
10	33.8	26.4	29.9	36.0	29.6	32.7	34.3	28.3	30.9	26.1	20.3	23.0
11	34.5	27.1	30.6	36.1	29.8	32.9	33.8	29.1	31.2	26.3	20.6	23.1
12	34.3	27.5	30.7	36.4	29.6	33.0	34.7	28.4	31.1	29.0	23.2	25.4
13	33.3	27.9	30.3	35.3	29.9	32.6	31.4	26.0	27.7	28.8	24.2	26.0
14	31.1	27.8	29.2	33.6	29.2	31.3	29.2	26.2	27.9	26.1	23.9	24.9
15	32.7	24.8	28.5	34.6	28.2	31.1	32.7	26.8	29.3	27.3	24.5	25.4
16	34.2	26.2	29.7	36.9	28.9	32.3	32.7	27.8	30.2	28.0	24.2	26.0
17	33.7	27.7	30.5	37.0	29.0	32.4	32.2	27.3	29.6	26.6	23.8	25.5
18	32.8	26.7	29.8	37.2	29.2	32.8	32.0	26.6	29.1	27.0	23.7	25.5
19	33.2	26.5	29.7	35.4	29.3	32.1	34.1	26.3	29.7	27.9	23.3	25.5
20	32.7	25.8	29.3	35.1	29.3	31.9	33.5	27.6	29.9	28.6	24.6	26.2
21	32.2	27.0	29.7	35.3	29.3	32.2	32.9	27.6	29.8	27.3	23.2	25.1
22	32.3	25.2	28.5	35.6	29.2	32.2	33.4	27.5	29.8	27.8	23.8	25.5
23	30.7	25.4	27.8	35.8	29.2	32.2	34.5	27.2	30.1	27.3	23.4	25.0
24	33.2	24.7	28.5	35.8	29.3	32.2	34.0	28.1	30.6	23.4	19.7	21.3
25	34.4	26.7	30.0	35.9	28.8	32.0	32.7	26.9	29.6	22.5	17.6	19.5
26	33.4	27.1	29.9	36.0	29.2	32.0	29.2	26.1	27.0	23.1	17.8	19.7
27	34.9	27.5	30.6	35.9	28.6	31.6	30.4	25.3	27.5	23.7	18.7	20.5
28	33.9	27.8	30.3	33.6	28.1	30.5	30.2	25.8	28.3	24.1	19.4	21.2
29	34.7	26.6	30.0	35.0	29.0	31.6	28.9	25.5	27.4	23.6	19.4	21.0
30	35.2	28.1	31.0	35.2	29.6	32.4	28.3	25.3	26.7	23.1	18.7	20.4
31	---	---	---	35.2	29.2	31.9	28.6	25.4	26.7	---	---	---
MONTH	35.2	23.2	29.5	37.3	27.3	32.0	36.0	25.3	29.6	31.4	17.6	24.6

07312200 Beaver Creek near Electra, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.2	---	7.8	.1	5.6	5.3	14.3	24.0	25.5	30.7	32.0	27.0
2	21.5	18.1	7.1	.2	5.4	8.0	17.5	25.3	27.4	30.3	31.9	28.0
3	23.0	---	6.3	.5	5.8	9.0	19.6	24.4	29.6	31.4	31.4	28.2
4	24.5	---	5.9	1.0	6.6	10.2	20.8	21.5	29.9	31.6	31.1	26.5
5	24.3	---	6.3	2.3	7.2	11.1	21.6	---	30.0	31.8	30.4	25.8
6	18.9	---	6.5	3.4	8.3	11.9	21.3	---	29.4	32.5	30.3	27.0
7	14.0	11.9	6.1	4.4	9.0	13.0	21.0	23.3	29.5	32.7	29.9	28.4
8	12.8	7.9	6.6	4.1	11.0	11.8	21.7	24.1	29.4	32.4	30.8	26.0
9	11.5	6.8	6.9	4.0	9.7	9.3	22.8	---	29.4	32.2	30.7	24.5
10	12.3	8.4	7.2	4.7	7.0	10.6	22.6	---	29.9	32.7	30.9	23.0
11	15.0	9.4	5.9	5.3	6.1	12.4	19.1	---	30.6	32.9	31.2	23.1
12	17.9	9.5	2.6	4.8	7.2	12.8	18.4	---	30.7	33.0	31.1	25.4
13	19.5	7.8	1.0	6.2	8.9	12.9	18.6	---	30.3	32.6	27.7	26.0
14	20.1	6.8	.9	6.6	10.3	13.4	20.5	---	29.2	31.3	27.9	24.9
15	20.7	7.2	2.6	6.0	7.4	12.8	21.7	---	28.5	31.1	29.3	25.4
16	20.5	7.9	4.1	---	5.3	11.5	20.2	---	29.7	32.3	30.2	26.0
17	19.5	7.2	3.3	---	5.5	11.0	16.9	---	30.5	32.4	29.6	25.5
18	19.4	7.0	3.5	---	6.2	10.4	16.6	---	29.8	32.8	29.1	25.5
19	18.6	7.1	3.1	---	7.9	9.9	18.8	---	29.7	32.1	29.7	25.5
20	19.1	6.2	3.5	---	9.9	10.5	20.7	---	29.3	31.9	29.9	26.2
21	19.2	5.9	3.1	---	10.0	12.8	21.6	---	29.7	32.2	29.8	25.1
22	19.9	6.9	2.6	---	8.4	15.2	21.8	---	28.5	32.2	29.8	25.5
23	20.1	8.8	3.0	---	8.2	17.0	20.8	---	27.8	32.2	30.1	25.0
24	20.7	9.7	2.9	6.7	10.5	16.0	19.7	---	28.5	32.2	30.6	21.3
25	19.8	9.1	2.5	6.3	10.9	13.1	20.4	---	30.0	32.0	29.6	19.5
26	---	8.8	.7	7.3	11.6	10.6	22.1	---	29.9	32.0	27.0	19.7
27	---	8.6	.7	5.6	11.5	8.8	22.5	---	30.6	31.6	27.5	20.5
28	20.5	8.7	.7	3.8	6.6	8.6	22.1	---	30.3	30.5	28.3	21.2
29	17.3	8.6	.5	4.0	---	10.0	22.5	---	30.0	31.6	27.4	21.0
30	---	7.9	.3	5.1	---	11.5	22.3	---	31.0	32.4	26.7	20.4
31	---	---	.2	5.6	---	13.2	---	---	---	31.9	26.7	---
TOTAL	---	---	114.4	---	228.0	354.6	610.5	---	884.6	991.5	918.6	737.1
MEAN	---	---	3.7	---	8.1	11.4	20.4	---	29.5	32.0	29.6	24.6
MAX	---	---	7.8	---	11.6	17.0	22.8	---	31.0	33.0	32.0	28.4
MIN	---	---	.2	---	5.3	5.3	14.3	---	25.5	30.3	26.7	19.5



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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.--Aug. 1998 to current year.

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

REMARKS.--Records fair. 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.. Conservation pool storage is 15,400 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1056.3
Crest of spillway (top of conservation pool)	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, 4,950 acre-ft, May 6, 7, elevation, 1,038.78 ft; minimum contents, 286 acre-ft, Oct. 13, elevation, 1,028.01 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

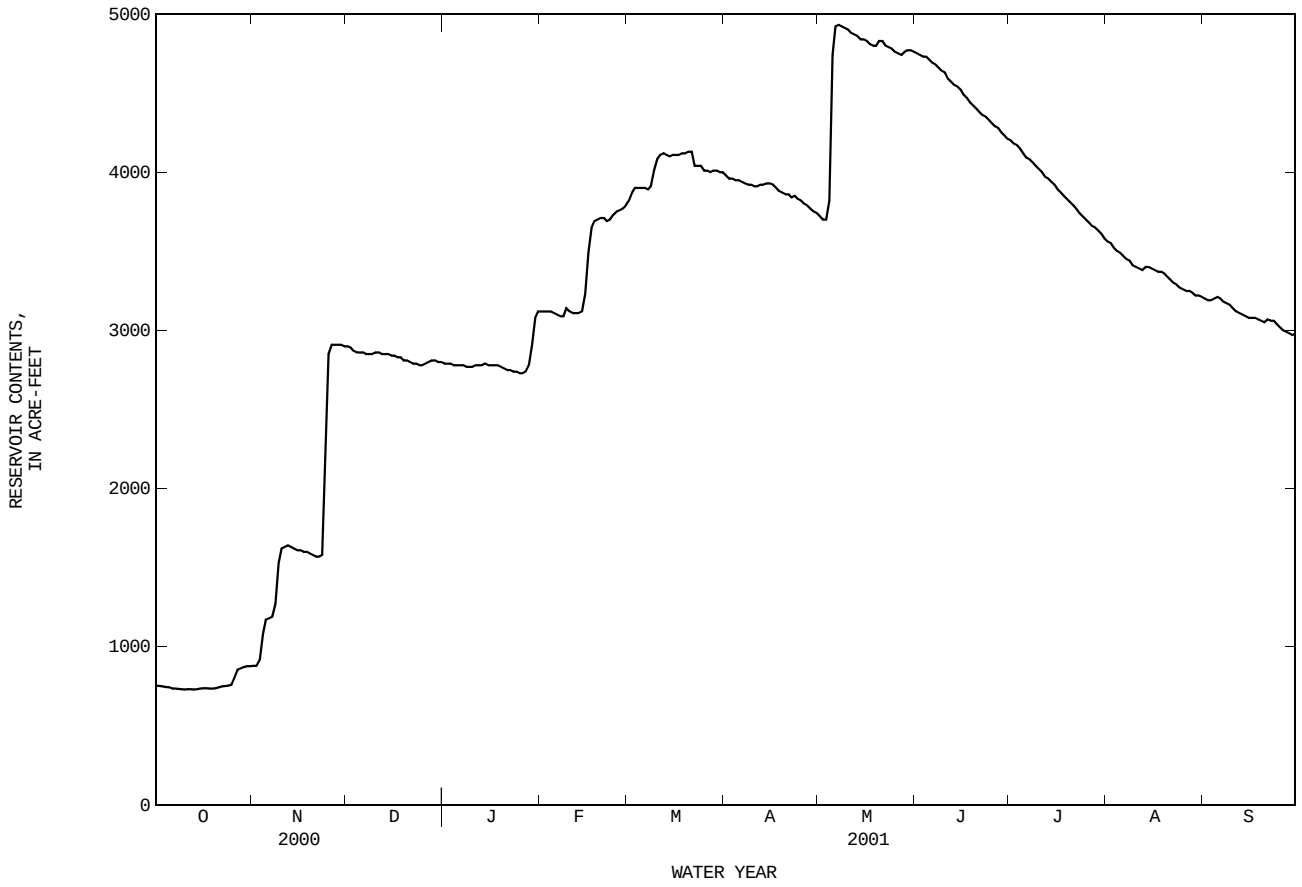
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	754	880	2900	2790	3120	3820	e3980	3720	4750	4200	3560	3200
2	752	879	2890	2790	3120	3870	e3960	3700	4740	4180	3550	3190
3	750	915	2870	2790	3120	3900	e3960	3700	4730	4170	3520	3190
4	747	1080	2860	2780	3120	3900	e3950	3820	4730	4150	3500	3200
5	744	1170	2860	2780	3110	3900	3950	4740	4710	e4120	3490	3210
6	736	1180	2860	2780	3100	3900	3940	4920	4690	4090	3470	3200
7	e735	1190	2850	2780	3090	3890	3930	4930	4680	4080	3450	3180
8	733	1270	2850	2770	3090	3910	3920	4920	4660	4060	3440	3170
9	731	1530	e2850	2770	3140	4010	3920	4910	4640	4040	3410	3160
10	e730	1620	e2860	2770	3120	4080	3910	4900	4630	4020	3400	3140
11	731	1630	e2860	2780	3110	4110	3910	4880	4590	4000	3390	3120
12	e732	1640	e2850	2780	3110	4120	3920	4870	4570	3970	3380	3110
13	730	1630	2850	2780	3110	4110	3920	4860	4550	3960	3400	3100
14	731	1620	2850	2790	3120	4100	3930	4840	4540	3940	3400	3090
15	735	1610	2840	2780	3230	4110	3930	4840	4520	3920	3390	3080
16	737	1610	2840	2780	3490	e4110	3920	4830	4490	3890	3380	3080
17	737	1600	2830	e2780	3650	e4110	3900	4810	4470	3870	3370	3080
18	736	1600	2830	e2780	3690	e4120	3880	4800	4440	3850	3370	3070
19	735	1590	2810	e2770	3700	e4120	3870	4800	4420	3830	3360	3060
20	737	1580	2810	e2760	3710	e4130	3860	4830	4400	3810	3340	3050
21	743	1570	2800	e2750	3710	e4130	3860	4830	4380	3790	3320	3070
22	751	1570	2790	e2750	3690	4040	3840	4800	4360	3770	3300	3060
23	752	1580	2790	2740	3700	4040	3850	4790	4350	3740	3290	3060
24	754	2170	2780	2740	3730	4040	3830	4780	4330	3720	3270	3040
25	760	2850	2780	2730	3750	4010	3820	4760	4310	3700	3260	3020
26	808	2910	e2790	2730	3760	4010	3800	4750	4290	3680	3250	3000
27	855	2910	e2800	2740	3770	4000	3790	4740	4280	3660	3250	2990
28	863	2910	2810	2780	3790	4010	3770	4760	4250	3650	3240	2980
29	872	2910	2810	2910	---	4010	3750	4770	4230	3630	3220	2970
30	878	2900	2800	3080	---	4000	3740	4770	4210	3610	3220	2980
31	878	---	2800	3120	---	4000	---	4760	---	3580	3210	---
MEAN	763	1740	2830	2800	3390	4020	3880	4680	4500	3890	3370	3100
MAX	878	2910	2900	3120	3790	4130	3980	4930	4750	4200	3560	3210
MIN	730	879	2780	2730	3090	3820	3740	3700	4210	3580	3210	2970
(+)	1029.66	1035.79	1035.60	1036.17	1037.13	1037.42	1037.05	1038.52	1037.73	1036.83	1036.30	1035.55
(@)	+121	+2022	-100	+320	+670	+210	-260	+1020	-550	-630	-370	-230
(++)	37	83	120	72	86	91	78	46	0	0	0	0

CAL YR 2000 MAX 2900 MIN 286 (@) -1390 (++) 1125
WTR YR 2001 MAX 4930 MIN 286 (@) +2223 (++) 614

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. 1901 to Jan. 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.--Records good, except those for estimated daily discharges, which are fair. Since installation of gage in Mar. 1938, at least 10% of contributing drainage area has been regulated. Since completion of Lake Kemp in 1923, no outflow has passed over the spillway. Water is diverted from Lake Diversion (conservation pool 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 47,150 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s June 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	57	313	92	223	897	104	78	78	59	66	73
2	35	73	249	63	129	885	104	93	72	59	61	50
3	39	415	197	49	97	662	105	108	67	56	57	45
4	32	1390	166	43	80	417	100	144	64	56	60	45
5	28	1200	146	43	73	266	93	1570	55	51	61	65
6	32	540	145	57	61	191	93	2510	40	52	61	76
7	35	250	138	57	54	152	89	1110	45	52	60	94
8	40	714	123	44	51	158	96	319	50	50	60	90
9	40	1750	114	37	81	870	93	151	57	50	64	94
10	41	1530	101	41	141	1790	102	95	92	57	62	78
11	40	864	87	66	128	1420	155	87	133	59	64	66
12	40	444	78	179	66	727	283	83	63	51	58	48
13	37	302	81	168	48	526	209	109	51	45	67	47
14	37	220	75	96	43	432	136	88	46	49	77	48
15	40	167	72	71	575	401	107	47	39	67	129	53
16	47	131	73	61	2470	336	83	60	29	68	100	62
17	59	108	70	51	2500	236	75	84	21	73	76	61
18	63	85	73	55	1220	175	63	114	21	74	77	68
19	44	63	62	60	599	166	52	124	24	65	71	74
20	75	58	60	60	414	152	52	250	27	63	66	73
21	153	52	55	51	299	143	58	564	31	67	58	e61
22	206	50	52	44	213	130	59	248	55	64	53	e50
23	321	72	49	40	170	122	59	143	58	68	54	e44
24	676	2250	44	36	213	119	59	120	56	59	59	e40
25	472	3260	45	29	234	113	61	111	57	62	59	34
26	1220	3380	68	28	212	116	63	123	58	66	69	39
27	1880	2990	70	39	157	126	66	151	51	68	76	39
28	737	1100	65	171	306	121	68	160	57	77	75	38
29	570	656	122	840	---	115	68	118	57	69	93	38
30	277	447	118	1130	---	118	68	82	60	67	95	44
31	102	---	122	568	---	112	---	71	---	61	87	---
TOTAL	7453	24618	3233	4369	10857	12194	2823	9115	1614	1884	2175	1737
MEAN	240	821	104	141	388	393	94.1	294	53.8	60.8	70.2	57.9
MAX	1880	3380	313	1130	2500	1790	283	2510	133	77	129	94
MIN	28	50	44	28	43	112	52	47	21	45	53	34
AC-FT	14780	48830	6410	8670	21530	24190	5600	18080	3200	3740	4310	3450

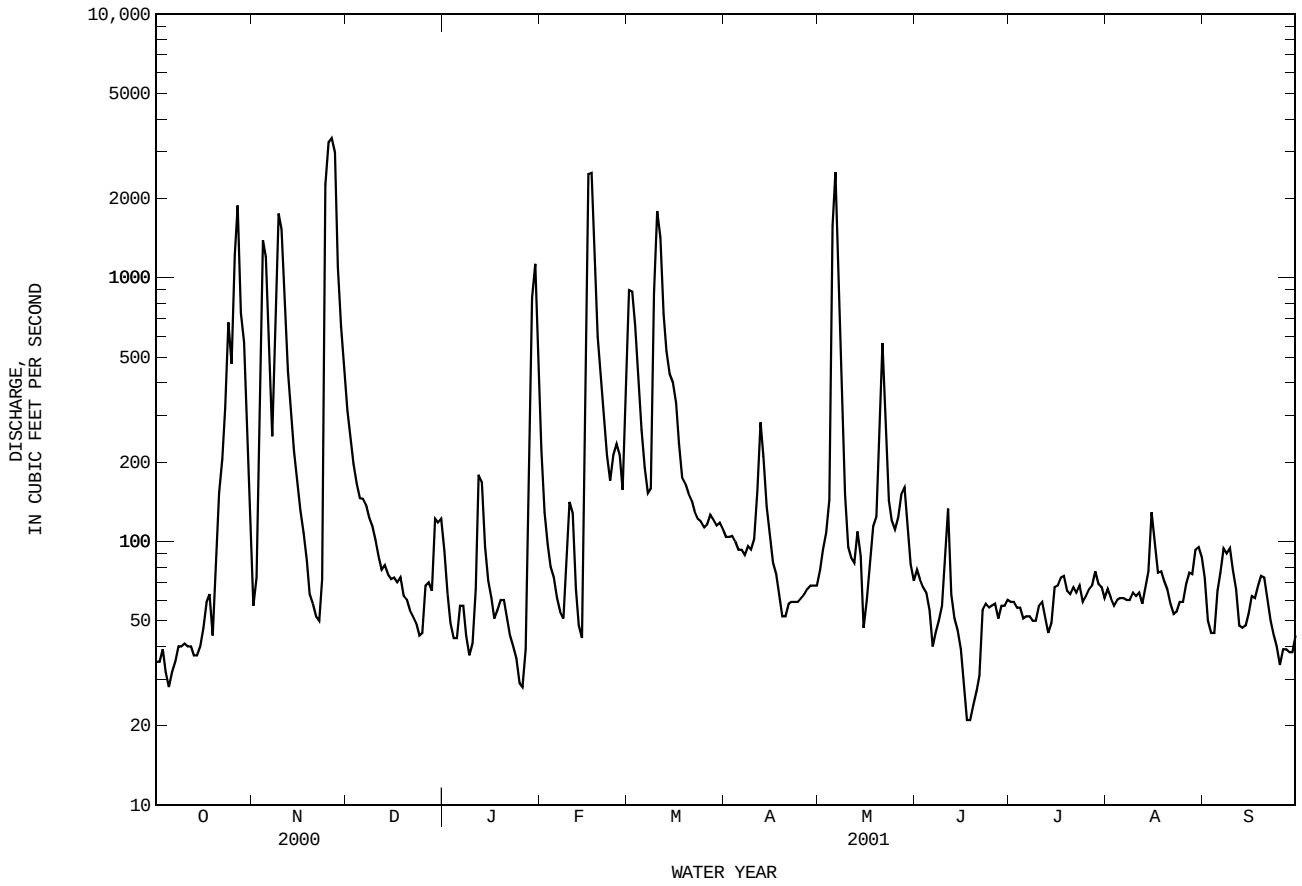
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2001, BY WATER YEAR (WY)

MEAN	399	211	116	91.1	154	202	226	550	505	231	257	312
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	36.1	35.4	53.8	46.5	53.3	39.9
(WY)	1983	1998	1979	1974	1995	1975	2000	2000	2001	2000	2000	2000

07312500 Wichita River at Wichita Falls, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1938 - 2001	
ANNUAL TOTAL	49482		82072			
ANNUAL MEAN	135		225		268	
HIGHEST ANNUAL MEAN					977	1941
LOWEST ANNUAL MEAN					49.5	2000
HIGHEST DAILY MEAN	3380	Nov 26	3380	Nov 26	17300	Oct 3 1941
LOWEST DAILY MEAN	10	Mar 15	21	Jun 17	7.7	Apr 9 1978
ANNUAL SEVEN-DAY MINIMUM	14	Feb 9	27	Jun 15	11	Mar 6 1975
MAXIMUM PEAK FLOW			3440	Nov 26	17800	Oct 3 1941
MAXIMUM PEAK STAGE			13.60	Nov 26	24.00	Oct 3 1941
ANNUAL RUNOFF (AC-FT)	98150		162800		194400	
10 PERCENT EXCEEDS	177		550		554	
50 PERCENT EXCEEDS	44		73		82	
90 PERCENT EXCEEDS	18		42		35	

e Estimated



07312500 Wichita River at Wichita Falls, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Apr. 1966 to July 1975, Oct. 1981 to Sept. 1989, June 1996 to current year.
BIOCHEMICAL DATA: Nov. 1981 to Aug. 1989 and June 1996 to Sept. 1997.
SEDIMENT DATA: Apr. 1966 to July 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1981 to Sept. 1989, June 1996 to current year.
WATER TEMPERATURE: Oct. 1981 to Sept. 1989, June 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Oct. 1981 to Sept. 1989, June 1996 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 9,490 microsiemens/cm, Mar. 2, 1984; minimum daily, 245 microsiemens/cm, Oct. 24, 1983.
WATER TEMPERATURE: Maximum daily, 36.0°C, July 15, 2000; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 7,190 microsiemens/cm, Apr. 24; minimum, 415 microsiemens/cm, Nov. 25, 26.
WATER TEMPERATURE: Maximum, 33.6°C, July 24; minimum, 0.9°C, Jan. 3.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6830	6690	6770	2970	2380	2660	3270	2780	2990	4900	4170	4420
2	7030	6780	6940	3860	2970	3410	3520	3230	3380	4950	4540	4760
3	7060	6890	7000	3860	1340	2640	3590	3460	3510	5300	4920	5120
4	7000	6790	6920	1880	1250	1700	4000	3580	3790	5620	5270	5450
5	6910	6700	6820	1680	1510	1600	4170	3970	4060	6060	5580	5870
6	7080	6750	6980	1520	1170	1330	4400	4140	4280	6340	5990	6100
7	7070	6870	6980	1720	1370	1560	5060	4400	4590	6600	5720	6380
8	7070	6940	7010	1730	1160	1550	4770	4560	4650	5720	4980	5390
9	7050	6880	6960	1160	1080	1120	4850	4710	4780	5360	4980	5130
10	7160	6970	7070	1080	898	986	4970	4790	4900	5840	5080	5350
11	7120	7010	7060	1060	1000	1040	4950	4830	4880	5860	5430	5670
12	7130	6940	7070	1310	1040	1170	5180	4880	5040	6810	3700	5810
13	6940	6630	6790	1520	1310	1420	5260	5060	5190	3700	2860	3070
14	6670	6520	6590	1820	1510	1660	5310	5120	5220	3610	2930	3230
15	6580	6140	6460	2080	1790	1910	5700	5250	5440	4180	3600	3890
16	6510	6300	6440	2380	2060	2200	6060	5690	5860	4810	4180	4540
17	6670	6440	6580	2660	2380	2540	6350	6000	6160	5220	4750	4910
18	6540	5910	6240	2960	2630	2770	6200	5980	6060	5320	5020	5170
19	6140	4810	5490	3220	2960	3080	6120	5760	5870	6050	5220	5730
20	4880	3700	4520	3490	3210	3350	5950	5760	5820	6970	6050	6550
21	4890	3730	4420	3680	3470	3570	6160	5860	5990	6100	5170	5470
22	4540	2500	3240	3840	3650	3750	6360	6130	6250	5800	5240	5580
23	2700	1290	2160	4040	1480	3740	6290	6050	6140	5920	5720	5840
24	1290	579	824	2900	482	1050	6360	6160	6280	6100	5860	5970
25	1260	686	1060	482	415	441	6530	6060	6370	6290	6090	6220
26	1450	1210	1270	1850	415	931	6110	5640	5830	6430	6240	6350
27	1260	1210	1230	2670	1850	2430	6150	5440	5760	6600	4930	6120
28	1320	1080	1210	2260	2080	2180	6270	5670	6020	5410	4230	4920
29	1340	1110	1230	2580	2210	2370	5860	5190	5580	4230	2530	3270
30	1500	1340	1420	2800	2550	2640	5620	4760	5120	2530	1850	2200
31	2380	1460	2030	---	---	---	5330	4280	4700	1850	1760	1790
MONTH	7160	579	4930	4040	415	2090	6530	2780	5180	6970	1760	5040

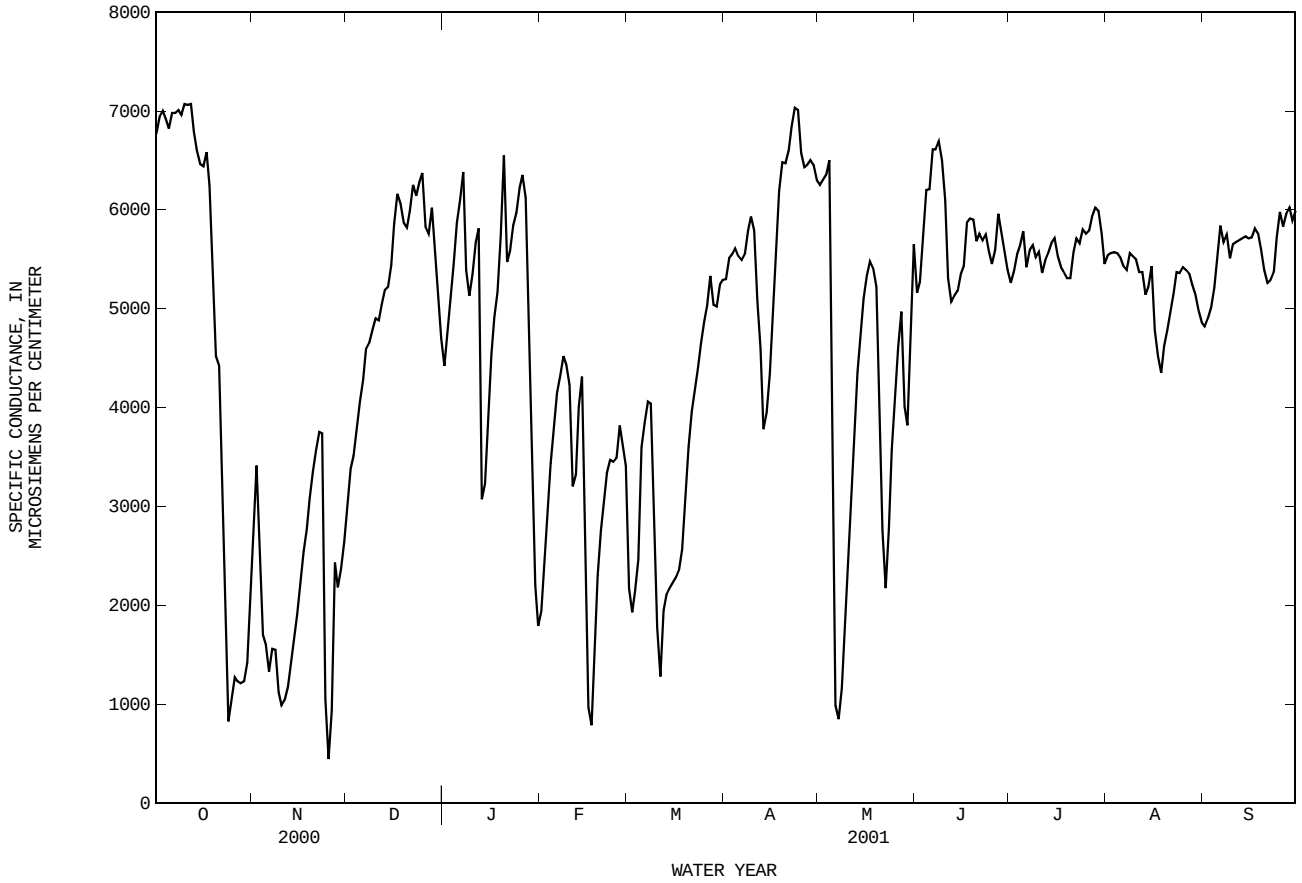
07312500 Wichita River at Wichita Falls, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2150	1790	1940	2510	1820	2170	5340	5230	5300	---	---	e6250
2	2690	2140	2400	2080	1820	1930	5630	5320	5510	---	---	e6300
3	3200	2690	2960	2320	2020	2150	5600	5490	5550	---	---	e6350
4	3660	3160	3430	3490	2020	2460	5680	5540	5610	---	---	e6500
5	4000	3640	3800	3760	3410	3600	5660	5450	5530	---	---	e2920
6	4300	3980	4150	3980	3720	3850	5940	5420	5490	1890	734	987
7	4400	4260	4320	4140	3950	4060	5640	5490	5550	1120	732	848
8	4640	4360	4520	4270	3430	4040	5890	5640	5790	1510	862	1160
9	4680	3950	4430	3430	2100	2750	6000	5860	5930	2340	1560	1960
10	4810	3880	4230	2310	1290	1770	5980	5580	5790	2990	2340	2660
11	4340	2820	3200	---	---	e1280	5580	4120	5080	3600	2990	3300
12	3540	3160	3320	---	---	e1950	5580	3450	4590	4110	3600	3850
13	4220	3520	4010	---	---	e2110	4070	3410	3780	4570	4100	4360
14	4530	4110	4310	---	---	e2170	4180	3870	3950	4920	4560	4720
15	4280	1590	2520	---	---	e2230	4620	4170	4340	5280	4920	5100
16	1590	782	968	---	---	e2280	5270	4620	4920	5400	5200	5330
17	992	725	786	---	---	e2350	6020	5270	5680	5570	5350	5480
18	---	---	e1400	---	---	e2570	6330	6010	6190	5640	5220	5410
19	---	---	e2300	---	---	e3120	6670	6310	6480	5350	4070	5220
20	---	---	e2750	3840	3340	3600	6560	6440	6470	5680	3320	4170
21	---	---	e3050	4070	3830	3960	6690	6550	6600	5680	1840	2750
22	---	---	e3340	4300	4050	4170	6950	6690	6840	2400	1900	2170
23	3560	3380	3470	4520	4280	4390	7090	6930	7030	3190	2400	2770
24	3670	3070	3450	4810	4510	4650	7190	6730	7010	3860	3190	3570
25	3780	3210	3490	4950	4790	4870	6700	6450	6570	4350	3860	4140
26	3990	3700	3820	5210	4880	5030	---	---	e6430	4840	4350	4610
27	3970	3280	3630	5590	5180	5330	---	---	e6450	5060	4840	4970
28	3990	2380	3410	5530	4810	5040	---	---	e6500	5060	2950	4010
29	---	---	---	5140	4890	5020	---	---	e6450	4420	2950	3820
30	---	---	---	5320	5100	5240	---	---	e6300	5110	4420	4930
31	---	---	---	5360	5230	5290	---	---	---	5890	5000	5650
MONTH	---	---	3190	---	---	3400	---	---	5790	---	---	4070

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5770	4900	5160	5330	5200	5260	5700	5370	5540	4860	4780	4820
2	5490	5030	5270	5450	5270	5380	5640	5460	5560	4950	4840	4900
3	6040	5490	5740	5670	5390	5550	5700	5480	5570	5080	4940	5010
4	6290	6040	6200	5760	5560	5640	5630	5510	5560	5380	5050	5210
5	6460	5940	6210	5920	5540	5780	5620	5370	5520	5670	5380	5540
6	6800	6430	6610	5540	5310	5420	5500	5310	5430	5910	5670	5840
7	6680	6450	6610	5660	5490	5590	5460	5310	5390	5860	5570	5670
8	6800	6450	6690	5710	5500	5640	5720	5370	5560	5820	5640	5750
9	6750	6210	6500	5610	5350	5520	5720	5420	5530	5640	5270	5510
10	6400	5510	6100	5720	5270	5570	5590	5380	5500	5700	5600	5650
11	5560	5040	5310	5420	5270	5360	5490	5240	5370	5750	5600	5670
12	5100	5030	5070	5560	5410	5490	5500	5260	5370	5730	5630	5690
13	5170	5070	5130	5630	5290	5560	5270	4960	5140	5760	5660	5710
14	5290	5090	5180	5770	5410	5660	5260	5140	5220	5790	5660	5730
15	5400	5280	5350	5800	5580	5710	5590	5250	5430	5760	5670	5710
16	5700	5350	5430	5730	5390	5530	5500	4270	4780	5810	5680	5720
17	5920	5700	5870	5510	5190	5420	4810	4340	4520	5900	5620	5810
18	5980	5750	5910	5460	5230	5370	4520	4020	4350	5830	5660	5760
19	6040	5630	5900	5370	5230	5310	4700	4510	4620	5780	5410	5600
20	5740	5620	5680	5360	5250	5310	4860	4700	4780	5500	5170	5390
21	5840	5640	5760	5780	5330	5570	5110	4840	4970	5330	5070	5260
22	5810	5580	5690	5830	5490	5710	5320	5080	5160	5330	5260	5290
23	5810	5540	5750	5760	5570	5660	5400	5310	5370	5560	5290	5370
24	5680	5490	5570	5820	5740	5800	5440	5280	5360	5960	5560	5720
25	5560	5270	5450	5820	5460	5760	5470	5360	5420	6090	5890	5980
26	5720	5500	5590	5910	5600	5790	5590	4760	5390	5910	5740	5830
27	6110	5720	5960	5990	5850	5930	5430	5210	5350	6090	5850	5960
28	5840	5590	5760	6060	5810	6020	5340	5180	5240	6170	5790	6020
29	5780	5380	5570	6060	5730	5990	5200	4990	5140	5940	5780	5890
30	5580	5160	5390	5980	5140	5760	5050	4900	4980	6060	5890	5990
31	---	---	---	5610	5250	5450	4930	4810	4860	---	---	---
MONTH	6800	4900	5750	6060	5140	5600	5720	4020	5230	6170	4780	5600

e Estimated



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

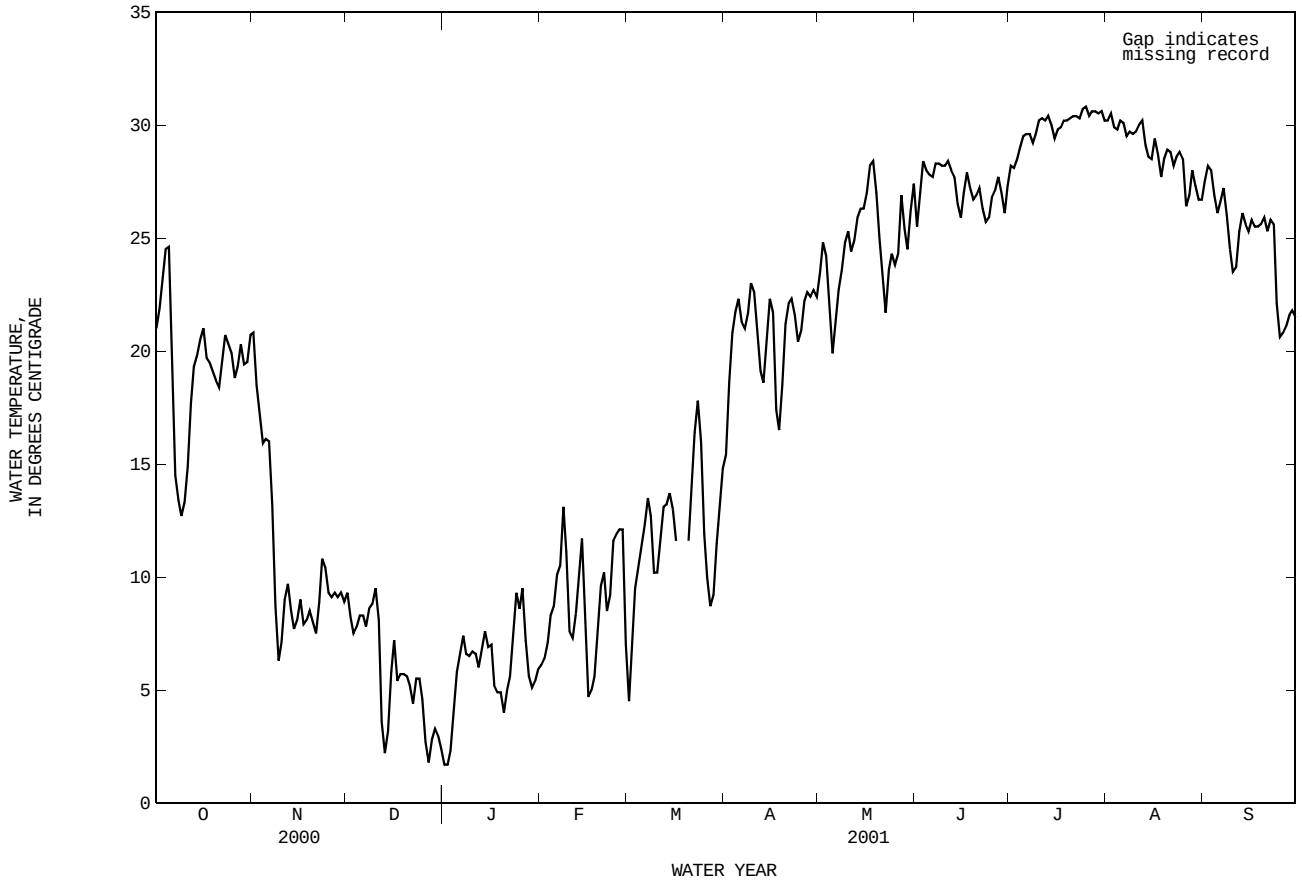
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.9	18.4	21.0	21.8	19.5	20.8	9.9	8.8	9.3	1.8	1.5	1.7
2	25.0	19.2	21.9	19.5	17.1	18.5	9.1	7.8	8.2	2.2	1.3	1.7
3	26.2	20.7	23.2	18.4	16.1	17.2	7.8	7.1	7.5	3.8	.9	2.3
4	27.4	22.0	24.5	16.2	15.8	15.9	8.4	7.1	7.8	5.9	2.5	4.2
5	27.3	22.5	24.6	16.4	15.8	16.1	8.4	8.1	8.3	7.3	4.2	5.8
6	23.2	17.0	19.3	16.4	15.4	16.0	8.6	7.7	8.3	8.1	5.1	6.6
7	17.0	13.4	14.5	15.4	11.3	13.2	8.9	6.7	7.8	8.5	6.5	7.4
8	15.4	12.0	13.4	11.3	6.4	8.7	9.5	7.8	8.6	7.8	5.3	6.6
9	15.1	10.4	12.7	6.7	5.8	6.3	9.8	8.0	8.8	7.9	4.9	6.5
10	15.8	11.4	13.3	8.3	6.3	7.1	10.2	8.8	9.5	7.1	6.5	6.7
11	17.7	13.1	14.9	10.0	8.3	9.0	9.7	5.5	8.1	7.2	6.2	6.6
12	20.5	15.5	17.7	10.1	9.1	9.7	5.5	2.3	3.6	6.5	5.5	6.0
13	20.2	18.5	19.3	9.1	7.8	8.5	3.3	1.2	2.2	8.1	5.8	6.8
14	21.2	18.8	19.8	8.5	6.7	7.7	4.4	2.1	3.2	8.6	6.6	7.6
15	21.5	19.3	20.5	9.0	7.3	8.1	7.7	4.0	5.8	7.8	5.9	6.9
16	22.9	19.7	21.0	9.8	8.2	9.0	7.9	6.2	7.2	7.3	6.5	7.0
17	20.7	18.7	19.7	8.5	7.1	7.9	6.2	4.4	5.4	6.5	4.5	5.2
18	21.3	18.2	19.5	9.3	7.3	8.1	6.9	4.9	5.7	6.0	3.9	4.9
19	21.0	17.0	19.1	9.9	7.4	8.5	6.7	4.7	5.7	6.0	4.0	4.9
20	19.5	18.3	18.7	9.1	7.0	8.0	6.9	4.4	5.6	4.9	2.8	4.0
21	19.1	17.9	18.4	9.1	5.8	7.5	6.2	4.2	5.2	6.6	3.7	5.0
22	20.9	18.7	19.6	10.0	7.8	8.9	5.4	3.3	4.4	7.2	3.8	5.6
23	21.1	20.2	20.7	11.5	10.0	10.8	7.1	4.0	5.5	9.3	6.0	7.5
24	21.0	20.0	20.3	11.5	9.6	10.4	6.2	5.0	5.5	10.8	8.3	9.3
25	20.1	19.4	19.9	9.6	9.1	9.3	5.3	4.1	4.6	9.6	6.9	8.6
26	19.4	18.6	18.8	9.3	8.9	9.1	4.1	1.7	2.7	11.2	7.8	9.5
27	19.9	18.9	19.3	9.6	8.9	9.3	2.4	1.2	1.8	9.8	5.5	7.2
28	21.1	19.9	20.3	9.7	8.5	9.1	3.8	1.7	2.8	5.8	5.4	5.6
29	20.3	18.7	19.4	9.7	8.8	9.3	4.2	2.6	3.3	5.6	4.5	5.1
30	20.5	18.5	19.5	9.3	8.3	8.9	3.6	2.3	3.0	5.9	4.8	5.4
31	21.4	20.1	20.7	---	---	---	2.8	1.8	2.4	6.6	5.1	5.9
MONTH	27.4	10.4	19.2	21.8	5.8	10.6	10.2	1.2	5.7	11.2	.9	5.9

07312500 Wichita River at Wichita Falls, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.0	5.0	6.1	5.5	3.5	4.5	17.4	13.6	15.4	27.4	20.3	23.5
2	7.6	5.2	6.4	8.9	5.5	7.3	22.0	16.2	18.6	27.9	22.6	24.8
3	8.6	5.7	7.1	10.4	8.8	9.5	22.7	19.3	20.8	25.6	23.3	24.2
4	9.9	6.9	8.3	11.6	9.2	10.4	24.0	19.9	21.7	23.7	20.3	22.0
5	10.4	7.1	8.7	12.5	10.1	11.4	23.1	21.6	22.3	20.3	19.5	19.9
6	11.5	8.9	10.1	13.4	11.0	12.3	22.3	20.6	21.3	22.5	20.1	21.2
7	12.0	8.9	10.5	15.2	11.8	13.5	23.5	18.9	21.0	23.9	21.8	22.7
8	14.7	11.8	13.1	14.5	10.8	12.7	23.9	20.2	21.7	25.9	21.6	23.6
9	14.5	8.4	11.1	10.8	9.5	10.2	25.3	21.0	23.0	27.2	22.9	24.8
10	8.4	6.6	7.6	11.1	9.6	10.2	24.0	22.0	22.6	27.9	23.2	25.3
11	8.1	6.3	7.3	13.0	10.9	11.7	22.5	19.0	20.8	25.7	23.1	24.4
12	9.3	7.6	8.4	13.6	12.6	13.1	20.1	18.0	19.1	27.9	22.4	24.9
13	11.1	9.2	10.0	14.0	12.4	13.2	20.3	17.0	18.6	28.8	23.2	25.9
14	12.6	10.9	11.7	14.1	13.4	13.7	21.9	19.6	20.6	29.2	23.7	26.3
15	10.9	5.7	7.6	13.8	12.2	13.0	25.3	20.2	22.3	29.4	23.5	26.3
16	5.7	4.3	4.7	12.6	10.6	11.6	24.7	19.1	21.7	30.3	24.0	27.0
17	5.6	4.4	5.0	---	---	---	21.2	15.8	17.4	31.3	25.2	28.2
18	6.9	4.8	5.6	---	---	---	19.4	14.1	16.5	31.1	25.7	28.4
19	9.1	6.6	7.5	---	---	---	22.2	15.4	18.5	28.6	24.2	27.0
20	11.1	8.6	9.6	14.3	9.1	11.6	23.1	19.3	21.2	27.4	22.8	25.1
21	11.1	9.2	10.2	16.9	11.8	14.2	23.8	20.9	22.1	26.8	21.6	23.5
22	9.2	7.7	8.5	18.9	14.3	16.4	24.0	20.6	22.3	24.1	19.5	21.7
23	9.8	8.9	9.2	20.1	15.7	17.8	24.0	19.0	21.6	26.7	21.0	23.6
24	13.2	9.8	11.6	18.8	13.2	16.0	23.5	17.0	20.4	26.7	22.3	24.3
25	12.7	11.0	11.9	13.2	11.1	11.9	24.5	17.3	20.9	26.5	21.2	23.8
26	13.0	11.1	12.1	11.4	9.1	10.0	25.6	18.9	22.2	27.2	21.8	24.3
27	12.9	10.2	12.1	9.1	8.5	8.7	25.8	19.5	22.6	30.5	23.9	26.9
28	10.2	4.4	7.0	10.2	8.4	9.2	24.5	19.9	22.4	27.9	24.0	25.4
29	---	---	---	13.5	9.9	11.5	25.8	19.7	22.7	25.2	24.0	24.5
30	---	---	---	14.8	11.4	13.1	24.4	20.3	22.4	30.3	23.3	26.2
31	---	---	---	17.5	12.5	14.8	---	---	---	30.1	25.2	27.4
MONTH	14.7	4.3	8.9	---	---	---	25.8	13.6	20.8	31.3	19.5	24.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.2	23.8	25.5	30.7	26.0	28.2	33.1	27.9	30.2	30.0	25.6	27.5
2	30.7	23.6	26.9	31.0	25.8	28.1	32.7	28.5	30.5	30.8	25.9	28.2
3	31.4	25.8	28.4	31.3	26.0	28.5	32.7	27.5	29.9	30.0	26.4	28.0
4	31.1	25.4	28.0	32.2	26.2	29.0	32.5	27.3	29.8	28.3	25.5	26.9
5	30.6	25.0	27.8	32.9	26.7	29.5	33.1	27.6	30.2	27.6	25.2	26.1
6	30.1	25.1	27.7	32.8	26.9	29.6	32.2	27.8	30.1	29.1	24.5	26.6
7	31.2	25.7	28.3	32.4	27.0	29.6	31.9	27.6	29.5	29.8	25.1	27.2
8	31.0	25.8	28.3	32.5	26.4	29.2	32.0	27.7	29.7	27.5	24.6	26.0
9	31.1	25.7	28.2	32.9	26.6	29.6	32.3	27.5	29.6	26.4	22.7	24.5
10	30.8	25.6	28.2	33.4	27.3	30.2	32.7	27.3	29.7	26.1	21.0	23.5
11	30.7	26.4	28.4	33.3	27.8	30.3	32.5	28.2	30.0	26.3	21.2	23.7
12	30.4	25.9	28.0	33.5	27.1	30.2	32.8	27.8	30.2	28.5	22.8	25.3
13	29.8	26.3	27.7	33.5	27.6	30.4	30.5	28.0	29.1	28.5	23.6	26.1
14	27.7	25.4	26.5	32.6	28.1	30.0	30.1	26.9	28.6	27.0	23.8	25.6
15	28.9	23.4	25.9	32.2	27.0	29.4	30.5	26.8	28.5	26.1	24.6	25.3
16	30.4	24.3	27.0	32.7	27.4	29.8	31.9	27.8	29.4	28.4	23.9	25.8
17	30.8	25.2	27.9	32.9	27.5	29.9	30.4	27.6	28.7	26.9	23.9	25.5
18	30.3	24.5	27.2	33.2	27.8	30.2	30.0	25.9	27.7	27.5	23.8	25.5
19	29.8	24.0	26.7	33.3	27.7	30.2	31.6	25.9	28.5	27.9	23.7	25.6
20	29.9	24.3	26.9	33.4	27.7	30.3	31.7	26.5	28.9	28.2	24.3	25.9
21	29.8	24.9	27.2	33.5	27.8	30.4	31.4	26.6	28.8	27.8	23.4	25.3
22	29.3	23.6	26.3	33.4	27.8	30.4	30.5	26.1	28.2	27.9	23.8	25.8
23	27.9	23.7	25.7	33.2	27.7	30.3	31.7	26.2	28.6	28.0	23.9	25.6
24	29.4	22.9	25.9	33.6	28.3	30.7	31.6	26.5	28.8	24.2	20.0	22.1
25	29.9	23.9	26.8	33.4	28.4	30.8	31.2	25.9	28.5	23.2	17.9	20.6
26	30.1	24.4	27.1	32.8	28.2	30.4	29.0	25.6	26.4	23.3	18.2	20.8
27	30.2	25.2	27.7	33.3	28.4	30.6	30.0	24.8	26.9	23.8	18.6	21.1
28	29.5	25.1	27.0	32.5	28.7	30.6	30.1	26.3	28.0	24.1	19.2	21.6
29	29.1	23.9	26.1	33.4	28.6	30.5	29.0	25.8	27.3	24.2	19.3	21.8
30	30.3	24.8	27.3	33.3	28.3	30.6	28.2	25.7	26.7	23.9	19.1	21.5
31	---	---	---	33.0	27.9	30.2	28.8	25.4	26.7	---	---	---
MONTH	31.4	22.9	27.2	33.6	25.8	29.9	33.1	24.8	28.8	30.8	17.9	24.8


Gap indicates
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WATER TEMPERATURE,
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WATER YEAR

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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.--No estimated daily discharges. Records fair. Since installation of gage in Oct. 1967, at least 10% of contributing drainage area has been regulated. Records furnished by the city of Wichita Falls indicate that 12,716 acre-ft was returned to river above this station as wastewater effluent.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

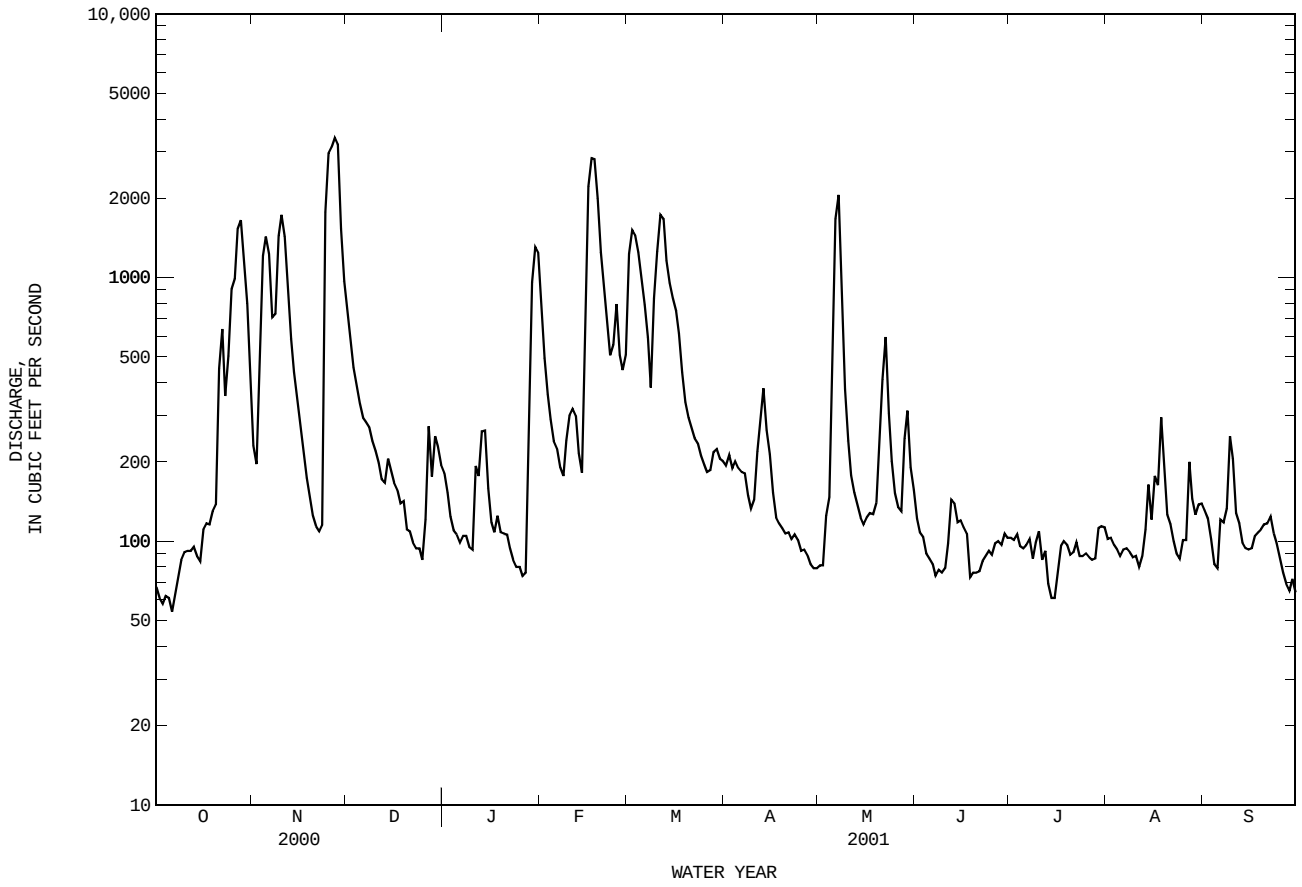
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	231	734	182	819	1230	194	81	122	103	102	131
2	61	196	564	153	496	1520	212	81	108	101	103	122
3	58	414	456	124	361	1450	189	125	104	106	97	102
4	62	1210	389	110	290	1250	201	147	90	96	93	82
5	61	1430	333	106	240	1000	189	523	86	94	88	79
6	54	1230	294	99	225	790	183	1670	82	97	93	121
7	63	708	284	105	191	593	181	2060	74	102	94	118
8	74	730	271	105	177	383	149	975	78	86	91	133
9	85	1440	240	95	241	835	133	377	76	99	87	250
10	91	1730	220	93	300	1260	144	241	79	109	88	206
11	92	1430	198	193	318	1730	219	178	98	85	80	128
12	92	931	172	177	299	1670	292	153	144	92	88	117
13	95	587	167	261	216	1160	380	137	139	69	111	99
14	88	439	206	263	182	954	264	123	118	61	164	94
15	84	341	184	159	677	835	214	116	120	61	121	93
16	111	270	167	118	2220	748	153	123	113	76	177	94
17	117	214	157	108	2840	613	123	128	107	96	163	105
18	116	174	139	125	2820	438	117	127	73	100	295	108
19	130	148	142	108	2000	337	112	140	76	97	202	111
20	138	125	111	107	1250	294	107	235	76	89	126	116
21	452	114	109	106	921	268	108	411	77	91	116	117
22	639	109	99	94	676	246	102	595	84	99	100	124
23	356	115	94	85	507	235	106	305	88	88	90	107
24	505	1770	94	80	556	211	101	202	92	88	86	98
25	906	2960	85	80	793	195	92	152	89	90	101	86
26	990	3130	121	74	509	183	93	135	98	87	101	76
27	1530	3400	273	76	446	186	89	130	100	85	200	69
28	1650	3210	176	279	510	218	82	245	97	86	145	65
29	1170	1530	250	960	---	224	79	313	107	112	126	72
30	796	970	228	1310	---	206	79	191	103	114	138	64
31	434	---	195	1250	---	202	---	157	---	113	139	---
TOTAL	11167	31286	7152	7185	21080	21464	4687	10576	2898	2872	3805	3287
MEAN	360	1043	231	232	753	692	156	341	96.6	92.6	123	110
MAX	1650	3400	734	1310	2840	1730	380	2060	144	114	295	250
MIN	54	109	85	74	177	183	79	81	73	61	80	64
AC-FT	22150	62060	14190	14250	41810	42570	9300	20980	5750	5700	7550	6520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2001, BY WATER YEAR (WY)

MEAN	358	316	192	173	280	411	328	552	641	279	304	400
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	94.4	96.6	80.1	72.6	68.2
(WY)	1971	1998	1979	1974	1995	1972	1989	2000	2001	2000	2000	2000

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1968 - 2001	
ANNUAL TOTAL	75391		127459			
ANNUAL MEAN	206		349		353	
HIGHEST ANNUAL MEAN					986	1987
LOWEST ANNUAL MEAN					90.2	2000
HIGHEST DAILY MEAN	3400	Nov 27	3400	Nov 27	7740	May 7 1990
LOWEST DAILY MEAN	37	Jan 2	54	Oct 6	21	Dec 19 1997
ANNUAL SEVEN-DAY MINIMUM	41	Feb 10	61	Oct 1	24	Dec 13 1997
MAXIMUM PEAK FLOW			3500	Nov 28	7760	May 7 1990
MAXIMUM PEAK STAGE			15.51	Nov 28	25.80	May 7 1990
ANNUAL RUNOFF (AC-FT)	149500		252800		255400	
10 PERCENT EXCEEDS	378		964		831	
50 PERCENT EXCEEDS	84		133		137	
90 PERCENT EXCEEDS	46		82		62	

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 Sept. 1981, Oct. 1989 to current year.
BIOCHEMICAL DATA: Oct. 1967 to Sept. 1981, Oct. 1989 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1967 to Sept. 1981 (local observer), June 1996 to current year.
WATER TEMPERATURE: Oct. 1967 to Sept. 1981 (local observer), June 1996 to current year.

INSTRUMENTATION.--Water-quality monitor June 1996 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 10,000 microsiemens/cm, Apr. 25, 1972; minimum, 213 microsiemens/cm, Jan. 29, 2001.
WATER TEMPERATURE: Maximum, 35.3°C, July 15, 2000; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 6,090 microsiemens/cm, Oct. 12; minimum, 107 microsiemens/cm, Jan. 29.
WATER TEMPERATURE: Maximum, 33.7°C, July 12; minimum, 1.2°C, Jan. 3.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	5920	5640	5810	1500	1460	1470	2980	2870	2910	4510	3900	4230
2	6020	5730	5860	1730	1500	1610	3140	2910	3030	4470	4010	4240
3	6010	5710	5850	1780	1170	1560	3460	3140	3320	4120	3590	3880
4	5890	5570	5760	1680	635	1190	3570	3450	3500	3960	3580	3720
5	5710	5420	5570	1350	700	969	3580	3470	3510	3950	3700	3800
6	---	---	e5860	847	705	770	3790	3520	3650	3930	3780	3840
7	---	---	e5800	1140	822	999	3900	3790	3860	4330	3900	3990
8	---	---	e5840	1280	1040	1180	4110	3900	4030	4770	4190	4400
9	---	---	e5790	1370	741	1050	4450	4100	4210	4970	4540	4660
10	---	---	e5730	1080	859	942	4290	4150	4220	5060	4450	4820
11	6080	5920	5980	945	827	871	4420	4270	4340	4910	3880	4230
12	6090	5680	5850	1100	899	991	4500	4340	4420	3880	2350	2910
13	6050	5970	6010	1340	1100	1200	4520	4320	4410	4660	2370	3450
14	6020	5670	5820	1570	1340	1460	4440	4280	4330	5840	3390	5020
15	5900	5510	5740	1760	1570	1670	4590	3550	4170	3390	2820	2950
16	---	---	e5240	2010	1760	1890	4200	3520	3900	2880	2800	2830
17	---	---	e5380	2180	2010	2100	4370	3980	4140	3180	2860	2980
18	---	---	e5400	2380	2180	2280	4550	4120	4330	3540	3160	3340
19	---	---	e4000	2600	2380	2490	4980	4450	4680	3560	3270	3400
20	---	---	e3900	2730	2600	2690	5070	4740	4880	4000	3340	3650
21	---	---	e3700	2950	2730	2840	5040	4840	4900	4180	3980	4090
22	---	---	e3350	3130	2940	3020	5000	4760	4830	4840	4140	4580
23	---	---	e2840	3200	2760	3140	4800	4490	4600	5190	4740	4960
24	---	---	e2960	2760	596	1360	4830	4630	4730	5120	4190	4600
25	2280	706	1100	938	664	806	4890	4620	4750	4210	3960	4100
26	978	640	778	1090	658	955	4980	4320	4680	4230	1660	3080
27	1430	693	1070	1650	1050	1250	4760	2700	3970	4310	1660	3080
28	723	539	611	2160	1650	2010	2770	2430	2570	4360	2840	4090
29	758	454	651	2250	2070	2140	3760	2650	3200	2840	107	1600
30	1230	572	1050	2960	2250	2620	3530	2760	3210	2340	1440	1900
31	1460	1000	1220	---	---	---	4160	3530	4000	1720	1390	1560
MONTH	---	---	4210	3200	596	1650	5070	2430	4040	5840	107	3680

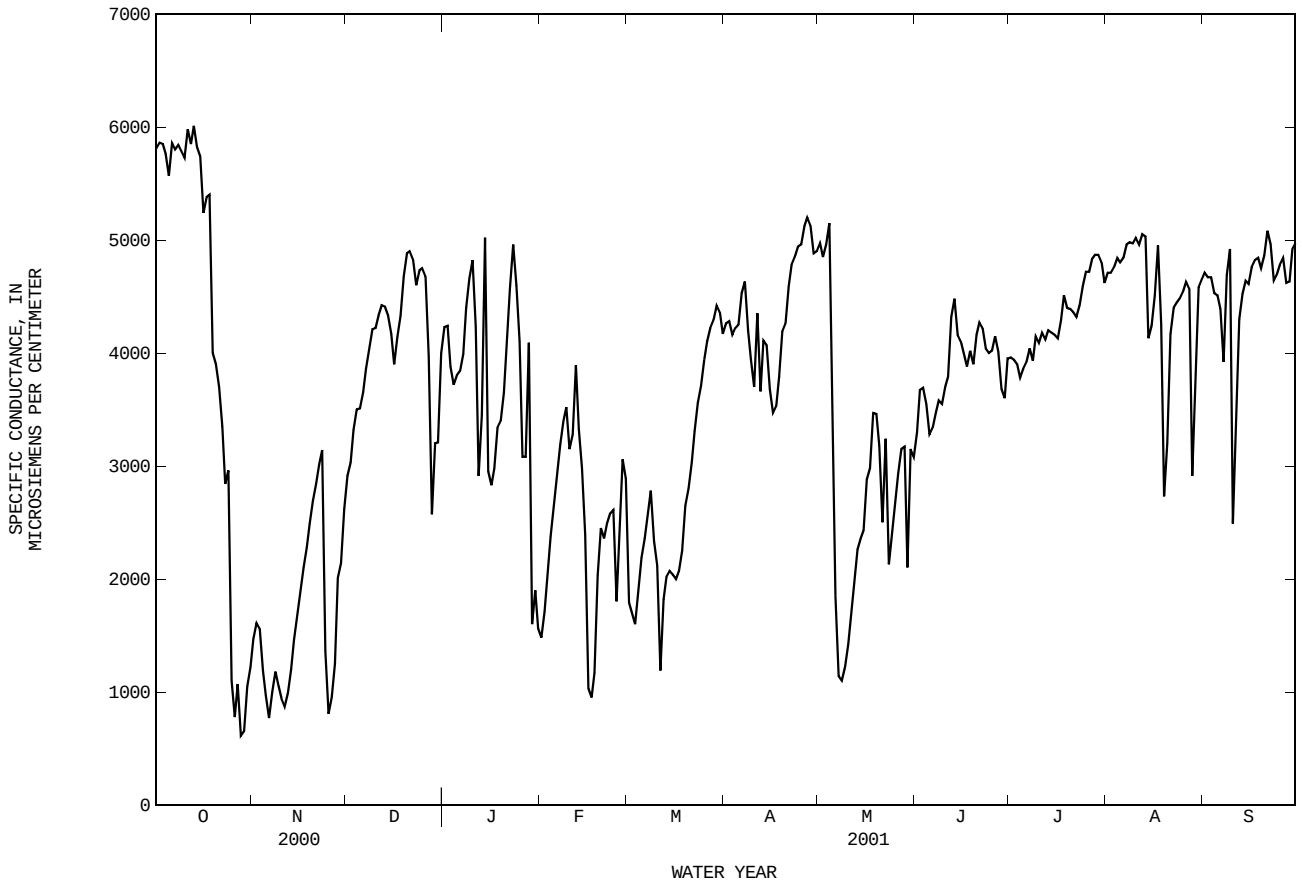
07312700 Wichita River near Charlie, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1610	1370	1480	2180	1230	1790	4410	4180	4260	---	---	e4970
2	1890	1530	1710	2010	1510	1690	4370	3970	4280	---	---	e4850
3	2250	1890	2070	1730	1520	1600	4400	3830	4160	---	---	e4960
4	2520	2250	2380	2020	1730	1910	4330	4030	4220	---	---	e5150
5	2800	2520	2660	2320	2020	2190	4490	4080	4250	---	---	e3430
6	3060	2800	2940	2470	2280	2360	4600	4470	4530	4720	894	1850
7	3270	3060	3190	2690	2470	2580	4710	4350	4630	1860	975	1140
8	3510	3230	3400	2840	2690	2780	4350	3860	4200	1160	978	1100
9	3590	3420	3520	2820	1620	2340	4110	3460	3940	1310	1150	1220
10	3690	2520	3150	2680	1430	2120	3840	3380	3700	1540	1310	1420
11	3980	2360	3280	1470	1010	1190	5020	3790	4350	1830	1540	1680
12	4280	3640	3890	2010	1470	1820	4850	2490	3660	2120	1830	1980
13	4260	2960	3330	2060	1990	2020	5050	2790	4110	2330	2120	2260
14	3060	2860	2980	2090	2040	2070	4930	3620	4070	2490	2190	2360
15	3300	836	2390	2080	2000	2040	3840	3510	3680	2960	2180	2430
16	1710	779	1030	2030	1960	2000	4010	2900	3470	3000	2630	2880
17	1060	779	950	2170	1990	2070	3870	2890	3530	3380	2550	2980
18	1450	1060	1170	2470	2170	2250	4170	3520	3790	3550	3330	3470
19	2420	1450	2030	2720	2470	2650	4290	4120	4190	3530	---	e3460
20	2520	2400	2450	2920	2720	2800	4410	4120	4260	---	---	e3180
21	2490	2270	2360	3160	2920	3030	4830	4410	4590	---	---	e2500
22	2510	2480	2490	3400	3160	3310	4940	4640	4780	4950	2250	3240
23	2630	2510	2580	3630	3400	3560	5020	4740	4850	2270	1990	2130
24	2660	2320	2610	3830	3600	3710	5080	4870	4940	2520	2190	2360
25	2320	1340	1800	3990	3830	3940	5320	4720	4960	2740	2500	2640
26	2740	2230	2540	4200	3990	4100	5370	4940	5120	3040	2740	2930
27	3180	2740	3060	4360	4100	4220	---	---	e5200	3220	2750	3150
28	3170	2060	2890	4390	4230	4290	---	---	e5130	3850	2750	3170
29	---	---	---	4600	4290	4420	---	---	e4880	3900	1280	2100
30	---	---	---	4600	4140	4360	---	---	e4900	3440	2540	3150
31	---	---	---	4240	4120	4170	---	---	---	3310	2950	3080
MONTH	4280	779	2510	4600	1010	2750	---	---	4350	---	---	2810

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3500	3070	3300	4020	3890	3960	---	---	e4710	4810	4540	4710
2	3720	3500	3670	4040	3840	3940	4870	4590	4710	4790	4540	4670
3	3840	3450	3690	3980	3800	3900	4860	4650	4760	4750	4550	4670
4	3830	3330	3550	3950	3700	3780	4950	4630	4840	4630	4410	4530
5	3360	3220	3280	3950	3770	3860	4960	4630	4800	4670	4420	4510
6	3380	3250	3340	4120	3810	3920	4990	4600	4840	4640	4130	4390
7	3560	3380	3460	4120	3940	4040	5120	4730	4960	4380	3400	3920
8	3640	3500	3580	4180	3800	3930	5070	4890	4980	4930	4380	4690
9	3640	3500	3550	4320	4000	4150	5100	4870	4970	5240	4440	4920
10	3820	3640	3700	4170	4000	4090	5160	4900	5020	4440	2160	2490
11	3910	3700	3790	4280	4070	4180	5280	4730	4960	3950	2470	3240
12	5100	3650	4320	4260	4020	4120	5290	4720	5050	4470	3950	4300
13	4950	4190	4480	4300	4140	4200	5180	4870	5030	4660	4410	4520
14	4270	4030	4160	4360	4070	4180	5020	2870	4130	4710	4600	4640
15	4270	4020	4100	4280	4070	4160	4540	3820	4240	4700	4580	4610
16	4140	3710	4000	4340	3990	4130	4770	4070	4510	4860	4700	4760
17	4030	3710	3880	4430	4190	4290	5070	4660	4950	4930	4730	4820
18	4120	3850	4020	4630	4410	4510	4990	2410	4250	4930	4730	4840
19	4110	3740	3900	4510	4350	4400	3200	2280	2730	4890	4640	4750
20	4360	3940	4160	4450	4320	4390	3780	2330	3200	4990	4710	4860
21	4370	4150	4270	4390	4320	4360	4340	3780	4170	5240	4930	5080
22	4280	4080	4220	4450	4250	4320	4530	4230	4400	5110	4660	4960
23	4280	3920	4040	4520	4350	4420	4600	4360	4440	4770	4490	4640
24	4120	3930	4000	4800	4500	4590	4610	4400	4480	4930	4410	4690
25	4180	3850	4020	4800	4630	4720	4670	4470	4540	4940	4660	4780
26	4220	4090	4150	4850	4600	4720	4830	4470	4630	4970	4670	4840
27	4160	3910	4010	4950	4780	4830	4780	4300	4570	4770	4530	4620
28	3910	3360	3680	4970	4760	4870	4460	2490	2910	4820	4340	4630
29	3980	3270	3600	4930	4770	4870	4310	2840	3920	5190	4710	4920
30	4120	3820	3950	---	---	e4800	4810	4310	4580	5080	4800	4970
31	---	---	---	---	---	e4620	4760	4560	4650	---	---	---
MONTH	5100	3070	3860	---	---	4300	---	---	4480	5240	2160	4570

e Estimated



TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.5	19.6	21.2	21.1	19.8	20.5	9.0	8.5	8.8	2.3	1.9	2.1
2	23.3	20.1	21.8	19.8	17.8	18.7	8.6	7.8	8.2	2.5	1.8	2.1
3	24.6	21.4	23.1	18.7	16.1	17.4	7.8	6.9	7.4	2.8	1.2	2.1
4	25.7	22.8	24.3	16.4	15.9	16.1	7.7	6.7	7.2	4.4	2.2	3.3
5	25.7	23.5	24.7	16.1	15.8	16.0	7.9	7.3	7.6	5.8	3.8	4.8
6	24.2	18.1	20.6	16.1	15.4	15.8	8.3	7.5	8.0	6.9	4.8	5.9
7	---	---	---	15.4	12.5	14.0	8.0	6.6	7.4	7.6	6.2	6.9
8	---	---	---	12.5	7.9	10.1	8.6	7.2	7.9	7.2	6.0	6.8
9	---	---	---	8.1	6.6	7.4	8.9	7.6	8.2	7.3	5.6	6.6
10	---	---	---	7.2	6.3	6.8	9.4	8.1	8.8	7.0	6.6	6.8
11	15.7	12.7	14.0	8.6	7.1	7.6	9.2	5.9	7.7	7.0	6.3	6.6
12	19.0	15.1	16.7	9.2	8.6	8.9	5.9	2.8	4.1	6.7	5.9	6.3
13	19.6	18.2	18.9	8.7	7.9	8.2	2.8	1.7	2.3	8.3	6.4	7.2
14	20.1	18.9	19.4	8.2	7.2	7.7	3.5	1.8	2.7	8.5	7.1	7.8
15	20.6	19.3	20.1	8.7	7.5	8.1	5.9	3.3	4.5	7.7	6.4	7.2
16	21.6	19.8	20.6	9.2	8.3	8.7	6.4	5.6	6.0	7.6	6.7	7.1
17	21.0	19.2	20.0	8.5	7.3	7.8	5.8	4.6	5.1	6.7	5.1	5.8
18	21.1	19.1	20.1	8.6	7.2	7.8	5.7	4.4	5.2	6.1	4.7	5.3
19	20.6	18.4	19.6	8.9	7.5	8.2	5.5	4.5	5.2	5.7	4.7	5.2
20	20.3	18.9	19.3	8.6	7.2	7.8	5.8	4.3	5.2	4.9	3.4	4.2
21	18.9	18.4	18.7	8.2	6.3	7.4	5.5	4.4	5.0	5.7	4.0	4.8
22	---	---	---	9.5	7.5	8.4	4.9	3.6	4.3	6.3	4.2	5.4
23	---	---	---	10.9	9.5	10.2	5.8	4.0	4.9	8.1	5.9	6.9
24	---	---	---	10.9	10.3	10.5	5.5	4.6	5.0	9.6	7.9	8.6
25	21.2	19.8	20.6	10.3	9.6	9.9	4.9	4.0	4.4	8.9	7.3	8.3
26	19.8	19.3	19.5	9.6	9.1	9.3	4.0	2.1	3.0	10.3	8.0	9.2
27	19.8	19.5	19.6	9.2	8.9	9.1	2.5	2.1	2.3	9.6	6.4	7.4
28	20.3	19.6	19.9	9.5	8.9	9.2	3.1	1.9	2.5	6.5	6.0	6.4
29	20.1	19.0	19.5	9.7	8.9	9.2	3.7	2.4	3.0	6.3	5.3	5.8
30	20.1	19.1	19.6	9.1	8.4	8.8	3.9	2.6	3.3	6.7	5.8	6.3
31	20.8	19.6	20.2	---	---	---	3.5	2.3	2.7	6.7	5.8	6.2
MONTH	---	---	---	21.1	6.3	10.5	9.4	1.7	5.4	10.3	1.2	6.0

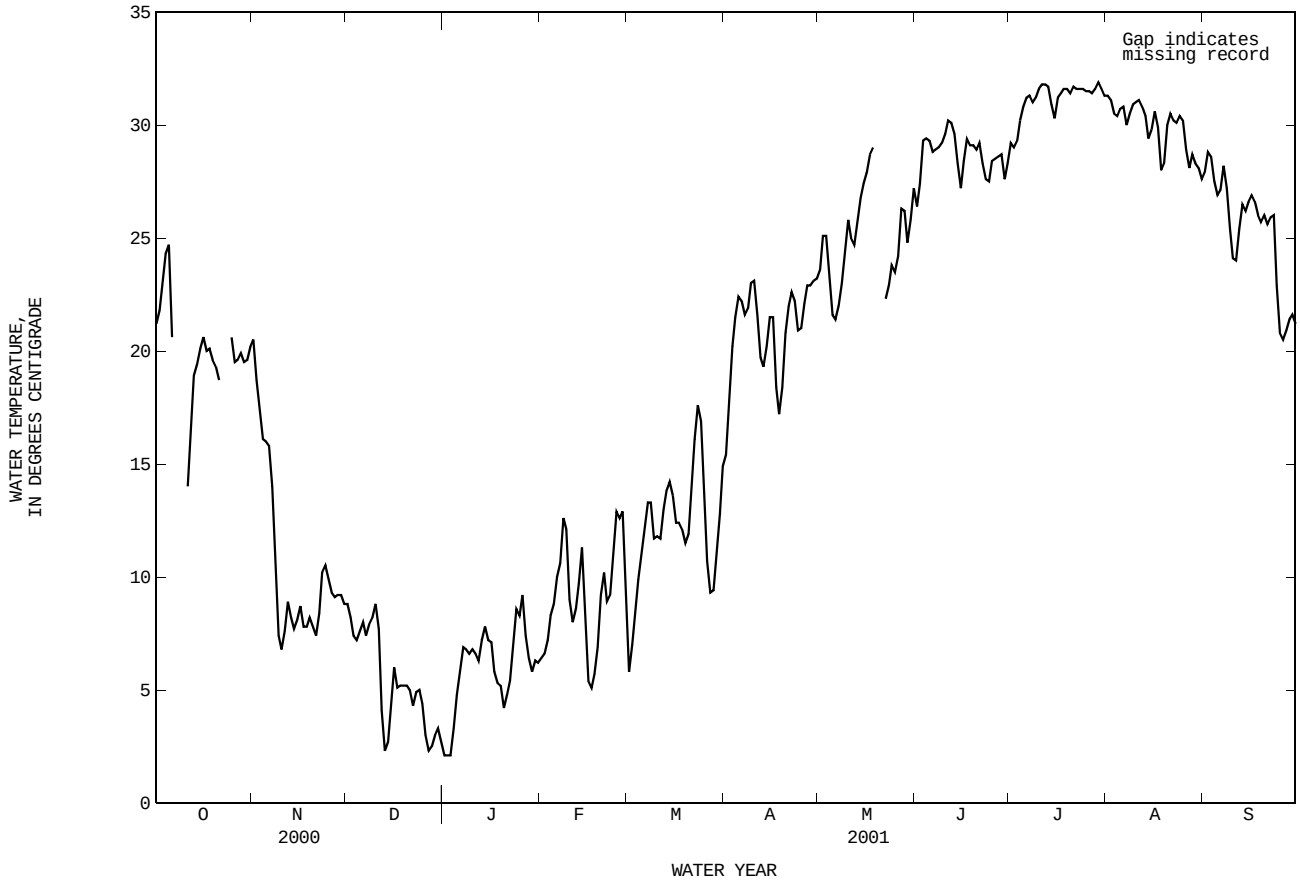
07312700 Wichita River near Charlie, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.1	5.7	6.4	7.2	4.3	5.8	16.6	14.3	15.4	25.8	21.5	23.6
2	7.2	6.0	6.6	7.4	6.4	7.0	20.3	15.7	17.5	27.0	23.0	25.1
3	8.1	6.3	7.2	9.6	7.4	8.5	21.8	19.1	20.2	26.8	24.2	25.1
4	9.5	7.3	8.3	10.9	9.2	9.9	22.9	20.4	21.5	25.0	21.9	23.2
5	10.1	7.5	8.8	12.0	10.2	11.0	23.2	21.6	22.4	22.4	20.9	21.6
6	11.2	8.9	10.0	13.2	11.2	12.1	22.9	21.7	22.2	22.4	20.7	21.4
7	11.9	9.6	10.6	14.4	12.2	13.3	23.1	20.1	21.6	22.6	21.4	22.0
8	14.0	11.8	12.6	14.1	12.3	13.3	23.2	20.9	21.9	24.1	22.1	23.0
9	14.1	10.3	12.1	12.3	11.1	11.7	24.6	21.4	23.0	26.5	23.0	24.5
10	10.3	8.2	9.0	12.1	11.4	11.8	24.1	22.7	23.1	27.8	24.2	25.8
11	8.9	7.1	8.0	12.4	11.2	11.7	22.7	20.3	21.6	26.4	24.2	25.0
12	9.2	8.1	8.6	13.9	12.2	13.0	21.0	18.3	19.7	26.8	22.9	24.7
13	10.7	9.1	9.7	14.6	13.1	13.8	20.5	17.9	19.3	27.4	24.0	25.8
14	11.9	10.7	11.3	14.7	13.9	14.2	21.1	19.6	20.2	29.0	24.8	26.8
15	11.1	6.3	8.6	14.2	12.8	13.6	23.3	20.1	21.5	29.2	25.5	27.4
16	6.3	4.9	5.4	13.2	11.6	12.4	23.2	19.9	21.5	30.1	25.7	27.9
17	5.5	4.8	5.1	12.9	11.9	12.4	21.7	17.2	18.4	30.6	26.8	28.7
18	6.1	5.2	5.7	12.6	11.5	12.1	18.7	15.7	17.2	30.8	27.1	29.0
19	8.1	5.9	6.9	12.4	10.8	11.5	21.0	16.2	18.4	---	27.2	---
20	10.4	8.1	9.2	13.9	10.1	11.9	22.1	19.6	20.8	---	---	---
21	10.6	9.4	10.2	16.4	12.0	14.0	23.1	21.1	22.0	24.3	---	---
22	9.4	8.3	8.9	17.9	14.6	16.1	23.9	21.3	22.6	23.2	21.5	22.3
23	9.8	9.0	9.2	19.5	15.9	17.6	23.5	20.6	22.2	25.0	21.1	22.9
24	12.5	9.8	11.2	18.8	15.0	16.9	22.5	18.8	20.9	25.4	22.3	23.8
25	13.4	12.5	12.9	15.0	12.0	13.2	23.0	18.7	21.0	25.3	21.7	23.5
26	13.3	12.1	12.6	12.0	10.0	10.7	24.2	19.8	22.1	26.3	22.2	24.2
27	13.3	11.4	12.9	10.0	9.0	9.3	24.6	20.7	22.9	29.2	24.0	26.3
28	11.4	7.2	9.3	10.1	8.8	9.4	24.3	21.0	22.9	28.5	25.1	26.2
29	---	---	---	12.4	9.9	11.0	25.0	21.0	23.1	25.8	24.2	24.8
30	---	---	---	14.6	11.2	12.8	24.6	21.7	23.2	28.5	24.0	25.8
31	---	---	---	16.9	13.2	14.9	---	---	---	28.9	26.0	27.2
MONTH	14.1	4.8	9.2	19.5	4.3	12.2	25.0	14.3	21.0	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.8	25.0	26.4	30.6	27.7	29.2	33.2	29.2	31.3	29.6	26.6	27.9
2	30.3	25.0	27.4	30.4	27.5	29.0	32.6	29.6	31.1	30.9	26.7	28.8
3	31.3	27.4	29.3	31.2	27.5	29.3	32.0	28.7	30.5	29.9	27.5	28.6
4	31.2	27.5	29.4	32.4	28.1	30.2	32.2	28.6	30.4	28.8	26.6	27.5
5	30.8	27.4	29.3	32.7	28.8	30.8	32.4	28.7	30.7	27.6	26.2	26.9
6	30.0	27.1	28.8	33.2	29.1	31.2	32.0	29.1	30.8	29.0	25.3	27.1
7	30.5	27.0	28.9	32.9	29.4	31.3	31.2	28.6	30.0	30.1	26.4	28.2
8	30.5	27.2	29.0	32.7	29.0	31.0	32.2	28.7	30.5	28.9	26.3	27.2
9	30.6	27.4	29.2	33.0	29.0	31.2	32.1	29.2	30.9	27.1	24.3	25.4
10	31.6	27.5	29.6	33.3	29.5	31.6	32.8	29.3	31.0	25.7	22.3	24.1
11	32.4	28.1	30.2	33.5	29.7	31.8	32.3	29.8	31.1	26.0	22.2	24.0
12	32.1	28.2	30.1	33.7	29.7	31.8	32.0	29.2	30.8	27.6	23.5	25.4
13	31.1	28.3	29.6	33.2	30.0	31.7	31.6	29.4	30.4	28.0	24.7	26.5
14	29.9	27.2	28.3	32.3	29.5	30.9	30.5	28.1	29.4	27.3	24.9	26.2
15	29.7	25.0	27.2	32.0	28.4	30.3	31.6	28.1	29.8	27.5	25.8	26.6
16	31.0	26.0	28.4	33.3	29.3	31.2	32.0	29.3	30.6	27.7	25.8	26.9
17	31.1	27.7	29.4	33.3	29.4	31.4	31.2	28.8	29.9	27.3	25.6	26.6
18	30.9	27.1	29.1	33.5	29.7	31.6	29.6	26.6	28.0	26.6	25.1	26.0
19	30.7	27.1	29.1	33.2	29.9	31.6	31.1	26.4	28.3	27.0	24.4	25.7
20	30.5	26.9	28.9	33.3	29.6	31.4	32.2	28.0	30.0	27.0	24.9	26.0
21	30.7	27.4	29.2	33.4	29.9	31.7	32.1	28.8	30.5	26.9	24.2	25.6
22	30.0	26.2	28.3	33.4	29.7	31.6	31.6	28.5	30.2	27.2	24.5	25.9
23	29.2	25.9	27.6	33.2	29.7	31.6	31.6	28.5	30.1	27.0	24.7	26.0
24	29.6	25.3	27.5	33.0	29.9	31.6	32.0	28.6	30.4	25.7	21.4	22.9
25	30.5	26.3	28.4	33.0	29.8	31.5	31.8	28.2	30.2	22.3	19.2	20.8
26	30.2	26.7	28.5	32.9	29.8	31.5	31.4	28.0	28.9	21.7	18.8	20.5
27	29.8	27.3	28.6	33.0	29.8	31.4	29.6	26.8	28.1	22.2	19.2	20.9
28	30.2	27.2	28.7	33.2	29.8	31.6	30.2	27.2	28.7	22.4	19.9	21.4
29	29.2	26.2	27.6	33.5	30.4	31.9	29.6	27.0	28.3	22.6	19.9	21.6
30	30.2	26.4	28.3	33.1	29.8	31.6	29.0	27.1	28.1	22.2	19.6	21.2
31	---	---	---	32.9	29.6	31.3	28.7	26.5	27.6	---	---	---
MONTH	32.4	25.0	28.7	33.7	27.5	31.2	33.2	26.4	29.9	30.9	18.8	25.3

07312700 Wichita River near Charlie, TX--Continued



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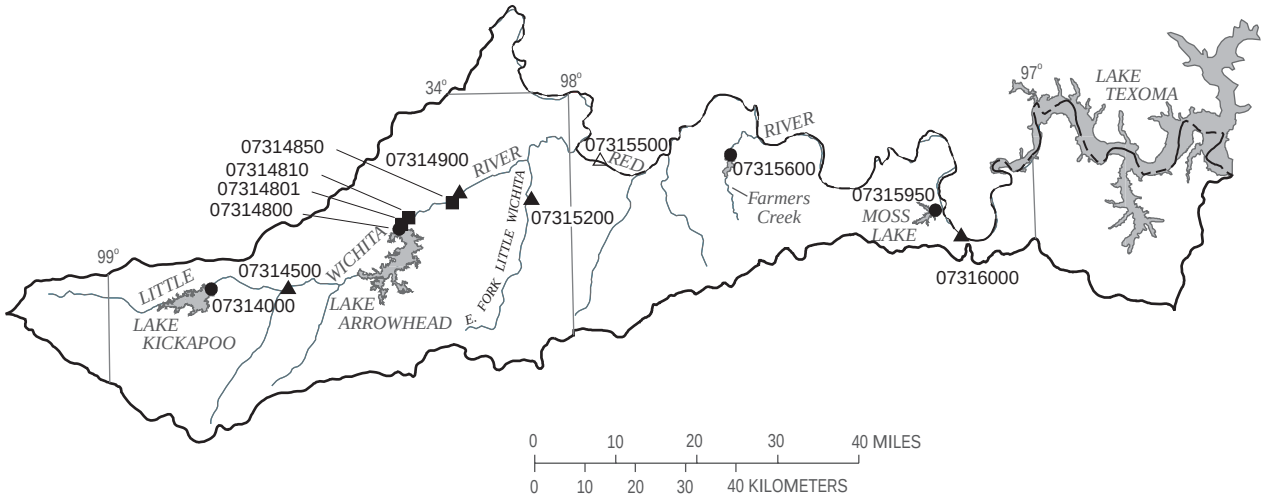


EXPLANATION

07315200	▲	**Surface-water continuous station and number**
07316000	△	**Surface-water continuous/water-quality station and number**
07314800	●	**Reservoir station and number**
07314801	■	**Surface-water partial record/stage only station and number**

Figure 6.--Map showing location of gaging stations in the third section of the Red River Basin

07314000 Lake Kickapoo near Archer City, TX 228
07314500 Little Wichita River near Archer City, TX 230
07314800 Lake Arrowhead near Henrietta, TX 232
07314801 Little Wichita River below Dam near Lake Arrowhead near Henrietta, TX 439
07314810 Little Wichita River at Halsell Ranch near Lake Arrowhead near Henrietta, TX 439
07314850 Little Wichita River at Priddy Ranch near Henrietta, TX 439
07314900 Little Wichita River above Henrietta, TX 234
07315200 East Fork Little Wichita River near Henrietta, TX 236
07315500 Red River near Terral, OK 238
07315600 Lake Nocona near Nocona, TX 242
07315950 Moss Lake near Gainesville, TX 244
07316000 Red River near Gainesville, TX 246

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 Sept. 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.--Records good. 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". Conservation pool storage is 106,000 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,062.00
Design flood (2-foot freeboard)	1,060.00
Crest of spillway (top of conservation pool)	1,045.00
Lowest gated outlet (invert)	1,000.92

COOPERATION.--Capacity curve 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 July 1950, 35,660 acre-ft, June 30, 1953, elevation, 1,029.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 102,500 acre-ft, May 6, elevation, 1,044.45 ft; minimum contents, 37,610 acre-ft, Oct. 19, elevation, 1,030.48 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

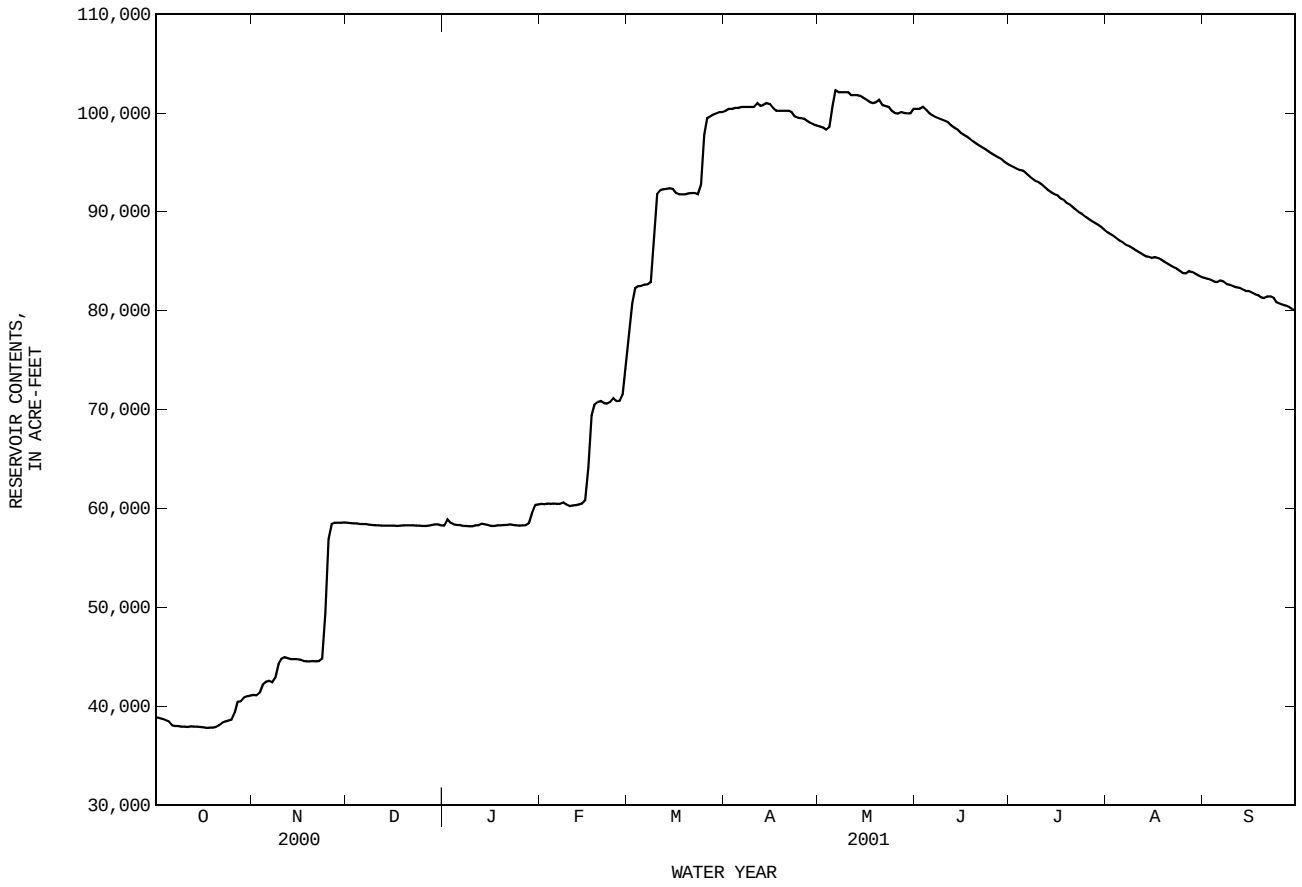
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38870	41120	58550	58240	60440	77730	100200	98640	100400	94640	87910	83320
2	38780	41100	58510	58860	60420	80720	100400	98530	100400	94490	87730	83210
3	38690	41360	58490	58540	60490	82250	100400	98310	100600	94330	87520	83100
4	38580	42180	58480	58370	60440	82470	100500	98570	100300	94220	87260	82940
5	38440	42460	58430	58330	60480	82510	100500	100700	99950	94160	87050	82900
6	38050	42560	58410	58330	60440	82620	100600	102300	99740	93880	86870	83040
7	38000	42390	58400	58230	60450	82660	100600	102100	99570	93580	86630	82960
8	37970	42890	58360	58220	60590	82870	100600	102100	99440	93320	86480	82710
9	37920	44280	58310	58200	60380	87630	100600	102100	99320	93080	86290	82590
10	37920	44790	58280	58180	60230	91790	100600	102100	99190	92950	86100	82480
11	37900	44960	58280	58280	60290	92180	101000	101800	99050	92730	85900	82370
12	37940	44840	58250	58300	60310	92280	100700	101800	98710	92460	85700	82300
13	37910	44760	58240	58440	60390	92320	100800	101800	98510	92190	85520	82160
14	37910	44740	58250	58380	60480	92380	101000	101700	98290	91970	85460	82000
15	37890	44740	58260	58320	60860	92320	100900	101500	97990	91770	85310	81970
16	37860	44680	58240	58220	64170	91890	100500	101300	97790	91620	85420	81810
17	37800	44550	58210	58210	69400	91780	100200	101100	97580	91320	85330	81670
18	37810	44540	e58240	58300	70490	91780	100200	101000	97370	91170	85160	81580
19	37810	44540	e58290	58290	70750	91760	100200	101100	97100	90860	84960	81350
20	37890	44550	e58290	58320	70850	91860	100200	101300	96880	90680	84760	81280
21	38060	44530	58300	58320	70640	91900	100200	100800	96700	90420	84580	81450
22	38320	44550	58290	58370	70590	91880	100100	100700	96490	90170	84380	81420
23	38440	44800	58250	58320	70760	91780	99640	100600	96300	89920	84250	81280
24	38530	49410	58240	58290	71140	92740	99500	100200	96080	89720	84030	80810
25	38630	56880	58230	58270	70850	97800	99470	100000	95880	89460	83800	80690
26	39340	58410	58220	58290	70890	99440	99390	99930	95680	89230	83780	80590
27	40450	58530	58260	58280	71480	99620	99180	100100	95500	89030	83990	80510
28	40470	58530	58330	58480	74780	99830	98990	100000	95320	88850	83890	80320
29	40870	58560	58380	59520	---	99970	98830	99960	95040	88650	83720	80140
30	41000	58570	58370	60320	---	100100	98710	99960	94830	88440	83530	79980
31	41060	---	58280	60380	---	100100	---	100400	---	88170	83380	---
MEAN	38620	46830	58320	58500	65120	90930	100200	100700	97870	91530	85380	81830
MAX	41060	58570	58550	60380	74780	100100	101000	102300	100600	94640	87910	83320
MIN	37800	41100	58210	58180	60230	77730	98710	98310	94830	88170	83380	79980
(+)	1031.57	1036.21	1036.14	1036.63	1039.67	1044.07	1043.84	1044.11	1043.21	1042.08	1041.25	1040.64
(@)	+2200	+17510	-290	+2100	+14400	+25320	-1390	+1690	-5570	-6660	-4790	-3400
(++)	525	335	211	248	64.2	109	812	1095	1308	2060	1486	1188

CAL YR 2000 MAX 58570 MIN 37800 (@) +5440 (++) 6649
WTR YR 2001 MAX 102300 MIN 37800 (@) +41120 (++) 9441

e Estimated

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

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 Sept. 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.--No estimated daily discharges. Records good. Since water year 1946, at least 10% of contributing drainage area has been regulated. Records furnished by the city of Wichita Falls show that 9,443 acre-ft was diverted from Lake Kickapoo for municipal use and wholesale customers during the current year. No flow at times.

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 June 1930 reached a stage of about 28 ft, from information by Texas Department of Transportation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	4.3	.86	3.7	12	1320	5.0	.27	96	.00	.00	.39
2	.00	4.0	.60	2.0	4.4	1180	3.7	.19	15	.00	.00	.32
3	.00	20	.50	1.2	2.5	670	2.9	.09	2.7	.00	.00	.24
4	.00	74	.39	.89	1.5	82	2.4	.26	1.1	.00	.00	.15
5	.00	29	.35	.70	1.1	19	1.9	60	.63	.00	.00	.53
6	.00	217	.30	.61	.83	9.2	1.7	132	.48	.00	.00	.29
7	.00	73	.27	.52	.70	5.4	1.4	59	.41	.00	.00	1.0
8	.00	120	.25	.44	.59	18	1.1	219	.29	.00	.00	2.2
9	.00	478	.26	.39	.64	574	.81	7.0	.18	.00	.00	2.4
10	.00	106	.23	.74	.52	986	.64	2.0	.08	.00	.00	13
11	.00	20	.13	2.7	1.4	378	2.2	.83	.08	.00	.00	6.4
12	.00	5.9	.09	6.1	1.9	37	8.2	.56	.10	.00	.00	2.3
13	.00	2.8	.27	5.9	1.2	18	11	.48	.11	.00	.00	1.6
14	.00	1.7	.30	3.2	1.1	9.9	3.8	.39	.18	.00	.00	1.2
15	.00	1.0	.35	1.9	155	6.0	2.4	.32	.20	.00	.00	1.1
16	.00	.72	.43	1.2	1220	4.1	1.7	.24	.14	.00	.00	1.1
17	.00	.58	.30	3.2	2480	3.2	1.1	.08	.09	.00	.00	.99
18	.00	.62	.27	9.2	1500	2.6	.91	.15	.07	.00	.00	.78
19	.00	.51	.25	13	155	2.0	.81	.87	.04	.00	.00	.55
20	.00	.46	.20	5.3	20	1.7	.67	21	.02	.00	.77	.14
21	.00	.37	.15	3.0	12	1.5	.56	17	.00	.00	1.5	.04
22	16	.34	.12	1.7	7.4	1.3	.44	2.7	.00	.00	1.0	11
23	20	11	.18	.99	5.5	.99	.34	.71	.00	.00	.94	3.7
24	15	784	.22	.71	6.2	177	.27	.37	.00	.00	.89	.79
25	61	1400	.19	.58	9.4	748	.25	.25	.00	.00	.78	.47
26	60	1140	1.5	.49	9.2	622	.30	.12	.00	.00	.83	.42
27	53	92	2.2	1.0	296	78	.29	.09	.00	.00	1.1	.29
28	10	6.5	5.9	39	1200	16	.30	.29	.00	.00	.66	.28
29	190	3.9	23	402	---	13	.31	2.5	.00	.00	.52	.23
30	116	1.6	32	505	---	12	.26	2.3	.00	.00	.52	.21
31	14	---	7.8	70	---	7.7	---	5.5	---	.00	.38	---
TOTAL	555.00	4599.30	79.86	1087.36	7106.08	7003.59	57.66	536.56	117.90	0.00	9.89	54.11
MEAN	17.9	153	2.58	35.1	254	226	1.92	17.3	3.93	.000	.32	1.80
MAX	190	1400	32	505	2480	1320	11	219	96	.00	1.5	13
MIN	.00	.34	.09	.39	.52	.99	.25	.08	.00	.00	.00	.04
AC-FT	1100	9120	158	2160	14090	13890	114	1060	234	.00	20	107

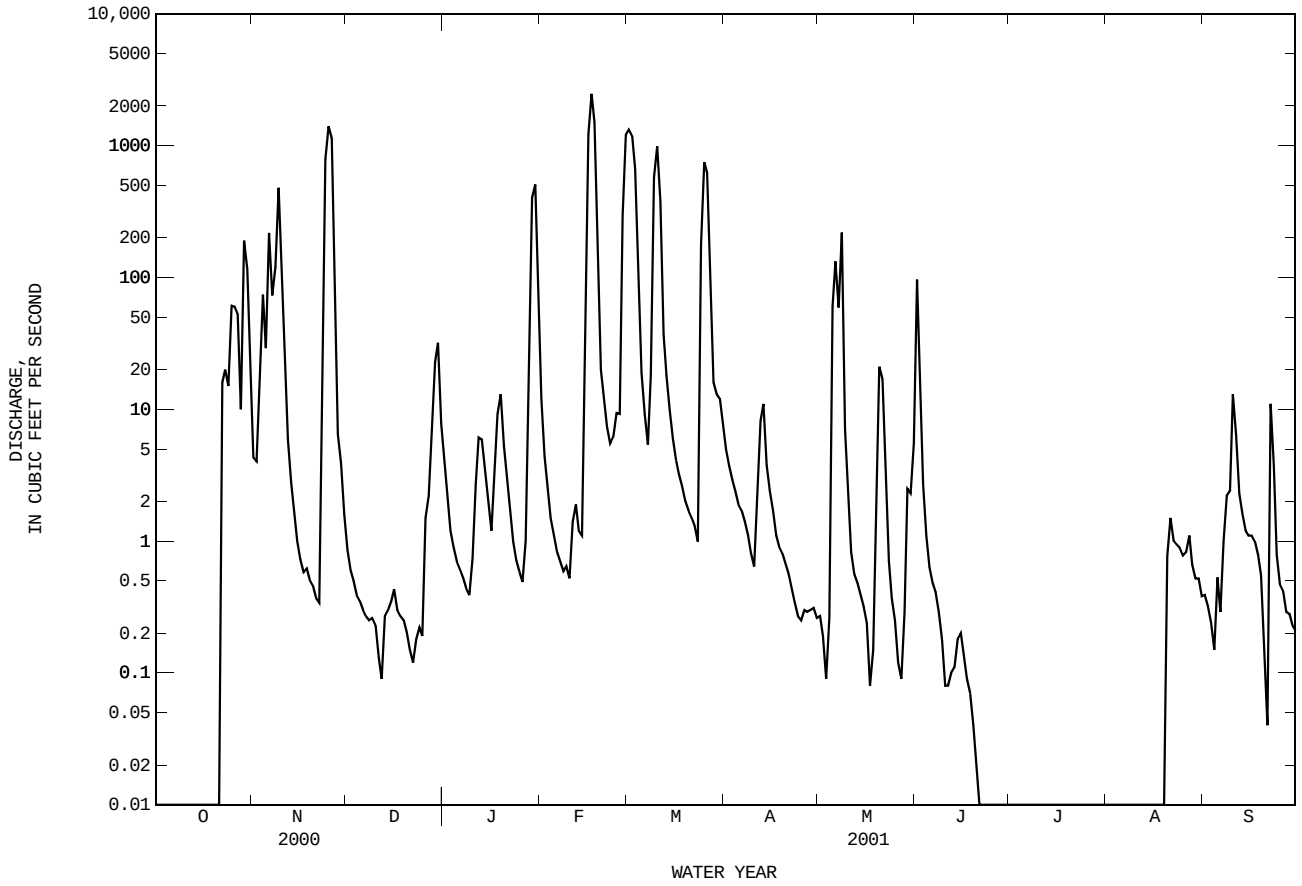
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2001hz, BY WATER YEAR (WY)

MEAN	52.1	18.1	20.8	14.2	28.0	47.1	37.8	147	110	22.0	42.1	61.5
MAX	771	160	194	154	254	309	637	1224	944	282	1337	624
(WY)	1982	1987	1992	1990	2001	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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1946 - 2001hz	
ANNUAL TOTAL	7399.32		21207.31			
ANNUAL MEAN	20.2		58.1		49.7	
HIGHEST ANNUAL MEAN					252	1990
LOWEST ANNUAL MEAN					2.27	1996
HIGHEST DAILY MEAN	1400	Nov 25	2480	Feb 17	9550	Aug 2 1950
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 31 1945
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 31 1945
MAXIMUM PEAK FLOW			2860	Feb 17	20100	May 16 1989
MAXIMUM PEAK STAGE			24.32	Feb 17	27.03	May 16 1989
ANNUAL RUNOFF (AC-FT)	14680		42060		36000	
10 PERCENT EXCEEDS	13		65		56	
50 PERCENT EXCEEDS	.38		.67		.30	
90 PERCENT EXCEEDS	.00		.00		.00	

h See PERIOD OF RECORD paragraph.
z Period of regulated streamflow.



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.--June 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.40 ft below sea level. Satellite telemeter at station.

REMARKS.--Records fair. 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 June 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. Conservation pool storage is 262,100 acre-ft. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam	944.40
Design flood	939.95
Crest of spillway (top of conservation pool)	926.40
Lowest gated outlet (invert)	874.10

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, 203,500 acre-ft, Apr. 1, 6, elevation, 922.47 ft; minimum contents, 89,260 acre-ft, Oct. 12, elevation, 911.67 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

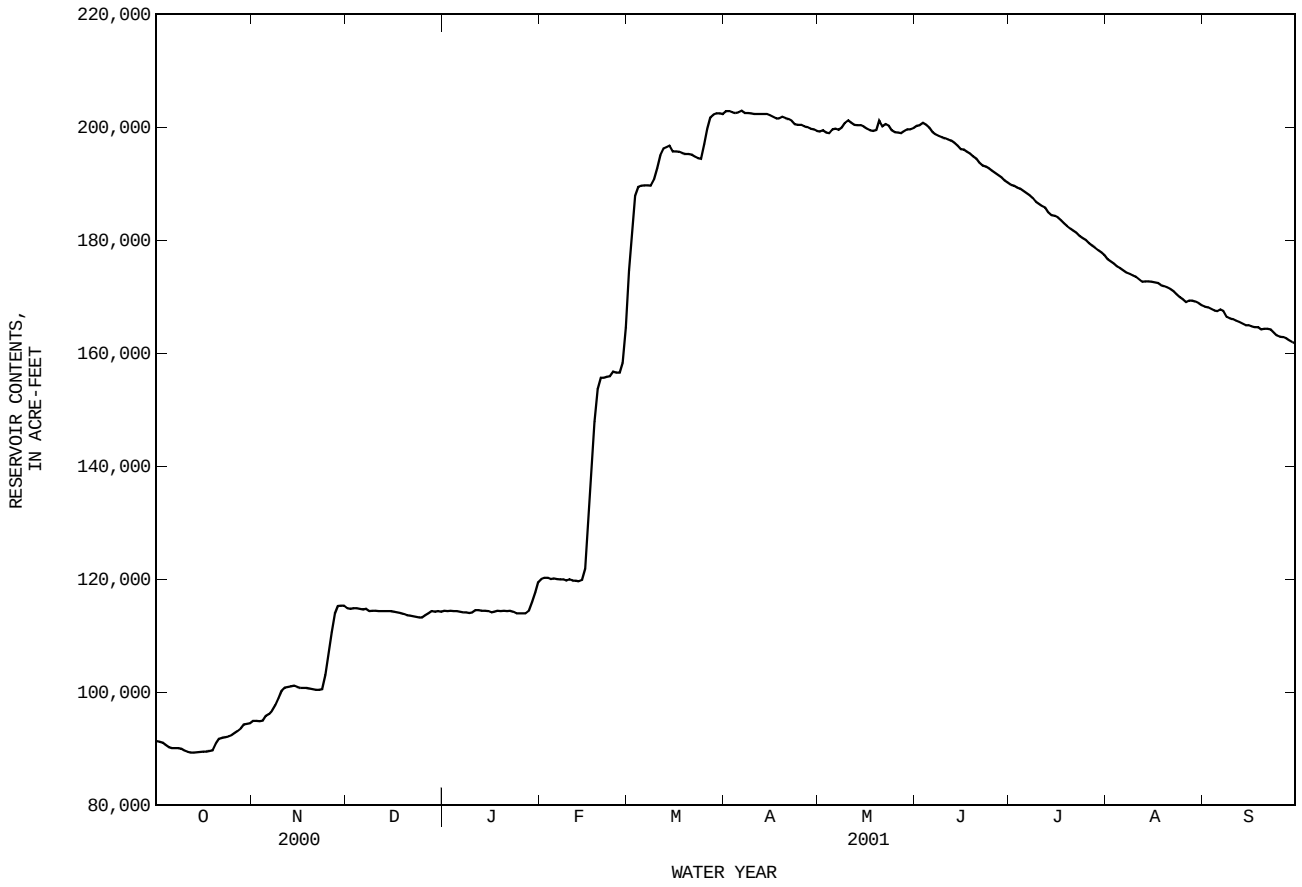
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91300	94880	114800	114400	120000	174600	202800	199200	200200	189800	176600	168200
2	91200	94910	114700	114300	120200	181600	202800	199400	200300	189600	176200	168100
3	91020	94840	114800	114400	120200	187800	202600	199000	200700	189300	175800	167800
4	90620	94920	114800	114300	120000	189400	202500	198900	200400	189100	175300	167500
5	90250	e95720	114700	114300	120100	189600	202600	199600	199900	188700	175000	167400
6	90050	e96100	114600	114200	120000	189700	202900	199700	199100	188300	174600	167700
7	90060	96700	114700	114100	119900	189700	202500	199500	198700	187900	174200	167400
8	90060	97660	114300	114100	119900	189600	202500	199900	198400	187400	174000	166400
9	89970	98910	114400	114000	119700	190700	202400	200700	198200	186800	173700	166100
10	89610	100200	114400	114100	119900	192700	202300	201200	198000	186400	173500	166000
11	89360	100800	114300	114500	119700	195000	202300	200800	197800	186000	173100	165700
12	89300	100900	114300	114500	119700	196200	202300	200400	197600	185700	172600	165500
13	89300	101000	114300	114400	119600	196400	202300	200300	197200	184900	172700	165200
14	89320	101100	114300	114400	119800	196700	202300	200300	196700	184400	172700	164900
15	89380	100900	114300	114300	121800	195700	202100	200100	196100	184300	172600	164900
16	89450	100700	114200	114100	129800	195700	201800	199700	196000	184000	172500	164700
17	89450	100700	114100	114200	140300	195600	201500	199400	195600	183500	172400	164600
18	89530	100700	114000	114400	147800	195400	201500	199300	195300	183000	172000	164600
19	89650	100600	113800	114300	153600	195200	201800	199500	194800	182500	171800	164200
20	90850	100500	113600	114400	155600	195200	201600	201200	194400	182000	171600	164300
21	91690	100400	113500	114300	155600	195100	201400	200100	193700	181600	171300	164300
22	91900	100400	113400	114400	155800	194800	201100	200500	193200	181300	170900	164200
23	92000	100500	113300	114200	155900	194500	200500	200200	193000	180700	170400	163600
24	92110	103000	113200	113900	156700	194400	200400	199400	192700	180300	169900	163100
25	92360	106700	113200	113900	156500	197000	200400	199100	192300	180000	169500	162900
26	92750	110600	e113600	113900	156500	199600	200100	199000	191900	179400	169000	162800
27	93090	113900	e113900	113900	158200	201700	200000	198900	191500	179000	169300	162600
28	93550	115200	114300	114400	164500	202200	199700	199300	191100	178600	169300	162200
29	94260	115300	114200	115900	---	202400	199600	199600	190500	178200	169100	161900
30	94350	115300	114300	117600	---	202400	199300	199600	190200	177800	168800	161600
31	94500	---	114200	119400	---	202300	---	199800	---	177300	168400	---
MEAN	91040	101800	114100	114600	135300	194200	201600	199800	195800	183800	172200	165000
MAX	94500	115300	114800	119400	164500	202400	202900	201200	200700	189800	176600	168200
MIN	89300	94840	113200	113900	119600	174600	199300	198900	190200	177300	168400	161600
(+)	912.34	914.76	914.65	915.20	919.44	922.39	922.17	922.21	921.49	920.48	919.76	919.19
(@)	+3120	+20800	-1100	+5200	+45100	+37800	-3000	+500	-9600	-12900	-8900	-6800
(++)	1351	1180	422	1279	1236	1373	556	8223	1329	2143	1523	909

CAL YR 2000 MAX 132900 MIN 89300 (@) -18000 (++) 18692
WTR YR 2001 MAX 202900 MIN 89300 (@) +70220 (++) 22123

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.

PERIOD OF RECORD.--Jan. 1953 to current year. Prior to Oct. 1974, published as "near Henrietta".
Water-quality records.--Chemical data: Dec. 1952 to Jan. 1956, Nov. 1959 to Sept. 1966, Jan. 1968 to Sept. 1985. Dissolved oxygen: Aug. 1999 to Sept. 1999.

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 June 26, 1953, nonrecording gage at site 2.6 mi downstream at same datum. Prior to July 11, 1975, at site 2.6 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records poor. Since water year 1967, at least 10% of contributing drainage area has been regulated. The city returned 14,819 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 625 acre-ft from pool at gage for municipal use. Records of diversions were furnished by the cities of Wichita Falls and Henrietta. No flow at times.

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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	9.9	e14	69	1270	.00	.00	.00	.00	.00	.00
2	.00	.00	7.3	e10	36	732	.00	.00	.00	.00	.00	.00
3	.00	13	5.8	e7.0	23	295	.00	.00	.00	.00	.00	.00
4	.00	35	5.1	e5.0	15	119	.00	.00	.00	.00	.00	.00
5	.00	68	4.6	e3.0	11	61	.00	.00	.00	.00	.00	.00
6	.00	123	3.5	e1.0	8.2	40	.00	.00	.00	.00	.00	.00
7	.00	33	.00	e.20	6.4	28	.00	.00	.00	.00	.00	.00
8	.00	92	.00	.00	5.7	24	.00	.00	.00	.00	.00	.00
9	.00	151	.00	.00	6.0	103	.00	.00	.00	.00	.00	.00
10	.00	83	.00	.00	5.7	138	.00	.00	.00	.00	.00	.00
11	.00	35	.00	11	5.0	97	.00	.00	.00	.00	.00	.00
12	.00	19	.00	19	5.0	72	.00	.00	.00	.00	.00	.00
13	.00	13	.00	14	4.9	42	.00	.00	.00	.00	.00	.00
14	.00	10	.00	9.5	52	27	.00	.00	.00	.00	.00	.00
15	.00	7.5	.00	6.7	1040	19	.00	.00	.00	.00	.00	.00
16	.00	6.9	.00	6.0	2180	14	.00	.00	.00	.00	.00	.00
17	.00	6.1	.00	7.4	2240	11	.00	.00	.00	.00	.00	.00
18	.00	5.2	.00	9.5	1250	9.0	.00	.00	.00	.00	.00	.00
19	.00	4.4	.00	7.6	148	7.1	.00	.00	.00	.00	.00	.00
20	.00	4.1	.00	5.9	60	5.7	.00	.00	.00	.00	.00	.00
21	.25	3.1	.00	4.4	36	4.8	.00	.00	.00	.00	.00	.00
22	.17	3.1	.00	3.4	26	4.0	.00	.00	.00	.00	.00	.00
23	.00	11	.00	3.1	21	3.3	.00	.00	.00	.00	.00	.00
24	.00	490	.00	2.8	46	2.4	.00	.00	.00	.00	.00	.00
25	.00	714	.00	2.4	37	.00	.00	.00	.00	.00	.00	.00
26	.00	331	4.0	2.3	25	.00	.00	.00	.00	.00	.00	.00
27	.00	74	38	3.4	249	.00	.00	.00	.00	.00	.00	.00
28	.59	35	27	36	942	.00	.00	.00	.00	.00	.00	.00
29	22	20	46	455	---	.00	.00	.00	.00	.00	.00	.00
30	3.7	13	35	475	---	.00	.00	.00	.00	.00	.00	.00
31	.19	---	18	215	---	.00	---	.00	---	.00	.00	---
TOTAL	26.90	2403.40	204.20	1339.60	8552.9	3128.30	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.87	80.1	6.59	43.2	305	101	.000	.000	.000	.000	.000	.000
MAX	22	714	46	475	2240	1270	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	4.9	.00	.00	.00	.00	.00	.00	.00
AC-FT	53	4770	405	2660	16960	6200	.00	.00	.00	.00	.00	.00

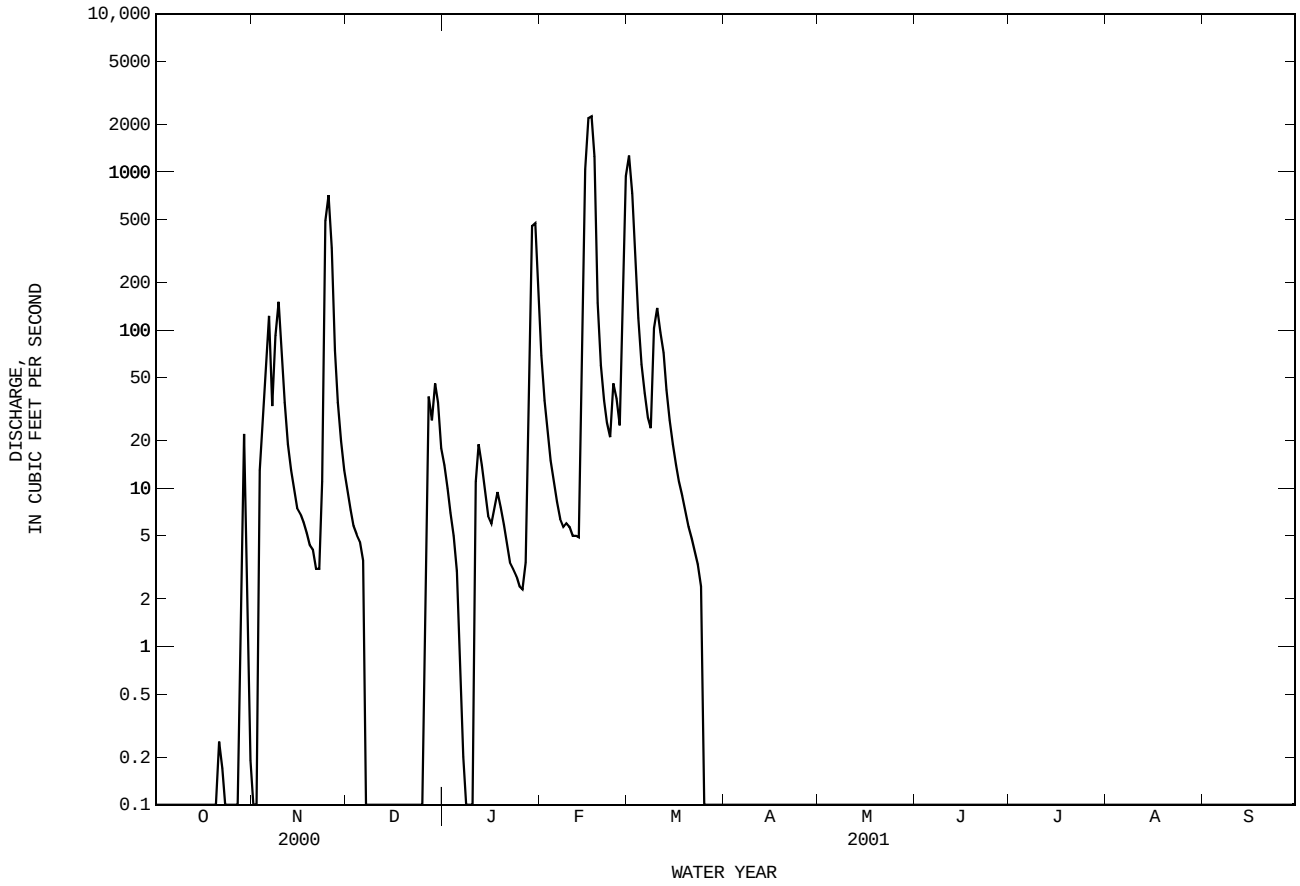
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2001z, BY WATER YEAR (WY)

MEAN	26.5	14.6	21.9	15.4	38.1	84.9	78.5	201	187	27.7	4.98	46.4
MAX	329	141	251	131	305	937	2169	2272	1652	549	76.6	549
(WY)	1982	1987	1992	1992	2001	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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1967 - 2001z	
ANNUAL TOTAL	2793.38		15655.30			
ANNUAL MEAN	7.63		42.9		62.2	
HIGHEST ANNUAL MEAN					498	1990
LOWEST ANNUAL MEAN					.84	2000
HIGHEST DAILY MEAN	714	Nov 25	2240	Feb 17	10500	May 3 1990
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 16 1966
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 19 1966
MAXIMUM PEAK FLOW			2490	Feb 16	14200	May 3 1990
MAXIMUM PEAK STAGE			22.58	Feb 16	24.96	May 3 1990
ANNUAL RUNOFF (AC-FT)	5540		31050		45050	
10 PERCENT EXCEEDS	8.4		37		42	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
z Period of regulated streamflow.



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. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Oct. 1941 reached a stage of 28.8 ft, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.6	2.2	7.8	19	2260	15	1.1	e.87	.02	.00	.00
2	.00	1.4	1.8	6.8	9.2	1380	11	1.0	e.56	.02	.00	.00
3	.00	5.2	1.6	4.9	5.7	208	9.5	.99	e.39	.03	.00	.00
4	.00	36	1.5	2.7	3.8	66	8.5	1.1	e.31	.03	.00	.00
5	.00	31	1.5	2.3	3.0	33	7.6	1.0	.27	.03	.00	.00
6	.00	157	1.5	2.0	2.4	20	6.9	.96	.22	.02	.00	.00
7	.00	62	1.4	1.8	2.1	15	6.5	.95	.17	.02	.00	.00
8	.00	41	1.4	1.6	1.9	14	6.1	1.1	.14	.01	.00	.00
9	.00	111	1.4	1.5	1.8	70	5.6	3.6	.13	.01	.00	.00
10	.00	59	1.4	1.5	3.1	79	5.1	3.1	.11	.01	.00	.00
11	.00	14	1.4	2.6	3.9	38	5.2	e1.7	.07	.01	.00	.00
12	.00	4.0	1.3	11	2.8	199	4.9	e1.3	.03	.01	.00	.00
13	.00	1.9	1.3	6.8	2.2	133	4.8	e1.1	.02	.00	.00	.00
14	.00	1.1	1.4	3.9	2.0	29	4.5	e.91	.01	.00	.00	.00
15	.00	.89	1.5	2.6	72	17	4.7	e.76	.00	.00	.00	.00
16	.00	.73	1.5	2.2	2120	12	4.2	e.65	.00	.00	.00	.00
17	.00	.64	1.5	2.7	2430	8.9	3.8	e.60	.00	.00	.00	.00
18	.00	.57	1.4	23	703	7.6	3.4	e.58	.00	.00	.00	.00
19	.00	.49	1.4	14	52	6.8	2.9	e.56	.00	.00	.00	.00
20	.00	.42	1.4	8.4	26	6.5	2.7	e.62	.00	.00	.00	.00
21	5.0	.36	1.3	4.6	19	6.4	2.5	e1.0	.00	.00	.00	.00
22	3.9	.36	1.3	2.9	19	6.2	2.2	e1.9	.00	.00	.00	.00
23	2.6	1.4	1.3	2.2	19	6.0	2.2	e3.1	.00	.00	.00	.00
24	1.5	725	1.3	1.9	51	9.8	2.4	e1.3	.00	.00	.00	.00
25	1.1	1060	1.3	1.7	73	424	2.3	e.88	.00	.00	.00	.00
26	.92	284	146	1.5	46	265	2.1	e.76	.00	.00	.00	.00
27	.92	16	642	1.5	569	38	2.0	e1.3	.00	.00	.00	.00
28	.87	7.5	237	4.8	2480	25	1.7	e6.1	.01	.00	.00	.00
29	60	4.3	50	439	---	32	1.4	e5.4	.01	.00	.00	.00
30	54	3.0	26	621	---	30	1.2	e2.9	.02	.00	.00	.00
31	7.4	---	13	85	---	20	---	e1.4	---	.00	.00	---
TOTAL	138.21	2632.86	1150.3	1276.2	8741.9	5465.2	142.9	49.72	3.34	0.22	0.00	0.00
MEAN	4.46	87.8	37.1	41.2	312	176	4.76	1.60	.11	.007	.000	.000
MAX	60	1060	642	621	2480	2260	15	6.1	.87	.03	.00	.00
MIN	.00	.36	1.3	1.5	1.8	6.0	1.2	.56	.00	.00	.00	.00
AC-FT	274	5220	2280	2530	17340	10840	283	99	6.6	.4	.00	.00

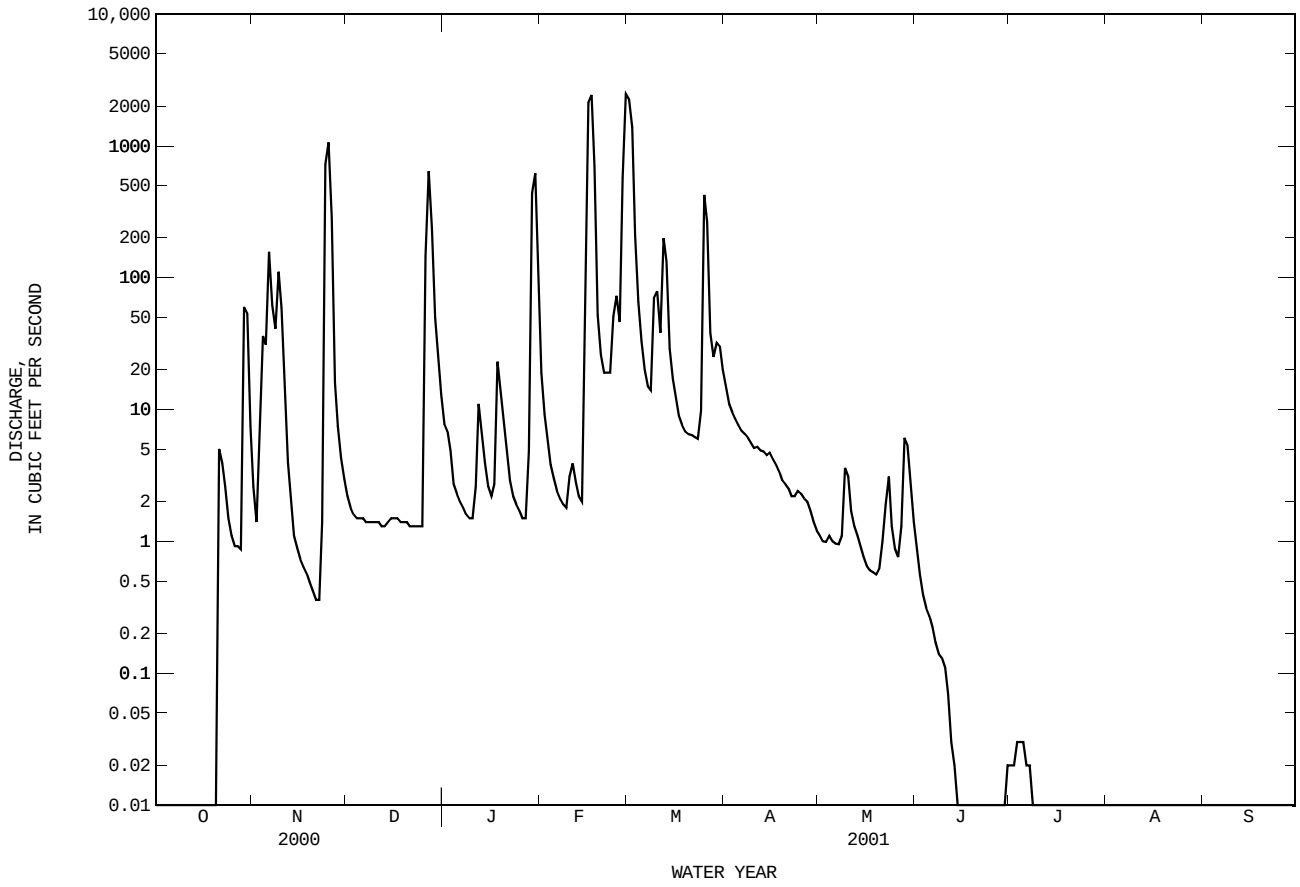
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2001, BY WATER YEAR (WY)

MEAN	34.3	13.6	20.6	12.4	34.3	52.8	38.6	102	60.8	5.67	5.12	11.6
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1964 - 2001	
ANNUAL TOTAL	4384.62		19600.85			
ANNUAL MEAN	12.0		53.7		33.3	
HIGHEST ANNUAL MEAN					128	1982
LOWEST ANNUAL MEAN					.44	1996
HIGHEST DAILY MEAN	1060	Nov 25	2480	Feb 28	16900	Oct 13 1981
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Dec 1 1963
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Dec 1 1963
MAXIMUM PEAK FLOW			24	Feb 17	32500	Oct 13 1981
MAXIMUM PEAK STAGE			23.79	Feb 17	31.70	Oct 13 1981
ANNUAL RUNOFF (AC-FT)	8700		38880		24130	
10 PERCENT EXCEEDS	2.6		43		18	
50 PERCENT EXCEEDS	.00		1.3		.13	
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.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft above sea level. Prior to Jan. 12, 1939, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for daily discharges from Oct 26 to May 10, which are poor. Since installation of gage in Apr. 1938, at least 10% of contributing drainage area has been regulated. There are many small diversions upstream from station for irrigation, oil field operations, and for municipal uses.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	6520	4210	2820	6270	13900	1550	578	8680	528	301	884
2	103	5420	3910	2680	5080	13200	1660	587	14100	526	282	672
3	99	5430	3720	2380	4180	10100	1740	603	8710	510	263	560
4	101	17300	3550	2180	3600	6240	1820	640	6980	528	271	493
5	124	12600	3380	2040	3280	4700	1890	1080	7520	534	281	454
6	122	9820	3120	2040	2990	3970	2050	16200	7390	503	270	421
7	98	5810	2950	2480	2880	3470	2050	12800	5940	473	257	425
8	93	4540	2740	2930	2710	3100	1870	11100	5020	452	257	437
9	90	7260	2500	2870	2660	3300	1820	8930	3820	427	252	605
10	95	11200	2410	2910	3060	4260	1860	5080	2550	410	252	964
11	92	7780	2320	2930	3710	6170	2060	3670	2170	392	258	934
12	80	5750	2270	2990	4130	6190	2030	2950	2010	363	275	675
13	84	4610	2250	3460	3860	6630	3120	2340	1740	359	305	556
14	85	3750	2180	3720	3710	5610	2760	1920	1430	358	309	475
15	104	3010	2210	3250	5430	4780	2090	1700	1310	351	327	426
16	142	2300	2220	2920	11400	e4320	1650	1520	1190	336	427	400
17	138	2070	2110	2740	9570	e3980	1160	1240	1020	332	451	442
18	146	2170	2270	2620	7130	e3640	916	1100	940	337	495	465
19	187	2110	2390	2670	6460	e3300	791	1200	880	344	583	530
20	333	2090	2310	2630	6090	e3960	706	1630	821	341	684	607
21	516	2060	2120	2590	5520	e2700	672	12300	759	334	558	674
22	671	2070	1880	2460	4880	e2600	664	18500	704	322	491	727
23	856	1870	1670	2390	4580	e2460	627	13300	661	317	510	720
24	7090	5080	1550	2290	4690	1800	589	8540	642	317	494	583
25	8480	11400	1500	2210	5450	1210	571	7190	617	304	463	469
26	e25700	7780	1650	2070	8920	1510	555	6860	594	307	401	424
27	e57800	5920	2180	1910	16200	1230	538	7130	573	307	430	370
28	37800	6730	2910	1910	11200	1100	537	7820	568	306	399	315
29	18400	6040	2520	3720	---	1170	565	6610	548	309	549	273
30	13900	4970	2680	7290	---	1290	575	4720	541	304	594	246
31	7610	---	2600	7440	---	1290	---	5030	---	304	869	---
TOTAL	181261	175460	78280	91540	159640	133180	41486	174868	90428	11835	12558	16226
MEAN	5847	5849	2525	2953	5701	4296	1383	5641	3014	382	405	541
MAX	57800	17300	4210	7440	16200	13900	3120	18500	14100	534	869	964
MIN	80	1870	1500	1910	2660	1100	537	578	541	304	252	246
AC-FT	359500	348000	155300	181600	316600	264200	82290	346900	179400	23470	24910	32180

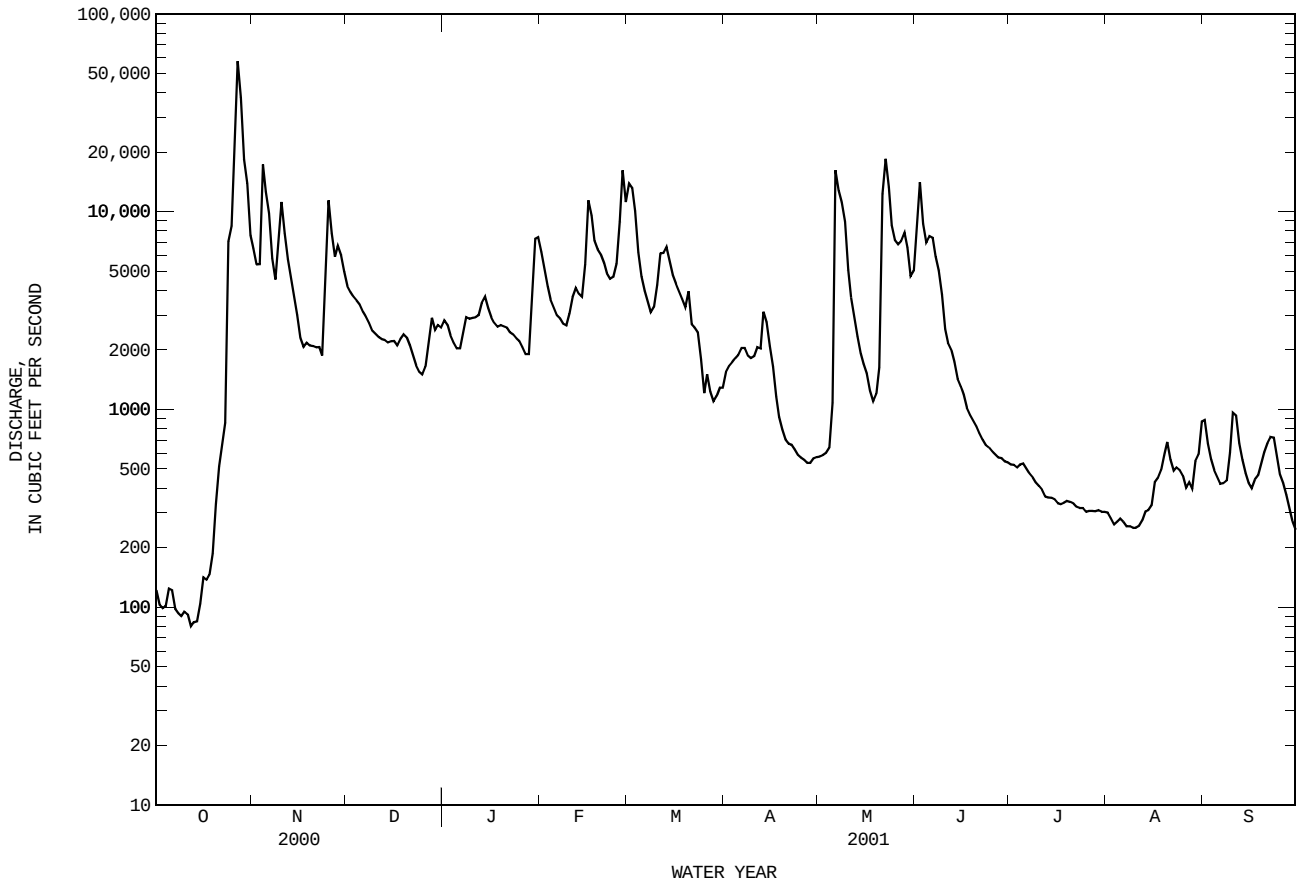
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2001, BY WATER YEAR (WY)

MEAN	3003	1558	1152	971	1422	2076	2607	6526	6200	1650	1320	1988
MAX	23900	9713	11810	5306	9320	14710	18080	43580	37460	8077	14730	9653
(WY)	1987	1987	1992	1992	1987	1998	1990	1957	1941	1950	1995	1986
MIN	108	102	91.2	76.5	136	66.1	142	134	517	158	155	100
(WY)	1953	1940	1939	1940	1953	1940	1971	1971	1966	1964	1970	2000

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1938 - 2001	
ANNUAL TOTAL	726028		1166762			
ANNUAL MEAN	1984		3197		2538	
HIGHEST ANNUAL MEAN					8925	1987
LOWEST ANNUAL MEAN					523	1953
HIGHEST DAILY MEAN	57800	Oct 27	57800	Oct 27	215000	Jun 7 1995
LOWEST DAILY MEAN	54	Sep 25	80	Oct 12	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	59	Sep 22	88	Oct 8	47	Mar 18 1940
MAXIMUM PEAK FLOW			69800	Oct 27	236000	Jun 7 1995
MAXIMUM PEAK STAGE			19.81	Oct 27	33.60	Oct 22 1983
ANNUAL RUNOFF (AC-FT)	1440000		2314000		1839000	
10 PERCENT EXCEEDS	5000		7410		5640	
50 PERCENT EXCEEDS	535		1910		608	
90 PERCENT EXCEEDS	124		305		178	

e Estimated

07315500 Red River near Terral, OK--Continued



WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)
FEB									
08...	1230	2660	3390	7.0	12.2	10.6	104	32	20
APR									
19...	1520	778	4430	8.5	19.5	14.7	170	140	130
MAY									
23...	1100	13800	1220	7.7	20.6	8.1	92.7	1600	2000
AUG									
09...	1020	252	4900	7.6	32.5	8.8	127	13	9

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07315600 Lake Nacona near Nacona, 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.--94.0 mi^2.

PERIOD OF RECORD.--Mar. 1999 to current year.

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

REMARKS.--No estimated daily contents. Records good. 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 Nocona Area & Capacity Characteristics". Conservation pool storage is 25,400 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	847.00
Crest of spillway	827.00
Top of conservation pool	826.85
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 PERIOD OF RECORD.--Maximum contents, 29,540 acre-ft, Feb. 28, Mar. 1, 2001, elevation, 829.51 ft; minimum contents, 13,240 acre-ft, Oct. 5, 2000, elevation, 816.95 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,540 acre-ft, Feb. 28, Mar. 1, elevation, 829.51 ft; minimum contents, 13,240 acre-ft, Oct. 5, elevation, 816.95 ft.

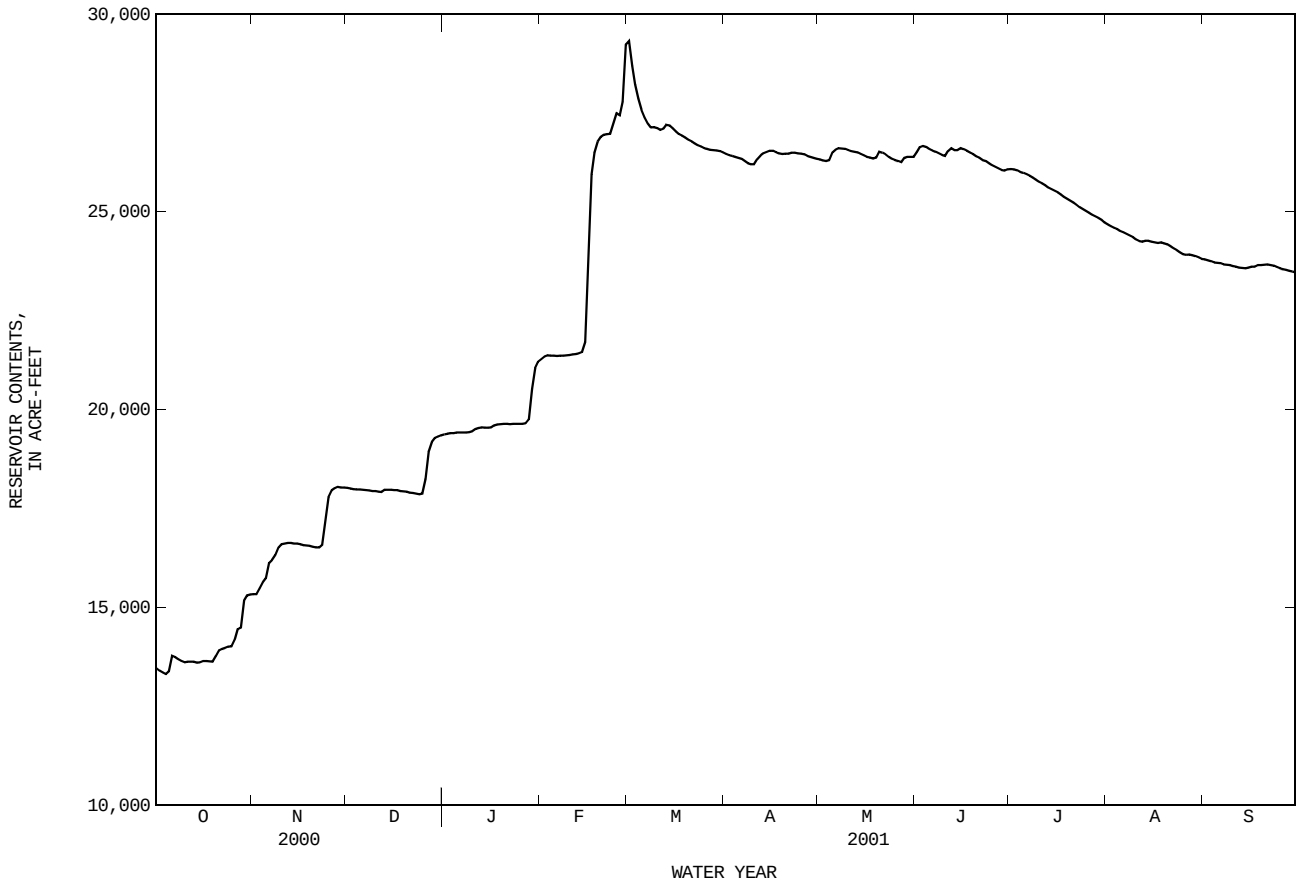
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13460	15330	18020	19370	21270	29320	26460	26320	26510	26080	24680	23800
2	13400	15330	18000	19390	21340	28690	26430	26300	26630	26070	24630	23770
3	13350	15480	17990	19400	21370	28220	26410	26280	26660	26050	24590	23750
4	13310	15630	17980	19400	21360	27860	26390	26310	26640	26010	24560	23720
5	13380	15730	17980	19420	21360	27580	26360	26500	26580	25980	24510	23710
6	13770	16120	17970	19420	21350	27380	26340	26570	26540	25950	24480	23700
7	13740	16200	17960	19420	21360	27230	26280	26610	26520	25910	24440	23670
8	13680	16320	17950	19420	21360	27130	26230	26600	26480	25860	24400	23660
9	13640	16510	17940	19430	21370	27140	26200	26590	26440	25810	24360	23650
10	13610	16590	17940	19450	21380	27120	26200	26560	26410	25760	24300	23630
11	13620	16610	17920	19510	21390	27070	26330	26530	26530	25720	24260	23610
12	13620	16630	17910	19530	21400	27100	26420	26520	26610	25670	24240	23590
13	13620	16630	17970	19550	21420	27200	26480	26500	26560	25610	24270	23580
14	13600	16610	17970	19540	21450	27180	26510	26460	26560	25570	24270	23570
15	13610	16610	17970	19540	21700	27110	26540	26430	26610	25530	24240	23590
16	13640	16590	17960	19550	24270	27030	26540	26390	26580	25490	24230	23610
17	13640	16570	17960	19600	25950	26960	26500	26370	26540	25430	24210	23610
18	13630	16560	17940	19620	26490	26920	26480	26350	26490	25380	24230	23650
19	13620	16550	17930	19630	26770	26870	26460	26370	26450	25330	24200	23650
20	13760	16530	17920	19640	26890	26820	26470	26520	26400	25280	24180	23660
21	13910	16510	17900	19640	26950	26780	26470	26490	26360	25230	24130	23670
22	13950	16510	17890	19630	26960	26730	26490	26450	26310	25180	24070	23650
23	13970	16580	17870	19640	26970	26680	26490	26390	26280	25120	24030	23640
24	14000	17190	17860	19640	27230	26650	26480	26340	26230	25070	23980	23600
25	14010	17780	17870	19640	27490	26610	26470	26310	26180	25020	23930	23570
26	14180	17950	18240	19640	27440	26590	26450	26280	26140	24970	23910	23550
27	14440	18010	18930	19650	27780	26570	26410	26250	26100	24920	23920	23530
28	14480	18040	19180	19750	29230	26560	26390	26360	26060	24880	23900	23510
29	15160	18030	19280	20520	---	26550	26360	26390	26040	24840	23880	23490
30	15300	18030	19310	21050	---	26530	26340	26390	26070	24790	23850	23470
31	15320	---	19350	21210	---	26500	---	26390	---	24730	23810	---
MEAN	13880	16660	18160	19670	23980	27120	26410	26420	26420	25460	24220	23630
MAX	15320	18040	19350	21210	29230	29320	26540	26610	26660	26080	24680	23800
MIN	13310	15330	17860	19370	21270	26500	26200	26250	26040	24730	23810	23470
(+)	819.04	821.40	822.45	823.95	829.31	827.55	827.46	827.49	827.23	826.42	825.83	825.61
(@)	+1820	+2710	+1320	+1860	+8020	-2730	-160	+50	-320	-1340	-920	-340
(++)	38	30	31	31	26	30	32	40	56	86	76	44

CAL YR 2000 MAX 19350 MIN 13310 (@) +1360 (++) 517
WTR YR 2001 MAX 29320 MIN 13310 (@) 9970 (++) 520

(+) Gage height, 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 Nacona near Nacona, TX--Continued



07315950 Moss Lake near Gainesville, TX

LOCATION.--Lat 33°46'26", long 97°12'50", Cooke County, Hydrologic Unit 11130201, on upstream side of dam 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 10.0 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 Sept. 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.--No estimated daily contents. 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. Conservation pool storage is 24,155 acre-ft. 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

COOPERATION.--Capacity Table No. 1, prepared by Freese, Nichols, and Endress, Consulting Engineers, Fort Worth, for the city of Gainesville, was replaced by Capacity Table No. 2. Table No. 2 was furnished by the Texas Water Development Board, and put into effect Oct. 27, 1999.

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, 28,180 acre-ft, Feb. 27, elevation, 718.93 ft; minimum contents, 19,440 acre-ft, Oct. 14, 19, elevation, 710.38 ft.

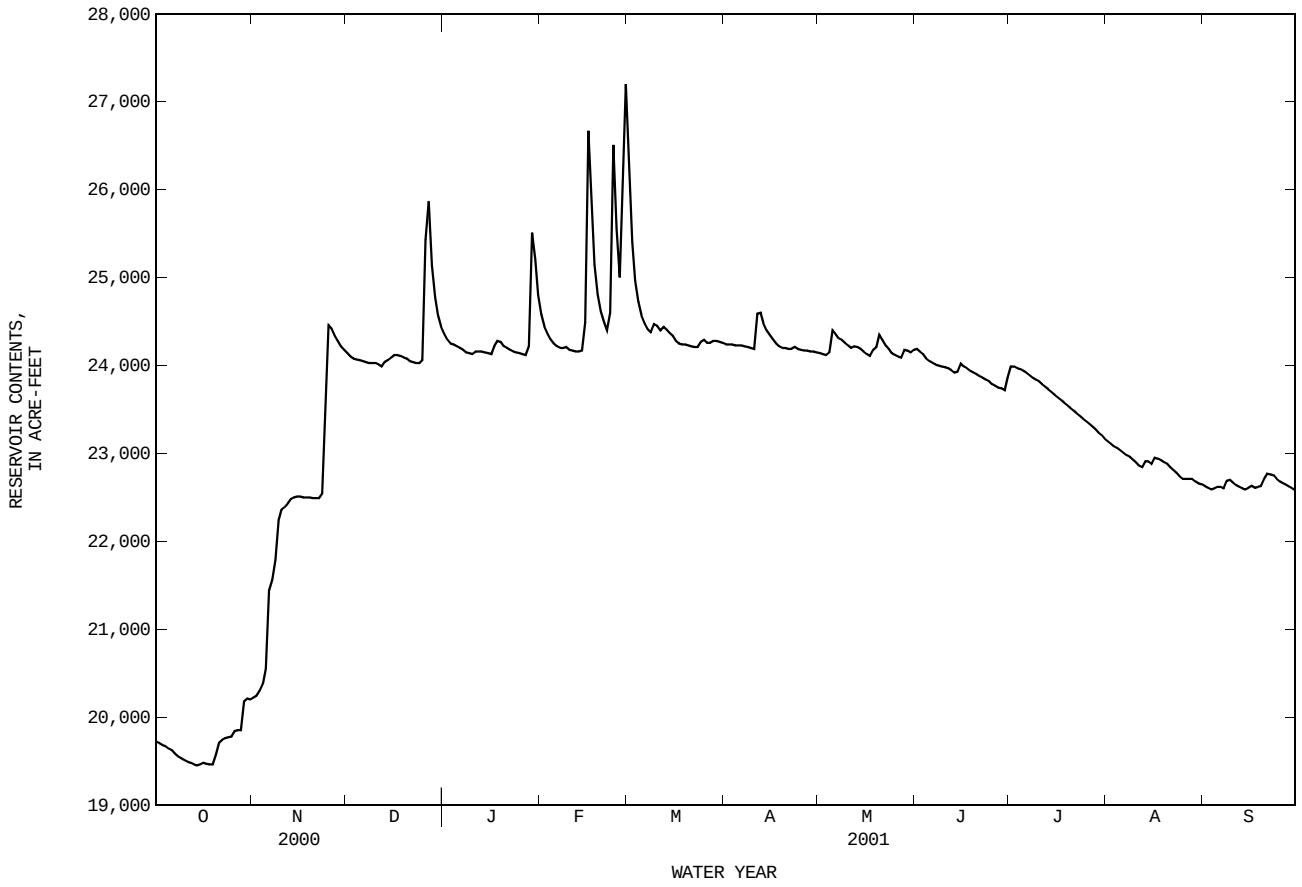
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19720	20220	24140	24360	24580	26340	24240	24140	24190	23990	23140	22630
2	19700	20240	24100	24290	24440	25410	24240	24130	24160	23990	23110	22610
3	19680	20300	24080	24250	24360	24970	24240	24120	24130	23970	23080	22590
4	19670	20380	24070	24240	24300	24730	24230	24150	24080	23960	23060	22600
5	19640	20550	24060	24220	24250	24570	24230	24400	24050	23940	23040	22620
6	19620	21440	24050	24200	24220	24480	24230	24360	24030	23920	23010	22620
7	19580	21560	24040	24180	24200	24410	24220	24310	24010	23890	22980	22600
8	19550	21790	24030	24150	24200	24380	24210	24290	24000	23860	22960	22690
9	19530	22240	24030	24140	24210	24470	24200	24260	23990	23840	22930	22700
10	19510	22360	24030	24130	24180	24450	24190	24230	23980	23820	22900	22670
11	19490	22390	24010	24160	24170	24400	24590	24200	23970	23790	22860	22640
12	19480	22430	23990	24160	24160	24440	24600	24220	23950	23760	22840	22620
13	19460	22480	24040	24160	24160	24410	24480	24210	23920	23730	22910	22600
14	19450	22500	24060	24150	24170	24370	24400	24190	23930	23700	22910	22590
15	19460	22510	24090	24140	24490	24340	24350	24160	24020	23670	22880	22610
16	19480	22510	24120	24130	26670	24280	24300	24130	23990	23640	22950	22630
17	19470	22500	24120	24220	25880	24250	24250	24110	23970	23610	22940	22610
18	19460	22500	24110	24280	25150	24240	24220	24180	23940	23580	22920	22620
19	19460	22500	24090	24270	24810	24240	24200	24210	23920	23550	22900	22630
20	19570	22490	24080	24220	24610	24230	24200	24350	23900	23520	22880	22710
21	19710	22490	24050	24200	24490	24220	24190	24290	23880	23490	22840	22770
22	19740	22490	24040	24180	24400	24210	24190	24230	23860	23460	22810	22760
23	19760	22540	24030	24160	24600	24210	24210	24190	23840	23430	22780	22750
24	19770	23550	24030	24150	26510	24270	24190	24140	23820	23400	22740	22710
25	19780	24460	24060	24140	25560	24290	24180	24120	23790	23370	22710	22680
26	19840	24420	25430	24130	25000	24260	24170	24100	23770	23340	22710	22660
27	19850	24340	25870	24120	26250	24260	24170	24090	23750	23310	22710	22640
28	19850	24280	25140	24220	27200	24280	24160	24180	23740	23280	22710	22620
29	20180	24220	24780	25510	---	24280	24160	24170	23720	23240	22680	22600
30	20210	24180	24570	25210	---	24270	24150	24150	23860	23210	22660	22580
31	20200	---	24440	24800	---	24260	---	24180	---	23170	22650	---
MEAN	19670	22430	24250	24290	24830	24460	24250	24200	23940	23630	22880	22650
MAX	20210	24460	25870	25510	27200	26340	24600	24400	24190	23990	23140	22770
MIN	19450	20220	23990	24120	24160	24210	24150	24090	23720	23170	22650	22580
(+)	711.17	715.02	715.28	715.63	717.97	715.10	714.99	715.03	714.73	714.08	713.58	713.51
(@)	+310	+3980	+260	+360	+2400	-2940	-110	+30	-320	-690	-520	-70

CAL YR 2000 MAX 25870 MIN 19450 (@) +2960
WTR YR 2001 MAX 27200 MIN 19450 (@) +2690

(+) 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.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--30,782 mi^2 of which 5,936 mi^2 probably is noncontributing.

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft above sea level. Prior to Jan. 17, 1939, and Feb. 13, 1965 to Nov. 14, 1966, nonrecording gage at same site and datum.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 24,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 28	2400	56,300	23.74	Feb 17	1100	48,300	22.15
Nov 5	1600	31,700	19.08	Mar 1	0100	26,100	17.87
Nov 26	0100	26,500	17.97	May 23	0300	25,800	17.81

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	e13700	5530	e3400	13300	23300	e2900	e800	e6820	2350	e282	550
2	116	e9770	e4700	e2900	9900	e18600	e2800	e780	e8010	1190	e277	695
3	137	e7450	3420	e2400	7310	e15300	e2700	740	16700	931	e271	989
4	e120	8140	3130	e2000	6240	e12300	e2600	700	12600	e825	e264	920
5	115	29100	2840	e1800	5360	e8840	e2500	e1750	e8190	e779	e257	722
6	110	24400	2650	e1650	4270	e7480	e2450	e1750	6650	e751	e237	623
7	98	16300	2450	e1600	3830	e6370	e2400	e13000	e6010	e751	224	497
8	97	10400	2190	e1700	3610	e5570	e2300	e17200	e5220	e741	239	595
9	93	10300	2020	e1800	3500	e5220	e2200	e14000	e4830	e697	225	657
10	92	16900	1830	e1900	3400	e5060	e2100	e10900	e4340	e632	210	534
11	88	17100	1660	e2000	3250	e5160	e3100	e7140	e3800	e567	207	526
12	85	10900	1590	e2100	3700	e6670	2710	e5390	e3380	e523	209	814
13	83	7420	1610	e2400	4760	e8710	e2590	e4090	e3170	e490	253	1110
14	84	5620	1590	e2700	4430	e8600	e2600	e3410	e3300	e469	277	857
15	91	4550	1550	e3300	4370	e7480	e3260	e2940	e3130	e476	286	692
16	111	3790	1520	e3200	24300	e6110	e3560	e2540	e2740	e435	362	737
17	124	3200	1530	e2800	44700	e5250	e2950	e2220	e2530	431	336	1190
18	116	2660	1500	e2600	e29200	e4890	e2390	e2070	e2280	e412	312	668
19	124	2530	1440	e2500	e16500	e4400	e1800	e1780	e1980	e378	416	836
20	187	2430	1540	e2300	e11800	e3970	e1660	e3840	e1830	e363	524	1420
21	270	2290	1590	2140	e7670	e3690	e1510	e2970	e1710	e351	543	3130
22	373	2170	1510	2050	e6430	3500	e1440	e13900	e1610	e358	644	3380
23	638	2180	1410	1950	e6540	e3280	e1380	e24200	1560	e371	653	1580
24	644	4060	1290	1840	e12400	e3330	e1250	e19400	1470	e396	532	1080
25	3690	18500	1240	1750	e9300	e3380	e1100	e13400	1400	e371	469	952
26	13900	23900	4220	1650	e10900	e4410	e1050	e9970	1340	e341	493	824
27	34200	17000	10000	1590	e20400	e4000	e970	e8990	1320	e319	497	668
28	51800	e11200	9050	1660	24300	e3730	e950	e9590	1300	e305	433	562
29	44100	e8000	6940	6640	---	e3390	e900	e10200	1270	e297	377	493
30	27800	e7000	e4900	17300	---	e3260	e830	e9810	1920	e291	369	424
31	18900	---	e3800	17700	---	e3000	---	e8560	---	e285	353	---
TOTAL	198494	302960	92240	103320	305670	208250	62950	228030	122410	17876	11031	28725
MEAN	6403	10100	2975	3333	10920	6718	2098	7356	4080	577	356	958
MAX	51800	29100	10000	17700	44700	23300	3560	24200	16700	2350	653	3380
MIN	83	2170	1240	1590	3250	3000	830	700	1270	285	207	424
AC-FT	393700	600900	183000	204900	606300	413100	124900	452300	242800	35460	21880	56980

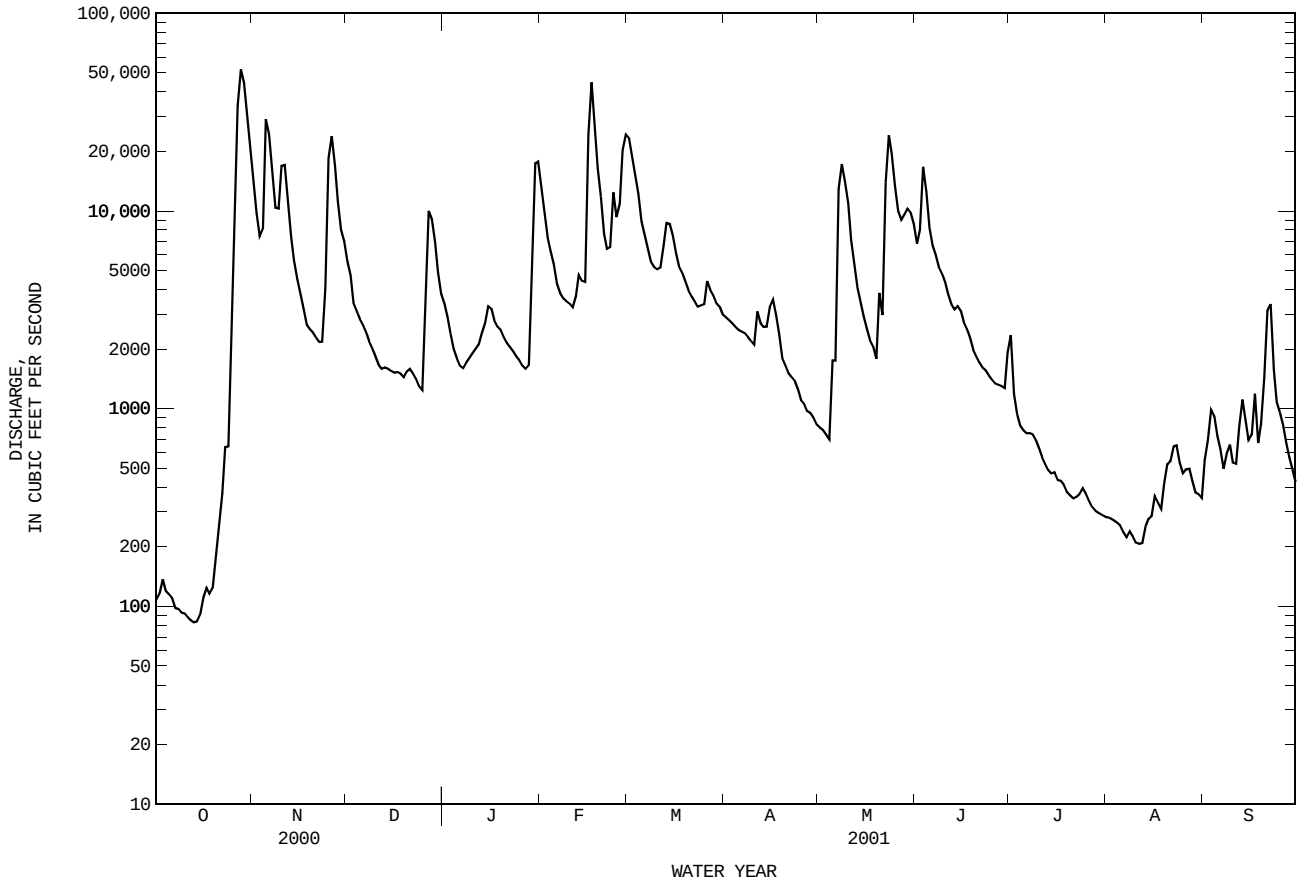
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2001, BY WATER YEAR (WY)

MEAN	3763	2071	1628	1300	1980	2944	3523	8000	8220	2161	1587	2458
MAX	31080	14020	14990	7258	10920	19590	27400	47780	43510	9857	20730	12880
(WY)	1942	1942	1992	1998	2001	1998	1990	1957	1941	1950	1995	1986
MIN	119	137	125	82.4	151	90.5	153	204	640	166	163	108
(WY)	1953	1955	1940	1940	1953	1940	1971	1971	1966	1964	1970	1956

e Estimated

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1937 - 2001	
ANNUAL TOTAL	947806		1681956			
ANNUAL MEAN	2590		4608		3304	
HIGHEST ANNUAL MEAN					11890	1987
LOWEST ANNUAL MEAN					651	1953
HIGHEST DAILY MEAN	51800	Oct 28	51800	Oct 28	232000	May 31 1987
LOWEST DAILY MEAN	83	Oct 13	83	Oct 13	48	Jan 18 1940
ANNUAL SEVEN-DAY MINIMUM	88	Oct 9	88	Oct 9	48	Jan 18 1940
MAXIMUM PEAK FLOW			56300	Oct 28	265000	May 31 1987
MAXIMUM PEAK STAGE			23.74	Oct 28	40.08	May 31 1987
INSTANTANEOUS LOW FLOW					100	Sep 17 2000
ANNUAL RUNOFF (AC-FT)	1880000		3336000		2394000	
10 PERCENT EXCEEDS	6100		12500		7340	
50 PERCENT EXCEEDS	641		2190		866	
90 PERCENT EXCEEDS	116		286		217	



07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY RECORDS

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

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

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

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 9,030 microsiemens/cm May 6, 1999; minimum, 402 microsiemens/cm Nov. 14, 1994.
WATER TEMPERATURE: Maximum, 36.5°C July 15, 1998; minimum , -0.5°C Jan. 4, 5, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded (more than 20% missing record), 6,790 microsiemens/cm Oct. 10; minimum, 474 microsiemens/cm Nov. 7.
WATER TEMPERATURE: Maximum recorded (more than 20% missing record), 34.4°C July 18; minimum, 0.2°C Jan. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)
SEP										
27...	1050	1028	9.54	677	752	9.3	8.5	3030	19.6	30.0
27...	1053	1028	9.54	677	752	9.1	8.5	3030	19.6	60.0
27...	1056	1028	9.54	677	752	9.1	8.5	3040	19.5	115
27...	1059	1028	9.54	677	752	9.1	8.5	3040	19.5	145
27...	1102	1028	9.54	677	752	9.1	8.5	3040	19.5	175
27...	1105	1028	9.54	677	752	9.2	8.5	3040	19.6	205
27...	1108	1028	9.54	677	752	9.4	8.6	3040	19.9	235
27...	1111	1028	9.54	677	752	10.6	8.7	3060	20.3	445
27...	1114	1028	9.54	677	752	9.4	8.6	3030	19.8	475
27...	1117	1028	9.54	677	752	9.6	8.6	3040	20.0	505

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
OCT													
17...	1730	80020	1028	8.02	119	751	117	9.7	8.2	5260	23.7	22.9	950
NOV													
09...	1000	80020	1028	14.17	10100	743	78	9.3	8.0	713	6.1	6.5	160
DEC													
19...	1600	80020	1028	10.25	1440	747	104	12.8	8.2	3770	7.8	5.1	670
JAN													
30...	0915	80020	1028	16.02	17200	739	92	10.9	8.0	1280	10.0	6.6	250
FEB													
28...	1510	80020	1028	17.45	24600	755	93	10.6	8.1	1460	1.6	8.8	340
MAR													
22...	1230	80020	1028	11.61	3480	745	111	10.9	8.5	3180	22.8	14.7	620
APR													
12...	1030	80020	1028	11.29	2980	746	82	7.5	8.2	2960	10.6	18.3	540
MAY													
25...	1130	80020	1028	14.95	13400	747	83	7.1	8.0	1300	26.6	22.0	280
JUN													
06...	1415	80020	1028	12.76	6860	746	110	8.3	8.2	1480	32.3	28.4	340
JUL													
17...	1630	80020	1028	9.02	460	747	125	8.6	8.3	4230	39.7	33.5	760
AUG													
22...	0720	80020	1028	9.34	617	746	72	5.5	8.0	4040	26.9	27.1	790
SEP													
11...	1030	80020	1028	9.16	500	754	92	7.8	7.9	5020	23.2	22.0	780
27...	1125	80020	1028	9.54	677	752	119	10.6	8.6	3060	22.6	19.9	--

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT													
17...	840	239	85.9	10.2	10	729	62	107	131	.0	1220	.4	4.0
NOV													
09...	75	43.6	11.3	4.33	3	77.0	51	80	98	.0	117	.2	10.6
DEC													
19...	470	174	57.3	6.39	7	417	57	197	240	.0	803	.4	9.7
JAN													
30...	170	66.6	21.1	3.79	5	165	58	87	106	.0	241	.2	6.2
FEB													
28...	230	90.2	27.7	4.44	5	203	56	107	131	.0	338	.2	7.6
MAR													
22...	440	159	54.0	5.98	7	395	58	184	200	12	692	.4	7.3
APR													
12...	400	134	49.3	5.76	8	411	62	133	162	.0	660	.3	3.7
MAY													
25...	180	78.0	21.0	6.25	4	149	53	104	127	.0	222	.3	10
JUN													
06...	230	92.2	27.3	6.22	4	157	49	116	142	.0	249	.3	10.4
JUL													
17...	650	176	78.7	8.60	9	579	62	111	126	5	924	.4	10.8
AUG													
22...	690	189	75.8	7.85	8	535	59	94	115	.0	852	.5	9.9
SEP													
11...	690	208	62.3	8.80	11	714	66	89	109	.0	1230	.4	6.5
27...	--	--	--	--	--	--	--	118	120	12	--	--	--

DATE	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT													
17...	799	1.3	<.041	--	--	--	--	<.047	--	<.006	--	--	<.060
NOV													
09...	68.5	1.8	E.025	.445	2.2	--	1.97	.455	.033	.010	--	.230	.076
DEC													
19...	458	.95	.057	.941	1.9	.07	4.17	.962	.069	.021	.89	.267	.114
JAN													
30...	129	2.6	.073	.441	3.0	.09	1.95	.454	.043	.013	2.5	.123	E.048
FEB													
28...	210	2.1	.052	.586	2.7	.07	2.59	.600	.046	.014	2.1	.120	.069
MAR													
22...	419	1.3	<.041	.449	1.8	--	1.99	.456	.024	.007	--	.064	<.060
APR													
12...	355	1.6	<.041	--	--	--	--	<.047	--	<.006	--	--	<.060
MAY													
25...	175	2.1	E.040	.387	2.5	--	1.71	.401	.046	.014	--	.172	.079
JUN													
06...	231	1.2	<.040	--	1.7	--	--	.447	--	E.004	--	.233	.098
JUL													
17...	628	1.2	<.040	--	--	--	--	<.050	--	<.006	--	--	<.060
AUG													
22...	701	1.3	<.040	--	--	--	--	<.050	--	<.006	--	--	<.060
SEP													
11...	644	.80	<.040	--	--	--	--	<.050	--	E.003	--	--	<.060
27...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
OCT													
17...	<.018	.153	25	4.29	1010	3150	2.9	4	89.6	95.9	<24.0	<.11	2.1
NOV													
09...	.075	.750	770	.52	10500	383	2.2	6	90.0	354	<8.00	E.07	<.8
DEC													
19...	.087	.172	48	2.78	7960	2050	3.2	3	172	194	<24.0	<.22	2.0
JAN													
30...	.040	.823	--	.93	31900	687	E1.0	5	99.1	338	<8.00	.13	<.8
FEB													
28...	.039	.809	1120	1.29	63000	949	2.1	6	158	441	<8.00	.14	<.8
MAR													
22...	.021	.193	136	2.51	17300	1850	2.3	3	163	188	<24.0	.17	<.8
APR													
12...	<.018	.234	272	2.31	13700	1700	E1.4	4	148	196	<24.0	E.05	<.8
MAY													
25...	.056	.917	118	.99	26300	726	2.9	8	95.4	417	<8.00	.16	<.8
JUN													
06...	.076	.463	472	1.15	15700	846	4.3	6	113	248	<8.00	.13	<.8
JUL													
17...	<.020	.081	68	3.36	3070	2470	5.1	6	169	172	<24.0	<.10	.9
AUG													
22...	<.020	.139	46	3.30	4050	2430	5.4	15	145	160	<24.0	<.10	<.8
SEP													
11...	<.020	.111	<20	3.98	3950	2920	3.4	E4	144	160	<16.0	<.30	<.8
27...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)
OCT													
17...	<1	<4.7	<1.8	<30	210	<.16	M	<3.2	117	E.21	<.14	<120	E61
NOV													
09...	13	<4.7	16.2	<10	8420	E.07	16	<3.2	556	<.23	<.14	<53.0	E56
DEC													
19...	1	<30.0	11.8	<30	690	E.07	4	14.4	65	<.23	<.14	<120	<66
JAN													
30...	15	E2.4	16.0	10	11700	.10	17	21.4	687	<.23	<.14	<53.0	<66
FEB													
28...	16	<4.7	16.2	<10	11600	E.07	19	E3.0	644	<.23	<.14	<53.0	<66
MAR													
22...	3	<4.7	3.7	<30	1480	.13	3	E6.2	124	<.23	<.14	<120	<66
APR													
12...	3	<30.0	5.4	<30	2750	.12	5	<3.2	289	<.01	<.01	<120	<66
MAY													
25...	18	<5.0	20.8	<10	12600	E.04	17	<3.0	779	.01	.03	<50.0	<66
JUN													
06...	3	<5.0	10.2	<10	2620	E.07	8	<3.0	354	<.01	.02	<50.0	<66
JUL													
17...	<1	<10.0	1.6	<30	580	<.20	1	14.7	265	<.01	<.05	<160	<66
AUG													
22...	M	<10.0	1.4	<30	470	.49	2	<10.0	194	<.01	<.01	<160	<66
SEP													
11...	<1	<9.0	3.7	<20	500	<.20	<2	12.6	134	<.01	<.01	<110	<66
27...	--	--	--	--	--	--	--	--	--	--	--	--	--

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)
OCT													
17...	E2.3	E1.6	<.2	<.43	<60	<93	--	--	--	--	--	--	--
NOV													
09...	<2.4	<2.6	<.2	<.43	<20	33	--	--	--	--	--	--	--
DEC													
19...	2.6	E1.7	<.2	<.43	<60	<31	--	--	--	--	--	--	--
JAN													
30...	<2.4	<2.6	<.2	<.43	<20	38	--	--	--	--	--	--	--
FEB													
28...	E1.9	<2.6	<.2	<.43	<20	50	--	--	--	--	--	--	--
MAR													
22...	<2.4	<2.6	<.2	<.43	<60	<31	--	--	--	--	--	--	--
APR													
12...	<2.4	E1.7	<.2	<.43	E38	E17	<.040	<.03	72	<.10	<1	<.1	<.1
MAY													
25...	<2.0	<3.0	<.2	<.40	E15	54	--	--	--	--	--	--	--
JUN													
06...	<2.0	E1.4	<.2	<.40	<20	E27	--	--	--	--	--	--	--
JUL													
17...	<2.0	<3.0	<.2	<.40	<60	<31	--	--	--	--	--	--	--
AUG													
22...	E1.6	<3.0	<.2	<.40	<60	E22	--	--	--	--	--	--	--
SEP													
11...	E1.5	<5.0	<.3	<1.00	<60	<31	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	<.040	<.03	97	<.10	<1	<.1	<.1

DATE	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ENDO-SULFAN II TOTAL (UG/L) (34356)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)
OCT													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.020	<.1	<.04	<.6	<.2	<.060
MAY													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
27...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.020	<.1	<.04	<.6	<.2	<.060

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	ISODRIN SUR SCD 1608 WTR, UNFLTRD PERCENT (90570)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)
OCT									
17...	--	--	--	--	--	--	--	--	--
NOV									
09...	--	--	--	--	--	--	--	--	--
DEC									
19...	--	--	--	--	--	--	--	--	--
JAN									
30...	--	--	--	--	--	--	--	--	--
FEB									
28...	--	--	--	--	--	--	--	--	--
MAR									
22...	--	--	--	--	--	--	--	--	--
APR									
12...	<.800	<.030	56	<.030	80	<.1	<.04	<.1	<2
MAY									
25...	--	--	--	--	--	--	--	--	--
JUN									
06...	--	--	--	--	--	--	--	--	--
JUL									
17...	--	--	--	--	--	--	--	--	--
AUG									
22...	--	--	--	--	--	--	--	--	--
SEP									
11...	--	--	--	--	--	--	--	--	--
27...	<.800	<.030	55	<.030	56	<.1	<.04	<.1	<2

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	e6350	706	648	661	2180	1750	2020	1990	1880	1920
2	---	---	e6440	850	706	790	2270	2180	2230	2180	1890	2000
3	---	---	e6530	1020	850	936	2470	2270	2360	2560	2180	2440
4	---	---	e6500	1240	1020	1120	2660	2470	2590	2620	2560	2590
5	---	---	e6500	1280	645	840	2790	2660	2740	2860	2590	2700
6	6600	6320	6500	645	487	551	2810	2790	2800	3120	2860	2990
7	6540	6270	6400	495	474	482	2840	2800	2820	3450	3120	3270
8	6270	6010	6070	581	495	523	2830	2800	2810	4040	3450	3740
9	6290	6000	6080	875	581	730	2960	2800	2850	4420	4040	4280
10	6790	6290	6620	957	826	890	3070	2960	3030	4420	3610	4090
11	6770	6350	6550	826	757	780	3300	3070	3130	3610	3350	3420
12	6350	6080	6200	824	790	799	3550	3300	3490	3630	3430	3570
13	6080	5770	5880	1080	824	940	3550	3490	3520	3910	3630	3820
14	5770	5480	5620	1390	1080	1240	3590	3520	3570	3960	3890	3940
15	5520	5170	5400	1710	1390	1540	3560	3480	3530	3950	3320	3770
16	5280	4960	5150	2070	1710	1890	3540	3470	3510	3320	2960	3080
17	5280	5000	5200	2200	2070	2170	3640	3540	3600	2960	2630	2780
18	5260	4660	4980	2240	2160	2180	3730	3610	3660	3120	2830	2980
19	5120	4650	4820	2680	2240	2450	3900	3730	3760	3340	3120	3240
20	5240	3980	4750	2710	2550	2620	4080	3900	4010	3330	3250	3290
21	4380	3550	4140	2590	2550	2570	3970	3840	3940	3480	3280	3400
22	4230	2840	3450	2610	2560	2600	3840	3580	3680	3550	3400	3460
23	4100	3110	3640	2560	2500	2540	3640	3580	3600	3640	3550	3610
24	3620	3110	3340	2500	929	1730	3800	3640	3730	3630	3560	3590
25	3760	1790	3180	1660	813	1170	3820	3140	3740	3620	3570	3600
26	1790	817	1220	901	609	724	3140	853	1460	3730	3590	3640
27	818	488	687	609	548	566	1630	974	1280	3800	3730	3780
28	554	474	522	742	552	618	1130	878	969	3780	2240	3420
29	552	529	538	1110	742	935	1020	899	935	2240	1010	1500
30	636	537	570	1710	1110	1350	1530	1020	1270	1610	1170	1360
31	666	636	658	---	---	---	1960	1530	1730	1430	946	1100
MONTH	6790	474	4530	2710	474	1300	4080	853	2850	4420	946	3110

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1000	946	980	1190	793	929	3020	2770	2940	4400	4330	4370
2	1220	999	1070	810	762	778	3150	3010	3090	4400	4360	4380
3	1810	1220	1500	1030	810	923	3090	2800	2910	4430	4370	4400
4	2040	1810	1960	1180	1030	1100	2940	2810	2880	4430	1970	4240
5	2200	2040	2110	1450	1180	1280	3090	2940	3020	3520	1970	2700
6	2680	2200	2390	1840	1450	1660	3350	3090	3220	2850	2190	2460
7	3130	2680	2940	2150	1840	2000	3520	3340	3450	4370	2080	2900
8	3170	3130	3150	2380	2150	2280	3500	3440	3480	4910	4370	4790
9	3160	2930	3030	2540	2350	2450	3480	3410	3430	4610	3310	3970
10	2970	2930	2950	2760	2540	2650	3820	3480	3640	3310	2780	2990
11	3030	2930	2960	2830	2740	2780	3820	2120	2640	2780	2630	2710
12	3320	3030	3210	2780	2660	2720	3260	2800	3050	2630	2500	2540
13	3160	2860	3000	3320	2710	3080	3430	3260	3350	2640	2500	2600
14	2860	2350	2480	2910	1900	2180	3430	3300	3360	2800	2640	2700
15	2380	1810	2160	2940	1950	2420	3890	3260	3570	3090	2800	2950
16	2010	814	1200	4570	2940	3880	3260	2580	2890	3430	3090	3260
17	818	518	588	4570	4350	4480	2580	2370	2500	3680	3430	3580
18	557	517	536	4350	3840	4060	2460	2250	2320	3780	3560	3690
19	689	529	607	3840	3500	3650	2770	2460	2640	3810	3150	3760
20	850	689	766	3500	3300	3380	3020	2770	2870	3150	1960	2460
21	1230	850	1010	3300	3190	3230	3250	3020	3170	3050	2620	2890
22	1810	1230	1520	3210	3170	3190	3390	3250	3310	3970	2460	3230
23	1980	526	1700	3190	3140	3170	3550	3260	3380	2380	1490	1840
24	1250	823	989	3170	2860	2990	3830	3550	3720	1490	1300	1370
25	1540	1050	1330	3030	2960	2990	3880	3780	3820	1400	1280	1310
26	1880	1410	1510	3020	2320	2860	4010	3880	3920	1560	1370	1450
27	2050	617	1220	2600	2160	2280	4170	4010	4080	1850	1580	1670
28	1520	895	1260	2760	2600	2700	4260	4170	4210	2210	1860	2050
29	---	---	---	2960	2610	2760	4270	4230	4250	2320	2210	2270
30	---	---	---	3020	2960	2990	4330	4240	4290	2260	2010	2150
31	---	---	---	3000	2760	2920	---	---	---	2010	1610	1820
MONTH	3320	517	1790	4570	762	2610	4330	2120	3310	4910	1280	2890

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2080	1660	1860	3190	1700	2470	---	---	e5050	---	---	e5680
2	2430	2050	2150	2780	1700	2270	---	---	e5090	---	---	e5630
3	2020	1630	1810	3430	2780	3130	---	---	e5110	---	---	e5710
4	2070	1490	1810	3700	3430	3590	---	---	e5120	---	---	e5900
5	1470	1420	1440	3890	3690	3800	---	---	e5140	---	---	e6190
6	1520	1450	1470	4040	3880	3930	---	---	e5160	---	---	e6390
7	1800	1520	1650	4140	4040	4110	---	---	e5160	---	---	e6440
8	2080	1800	1930	4250	4110	4170	---	---	e5180	---	---	e6330
9	2320	2070	2210	4340	4250	4310	---	---	e5160	---	---	e4600
10	2480	2310	2430	4350	4300	4330	---	---	e5180	---	---	e4230
11	2560	2410	2470	4330	4100	4200	---	---	e5200	---	---	e5030
12	2900	2500	2620	4200	4100	4120	---	---	e5180	---	---	e4900
13	3080	2900	2980	4150	4020	4060	---	---	e5250	---	---	e4770
14	2920	2700	2870	4060	4030	4050	---	---	e5270	---	---	e4650
15	2680	2580	2630	4090	4030	4050	---	---	e5170	---	---	e4520
16	2960	2660	2780	4190	4060	4110	---	---	e5330	---	---	e4390
17	3120	2960	3050	4250	4160	4200	---	---	e5450	---	---	e4260
18	3160	3090	3130	4370	4130	4310	---	---	e5470	---	---	e4130
19	3110	3020	3070	4370	4190	4270	---	---	e3750	---	---	e4010
20	3200	3020	3100	---	---	e4310	---	---	e4110	---	---	e3880
21	3500	3190	3350	---	---	e4270	---	---	e4070	---	---	e3750
22	3580	3500	3530	---	---	e4270	---	---	e4040	---	---	e3620
23	3750	3580	3650	---	---	e4430	---	---	e3820	---	---	e3490
24	3890	3740	3800	---	---	e4580	---	---	e3890	---	---	e3370
25	4060	3880	4000	---	---	e4800	---	---	e4030	---	---	e3240
26	4070	4010	4050	---	---	e4870	---	---	e4370	---	---	e3110
27	4010	3970	3980	---	---	e4850	---	---	e4680	---	---	e3050
28	4050	3950	4020	---	---	e4980	---	---	e5070	---	---	e3220
29	4040	3980	4020	---	---	e5020	---	---	e5460	---	---	e3390
30	4060	672	2810	---	---	e5030	---	---	e5660	---	---	e3560
31	---	---	---	---	---	e5020	---	---	e5700	---	---	---
MONTH	4070	672	2820	4370	1700	4190	---	---	4910	---	---	4510
YEAR	6790	474	3250									

e Estimated

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.9	18.7	21.2	20.5	20.1	20.3	9.7	8.5	9.2	1.4	.6	1.0
2	24.9	18.5	21.5	20.1	19.1	19.6	8.5	7.2	7.9	2.1	.9	1.4
3	26.9	20.1	23.3	19.2	17.9	18.6	7.5	6.4	6.9	2.4	.2	1.3
4	27.8	21.9	24.5	17.9	17.2	17.5	7.0	5.7	6.4	4.2	1.2	2.7
5	27.9	22.6	25.1	17.2	15.9	16.3	7.4	6.1	6.8	5.9	3.0	4.4
6	24.2	18.4	20.5	15.9	15.2	15.7	7.8	6.9	7.4	7.0	4.3	5.7
7	18.4	13.0	14.7	15.2	13.3	14.3	7.8	5.8	6.9	8.2	6.1	7.0
8	14.7	11.2	12.8	13.3	10.3	11.8	8.8	6.7	7.7	8.2	5.9	7.1
9	15.8	9.7	12.6	10.3	9.4	9.9	8.7	7.1	7.9	7.9	5.5	6.8
10	14.8	9.9	12.5	9.7	8.8	9.3	9.7	8.0	8.8	7.1	6.1	6.5
11	16.6	12.2	14.3	9.0	8.1	8.3	9.7	5.0	7.8	6.1	5.7	5.9
12	20.1	14.5	17.1	8.3	7.8	8.2	5.0	1.4	3.2	6.0	5.4	5.7
13	22.2	16.3	19.3	8.2	7.0	7.6	2.0	1.2	1.5	6.5	5.4	5.8
14	22.1	18.7	20.4	8.3	6.9	7.5	3.4	.9	2.1	7.9	5.7	6.7
15	23.3	19.0	21.1	8.3	7.4	7.9	4.7	2.7	3.4	7.8	5.9	6.9
16	24.1	20.2	21.7	9.8	8.2	8.9	5.7	4.5	5.0	7.1	6.5	6.8
17	23.3	19.0	21.1	9.1	7.9	8.6	4.9	3.3	4.1	6.5	5.1	5.6
18	24.8	19.0	21.5	8.7	7.8	8.2	5.4	3.3	4.3	5.1	4.1	4.7
19	23.6	18.4	20.9	9.2	7.2	8.2	5.2	3.4	4.3	5.1	3.5	4.2
20	20.7	17.2	18.4	9.2	7.4	8.3	5.7	3.1	4.3	4.1	2.3	3.3
21	19.0	16.9	17.8	9.1	6.9	8.0	5.5	3.5	4.4	5.3	3.0	4.0
22	21.4	18.0	19.4	9.4	7.7	8.5	4.8	3.0	3.9	6.1	3.3	4.7
23	22.2	20.3	21.1	10.4	9.4	9.9	4.8	3.8	4.2	6.9	5.0	5.9
24	23.1	20.9	21.8	11.0	10.3	10.6	4.2	3.0	3.7	7.9	6.2	6.9
25	21.6	20.3	20.9	10.7	10.1	10.4	4.1	3.3	3.6	8.3	5.9	7.2
26	20.3	19.6	20.0	10.3	9.7	10.0	3.6	2.7	3.1	10.5	7.6	9.0
27	19.6	19.0	19.2	10.1	9.4	9.7	3.6	1.9	2.7	9.6	6.8	7.7
28	20.0	19.0	19.4	10.3	9.1	9.7	2.9	1.8	2.3	7.2	6.5	6.8
29	20.2	19.6	19.9	10.4	9.5	10.0	3.4	2.1	2.6	7.6	5.9	6.7
30	20.7	20.1	20.4	9.7	8.9	9.4	3.0	1.8	2.4	7.3	6.5	6.9
31	20.6	20.0	20.3	---	---	---	2.2	1.0	1.6	7.0	6.0	6.5
MONTH	27.9	9.7	19.5	20.5	6.9	11.0	9.7	.9	4.9	10.5	.2	5.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.8	5.6	6.3	8.1	7.4	7.7	16.7	13.8	15.2	25.9	21.6	23.6
2	7.1	5.8	6.5	8.0	7.4	7.7	19.1	15.8	17.1	26.0	22.2	24.0
3	7.5	5.8	6.7	8.5	8.0	8.2	21.9	18.2	19.8	24.9	22.8	23.8
4	8.8	6.8	7.7	10.0	7.8	8.9	23.8	20.5	21.8	23.8	20.3	22.6
5	9.2	6.9	8.0	11.4	9.3	10.3	23.1	22.0	22.4	21.7	20.1	20.9
6	10.6	7.9	9.1	12.0	10.6	11.3	22.6	21.2	21.9	23.8	20.1	21.6
7	12.5	9.3	10.8	13.9	11.2	12.4	21.7	20.3	21.0	23.2	21.8	22.5
8	14.8	12.5	13.7	13.3	12.0	12.8	22.8	20.5	21.5	23.9	21.8	22.8
9	14.9	9.9	12.7	13.7	10.9	12.3	24.0	20.8	22.3	24.7	22.8	23.7
10	9.9	8.0	8.9	14.0	11.8	12.9	23.1	21.8	22.5	24.8	23.3	24.1
11	8.4	7.3	7.7	13.5	13.1	13.4	22.3	19.6	20.8	25.6	23.7	24.6
12	7.7	7.2	7.5	15.3	13.3	14.2	20.3	18.3	19.5	26.9	23.5	25.1
13	8.9	7.6	8.1	15.1	13.4	14.2	21.4	17.8	19.6	27.4	24.0	25.6
14	11.9	8.9	10.6	14.3	13.7	14.0	20.9	20.1	20.5	27.7	24.7	26.2
15	11.4	7.9	9.5	14.1	12.1	13.4	23.3	19.9	21.4	27.0	24.4	25.7
16	7.9	4.8	5.9	12.9	10.6	11.8	23.1	19.5	21.2	27.8	23.7	25.7
17	4.8	3.9	4.3	12.7	11.1	11.9	21.2	17.4	18.7	28.6	24.8	26.7
18	5.4	4.3	4.8	11.9	10.9	11.4	18.9	16.2	17.6	29.3	25.0	27.2
19	7.3	5.0	6.0	11.6	10.3	11.0	18.1	15.6	16.9	28.6	25.7	27.5
20	9.9	7.3	8.5	13.6	9.9	11.7	21.1	17.8	19.1	26.3	23.1	24.7
21	10.0	9.3	9.8	15.5	11.5	13.4	21.1	20.0	20.5	25.9	21.9	23.5
22	9.8	8.2	9.1	17.5	13.5	15.4	22.2	19.6	20.9	22.5	19.9	21.5
23	10.3	8.9	9.2	19.4	15.5	17.4	22.2	19.4	20.9	22.1	20.9	21.6
24	11.6	9.4	10.5	18.6	14.3	16.5	23.0	18.5	20.6	22.9	21.4	22.0
25	12.7	11.0	11.7	14.3	11.7	12.8	23.6	18.7	21.1	23.6	21.5	22.5
26	12.7	11.3	12.0	11.7	9.8	10.6	24.5	19.8	22.1	24.0	22.0	23.1
27	12.4	10.7	11.6	9.8	8.7	9.2	25.0	20.6	22.8	26.2	23.0	24.5
28	10.7	8.1	9.3	9.0	8.4	8.7	25.4	21.0	23.1	26.2	24.3	25.2
29	---	---	---	9.9	8.8	9.3	25.5	21.3	23.4	25.9	24.0	25.0
30	---	---	---	13.3	9.4	11.2	24.8	21.7	23.4	26.6	24.4	25.3
31	---	---	---	16.4	12.2	14.2	---	---	---	27.0	24.9	26.0
MONTH	14.9	3.9	8.8	19.4	7.4	11.9	25.5	13.8	20.7	29.3	19.9	24.2

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.8	24.5	26.0	29.0	26.1	27.3	---	---	---	---	---	---
2	27.4	24.9	26.3	31.0	26.3	28.4	---	---	---	---	---	---
3	27.5	26.1	27.0	31.9	27.2	29.4	---	---	---	---	---	---
4	27.8	25.5	26.7	33.3	27.7	30.4	---	---	---	---	---	---
5	27.5	25.8	26.6	33.3	28.1	30.7	---	---	---	---	---	---
6	27.8	25.7	26.7	34.1	28.6	31.4	---	---	---	---	---	---
7	28.2	26.1	27.1	33.1	29.0	31.1	---	---	---	---	---	---
8	29.1	26.4	27.6	33.1	28.6	30.7	---	---	---	---	---	---
9	30.5	26.9	28.6	34.4	28.6	31.3	---	---	---	---	---	---
10	31.2	27.4	29.2	34.4	29.4	31.9	---	---	---	---	---	---
11	31.1	27.6	29.2	34.3	29.4	31.9	---	---	---	---	---	---
12	30.4	27.0	28.9	34.2	29.1	31.6	---	---	---	---	---	---
13	29.5	26.7	28.1	34.2	28.9	31.1	---	---	---	---	---	---
14	28.6	25.5	26.9	32.0	28.4	30.1	---	---	---	---	---	---
15	29.6	24.5	26.6	33.2	26.3	29.4	---	---	---	---	---	---
16	30.3	26.1	28.0	33.3	27.4	30.1	---	---	---	---	---	---
17	30.5	26.6	28.5	33.6	27.6	30.2	---	---	---	---	---	---
18	29.8	26.1	27.9	34.4	27.4	30.7	---	---	---	---	---	---
19	30.0	25.9	28.0	33.5	27.9	30.8	---	---	---	---	---	---
20	30.8	26.6	28.7	---	---	---	---	---	---	---	---	---
21	30.9	27.4	29.2	---	---	---	---	---	---	---	---	---
22	30.4	26.1	28.3	---	---	---	---	---	---	---	---	---
23	29.3	25.7	27.4	---	---	---	---	---	---	---	---	---
24	29.7	24.9	27.1	---	---	---	---	---	---	---	---	---
25	29.6	25.4	27.4	---	---	---	---	---	---	---	---	---
26	30.4	25.8	28.0	---	---	---	---	---	---	---	---	---
27	28.7	26.8	27.4	---	---	---	---	---	---	---	---	---
28	27.5	25.2	26.1	---	---	---	---	---	---	---	---	---
29	27.4	24.0	25.4	---	---	---	---	---	---	---	---	---
30	28.1	20.8	25.3	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	31.2	20.8	27.5	34.4	26.1	30.4	---	---	---	---	---	---
YEAR	34.4	.2	15.9									

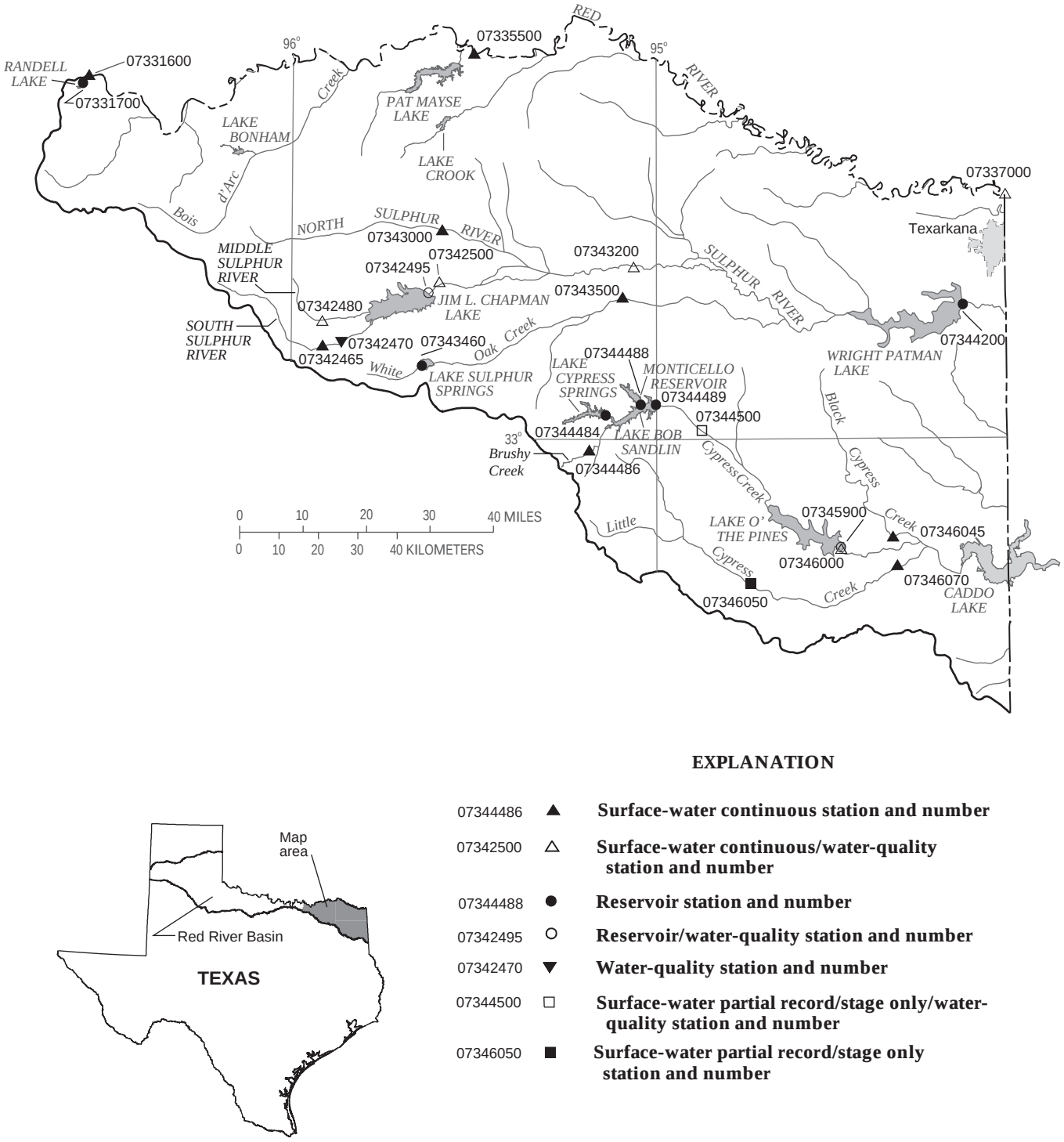


Figure 7.--Map showing location of gaging stations in the fourth section of the Red River Basin

07331600 Red River at Denison Dam near Denison, TX 258
07331700 Randell Lake near Denison, TX 268
07335500 Red River at Arthur City, TX 270
07337000 Red River at Index, AR 272
07342465 South Sulphur River at Commerce, TX 276
07342470 South Sulphur River near Commerce, TX 278
07342480 Middle Sulphur River at Commerce, TX 280
07342495 Jim L. Chapman Lake near Cooper, TX 284
07342500 South Sulphur River near Cooper, TX 294
07343000 North Sulphur River near Cooper, TX 298
07343200 Sulphur River near Talco, TX 300
07343460 Lake Sulphur Springs near Sulphur Springs, TX 304
07343500 White Oak Creek near Talco, TX 306
07344200 Wright Patman Lake near Texarkana, TX 308
07344484 Lake Cypress Springs near Mt. Vernon, TX 310
07344486 Brushy Creek at Scroggins, TX 312
07344488 Monticello Reservoir near Mt. Pleasant, TX 314
07344489 Lake Bob Sandlin near Mount Pleasant, TX 316
07344500 Big Cypress Creek near Pittsburg, TX 318
07345900 Lake O the Pines near Jefferson, TX 322
07346000 Big Cypress Creek near Jefferson, TX 332
07346045 Black Cypress Bayou at Jefferson, TX 336
07346050 Little Cypress Creek near Ore City, TX 338
07346070 Little Cypress Creek near Jefferson, TX 340

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 except for discharges less than 100 ft^3/s which are poor. Flow regulated since October 1943 by Lake Texoma (station 07331500). U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 26, 1908, reached a stage of 45.5 ft (at site and datum used July 29, 1942, to Sept. 30, 1961); from record of National Weather Service.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	7040	17900	6300	5510	4830	11400	4240	11000	2730	3560	2550
2	2050	7020	17900	8280	3820	17300	11400	4240	6410	6970	2560	2670
3	1870	7040	17900	11100	11300	28500	11400	4230	6500	7320	2600	2680
4	1090	7020	14800	11100	11300	32700	11400	4260	8670	6080	316	562
5	1090	7070	11000	11200	11300	32600	11400	3340	11000	5960	133	255
6	199	7510	11000	11200	11300	32600	11500	3300	11000	6870	2500	526
7	42	13900	8270	11200	11400	32600	6730	4290	11000	6410	2860	617
8	43	17800	7770	11200	11400	32500	6230	4190	11000	6400	2370	238
9	919	17800	3290	11200	11400	32400	6210	4180	8610	6850	2710	254
10	1090	17900	3090	11300	11400	32500	6230	4150	8160	6590	2270	1180
11	1090	18000	6010	11300	11500	32800	6260	4170	9920	5880	267	1460
12	1080	17800	6260	11300	11500	29600	6180	4150	11000	5060	130	1440
13	1080	17800	7150	11300	11600	23900	6190	404	9520	4580	2130	1390
14	196	17900	6530	11300	8640	20600	6180	4720	7740	5810	2640	1420
15	43	17900	6360	11300	5230	24100	6160	5080	4350	5810	2690	424
16	1060	17900	7340	11400	6510	29900	6460	5080	165	5680	2710	181
17	991	14100	7390	11400	614	32300	2750	5080	46	5590	2700	928
18	1090	8250	7400	11400	264	32400	75	4820	4840	6930	2690	1130
19	1100	10800	7380	11400	10700	32400	64	408	5030	6930	2650	1140
20	2200	10800	7420	11400	11100	32400	6080	144	5410	6940	2690	1380
21	227	10800	7400	11400	13600	25200	6170	2250	6740	6950	2680	1250
22	53	8960	7450	11400	15300	14600	6230	3320	5920	6930	2710	397
23	1060	8630	7480	11500	15500	11300	6590	4100	7300	7000	2690	135
24	1100	8780	7470	11500	13800	11400	6390	2590	7310	6980	2690	903
25	1090	8580	7560	11500	13200	11300	6360	9220	6670	6990	2680	1050
26	1150	8490	8430	9550	15200	11300	6370	16500	7500	7040	2700	1010
27	1100	12200	7830	712	11900	11300	6390	16400	5630	7040	2690	999
28	44	17800	1830	107	1500	11400	4220	16500	4850	7090	2700	1010
29	71	17800	5980	5660	---	11400	4220	12900	3220	7090	2690	261
30	4940	17900	6320	5550	---	11400	6390	11000	2920	7120	332	49
31	7030	---	6240	5540	---	11300	---	11300	---	7090	150	---
TOTAL	36231	381290	256150	301999	277788	710830	199629	180556	209431	198710	67888	29489
MEAN	1169	12710	8263	9742	9921	22930	6654	5824	6981	6410	2190	983
MAX	7030	18000	17900	11500	15500	32800	11500	16500	11000	7320	3560	2680
MIN	42	7020	1830	107	264	4830	64	144	46	2730	130	49
AC-FT	71860	756300	508100	599000	551000	1410000	396000	358100	415400	394100	134700	58490

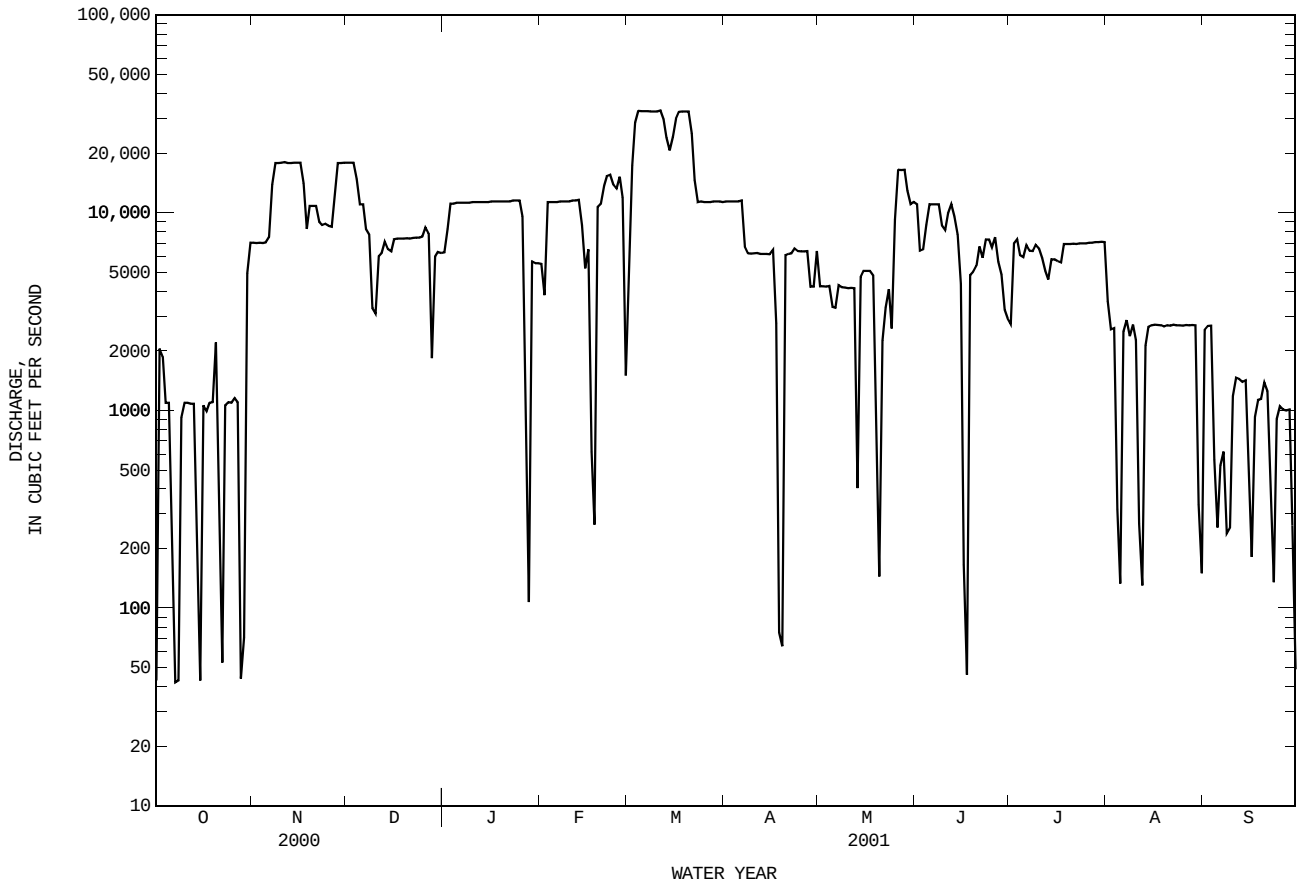
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2001, BY WATER YEAR (WY)

MEAN	4843	3748	3425	3667	3571	4767	4838	7555	11350	5470	3488	2613
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1945 - 2001	
ANNUAL TOTAL	1360927		2849991			
ANNUAL MEAN	3718		7808		[a]4891	
HIGHEST ANNUAL MEAN					16030	1987
LOWEST ANNUAL MEAN					1510	1964
HIGHEST DAILY MEAN	18000	Nov 11	32800	Mar 11	96200	Jun 5 1957
LOWEST DAILY MEAN	18	Feb 27	42	Oct 7	18	Feb 27 2000
ANNUAL SEVEN-DAY MINIMUM	25	Mar 8	519	Sep 4	25	Mar 8 2000
MAXIMUM PEAK FLOW			34100	Mar 11	[b]102000	Jun 5 1957
MAXIMUM PEAK STAGE			17.57	Mar 11	[c]26.26	Jun 5 1957
ANNUAL RUNOFF (AC-FT)	2699000		5653000		3543000	
10 PERCENT EXCEEDS	8450		16500		10700	
50 PERCENT EXCEEDS	2640		6460		2810	
90 PERCENT EXCEEDS	42		593		194	

[a]Prior to regulation, water years 1924-43, 5,684 ft^3/s.
[b]Maximum discharge for period of record, 201,000 ft^3/s May 21, 1935.
[c]Maximum gage height for period of record, 32.00 ft Apr. 25, 1942, site and datum then in use.



07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1944 to August 1989; October 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1944 to September 1989; February 1997 to current year.
WATER TEMPERATURE: October 1945 to September 1989; February 1997 to current year.

INSTRUMENTATION.--Water-quality monitor February 1997 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,520 microsiemens/cm Aug. 14, 1944; minimum daily, 656 microsiemens/cm 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, 2,430 microsiemens/cm Oct. 30; minimum, 996 microsiemens/cm May 19.
WATER TEMPERATURE: Maximum, 26.5°C Sept. 2,3; minimum, 4.8°C Jan. 27.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)
SEP										
26...	1253	1028	4.99	59	757	15.0	8.6	1500	26.1	40.0
26...	1256	1028	4.99	59	757	14.7	8.5	1500	26.1	60.0
26...	1259	1028	4.99	59	757	12.9	8.4	1510	25.7	80.0
26...	1302	1028	4.99	59	757	8.6	7.9	1510	24.8	100
26...	1305	1028	4.99	59	757	7.2	7.6	1520	24.4	120
26...	1308	1028	4.99	59	757	8.5	7.5	1520	24.2	140
26...	1311	1028	4.99	59	757	5.5	7.5	1530	24.1	160
26...	1314	1028	4.99	59	757	5.5	7.5	1520	24.0	180
26...	1317	1028	4.99	59	757	5.4	7.5	1520	24.2	200
26...	1320	1028	4.99	59	757	5.5	7.5	1520	24.2	220
26...	1323	1028	4.99	59	757	6.2	7.5	1520	24.1	240
26...	1326	1028	4.99	59	757	6.1	7.4	1520	24.2	260

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
OCT													
04...	1530	80020	1028	4.95	47	745	197	15.5	8.2	2210	34.0	25.9	490
NOV													
08...	1530	80020	1028	13.59	18000	744	77	7.0	8.1	2270	5.2	18.2	490
DEC													
22...	1000	80020	1028	10.32	10400	762	85	10.0	8.1	1780	-1.5	8.0	420
JAN													
30...	1815	80020	1028	10.15	10100	745	98	11.8	8.2	1520	13.3	6.1	360
FEB													
28...	1120	80020	1028	5.77	868	755	96	11.7	8.3	1110	1.8	6.3	320
MAR													
23...	1030	80020	1028	10.89	11000	750	91	10.1	8.2	1190	22.4	10.0	280
APR													
12...	1320	80020	1028	10.47	10600	749	91	9.5	8.1	1180	20.7	12.6	300
MAY													
24...	1450	80020	1028	5.06	63	749	152	13.5	8.6	1230	26.5	20.0	300
JUN													
06...	1730	80020	1028	10.74	10600	749	82	7.0	8.0	1340	34.6	22.2	330
JUL													
18...	1150	80020	1028	8.85	9670	750	55	4.5	7.7	1470	36.8	24.7	330
AUG													
22...	1130	80020	1028	5.27	200	750	38	3.2	7.9	1500	34.4	22.9	340
SEP													
12...	1500	80020	1028	5.23	197	750	83	6.7	8.0	1530	--	24.9	340
26...	1330	80020	1028	4.99	59	757	74	6.1	7.9	1520	23.7	24.2	--

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT													
04...	390	119	45.8	6.11	5	275	55	94	115	.0	412	.3	5.5
NOV													
08...	390	120	45.1	6.36	5	274	55	91	111	.0	425	.3	.9
DEC													
22...	320	108	37.8	5.74	4	194	49	100	122	.0	319	.3	3.0
JAN													
30...	260	92.0	30.7	4.97	4	171	51	101	123	.0	246	.3	5.3
FEB													
28...	210	83.2	28.0	4.75	4	153	50	109	133	.0	247	.3	5.9
MAR													
23...	160	72.6	23.1	4.09	3	117	48	121	148	.0	198	.2	6.7
APR													
12...	180	77.9	25.1	4.23	3	127	48	118	144	.0	188	.2	7.0
MAY													
24...	180	78.1	25.9	4.22	3	126	47	117	134	4	190	.3	6.8
JUN													
06...	210	86.7	28.0	4.10	3	137	47	120	146	.0	218	.3	4.9
JUL													
18...	210	86.0	28.8	4.67	4	156	50	121	148	.0	243	.3	4.6
AUG													
22...	200	89.1	28.5	4.52	4	165	51	138	168	.0	255	.3	8.2
SEP													
12...	190	91.0	27.8	4.80	4	149	48	152	185	.0	255	.3	7.0
26...	--	--	--	--	--	--	--	128	156	.0	--	--	--

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)
OCT													
04...	401	.53	.136	.047	.59	.18	.208	.065	.059	.018	.39	.086	<.060
NOV													
08...	403	.48	E.034	.179	.67	--	.792	.191	.039	.012	--	--	<.060
DEC													
22...	304	.42	E.022	--	.82	--	--	.398	--	E.004	--	.080	<.060
JAN													
30...	240	.48	.053	.447	.94	.07	1.98	.453	.020	.006	.43	.117	E.046
FEB													
28...	227	.41	.054	.490	.91	.07	2.17	.499	.030	.009	.35	.123	.066
MAR													
23...	170	.45	.091	.524	.99	.12	2.32	.536	.039	.012	.36	.126	E.049
APR													
12...	174	.51	.042	.549	1.1	.05	2.43	.584	.115	.035	.47	.104	E.046
MAY													
24...	186	.48	<.040	--	.91	--	--	.429	--	E.004	--	.086	E.051
JUN													
06...	199	.41	<.040	.360	.79	--	1.59	.379	.062	.019	--	--	E.041
JUL													
18...	224	.44	.066	--	.59	.08	--	.156	--	<.006	.37	.071	<.060
AUG													
22...	207	1.0	E.552	--	--	--	--	E.053	--	E.019	--	--	.241
SEP													
12...	212	1.2	.740	.045	1.3	.95	.199	.070	.082	.025	.50	.693	.261
26...	--	--	--	--	--	--	--	--	--	--	--	--	--

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
OCT													
04...	.028	<.060	<10	1.80	168	1320	2.7	3	140	137	<8.00	<.11	<.8
NOV													
08...	E.017	E.039	<10	1.81	64600	1330	E1.7	E1	140	139	<8.00	<.11	<.8
DEC													
22...	.026	E.038	<10	1.41	29000	1030	E1.7	E1	136	128	<8.00	1.12	E.5
JAN													
30...	.038	E.057	<10	1.16	23300	853	E1.7	E1	124	117	<8.00	<.11	<.8
FEB													
28...	.040	.068	<10	1.11	1910	816	E1.7	E2	115	116	<8.00	<.11	<.8
MAR													
23...	.041	E.050	<10	.91	19800	668	E1.2	E1	105	103	<8.00	<.11	<.8
APR													
12...	.034	E.047	<10	.92	19400	678	E1.7	E2	111	108	<8.00	<.11	<.8
MAY													
24...	.028	.084	15	.94	117	690	2.3	E1	113	107	<8.00	<.10	<.8
JUN													
06...	<.020	E.045	<10	1.02	21500	752	E1.5	E2	118	112	<8.00	E.05	<.8
JUL													
18...	.023	<.060	<10	1.12	21500	822	2.8	3	129	119	<8.00	<.10	E.7
AUG													
22...	E.228	.285	<10	1.14	454	842	4.2	19	120	118	<8.00	<.10	<.8
SEP													
12...	.226	.275	<10	1.14	447	841	4.1	4	118	125	<8.00	<.10	<.8
26...	--	--	--	--	--	--	--	--	--	--	--	--	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)
OCT													
04...	<1	<4.7	3.0	<10	30	<.08	M	12.2	50	<.23	<.14	<53.0	<39
NOV													
08...	1	<4.7	<1.8	<10	90	E.07	<1	<3.2	31	.55	<.14	<53.0	<66
DEC													
22...	<1	<4.7	6.5	<10	20	.16	2	E1.8	11	<.23	<.14	<53.0	<66
JAN													
30...	<1	<4.7	E1.0	<10	40	.09	<1	E2.1	8	<.23	<.14	<53.0	<66
FEB													
28...	<1	<4.7	3.2	<10	100	.17	M	9.5	16	<.23	<.14	<53.0	<66
MAR													
23...	<1	<4.7	E1.5	<10	120	.09	<1	E1.7	8	<.23	<.14	<53.0	<66
APR													
12...	<1	<4.7	E1.8	<10	100	.11	<1	<3.2	7	<.01	<.01	<53.0	<66
MAY													
24...	<1	<5.0	2.2	<10	160	<.08	M	9.8	45	<.01	.02	<50.0	<66
JUN													
06...	<1	<5.0	2.3	<10	90	E.08	<1	7.8	33	<.01	<.01	<50.0	<66
JUL													
18...	<1	<5.0	E1.0	<10	30	<.08	<1	124	120	<.01	<.01	<50.0	<66
AUG													
22...	<1	<5.0	1.8	20	70	.67	M	417	400	<.01	<.01	<50.0	<66
SEP													
12...	<1	<5.0	<1.0	10	80	E.06	<1	393	402	<.01	<.01	<50.0	<66
26...	--	--	--	--	--	--	--	--	--	--	--	--	--

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)
OCT													
04...	<2.4	<2.6	<.2	<.43	<20	<31	--	--	--	--	--	--	--
NOV													
08...	<2.4	<2.6	<.2	<.43	<20	<31	--	--	--	--	--	--	--
DEC													
22...	<2.4	<2.6	<.2	<.43	E11	<31	--	--	--	--	--	--	--
JAN													
30...	<2.4	<2.6	<.2	<.86	<20	<31	--	--	--	--	--	--	--
FEB													
28...	<2.4	<2.6	<.2	<.43	E14	<31	--	--	--	--	--	--	--
MAR													
23...	<2.4	<2.6	<.2	<.43	<20	<31	--	--	--	--	--	--	--
APR													
12...	<2.4	<2.6	<.2	<.43	<20	<31	<.040	<.03	76	<.10	<1	<.1	<.1
MAY													
24...	<2.0	<3.0	<.2	<.40	<20	<31	--	--	--	--	--	--	--
JUN													
06...	<2.0	<3.0	<.2	<.40	<20	E17	--	--	--	--	--	--	--
JUL													
18...	<2.0	<3.0	<.2	<.40	<20	<31	--	--	--	--	--	--	--
AUG													
22...	<2.0	<3.0	<.2	<.40	E11	<31	--	--	--	--	--	--	--
SEP													
12...	<2.0	<3.0	<.2	<.40	<20	<31	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	<.040	<.03	106	<.10	<1	<.1	<.1

DATE	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ENDO-SULFAN II TOTAL (UG/L) (34356)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)
OCT													
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
12...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.020	<.1	<.04	<.6	<.2	<.060
MAY													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.020	<.1	<.04	<.6	<.2	<.060

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	ISODRIN SUR SCD 1608 WTR, UNFLTRD PERCENT (90570)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)
OCT									
04...	--	--	--	--	--	--	--	--	--
NOV									
08...	--	--	--	--	--	--	--	--	--
DEC									
22...	--	--	--	--	--	--	--	--	--
JAN									
30...	--	--	--	--	--	--	--	--	--
FEB									
28...	--	--	--	--	--	--	--	--	--
MAR									
23...	--	--	--	--	--	--	--	--	--
APR									
12...	<.800	<.030	48	<.030	77	<.1	<.04	<.1	<2
MAY									
24...	--	--	--	--	--	--	--	--	--
JUN									
06...	--	--	--	--	--	--	--	--	--
JUL									
18...	--	--	--	--	--	--	--	--	--
AUG									
22...	--	--	--	--	--	--	--	--	--
SEP									
12...	--	--	--	--	--	--	--	--	--
26...	<.800	<.030	57	<.030	81	<.1	<.04	<.1	<2

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2260	2160	2210	2390	2350	2370	2040	1980	2000	1740	1730	1740
2	2240	2170	2210	2380	2300	2330	2000	1980	2000	1740	1720	1730
3	2310	2210	2240	2350	2280	2300	1990	1980	1980	1730	1680	1720
4	2310	2210	2250	2330	2270	2290	1980	1950	1970	1680	1660	1670
5	2260	2240	2240	2280	2210	2260	1960	1940	1960	1660	1640	1650
6	2250	1980	2210	2280	2180	2250	1950	1930	1950	1660	1640	1650
7	2260	2240	2250	2280	2260	2270	1950	1940	1940	1670	1650	1650
8	2260	2250	2260	2280	2250	2270	1950	1930	1940	1670	1650	1650
9	2270	2240	2260	2250	2220	2240	1940	1930	1940	1660	1630	1650
10	2260	2240	2250	2220	2200	2220	1960	1920	1940	1650	1630	1650
11	2250	2230	2240	2220	2220	2220	1950	1930	1940	1650	1610	1630
12	2250	2240	2240	2220	2200	2210	1950	1930	1940	1630	1600	1610
13	2250	2240	2250	2210	2200	2210	1940	1920	1930	1640	1620	1630
14	2260	2240	2250	2210	2200	2200	1930	1920	1920	1630	1590	1600
15	2260	2160	2240	2210	2200	2210	1930	1890	1920	1590	1580	1580
16	2260	2160	2230	2210	2200	2200	1930	1860	1910	1580	1560	1570
17	2260	2240	2250	2200	2170	2190	1900	1850	1880	1580	1550	1560
18	2270	2250	2260	2180	2140	2160	1900	1870	1890	1560	1530	1550
19	---	---	e2270	2140	2140	2140	1890	1870	1880	1540	1530	1540
20	---	---	e2290	2140	2140	2140	1880	1840	1870	1540	1520	1520
21	---	---	e2300	2140	2140	2140	1870	1860	1860	1530	1520	1530
22	---	---	e2320	2150	2130	2140	1860	1820	1840	1530	1530	1530
23	---	---	e2330	2150	2090	2130	1840	1780	1800	1540	1530	1530
24	---	---	e2340	2130	2050	2100	1800	1770	1780	1530	1530	1530
25	---	---	e2330	2100	2090	2100	1780	1750	1770	1530	1530	1530
26	---	---	e2370	2110	2090	2100	1770	1620	1750	1540	1530	1530
27	---	---	e2350	2120	2100	2100	1780	1740	1770	1530	1460	1500
28	2420	2370	2400	2120	2090	2100	1780	1750	1760	1520	1410	1500
29	2420	2220	2320	2090	1920	2030	1760	1730	1750	1520	1280	1480
30	2430	2340	2380	2030	1920	1970	1750	1740	1750	1520	1510	1520
31	2380	2350	2370	---	---	---	1750	1720	1740	1520	1500	1520
MONTH	2430	1980	2280	2390	1920	2190	2040	1620	1880	1740	1280	1590

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1520	1510	1510	1460	1350	1430	1240	1230	1240	1200	1170	1180
2	1520	1490	1510	1470	1440	1460	1260	1240	1250	1200	1170	1180
3	1510	1500	1500	1440	1380	1410	1300	1260	1280	1190	1160	1180
4	1500	1500	1500	1380	1310	1340	1300	1290	1300	1190	1160	1180
5	1500	1490	1490	1320	1280	1300	1300	1290	1300	1190	1160	1170
6	1490	1480	1490	1350	1280	1310	1330	1300	1310	1190	1160	1180
7	1480	1480	1480	1310	1260	1280	1330	1270	1300	1180	1150	1170
8	1480	1470	1480	1290	1220	1270	1300	1260	1270	1180	1170	1170
9	1470	1460	1470	1220	1140	1180	1290	1250	1260	1180	1170	1170
10	1460	1460	1460	1350	1200	1290	1280	1240	1250	1180	1170	1180
11	1460	1450	1450	1360	1320	1340	1260	1200	1220	1190	1160	1180
12	1450	1450	1450	1350	1240	1310	1250	1160	1200	1180	1170	1180
13	1450	1420	1440	1280	1260	1270	1200	1160	1170	1190	1180	1180
14	1440	1430	1440	1340	1220	1290	1200	1160	1170	1190	1170	1180
15	1480	1410	1450	1350	1190	1260	1210	1160	1180	1210	1180	1190
16	1470	1400	1440	1220	1210	1220	1200	1170	1180	1200	1190	1200
17	1460	1450	1450	1230	1220	1220	1230	1160	1180	1210	1200	1200
18	1460	1440	1450	1220	1210	1220	1230	1210	1220	1210	1190	1200
19	1460	1460	1460	1210	1200	1200	1220	1220	1220	1210	996	1180
20	1460	1450	1450	1200	1190	1200	1220	1210	1210	1190	1060	1160
21	1450	1450	1450	1200	1190	1200	1220	1200	1210	1200	1180	1190
22	1450	1440	1440	1190	1190	1190	1220	1200	1210	1250	1190	1220
23	1450	1420	1440	1200	1190	1190	1200	1160	1180	1260	1240	1250
24	1450	1430	1440	1200	1190	1190	1200	1180	1190	1260	1210	1240
25	1440	1430	1430	1200	1190	1190	1210	1180	1190	1260	1240	1250
26	1430	1420	1430	1200	1190	1190	1200	1180	1180	1280	1250	1260
27	1420	1410	1420	1200	1180	1190	1200	1180	1180	1320	1280	1300
28	1420	1340	1400	1210	1200	1200	1210	1180	1190	1320	1280	1300
29	---	---	---	1210	1200	1210	1200	1180	1190	1320	1300	1310
30	---	---	---	1220	1210	1220	1190	1180	1180	1400	1320	1370
31	---	---	---	1230	1220	1230	---	---	---	1430	1320	1370
MONTH	1520	1340	1460	1470	1140	1260	1330	1160	1220	1430	996	1220

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1360	1330	1340	1420	1370	1410	1490	1450	1470	1530	1470	1500
2	1390	1310	1360	1420	1410	1420	1500	1460	1480	1530	1470	1500
3	1380	1320	1360	1430	1410	1420	1500	1450	1480	1530	1470	1500
4	1370	1320	1350	1420	1410	1420	1510	1460	1490	1530	1260	1480
5	1350	1330	1340	1430	1420	1420	1520	1470	1500	1540	1510	1530
6	1350	1330	1340	1440	1420	1430	1520	1480	1510	1540	1510	1530
7	1340	1340	1340	1440	1430	1440	1540	1470	1510	1540	1510	1530
8	1340	1340	1340	1450	1430	1440	1520	1470	1500	1540	1520	1530
9	1340	1340	1340	1460	1430	1440	1520	1480	1500	1550	1500	1530
10	1350	1340	1340	1460	1440	1440	1520	1470	1500	1560	1520	1540
11	1350	1340	1340	1460	1440	1450	1520	1490	1510	1560	1520	1540
12	1370	1340	1350	1460	1440	1450	1520	1480	1510	1560	1510	1530
13	1390	1360	1380	1470	1440	1450	1520	1490	1510	1540	1500	1530
14	1390	1370	1380	1470	1450	1460	1530	1470	1500	1680	1510	1570
15	1380	1360	1370	1480	1450	1460	1520	1470	1500	1670	1510	1580
16	1380	1320	1350	1480	1460	1470	1510	1460	1490	1510	1470	1500
17	1340	1330	1340	1490	1470	1480	1510	1420	1470	1720	1460	1520
18	1380	1340	1360	1490	1450	1470	1510	1460	1480	1690	1460	1560
19	1390	1360	1380	1480	1450	1460	1510	1460	1490	1470	1440	1460
20	1390	1360	1380	1480	1460	1470	1520	1460	1490	1610	1320	1470
21	1390	1360	1380	1480	1450	1470	1520	1470	1500	1620	1410	1440
22	1390	1360	1380	1480	1450	1460	1520	1480	1500	1590	1410	1490
23	1400	1380	1390	1480	1450	1460	1520	1480	1500	1430	1390	1420
24	1410	1380	1400	1490	1460	1460	1520	1480	1500	1520	1380	1410
25	1420	1390	1410	1490	1450	1470	1520	1470	1500	1410	1360	1390
26	1420	1410	1420	1490	1460	1470	1520	1460	1500	1530	1390	1510
27	1420	1390	1410	1500	1460	1470	1520	1460	1490	1660	1500	1540
28	1420	1390	1420	1500	1460	1480	1520	1460	1490	1550	1500	1530
29	1430	1370	1410	1500	1460	1480	1520	1460	1500	1550	1500	1530
30	1430	1340	1400	1500	1470	1480	1520	1490	1510	1670	1500	1560
31	---	---	---	1500	1460	1470	1520	1490	1510	---	---	---
MONTH	1430	1310	1370	1500	1370	1450	1540	1420	1500	1720	1260	1510
YEAR	2430	996	1580									

e Estimated

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.9	21.8	23.5	19.6	19.3	19.5	12.7	12.4	12.6	6.6	5.8	6.2
2	25.7	22.0	23.4	19.9	18.7	19.6	12.4	12.1	12.2	6.2	5.7	6.1
3	26.4	22.8	23.8	19.8	19.2	19.6	12.1	11.8	12.0	6.1	5.6	5.9
4	26.5	23.0	24.0	19.7	19.3	19.6	11.8	11.6	11.7	5.7	5.5	5.6
5	25.8	22.3	23.6	19.7	19.2	19.6	11.7	11.5	11.6	5.7	5.5	5.6
6	23.0	20.9	21.8	19.7	19.0	19.4	11.6	11.3	11.5	5.8	5.5	5.6
7	21.0	19.5	20.2	19.3	19.0	19.2	11.4	10.8	11.2	6.0	5.8	5.9
8	21.4	18.8	19.8	19.0	18.1	18.6	11.4	10.8	11.2	6.1	5.7	5.9
9	21.7	17.9	19.6	18.1	17.7	17.9	11.7	10.5	11.1	6.0	5.7	5.8
10	21.7	17.7	19.6	17.7	17.4	17.6	11.9	10.9	11.3	5.9	5.7	5.8
11	21.4	18.7	19.8	17.4	17.1	17.2	11.3	10.3	10.9	5.9	5.7	5.8
12	21.5	18.7	19.8	17.1	16.6	16.9	10.3	9.0	10.0	5.8	5.7	5.7
13	22.2	18.5	19.9	16.6	16.3	16.5	10.1	9.1	9.8	5.9	5.8	5.9
14	21.9	19.3	20.4	16.3	15.9	16.0	10.1	9.0	9.7	6.0	5.7	5.9
15	22.2	19.2	20.4	15.9	15.5	15.7	9.7	9.1	9.6	6.0	5.8	5.8
16	21.9	19.4	20.0	15.6	15.3	15.5	9.7	9.0	9.4	5.8	5.7	5.8
17	21.9	18.3	19.8	15.3	14.8	15.1	9.3	7.9	8.9	5.7	5.7	5.7
18	22.7	18.7	19.9	14.8	14.1	14.6	9.1	8.2	8.9	5.7	5.5	5.6
19	---	---	---	14.4	14.2	14.3	8.8	7.3	8.5	5.5	5.3	5.4
20	---	---	---	14.2	13.9	14.1	8.6	7.7	8.4	5.4	5.1	5.2
21	---	---	---	14.0	13.8	13.9	8.3	7.6	8.1	5.4	5.2	5.3
22	---	---	---	13.9	13.5	13.8	8.3	7.1	8.0	5.5	5.2	5.3
23	---	---	---	13.7	13.6	13.7	8.0	7.7	7.8	5.4	5.3	5.4
24	---	---	---	13.6	13.4	13.5	7.7	7.0	7.5	5.5	5.3	5.4
25	---	---	---	13.4	12.8	13.2	7.6	6.9	7.4	5.5	5.3	5.4
26	---	---	---	13.3	12.6	13.1	7.3	6.6	7.2	5.7	5.3	5.5
27	---	---	---	13.2	12.7	13.1	7.2	6.9	7.1	5.6	4.8	5.3
28	21.4	18.8	20.0	13.3	13.0	13.1	7.8	6.8	7.1	6.9	5.5	6.1
29	20.2	19.0	19.6	13.2	12.6	13.0	7.2	6.1	6.7	7.2	5.7	6.0
30	20.3	19.3	19.6	12.9	12.6	12.7	7.0	6.0	6.6	6.9	5.4	5.9
31	19.6	19.4	19.5	---	---	---	6.5	6.0	6.3	6.8	5.5	5.9
MONTH	26.5	17.7	20.8	19.9	12.6	16.0	12.7	6.0	9.4	7.2	4.8	5.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.5	5.3	5.9	8.0	6.5	7.2	10.9	10.1	10.5	17.2	14.4	15.5
2	8.3	5.4	6.2	7.5	7.4	7.4	10.3	10.0	10.1	16.7	14.8	15.5
3	6.3	6.0	6.1	7.6	7.4	7.5	10.7	10.1	10.3	17.1	15.1	15.8
4	6.4	6.0	6.2	7.9	7.5	7.7	10.8	10.5	10.6	16.5	15.2	15.9
5	6.3	6.1	6.2	8.1	7.8	7.9	11.0	10.7	10.8	16.5	15.1	15.8
6	6.5	6.1	6.3	7.9	7.7	7.8	10.8	10.3	10.6	16.4	15.2	15.9
7	6.4	6.1	6.2	8.2	7.9	8.0	11.4	10.3	11.0	18.3	15.1	16.4
8	6.6	6.3	6.5	8.3	7.9	8.1	11.5	11.2	11.4	18.4	15.4	17.0
9	7.3	6.5	6.9	8.9	8.3	8.7	12.0	11.1	11.5	18.1	15.6	17.1
10	6.8	6.5	6.6	8.4	7.9	8.1	11.8	11.3	11.5	17.9	16.0	16.9
11	6.6	6.5	6.6	8.3	7.9	8.0	12.7	11.5	12.2	18.2	15.9	16.9
12	6.7	6.6	6.7	9.3	8.1	8.6	13.7	10.9	12.4	19.5	15.8	17.7
13	6.8	6.7	6.7	9.1	8.8	8.9	13.8	11.5	13.1	19.5	16.3	17.9
14	7.3	6.7	7.0	9.2	8.3	8.7	13.4	12.3	13.0	18.2	15.6	17.0
15	7.3	6.8	7.0	9.7	8.1	9.0	14.3	12.1	13.4	18.1	16.0	17.1
16	7.1	6.2	6.7	9.5	9.1	9.3	14.9	12.4	13.9	18.5	16.3	17.2
17	8.9	5.7	6.8	9.3	9.1	9.2	16.7	11.7	14.6	18.4	16.7	17.6
18	8.5	5.5	6.8	9.3	9.1	9.2	14.3	10.3	12.2	18.9	16.5	17.9
19	6.7	6.3	6.5	9.9	9.3	9.6	13.2	11.2	12.2	19.6	16.8	18.1
20	7.2	6.7	6.8	10.3	9.8	10.0	14.5	12.3	13.7	19.0	16.1	17.3
21	7.0	6.7	6.9	10.1	9.7	9.9	14.4	13.2	14.1	21.7	15.9	18.1
22	7.3	6.8	7.1	10.2	9.7	9.9	14.3	13.5	13.9	20.9	16.5	19.0
23	7.1	6.5	6.7	10.2	9.7	9.9	17.3	14.2	15.3	21.3	16.6	19.3
24	6.9	6.4	6.7	10.6	9.8	10.0	17.5	13.7	15.8	20.5	17.2	19.0
25	7.1	6.9	7.0	10.7	10.3	10.5	17.7	13.6	15.9	20.5	16.8	19.2
26	6.9	6.7	6.8	10.5	10.3	10.4	17.5	14.1	15.9	20.0	19.6	19.8
27	6.8	6.7	6.8	10.5	10.0	10.2	17.7	14.3	15.9	20.0	19.6	19.8
28	6.7	6.3	6.5	10.1	10.0	10.0	17.4	13.8	15.5	21.2	19.7	20.9
29	---	---	---	10.0	10.0	10.0	16.8	14.1	15.5	20.7	19.7	20.2
30	---	---	---	10.4	9.9	10.1	17.2	14.9	15.8	20.6	19.8	20.3
31	---	---	---	10.7	10.0	10.3	---	---	---	21.8	20.3	21.2
MONTH	8.9	5.3	6.6	10.7	6.5	9.0	17.7	10.0	13.1	21.8	14.4	17.8

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.7	20.9	21.3	24.2	20.4	22.2	25.8	22.9	24.6	26.1	21.8	23.5
2	21.5	18.9	20.5	24.1	20.5	23.1	25.4	22.1	23.9	26.5	21.9	23.8
3	21.3	19.4	20.2	24.3	21.1	23.5	25.7	21.8	23.7	26.5	22.0	23.9
4	21.2	19.9	20.4	24.5	21.0	23.3	24.9	21.0	22.7	23.9	22.1	22.5
5	21.4	20.7	21.0	24.4	20.9	23.2	24.8	20.9	22.3	23.7	22.1	22.6
6	22.3	21.2	22.0	24.4	21.3	23.5	25.8	21.0	23.0	24.8	22.0	23.2
7	22.6	21.6	22.2	24.3	21.1	23.4	26.1	21.2	23.5	25.2	22.3	23.5
8	22.9	22.2	22.5	24.5	21.2	23.5	26.0	21.4	23.5	24.2	22.3	23.2
9	22.5	21.2	22.1	25.0	21.4	23.8	25.5	21.6	23.4	24.6	22.1	22.9
10	22.4	20.3	22.0	24.7	21.4	23.9	26.1	21.4	23.4	25.5	21.2	23.4
11	22.5	21.5	22.2	25.1	21.4	23.8	24.7	21.8	23.0	25.3	22.0	24.0
12	22.3	21.9	22.1	25.0	21.5	23.6	25.2	21.7	22.9	25.1	22.0	23.8
13	22.4	21.7	22.0	25.3	21.5	23.6	26.4	21.9	23.7	25.0	21.3	23.3
14	22.9	20.4	21.9	24.9	21.7	23.9	26.3	21.8	23.9	25.0	21.6	23.4
15	23.4	20.0	21.9	24.9	21.9	23.8	26.1	21.8	23.8	24.7	21.9	22.4
16	23.3	18.8	20.9	24.8	21.9	23.8	25.9	22.3	23.8	24.5	21.9	22.8
17	22.9	18.4	20.3	25.4	22.1	23.9	25.8	21.7	23.3	24.7	21.9	23.4
18	22.9	18.3	21.0	25.4	22.6	24.3	26.2	21.6	23.7	24.9	22.4	23.4
19	23.3	19.4	21.8	25.0	22.1	24.2	26.4	21.6	23.8	25.5	22.5	24.1
20	23.6	19.6	22.2	24.8	22.0	24.1	26.2	21.7	23.7	24.9	22.0	23.4
21	24.0	19.9	22.7	25.1	22.1	24.2	25.7	21.7	23.7	25.0	22.5	23.6
22	24.1	20.0	22.7	25.2	22.0	24.4	24.9	22.1	23.5	25.7	22.4	23.7
23	23.8	20.1	22.9	25.3	22.2	24.4	25.8	21.5	23.3	25.9	22.3	23.6
24	23.7	20.2	22.9	25.1	22.3	24.4	25.5	21.7	23.4	25.3	21.5	23.6
25	23.8	20.1	22.7	25.5	22.2	24.5	25.7	21.5	23.5	26.4	22.8	24.5
26	23.7	20.6	23.1	25.5	22.5	24.6	26.4	21.8	23.8	25.5	22.1	23.8
27	23.9	20.4	22.9	25.2	22.5	24.5	26.2	21.9	23.6	25.7	21.3	23.3
28	23.5	20.4	22.7	25.5	22.5	24.6	26.0	21.7	23.7	25.9	21.6	23.5
29	23.5	20.1	21.9	25.4	22.2	24.5	26.1	21.9	23.5	26.0	21.6	23.5
30	24.1	20.0	21.9	25.5	22.6	24.6	23.9	21.9	22.7	25.7	20.8	23.0
31	---	---	---	25.6	22.7	24.7	23.8	21.9	22.6	---	---	---
MONTH	24.1	18.3	21.9	25.6	20.4	23.9	26.4	20.9	23.4	26.5	20.8	23.4
YEAR	26.5	4.8	15.9									

07331700 Randell Lake near Denison, TX

LOCATION.--Lat 33°48'06", long 96°34'48", Grayson County, Hydrologic Unit 11140101, on right bank near the right end of the dam on Shawne Creek, 5.6 mi northeast of Denison.

DRAINAGE AREA.--11 mi^2.

PERIOD OF RECORD.--Mar. 1999 to current year.

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

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 2,100 ft long. The outlet works consist of twenty-three 8 by 12-ft tainter gates and two 8-ft wide open concrete spillways. Dam was completed and impoundment began in 1909. The lake was built and owned by the city of Denison. Conservation pool storage is 5,400 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	640.00
Top of tainter gates	628.00
Crest of concrete spillway	630.00
Top of conservation pool	621.11

COOPERATION.--Capacity table furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,590 acre-ft, Apr. 5, 1999, elevation, 618.31 ft; minimum contents, 2,250 acre-ft, Sept. 3, 4, 5, 1999, elevation, 608.04 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,160 acre-ft, Feb. 16, elevation, 616.49 ft; minimum contents, 2,700 acre-ft, Nov. 3, elevation, 610.40 ft.

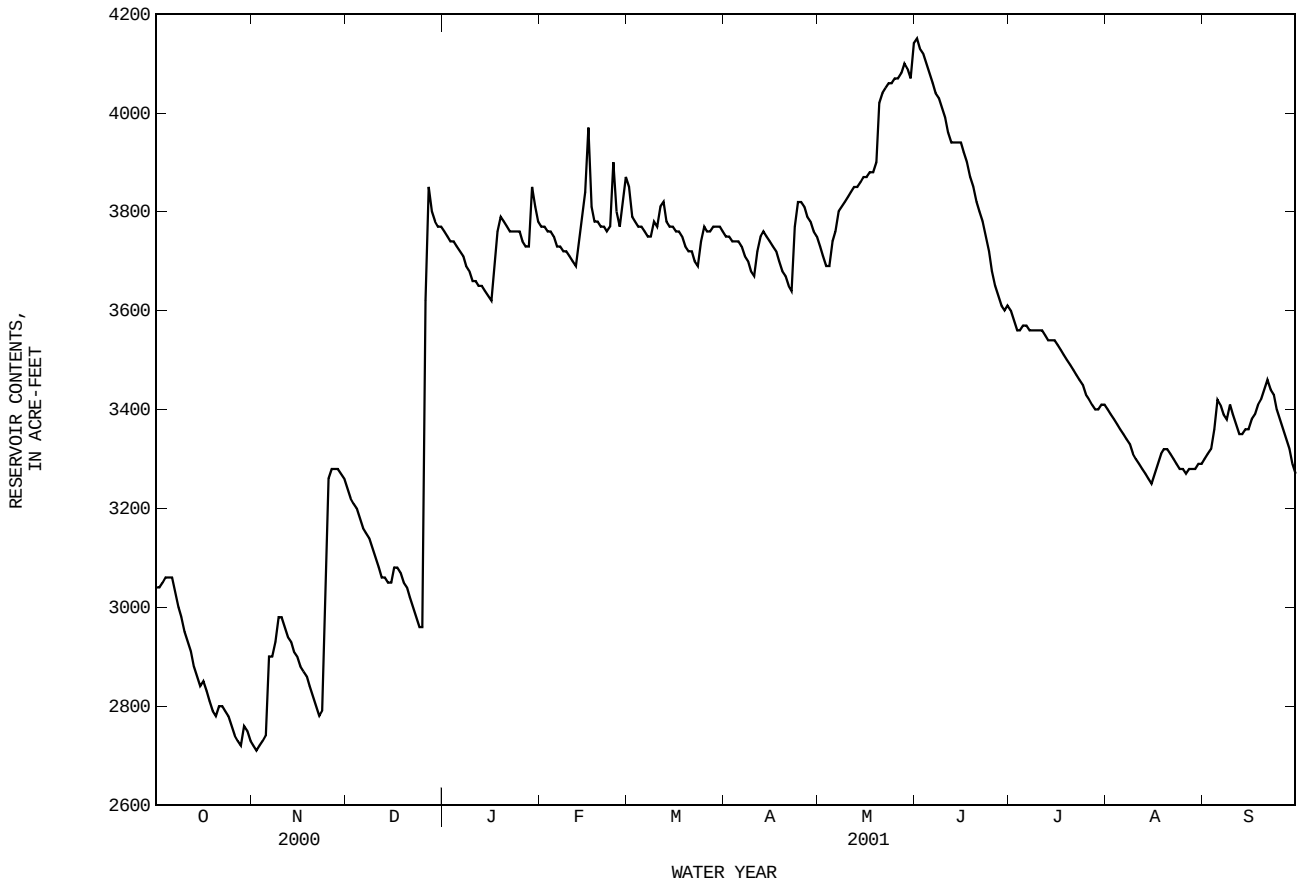
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3040	2720	3240	3760	3770	3850	3750	3730	4150	3600	3400	3300
2	3040	2710	3220	3750	3770	3790	3750	3710	4130	3580	3390	3310
3	3050	2720	3210	3740	3760	3780	3740	3690	4120	3560	3380	3320
4	3060	2730	3200	3740	3760	3770	3740	3690	4100	3560	3370	3360
5	3060	2740	3180	3730	3750	3770	3740	3740	4080	3570	3360	3420
6	3060	2900	3160	3720	3730	3760	3730	3760	4060	3570	3350	3410
7	3030	2900	3150	3710	3730	3750	3710	3800	4040	3560	3340	3390
8	3000	2930	3140	3690	3720	3750	3700	3810	4030	3560	3330	3380
9	2980	2980	3120	3680	3720	3780	3680	3820	4010	3560	3310	3410
10	2950	2980	3100	3660	3710	3770	3670	3830	3990	3560	3300	3390
11	2930	2960	3080	3660	3700	3810	3720	3840	3960	3560	3290	3370
12	2910	2940	3060	3650	3690	3820	3750	3850	3940	3550	3280	3350
13	2880	2930	3060	3650	3740	3780	3760	3850	3940	3540	3270	3350
14	2860	2910	3050	3640	3790	3770	3750	3860	3940	3540	3260	3360
15	2840	2900	3050	3630	3840	3770	3740	3870	3940	3540	3250	3360
16	2850	2880	3080	3620	3970	3760	3730	3870	3920	3530	3270	3380
17	2830	2870	3080	3690	3810	3760	3720	3880	3900	3520	3290	3390
18	2810	2860	3070	3760	3780	3750	3700	3880	3870	3510	3310	3410
19	2790	2840	3050	3790	3780	3730	3680	3900	3850	3500	3320	3420
20	2780	2820	3040	3780	3770	3720	3670	4020	3820	3490	3320	3440
21	2800	2800	3020	3770	3770	3720	3650	4040	3800	3480	3310	3460
22	2800	2780	3000	3760	3760	3700	3640	4050	3780	3470	3300	3440
23	2790	2790	2980	3760	3770	3690	3770	4060	3750	3460	3290	3430
24	2780	3050	2960	3760	3900	3740	3820	4060	3720	3450	3280	3400
25	2760	3260	2960	3760	3800	3770	3820	4070	3680	3430	3280	3380
26	2740	3280	3620	3740	3770	3760	3810	4070	3650	3420	3270	3360
27	2730	3280	3850	3730	3820	3760	3790	4080	3630	3410	3280	3340
28	2720	3280	3800	3730	3870	3770	3780	4100	3610	3400	3280	3320
29	2760	3270	3780	3850	---	3770	3760	4090	3600	3400	3280	3290
30	2750	3260	3770	3810	---	3770	3750	4070	3610	3410	3290	3270
31	2730	---	3770	3780	---	3760	---	4140	---	3410	3290	---
MEAN	2870	2940	3220	3730	3780	3760	3730	3910	3890	3510	3310	3370
MAX	3060	3280	3850	3850	3970	3850	3820	4140	4150	3600	3400	3460
MIN	2720	2710	2960	3620	3690	3690	3640	3690	3600	3400	3250	3270
(+)	610.54	612.76	614.86	614.92	615.29	614.85	614.78	616.40	614.19	613.37	612.88	612.79
(@)	-290	+530	+510	+10	+90	-110	-10	+390	-530	-200	-120	-20

CAL YR 2001 MAX 3900 MIN 2710 (@) +550
WTR YR 2001 MAX 4150 MIN 2710 (@) +250

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

07331700 Randell Lake near Denison, TX--Continued



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.

REMARKS.--Records fair. Flow regulated since October 1943 by Lake Texoma (station 07331500), 92.8 mi upstream from station. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2440	4760	22600	18700	18300	51500	17300	e7000	31100	6030	6830	2290
2	2250	8130	21900	15100	16300	50500	16800	7050	23000	4960	6770	1350
3	e1000	7880	21100	11500	15800	44700	16400	5240	14500	4320	4280	1510
4	638	8170	21000	14400	14500	51600	16200	5080	10500	7120	3100	2540
5	e1200	8070	20100	15900	15200	54800	16100	5040	9940	7770	2890	2770
6	e1100	14200	14600	16200	14100	51600	16300	5300	11900	6720	2220	2380
7	e800	20800	12600	16400	13800	48200	16200	6270	13100	6480	1490	1790
8	e800	19700	10700	16300	13400	47000	14100	8690	12800	7070	1670	1340
9	e750	26900	9240	16100	13100	47000	e12000	8540	12100	6730	2650	1440
10	e700	28200	8510	15400	13200	47700	e11000	6730	10100	6660	2540	1390
11	e650	25900	5170	14900	13400	47700	10100	5870	8370	6840	2590	1500
12	e800	24100	4550	14900	13800	59100	e9000	5360	8790	6530	2470	1400
13	e810	22400	6670	15200	15600	59100	e8000	5930	9990	5910	1970	1570
14	e820	21600	7310	15300	28100	49300	14200	6870	9830	5300	1270	1590
15	e810	21600	8010	14800	31700	39800	18200	4650	8530	4820	1290	1520
16	e2800	21400	9540	14400	48000	37400	21500	4630	7450	5570	2360	1520
17	e940	21100	10300	15100	74100	41600	21000	5510	5170	5650	2890	1550
18	e800	19700	11000	19200	e60000	44400	18300	5460	2870	5560	2820	1460
19	e770	12200	10000	22000	e49000	43400	14200	5330	2020	5600	2770	2260
20	e780	11000	9580	19500	e45000	42700	e12000	5150	3650	6590	2710	2620
21	e800	11600	9050	16900	e48000	42300	e10000	4250	4800	6670	2630	6780
22	1400	11400	8400	15400	e44000	38200	e8000	3320	5120	6700	2590	9780
23	1580	11000	8130	14800	e42700	26900	13900	5880	5910	6690	2570	7220
24	999	17700	7990	14300	e39200	19700	21100	8820	5540	6680	2550	3880
25	746	26300	8200	13800	e51800	20500	15300	8080	6400	6710	2540	2400
26	1010	25900	25600	13500	e48700	23000	e11000	4370	6330	6690	2520	1860
27	1630	19800	51300	12600	e48600	20000	e9000	13500	6060	6720	2570	1900
28	1650	17400	40600	9640	50300	17800	e7000	20900	7480	6750	3040	1830
29	1810	21900	27200	7130	---	18000	e9000	21800	8100	6770	3050	1730
30	2070	23100	20900	14600	---	18900	e8000	21100	9100	6850	2790	1660
31	3020	---	20800	21400	---	18000	---	20200	---	6860	2770	---
TOTAL	38373	533910	472650	475370	899700	1222400	411200	251920	280550	196320	87200	74830
MEAN	1238	17800	15250	15330	32130	39430	13710	8126	9352	6333	2813	2494
MAX	3020	28200	51300	22000	74100	59100	21500	21800	31100	7770	6830	9780
MIN	638	4760	4550	7130	13100	17800	7000	3320	2020	4320	1270	1340
AC-FT	76110	1059000	937500	942900	1785000	2425000	815600	499700	556500	389400	173000	148400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2001, BY WATER YEAR (WY)

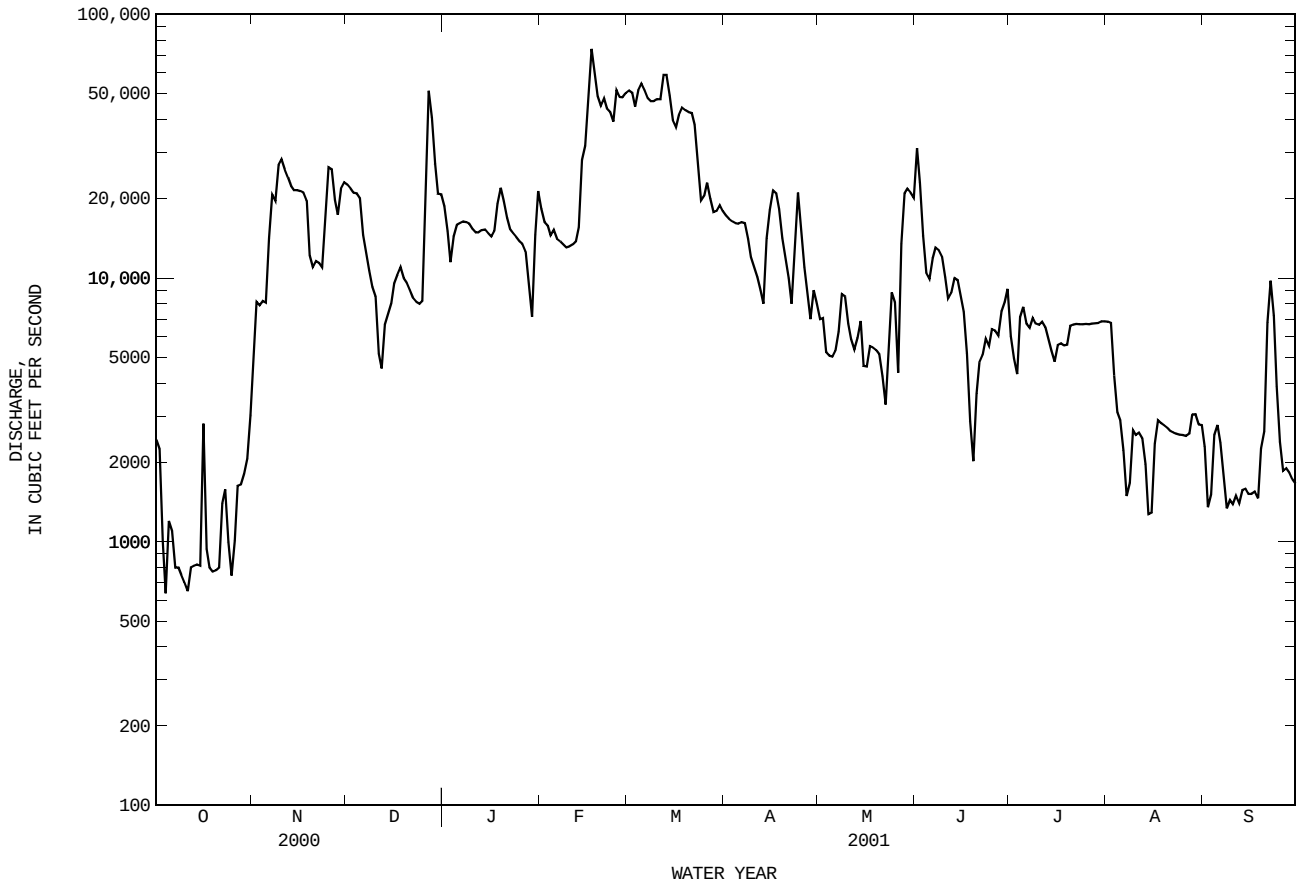
MEAN	6782	7522	7471	7072	8757	11190	11680	16860	17880	7784	4874	4767
MAX	40240	37170	32340	39930	32130	39430	55500	103900	83820	27700	34840	19010
(WY)	1982	1975	1992	1992	2001	2001	1990	1990	1957	1989	1950	1950
MIN	263	242	894	1126	1138	1118	1344	2837	2074	1586	1108	859
(WY)	1957	1957	1957	1964	1959	1967	1956	1980	1956	1956	1972	1988

e Estimated

07335500 RED RIVER AT ARTHUR CITY, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1945 - 2001	
ANNUAL TOTAL	2022015		4944423			
ANNUAL MEAN	5525		13550		[a]9379	
HIGHEST ANNUAL MEAN					23290	1990
LOWEST ANNUAL MEAN					2754	1964
HIGHEST DAILY MEAN	51300	Dec 27	74100	Feb 17	269000	May 4 1990
LOWEST DAILY MEAN	638	Oct 4	638	Oct 4	134	[b]Dec 11 1956
ANNUAL SEVEN-DAY MINIMUM	759	Oct 7	759	Oct 7	134	Dec 11 1956
MAXIMUM PEAK FLOW			80400	Feb 17	[c]275000	May 4 1990
MAXIMUM PEAK STAGE			18.35	Feb 17	[d]34.21	May 4 1990
ANNUAL RUNOFF (AC-FT)	4011000		9807000		6795000	
10 PERCENT EXCEEDS	12200		37700		24200	
50 PERCENT EXCEEDS	3260		8690		4320	
90 PERCENT EXCEEDS	1200		1560		1370	

[a]Prior to regulation, water years 1906-11, 1937-43, 9,266 ft^3/s.
[b]Also occurred Dec. 12, 1956.
[c]Maximum discharge for period of record, 400,000 ft^3/s, May 28, 1908.
[d]Maximum gage height for period of record, 43.2 ft, May 28, 1908.



07337000 RED RIVER AT INDEX, AR

LOCATION.--Lat 33°33'07", long 94°02'28", in NW1/4SW1/4 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, 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.--July 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 July 19, 1979, water-stage recorder, at site 500 ft downstream at present datum.

REMARKS.--No estimted daily discharges. Water-discharge records good. Some regulation since Oct. 31, 1943, by Lake Texoma (Texas), 241 mi upstream, capacity, 5,392,900 acre-ft, since Sept. 28, 1967, by Pat Mayse Lake (Texas), capacity, 352,700 acre-ft, and since Jan. 18, 1974, by Hugo Lake (Oklahoma) capacity, 966,700 acre-ft. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

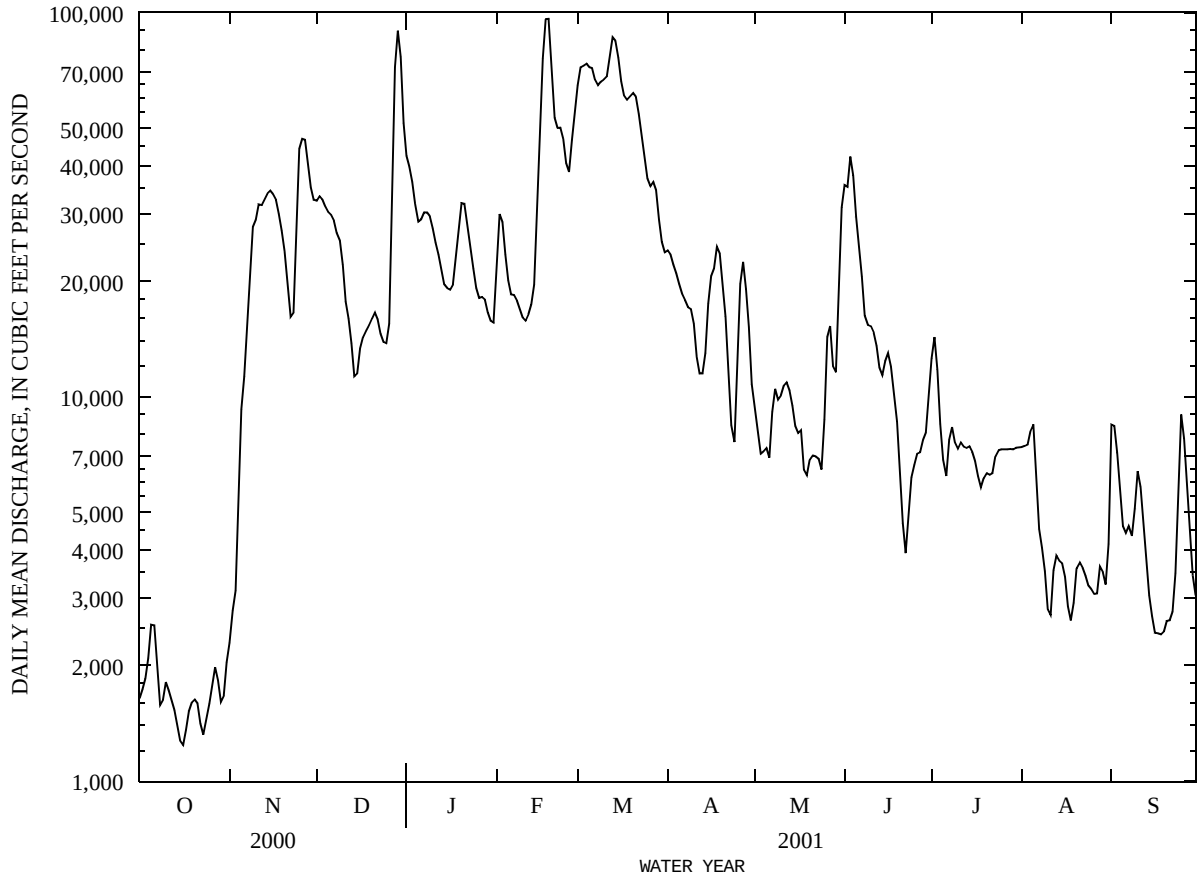
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1640	2290	32400	42400	22800	64800	24100	9350	35600	12600	7400	8480
2	1730	2780	33300	39700	29900	72200	23500	8160	35200	14300	7460	8410
3	1850	3130	32700	36300	28500	72900	22100	7120	42200	11800	7520	7150
4	2090	5560	31300	31800	23500	73700	21000	7220	37700	8500	8160	5640
5	2550	9290	30300	28600	20100	72200	19700	7360	29500	6860	8470	4600
6	2540	11300	29800	29000	18500	71800	18500	6940	24400	6220	6350	4420
7	1990	16100	28800	30200	18400	66900	17800	9130	20600	7750	4540	4610
8	1580	21700	26700	30200	17800	64900	17100	10500	16300	8360	4050	4350
9	1630	27700	25500	29500	16900	66200	16900	9850	15400	7600	3520	5130
10	1810	28900	22100	27500	16100	67100	15500	10100	15300	7330	2800	6410
11	1720	31700	17700	25200	15800	68200	12700	10700	14700	7620	2700	5830
12	1620	31600	16000	23500	16400	76600	11500	10900	13600	7430	3540	4720
13	1530	32700	13800	21500	17400	86300	11500	10400	11900	7370	3860	3700
14	1390	33800	11300	19600	19600	84500	13000	9500	11400	7440	3740	3040
15	1270	34400	11500	19200	31500	76500	17500	8400	12400	7190	3690	2690
16	1240	33700	13400	19000	49500	66400	20600	8040	13000	6800	3400	2430
17	1360	32600	14300	19600	76000	60800	21600	8190	12000	6230	2850	2420
18	1520	30000	14900	23300	96200	59300	24600	6460	10200	5820	2620	2410
19	1600	27100	15400	27600	96400	60600	23600	6250	8630	6150	2910	2450
20	1630	24000	16000	31900	69400	61800	19600	6870	6500	6330	3580	2610
21	1590	19500	16600	31800	53300	60300	16200	7040	4700	6270	3710	2620
22	1410	16200	15900	28400	50100	54600	11900	7000	3920	6340	3590	2760
23	1320	16600	14600	24800	50200	47900	8450	6910	4820	7000	3420	3470
24	1460	27900	13900	21600	47000	41900	7630	6470	6170	7260	3220	6200
25	1590	44200	13800	19200	40600	37000	11000	8720	6660	7300	3160	9010
26	1780	47000	15500	18100	38500	35400	19700	14300	7120	7300	3070	7790
27	1980	46700	37400	18200	46600	36300	22500	15300	7170	7300	3080	5770
28	1830	40500	72200	17900	54600	34500	19100	12000	7720	7310	3620	4340
29	1610	35100	89700	16600	---	29000	15200	11600	8060	7300	3500	3430
30	1670	32600	76700	15800	---	25300	10800	21100	9930	7370	3250	3040
31	2040	---	51700	15600	---	23800	---	31100	---	7380	4140	---
TOTAL	52570	766650	855200	783600	1081600	1819700	514880	312980	452800	237830	130920	139930
MEAN	1696	25560	27590	25280	38630	58700	17160	10100	15090	7672	4223	4664
MAX	2550	47000	89700	42400	96400	86300	24600	31100	42200	14300	8470	9010
MIN	1240	2290	11300	15600	15800	23800	7630	6250	3920	5820	2620	2410
AC-FT	104300	1521000	1696000	1554000	2145000	3609000	1021000	620800	898100	471700	259700	277600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2001, BY WATER YEAR (WY)

MEAN	8070	10910	12170	11350	14260	17500	17240	23740	21990	9782	5781	5925
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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1944 - 2001	
ANNUAL TOTAL	3245570		7148660			
ANNUAL MEAN	8868		19590		a13210	
HIGHEST ANNUAL MEAN					30420	1990
LOWEST ANNUAL MEAN					4383	1964
HIGHEST DAILY MEAN	89700	Dec 29	96400	Feb 19	268000	May 10 1990
LOWEST DAILY MEAN	1240	Oct 16	1240	Oct 16	384	Nov 28 1956
ANNUAL SEVEN-DAY MINIMUM	1420	Oct 13	1420	Oct 13	397	Oct 19 1956
MAXIMUM PEAK FLOW			102000	Feb 19	b270000	May 10 1990
MAXIMUM PEAK STAGE			18.55	Feb 19	c32.30	May 10 1990
INSTANTANEOUS LOW FLOW			1240	Oct 15-16	378	Nov 28 1956
ANNUAL RUNOFF (AC-FT)	6438000		14180000		9570000	
10 PERCENT EXCEEDS	19800		47400		35300	
50 PERCENT EXCEEDS	4500		13000		6010	
90 PERCENT EXCEEDS	2000		2590		2290	

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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07337000 RED RIVER AT INDEX, AR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947-1956, April 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
OCT											
18...	1130	81213	80513	1450	764	6.2	69.8	7.8	1670	21.0	382
JAN											
17...	1115	81213	80513	19500	781	8.7	65.3	8.3	1050	4.2	240
FEB											
28...	1330	81213	80513	53400	775	9.7	86.3	7.7	516	11.0	129
MAY											
09...	1400	81213	80513	6840	764	7.6	90.6	8.2	737	24.2	206
JUN											
20...	1200	81213	80513	6900	763	7.9	105	8.3	1130	29.9	280
AUG											
29...	1315	81213	80513	3490	772	7.6	97.3	8.4	1270	28.6	313

DATE	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
18...	100	32.0	6.50	4.23	190	51.5	130	130	1020	.070	1.2
JAN											
17...	63.0	20.0	4.30	2.05	73.0	39.3	160	170	643	<.010	.60
FEB											
28...	37.0	9.0	3.00	1.80	47.0	43.4	63.0	69.0	310	.021	1.4
MAY											
09...	56.0	16.0	3.60	2.15	71.0	42.4	92.0	97.0	432	.032	1.1
JUN											
20...	74.0	23.0	3.80	3.12	120	47.9	170	160	675	<.010	.79
AUG											
29...	81.0	27.0	5.00	3.69	150	50.5	190	190	784	<.010	1.1

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)
OCT										
18...	.090	.010	.044	.030	.066	.20	1.13	1.23	.031	<.020
JAN										
17...	--	--	--	.460	--	<.010	--	1.06	.061	.030
FEB										
28...	.027	--	--	.390	--	<.010	1.38	1.79	.092	.030
MAY										
09...	.041	--	--	.200	--	<.010	1.07	1.30	.061	<.020
JUN										
20...	--	--	--	<.020	--	<.010	--	--	--	<.020
AUG										
29...	--	--	--	<.020	--	<.010	--	--	--	<.020

DATE	PHOSPHORUS ORTHO DIS SOLVED (MG/L AS P (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	E COLI MTEF MF WATER (COLS./ 100 ML/ (31633)	COLI FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP KF STRP MR, WATER (COL/ 100 ML) (31673)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT								
18...	.010	.120	120	77	84	95	225	881
JAN								
17...	.020	.150	80	73	160	61	564	29700
FEB								
28...	.030	.430	2200	1800	3800	59	1320	191000
MAY								
09...	.020	.200	400	480	260	89	310	5730
JUN								
20...	<.010	.070	E19	E19	E25	96	161	3000
AUG								
29...	<.010	.060	E6	E16	E27	100	168	1580

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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. No flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

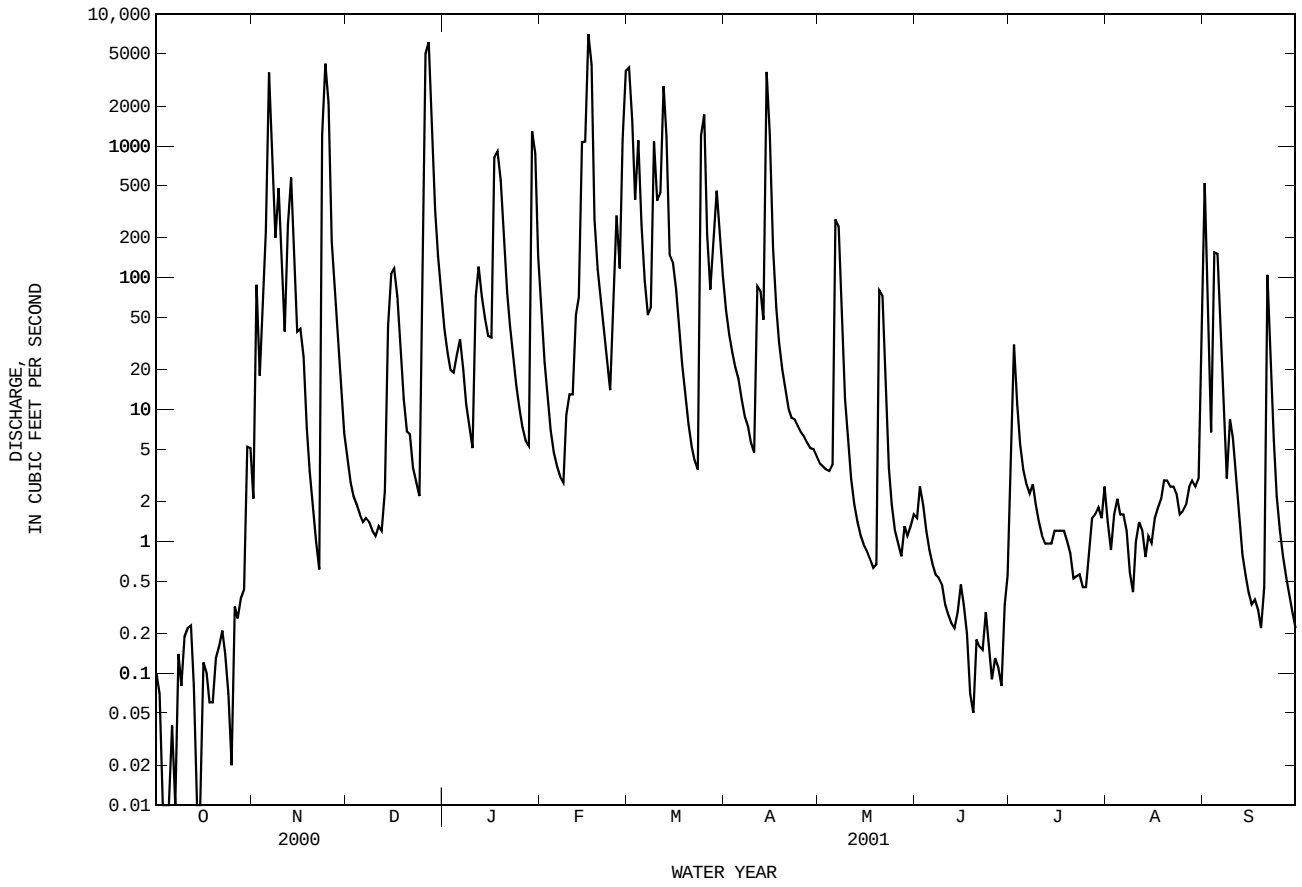
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	2.1	4.4	41	59	3920	57	3.9	1.5	6.1	1.4	522
2	.07	88	2.8	27	23	1550	37	3.7	2.6	31	.86	31
3	.00	18	2.2	20	12	389	27	3.5	1.9	11	1.6	6.7
4	.00	84	1.9	19	7.0	1100	21	3.4	1.2	5.5	2.1	155
5	.00	223	1.6	26	4.7	251	17	3.8	.85	3.5	1.6	152
6	.04	3590	1.4	34	3.7	95	12	278	.66	2.7	1.6	36
7	.00	1080	1.5	20	3.1	52	8.8	246	.56	2.3	1.2	9.4
8	.14	201	1.4	11	2.8	59	7.4	39	.53	2.7	.58	3.0
9	.08	477	1.2	7.3	9.1	1080	5.6	12	.47	1.9	.41	8.4
10	.19	134	1.1	5.1	13	383	4.7	5.4	.33	1.4	1.0	6.1
11	.22	39	1.3	72	13	438	86	3.0	.28	1.1	1.4	3.0
12	.23	251	1.2	121	52	2840	79	1.9	.24	.96	1.2	1.5
13	.08	572	2.4	72	71	1180	48	1.4	.22	.96	.76	.79
14	.00	138	43	49	1060	150	3620	1.1	.29	.96	1.1	.55
15	.00	39	107	36	1080	131	1200	.95	.47	1.2	.97	.41
16	.12	41	117	35	7020	82	169	.85	.33	1.2	1.5	.33
17	.10	25	72	816	4120	44	60	.74	.20	1.2	1.8	.36
18	.06	7.2	31	906	277	22	32	.63	.07	1.2	2.1	.30
19	.06	3.4	12	548	116	13	20	.67	.05	1.0	2.9	.22
20	.13	1.9	6.8	184	67	7.7	14	80	.18	.81	2.9	.45
21	.16	1.0	6.5	78	38	5.2	10	73	.16	.52	2.6	105
22	.21	.61	3.6	43	23	4.1	8.6	12	.15	.54	2.6	32
23	.14	1210	2.8	25	14	3.5	8.4	3.6	.29	.56	2.3	5.8
24	.07	4190	2.2	15	66	1200	7.5	1.9	.15	.45	1.6	2.2
25	.02	2110	28	10	295	1730	6.7	1.2	.09	.45	1.7	1.2
26	.32	186	4990	7.3	117	213	6.2	.96	.13	.86	1.9	.76
27	.26	68	6110	5.8	1120	81	5.6	.77	.11	1.5	2.6	.53
28	.37	30	1370	5.3	3710	203	5.1	1.3	.08	1.6	2.9	.39
29	.43	13	326	1290	---	456	5.0	1.1	.33	1.8	2.6	.29
30	5.2	6.6	147	877	---	213	4.4	1.3	.55	1.5	3.0	.22
31	5.1	---	74	145	---	105	---	1.6	---	2.6	79	---
TOTAL	13.90	14829.81	13473.3	5550.8	19396.4	18000.5	5593.0	788.67	14.97	91.07	131.78	1085.90
MEAN	.45	494	435	179	693	581	186	25.4	.50	2.94	4.25	36.2
MAX	5.2	4190	6110	1290	7020	3920	3620	278	2.6	31	79	522
MIN	.00	.61	1.1	5.1	2.8	3.5	4.4	.63	.05	.45	.41	.22
AC-FT	28	29410	26720	11010	38470	35700	11090	1560	30	181	261	2150
CFSM	.00	3.30	2.90	1.19	4.62	3.87	1.24	.17	.00	.02	.03	.24
IN.	.00	3.68	3.34	1.38	4.81	4.46	1.39	.20	.00	.02	.03	.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2001, BY WATER YEAR (WY)

MEAN	143	203	330	146	245	220	143	203	96.0	50.6	4.93	17.0
MAX	451	646	804	513	693	581	411	734	433	333	32.0	91.5
(WY)	1994	1997	1992	1998	2001	2001	1997	1992	1992	1994	1992	1994
MIN	.008	.093	.33	5.83	.12	8.01	10.4	2.53	.50	.000	.005	.002
(WY)	1993	1996	1996	2000	1996	1996	1996	1998	2001	1998	1993	1993

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1992 - 2001	
ANNUAL TOTAL	47302.33		78970.10			
ANNUAL MEAN	129		216		150	
HIGHEST ANNUAL MEAN					297	1992
LOWEST ANNUAL MEAN					7.81	1996
HIGHEST DAILY MEAN	6110	Dec 27	7020	Feb 16	8230	Oct 20 1993
LOWEST DAILY MEAN	.00	Jul 10	.00	Oct 3	.00	Oct 2 1991
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 10	.03	Oct 1	.00	Oct 7 1991
MAXIMUM PEAK FLOW			7900	Dec 27	14900	Dec 4 1998
MAXIMUM PEAK STAGE			25.06	Dec 27	29.44	Dec 4 1998
ANNUAL RUNOFF (AC-FT)	93820		156600		108600	
ANNUAL RUNOFF (CFSM)	.86		1.44		1.00	
ANNUAL RUNOFF (INCHES)	11.73		19.58		13.58	
10 PERCENT EXCEEDS	190		349		233	
50 PERCENT EXCEEDS	1.6		4.4		2.6	
90 PERCENT EXCEEDS	.00		.22		.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 2000 TO SEPTEMBER 2001

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)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)
FEB													
20...	1625	77	229	7.9	12.5	72	--	9.6	89.8	<2.0	--	220	600
MAY													
09...	1315	27	340	7.8	24.0	53	--	7.2	85.9	2.8	--	530	1100
JUL													
12...	1215	--	--	--	--	--	32	--	--	--	--	e22	e46
AUG													
07...	1455	2.0	619	8.8	32.5	--	63	10.2	145	5.9	340	68	340

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	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 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)	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													
20...	108	4	37.5	3.45	14.1	.592	2.93	104	23.9	6.2	E.2	7.8	179
MAY													
09...	109	13	38.4	3.22	20.4	.849	3.90	96	25.3	10.2	.3	8.6	217
JUL													
12...	119	--	40.3	4.58	72.1	2.87	6.96	136	58.1	43.5	.3	6.3	335
AUG													
07...	76.8	--	25.9	2.93	93.9	4.67	6.35	101	51.9	55.5	.4	5.1	372

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)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)
FEB													
20...	--	114	.498	.013	.511	E.036	--	.44	.174	--	--	8.4	3
MAY													
09...	188	91	4.21	.252	4.46	.199	1.02	1.2	.173	.110	.337	12	2
JUL													
12...	328	56	2.49	.130	2.62	.146	.695	.84	.810	.777	2.38	9.7	--
AUG													
07...	346	70	8.89	.138	9.03	.042	.820	.86	1.56	1.44	4.41	11	2

DATE	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)	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)
FEB													
20...	.23	E1.7	43.0	<.06	.12	E.5	.31	3.6	20	.21	16.6	<.23	1.0
MAY													
09...	.20	3.5	53.4	<.06	.10	<.8	.44	2.6	30	.20	14.6	<.01	1.7
JUL													
12...	--	--	--	--	--	--	--	--	<10	--	3.4	--	--
AUG													
07...	.40	4.0	42.0	<.06	.09	<.8	1.75	4.3	<10	.37	.6	<.01	22.3

07342470 South Sulphur River near Commerce, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	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					
20...	1.36	<2.4	<1.0	5	1.73
MAY					
09...	2.28	<2.4	<1.0	3	.99
JUL					
12...	--	--	--	--	--
AUG					
07...	2.46	<2.0	<1.0	6	.60

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 is 460.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. No known regulation or diversions. No flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	3.7	6.1	10	16	1470	9.3	2.6	2.3	2.2	.00	60
2	.00	33	5.6	9.5	13	233	6.8	2.4	2.2	2.0	.00	7.0
3	.00	9.0	3.1	9.8	12	104	5.8	2.4	2.3	2.0	.00	5.7
4	.00	30	3.1	9.6	9.5	372	5.1	2.2	2.0	2.0	.00	8.3
5	.00	84	3.0	11	8.2	43	4.9	2.5	1.8	1.7	.00	8.8
6	.00	1130	2.9	9.6	7.9	17	4.9	39	1.5	1.4	.00	4.9
7	.00	208	2.9	8.0	7.1	13	4.6	23	1.4	e.5	.00	2.5
8	.00	56	2.8	6.9	8.4	12	4.3	9.4	1.3	.00	.00	1.6
9	.00	79	2.7	6.1	9.8	29	4.1	6.1	1.2	.00	.00	9.1
10	.00	25	2.6	5.6	10	47	4.0	4.5	.98	.00	.00	4.7
11	.00	15	2.4	24	12	110	13	3.7	.88	.00	.00	2.5
12	.00	92	2.3	27	16	902	16	3.2	.88	.00	.00	1.5
13	.00	199	4.8	17	27	195	9.2	2.7	.88	.00	.00	1.7
14	.00	23	19	16	e200	22	1920	2.3	.95	.00	.00	1.4
15	.00	11	29	13	e200	21	532	2.2	1.4	.00	.00	1.1
16	.00	8.9	23	15	e3000	12	26	1.9	1.3	.00	.00	1.1
17	.00	7.1	14	268	e1000	8.3	11	1.8	1.1	.00	.00	e.5
18	.00	5.9	8.6	254	e100	6.3	6.9	1.6	.90	.00	.00	.00
19	.00	5.2	6.6	128	e70	5.3	5.7	2.0	.88	.00	.00	.00
20	.00	4.7	5.4	26	e40	4.7	5.1	60	.88	.00	.00	5.9
21	.00	4.8	4.7	16	e20	4.3	4.6	21	.88	.00	.00	47
22	.00	5.4	4.3	12	e10	4.0	4.3	9.1	4.8	.00	.00	11
23	.00	457	4.0	10	7.4	3.7	4.1	6.1	11	.00	.00	5.7
24	.00	1680	3.9	9.2	24	277	3.6	4.8	5.1	.00	.00	3.1
25	.00	319	26	8.4	98	429	3.4	3.8	3.6	.00	.00	2.1
26	.00	30	2180	7.4	21	25	3.4	3.1	3.0	.00	.00	1.1
27	.00	17	1600	7.2	498	11	3.2	2.4	2.8	.00	.00	e.5
28	.00	12	218	7.7	1330	50	3.1	3.0	2.5	.00	.00	.00
29	.00	9.0	74	439	---	85	3.0	2.8	2.2	.00	.00	.00
30	.00	7.2	24	315	---	29	2.9	2.6	2.2	.00	.00	.00
31	.00	---	14	26	---	15	---	2.7	---	.00	17	---
TOTAL	0.00	4570.9	4302.8	1732.0	6775.3	4559.6	2634.3	236.9	65.11	11.80	17.00	198.80
MEAN	.000	152	139	55.9	242	147	87.8	7.64	2.17	.38	.55	6.63
MAX	.00	1680	2180	439	3000	1470	1920	60	11	2.2	17	60
MIN	.00	3.7	2.3	5.6	7.1	3.7	2.9	1.6	.88	.00	.00	.00
AC-FT	.00	9070	8530	3440	13440	9040	5230	470	129	23	34	394

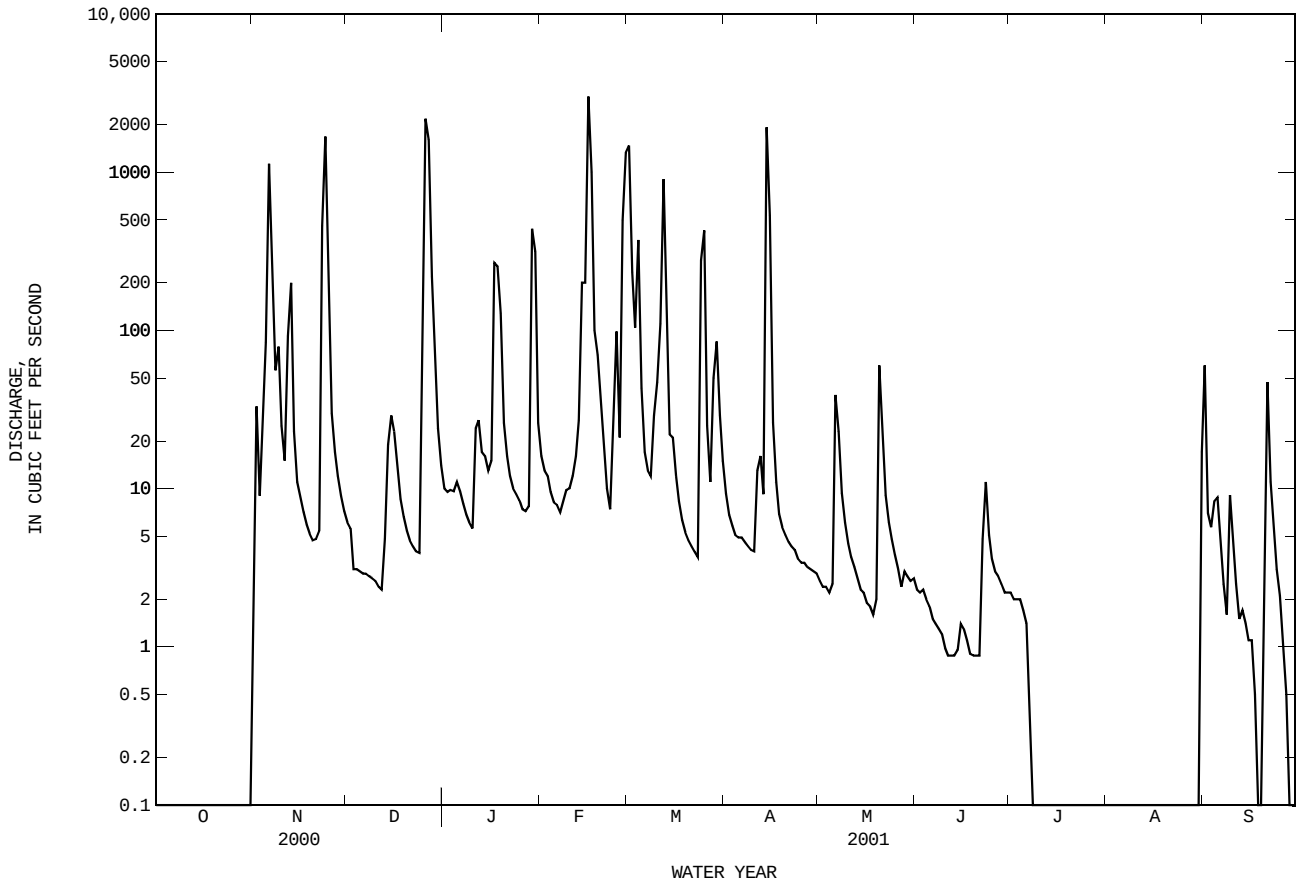
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2001, BY WATER YEAR (WY)

MEAN	39.4	67.1	109	51.2	88.3	70.7	59.4	64.2	39.2	20.8	3.54	3.15
MAX	179	212	257	144	290	147	171	247	126	119	31.6	11.5
(WY)	1994	1997	1992	1998	1997	2001	1993	1992	1992	1994	1992	1995
MIN	.000	.033	.000	.98	.10	5.41	2.02	.83	.003	.000	.000	.000
(WY)	2000	2000	1996	2000	1996	1996	1992	1998	1998	1993	1993	1993

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1992 - 2001	
ANNUAL TOTAL	14000.31		25104.51			
ANNUAL MEAN	38.3		68.8		51.2	
HIGHEST ANNUAL MEAN					99.8	1992
LOWEST ANNUAL MEAN					2.37	1996
HIGHEST DAILY MEAN	2180	Dec 26	e3000	Feb 16	3460	Dec 4 1998
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 8	.00	Oct 1	.00	Oct 1 1991
MAXIMUM PEAK FLOW			7210	Feb 15	7210	Feb 15 2001
MAXIMUM PEAK STAGE			b16.72	Feb 15	b16.72	Feb 15 2001
ANNUAL RUNOFF (AC-FT)	27770		49790		37080	
10 PERCENT EXCEEDS	42		81		65	
50 PERCENT EXCEEDS	.53		4.1		.60	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated.
b From crest-stage gage.

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 2000 TO SEPTEMBER 2001

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)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
FEB													
20...	1335	16	197	8.1	13.6	55	--	10.4	99.6	<2.0	660	800	99.3
MAY													
09...	1530	5.7	293	7.9	23.0	50	--	8.3	97.2	<2.0	570	1000	110
SEP													
05...	1236	<2.0	197	7.4	24.7	60	60	6.5	78.9	3.2	--	--	79.6

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 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)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB													
20...	3	35.5	2.59	8.2	.357	2.58	96	15.7	3.5	E.1	7.6	151	134
MAY													
09...	14	38.6	3.18	10.9	.452	3.56	96	24.6	5.7	.2	8.5	189	156
SEP													
05...	12	28.3	2.16	6.4	.310	4.48	69	20.8	3.0	.2	8.5	128	117

DATE	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,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)	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)
FEB													
20...	76	.126	.013	.139	<.041	.36	E.056	.065	.199	8.4	5	.17	2.0
MAY													
09...	<10	.556	.050	.606	E.035	.80	.137	.101	.310	12	2	.18	4.1
SEP													
05...	176	.383	.014	.397	<.040	.48	.146	.145	.445	15	3	.17	4.4

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	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)
FEB													
20...	42.2	<.06	.08	<.8	.18	3.1	20	.39	3.9	<.23	.6	1.10	<2.4
MAY													
09...	55.3	<.06	E.03	<.8	.38	2.0	40	.08	9.9	<.01	1.2	2.27	<2.4
SEP													
05...	37.9	E.03	E.02	<.8	.16	2.3	30	.40	1.1	<.01	1.1	1.47	<2.0

DATE	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			
20...	<1.0	4	1.85
MAY			
09...	<1.0	2	1.10
SEP			
05...	<1.0	2	.54

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07342495 Jim L. Chapman 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 Sept. 2000 (U.S. Army Corps of Engineers furnished contents), Oct. 2000 to current year. Prior to Oct. 2000, published as "Cooper Lake near Cooper".

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

REMARKS.--No estimated daily contents. Records poor. 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 Sept. 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. Conservation pool storage is 310,312 acre-ft. 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.

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, 439,400 acre-ft, Mar. 4, elevation, 446.09 ft; minimum contents, 275,800 acre-ft, Oct. 15, elevation, 438.03 ft.

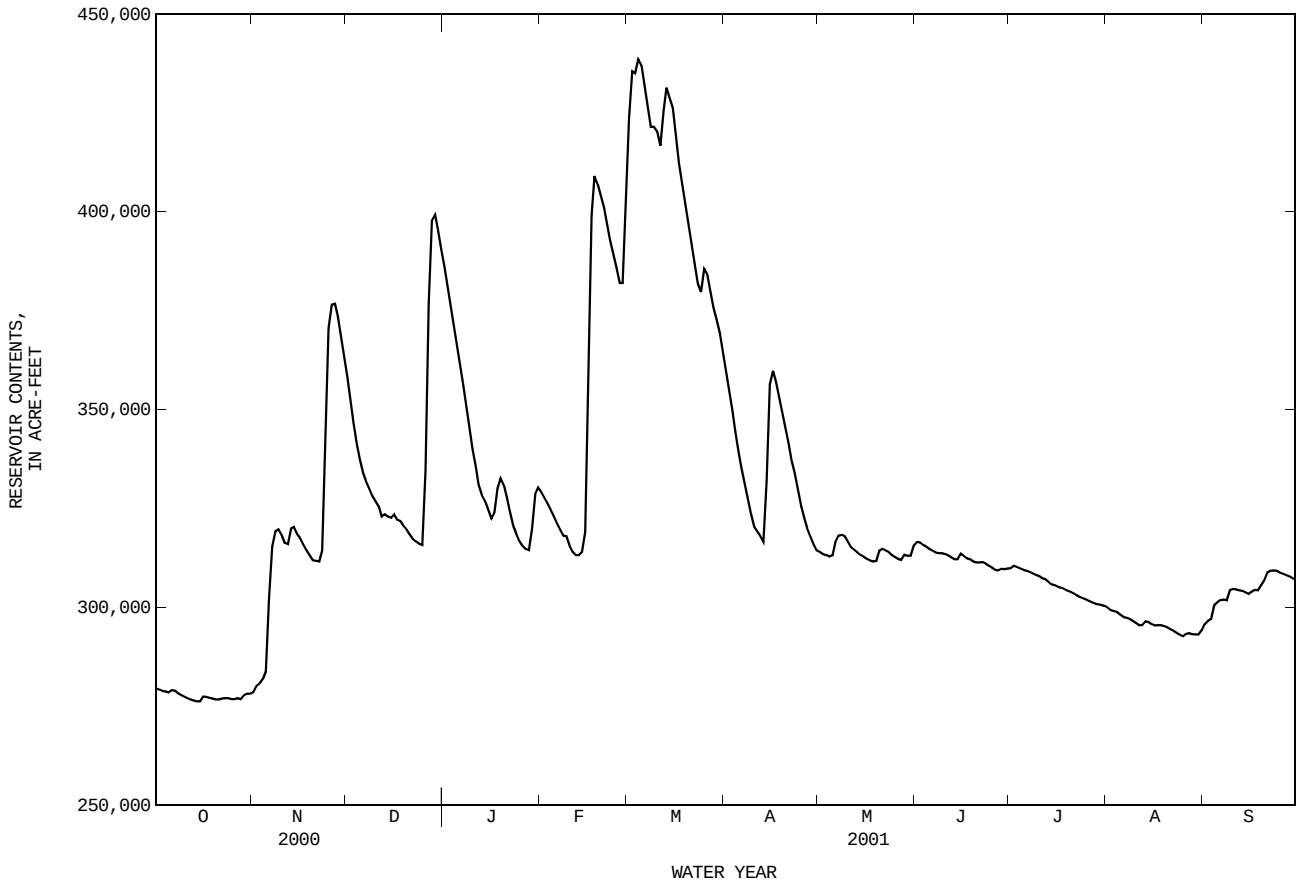
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	279400	278500	358100	386200	329100	423600	359800	313900	316500	309900	299900	295700
2	279100	280100	352400	381100	327700	435500	354600	313400	316400	310400	299300	296500
3	278800	280700	346600	376300	326200	435000	349800	313200	315800	310100	299000	297000
4	278700	281900	341400	371200	324800	438600	344500	312800	315300	309800	298700	300600
5	278500	283700	337300	366200	323100	437000	339400	313100	314700	309500	298100	301300
6	279000	302300	333900	361200	321300	432000	334900	316500	314200	309200	297600	301800
7	278900	315400	331900	356200	319700	426700	331200	318100	313800	308900	297300	301900
8	278100	319200	330100	350900	318100	421500	327300	318300	313700	308500	297000	301800
9	277700	319700	328200	345400	318000	421500	323600	317900	313700	308200	296500	304300
10	277300	318400	326800	340000	315600	420300	320400	316500	313400	307900	296000	304600
11	276900	316300	325500	335600	314000	416700	319200	315200	313100	307400	295500	304500
12	276600	315900	322900	330900	313200	425500	318000	314600	312600	307100	295500	304300
13	276400	319900	323500	328400	313200	431400	316600	313800	312100	306500	296400	304100
14	276200	320300	322900	326900	314000	428700	331900	313200	312100	305800	296300	303700
15	276200	318500	322600	324600	319000	426200	356300	312800	313500	305600	295700	303300
16	277400	317400	323500	322400	355800	418500	359700	312200	313000	305200	295400	303900
17	277300	315800	322100	323800	399100	412300	356700	311800	312400	304900	295500	304400
18	277100	314300	321800	330000	409000	407100	353100	311600	312100	304600	295500	304300
19	276900	313200	320500	332600	407000	402300	349100	311700	311600	304200	295200	305400
20	276700	311900	319500	330800	404100	397400	345100	314200	311300	303900	294900	306700
21	276700	311700	318400	327500	401000	392100	341300	314700	311300	303500	294400	308700
22	276900	311600	317200	324000	397200	386900	337100	314300	311400	303100	294000	309200
23	277000	314300	316600	320600	392700	381800	333800	313900	311000	302600	293500	309300
24	277000	344800	316000	318500	389200	379700	329600	313200	310400	302300	293000	309200
25	276800	370600	315800	316700	385800	385600	325600	312700	310000	301900	292600	308700
26	276800	376500	334500	315500	382000	384300	322400	312200	309500	301500	293300	308400
27	277000	376700	376800	314700	382000	379900	319900	312000	309300	301200	293400	308100
28	276800	373600	397700	314400	399600	375700	317900	313300	309700	300900	293200	307800
29	277700	368500	399200	319900	---	372600	315900	313000	309600	300700	293100	307400
30	278100	363100	395400	328600	---	369200	314300	313000	309800	300600	293100	307100
31	278100	---	390600	330300	---	364600	---	315600	---	300300	294200	---
MAX	279400	376700	399200	386200	409000	438600	359800	318300	316500	310400	299900	309300
MIN	276200	278500	315800	314400	313200	364600	314300	311600	309300	300300	292600	295700
(+)	438.16	442.55	443.88	440.97	444.31	442.62	440.19	440.26	439.97	439.43	439.08	439.82
(@)	+1400	+85000	+27500	-60300	+69300	-35000	-50300	+1300	-5800	-9500	-6100	+12900

CAL YR 2000 MAX 390600 MIN 223500 (@) +165700
WTR YR 2001 MAX 438600 MIN 276200 (@) +30400

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

07342495 Jim L. Chapman Lake near Cooper, TX--Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Sept. 1992 to current year.
BIOCHEMICAL DATA: Sept. 1992 to current year.
PESTICIDE DATA: Aug. 1999 to current year.

REMARKS.--Pesticide samples are composited from discrete samples collected at the surface, middle, and bottom of the reservoir.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

331938095374701 -- Cooper Lk 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)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
FEB													
20-20	1545	--	--	--	--	--	--	--	--	--	--	--	--
20...	1633	403000	1.00	166	7.9	10.0	.21	11.0	99.0	--	44	52	64.4
20...	1639	--	10.0	165	7.8	9.5	--	10.9	97.0	--	--	--	--
20...	1645	--	20.0	165	7.8	9.5	--	10.8	96.1	--	--	--	--
20...	1650	--	30.0	165	7.8	9.5	--	10.8	96.1	--	--	--	--
20...	1655	--	40.0	165	7.8	9.0	--	10.7	94.1	--	--	--	--
20...	1700	--	45.0	165	7.8	9.0	--	10.6	93.2	--	--	--	65.0
MAY													
09-09	1422	--	--	--	--	--	--	--	--	--	--	--	--
09...	1430	317000	1.00	160	8.1	25.0	.34	9.0	110	e8	<1	--	62.1
09...	1437	--	10.0	158	7.6	21.0	--	7.5	85.0	--	--	--	--
09...	1445	--	20.0	158	7.6	21.0	--	7.4	83.9	--	--	--	--
09...	1452	--	30.0	159	7.5	20.5	--	6.9	77.4	--	--	--	--
09...	1500	--	41.0	161	7.2	19.5	--	4.7	51.7	--	--	--	63.4
AUG													
07-07	1354	--	--	--	--	--	--	--	--	--	--	--	--
07...	1405	296000	1.00	171	7.9	30.0	1.10	5.6	75.4	e1	e1	--	68.2
07...	1414	--	10.0	171	7.6	28.5	--	4.8	63.0	--	--	--	--
07...	1424	--	20.0	171	7.6	28.5	--	4.4	57.7	--	--	--	--
07...	1433	--	30.0	172	7.1	27.5	--	1.5	19.3	--	--	--	--
07...	1443	--	40.0	178	7.0	25.5	--	.2	2.5	--	--	--	70.5

331938095374701 -- Cooper Lk 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)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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													
20-20	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	22.0	2.30	7.7	.416	19.6	3.17	66	9.7	4.1	.2	3.4	93.4
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	0	22.2	2.34	7.8	.422	19.8	3.17	64	9.7	4.1	.2	3.7	93.3
MAY													
09-09	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	3	21.4	2.07	6.8	.374	18.4	2.64	--	9.6	2.8	E.2	5.5	88.2
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	1	21.9	2.14	6.9	.374	18.2	2.76	62	9.6	2.9	.2	6.3	92.1
AUG													
07-07	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	23.5	2.32	7.3	.385	18.1	2.77	72	9.5	3.2	.2	1.2	92.9
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	24.2	2.41	7.2	.371	17.4	2.88	75	8.7	3.0	.2	5.8	101

331938095374701 -- Cooper Lk Site AC

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)	BENZENE TOTAL (UG/L) (34030)	ETHYL-BENZENE TOTAL (UG/L) (34371)
FEB													
20-20	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	.306	.011	.317	.060	.264	.32	E.034	.023	.071	M	<3.0	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	.313	.007	.320	.070	.345	.41	.061	.024	.074	10	E3.1	--	--
MAY													
09-09	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	E.003	.427	<.040	--	.32	E.030	.032	.098	<10	3.7	<.20	<.20
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	E.003	.476	<.041	--	.36	E.047	.030	.092	10	21.5	--	--
AUG													
07-07	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	<.006	E.029	.058	.254	.31	<.060	<.020	--	<10	12.2	<.20	<.20
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	E.003	E.040	.052	.280	.33	<.060	<.020	--	<10	38.3	--	--
07...	--	E.005	.070	.099	.327	.43	<.060	<.020	--	<10	296	--	--
07...	--	<.006	<.050	.282	.355	.64	.076	.071	.218	380	752	--	--

331938095374701 -- Cooper Lk Site AC

DATE	TOLUENE TOTAL (UG/L) (34010)	XYLENE WATER UNFLTRD REC (UG/L) (81551)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)
FEB													
20-20	--	--	--	<.002	<.004	<.002	<.005	.546	<.050	<.010	<.002	<.041	<.020
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
09-09	--	--	--	<.002	<.004	<.002	<.005	.627	<.050	<.010	<.002	<.041	<.020
09...	<.20	<.2	<.2	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07-07	--	--	--	<.002	<.004	<.002	<.005	.676	<.050	<.010	<.002	<.041	<.020
07...	.12	<.2	<.2	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--

331938095374701 -- Cooper Lk Site AC

DATE	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)
FEB													
20-20	<.005	<.006	<.018	<.003	E.054	<.005	<.005	<.021	<.002	<.009	<.005	<.003	<.004
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
09-09	<.005	<.006	<.018	<.003	E.030	<.005	<.005	<.021	<.002	<.009	<.005	<.003	<.004
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07-07	<.005	<.006	<.018	<.003	E.032	<.005	<.005	<.021	<.002	<.009	<.005	<.003	<.004
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--

331938095374701 -- Cooper Lk Site AC

DATE	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
FEB													
20-20	<.035	<.027	.015	<.006	<.002	<.007	<.003	<.007	<.006	<.002	<.010	<.011	<.015
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
09-09	<.035	<.027	.190	<.006	<.002	<.007	<.003	<.007	<.080	<.002	<.010	<.011	<.015
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
07-07	<.035	<.027	.178	<.006	<.002	<.007	<.003	<.007	<.006	<.002	<.010	<.011	<.015
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--

07342495 Jim L. Chapman Lake near Cooper, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

331938095374701 -- Cooper Lk Site AC

DATE	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
FEB											
20-20	<.010	<.011	<.023	<.004	E.005	<.016	<.034	<.017	<.005	<.002	<.009
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09-09	<.010	<.011	<.023	<.004	<.011	<.016	<.034	<.017	<.005	<.002	<.009
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
AUG											
07-07	<.010	<.011	<.023	<.004	<.011	<.016	<.034	<.017	<.005	<.002	<.009
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--

332110095422201 -- Cooper Lk 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)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB													
20...	1718	1.00	154	7.7	10.0	.18	10.8	97.2	--	>120	e480	61.5	1
20...	1723	10.0	152	7.6	9.0	--	10.4	91.4	--	--	--	--	--
20...	1729	22.0	149	7.6	9.0	--	10.6	93.2	--	--	--	58.0	--
MAY													
09...	1523	1.00	161	8.3	26.0	.32	9.4	117	e4	e1	--	62.4	1
09...	1528	10.0	160	7.9	23.5	--	8.2	97.5	--	--	--	--	--
09...	1533	19.0	163	7.3	22.5	--	5.0	58.3	--	--	--	63.9	--
AUG													
07...	1506	1.00	172	8.8	33.0	.70	7.9	112	e6	e1	--	69.9	--
07...	1511	10.0	172	8.6	30.5	--	6.4	87.0	--	--	--	--	--
07...	1516	17.0	172	8.3	30.5	--	5.6	76.1	--	--	--	69.1	--

332110095422201 -- Cooper Lk 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)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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)
FEB													
20...	21.1	2.15	7.9	.438	20.9	2.92	60	9.0	3.9	.2	3.6	88.1	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	19.9	2.00	7.6	.437	21.3	2.87	58	8.8	3.8	E.2	3.8	85.2	.297
MAY													
09...	21.6	2.06	7.0	.387	18.9	2.67	61	9.6	2.9	.2	4.6	88.7	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	22.1	2.12	7.1	.389	18.8	2.72	65	9.6	3.2	.2	3.8	91.1	.269
AUG													
07...	24.1	2.37	7.6	.397	18.4	3.07	73	9.9	3.4	.2	1.6	95.8	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	23.8	2.35	7.5	.395	18.4	2.97	72	9.8	3.3	.2	1.4	94.5	--

332110095422201 -- Cooper Lk 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										
20...	<.006	.307	E.028	--	.33	E.040	.031	.095	M	<3.0
20...	--	--	--	--	--	--	--	--	--	--
20...	.007	.304	E.037	--	.35	E.052	.032	.098	20	5.2
MAY										
09...	E.003	.377	<.040	--	.34	E.044	.025	.077	<10	4.4
09...	--	--	--	--	--	--	--	--	--	--
09...	.007	.276	.114	.344	.46	<.060	E.013	--	10	12.4
AUG										
07...	<.006	<.050	E.030	--	.32	<.060	<.020	--	<10	<3.0
07...	<.006	<.050	.055	.236	.29	<.060	<.020	--	<10	<3.0
07...	<.006	<.050	.049	.253	.30	<.060	<.020	--	<10	E2.2

331818095422501 -- Cooper Lk 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)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB													
20...	1744	1.00	164	7.5	9.5	.12	9.4	83.6	--	>120	e540	65.2	2
20...	1750	10.0	163	7.5	9.0	--	9.5	83.5	--	--	--	--	--
20...	1756	20.0	158	7.5	9.0	--	9.5	83.5	--	--	--	--	--
20...	1802	30.0	158	7.5	9.0	--	9.7	85.3	--	--	--	--	--
20...	1807	36.0	158	7.5	9.0	--	9.7	85.3	--	--	--	64.5	2
MAY													
09...	1600	1.00	162	8.1	28.5	.37	8.9	116	e3	<1	--	62.9	0
09...	1606	10.0	161	7.4	22.5	--	6.1	71.2	--	--	--	66.7	--
09...	1612	20.0	162	7.1	21.0	--	3.5	39.7	--	--	--	--	--
09...	1619	30.0	169	6.9	19.5	--	.2	2.2	--	--	--	66.7	--
AUG													
07...	1537	1.00	174	8.6	32.0	.91	7.5	105	e2	e2	--	70.0	--
07...	1541	10.0	176	7.9	30.5	--	5.4	73.4	--	--	--	--	--
07...	1545	20.0	170	8.1	30.0	--	5.8	78.1	--	--	--	--	--
07...	1550	29.0	207	6.9	29.0	--	.3	4.0	--	--	--	80.4	--

331818095422501 -- Cooper Lk Site CC

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)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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)
FEB													
20...	22.8	1.99	7.5	.404	19.2	2.60	63	11.0	3.3	E.1	7.0	95.9	.300
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
20...	22.3	2.14	7.2	.391	18.7	2.82	62	10.8	3.2	E.1	6.9	94.1	.277
MAY													
09...	21.8	2.07	6.8	.372	18.2	2.62	62	9.5	3.4	.2	5.3	90.8	--
09...	23.2	2.11	6.5	.344	16.7	2.52	--	9.1	2.6	.2	7.2	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	23.2	2.11	6.5	.344	16.7	2.52	72	9.1	2.6	.2	7.2	98.5	--
AUG													
07...	24.2	2.34	7.5	.391	18.2	2.79	73	9.3	3.3	.2	1.2	94.4	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
07...	27.8	2.66	7.7	.376	16.6	3.25	91	6.4	3.4	.2	3.7	114	--

07342495 Jim L. Chapman Lake near Cooper, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

331818095422501 -- Cooper Lk Site CC

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										
20...	.007	.307	.076	.427	.50	.074	.065	.199	30	E2.6
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
20...	.006	.283	.075	.398	.47	.080	.058	.178	60	4.7
MAY										
09...	<.006	.430	<.040	--	.34	E.054	.033	.101	10	E2.6
09...	E.004	.335	.047	.365	.41	E.058	.043	.132	M	32.4
09...	E.003	.377	.076	.384	.46	.060	.036	.110	M	154
09...	E.004	.184	.184	.423	.61	.121	.102	.313	30	316
AUG										
07...	<.006	<.050	.044	.282	.33	<.060	<.020	--	<10	3.3
07...	<.006	<.050	E.036	--	.32	<.060	<.020	--	<10	12.1
07...	<.006	E.036	E.031	--	.36	<.060	E.009	--	20	61.3
07...	<.006	<.050	.466	.490	.96	.459	.439	1.35	1910	566

332019095441901 -- Cooper Lk 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)
FEB							
20...	1816	1.00	147	7.5	10.0	10.1	90.9
20...	1818	10.0	148	7.5	9.5	10.1	89.8
20...	1820	16.0	148	7.5	9.5	10.0	89.0
MAY							
09...	1635	1.00	160	9.1	27.0	13.2	169
09...	1640	9.00	166	7.9	25.0	8.4	103
AUG							
07...	1605	1.00	176	8.8	33.5	9.0	129
07...	1608	8.00	187	7.3	30.0	3.0	40.4

331927095480001 -- Cooper Lk Site HC

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)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	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													
20...	1651	1.00	374	8.0	12.5	10.6	100	--	200	e310	137	--	50.1
MAY													
09...	1500	1.00	319	7.7	21.5	7.4	84.7	1100	1000	--	140	22	51.0

331927095480001 -- Cooper Lk Site HC

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
FEB													
20...	2.96	22.5	.834	25.9	2.14	138	32.9	9.2	.3	7.2	212	.524	.010
MAY													
09...	3.03	22.4	.824	25.4	2.61	118	40.6	11.9	.4	9.5	227	3.18	.081

07342495 Jim L. Chapman Lake near Cooper, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

331927095480001 -- Cooper Lk Site HC

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									
20...	.534	E.022	--	.31	E.043	.029	.089	<10	E2.6
MAY									
09...	3.26	.041	.739	.78	.063	.046	.141	<10	10.0

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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.--June 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. Prior to 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.--No estimated daily discharges. Records fair. Since Sept. 28, 1991, at least 10% of contributing drainage area has been regulated. No known diversions. No flow at times.

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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	13	2800	2870	852	5070	2780	8.8	292	27	4.70	5.1
2	2.1	11	2790	2850	836	3670	2760	29	126	50	5.80	10
3	6.6	11	2760	2810	827	3240	2740	73	86	8.7	5.70	8.7
4	9.7	17	2580	2800	821	3830	2730	6.5	67	6.0	6.60	68
5	10	77	1960	2810	819	3130	2580	5.4	58	5.3	6.10	9.3
6	11	1600	1510	2780	814	3030	2150	134	52	4.8	6.10	6.9
7	11	691	844	2760	812	2960	1910	88	51	4.4	6.50	5.8
8	11	1420	840	2750	810	2940	1910	272	30	4.1	6.1	5.3
9	11	1450	838	2730	819	3250	1750	419	8.1	4.0	5.7	85
10	11	1380	835	2720	820	2990	1390	642	6.0	3.9	5.8	23
11	10	1340	835	2740	815	2960	1060	499	5.4	3.9	6.1	9.3
12	9.6	1510	751	2450	586	4220	845	274	4.8	3.9	5.0	6.3
13	9.9	1660	472	1240	299	3160	663	273	6.0	4.3	6.9	5.2
14	10	1380	503	1220	313	2990	1920	211	7.6	6.6	6.4	4.7
15	11	1170	509	1210	722	3020	1230	25	16	6.2	6.9	4.6
16	11	953	500	1210	3990	2950	1180	56	7.0	5.5	7.6	7.0
17	9.9	869	489	1510	2280	2880	2030	66	6.1	4.4	8.1	5.6
18	9.7	735	482	1740	1550	2850	1990	53	6.2	4.9	7.6	5.2
19	9.6	727	478	2140	2120	2860	1970	4.9	6.5	5.6	6.9	79
20	10	411	472	1990	2080	2850	1960	88	6.6	4.7	6.4	254
21	11	27	467	1950	2060	2830	1960	8.6	7.4	4.6	6.2	161
22	11	19	382	1920	2160	2820	1950	5.3	7.2	5.1	6.4	30
23	11	412	250	1610	2430	2800	1950	4.5	6.0	5.1	6.6	18
24	10	2820	246	1040	2440	3060	1930	4.3	6.4	4.8	6.5	12
25	10	846	255	827	2430	3140	1770	4.5	6.5	4.9	6.1	9.3
26	10	241	2360	577	2410	2900	1390	4.2	6.2	4.9	6.1	8.6
27	10	908	2820	270	3140	2850	1040	87	6.5	5.0	5.0	8.0
28	10	2420	2980	267	4760	2870	845	114	8.5	5.0	6.4	7.6
29	11	2950	3120	753	---	2900	841	21	7.5	5.0	6.0	7.7
30	10	2830	2960	680	---	2830	465	6.5	7.0	5.0	7.2	8.4
31	10	---	2890	892	---	2800	---	782	---	4.4	9.4	---
TOTAL	300.2	30898	41978	56116	44815	96650	51689	4269.5	917.5	222.0	198.90	878.6
MEAN	9.68	1030	1354	1810	1601	3118	1723	138	30.6	7.16	6.42	29.3
MAX	11	2950	3120	2870	4760	5070	2780	782	292	50	9.4	254
MIN	2.1	11	246	267	299	2800	465	4.2	4.8	3.9	4.7	4.6
AC-FT	595	61290	83260	111300	88890	191700	102500	8470	1820	440	395	1740
CFSM	.02	1.95	2.57	3.43	3.04	5.92	3.27	.26	.06	.01	.01	.06
IN.	.02	2.18	2.96	3.96	3.16	6.82	3.65	.30	.06	.02	.01	.06

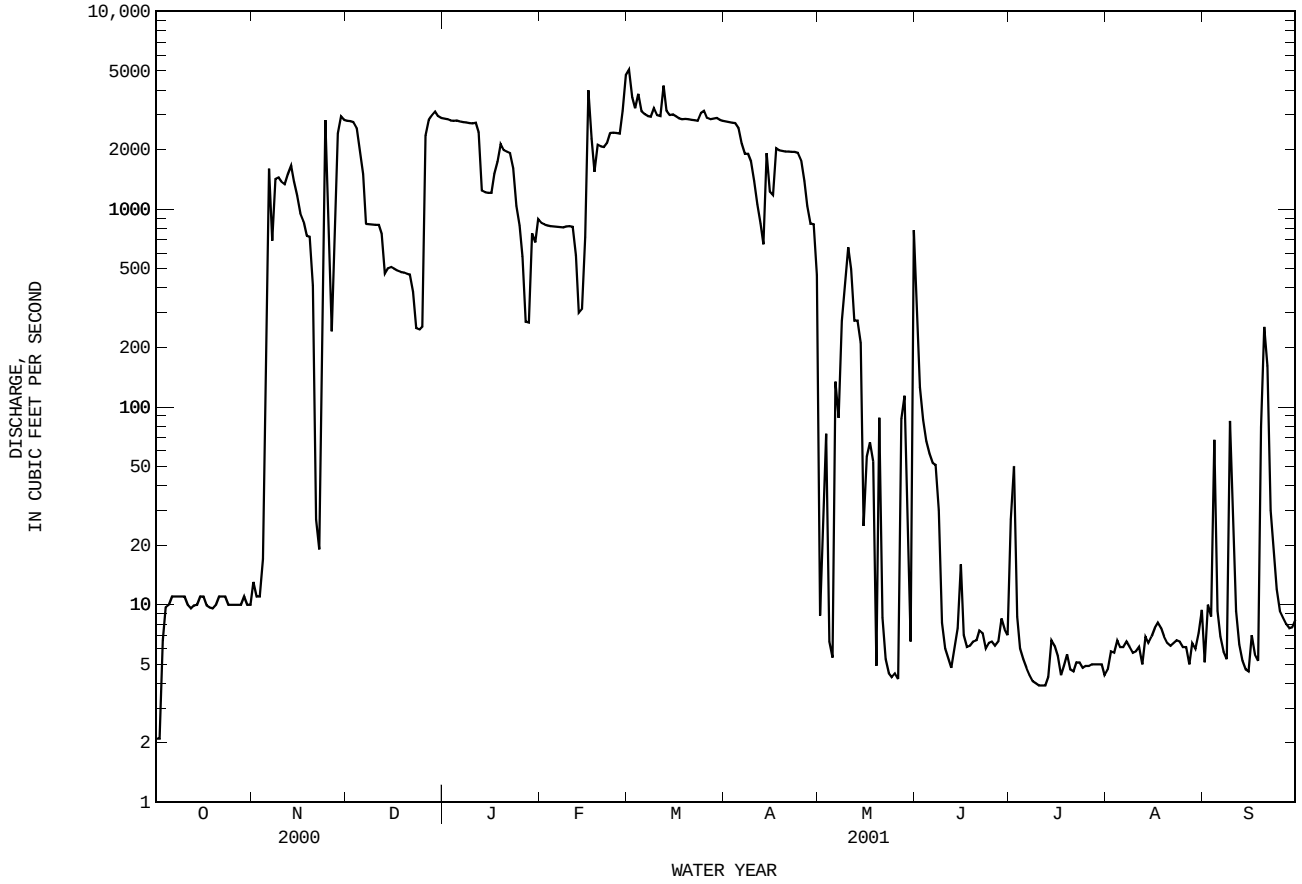
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2001z, BY WATER YEAR (WY)

MEAN	116	545	981	721	741	1259	697	476	330	189	145	18.3
MAX	551	1280	2167	2281	1748	3118	1723	1902	939	839	1205	99.5
(WY)	1994	1995	1999	1998	1999	2001	2001	1995	1995	1992	1992	1994
MIN	1.58	2.11	3.39	3.68	.71	4.17	5.16	15.7	5.95	2.32	.74	.47
(WY)	2000	2000	1996	1996	1996	1996	1996	1996	1993	1996	1999	1999

07342500 South Sulphur River near Cooper, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1992 - 2001z	
ANNUAL TOTAL	111753.8		328932.70			
ANNUAL MEAN	305		901		518	
HIGHEST ANNUAL MEAN					901	2001
LOWEST ANNUAL MEAN					5.52	1996
HIGHEST DAILY MEAN	3190	Jun 22	5070	Mar 1	5070	Mar 1 2001
LOWEST DAILY MEAN	2.1	Oct 1	2.1	Oct 1	.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	4.3	Feb 5	4.1	Jul 7	.00	Oct 1 1991
MAXIMUM PEAK FLOW			7760	Nov 30	7760	Nov 30 2000
MAXIMUM PEAK STAGE			19.98	Nov 30	19.98	Nov 30 2000
ANNUAL RUNOFF (AC-FT)	221700		652400		375200	
ANNUAL RUNOFF (CFSM)	.58		1.71		.98	
ANNUAL RUNOFF (INCHES)	7.89		23.22		13.35	
10 PERCENT EXCEEDS	1090		2840		1780	
50 PERCENT EXCEEDS	16		241		18	
90 PERCENT EXCEEDS	5.2		5.2		1.5	

z Period of regulated streamflow.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1958 to Sept. 1966, Oct. 1967 to current year.
BIOCHEMICAL DATA: Dec. 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1958 to Sept. 1966, Oct. 1967 to Sept. 1989.
WATER TEMPERATURE: Oct. 1958 to Sept. 1966, Oct. 1967 to Sept. 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,710 microsiemens/cm, Aug. 14, 1973; minimum daily, 82 microsiemens/cm, July 2, 1976, July 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 2000 TO SEPTEMBER 2001

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)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	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)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB													
20...	1545	2080	174	7.7	9.8	36	--	13.0	116	<2.0	63.7	--	21.8
MAY													
09...	1315	426	135	7.6	21.5	81	--	8.6	98.4	<2.0	61.8	0	21.3
AUG													
07...	1657	6.2	177	7.8	29.0	--	17	6.2	82.6	<2.0	72.0	16	24.8

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 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)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
FEB													
20...	2.26	7.7	.419	3.03	64	9.8	4.3	E.2	3.4	110	92.2	24	.311
MAY													
09...	2.08	6.9	.383	2.39	61	9.7	3.4	.2	5.6	105	90.7	68	--
AUG													
07...	2.45	7.5	.386	2.73	56	9.4	3.3	.2	2.1	99	86.7	14	--

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)	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)
FEB													
20...	.011	.322	.061	.211	.27	E.040	.027	.083	7.1	2	.13	E1.1	35.1
MAY													
09...	E.004	.474	<.041	--	.38	E.059	.036	.110	9.0	1	.12	E1.3	37.3
AUG													
07...	E.004	.054	.119	.34	.46	E.045	.040	.120	5.5	2	.14	5.4	39.6

DATE	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	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)
FEB													
20...	<.06	<.04	<.8	.09	1.1	10	<.08	1.9	<.23	.7	.74	<2.4	<1.0
MAY													
09...	<.06	E.02	<.8	.14	1.2	M	.17	11.3	<.01	.6	.76	<2.4	<1.0
AUG													
07...	<.06	<.04	<.8	.16	.7	<10	<.08	142	<.01	.8	.25	<2.0	<1.0

07342500 South Sulphur River near Cooper, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB		
20...	<1	.49
MAY		
09...	<1	.34
AUG		
07...	<1	.26

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 Sept. 30, 1970, at datum 5.00 ft higher. Satellite telemeter at station.

REMARKS.--Records poor. No known regulation or diversions. No flow at times.

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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	7.0	105	274	177	7790	119	24	176	47	.47	857
2	.00	204	94	273	140	1030	95	24	54	28	.39	100
3	.00	46	87	254	119	1670	89	24	30	15	.33	55
4	.00	511	82	293	105	2860	81	23	21	10	.27	42
5	.00	887	79	376	92	455	73	25	16	7.6	.23	28
6	.00	8820	79	291	84	254	68	161	14	5.7	.18	33
7	.00	273	77	247	80	194	63	131	14	4.1	.15	24
8	.00	1030	75	220	79	173	59	55	13	3.0	.14	17
9	.00	688	71	202	108	1970	54	37	13	2.4	.12	649
10	.00	173	70	195	145	429	50	30	12	1.9	.09	132
11	.00	77	67	585	106	2990	158	26	12	1.6	.09	43
12	.00	530	58	416	109	6210	216	122	8.9	1.3	.16	23
13	.00	933	110	300	5230	608	85	49	7.0	1.1	.87	16
14	.00	159	310	314	2340	276	2320	30	7.0	1.1	.66	14
15	.00	79	521	257	5250	255	1050	23	28	1.1	.37	36
16	.00	57	390	261	24200	168	208	19	26	1.1	.29	18
17	.00	42	201	e3850	1610	125	93	17	14	.96	.40	14
18	.00	33	132	e1800	733	109	62	15	9.5	.87	.65	9.1
19	.00	30	111	989	536	101	53	17	6.9	.82	7.4	475
20	.00	27	97	314	424	92	51	1080	5.7	.74	4.8	1550
21	.00	25	90	227	360	85	50	105	5.3	.69	1.9	680
22	.04	26	82	200	305	79	47	45	139	.65	1.3	120
23	.03	5230	77	172	270	74	49	29	31	.62	.87	56
24	.02	13700	76	154	614	2140	59	22	15	.61	.51	31
25	.01	1280	e792	137	918	958	43	17	9.3	.58	.25	22
26	.00	375	e21900	124	386	217	36	15	6.9	.56	.20	14
27	.02	226	e4120	115	6050	143	32	49	6.6	.52	.18	11
28	.07	172	1070	132	8190	421	30	238	42	.51	.20	8.5
29	7.8	140	627	4850	---	651	28	83	48	.56	.15	7.8
30	21	120	369	763	---	296	26	36	29	.64	.14	6.0
31	14	---	275	277	---	173	---	2150	---	.58	5090	---
TOTAL	42.99	35900.0	32294	18862	58760	32996	5447	4721	820.1	141.91	5113.76	5091.4
MEAN	1.39	1197	1042	608	2099	1064	182	152	27.3	4.58	165	170
MAX	21	13700	21900	4850	24200	7790	2320	2150	176	47	5090	1550
MIN	.00	7.0	58	115	79	74	26	15	5.3	.51	.09	6.0
AC-FT	85	71210	64060	37410	116600	65450	10800	9360	1630	281	10140	10100

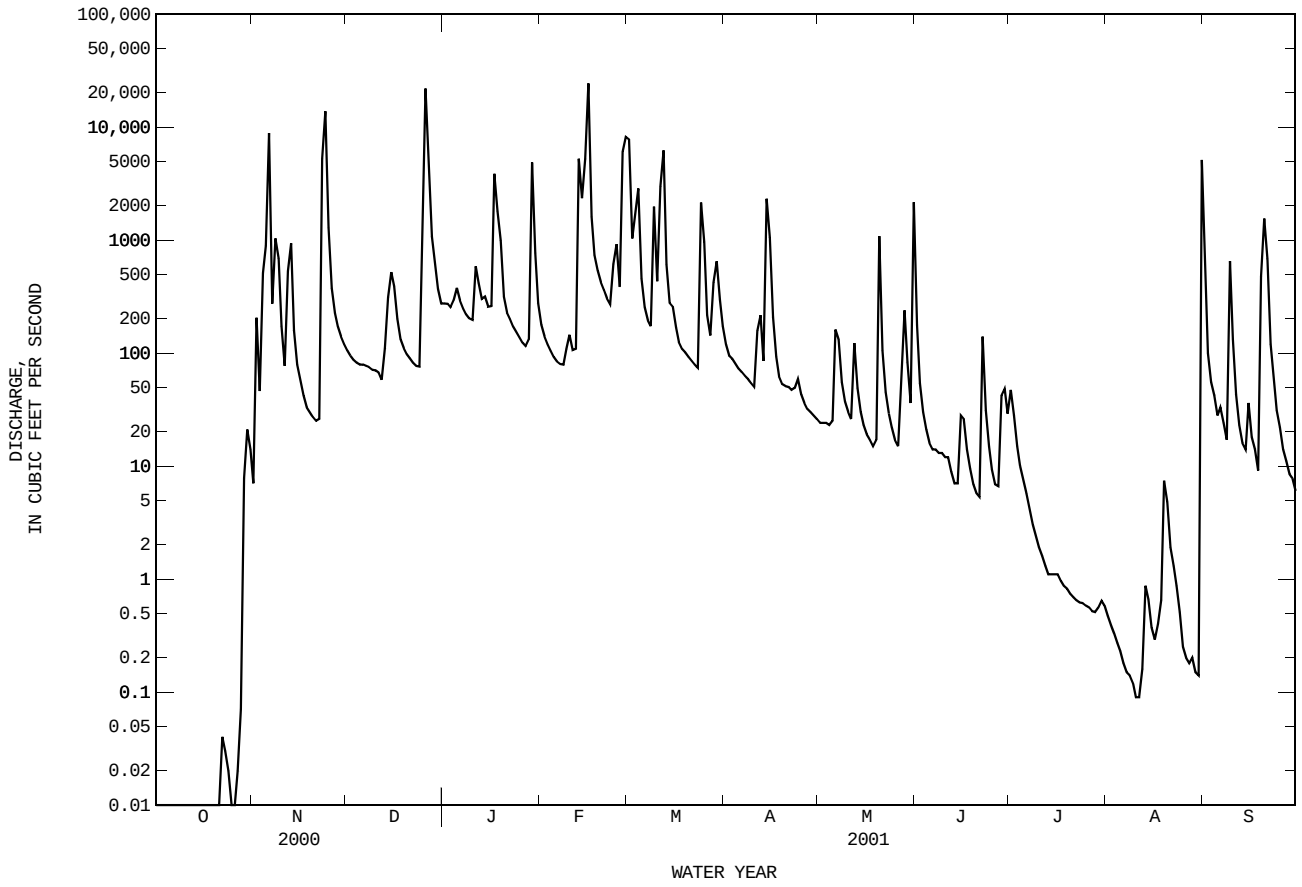
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2001, BY WATER YEAR (WY)

MEAN	215	270	311	224	388	353	384	462	305	95.0	22.9	110
MAX	1784	1406	1527	1172	2099	1223	3017	2461	1792	872	165	584
(WY)	1972	1958	1992	1950	2001	1968	1966	1982	1989	1976	2001	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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1950 - 2001	
ANNUAL TOTAL	125696.26		200190.16			
ANNUAL MEAN	343		548		261	
HIGHEST ANNUAL MEAN					548	2001
LOWEST ANNUAL MEAN					34.7	1996
HIGHEST DAILY MEAN	21900	Dec 26	24200	Feb 16	40900	Oct 19 1971
LOWEST DAILY MEAN	.00	Aug 2	.00	Oct 1	.00	Oct 1 1949
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 2	.00	Oct 1	.00	Aug 2 1951
MAXIMUM PEAK FLOW			45900	Feb 16	90600	Oct 19 1971
MAXIMUM PEAK STAGE			29.45	Feb 16	36.16	Oct 19 1971
ANNUAL RUNOFF (AC-FT)	249300		397100		188900	
10 PERCENT EXCEEDS	538		899		306	
50 PERCENT EXCEEDS	15		54		11	
90 PERCENT EXCEEDS	.00		.17		.00	

e Estimated

07343000 North Sulphur River near Cooper, TX--Continued



07343200 Sulphur River near 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, 1.0 mi downstream from Little Mustang Creek, 2.3 mi downstream from U.S Highway 271, 2.8 mi northeast of Talco.

DRAINAGE AREA.--1,405 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Dec. 1956 to Sept. 1996, Oct. 2000 to current year. Oct. 1997 to Sept. 2000, published as "below Talco" (station 07343210).

REVISED RECORDS.--WDR TX-76-1: (P).

GAGE.--Water-stage recorder and crest-stage gage. 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.--No estimated daily discharges. Records good. The River Crest Steam Electric Generating Plant diverts an unknown amount of water upstream from station. Since Sept. 1991, at least 10% of contributing drainage area has been regulated. 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 Jim L. Chapman 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	58	3620	6650	4030	20100	3880	587	4430	518	12	1460
2	11	79	3300	5380	2300	23600	3590	238	5960	404	12	2910
3	10	264	3060	4680	1500	15900	3390	123	2900	391	12	1050
4	9.6	217	2870	4180	1140	10500	3260	86	1170	232	12	484
5	9.2	427	2780	3900	952	11200	3170	93	547	143	12	1230
6	9.8	2480	2320	3850	853	9040	3100	116	317	91	12	722
7	9.4	15700	1780	3760	805	6560	2730	1310	218	52	11	368
8	9.9	18700	1010	3530	782	5000	2190	1200	159	34	11	217
9	9.9	10900	676	3340	778	4950	1960	612	124	26	11	204
10	9.7	8710	623	3200	821	6280	1820	456	95	22	11	955
11	9.5	5790	612	3370	886	6300	1520	568	62	20	11	729
12	9.6	3840	604	3900	942	7190	1250	546	48	19	11	293
13	9.7	4970	610	4120	1060	12800	1140	381	41	18	13	183
14	9.8	6760	569	3130	3230	10900	3430	316	36	18	13	119
15	9.8	5210	889	2140	7070	7780	7770	264	37	18	13	83
16	12	3110	1310	1670	10400	5820	10300	177	49	18	14	139
17	12	1790	1270	2110	34200	4680	6170	104	72	18	14	548
18	13	1220	890	6150	28600	4040	3860	78	60	18	14	565
19	13	878	594	8410	12700	3710	3150	77	43	17	15	284
20	12	730	471	8000	7660	3480	2540	118	35	17	16	711
21	12	584	403	5860	5450	3330	2170	672	31	17	16	3210
22	12	276	367	4090	4270	3240	2000	342	29	16	16	6370
23	12	265	327	3290	3660	3180	1920	165	48	15	16	5200
24	15	5570	228	2650	3410	3360	1880	102	76	15	15	2460
25	16	26400	212	1690	3470	5190	1850	64	49	15	14	1030
26	17	22400	2960	1100	3790	6900	1760	48	36	15	13	435
27	16	10500	21700	814	4700	5530	1470	49	30	15	13	255
28	15	5090	38400	457	8990	4410	1090	133	422	15	12	168
29	16	3750	21400	823	---	4190	785	496	1420	14	13	111
30	17	3800	12200	5990	---	4540	717	389	880	14	13	81
31	45	---	8590	7200	---	4260	---	482	---	13	15	---
TOTAL	403.9	170468	136645	119434	158449	227960	85862	10392	19424	2258	406	32574
MEAN	13.0	5682	4408	3853	5659	7354	2862	335	647	72.8	13.1	1086
MAX	45	26400	38400	8410	34200	23600	10300	1310	5960	518	16	6370
MIN	9.2	58	212	457	778	3180	717	48	29	13	11	81
AC-FT	801	338100	271000	236900	314300	452200	170300	20610	38530	4480	805	64610
CFSM	.01	4.04	3.14	2.74	4.03	5.23	2.04	.24	.46	.05	.01	.77
IN.	.01	4.51	3.62	3.16	4.20	6.04	2.27	.28	.51	.06	.01	.86

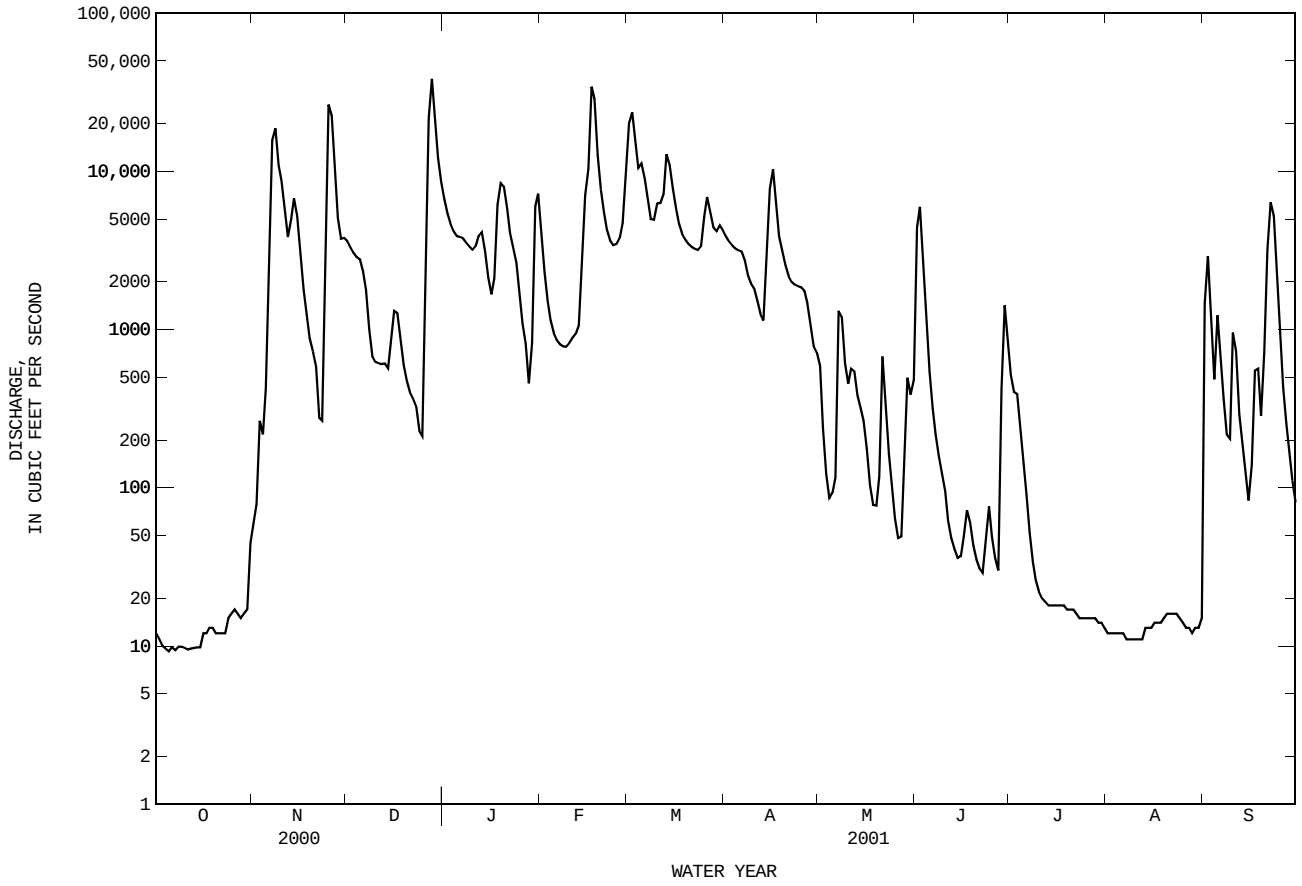
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2001z, BY WATER YEAR (WY)

MEAN	583	1999	2811	1639	2236	2681	1511	1528	887	569	273	207
MAX	2208	5798	5315	4052	6470	7354	4361	6191	2279	3164	1832	1086
(WY)	1994	1997	1992	1998	1997	2001	1997	1995	2000	1992	1992	2001
MIN	.80	9.52	24.0	21.9	12.7	50.3	83.1	88.6	13.3	4.39	.42	.65
(WY)	2000	2000	1996	2000	1996	1996	1996	1998	1998	1993	1999	1999

07343200 Sulphur River near Talco, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1992 - 2001z	
ANNUAL TOTAL	486091.5		964275.9			
ANNUAL MEAN	1328		2642		1407	
HIGHEST ANNUAL MEAN					2642	2001
LOWEST ANNUAL MEAN					161	1996
HIGHEST DAILY MEAN	38400	Dec 28	38400	Dec 28	38400	Dec 28 2000
LOWEST DAILY MEAN	3.5	Feb 21	9.2	Oct 5	.09	Sep 7 1999
ANNUAL SEVEN-DAY MINIMUM	4.2	Feb 17	9.6	Oct 5	.11	Sep 1 1999
MAXIMUM PEAK FLOW			44000	Dec 28	44000	Dec 28 2000
MAXIMUM PEAK STAGE			29.17	Dec 28	29.17	Dec 28 2000
ANNUAL RUNOFF (AC-FT)	964200		1913000		1019000	
ANNUAL RUNOFF (CFSM)	.95		1.88		1.00	
ANNUAL RUNOFF (INCHES)	12.87		25.53		13.61	
10 PERCENT EXCEEDS	3700		6690		3790	
50 PERCENT EXCEEDS	108		623		245	
90 PERCENT EXCEEDS	11		13		8.6	

z Period of regulated streamflow.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jan. 1965 to Sept. 1995, Jan. 1968 to Sept. 1995, Oct. 1996 to current year.
BIOCHEMICAL DATA: Jan. 1968 to Sept. 1995, Oct. 1996 to current year.
PESTICIDE DATA: Jan. 1968 to Sept. 1995.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1966 to Sept. 1991.
WATER TEMPERATURES: Oct. 1966 to Sept. 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,800 microsiemens/cm Feb. 17, 1976; minimum daily 65 microsiemens/cm 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 2000 TO SEPTEMBER 2001

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)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	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)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB													
15...	1112	7470	226	8.1	11.7	280	--	10.4	96.1	<2.0	99.2	9.0	35.6
APR													
25...	1822	1840	169	7.9	19.3	--	--	9.3	99.8	--	71.6	--	24.9
JUN													
20...	1445	33	409	8.0	31.3	--	36	7.0	95.2	--	164	32	58.1
SEP													
19...	1241	270	238	7.3	24.1	--	--	6.0	71.7	--	86.4	5.1	30.9

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 TOT IT FIELD MG/L AS CACO3 (39086)	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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
FEB													
15...	2.51	11.0	.481	2.69	91	93	26.2	5.5	.2	5.9	165	146	482
APR													
25...	2.31	8.5	.435	3.06	75	75	14.5	5.2	.2	5.7	--	111	--
JUN													
20...	4.48	24.9	.849	4.10	134	--	11.5	20.0	.4	5.7	269	208	43
SEP													
19...	2.25	9.6	.448	4.21	81	93	20.2	7.5	E.1	9.9	--	134	--

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,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)	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)
FEB													
15...	.404	.016	.420	<.041	.46	E.031	E.013	--	14	4	.26	<2.0	31.9
APR													
25...	--	E.004	.482	<.041	2.0	E.041	.029	.089	--	--	--	--	--
JUN													
20...	--	E.004	E.037	<.040	.66	.082	.055	.169	8.6	6	.35	E1.3	77.4
SEP													
19...	.223	.015	.238	<.040	.61	.077	.069	.212	--	--	--	--	--

DATE	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	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)
FEB													
15...	<.06	.06	<.8	.18	3.5	20	.12	2.4	<.23	.7	1.50	<2.4	<1.0
APR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
20...	<.06	.57	<.8	.20	8.9	<10	.18	4.1	.08	1.4	2.62	<2.0	<1.0
SEP													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--

07343200 Sulphur River near Talco, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB		
15...	2	.98
APR		
25...	--	--
JUN		
20...	19	1.38
SEP		
19...	--	--

07343460 Lake Sulphur Springs near Sulphur Springs, TX

LOCATION.--Lat 33°10'04", long 95°38'30", Hopkins County, Hydrologic Unit 11140303, on White Oak Dam, next to spillway on Whit Oak Creek, 2.4 mi from Sulphur Springs.

DRAINAGE AREA.--55.0 mi^2.

PERIOD OF RECORD.--Mar. 1999 to current year.

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

REMARKS.--Records poor. The lake is formed by an earthfill dam 6,232 ft long (including service spillway) with an uncontrolled emergency spillway located at left end of dam. The dam was completed and storage began in Jan. 1974. The lake is the property of the Sulphur Springs Water District, and was built to impound water for municipal use. Conservation pool storage is 17,710 acre-ft. Data regarding the dam and lake are given in the following table:

	Elevation (feet)
Top of dam	474.0
Crest of spillway	462.0
Lowest gated outlet (invert)	441.0

COOPERATION.--The capacity table is based on a survey completed in 1982 and was furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 30,660 acre-ft, June 4, 2000, elevation, 464.41 ft; minimum contents, 13,660 acre-ft, Aug. 25, 2001, elevation 456.52 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,160 acre-ft, Feb. 16, elevation, 463.12 ft; minimum contents, 13,660 acre-ft, Aug. 25, elevation, 456.52 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

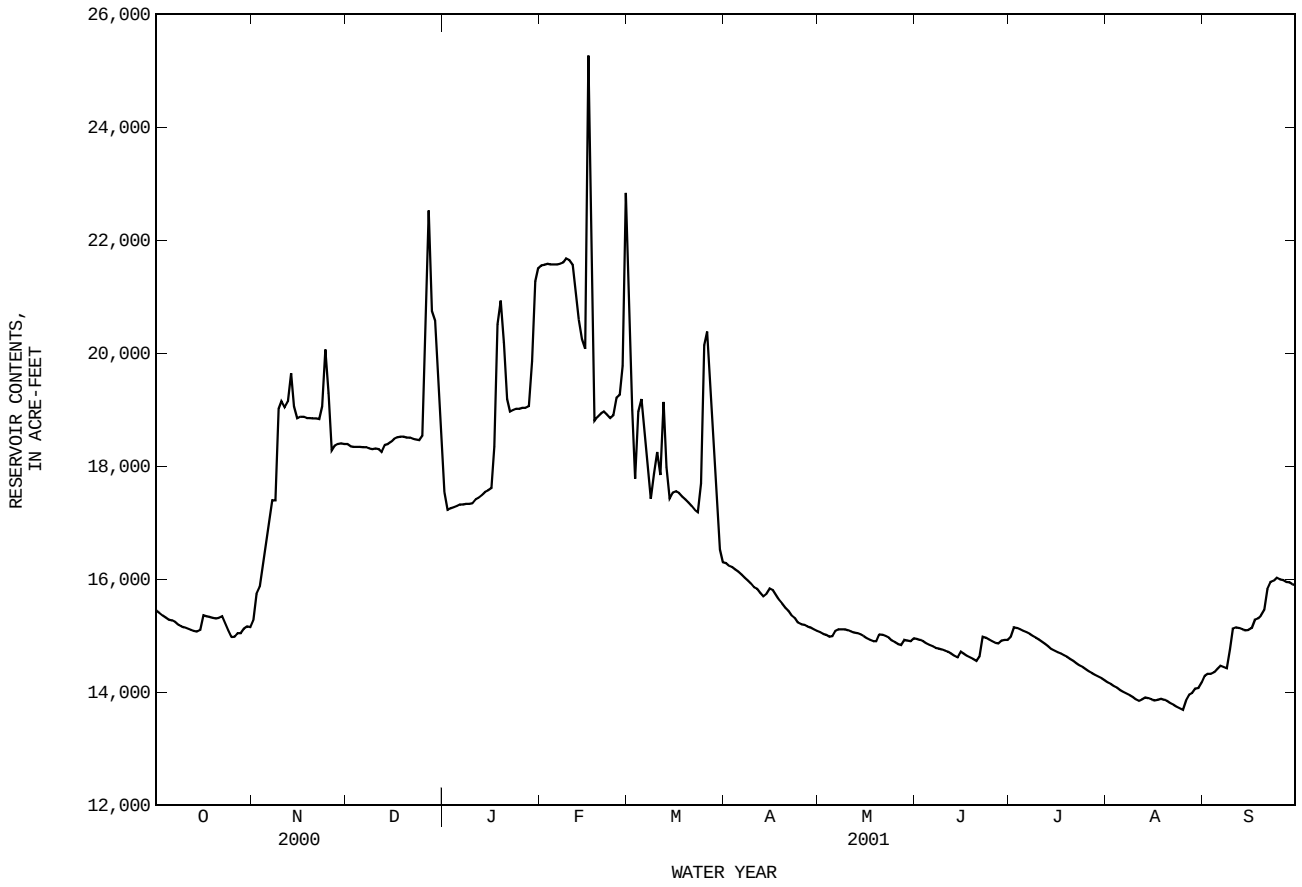
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15440	15270	18390	17540	21550	21430	16280	15060	14940	14980	14170	14280
2	15400	15740	18350	17220	21560	18990	16230	15030	14920	15140	14140	14320
3	15350	15860	18340	17250	21580	17770	16210	15010	14900	15130	14100	14320
4	15320	e16240	18340	17270	21570	18960	16170	14980	14860	15110	14070	14350
5	15280	e16620	18340	17290	21570	19180	16130	14990	14830	15080	14030	14410
6	15270	e17000	18330	17320	21570	18630	16080	15080	14810	15060	14000	14460
7	15240	17390	18330	17320	21580	18010	16020	15110	14780	15030	13970	14440
8	15190	17390	18310	17330	21600	17420	15970	15110	14770	14990	13940	14420
9	15160	19010	18300	17330	21670	17860	15920	15110	14750	14960	13910	14760
10	15140	19150	18310	17340	21640	18250	15850	15090	14730	14930	13870	15120
11	15120	19040	18300	17410	21560	17840	15820	15070	14710	14890	13840	15140
12	15100	19140	18250	17440	21040	19130	15750	15050	14680	14850	13870	15130
13	15080	19640	18370	17480	20590	17980	15690	15040	14640	14810	13900	15110
14	15070	19050	18390	17540	20240	17420	15740	15020	14610	14760	13890	15090
15	15100	18840	18430	17570	20070	17530	15830	14990	14710	14730	13870	15100
16	15360	18870	18480	17610	25260	17550	15800	14950	14680	14700	13850	15130
17	15340	18870	18510	18340	23240	17520	15710	14920	14640	14680	13860	15280
18	15330	18850	18520	20510	18800	17460	15630	14900	14610	14650	13880	15300
19	15310	18850	18520	20930	18870	17410	15560	14900	14580	14620	13860	15350
20	15300	18840	18500	20180	18930	17350	15490	15020	14550	14580	13840	15450
21	15310	18840	18500	19180	18960	17290	15430	15010	14620	14550	13800	15820
22	e15340	18830	18480	18960	18910	17230	15360	14990	14980	14510	13770	15950
23	e15220	19050	18470	18990	18850	17180	15310	14960	14960	14470	13740	15970
24	e15090	20060	18460	19010	18900	17690	15230	14910	14930	14440	13710	16020
25	14970	19290	18530	19010	19210	20140	15200	14880	14900	14400	13680	15990
26	14980	18270	20540	19030	19260	20380	15190	14850	14870	14360	13850	15980
27	15040	18360	22520	19030	19770	19280	15160	14830	14860	14330	13950	15950
28	15040	18390	20740	19060	22830	18250	15140	14920	14910	14300	13980	15940
29	15120	18400	20570	19850	---	17400	15110	14910	14920	14270	14060	15910
30	15160	18390	19700	21270	---	16520	15080	14900	14920	14240	14070	15890
31	15150	---	18600	21500	---	16300	---	14950	---	14210	14170	---
MEAN	15200	18250	18800	18490	20760	18110	15670	14990	14790	14700	13920	15210
MAX	15440	20060	22520	21500	25260	21430	16280	15110	14980	15140	14170	16020
MIN	14970	15270	18250	17220	18800	16300	15080	14830	14550	14210	13680	14280
(+)	457.47	459.28	459.38	460.78	461.36	458.15	457.43	457.35	457.34	456.89	456.86	457.92
(@)	-2030	+3240	+210	+2900	+1330	-6530	-1220	-130	-30	-710	-40	+1720

CAL YR 2000 MAX 28460 MIN 14150 (@) +4320
WTR YR 2001 MAX 25260 MIN 13680 (@) -1290

e Estimated

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

07343460 Lake Sulphur Springs near Sulphur Springs, TX--Continued



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 Sept. 1998; Biochemical data: Nov. 1982 to Sept. 1985, Oct. 1991 to Sept. 1998; Specific conductance: Oct. 1967 to Sept. 1989; Water temperature: Oct. 1967 to Sept. 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.--No estimated daily discharges. Records fair. Since water year 1973, at least 10% of contributing drainage area has been regulated. 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. No flow at times.

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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	4.6	1020	2500	1770	4580	1350	26	531	498	2.9	30
2	1.3	11	293	2190	1900	5170	1260	23	740	233	2.9	23
3	.70	55	141	1870	1570	3360	915	21	306	110	2.6	102
4	.29	316	99	1480	666	2930	370	20	121	94	2.3	183
5	.04	415	80	1140	259	2790	206	20	63	158	2.0	187
6	.33	674	68	682	172	2630	167	25	35	86	1.9	185
7	.32	1250	56	417	136	2360	143	29	29	38	1.8	97
8	.06	3340	45	304	119	1970	124	32	25	22	1.7	97
9	.00	3240	41	231	110	1670	108	111	23	15	1.7	78
10	.00	2960	38	177	104	1690	88	126	23	11	1.8	69
11	.00	2710	35	263	105	1920	77	69	19	9.2	1.9	138
12	.00	2430	32	680	190	2720	71	45	17	7.7	2.0	247
13	.00	2280	42	842	715	3220	113	32	12	6.7	2.1	177
14	.03	2110	204	807	1150	3140	993	23	10	5.8	2.1	76
15	.04	2010	423	634	1380	2820	2080	20	11	5.2	2.3	32
16	.19	2060	454	464	2710	2600	2300	16	12	5.0	3.4	20
17	.15	2060	373	836	12500	2310	2040	14	11	4.7	5.3	23
18	.34	1730	263	1880	7280	1860	1630	12	14	4.4	5.0	19
19	16	887	187	2620	3070	1150	1020	11	28	4.3	8.0	123
20	36	265	145	2850	2750	457	291	12	23	4.2	8.3	384
21	25	143	112	2670	2490	258	128	15	14	4.2	6.9	875
22	9.8	101	86	2380	2060	202	93	83	9.8	3.9	6.0	1130
23	3.5	126	70	2070	1310	170	78	258	7.5	3.7	5.9	1210
24	1.6	1630	62	1720	563	322	68	227	20	3.6	6.1	865
25	.92	2360	67	1250	473	1330	59	125	127	3.5	3.7	343
26	.65	2780	1190	570	628	1820	46	59	75	3.3	2.4	115
27	.40	2830	2610	284	1100	2100	39	46	32	3.2	2.1	118
28	.19	2580	4930	211	2580	2270	38	64	219	3.0	2.0	103
29	.15	2320	4810	367	---	1920	38	102	1170	3.0	2.0	57
30	.24	1930	3170	1140	---	1550	34	96	1060	2.9	11	29
31	.42	---	2780	1610	---	1400	---	181	---	2.8	39	---
TOTAL	101.16	47607.6	23926	37139	49860	64689	15967	1943	4787.3	1359.3	149.1	7135
MEAN	3.26	1587	772	1198	1781	2087	532	62.7	160	43.8	4.81	238
MAX	36	3340	4930	2850	12500	5170	2300	258	1170	498	39	1210
MIN	.00	4.6	32	177	104	170	34	11	7.5	2.8	1.7	19
AC-FT	201	94430	47460	73670	98900	128300	31670	3850	9500	2700	296	14150

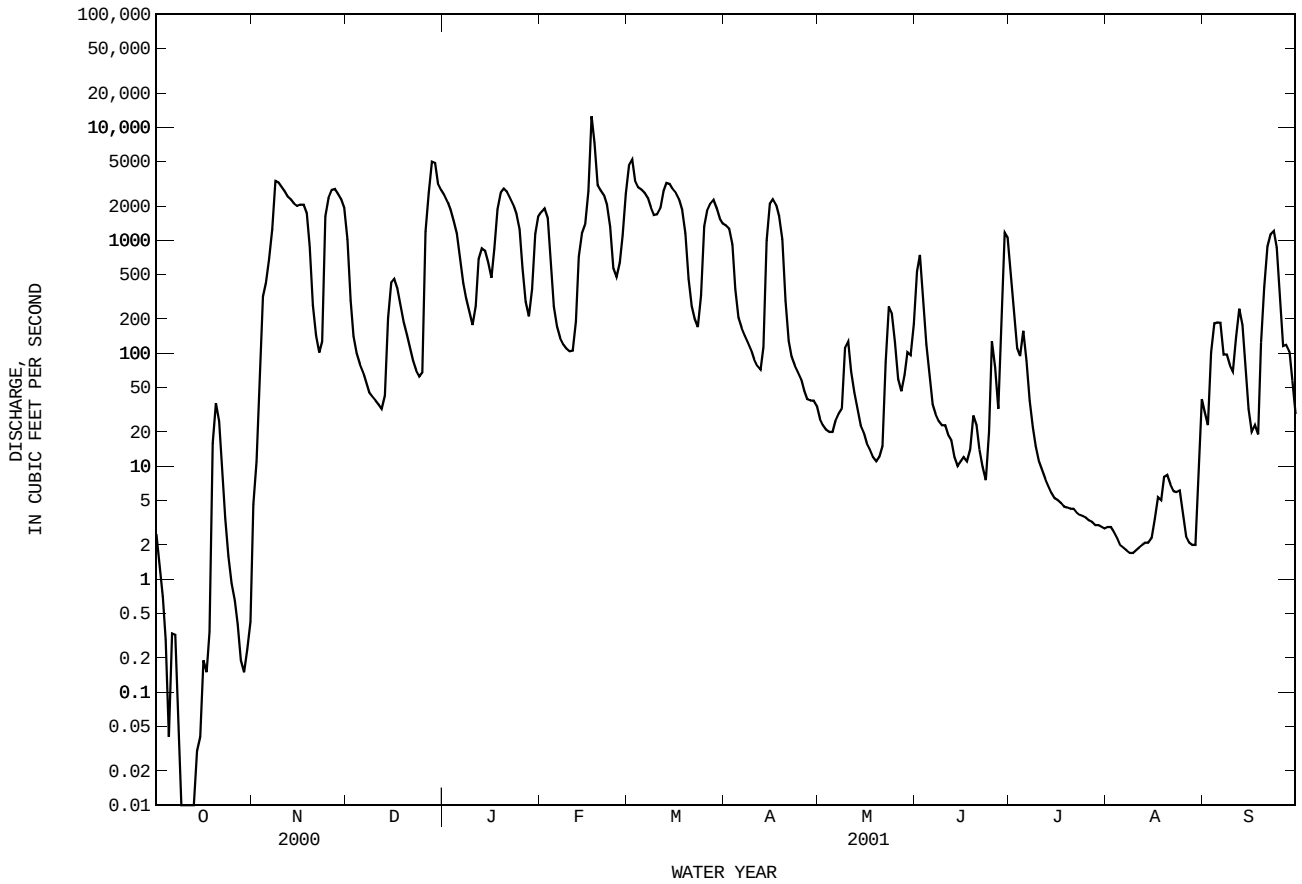
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2001z, BY WATER YEAR (WY)

MEAN	243	753	924	640	886	961	698	673	519	307	76.3	72.2
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1973 - 2001z	
ANNUAL TOTAL	199053.54		254663.46			
ANNUAL MEAN	544		698		561	
HIGHEST ANNUAL MEAN					1160	1992
LOWEST ANNUAL MEAN					55.8	1996
HIGHEST DAILY MEAN	4930	Dec 28	12500	Feb 17	31700	Jan 24 1980
LOWEST DAILY MEAN	.00	Oct 9	.00	Oct 9	.00	Aug 30 1973
ANNUAL SEVEN-DAY MINIMUM	.01	Aug 28	.01	Oct 9	.00	Jul 24 1978
MAXIMUM PEAK FLOW			18700	Feb 17	34600	Jan 24 1980
MAXIMUM PEAK STAGE			18.91	Feb 17	19.86	Jan 24 1980
ANNUAL RUNOFF (AC-FT)	394800		505100		406200	
10 PERCENT EXCEEDS	2160		2370		1620	
50 PERCENT EXCEEDS	48		105		56	
90 PERCENT EXCEEDS	.03		2.1		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.--July 1953 to Sep. 2000 (U.S. Army Corps of Engineers furnished contents), Oct. 2000 to current year. Published as Texarkana Reservoir prior to Oct. 1970 and as Lake Texarkana from Oct. 1970 to Sept. 1972.
Water-quality Records.--Chemical data: Mar. 1967 to Sept. 1984, Feb. 1992 to Sept. 1998.

REVISED RECORDS.--WSP 1561: 1957(M). WSP 1711: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is sea level. July 19 to Dec. 31, 1953, nonrecording gage at site about 125 ft upstream at datum 200 ft higher. Satellite telemeter at station.

REMARKS.--Records poor. 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 July 2, 1953, and deliberate impoundment began June 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 dam is owned by the U.S. Army Corps of Engineers. 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 initiated Oct. 1, 1999, is based on a 1997 Texas Water Development Board survey. Conservation pool storage is 122,794 acre-ft. 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	220.6
Lowest gated outlet (invert)	200.0

COOPERATION.--Capacity Table No. 2, provided by the Texas Water Development Board based on a 1997 survey, put into effect Oct. 1, 1999.

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, Sept. 5, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,684,000 acre-ft, Mar. 19, elevation, 251.25 ft; minimum contents, 199,600 acre-ft, Nov. 1, elevation, 223.86 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

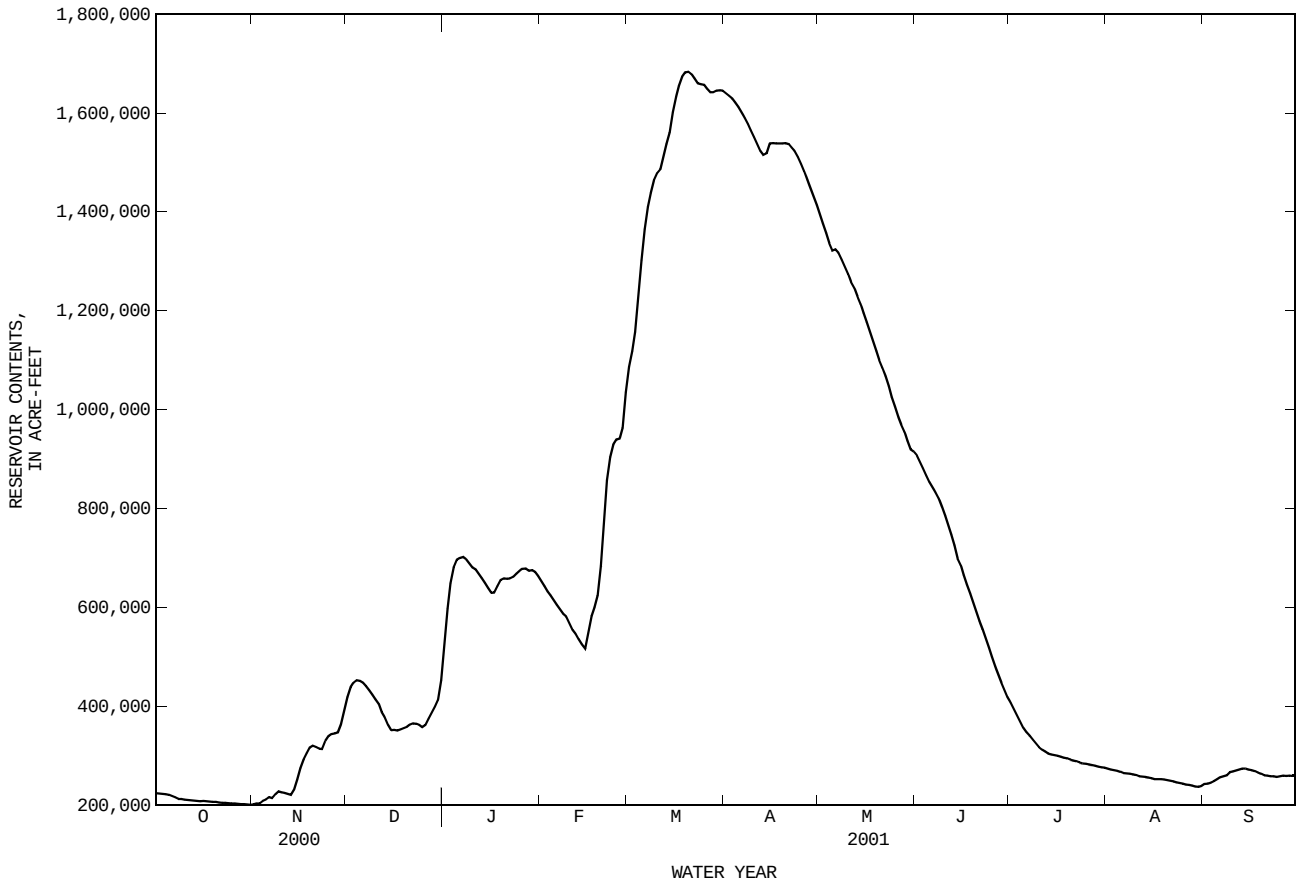
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	223700	200800	418300	524900	652900	1086000	1640000	1394000	906800	406800	273900	242700
2	223200	203300	437800	597500	642500	1118000	1635000	1376000	894500	393900	271400	243200
3	222400	203100	447400	648600	631900	1157000	1629000	1357000	881000	381300	270200	244800
4	221600	208000	452000	680000	624100	1226000	1621000	1336000	866600	369400	269200	248500
5	220700	210500	450700	695600	614200	1302000	1612000	1321000	853200	356300	267000	252500
6	218200	216100	447000	699600	604700	1365000	1601000	1324000	842000	347100	264800	256300
7	215100	214100	440900	701900	595200	1410000	1590000	1317000	832300	340200	264200	258300
8	212200	221600	432300	696800	586200	1438000	1578000	1303000	819900	332000	263200	260100
9	211800	e227700	423000	688900	581400	1464000	1565000	1289000	803200	324500	262000	266300
10	210900	e226000	413600	680500	567700	1478000	1551000	1274000	784900	317200	260400	268000
11	210000	e224200	404600	676600	554100	1486000	1537000	1258000	766700	311800	258200	269500
12	209300	e222400	388500	668200	545500	1513000	1523000	1246000	747100	308100	257700	271900
13	208800	e220700	377200	658900	e535200	1537000	1515000	1229000	724700	304300	256700	273900
14	208300	230100	362500	649400	525000	1560000	1518000	1213000	698200	302000	255700	273600
15	207700	251200	351500	638800	516500	1602000	1538000	1195000	684700	301100	254100	271900
16	208300	274000	352200	629300	548700	1632000	1539000	1176000	665000	299200	252100	270100
17	207500	291900	350800	629500	581600	1655000	1538000	1156000	645000	297400	252300	268200
18	207000	304900	352600	642900	599600	1673000	1538000	1137000	627600	295700	252400	265100
19	206500	315700	355000	655200	623900	1682000	1538000	1118000	608400	294100	251300	263100
20	206000	319500	357700	658000	683300	1683000	1539000	1100000	589500	291700	250300	260100
21	205100	316800	362100	657700	779600	1678000	1537000	1084000	572200	289800	248800	259600
22	204400	313700	364600	658100	857300	1670000	1530000	1067000	555000	288300	247400	258300
23	204300	312900	364400	661400	902800	1660000	1523000	1047000	536400	286000	246000	257800
24	203900	329300	361500	668100	929000	1658000	1511000	1025000	517900	284200	244600	257000
25	203300	338800	357100	673700	939200	1657000	1497000	1006000	499400	283300	243000	257800
26	202900	343400	361400	677900	941000	1649000	1481000	985800	481000	282100	241500	259100
27	202400	344800	374900	678000	962400	1642000	1465000	968800	464100	280900	240300	259000
28	201900	346700	387000	673700	1035000	1642000	1448000	954900	447000	279300	239300	259300
29	201500	363500	399300	675300	---	1645000	1431000	936500	431600	277700	237600	259000
30	201200	390600	412100	671300	---	1646000	1413000	919200	417800	276400	236400	258600
31	200700	---	452400	663500	---	1645000	---	914500	---	275300	238800	---
MEAN	209400	272900	393900	660600	684300	1524000	1539000	1162000	672100	312200	253900	260500
MAX	223700	390600	452400	701900	1035000	1683000	1640000	1394000	906800	406800	273900	273900
MIN	200700	200800	350800	524900	516500	1086000	1413000	914500	417800	275300	236400	242700
(+)	223.90	229.94	231.57	236.30	242.77	250.80	248.01	240.87	230.68	226.46	225.25	225.91
(@)	-23500	+189900	+61800	+211100	+371500	+610000	-232000	-498500	-496700	-142500	-36500	+19800

CAL YR 2000 MAX 452400 MIN 166600 (@) +258300
WTR YR 2001 MAX 1683000 MIN 200700 (@) +34400

e Estimated

(+) 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°08'21", 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.--Feb. 1974 to Sept. 1991, June 1998 to current year.
Water-quality records.--Chemical data: Oct. 1974 to Sept. 1984.

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

REMARKS.--Records fair except those for estimated daily contents, which are poor. The lake is formed by a rolled earthfill dam 5,230 ft long. The dam is owned by the Franklin County Water District and the Texas Water Development Board. Deliberate impoundment began July 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. Conservation pool storage is 67,690 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	397.0
Crest of spillway	385.0
Top of conservation pool	378.0
Lowest gated outlet (invert)	317.75

COOPERATION.--Capacity Table No. 2 was provided by the Texas Water Development Board, and put into use Oct. 1, 1997.

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 CURRENT YEAR.--Maximum contents, 79,810 acre-ft, Feb. 16, 17, elevation, 381.62 ft; minimum contents, 63,070 acre-ft, Oct. 15, elevation, 376.65 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

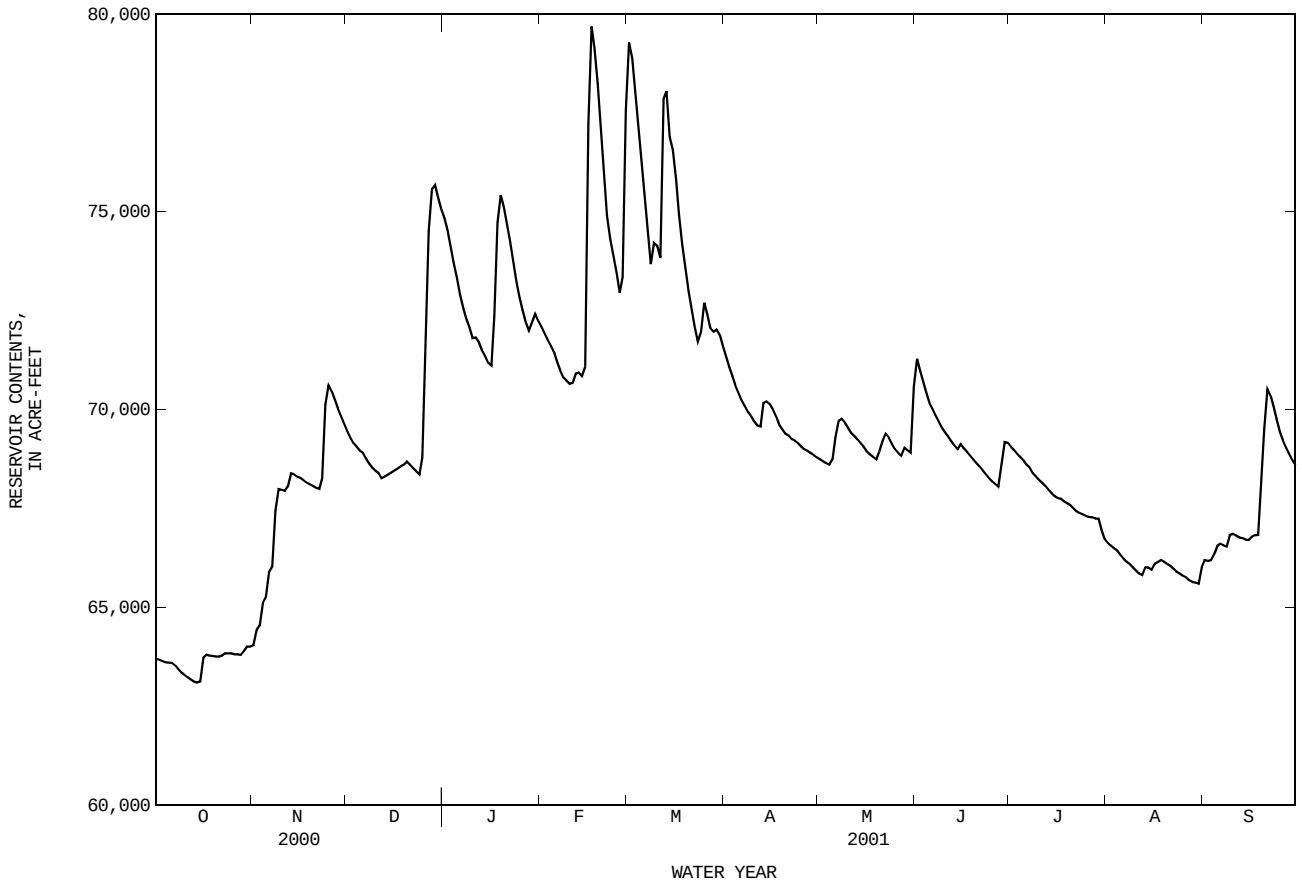
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63700	64040	69450	74840	72110	79280	71350	68740	71280	69060	66630	66190
2	63660	64420	69280	74530	71940	78880	71080	68690	71000	68970	66560	66170
3	63630	64540	69150	74120	71770	78160	70840	68640	70710	68880	66490	66190
4	63610	65110	69060	73710	71630	77210	70620	68600	70420	68800	66430	66340
5	63600	65250	68960	73340	71470	76260	70420	68740	70160	68720	66330	66550
6	63590	65880	68900	72900	71210	75360	70240	69300	70010	68610	66230	66600
7	63530	66020	68760	72560	70990	74430	70090	69710	69860	68540	66150	66560
8	63430	67440	68630	72300	70810	73680	69940	69760	69700	68390	66090	66540
9	63350	67990	68530	72080	70740	74210	69840	69660	69540	68310	66000	66830
10	63290	67970	68450	71810	70650	74140	69700	69530	69420	68220	65930	66850
11	63230	67940	68390	71820	70670	73840	69600	69410	69320	68150	65850	66810
12	63170	68050	68260	71720	70910	77850	69570	69330	69200	68070	65810	66760
13	63120	68380	e68300	71510	70930	78050	70160	69240	69090	67980	66010	66750
14	63100	68370	e68350	71360	70840	76890	70200	69140	68990	67890	66000	66710
15	63120	68300	e68400	71180	71080	76560	70140	69060	69120	67810	65950	66700
16	63730	68270	e68450	71110	77250	75820	70000	68940	69020	67760	66090	66780
17	63800	68210	e68500	72360	79680	74940	69820	68860	68930	67740	66140	66820
18	63780	68150	e68550	74730	79140	74190	69620	68800	68830	67680	66190	66830
19	63770	68110	e68600	75420	78250	73600	69500	68740	68730	67630	66150	68080
20	63750	68070	68680	75110	77070	73000	69390	68930	68640	67580	66090	69510
21	63750	68020	68610	74680	75920	72530	69340	69190	68560	67500	66040	70520
22	63780	67990	68520	74270	74910	72100	69250	69390	68460	67430	65970	70350
23	63830	68250	68440	73730	74320	71720	69220	69290	68360	67380	65900	70050
24	63830	70120	68360	73240	73900	71960	69150	69140	68260	67350	65850	69740
25	63830	70620	68790	72830	73470	72700	69060	69000	68190	67310	65790	69430
26	63810	70460	71460	72520	72960	72420	68990	68900	68120	67280	65750	69210
27	63810	70240	74520	72210	73350	72060	68960	68830	68050	67270	65680	69030
28	63790	70030	75560	71990	77570	71960	68900	69030	68630	67240	65640	68870
29	63890	69850	75670	72210	---	72020	68850	68970	69180	67240	65620	68720
30	64000	69650	75370	72420	---	71880	68790	68910	69160	66940	65590	68590
31	64000	---	75070	72250	---	71610	---	70580	---	66720	66010	---
MEAN	63620	67860	69810	72930	73410	74490	69750	69130	69230	67890	66030	67700
MAX	64000	70620	75670	75420	79680	79280	71350	70580	71280	69060	66630	70520
MIN	63100	64040	68260	71110	70650	71610	68790	68600	68050	66720	65590	66170
(+)	376.93	378.56	380.07	379.28	380.74	379.09	378.32	378.81	378.43	377.72	377.52	378.26
(@)	+230	+5650	+5420	-2820	+5320	-5960	-2820	+1790	-1420	-2440	-710	+2580

CAL YR 2000 MAX 76170 MIN 61980 (@) +12990
WTR YR 2001 MAX 79680 MIN 63100 (@) +4820

e Estimated

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

07344484 Lake Cypress Springs near Mount Vernon, TX--Continued



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.--No estimated daily discharges. Records poor. No known regulation or diversions. No flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

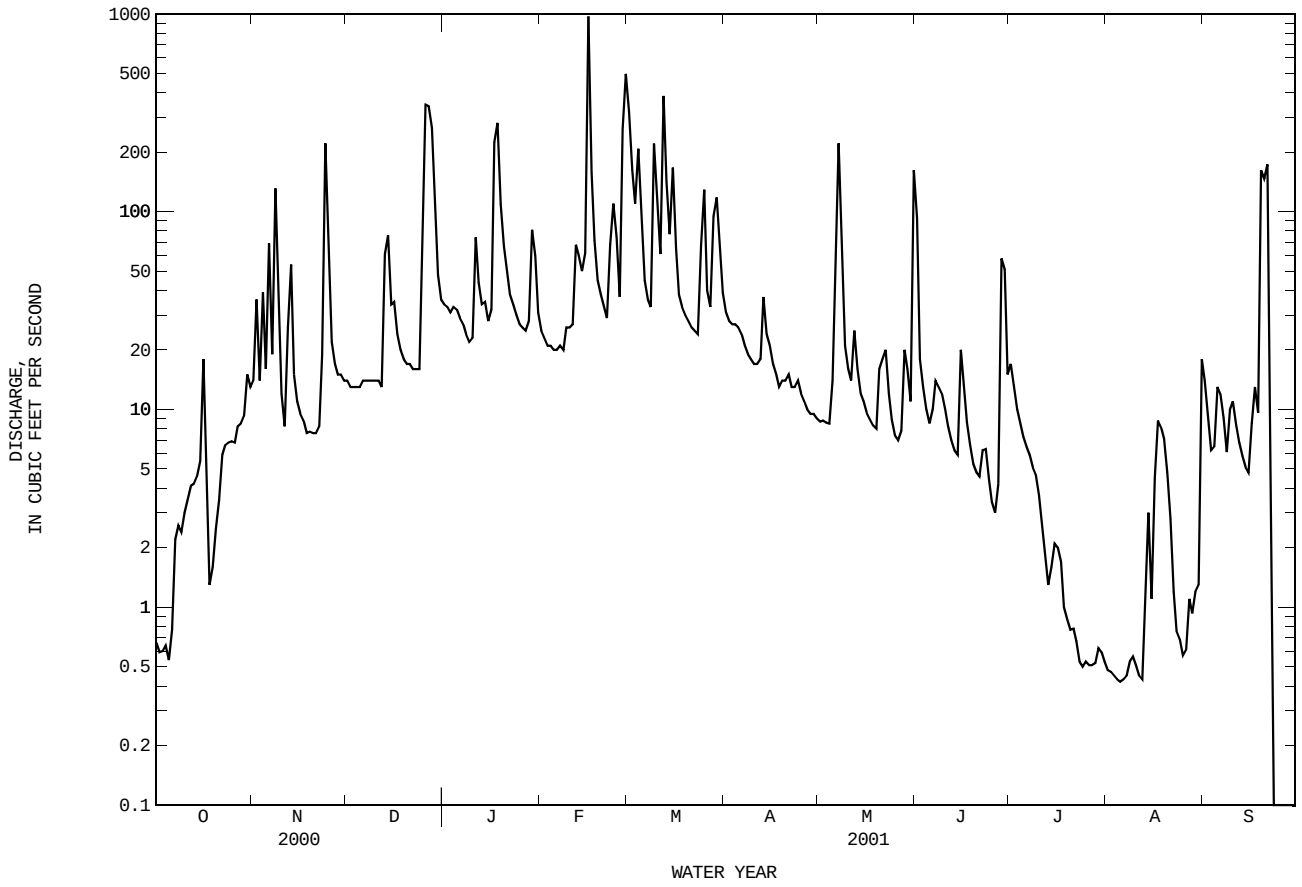
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.66	14	14	34	25	320	31	8.7	93	17	.48	14
2	.59	36	13	33	23	163	28	8.8	18	13	.47	9.2
3	.60	14	13	31	21	110	27	8.6	13	10	.45	6.2
4	.64	39	13	33	21	208	27	8.5	10	8.6	.43	6.5
5	.54	16	13	32	20	88	26	14	8.5	7.3	.42	13
6	.77	69	14	29	20	45	24	65	10	6.5	.43	12
7	2.2	19	14	27	21	36	21	222	14	5.9	.45	9.1
8	2.6	131	14	24	20	33	19	62	13	5.1	.53	6.1
9	2.4	43	14	22	26	221	18	21	12	4.7	.56	10
10	3.0	12	14	23	26	114	17	16	10	3.7	.51	11
11	3.5	8.2	14	74	27	61	17	14	8.2	2.7	.45	8.4
12	4.1	26	13	44	68	385	18	25	7.0	1.9	.43	6.8
13	4.2	54	61	34	60	142	37	16	6.2	1.3	1.1	5.8
14	4.6	15	76	35	50	77	24	12	5.9	1.6	3.0	5.1
15	5.5	11	34	28	62	167	21	11	20	2.1	1.1	4.8
16	18	9.5	35	32	968	65	17	9.6	14	2.0	4.5	8.5
17	5.8	8.8	24	225	158	38	15	8.9	8.6	1.7	8.8	13
18	1.3	7.6	20	281	72	33	13	8.3	6.6	1.0	8.1	9.6
19	1.6	7.7	18	109	45	30	14	8.0	5.3	.87	7.1	162
20	2.5	7.6	17	67	38	28	14	16	4.8	.77	4.8	147
21	3.5	7.6	17	49	33	26	15	18	4.6	.78	2.8	173
22	5.9	8.2	16	38	29	25	13	20	6.2	.67	1.2	3.4
23	6.6	19	16	34	68	24	13	12	6.3	.53	.76	.00
24	6.8	222	16	30	110	67	14	8.9	4.4	.50	.69	.00
25	6.9	54	52	27	75	129	12	7.4	3.4	.53	.57	.00
26	6.8	22	348	26	37	40	11	7.0	3.0	.51	.61	.00
27	8.2	17	341	25	261	33	10	7.8	4.2	.51	1.1	.00
28	8.5	15	266	28	497	95	9.5	20	58	.52	.93	.00
29	9.3	15	124	81	---	118	9.5	16	51	.62	1.2	.00
30	15	14	48	60	---	64	9.0	11	15	.59	1.3	.00
31	13	---	36	31	---	39	---	162	---	.53	18	---
TOTAL	155.60	942.2	1728	1646	2881	3024	544.0	853.5	444.2	104.03	73.27	644.50
MEAN	5.02	31.4	55.7	53.1	103	97.5	18.1	27.5	14.8	3.36	2.36	21.5
MAX	18	222	348	281	968	385	37	222	93	17	18	173
MIN	.54	7.6	13	22	20	24	9.0	7.0	3.0	.50	.42	.00
AC-FT	309	1870	3430	3260	5710	6000	1080	1690	881	206	145	1280

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2001, BY WATER YEAR (WY)

MEAN	13.5	22.3	31.4	23.0	29.8	29.8	20.6	25.0	17.1	9.14	3.45	4.79
MAX	80.5	143	103	62.7	103	97.5	54.9	68.2	70.6	32.2	24.4	41.7
(WY)	1992	1995	1983	1993	2001	2001	1990	1991	2000	1981	1997	1979
MIN	.68	2.51	2.99	2.96	5.31	8.15	3.64	1.64	.26	.007	.003	.14
(WY)	1979	1990	1979	2000	1996	1986	1978	1988	1984	1978	1985	1984

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1978 - 2001	
ANNUAL TOTAL	7779.41		13040.30			
ANNUAL MEAN	21.3		35.7		19.5	
HIGHEST ANNUAL MEAN					35.7	2001
LOWEST ANNUAL MEAN					5.21	1996
HIGHEST DAILY MEAN	505	Jun 22	968	Feb 16	2800	Nov 5 1994
LOWEST DAILY MEAN	.08	Sep 6	.00	Sep 23	.00	Jun 28 1978
ANNUAL SEVEN-DAY MINIMUM	.13	Sep 3	.00	Sep 23	.00	Jun 28 1978
MAXIMUM PEAK FLOW			2970	Feb 16	7520	Dec 2 1982
MAXIMUM PEAK STAGE			13.69	Feb 16	14.39	Dec 2 1982
ANNUAL RUNOFF (AC-FT)	15430		25870		14140	
10 PERCENT EXCEEDS	36		75		31	
50 PERCENT EXCEEDS	8.0		14		7.2	
90 PERCENT EXCEEDS	.52		.67		.47	

07344486 Brushy Creek at Scroggins, TX--Continued



07344488 Monticello Reservoir near Mount Pleasant, TX

LOCATION.--Lat 33°04'48", long 95°02'36", Titus County, Hydrologic Unit 11140305, on old intake structure 0.25 mi upstream from Monticello Dam on Blundell Creek, approximately 11.0 mi southwest of Mount Pleasant, and approximately 16.0 mi southeast of Mount Vernon.

DRAINAGE AREA.--36 mi^2.

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

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

REMARKS.--Records poor. The lake is formed by a rolled earthfill dam 3,200 ft long, including spillways. Construction began in 1971, and deliberate impoundment began in 1973, with lake at normal pool level in 1974. The spillway is an excavated channel cut through natural ground. The spillway is 1,000 ft wide, and located to the left of the left end of the dam. The service spillway is 204.0 ft wide with flow controlled by four 40.0 by 14.0 ft tainter gates. The dam, owned and operated by Texas Utilities Services, Inc., provides cooling water for electrical generation at the Moticello Steam Electric Station. Conservation pool storage is 34,740 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	352.0
Crest of uncontrolled spillway	343.5
Crest of gated spillway	340.0
Lowest gated outlet (invert)	328.0

COOPERATION.--Capacity Table No. 1 was furnished by the Texas Water Development Board from survey in Feb. 1998; put into effect Oct. 1, 1997.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 37,980 acre-ft, Feb. 16, 2001, elevation, 341.58 ft; minimum contents, 31,910 acre-ft, Jan. 5, 2000, elevation, 338.57 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 37,980 acre-ft, Feb. 16, elevation, 341.58 ft; minimum contents, 33,370 acre-ft, Mar. 8, elevation, 339.32 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

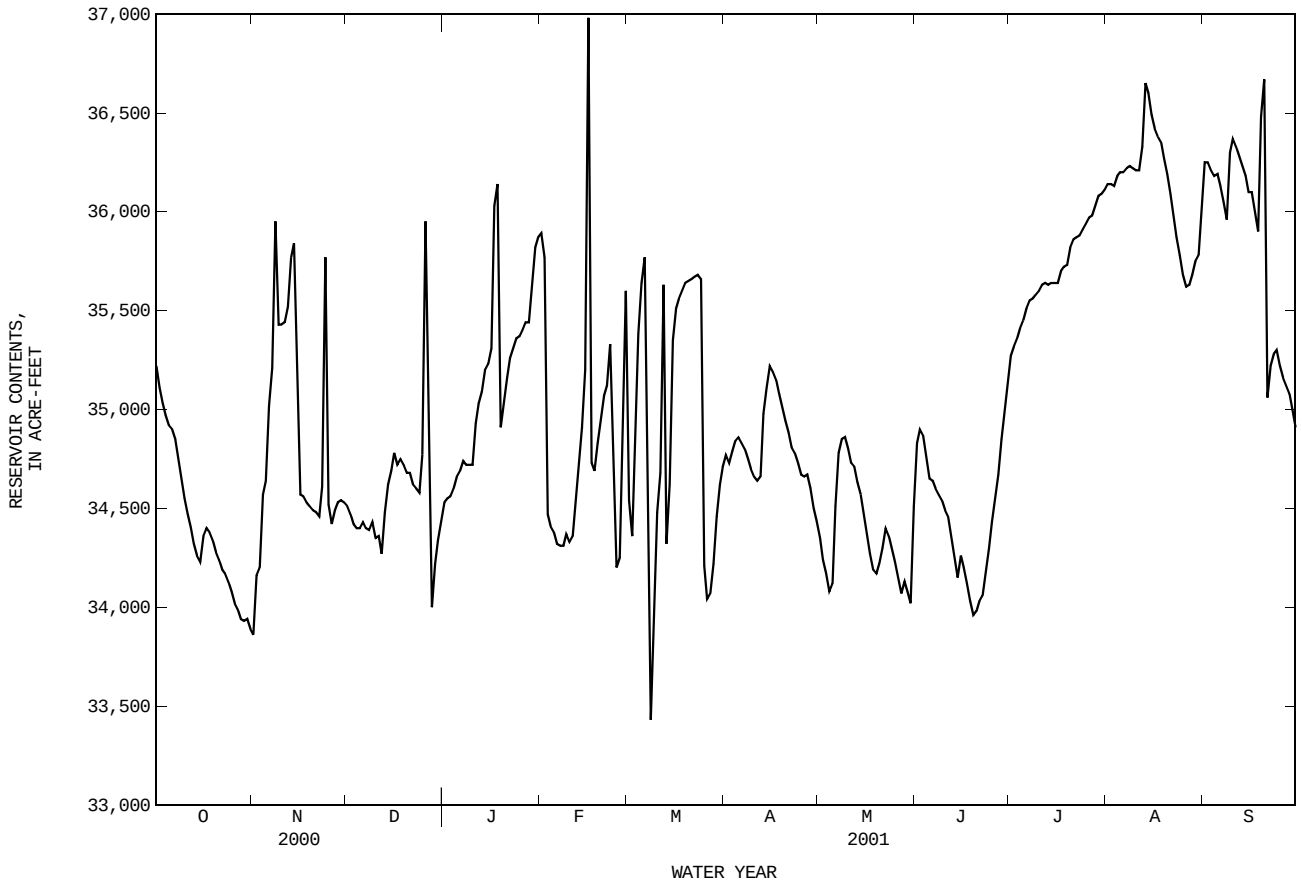
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35220	33860	34510	34530	35890	34540	34770	34350	34830	35270	36140	36250
2	35110	34160	34470	34550	35770	34360	34730	34240	34900	35320	36140	36250
3	35030	34200	34420	34560	34470	34710	34790	34170	34870	35360	36130	36210
4	34970	34570	34400	34600	34410	35380	34840	34080	34760	35410	36180	36180
5	34920	34640	34400	34660	34380	35640	34860	34120	34650	35450	36200	36190
6	34900	35020	34430	34690	34320	35770	34830	34510	34640	35510	36200	36130
7	34850	35210	34400	34740	34310	35110	34800	34780	34600	35550	36220	36050
8	34750	35950	34390	34720	34310	33430	34750	34850	34570	35560	36230	35960
9	34650	35430	34430	34720	34370	34090	34700	34860	34540	35580	36220	36300
10	34550	35430	34350	34720	34330	34480	34660	34800	34490	35600	36210	36370
11	34470	35440	34360	34930	34360	34680	34640	34730	34460	35630	36210	36330
12	34400	35520	34270	35030	34540	35630	34660	34710	34350	35640	36330	36280
13	34320	35770	34480	35090	34730	34320	34980	34630	34250	35630	36650	36230
14	34260	35840	34620	35200	34910	34620	35110	34570	34150	35640	36600	36180
15	34230	35310	34690	35230	35200	35350	35220	34480	34260	35640	36490	36100
16	34360	34570	34780	35310	36980	35510	35190	34370	34200	35640	36420	e36100
17	34400	34560	34720	36030	34730	35560	35150	34270	34120	35700	36380	e36000
18	34380	34530	34750	36140	34690	35600	35080	34190	34030	35720	36350	35900
19	34340	34510	34720	34910	34830	35640	35010	34170	33960	35730	36270	36480
20	34280	34490	34680	35030	34950	35650	34940	34220	33980	35820	36190	36670
21	34240	34480	34680	35160	35070	35660	34880	34300	34030	35860	36090	35060
22	34190	34460	34620	35260	35120	35670	34810	34400	34060	35870	35970	35220
23	34170	34610	34600	35310	35330	35680	34780	34360	34180	35880	35870	35280
24	34130	35770	34580	35360	34770	35660	34730	34300	34300	35910	35780	35300
25	34080	34520	34770	35370	34200	34210	34670	34230	34430	35940	35680	35220
26	34020	34420	35950	35400	34250	34040	34660	34150	34550	35970	35620	35160
27	33990	34490	35380	35440	34930	34070	34670	34070	34670	35980	35630	35120
28	33940	34530	34000	35440	35600	34220	34600	34130	34850	36030	35680	35080
29	33930	34540	34220	35630	---	34460	34500	34080	34980	36080	35750	35000
30	33940	34530	34340	35820	---	34620	34430	34020	35110	36090	35780	34910
31	33890	---	34430	35870	---	34710	---	34510	---	36110	36050	---
MEAN	34420	34850	34580	35140	34850	34940	34810	34380	34460	35710	36120	35850
MAX	35220	35950	35950	36140	36980	35770	35220	34860	35110	36110	36650	36670
MIN	33890	33860	34000	34530	34200	33430	34430	34020	33960	35270	35620	34910
(+)	339.58	339.89	339.85	340.55	340.41	339.99	339.85	339.89	340.18	340.66	340.63	340.08
(@)	-1140	+640	-100	+1440	-270	-890	-280	+80	+600	+1000	-60	-1140

CAL YR 2000 MAX 36710 MIN 31950 (@) +2360
WTR YR 2001 MAX 36980 MIN 33430 (@) -120

e Estimated

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

07344488 Monticello Reservoir near Mount Pleasant, TX--Continued



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 fair, except for estimated daily mean contents, which are poor. 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 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 Monticello Reservoir on Blundell Creek, a tributary to Big Cypress Creek. Conservation pool storage is 192,350 acre-ft. 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. Capacity Table 2-C, provided by the U.S. Army Corps of Engineers, was put into effect Oct. 1, 1996. Capacity Table 3-C, provided by the Texas Water Development Board, was put into effect Oct. 1, 2000.

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, 211,600 acre-ft, Feb. 17, elevation, 338.25 ft; minimum contents, 182,600 acre-ft, Oct. 15, 16, elevation, 335.00 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

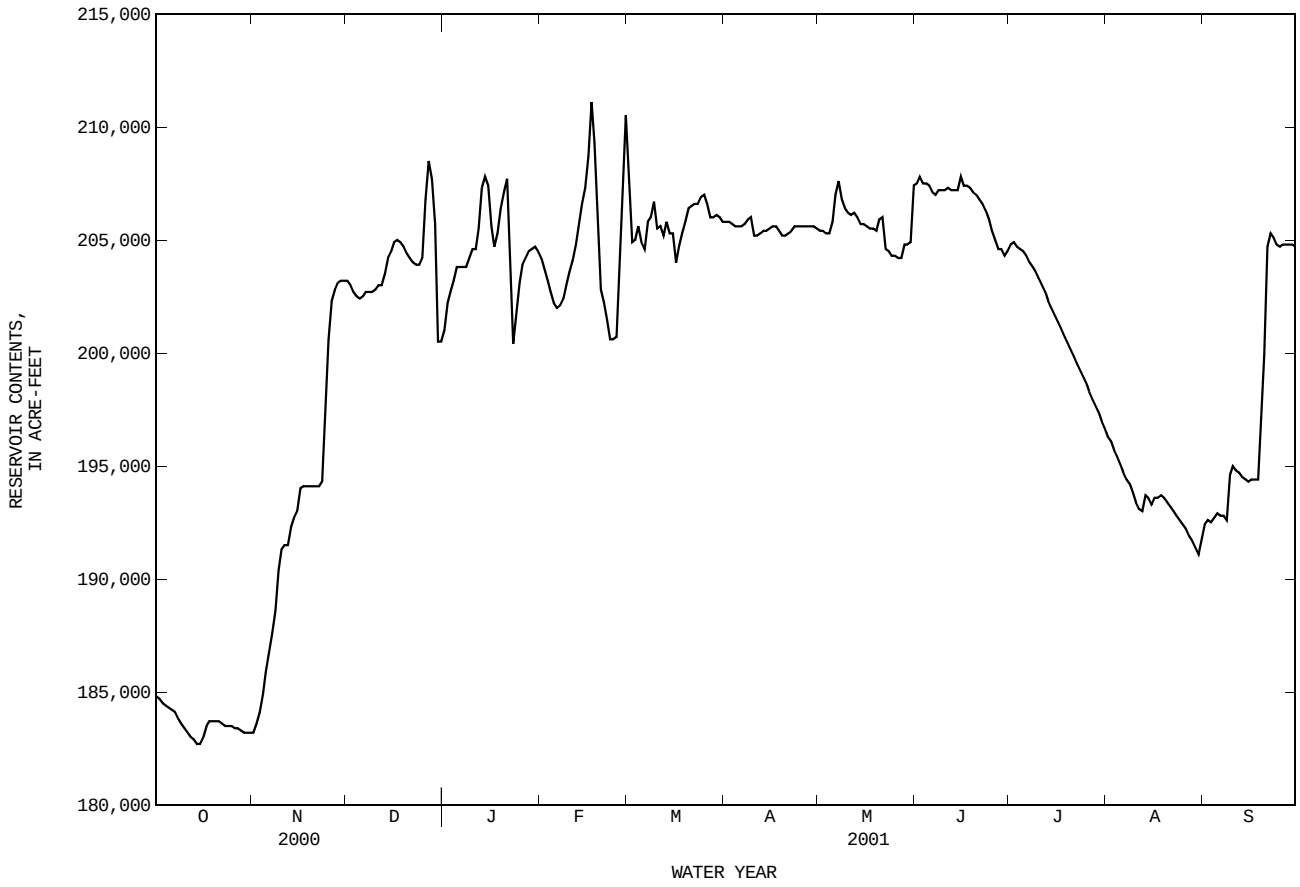
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	184800	183200	203200	201000	204200	207900	205800	205400	207500	204800	196300	192400
2	184700	183600	203000	202200	203700	204900	205800	205400	207800	204900	196100	192600
3	184500	184100	202700	e202700	203200	205000	205700	205300	207500	204700	195700	192500
4	184400	184900	202500	e203200	202700	205600	205600	205300	207500	204600	195400	192700
5	184300	185900	202400	203800	202200	204900	205600	205800	207400	204500	195100	192900
6	184200	186800	202500	203800	202000	204600	e205600	207000	207100	204300	194700	192800
7	184100	187600	202700	203800	202100	205800	e205700	207600	207000	204000	194400	192800
8	183800	188600	202700	203800	202400	206000	e205900	206800	207200	203800	194200	192600
9	183600	190400	202700	204200	203000	206700	e206000	206400	207200	203600	193800	194600
10	183400	191300	202800	204600	203600	205500	e205200	206200	207200	203300	193400	195000
11	183200	191500	203000	204600	204100	205600	e205200	206100	207300	203000	193100	194800
12	183000	191500	203000	205500	204800	205200	e205300	206200	207200	202700	193000	194700
13	182900	192300	203500	207300	205600	205800	e205400	206000	207200	202300	193700	194500
14	182700	192700	204200	207800	206600	205300	e205400	205700	207200	202000	193600	194400
15	182700	193000	204500	207400	207300	205300	e205500	205700	207800	201700	193300	194300
16	183000	194000	204900	205600	208700	204000	e205600	205600	207400	201400	193600	194400
17	183500	194100	205000	204700	211100	204700	205600	205500	207400	201100	193600	194400
18	183700	194100	204900	205300	209300	205300	205400	205500	207300	200800	193700	194400
19	183700	194100	204700	206400	206100	205800	205200	205400	207100	200500	193600	196900
20	183700	194100	204400	207100	202800	206400	205200	205900	207000	200200	193400	199900
21	183700	194100	204200	207700	202200	206500	205300	206000	206800	199900	193200	204700
22	183600	194100	204000	204000	201500	206600	205400	204600	206600	199600	193000	205300
23	183500	194300	203900	200400	200600	206600	205600	204500	206300	199300	192800	205100
24	183500	197000	203900	201700	200600	206900	205600	204300	205900	199000	192600	204800
25	183500	200600	204200	203100	200700	207000	205600	204300	205400	198700	192400	204700
26	183400	202300	206800	203900	203200	206600	205600	204200	205000	198300	192200	204800
27	183400	202800	208500	204200	206400	206000	205600	204200	204600	198000	191900	204800
28	183300	203100	207700	204500	210500	206000	205600	204800	204600	197700	191700	204800
29	183200	203200	205700	204600	---	206100	205600	204800	204300	197400	191400	204800
30	183200	203200	200500	204700	---	206000	205500	204900	204500	197000	191100	204700
31	183200	---	200500	204500	---	205800	---	207400	---	196700	191800	---
MEAN	183600	193100	203800	204500	204300	205800	205500	205600	206700	201300	193500	197700
MAX	184800	203200	208500	207800	211100	207900	206000	207600	207800	204900	196300	205300
MIN	182700	183200	200500	200400	200600	204000	205200	204200	204300	196700	191100	192400
(+)	335.07	337.34	337.04	337.48	338.13	337.62	337.59	337.80	337.47	336.61	336.06	337.50
(@)	-9500	+20000	-2700	+4000	+6000	-4700	-300	+1900	-2900	-7800	-4900	+12900

CAL YR 2000 MAX 219100 MIN 180900 (@) +16800
WTR YR 2001 MAX 211100 MIN 182700 (@) +12000

e Estimated

(+) 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 Sept. 1989 (daily mean discharge). Oct. 1989 to current year, (peak discharges greater than base discharge). Gage-height records collected at this site from Sept. 1963 to Dec. 1967, are published in reports by the U.S. Army Corps of Engineers.

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 good. Since July 1970, at least 10% of contributing drainage area has been regulated. 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 FOR PERIOD PRIOR TO REGULATION.--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.

AVERAGE DISCHARGE FOR REGULATED PERIOD.--19 years (water years 1971-89) regulated, 237 ft^3/s (171,900 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1944-62, 1968-70).--Maximum discharge, 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, July 19 to Nov. 4, 1956.

EXTREMES FOR REGULATED PERIOD (WATER YEARS 1971-89).--Maximum discharge, 50,400 ft^3/s, Mar. 17, 1987, gage height, 23.65 ft; minimum discharge, 0.71 ft^3/s, Oct. 1, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jan. 1938 reached a stage of about 25 ft from information by local resident. Maximum stage since at least 1895, that of Mar. 30, 1945.

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. 27	1945	6,050	15.50	Feb. 25	1415	3,910	14.27
Jan. 18		unknown	unknown	Mar. 1	0300	11,100	17.86
Feb. 17		unknown	unknown	Mar. 12	2000	9,580	17.23

07344500 Big Cypress Creek near Pittsburg, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Mar. 1965 to Aug. 1989, Oct. 1998 to current year.
BIOCHEMICAL DATA: Jan. 1983 to Sept. 1985, Oct. 1998 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1968 to Sept. 1989.
WATER TEMPERATURE: Oct. 1968 to Sept. 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 989 microsiemens/cm, Aug. 29, 1987; minimum daily, 48 microsiemens/cm, Nov. 27, 1988.
WATER TEMPERATURE: Maximum daily, 32.0°C, Aug. 20, 1969; minimum daily, 0.0°C on several days during winter months of 1982-84.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	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)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB													
28...	1435	9590	79	7.1	11.0	34	--	8.9	80.4	<2.0	21.9	6	5.34
APR													
26...	1015	25	427	7.1	17.3	30	--	7.7	79.4	<2.0	94.6	40	25.4
MAY													
16...	0930	34	215	6.8	23.0	33	--	5.5	64.4	<2.0	53.5	26	12.8
AUG													
08...	1222	9.4	948	7.3	27.5	--	22	4.9	62.5	<2.0	190	93	63.6

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 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)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
FEB													
28...	2.08	4.7	.441	2.89	15	10.8	4.9	<.2	4.3	64	--	24	--
APR													
26...	7.56	38.5	1.72	7.58	54	65.1	39.5	E.1	13.4	274	250	32	4.23
MAY													
16...	5.18	16.9	1.01	4.83	28	30.1	19.3	E.1	7.3	131	118	32	.948
AUG													
08...	7.61	108	3.41	27.6	97	170	102	E.1	7.4	660	617	21	13.9

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)	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)
FEB													
28...	E.005	.089	<.041	--	.53	.062	.049	.150	14	--	.24	<2.0	29.1
APR													
26...	.028	4.26	.065	.850	.92	.324	.291	.892	2.1	--	--	--	--
MAY													
16...	.010	.958	.059	.459	.52	.125	.110	.337	8.6	3	.09	<2.0	49.5
AUG													
08...	.040	13.9	.048	.946	.99	3.98	3.51	10.8	8.8	3	.31	2.7	56.3

DATE	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	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)
FEB													
28...	.06	.16	<.8	.41	3.7	--	.86	22.7	<.23	E.2	2.62	<2.4	<1.0
APR													
26...	--	--	--	--	--	20	--	206	--	--	--	--	--
MAY													
16...	<.06	E.03	<.8	.91	1.4	70	E.06	218	<.01	.7	2.63	<2.0	<1.0
AUG													
08...	<.06	.05	<.8	1.33	3.2	M	.35	77.8	<.01	12.0	2.73	<2.0	<1.0

07344500 Big Cypress Creek near Pittsburg, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB		
28...	--	.07
APR		
26...	--	--
MAY		
16...	5	.04
AUG		
08...	5	.21

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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 Sep. 2000 (U.S. Army Corps of Engineers furnished contents), Oct. 2000 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. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily contents, which are poor. 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 June 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. The dam is owned by the U.S. Army Corps of Engineers. During the current year, an unknown amount of water was diverted from the lake for municipal and industrial uses. Conservation pool storage is 241,371 acre-ft. 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.--Capacity table furnished by the Texas Water Development Board.

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, 657,500 acre-ft, Mar. 16, 17, elevation, 244.73 ft; minimum contents, 226,800 acre-ft, Nov. 1, elevation, 227.62 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

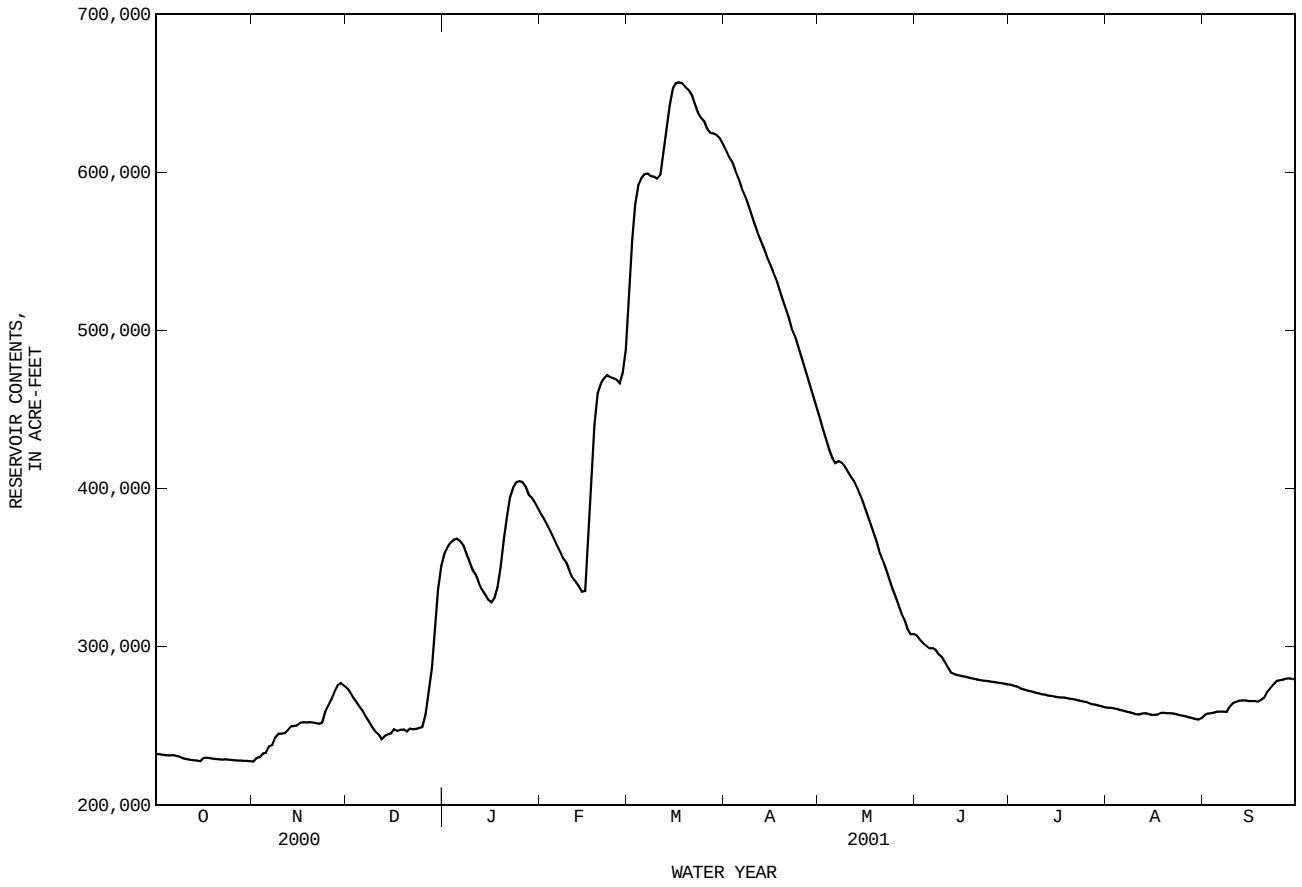
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232400	227400	273800	358800	383700	517900	614200	443900	306900	e276000	261500	256700
2	232100	229600	271000	362900	380500	557300	609800	437400	304600	e275400	261500	257900
3	231700	230300	267700	365700	376500	579200	606200	431000	302400	e274800	261100	258000
4	231500	232600	264800	367600	373000	591600	601500	424300	300700	e273700	260700	258500
5	231200	233000	261900	368200	368600	596100	596400	419100	299100	e273200	260000	259000
6	231500	236900	259200	366800	364300	598700	590100	416100	299100	e272600	259600	259000
7	231200	237800	255800	364300	360100	599100	585400	417300	298100	e272000	259100	259000
8	230600	242900	252500	359400	355800	597500	579800	416200	295300	e271500	258600	258800
9	229800	245100	249100	353900	353300	597100	574300	413900	293400	e271000	258000	262300
10	229300	245000	246200	348700	348100	595900	568000	410400	290100	e270500	257300	264300
11	228900	245500	244600	345600	343400	598300	562400	407300	287000	e270000	257200	265100
12	228500	247200	241700	340700	341000	613300	557200	404600	283500	e269700	257900	265800
13	228200	249800	243700	336300	338300	627100	552600	400200	e282700	269200	258100	266100
14	228000	250000	244700	333200	334900	642100	547200	395400	e282000	268900	257600	266000
15	227700	250400	245200	329800	335300	652800	542600	390200	e281600	268500	256900	265700
16	229600	251900	247600	328000	364100	656300	537200	384400	e281200	268200	256900	265700
17	229900	252400	246600	330400	398900	656900	532400	378400	e280800	268000	257100	265600
18	229600	252200	247400	337500	440600	656200	526400	372600	e280300	267900	258300	265200
19	229300	252400	247700	350800	460100	653900	520000	366900	e279800	267600	258300	266300
20	229100	252200	246500	368200	466200	652100	514100	360400	e279400	267200	258100	267800
21	228900	251700	248200	382900	469700	648900	508200	355400	e279000	266900	258000	271500
22	228700	251300	247800	394300	471600	643400	501500	349700	e278700	266500	257800	273900
23	228800	252000	248100	400400	470500	637800	496700	343500	e278400	265800	257400	276400
24	228700	259000	248600	403900	469600	634400	490200	337900	e278200	265400	256800	278400
25	228400	263100	249400	404800	468900	632200	483400	332600	e277900	265000	256300	278800
26	228200	267100	257000	404200	466700	627600	476900	327100	e277600	264300	255900	279300
27	228100	271900	271100	401200	473000	624800	470400	321400	e277300	263700	255400	279800
28	228000	275600	286600	396000	487900	624500	463700	317000	e277000	263400	255000	280100
29	227800	277000	313300	393900	---	623400	457000	311500	e276700	262900	254300	279600
30	227900	275400	336000	390900	---	621400	450400	308000	e276300	262400	253900	279400
31	227600	---	350600	387600	---	618200	---	308000	---	261800	254900	---
MEAN	229400	250300	261800	367000	402300	618600	537200	377500	286200	268500	257700	267700
MAX	232400	277000	350600	404800	487900	656900	614200	443900	306900	276000	261500	280100
MIN	227600	227400	241700	328000	334900	517900	450400	308000	276300	261800	253900	256700
(+)	227.67	230.08	233.79	235.36	239.21	243.54	237.83	231.86	230.32	229.59	229.23	230.48
(@)	-5900	+47800	+75200	+37000	+100300	+130300	-167800	-142400	-31700	-14500	-6900	+24500

CAL YR 2000 MAX 350600 MIN 227400 (@) +119200
WTR YR 2001 MAX 656900 MIN 227400 (@) +45900

e Estimated

(+) 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' the Pines near Jefferson, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1969 to Sept. 1984, Oct. 1998 to current year.
BIOCHEMICAL DATA: Oct. 1969 to Sept. 1984, Oct. 1998 to current year.
PESTICIDE DATA: Aug. 1999 to current year.

REMARKS.--Pesticide samples are composited from discrete samples collected at the surface, middle, and bottom of the reservoir.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

324518094300801 -- Lk 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)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
FEB													
28-28	0901	--	--	--	--	--	--	--	--	--	--	--	--
28...	0925	488000	1.00	112	6.9	11.0	1.19	9.9	90.0	--	34	55	26.7
28...	0934	--	10.0	113	6.9	11.0	--	9.9	90.0	--	--	--	--
28...	0943	--	20.0	113	6.9	11.0	--	9.9	90.0	--	--	--	--
28...	0952	--	30.0	114	6.9	11.0	--	9.8	89.1	--	--	--	--
28...	1001	--	40.0	116	6.9	11.0	--	9.6	87.3	--	--	--	--
28...	1008	--	54.0	118	6.9	11.0	--	8.8	80.0	--	--	--	26.7
MAY													
16...	0935	--	--	--	--	--	--	--	--	--	--	--	--
16...	0944	384000	1.00	110	8.2	26.0	1.07	8.8	110	e1	<1	--	28.9
16...	0952	--	10.0	109	6.9	24.0	--	7.4	89.4	--	--	--	--
16...	1000	--	20.0	109	6.4	21.5	--	3.8	43.8	--	--	--	--
16...	1009	--	30.0	110	6.3	18.5	--	.9	9.8	--	--	--	--
16...	1019	--	40.0	112	6.3	17.0	--	.1	1.1	--	--	--	--
16...	1028	--	53.0	113	6.3	17.0	--	.2	2.1	--	--	--	29.0
AUG													
09-09	1132	--	--	--	--	--	--	--	--	--	--	--	--
09...	1141	258000	1.00	115	7.6	31.0	1.13	7.5	102	<1	<1	--	27.6
09...	1150	--	10.0	115	7.4	31.0	--	7.3	99.3	--	--	--	--
09...	1158	--	20.0	142	6.7	27.5	--	.1	1.3	--	--	--	--
09...	1206	--	30.0	157	6.8	23.5	--	.2	2.4	--	--	--	--
09...	1213	--	44.0	161	6.8	23.0	--	.2	2.4	--	--	--	35.8

324518094300801 -- Lk 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)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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													
28-28	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	16	6.19	2.73	9.2	.773	38.6	3.99	10	21.5	9.4	E.1	8.6	68.8
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	17	6.17	2.73	9.3	.781	38.7	4.18	9	22.1	9.6	<.2	9.3	70.1
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	12	6.84	2.86	7.7	.622	34.2	2.58	14	18.0	8.0	E.1	<.5	56.3
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	14	6.90	2.87	7.7	.618	33.1	3.64	16	18.6	8.6	E.1	8.9	69.2
AUG													
09-09	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	9	5.80	3.18	8.1	.668	35.0	3.86	19	15.9	9.2	E.1	2.6	59.9
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	8.61	3.48	7.7	.561	29.1	3.99	54	5.1	8.8	E.1	10	93.5

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

324518094300801 -- Lk O the Pines Site AC

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)	BENZENE TOTAL (UG/L) (34030)	ETHYL-BENZENE TOTAL (UG/L) (34371)	TOLUENE TOTAL (UG/L) (34010)
FEB													
28-28	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	E.003	.190	E.033	--	.33	<.060	<.018	--	70	7.3	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	E.003	.201	.090	.309	.40	<.060	E.010	--	60	55.0	--	--	--
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.006	<.047	<.041	--	.30	<.060	<.018	--	170	13.1	<.20	<.20	<.20
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	E.003	.068	<.041	--	.32	<.060	<.018	--	240	61.8	--	--	--
16...	<.006	.220	<.041	--	.33	<.060	<.018	--	250	596	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	E.004	.226	E.026	--	.33	<.060	<.018	--	230	1540	--	--	--
AUG													
09-09	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.006	E.023	E.037	--	.39	<.060	<.020	--	<10	27.6	<.20	<.20	<.20
09...	<.006	E.027	E.030	--	.38	<.060	<.020	--	40	162	--	--	--
09...	<.006	E.024	.057	.371	.43	<.060	E.010	--	700	2160	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	<.006	E.024	1.57	.487	2.1	.410	.385	1.18	6420	3840	--	--	--

324518094300801 -- Lk O the Pines Site AC

DATE	XYLENE WATER UNFLTRD REC (UG/L) (81551)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)
FEB													
28-28	--	--	<.002	<.004	<.002	<.005	.007	<.050	<.010	<.002	<.041	<.020	<.005
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
16...	--	--	<.002	<.004	<.002	<.005	.007	<.050	<.010	<.002	<.041	<.020	<.005
16...	<.2	<.2	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
09-09	--	--	<.002	<.004	<.002	<.005	.048	<.050	<.010	<.002	<.041	<.020	<.005
09...	<.2	E.1	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

324518094300801 -- Lk O the Pines Site AC

DATE	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)
FEB													
28-28	<.006	<.018	<.003	E.003	<.005	<.005	<.021	<.002	<.009	<.005	<.003	<.004	<.035
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
16...	<.006	<.018	<.003	<.006	<.005	<.007	<.021	<.002	<.009	<.005	<.003	<.004	<.035
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
09-09	<.006	<.018	<.003	E.004	<.005	<.005	<.021	<.002	<.009	<.005	<.003	<.004	<.035
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--

324518094300801 -- Lk O the Pines Site AC

DATE	MALATHION, DISSOLVED (UG/L) (39532)	METOLACHLOR WATER DISSOLV (UG/L) (39415)	METRIBUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOLINATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROPAMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARATHION, DISSOLVED (UG/L) (39542)	METHYL PARATHION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEBULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDIMETHALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PROMETON, WATER, DISS, REC (UG/L) (04037)	PROPACHLOR, WATER, DISS, REC (UG/L) (04024)
FEB													
28-28	<.027	E.002	<.006	<.002	<.007	<.003	<.007	<.006	<.002	<.010	<.011	<.015	<.010
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
16...	<.027	E.005	<.006	<.002	<.007	<.003	<.007	<.006	<.002	<.010	<.011	<.015	<.010
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
09-09	<.027	.020	<.006	<.002	<.007	<.003	<.007	<.006	<.002	<.010	<.011	<.015	<.010
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

324518094300801 -- Lk O the Pines Site AC

DATE	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
FEB										
28-28	<.011	<.023	<.004	<.011	<.016	<.034	<.017	<.005	<.002	<.009
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	<.011	<.023	<.004	.018	E.013	<.034	<.017	<.005	<.002	<.009
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
AUG										
09-09	<.011	<.023	<.004	.017	.016	<.034	<.017	<.005	<.002	<.009
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--

324509094303901 -- Lk 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							
28...	1019	1.00	112	6.9	11.5	9.8	90.1
28...	1021	10.0	112	6.9	11.5	9.8	90.1
28...	1023	20.0	112	6.9	11.5	9.8	90.1
28...	1026	30.0	113	6.9	11.0	9.9	90.0
28...	1029	39.0	113	6.9	11.0	9.9	90.0
MAY							
16...	1036	1.00	110	8.2	25.5	8.8	109
16...	1039	10.0	111	6.8	23.5	6.6	79.0
16...	1042	20.0	109	6.4	21.0	3.3	37.6
16...	1045	26.0	109	6.4	20.5	2.4	27.1
AUG							
09...	1222	1.00	115	7.5	31.0	7.5	102
09...	1224	10.0	115	7.0	30.5	6.6	89.0
09...	1227	23.0	123	6.5	29.0	.2	2.6

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

324613094323001 -- Lk O the Pines Site BC

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)	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)
FEB													
28...	1044	1.00	110	6.8	11.5	A1.04	9.5	87.4	--	E.003	.169	.052	.332
28...	1046	10.0	110	6.8	11.5	--	9.5	87.4	--	--	--	--	--
28...	1048	20.0	110	6.8	11.5	--	9.5	87.4	--	--	--	--	--
28...	1051	30.0	111	6.7	11.5	--	9.5	87.4	--	--	--	--	--
28...	1054	40.0	114	6.7	11.5	--	8.9	81.8	--	--	--	--	--
28...	1057	50.0	115	6.7	11.0	--	8.8	80.0	--	--	--	--	--
28...	1101	55.0	115	6.7	11.0	--	9.0	81.8	--	E.003	.183	.081	.317
MAY													
16...	1059	1.00	111	8.3	25.5	1.22	8.8	109	--	<.006	<.047	<.041	--
16...	1102	10.0	111	8.2	25.5	--	8.7	108	--	--	--	--	--
16...	1106	20.0	107	6.4	21.5	--	3.6	41.5	--	--	--	--	--
16...	1109	30.0	111	6.3	18.0	--	.6	6.4	--	--	--	--	--
16...	1111	40.0	113	6.4	17.5	--	.2	2.1	--	--	--	--	--
16...	1115	50.0	113	6.3	17.0	--	.1	1.1	.206	.006	.212	.044	.303
AUG													
09...	1241	1.00	117	8.1	31.5	1.04	7.7	106	--	<.006	E.023	E.022	--
09...	1245	10.0	115	7.4	30.5	--	7.2	97.1	--	<.006	E.024	E.030	--
09...	1249	20.0	137	6.7	28.0	--	.2	2.6	--	<.006	<.050	.056	.386
09...	1253	30.0	155	6.8	24.0	--	.2	2.4	--	--	--	--	--
09...	1257	43.0	168	6.8	23.0	--	.2	2.4	--	<.006	E.029	1.64	.719

324613094323001 -- Lk O the Pines Site BC

DATE	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						
28...	.38	<.060	E.009	--	60	17.2
28...	--	--	--	--	--	--
28...	--	--	--	--	--	--
28...	--	--	--	--	--	--
28...	--	--	--	--	--	--
28...	--	--	--	--	--	--
28...	.40	<.060	E.013	--	70	44.8
MAY						
16...	.30	<.060	<.018	--	20	58.2
16...	--	--	--	--	--	--
16...	--	--	--	--	--	--
16...	--	--	--	--	--	--
16...	--	--	--	--	--	--
16...	.35	<.060	<.018	--	60	1450
AUG						
09...	.36	<.060	<.020	--	<10	23.3
09...	.35	<.060	<.020	--	20	119
09...	.44	<.060	<.020	--	440	1820
09...	--	--	--	--	--	--
09...	2.4	.467	.443	1.36	7050	3840

324738094325101 -- Lk O the Pines 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)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
FEB							
28...	1118	1.00	84	6.6	12.5	8.7	81.8
28...	1120	10.0	112	6.7	11.0	9.4	85.4
28...	1123	20.0	113	6.7	11.0	9.4	85.4
28...	1126	32.0	113	6.7	11.0	9.8	89.1
MAY							
16...	1133	1.00	108	7.7	27.5	8.5	109
16...	1135	10.0	106	6.9	26.5	7.3	91.8
16...	1138	20.0	107	6.4	22.0	.2	2.3
16...	1140	29.0	111	6.3	20.0	.3	3.3
AUG							
09...	1307	1.00	116	7.9	32.5	7.8	109
09...	1309	10.0	115	7.0	31.5	6.3	86.4
09...	1312	23.0	138	6.6	30.0	.3	4.0

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

324806094350001 -- Lk 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							
28...	1142	1.00	58	6.4	12.5	8.4	79.0
28...	1145	10.0	107	6.6	12.0	8.7	80.9
28...	1148	20.0	112	6.6	12.0	8.8	81.9
28...	1151	33.0	114	6.6	11.5	8.9	81.8
MAY							
16...	1200	1.00	110	7.4	27.0	8.0	101
16...	1203	10.0	106	7.0	26.5	7.2	90.5
16...	1205	20.0	95	6.4	23.0	.3	3.5
16...	1208	28.0	100	6.5	22.5	.3	3.5
AUG							
09...	1335	1.00	117	7.9	32.5	7.4	103
09...	1338	10.0	115	7.1	31.5	6.3	86.4
09...	1341	22.0	115	6.8	31.0	4.8	65.3

324726094363801 -- Lk 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)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB													
28...	1207	1.00	114	6.6	12.0	.91	8.9	82.8	--	e6	e5	28.7	17
28...	1211	10.0	114	6.6	12.0	--	8.9	82.8	--	--	--	--	--
28...	1216	20.0	114	6.6	12.0	--	8.9	82.8	--	--	--	--	--
28...	1221	30.0	114	6.6	12.0	--	8.9	82.8	--	--	--	--	--
28...	1226	38.0	114	6.6	12.0	--	9.0	83.7	--	--	--	28.9	16
MAY													
16...	1226	1.00	114	8.5	26.5	1.08	8.8	111	e2	<1	--	30.3	16
16...	1231	10.0	114	8.4	26.5	--	8.7	109	--	--	--	--	--
16...	1236	20.0	117	6.4	22.0	--	1.2	14.0	--	--	--	--	--
16...	1240	30.0	118	6.4	19.0	--	.1	1.1	--	--	--	--	--
16...	1245	40.0	124	6.5	18.5	--	.2	2.2	--	--	--	31.1	11
AUG													
09...	1400	1.00	119	8.0	31.5	.94	7.8	107	<1	<1	--	28.2	8
09...	1404	10.0	119	7.5	31.0	--	6.5	88.4	--	--	--	--	--
09...	1409	20.0	164	7.1	28.0	--	.1	1.3	--	--	--	--	--
09...	1414	29.0	176	7.0	25.5	--	.3	3.7	--	--	--	37.2	--

324726094363801 -- Lk O the Pines Site EC

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)	SODIUM PERCENT (00932)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	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)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)
FEB													
28...	7.04	2.71	8.4	.682	35.3	3.74	12	22.1	8.8	<.2	7.8	68.5	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	7.07	2.72	8.4	.678	35.2	3.61	12	22.1	8.6	<.2	7.8	68.6	--
MAY													
16...	7.21	2.99	7.9	.623	33.0	3.50	14	18.3	8.4	E.1	<.5	57.3	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	.053
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	7.33	3.12	7.8	.605	32.0	3.73	20	17.5	9.0	E.1	8.6	72.9	--
AUG													
09...	6.08	3.16	8.2	.670	34.9	3.92	20	15.1	9.9	E.1	4.1	62.5	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
09...	9.20	3.46	7.7	.547	28.2	4.11	58	4.8	9.3	E.1	9.3	97.1	--

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

324726094363801 -- Lk O the Pines Site EC

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										
28...	E.003	.132	.077	.335	.41	<.060	E.016	--	70	64.5
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--
28...	E.003	.130	.073	.338	.41	<.060	E.016	--	100	65.0
MAY										
16...	<.006	<.047	<.041	--	.36	<.060	<.018	--	310	6.6
16...	<.006	<.047	<.041	--	.35	<.060	<.018	--	460	20.6
16...	.032	.085	.099	.374	.47	<.060	<.020	--	360	189
16...	--	--	--	--	--	--	--	--	--	--
16...	.010	E.041	.313	.314	.63	<.060	<.018	--	430	2730
AUG										
09...	<.006	<.050	E.029	--	.36	<.060	<.020	--	<10	41.2
09...	<.006	E.024	E.038	--	.35	<.060	<.020	--	70	427
09...	<.006	<.050	1.08	.487	1.6	.131	.139	.426	2060	4880
09...	<.006	E.026	1.66	.544	2.2	.354	.332	1.02	6270	4900

325100094420301 -- Lk 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)	E COLI, MTEC MF WATER (COL/ 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB													
28...	1323	1.00	126	6.6	13.0	.94	8.2	78.0	--	e18	20	32.6	16
28...	1327	10.0	128	6.6	13.0	--	8.2	78.0	--	--	--	--	--
28...	1331	20.0	123	6.5	12.5	--	8.0	75.3	--	--	--	--	--
28...	1336	32.0	122	6.5	12.5	--	8.5	80.0	--	--	--	32.1	15
MAY													
16...	1313	1.00	131	7.5	27.0	.79	8.4	107	e6	e1	--	36.6	15
16...	1319	10.0	134	6.4	23.5	--	.2	2.4	--	--	--	--	--
16...	1324	20.0	141	6.4	23.0	--	.1	1.2	--	--	--	--	--
16...	1330	27.0	146	6.5	23.0	--	.2	2.4	--	--	--	38.8	12
AUG													
09...	1440	1.00	140	8.2	32.0	.49	8.2	113	e2	<1	--	33.1	7
09...	1447	10.0	147	6.8	31.0	--	4.4	59.9	--	--	--	--	--
09...	1455	22.0	147	6.9	31.0	--	4.3	58.5	--	--	--	34.5	6

325100094420301 -- Lk 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)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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, NITRITE DIS-SOLVED (MG/L AS N) (00613)
FEB													
28...	7.91	3.12	9.0	.689	34.7	3.49	16	22.9	9.5	E.1	4.8	70.8	<.006
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
28...	7.82	3.05	8.8	.676	34.1	3.86	17	22.2	9.0	E.1	4.9	70.2	<.006
MAY													
16...	8.91	3.48	8.6	.617	31.0	3.84	32	20.1	9.1	E.1	.9	68.3	<.006
16...	--	--	--	--	--	--	--	--	--	--	--	--	.008
16...	--	--	--	--	--	--	--	--	--	--	--	--	<.006
16...	10.1	3.31	8.8	.615	30.3	4.15	27	18.6	10.0	E.1	7.4	82.6	<.006
AUG													
09...	7.32	3.59	11.1	.842	38.1	4.86	26	15.0	12.6	E.2	12.8	83.2	<.006
09...	--	--	--	--	--	--	--	--	--	--	--	--	<.006
09...	7.94	3.57	11.3	.837	37.7	4.76	28	15.3	13.0	.2	13.8	86.9	<.006

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

325100094420301 -- Lk O the Pines Site FC

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									
28...	E.033	E.037	--	.39	E.031	.021	.064	120	55.6
28...	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--
28...	E.037	.044	.385	.43	<.060	.018	.055	90	60.3
MAY									
16...	<.047	<.041	--	.43	<.060	<.018	--	270	11.1
16...	E.024	.132	.448	.58	<.060	.028	.086	200	684
16...	<.047	.233	.466	.70	.112	.110	.337	1340	1010
16...	<.047	.281	.465	.75	.167	.155	.475	2130	1230
AUG									
09...	E.024	E.036	--	.53	E.054	.022	.067	M	4.5
09...	E.029	E.038	--	.52	E.036	E.012	--	20	38.6
09...	E.024	E.040	--	.56	E.049	E.015	--	30	46.4

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 Sept. 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 except those for estimated daily discharges, which are fair. Since Aug. 1957, flow completely regulated. No known diversions. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1925-57), prior to completion of Ferrell's Bridge Dam, 660 ft^3s (478,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION, (WATER YEARS, 1925-57).--Maximum discharge, 57,100 ft^3s Apr. 1, 1945, gage height, 28.78. ft, site and datum then in use, from rating curve extended above 29,000 ft^3s; no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	67	1790	586	2760	2530	3030	2690	1710	e.00	92	49
2	71	73	1810	459	2750	3010	3030	2680	1710	e.00	80	47
3	70	70	1810	298	2740	3040	3020	2660	1700	e.00	79	46
4	70	75	1800	329	2730	3080	3020	2660	1700	e.00	70	45
5	71	72	1800	792	2720	3060	3010	2660	1700	e.00	73	46
6	79	73	1790	1420	2710	3050	3000	2670	1700	e.00	71	47
7	87	73	1780	2230	2700	3050	3000	2680	1700	e.00	67	47
8	87	77	1780	2700	2690	3050	2980	2660	1700	e.00	61	44
9	86	173	1770	2740	2690	3070	2970	2650	1700	e.00	61	49
10	80	265	1770	2750	2680	3070	2960	2650	1700	e.00	58	45
11	72	263	1540	2760	2690	3080	2950	2640	1700	e.00	62	45
12	81	264	953	2750	2710	3200	2940	2630	1700	e.00	54	45
13	91	272	396	2750	2690	3140	2940	2620	1690	e.00	45	44
14	93	272	301	2730	2670	3150	2930	2620	1460	e.00	53	41
15	95	275	275	2720	2710	3160	2910	2600	1010	e.00	78	40
16	97	275	384	2740	2590	3140	2890	2590	638	e.00	58	39
17	86	274	551	2760	2130	3130	2870	2580	551	e.00	44	20
18	70	274	556	2480	2030	3110	2850	2580	536	10	45	e.00
19	69	272	552	1810	2010	2770	2840	2570	541	29	40	e.00
20	69	271	472	1190	2000	1920	2830	2560	540	15	46	e.00
21	68	271	282	667	2000	2380	2820	2550	423	e.00	50	e.00
22	68	269	268	306	1990	2960	2810	2540	299	e.00	49	e.00
23	75	272	266	223	1990	3010	2790	2520	288	e.00	47	e.00
24	77	313	263	440	2000	3040	2770	2500	283	e.00	51	e.00
25	78	302	266	768	1990	3060	2750	2490	230	50	49	e.00
26	79	281	435	1420	2220	3050	2730	2480	55	108	45	e.00
27	70	399	777	2250	2430	3040	2720	2480	25	105	45	e.00
28	60	733	724	2700	2160	3040	2710	2480	10	101	45	e.00
29	61	1320	648	2790	---	3030	2700	2140	e.00	101	45	e.00
30	61	1710	608	2790	---	3030	2700	1770	e.00	102	45	e.00
31	63	---	589	2770	---	3030	---	1720	---	104	49	---
TOTAL	2355	9600	29006	56118	68180	92480	86470	78320	28999.00	725.00	1757	739.00
MEAN	76.0	320	936	1810	2435	2983	2882	2526	967	23.4	56.7	24.6
MAX	97	1710	1810	2790	2760	3200	3030	2690	1710	108	92	49
MIN	60	67	263	223	1990	1920	2700	1720	.00	.00	40	.00
AC-FT	4670	19040	57530	111300	135200	183400	171500	155300	57520	1440	3490	1470

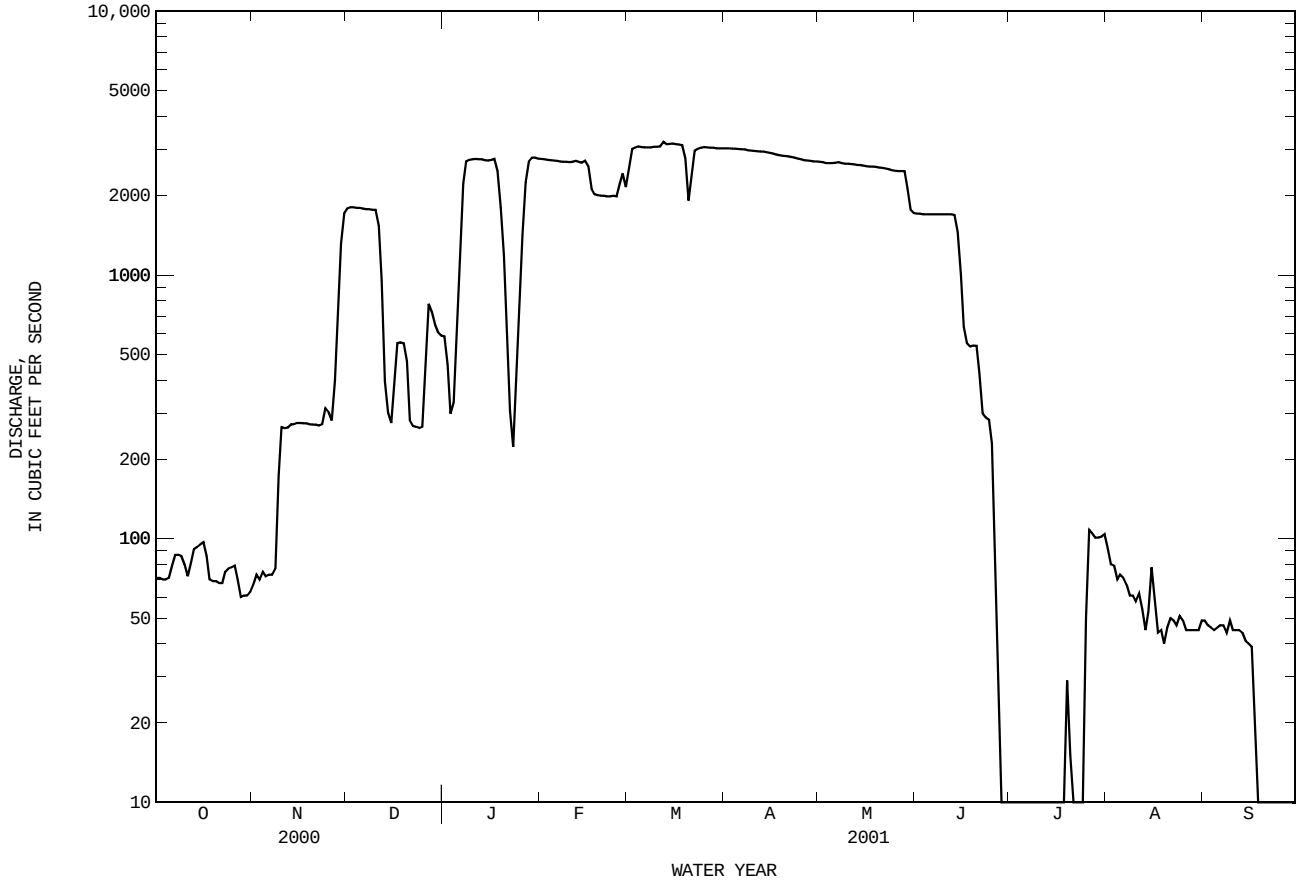
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2001zh, BY WATER YEAR (WY)

MEAN	206	417	706	920	1298	1287	1093	884	869	393	173	98.3
MAX	728	2690	1946	2685	2688	2983	2882	2979	3209	3057	2349	482
(WY)	1995	1958	1958	1993	1993	2001	2001	1958	1958	1958	1958	1958
MIN	3.35	4.82	4.13	4.16	30.7	37.2	47.7	32.4	32.5	18.7	16.2	8.70
(WY)	1981	1989	1982	1981	2000	1996	1996	1992	1987	1998	1982	1980

07346000 Big Cypress Creek near Jefferson, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1958 - 2001zh	
ANNUAL TOTAL	162140		454749.00			
ANNUAL MEAN	443		1246		694	
HIGHEST ANNUAL MEAN					1859	1958
LOWEST ANNUAL MEAN					47.9	1996
HIGHEST DAILY MEAN	2450	Jun 27	3200	Mar 12	4500	May 20 1958
LOWEST DAILY MEAN	23	Jan 28	e.00	Jun 29	.00	Jul 26 1987
ANNUAL SEVEN-DAY MINIMUM	27	Feb 18	e.00	Jun 29	e.00	Jun 29 2001
MAXIMUM PEAK FLOW			3230	Mar 12	3230	Mar 12 2001
MAXIMUM PEAK STAGE			19.98	Mar 12	19.98	Mar 12 2001
ANNUAL RUNOFF (AC-FT)	321600		902000		502700	
10 PERCENT EXCEEDS	1760		2960		2530	
50 PERCENT EXCEEDS	80		552		176	
90 PERCENT EXCEEDS	31		6.0		23	

e Estimated.
z Period of regulated streamflow.
h See PERIOD OF RECORD paragraph.



07346000 Big Cypress Creek near Jefferson, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1998 to current year.
BIOCHEMICAL DATA: Oct. 1998 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	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)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB													
27...	1015	2400	116	7.4	11.4	6.5	--	12.6	115	<2.0	26.7	14	6.48
MAY													
16...	1250	2600	113	6.6	23.5	4.4	--	9.4	111	<2.0	29.1	14	6.90
AUG													
08...	1632	45	133	6.8	27.3	--	7.9	6.6	83.6	--	34.2	0	8.34

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 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)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
FEB													
27...	2.54	9.0	.763	4.46	13	21.7	9.8	<.2	8.1	83		<10	E.004
MAY													
16...	2.88	7.5	.607	3.37	14	18.2	8.1	E.1	2.1	72	58.6	<10	<.006
AUG													
08...	3.22	8.2	.613	3.90	34	11.9	9.0	E.1	5.0	105	74.6	<10	<.006

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)	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)
FEB													
27...	.331	.041	.406	.45	<.060	E.013	--	8.7	--	.27	<2.0	41.9	<.06
MAY													
16...	.053	<.040	--	.41	<.060	<.020	--	7.5	6	.06	<2.0	47.4	<.06
AUG													
08...	E.035	.363	.424	.79	<.060	.052	.159	8.4	6	.05	3.6	123	<.06

DATE	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	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)
FEB													
27...	.12	<.8	.07	2.5	100	.57	5.7	<.23	.6	2.04	<2.4	<1.0	5
MAY													
16...	<.04	<.8	.07	.9	250	.10	63.7	<.01	.5	1.41	<2.0	<1.0	2
AUG													
08...	<.04	<.8	.61	.3	1710	.66	2420	<.01	1.5	.70	<2.0	<1.0	3

DATE	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB	
27...	.05
MAY	
16...	.03
AUG	
08...	.03

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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 Sept. 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", Sept. 1964 to Aug. 1968 (low-flow partial-record), Sept. 1968 to current year.
Water-quality records.--Chemical data: Oct. 1967 to Sept. 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. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1938, 22.42 ft Apr. 29, 1958, from records by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

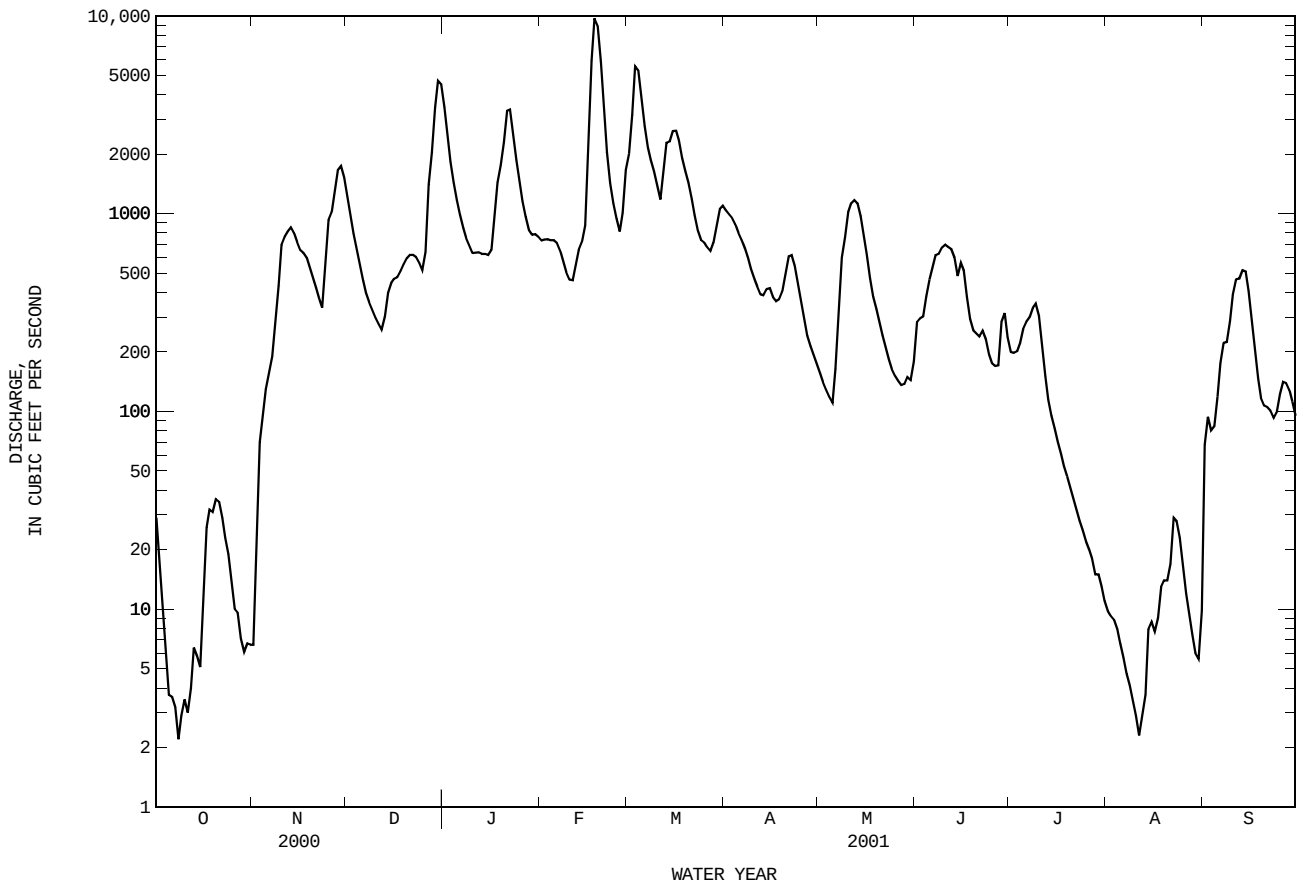
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	6.6	1230	3460	732	2010	1040	156	283	200	9.8	68
2	19	26	979	2480	742	3180	990	141	295	198	9.2	94
3	12	70	794	1830	744	5570	948	129	302	202	8.8	80
4	7.1	97	664	1440	735	5300	886	119	383	221	7.9	84
5	3.7	130	551	1170	735	3770	800	111	465	262	6.7	119
6	3.6	158	459	983	710	2770	739	164	540	284	5.7	176
7	3.2	190	397	847	649	2160	671	329	616	299	4.7	222
8	2.2	288	357	755	571	1870	596	602	627	333	4.1	225
9	2.9	433	326	690	506	1640	526	761	675	350	3.4	286
10	3.5	695	298	634	465	1390	472	1020	697	304	2.9	391
11	3.0	762	277	635	462	1180	428	1130	681	216	2.3	466
12	4.0	813	260	639	561	1650	392	1170	663	151	2.9	470
13	6.4	855	302	626	657	2280	387	1130	601	115	3.7	518
14	5.8	800	398	626	722	2320	416	968	484	95	7.9	510
15	5.1	719	446	618	874	2620	420	777	564	82	8.6	408
16	13	656	469	654	2130	2630	379	622	517	70	7.7	296
17	26	634	477	915	5940	2340	361	474	379	61	9.0	203
18	32	599	513	1440	9730	1910	369	380	293	53	13	147
19	31	537	555	1760	8950	1640	405	330	257	47	14	117
20	36	476	597	2300	5880	1430	499	286	248	41	14	107
21	35	422	620	3310	3440	1190	608	243	239	36	17	105
22	29	370	619	3370	2050	982	617	210	256	32	29	101
23	23	335	603	2550	1430	822	544	183	232	28	28	93
24	19	550	564	1870	1130	739	441	164	194	25	23	99
25	14	930	519	1460	945	716	353	152	176	22	17	122
26	10	1020	641	1160	812	677	287	143	170	20	12	141
27	9.6	1320	1410	965	1010	647	241	136	171	18	9.5	139
28	7.1	1660	2050	827	1670	717	214	138	284	15	7.5	128
29	6.1	1740	3450	783	---	867	192	149	314	15	6.0	112
30	6.7	1520	4700	788	---	1060	173	144	238	13	5.6	95
31	6.6	---	4510	767	---	1100	---	179	---	11	9.8	---
TOTAL	414.6	18811.6	30035	42352	54982	59177	15394	12640	11844	3819	310.7	6122
MEAN	13.4	627	969	1366	1964	1909	513	408	395	123	10.0	204
MAX	36	1740	4700	3460	9730	5570	1040	1170	697	350	29	518
MIN	2.2	6.6	260	618	462	647	173	111	170	11	2.3	68
AC-FT	822	37310	59570	84010	109100	117400	30530	25070	23490	7570	616	12140

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2001, BY WATER YEAR (WY)

MEAN	89.4	269	545	544	675	731	582	483	290	92.6	40.6	60.5
MAX	415	1344	2157	1508	1964	1909	2006	1934	1321	576	623	581
(WY)	1974	1975	1988	1991	2001	2001	1973	1991	1974	1992	1979	1974
MIN	.009	13.6	62.1	88.6	69.6	108	109	50.8	1.86	.000	.060	.000
(WY)	1979	1984	1990	2000	1996	1996	1971	1984	1998	1998	1969	1969

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1969 - 2001	
ANNUAL TOTAL	124070.25		255901.9			
ANNUAL MEAN	339		701		365	
HIGHEST ANNUAL MEAN					701	2001
LOWEST ANNUAL MEAN					78.3	1971
HIGHEST DAILY MEAN	4700	Dec 30	9730	Feb 18	10700	Dec 28 1987
LOWEST DAILY MEAN	.00	Aug 18	2.2	Oct 8	.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 18	3.2	Oct 5	.00	Aug 10 1969
MAXIMUM PEAK FLOW			10300	Feb 18	11600	Dec 28 1987
MAXIMUM PEAK STAGE			18.96	Feb 18	19.34	Dec 28 1987
ANNUAL RUNOFF (AC-FT)	246100		507600		264500	
10 PERCENT EXCEEDS	794		1660		887	
50 PERCENT EXCEEDS	154		391		168	
90 PERCENT EXCEEDS	.00		9.4		1.7	

07346045 Black Cypress Bayou at Jefferson, TX--Continued



07346050 Little Cypress Creek near Ore City, TX
(Flood-hydrograph partial-record station)

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, 4.0 mi downstream from Clear Creek, 9.0 mi south of Ore City, and 12.0 mi north of Longview.

DRAINAGE AREA.--383 mi^2.

PERIOD OF RECORD.--Jan. 1963 to Sept. 1999 (daily mean discharge). Oct. 1999 to current year (peaks above base discharge).

GAGE.--Water-stage recorder. Datum of gage is 232.67 ft above sea level. Satellite telemeter at station.

REMARKS.--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.

AVERAGE DISCHARGE.--36 years (water years 1964-99), 290 ft^3/s (210,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft^3/s, Apr. 24, 1966, gage height, 20.20 ft; no flow for many days most years.

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)
Dec. 29	0515	5,040	12.80	Mar. 2	1430	6,220	13.31
Jan. 20	1745	3,720	12.11	Mar. 15	1045	3,790	12.15
Feb. 17	2100	12,000	15.44				

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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.--June 1946 to current year.
Water-quality records.--Chemical data: June 1964 to Oct. 1997. Biological data: June 1964 to Oct. 1997. Pesticide data: Jan. 1968 to June 1981. Specific conductance: Oct. 1967 to Sept. 1990. Water temperature: Oct. 1967 to Sept. 1990.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 174.60 ft above sea level. Prior to Sept. 19, 1947, nonrecording gage at upstream side of bridge at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No flow at times. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

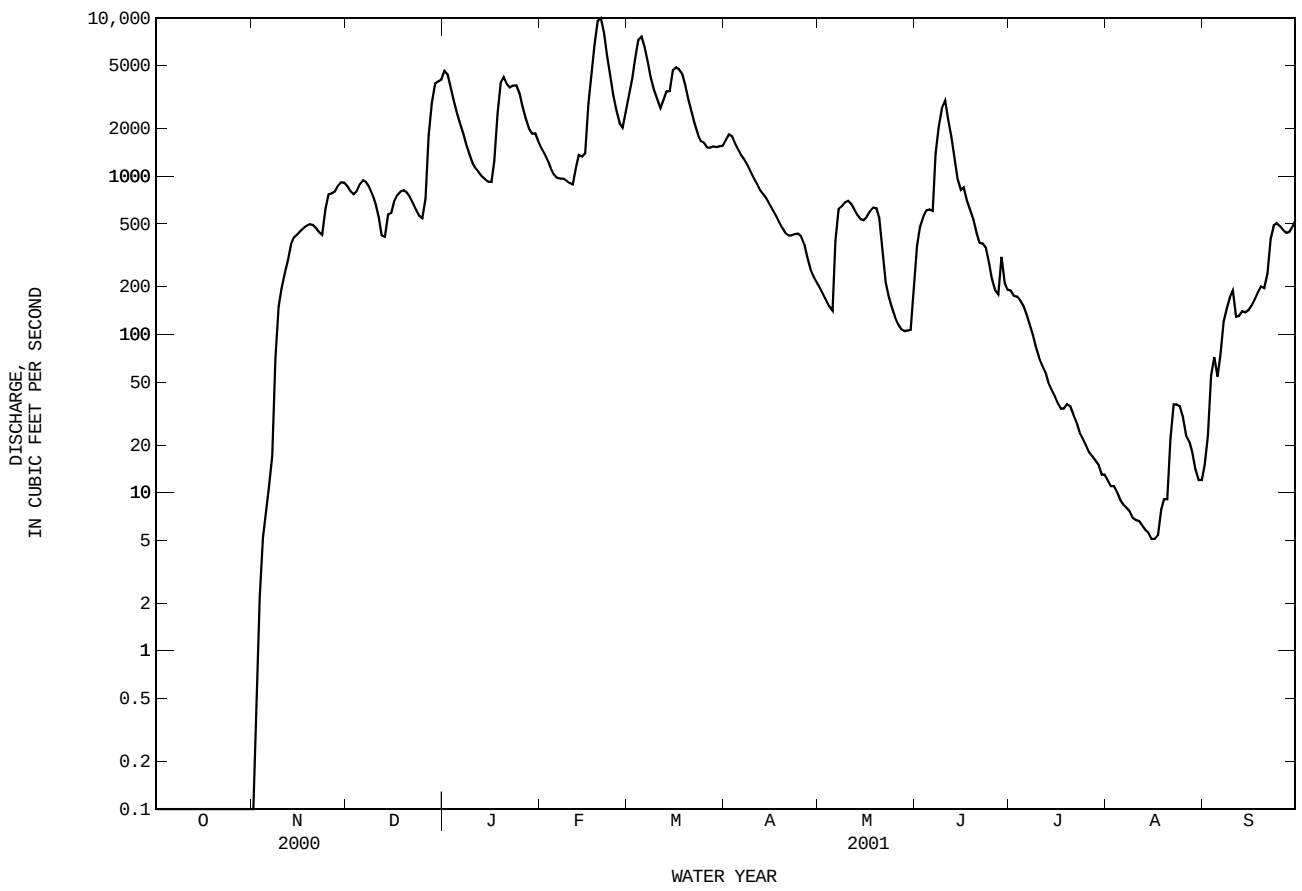
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	865	4630	1510	3320	1690	197	364	189	12	15
2	.00	.44	804	4400	1390	4140	1830	181	475	175	11	23
3	.00	2.2	769	3680	1260	5520	1780	165	548	173	11	55
4	.00	5.2	803	3020	1130	7280	1610	151	606	165	10	72
5	.00	7.6	890	2510	1030	7610	1470	141	617	152	9.0	54
6	.00	11	940	2150	978	6510	1350	392	603	134	8.4	74
7	.00	17	921	1860	968	5220	1260	621	1390	115	8.0	120
8	.00	71	858	1590	962	4180	1160	644	2070	99	7.6	145
9	.00	150	771	1380	939	3500	1060	683	2700	84	6.9	172
10	.00	195	666	1210	905	3080	969	699	3000	72	6.7	189
11	.00	242	549	1120	886	2700	889	669	2300	64	6.6	129
12	.00	294	423	1060	1130	3040	811	618	1790	58	6.2	131
13	.00	373	413	998	1360	3440	768	569	1320	50	5.8	140
14	.00	411	571	958	1330	3450	720	535	956	45	5.6	138
15	.00	428	585	924	1400	4670	662	528	817	41	5.1	142
16	.00	450	693	918	2860	4880	611	554	844	37	5.1	152
17	.00	470	760	1250	4570	4730	562	599	699	34	5.4	167
18	.00	486	801	2470	6710	4450	515	634	609	34	7.8	185
19	.00	497	816	3900	9580	3740	472	628	534	36	9.1	200
20	.00	492	790	4240	10000	3010	439	542	439	35	9.1	196
21	.00	470	741	3800	8030	2510	423	345	379	31	22	241
22	.00	442	675	3630	5850	2150	423	214	376	28	36	400
23	.00	427	613	3740	4290	1850	431	172	354	24	36	488
24	.00	616	562	3750	3240	1660	435	149	283	22	35	505
25	.00	769	542	3320	2590	1620	416	129	224	20	30	484
26	.00	779	721	2760	2160	1520	370	116	190	18	23	458
27	.00	801	1830	2320	2030	1510	307	108	179	17	21	439
28	.00	866	2930	2010	2620	1540	259	105	309	16	18	444
29	.00	916	3850	1860	---	1530	232	106	212	15	14	477
30	.00	909	3950	1870	---	1550	213	107	192	13	12	529
31	.00	---	4060	1680	---	1560	---	190	---	13	12	---
TOTAL	0.00	11597.44	35162	75008	81708	107470	24137	11491	25379	2009	415.4	6964
MEAN	.000	387	1134	2420	2918	3467	805	371	846	64.8	13.4	232
MAX	.00	916	4060	4630	10000	7610	1830	699	3000	189	36	529
MIN	.00	.00	413	918	886	1510	213	105	179	13	5.1	15
AC-FT	.00	23000	69740	148800	162100	213200	47880	22790	50340	3980	824	13810

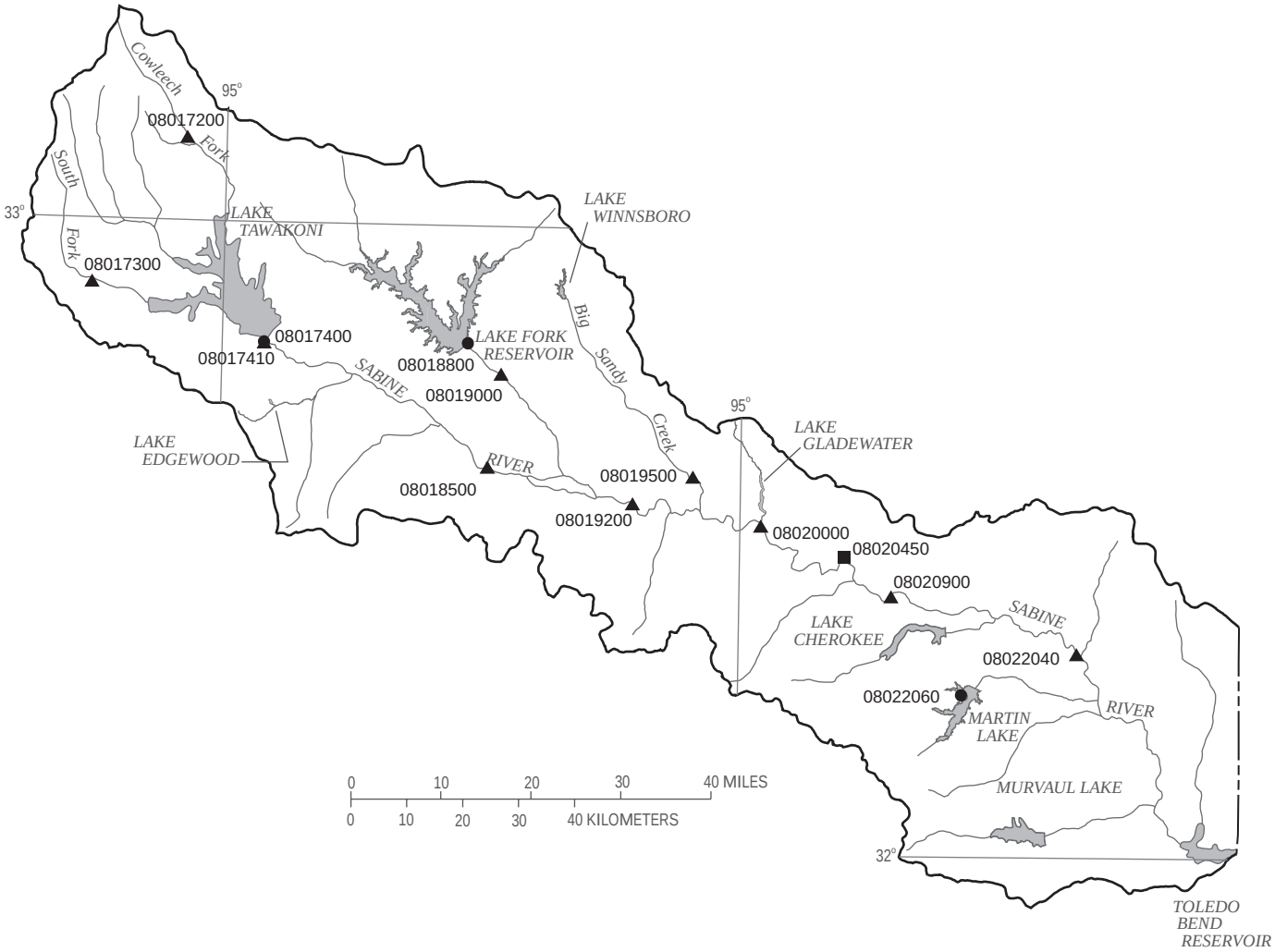
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2001, BY WATER YEAR (WY)

MEAN	121	310	657	776	963	1029	994	980	453	139	45.2	101
MAX	927	2709	3391	2664	2918	3467	4584	4212	2525	689	667	941
(WY)	1950	1958	1961	1991	2001	2001	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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1946 - 2001	
ANNUAL TOTAL	149365.85		381340.84			
ANNUAL MEAN	408		1045		542	
HIGHEST ANNUAL MEAN					1260	1958
LOWEST ANNUAL MEAN					67.3	1964
HIGHEST DAILY MEAN	4060	Dec 31	10000	Feb 20	32700	Apr 26 1966
LOWEST DAILY MEAN	.00	Jul 25	.00	Oct 1	.00	Sep 20 1948
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 25	.00	Oct 1	.00	Sep 20 1948
MAXIMUM PEAK FLOW			10500	Feb 20	35500	Apr 26 1966
MAXIMUM PEAK STAGE			16.09	Feb 20	22.28	Apr 26 1966
ANNUAL RUNOFF (AC-FT)	296300		756400		392800	
10 PERCENT EXCEEDS	1100		3270		1370	
50 PERCENT EXCEEDS	183		477		182	
90 PERCENT EXCEEDS	.00		5.2		1.1	

07346070 Little Cypress Creek near Jefferson, TX--Continued





EXPLANATION

08019200	▲	**Surface-water continuous station and number**
08017410	●	**Reservoir station and number**
08020450	■	**Surface-water partial record/stage only station and number**

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 344
08017300 South Fork Sabine River near Quinlan, TX 346
08017400 Lake Tawakoni near Wills Point, TX 348
08017410 Sabine River near Wills Point, TX 350
08018500 Sabine River near Mineola, TX 352
08018800 Lake Fork Reservoir near Quitman, TX 354
08019000 Lake Fork Creek near Quitman, TX 356
08019200 Sabine River near Hawkins, TX 358
08019500 Big Sandy Creek near Big Sandy, TX 360
08020000 Sabine River near Gladewater, TX 362
08020450 Sabine River above Longview, TX 364
08020900 Sabine River below Longview, TX 366
08022040 Sabine River near Beckville, TX 368
08022060 Martin Lake near Tatum, TX 370

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 gages. Datum of gage is 485.07 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. The city of Greenville diverts water from city lakes upstream from gage and from Lake Tawakoni (station 08017400, conservation pool storage 888,130 acre-ft) 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. No flow at times.

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 July 3, 1913, reached a stage of 20 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	3.8	7.6	26	26	2810	28	1.7	1.4	.64	.16	19
2	.00	42	6.4	22	17	447	23	1.7	1.3	.61	.20	3.1
3	.00	11	5.5	19	12	210	21	1.7	.98	.53	.35	12
4	.00	67	5.3	18	8.7	695	19	1.7	.84	.44	.35	119
5	.00	91	3.1	18	6.7	90	19	3.3	.52	.30	.46	143
6	.01	2760	3.3	15	6.3	39	22	481	.52	.41	.39	6.9
7	.27	280	3.2	12	5.7	26	19	120	.46	.52	.13	2.1
8	.15	90	3.0	9.5	5.7	39	18	14	.39	.53	.02	1.2
9	.01	207	3.1	7.4	15	766	18	7.7	.45	.56	.01	6.6
10	.00	41	3.2	7.8	22	111	19	4.4	.39	.57	.06	4.6
11	.00	14	3.6	105	18	250	30	3.0	.19	.60	.16	1.8
12	.00	165	3.8	93	26	2310	42	2.2	.16	.63	.24	1.1
13	.00	512	13	41	37	227	26	1.8	.13	.62	e.31	.91
14	.00	43	43	41	102	66	4010	1.5	2.1	.65	.25	.82
15	.48	16	68	29	664	90	1580	1.3	3.7	.67	.30	.97
16	1.7	18	53	36	6070	43	83	1.2	.65	.52	.10	.99
17	.01	15	28	804	1440	26	40	1.2	.45	.55	.24	.81
18	.00	7.2	15	489	106	21	30	1.1	.29	.66	.71	.96
19	.00	4.9	9.1	260	49	17	26	1.1	.16	.68	.46	1.4
20	.03	4.0	6.6	45	29	15	23	.93	.13	.67	.61	102
21	.11	3.8	5.5	23	19	14	22	1.1	.11	.55	.33	209
22	.36	3.5	5.2	16	14	14	21	.44	.15	.53	.18	10
23	.23	674	4.3	12	12	12	11	.69	.15	.41	.19	3.4
24	.12	3480	3.9	9.6	137	1320	3.5	.91	.15	.29	.19	2.0
25	.08	544	27	7.3	197	1890	3.2	1.0	.10	.13	.16	1.7
26	1.2	63	3740	6.7	32	90	2.8	.88	.44	.32	.18	1.4
27	1.4	29	2850	7.4	857	43	2.6	.68	.70	.55	.24	1.1
28	.32	14	537	8.4	2980	195	2.3	3.8	.25	.41	.27	1.0
29	35	9.4	184	1400	---	225	2.1	1.3	.10	.36	.42	.91
30	17	6.7	70	414	---	84	1.9	1.4	3.5	.26	1.6	.85
31	2.4	---	37	50	---	43	---	1.4	---	.21	6.4	---
TOTAL	60.88	9219.3	7750.7	4052.1	12914.1	12228	6168.4	666.13	20.86	15.38	15.67	660.62
MEAN	1.96	307	250	131	461	394	206	21.5	.70	.50	.51	22.0
MAX	35	3480	3740	1400	6070	2810	4010	481	3.7	.68	6.4	209
MIN	.00	3.5	3.0	6.7	5.7	12	1.9	.44	.10	.13	.01	.81
AC-FT	121	18290	15370	8040	25620	24250	12240	1320	41	31	31	1310

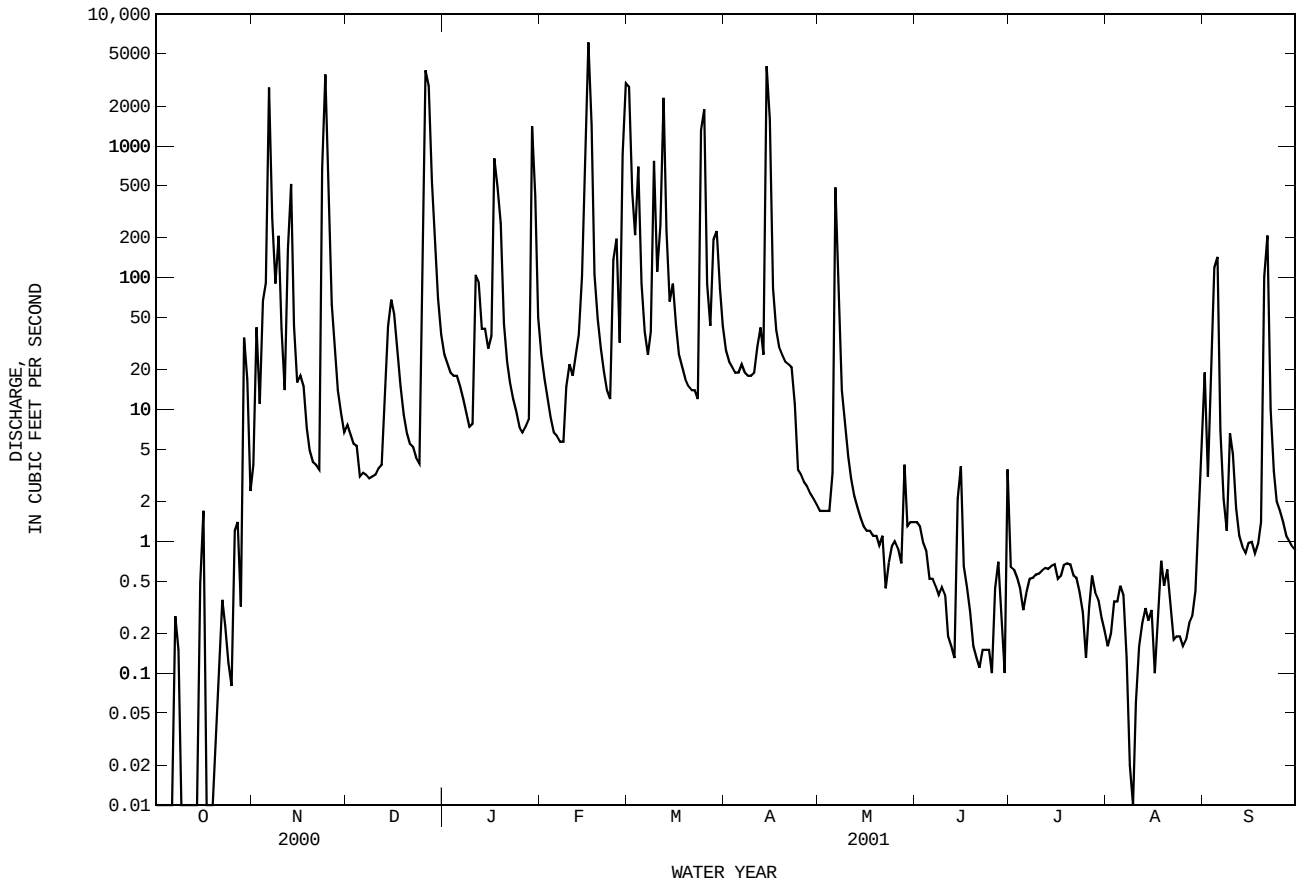
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2001, BY WATER YEAR (WY)

MEAN	54.3	63.6	106	64.2	94.9	100	96.5	132	64.9	21.4	5.39	27.3
MAX	354	433	573	403	461	394	431	540	353	264	95.2	258
(WY)	1972	1997	1972	1998	2001	2001	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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1959 - 2001	
ANNUAL TOTAL	30765.34		53772.14			
ANNUAL MEAN	84.1		147		69.8	
HIGHEST ANNUAL MEAN					147	2001
LOWEST ANNUAL MEAN					2.85	1996
HIGHEST DAILY MEAN	3740	Dec 26	6070	Feb 16	9730	May 13 1982
LOWEST DAILY MEAN	.00	Aug 24	.00	Oct 1	.00	Aug 4 1964
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 24	.02	Oct 8	.00	Aug 4 1972
MAXIMUM PEAK FLOW			8840	Feb 16	15300	May 13 1982
MAXIMUM PEAK STAGE			17.54	Feb 16	18.47	May 13 1982
ANNUAL RUNOFF (AC-FT)	61020		106700		50580	
10 PERCENT EXCEEDS	68		196		57	
50 PERCENT EXCEEDS	1.4		3.8		1.4	
90 PERCENT EXCEEDS	.00		.16		.02	

e Estimated

08017200 Cowleech Fork Sabine River at Greenville, TX--Continued



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.--No estimated daily discharges. 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. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 21 ft July 29, 1902, from information by local resident. Flood of Apr. 27, 1957, reached a stage of 17.76 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

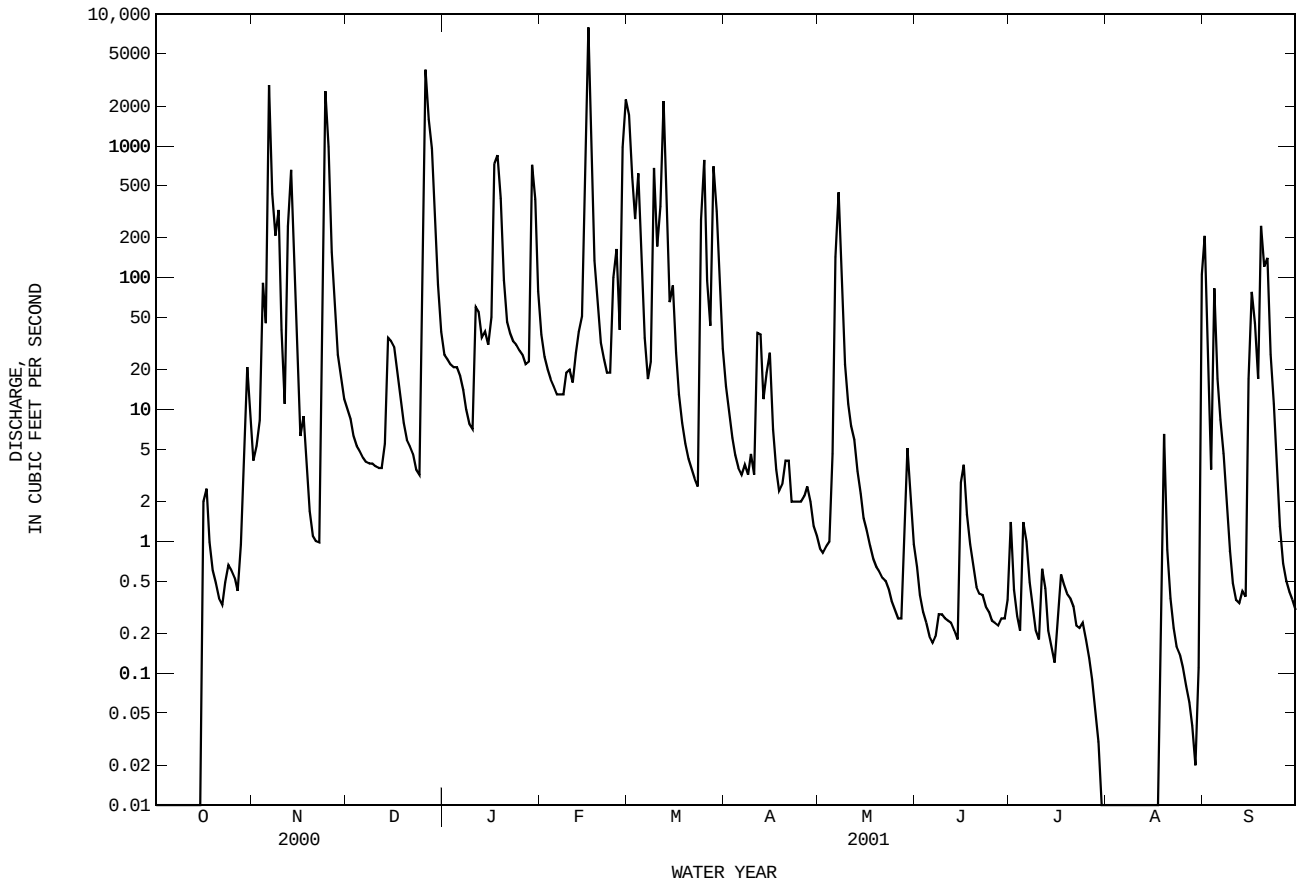
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	4.1	10	26	37	1720	15	.88	.64	1.4	.00	207
2	.00	5.3	8.4	24	25	578	9.3	.82	.39	.43	.00	36
3	.00	8.3	6.3	22	20	279	6.1	.91	.29	.27	.00	3.5
4	.00	91	5.3	21	17	617	4.5	.99	.24	.21	.00	83
5	.00	45	4.8	21	15	125	3.6	4.6	.19	1.4	.00	17
6	.00	2880	4.3	18	13	35	3.2	143	.17	1.0	.00	8.4
7	.00	434	4.0	14	13	17	3.8	444	.19	.49	.00	4.6
8	.00	208	3.9	10	13	23	3.2	77	.28	.32	.00	1.9
9	.00	326	3.9	7.8	19	678	4.6	22	.28	.21	.00	.85
10	.00	40	3.7	7.1	20	172	3.2	11	.26	.18	.00	.48
11	.00	11	3.6	60	16	346	38	7.5	.25	.62	.00	.36
12	.00	245	3.6	55	27	2180	37	5.9	.24	.44	.00	.34
13	.00	657	5.5	35	39	292	12	3.4	.21	.21	.00	.42
14	.00	94	35	39	51	65	19	2.3	.18	.16	.00	.38
15	.00	21	33	31	481	87	27	1.5	2.8	.12	.00	17
16	2.0	6.3	30	50	7900	27	7.1	1.2	3.8	.28	.00	78
17	2.5	8.9	19	731	827	13	3.5	.93	1.6	.56	.00	45
18	.99	3.5	12	847	134	7.9	2.4	.74	.95	.47	.69	17
19	.60	1.7	7.9	400	61	5.5	2.7	.64	.65	.40	6.5	246
20	.48	1.1	5.9	96	32	4.2	4.1	.59	.45	.37	.86	121
21	.37	1.0	5.3	46	24	3.5	4.1	.53	.40	.32	.37	141
22	.33	.98	4.6	38	19	3.0	2.0	.50	.39	.23	.22	26
23	.49	210	3.5	33	19	2.6	2.0	.43	.32	.22	.16	11
24	.66	2590	3.2	31	100	274	2.0	.35	.29	.24	.14	3.4
25	.60	979	34	28	165	779	2.0	.30	.25	.18	.11	1.3
26	.53	156	3770	26	40	95	2.2	.26	.24	.13	.08	.68
27	.42	55	1600	22	975	43	2.6	.26	.23	.09	.06	.50
28	.94	26	955	23	2240	696	2.0	1.1	.26	.05	.04	.41
29	4.6	18	322	717	---	319	1.3	5.1	.26	.03	.02	.36
30	21	12	88	394	---	81	1.1	2.2	.36	.01	.11	.30
31	9.1	---	39	79	---	29	---	.95	---	.00	106	---
TOTAL	45.61	9139.18	7034.7	3951.9	13342	9596.7	230.6	741.88	17.06	11.04	115.36	1073.18
MEAN	1.47	305	227	127	476	310	7.69	23.9	.57	.36	3.72	35.8
MAX	21	2880	3770	847	7900	2180	38	444	3.8	1.4	106	246
MIN	.00	.98	3.2	7.1	13	2.6	1.1	.26	.17	.00	.00	.30
AC-FT	90	18130	13950	7840	26460	19040	457	1470	34	22	229	2130

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2001, BY WATER YEAR (WY)

MEAN	94.8	70.7	113	63.5	122	108	119	147	93.5	27.0	5.30	24.5
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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1959 - 2001	
ANNUAL TOTAL	34878.82		45299.21			
ANNUAL MEAN	95.3		124		83.0	
HIGHEST ANNUAL MEAN					187	1995
LOWEST ANNUAL MEAN					3.29	1996
HIGHEST DAILY MEAN	5280	Jun 15	7900	Feb 16	13300	Jun 16 1981
LOWEST DAILY MEAN	.00	Jul 21	.00	Oct 1	.00	Mar 3 1959
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 21	.00	Oct 1	.00	Apr 5 1959
MAXIMUM PEAK FLOW			14400	Feb 16	23000	Jun 16 1981
MAXIMUM PEAK STAGE			17.90	Feb 16	18.77	Apr 5 1986
ANNUAL RUNOFF (AC-FT)	69180		89850		60140	
10 PERCENT EXCEEDS	109		209		60	
50 PERCENT EXCEEDS	1.0		3.7		.49	
90 PERCENT EXCEEDS	.00		.04		.00	

08017300 South Fork Sabine River near Quinlan, TX--Continued



08017400 Lake Tawakoni near Wills Point, TX

LOCATION.--Lat 32°48'31", long 95°55'10", Rains County, Hydrologic Unit 12010001, 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.--No estimated daily contents. Records good. 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 July 1, 1960, and deliberate impoundment of water began Oct. 7, 1960. Diversions are made for municipal use by the city of Dallas and various other users in the Sabine River basin. The dam is owned by the Sabine River Authority. The lake was built for water conservation. Conservation pool storage is 888,130 acre-ft. 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

COOPERATION.--Capacity table No. 1, based on a 1984 survey was prepared by Forrest and Cotton, Inc., Consulting Engineers, for Sabine River Authority. Table No. 1 was replaced with Table No. 2, provided by the Texas Water Development Board from a survey conducted in April 1997, and put into use Oct. 1, 2000.

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, 722,500 acre-ft, Feb. 22, elevation, 431.16 ft, using Capacity Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,019,000 acre-ft, Feb. 17, elevation, 440.76 ft; minimum contents, 776,200 acre-ft, Nov. 1, elevation, 434.44 ft.

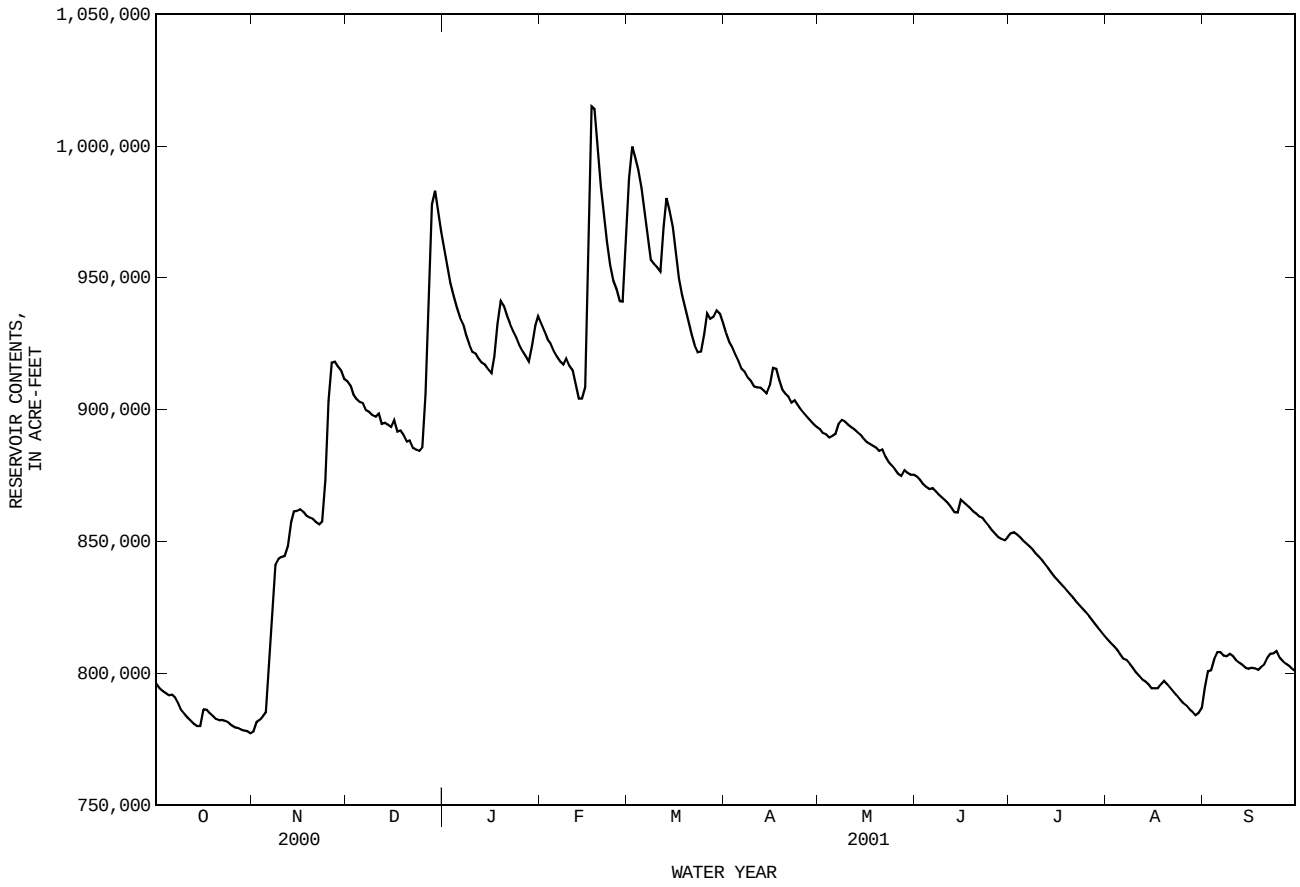
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	796000	777800	910700	960600	932600	987700	929100	892500	874500	853000	812700	794300
2	794300	781400	909000	953900	929800	999700	925600	891100	873400	853400	811400	800700
3	793200	782300	905600	947800	926500	995700	923600	890600	871700	852600	810200	801100
4	792500	783600	903900	943000	925000	990900	921000	889300	870700	851600	808800	805300
5	791600	785100	902800	938600	922300	984000	918500	889900	869800	850300	807100	808000
6	791900	805200	902300	934900	920100	973600	915400	890700	870200	849200	805500	808000
7	790700	823700	899800	932300	918200	964200	914200	894600	869100	848100	805000	806700
8	788500	841000	899100	928200	917000	956800	912100	896000	867700	846800	803500	806400
9	785900	843300	897900	924700	919300	955300	910800	895400	866600	845400	801900	807300
10	784400	844000	897200	921800	916500	953900	908800	894200	865500	844200	800300	806500
11	783100	844400	898500	921200	914800	952300	908400	893300	864400	842900	799000	805000
12	781900	848200	894600	919300	909000	969200	908300	892500	862900	841200	797600	804000
13	780800	857200	894900	917700	904100	980200	907300	891400	861100	839800	796800	803100
14	779900	861400	894200	917000	904100	975200	906100	890400	860900	838100	795900	802100
15	779900	861500	893300	915200	908400	969100	909100	889000	865800	836500	794300	801700
16	786300	862200	895900	913800	957300	958500	915800	887700	864800	835200	794300	802000
17	786100	861200	891700	920000	1015000	949700	915400	886900	863700	833900	794300	801800
18	784900	859600	892000	932600	1014000	943300	911300	886200	862600	832600	795800	801200
19	783800	859000	890300	941200	998200	938100	907500	885500	861300	831200	797100	802300
20	782600	858500	887900	939200	984500	933100	906000	884200	860400	829800	795700	803200
21	782100	857300	888300	935500	973900	928300	904700	884800	859300	828500	794300	805800
22	782300	856400	885400	932600	963700	924400	902600	882000	858900	827100	792800	807400
23	781900	857500	884700	929800	954800	921700	903400	880000	857200	825700	791600	807500
24	781300	873200	884300	927300	948800	922000	901600	878800	855700	824400	790200	808400
25	780200	903400	885600	924300	945700	928700	899800	877300	854200	823100	788800	805800
26	779500	917700	905700	922200	941100	936400	898300	875600	852900	821600	787800	804500
27	779200	918100	949000	920300	940900	934400	897100	874800	851600	820100	786400	803500
28	778600	916400	977700	918200	962600	935100	895800	876900	850800	818500	785400	802600
29	778300	914800	983000	924300	---	937500	894500	876000	850400	817000	784000	801600
30	778000	911500	975600	931700	---	936300	893300	875300	851400	815400	784800	800700
31	777100	---	967400	935500	---	933100	---	875300	---	814100	786800	---
MEAN	784400	852200	908000	929800	941700	953800	908800	886100	862300	835200	796800	804000
MAX	796000	918100	983000	960600	1015000	999700	929100	896000	874500	853400	812700	808400
MIN	777100	777800	884300	913800	904100	921700	893300	874800	850400	814100	784000	794300
(+)	434.47	438.10	439.49	438.69	439.37	438.63	437.63	437.16	436.53	435.51	434.75	435.14
(@)	-71400	+134400	+55900	-31900	+27100	-29500	-39800	-18000	-23900	-37300	-27300	+13900

CAL YR 2000 MAX 983000 MIN 725000 (@) +210800
WTR YR 2001 MAX 1015000 MIN 777100 (@) -47800

(+) 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. No flow at times.

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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

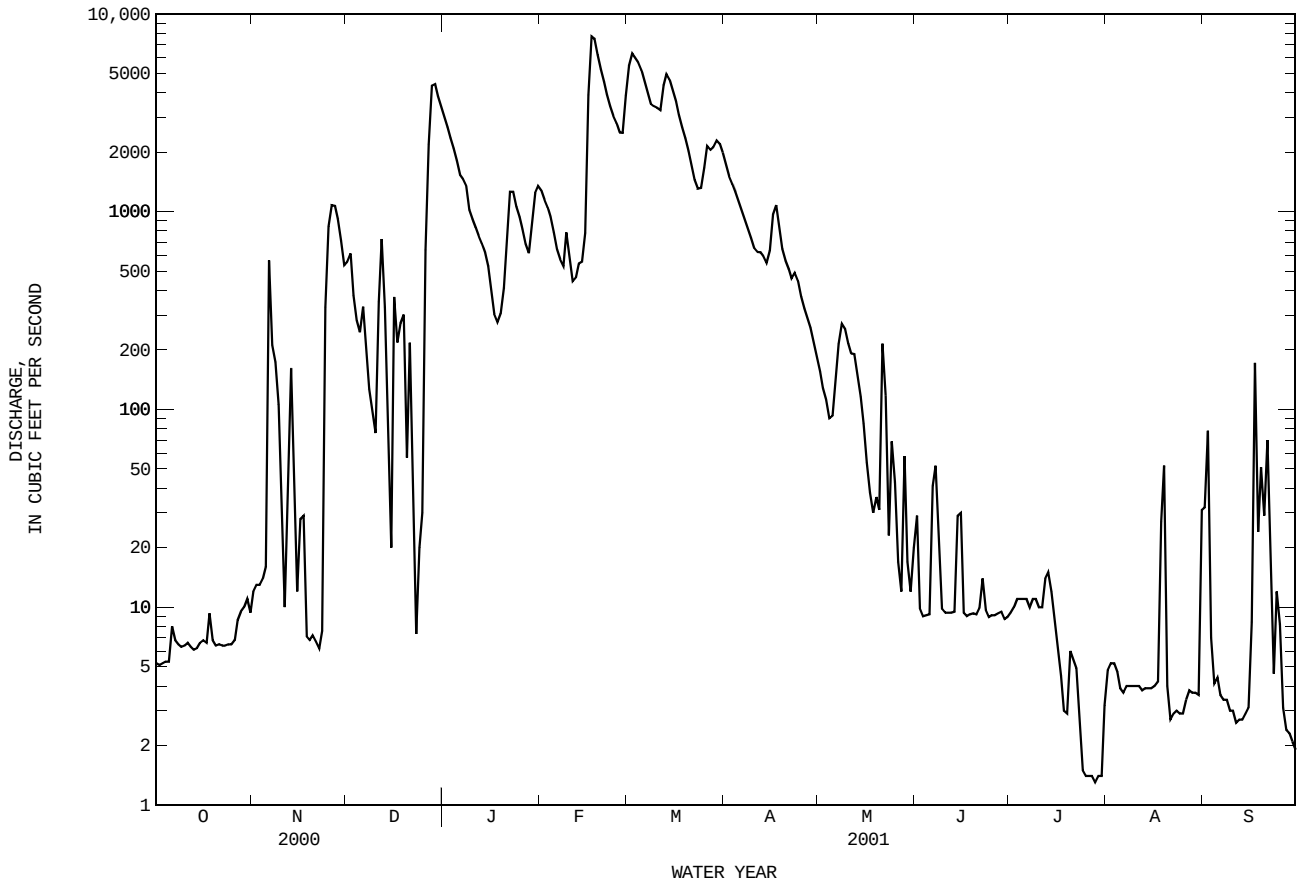
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	12	560	3010	1280	5480	1740	156	29	9.4	4.8	32
2	5.1	13	615	2670	1150	6310	1510	128	9.9	10	5.2	78
3	5.2	13	377	2360	1050	6010	1380	112	9.0	11	5.2	7.0
4	5.3	14	282	2090	939	5690	1260	90	9.1	11	4.7	4.1
5	5.3	16	246	1810	787	5210	1130	93	9.2	11	3.9	4.4
6	8.0	567	331	1540	645	4540	1010	135	41	11	3.7	3.6
7	6.8	212	218	1460	575	3970	906	215	52	10	4.0	3.4
8	6.5	174	127	1360	531	3520	813	272	20	11	4.0	3.4
9	6.3	106	97	1020	787	3420	738	256	9.8	11	4.0	3.0
10	6.4	25	76	916	586	3350	655	216	9.4	10	4.0	3.0
11	6.6	10	350	832	445	3260	627	192	9.4	10	4.0	2.6
12	6.3	31	728	757	465	4350	624	191	9.4	14	3.8	2.7
13	6.1	161	329	692	546	4980	597	148	9.5	15	3.9	2.7
14	6.2	52	78	624	559	4660	552	116	29	12	3.9	2.9
15	6.6	12	20	530	781	4110	635	85	30	8.8	3.9	3.1
16	6.8	28	370	398	3890	3610	968	54	9.4	6.2	4.0	8.4
17	6.6	29	218	304	7690	3080	1080	38	9.0	4.5	4.2	172
18	9.3	7.1	274	277	7500	2670	853	30	9.2	3.0	27	24
19	6.8	6.8	302	306	6190	2350	647	36	9.3	2.9	52	51
20	6.4	7.2	57	412	5240	2030	566	31	9.2	6.0	4.0	29
21	6.5	6.7	217	768	4530	1710	514	215	9.9	5.4	2.7	70
22	6.4	6.2	36	1260	3910	1450	460	117	14	4.9	2.9	16
23	6.4	7.6	7.3	1260	3410	1310	491	23	9.7	2.9	3.0	4.6
24	6.5	329	20	1060	3050	1320	448	69	8.9	1.5	2.9	12
25	6.5	843	30	941	2810	1670	372	43	9.1	1.4	2.9	8.2
26	6.8	1080	641	815	2520	2150	324	17	9.1	1.4	3.4	3.1
27	8.6	1070	2190	686	2510	2060	292	12	9.3	1.4	3.8	2.4
28	9.5	919	4330	616	3880	2130	259	58	9.5	1.3	3.7	2.3
29	10	715	4420	891	---	2290	220	17	8.7	1.4	3.7	2.1
30	11	538	3840	1250	---	2200	185	12	8.9	1.4	3.6	1.9
31	9.4	---	3400	1350	---	1990	---	20	---	3.2	31	---
TOTAL	215.4	7010.6	24786.3	34265	68256	102880	21856	3197	428.9	214.0	217.8	562.9
MEAN	6.95	234	800	1105	2438	3319	729	103	14.3	6.90	7.03	18.8
MAX	11	1080	4420	3010	7690	6310	1740	272	52	15	52	172
MIN	5.1	6.2	7.3	277	445	1310	185	12	8.7	1.3	2.7	1.9
AC-FT	427	13910	49160	67960	135400	204100	43350	6340	851	424	432	1120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2001, BY WATER YEAR (WY)

MEAN	184	366	573	371	583	766	683	871	565	167	32.4	46.6
MAX	1726	2539	3377	1701	2482	3319	2090	3888	2825	1229	332	868
(WY)	1974	1975	1992	1998	1975	2001	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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1971 - 2001	
ANNUAL TOTAL	44493.17		263889.9			
ANNUAL MEAN	122		723		433	
HIGHEST ANNUAL MEAN					1064	1992
LOWEST ANNUAL MEAN					3.66	1996
HIGHEST DAILY MEAN	4420	Dec 29	7690	Feb 17	20000	May 4 1990
LOWEST DAILY MEAN	.05	Apr 9	1.3	Jul 28	.00	Oct 1 1971
ANNUAL SEVEN-DAY MINIMUM	.09	Mar 22	1.4	Jul 24	.00	Oct 6 1971
MAXIMUM PEAK FLOW			8220	Feb 17	20600	May 4 1990
MAXIMUM PEAK STAGE			16.29	Feb 17	19.11	May 4 1990
ANNUAL RUNOFF (AC-FT)	88250		523400		313700	
10 PERCENT EXCEEDS	329		2510		1340	
50 PERCENT EXCEEDS	5.9		52		20	
90 PERCENT EXCEEDS	1.8		3.8		.31	

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.--June 1939 to Sept. 1959, Oct. 1967 to current year. Gage-height records collected at this site since July 1946 are contained in reports published by the National Weather Service.
Water-quality records.--Chemical data: Oct. 1967 to Sept. 1996. Biochemical data: Oct. 1973 to Sept. 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 Sept. 12, 1968, nonrecording gage at downstream side of bridge; Sept. 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.--No estimated daily discharges. Records good. Since Oct. 1960, at least 10% of contributing drainage area has been regulated. 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, 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 June 8, 1943; no flow at times. Maximum stage since at least 1890, that of June 8, 1943.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	16	1130	7160	2420	10200	3750	281	74	76	17	36
2	11	135	945	6340	2420	12800	3720	237	120	112	16	107
3	9.7	111	774	5720	2360	11600	3530	205	176	122	16	163
4	8.6	147	726	5260	2270	11600	3230	178	179	101	16	232
5	8.0	104	566	4810	2140	11100	2890	207	115	70	15	413
6	7.7	199	383	4360	1940	10500	2540	975	80	53	15	357
7	11	454	296	3880	1690	9080	2290	733	64	42	17	180
8	17	1140	335	3540	1440	7570	2030	472	58	35	18	96
9	18	1720	280	3170	1200	7100	1750	415	64	31	19	73
10	18	1780	179	2780	1030	6940	1510	401	79	29	17	52
11	18	1320	137	2530	1040	6610	1320	365	62	27	16	38
12	18	531	110	2370	1180	7360	1160	336	49	25	15	34
13	18	372	321	2160	1270	9080	1240	325	41	24	15	30
14	18	538	545	1890	1420	11200	1380	313	37	22	16	24
15	18	580	486	1610	1660	10200	1340	247	86	21	15	22
16	37	341	419	1420	4540	8350	1170	197	99	22	18	181
17	28	168	308	1730	13400	7060	1040	157	102	24	26	381
18	16	98	385	3040	18500	6250	1080	120	80	21	47	743
19	16	75	396	3820	15400	5700	1220	93	57	19	62	656
20	17	64	314	4450	11800	5190	1310	76	43	18	140	327
21	15	47	312	4980	10100	4630	1230	65	36	18	209	299
22	14	36	191	5060	8620	4050	1010	63	75	17	105	270
23	13	37	201	4610	7240	3620	840	161	109	17	53	239
24	13	540	162	3900	6400	3380	737	188	59	18	33	156
25	12	1460	204	3330	5820	3380	696	97	44	17	24	94
26	12	1810	1750	2780	5360	3230	662	58	44	17	20	63
27	12	1970	4050	2360	5160	2910	558	69	37	17	17	64
28	12	1900	7110	2030	7200	2780	458	80	64	17	16	55
29	12	1600	9300	1830	---	3020	390	79	77	16	16	40
30	17	1320	9110	2050	---	3350	336	68	63	16	17	31
31	17	---	7950	2300	---	3610	---	84	---	16	24	---
TOTAL	476.0	20613	49375	107270	145020	213450	46417	7345	2273	1080	1070	5456
MEAN	15.4	687	1593	3460	5179	6885	1547	237	75.8	34.8	34.5	182
MAX	37	1970	9300	7160	18500	12800	3750	975	179	122	209	743
MIN	7.7	16	110	1420	1030	2780	336	58	36	16	15	22
AC-FT	944	40890	97940	212800	287600	423400	92070	14570	4510	2140	2120	10820

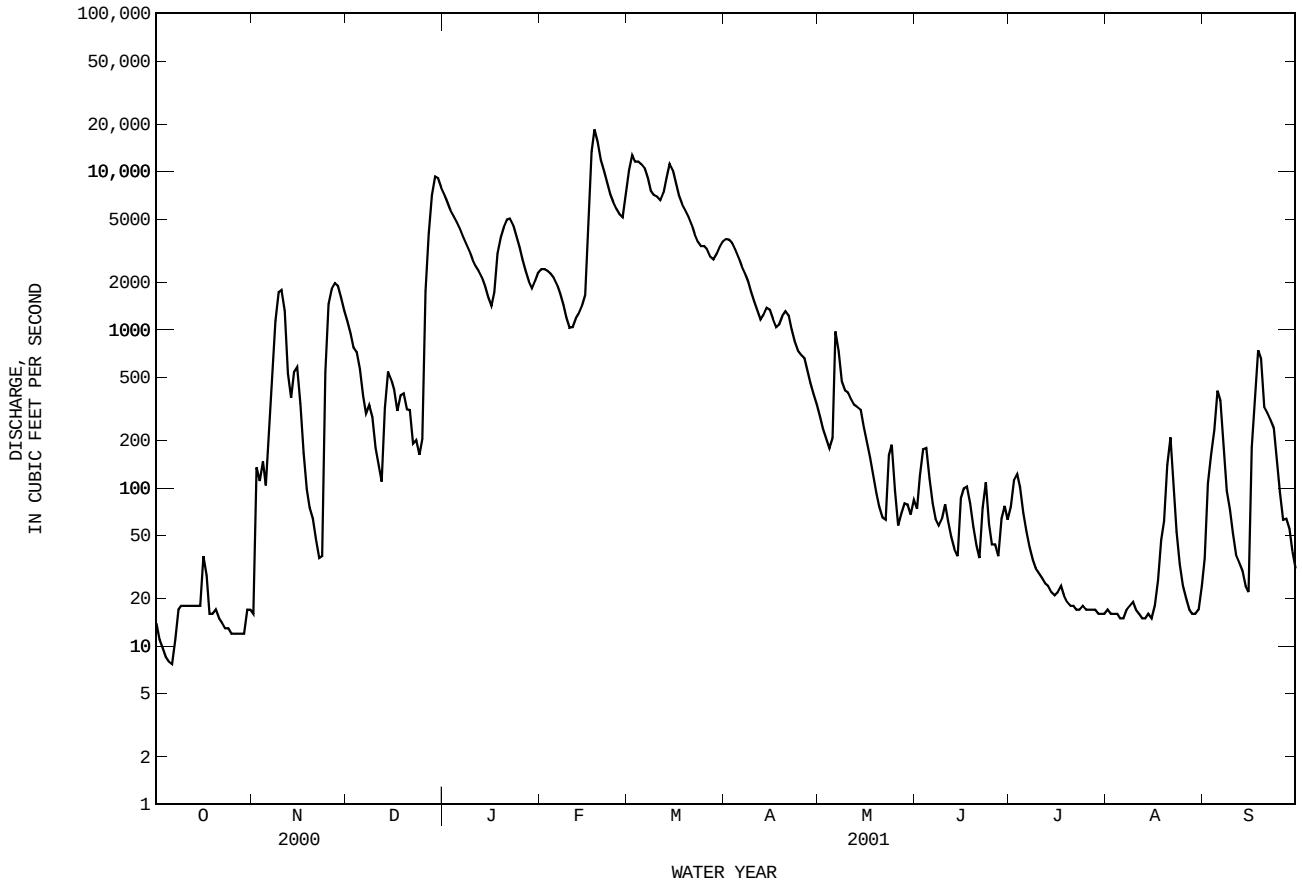
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2001z, BY WATER YEAR (WY)

MEAN	282	780	1235	977	1412	1750	1344	1916	1035	255	57.2	65.0
MAX	2158	5296	5873	4097	5179	6885	4086	6934	4083	1626	419	616
(WY)	1974	1975	1992	1998	2001	2001	1990	1968	1973	1992	1979	1974
MIN	3.42	9.88	10.9	26.2	20.3	28.0	31.8	29.6	5.72	4.87	.071	.048
(WY)	1988	1990	1990	2000	1996	1996	1971	1988	1971	1969	1987	1987

08018500 Sabine River near Mineola, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1967 - 2001z	
ANNUAL TOTAL	174029.0		599845.0			
ANNUAL MEAN	475		1643		923	
HIGHEST ANNUAL MEAN					1904	1968
LOWEST ANNUAL MEAN					29.8	1996
HIGHEST DAILY MEAN	17800	Jun 17	18500	Feb 18	36200	Dec 11 1971
LOWEST DAILY MEAN	7.7	Oct 6	7.7	Oct 6	.00	Aug 13 1970
ANNUAL SEVEN-DAY MINIMUM	10	Oct 1	10	Oct 1	.00	Sep 15 1971
MAXIMUM PEAK FLOW			19300	Feb 18	37700	Dec 11 1971
MAXIMUM PEAK STAGE			19.62	Feb 18	21.53	Dec 11 1971
ANNUAL RUNOFF (AC-FT)	345200		1190000		668900	
10 PERCENT EXCEEDS	870		5500		2860	
50 PERCENT EXCEEDS	38		232		132	
90 PERCENT EXCEEDS	13		17		8.4	

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 Sept. 1984.

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

REMARKS.--No estimated daily contents. Records poor. 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 June 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. Conservation pool storage is 635,200 acre-ft. 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, 737,400 acre-ft, Feb. 16, 2001, elevation, 405.15 ft; minimum contents after initial filling, 81,550 acre-ft, Sept. 27, 1980, elevation, 366.86 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 737,400 acre-ft, Feb. 16, elevation, 405.15 ft; minimum contents, 609,200 acre-ft, Oct. 29, elevation, 400.50 ft.

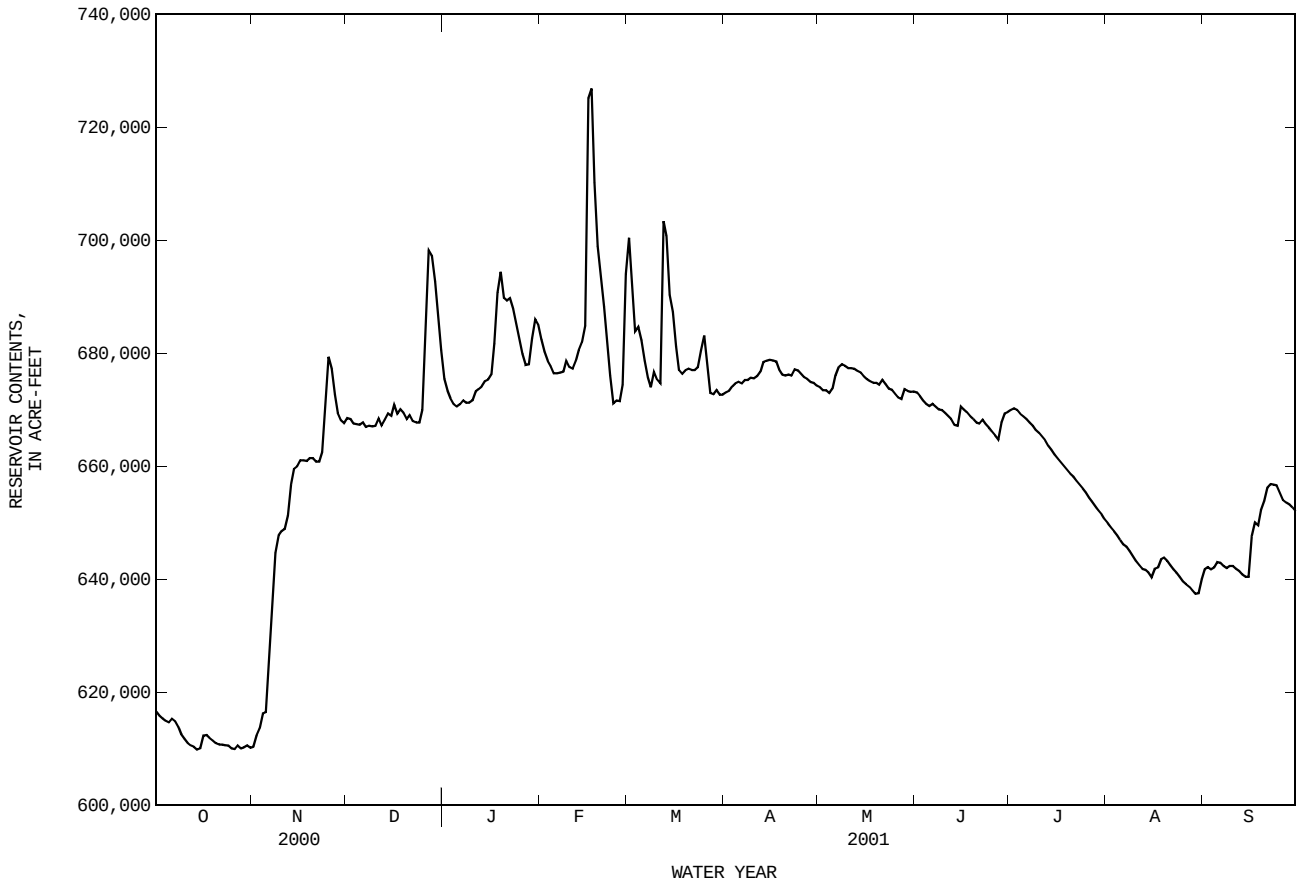
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	616500	610300	668500	675400	682400	700400	673000	673900	673000	669900	649900	641700
2	615800	612300	668300	673300	680200	691600	673300	673400	672400	670200	649100	642100
3	615300	613600	667500	672000	678600	683800	674100	673400	671600	669900	648400	641700
4	614900	616200	667400	671000	677700	684600	674600	672900	671000	669300	647700	642000
5	614600	616400	667300	670500	676400	682200	674900	673700	670600	668800	646900	643000
6	615300	626600	667700	670900	676400	678600	674600	676000	671000	668300	646100	642900
7	614800	636800	666900	671600	676500	675600	675200	677500	670500	667700	645700	642300
8	613800	644600	667100	671200	676700	673900	675200	678000	670000	667100	644900	641900
9	612500	647700	667000	671200	678600	676700	675600	677700	669900	666400	644000	642300
10	611700	648400	667100	671600	677500	675300	675500	677300	669400	665900	643200	642300
11	611000	648800	668400	673200	677200	674600	675900	677300	668900	665200	642500	641800
12	610500	651200	667200	673600	678600	703300	676700	677200	668300	664500	641800	641400
13	610300	656800	668200	674100	680500	700700	678400	676800	667300	663600	641600	640800
14	609800	659500	669300	675000	681900	690300	678600	676500	667100	662900	641200	640400
15	610000	659900	668900	675300	684800	687300	678800	675900	670500	662000	640300	640400
16	612300	661000	670800	676200	725100	681200	678700	675400	670000	661300	641800	647600
17	612400	661000	669200	681700	726800	677000	678500	675000	669500	660600	642000	650000
18	611900	660900	670000	690700	710100	676300	677100	674700	668800	660000	643500	649500
19	611400	661400	669400	694400	698900	676900	676200	674700	668300	659300	643800	652200
20	610900	661400	668300	689800	693500	677200	676000	674400	667700	658600	643200	653800
21	610700	660800	669000	689300	688200	677000	676200	675200	667500	658100	642400	656200
22	610700	660800	667900	689700	682100	677000	676000	674500	668200	657400	641700	656800
23	610600	662400	667700	687800	676000	677500	677100	673700	667400	656700	641100	656700
24	610500	671300	667700	685200	671100	680500	676900	673500	666800	656000	640400	656600
25	610000	679300	669900	682500	671600	683100	676300	672800	666100	655300	639600	655300
26	609900	677200	683900	679800	671500	678600	675700	672100	665400	654400	639100	654000
27	610500	672600	698200	677900	674400	672900	675400	671800	664700	653700	638600	653500
28	610000	669400	697200	678000	694000	672700	674900	673600	667700	652900	638000	653200
29	610200	668100	692700	682600	---	673400	674700	673300	669300	652100	637400	652700
30	610500	667600	687000	686000	---	672600	674200	673100	669500	651400	637500	652000
31	610100	---	680500	685100	---	672600	---	673200	---	650600	640000	---
MEAN	611900	651500	672500	678900	684500	680800	675900	674800	668900	661300	642700	647600
MAX	616500	679300	698200	694400	726800	703300	678800	678000	673000	670200	649900	656800
MIN	609800	610300	666900	670500	671100	672600	673000	671800	664700	650600	637400	640400
(+)	400.54	402.70	403.17	403.33	403.65	402.88	402.94	402.90	402.77	402.08	401.68	402.13
(@)	-9100	+57500	+12900	+4600	+8900	-21400	+1600	-1000	-3700	-18900	-10600	+12000

CAL YR 2000 MAX 719000 MIN 582300 (@) +89900
WTR YR 2001 MAX 726800 MIN 609800 (@) +32800

(+) 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.--June 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 Sept. 1989. Specific conductance: Nov. 1967 to Sept. 1989. Water temperature: Dec. 1967 to Sept. 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 June 27, 1924, to Apr. 30, 1926, a nonrecording gage was located at site 1,000 ft downstream at same datum. Prior to Sept. 5, 1978, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records poor. Since water year 1980, at least 10% of contributing drainage area has been regulated. Construction of Lake Fork Reservoir located about 5 mi upstream from this station, began in 1975. Deliberate impoundment began June 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 July 1895 reached a stage of about 25.9 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72	50	324	4390	2130	9880	679	19	38	469	80	81
2	72	53	82	2620	2070	11400	240	16	67	283	80	80
3	80	29	37	1820	1670	7850	141	15	81	195	80	79
4	80	44	32	1520	1340	4760	119	15	81	146	80	78
5	80	35	27	1400	1180	4220	110	18	81	122	80	78
6	83	60	23	714	467	3310	90	51	82	108	79	77
7	84	44	22	150	83	2780	72	42	82	100	80	77
8	82	368	22	74	58	2230	61	75	82	93	80	77
9	81	373	23	58	109	2450	54	60	82	92	79	77
10	81	64	22	54	584	3860	49	44	81	90	79	76
11	79	22	22	197	662	3080	43	34	80	87	78	76
12	78	26	24	317	424	5690	42	31	79	84	79	76
13	95	227	66	207	804	11100	98	26	78	80	79	73
14	100	97	259	156	1190	8200	110	22	79	80	79	72
15	103	28	192	132	1360	5140	80	19	109	79	78	72
16	123	19	115	117	7940	4250	61	17	108	78	84	216
17	122	15	95	739	16000	3260	46	16	83	78	82	300
18	116	13	60	4600	11800	1900	36	15	79	78	85	96
19	109	11	54	5420	7790	885	30	15	80	78	83	107
20	108	9.6	51	4970	4490	262	27	17	81	77	80	183
21	108	9.4	47	2540	4110	122	25	18	81	78	79	174
22	110	8.4	44	1070	4070	85	23	20	85	77	78	114
23	111	12	42	1370	4070	74	23	25	85	77	77	93
24	113	581	39	1950	4140	384	24	31	81	76	76	85
25	118	978	89	2070	2680	3730	23	29	80	77	76	83
26	121	2610	1120	2070	1600	4370	20	30	79	78	77	81
27	121	3600	6160	2030	1570	4010	18	32	79	78	77	78
28	122	3010	9570	1200	5140	2550	18	37	181	79	77	76
29	115	2260	8620	664	---	2340	17	39	463	78	77	76
30	114	1340	5340	1670	---	2280	16	38	623	79	77	75
31	113	---	4690	2140	---	1690	---	37	---	79	81	---
TOTAL	3094	15996.4	37313	48429	89531	118142	2395	903	3450	3353	2456	2986
MEAN	99.8	533	1204	1562	3198	3811	79.8	29.1	115	108	79.2	99.5
MAX	123	3600	9570	5420	16000	11400	679	75	623	469	85	300
MIN	72	8.4	22	54	58	74	16	15	38	76	76	72
AC-FT	6140	31730	74010	96060	177600	234300	4750	1790	6840	6650	4870	5920

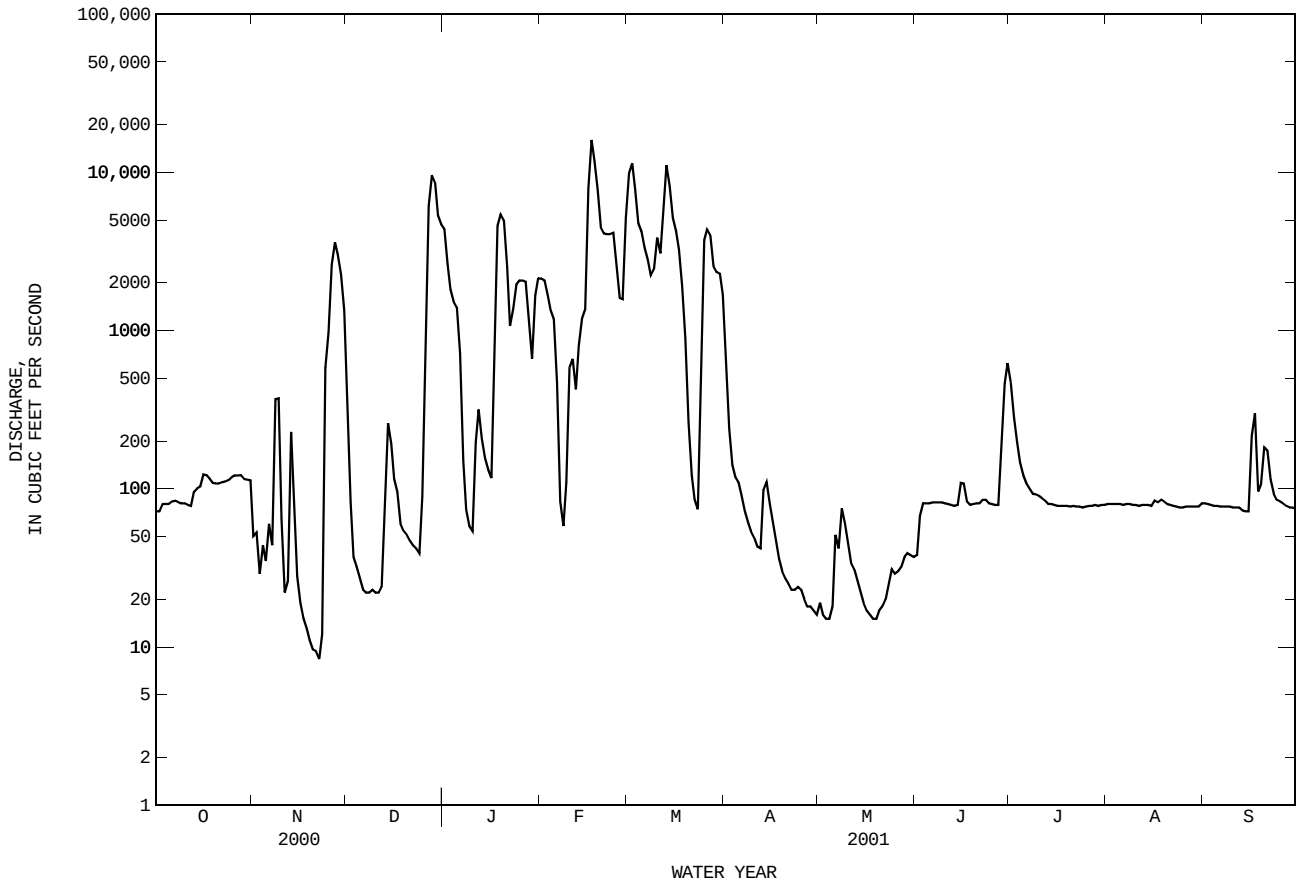
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2001z, BY WATER YEAR (WY)

MEAN	122	336	659	528	935	912	514	619	414	251	90.1	42.0
MAX	1068	1552	2853	1786	3198	3811	1991	2807	2771	1795	940	167
(WY)	1999	1989	1992	1998	2001	2001	1990	1990	2000	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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1980 - 2001z	
ANNUAL TOTAL	171719.4		328048.4			
ANNUAL MEAN	469		899		450	
HIGHEST ANNUAL MEAN					1006	1992
LOWEST ANNUAL MEAN					43.2	1984
HIGHEST DAILY MEAN	16500	Jun 16	16000	Feb 17	23600	May 18 1989
LOWEST DAILY MEAN	8.4	Nov 22	8.4	Nov 22	.00	Aug 23 1980
ANNUAL SEVEN-DAY MINIMUM	11	Nov 17	11	Nov 17	.00	Aug 23 1980
MAXIMUM PEAK FLOW			17200	Feb 17	24200	May 18 1989
MAXIMUM PEAK STAGE			21.15	Feb 17	21.75	May 18 1989
ANNUAL RUNOFF (AC-FT)	340600		650700		325700	
10 PERCENT EXCEEDS	396		3150		1270	
50 PERCENT EXCEEDS	58		81		48	
90 PERCENT EXCEEDS	32		23		5.5	

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 is 267.97 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. 1997, at least 10% of contributing drainage area has been regulated. There are many diversions above station for oil field operations and municipal supply.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	141	3120	14300	3700	11100	6550	308	254	452	102	203
2	111	167	3140	14100	3480	13700	6300	262	251	482	102	270
3	106	269	2800	13300	3470	19400	6010	224	170	469	103	296
4	101	435	1890	12100	3530	22900	5530	185	219	399	102	340
5	101	472	1080	10800	3570	21900	4830	164	241	332	102	395
6	102	446	764	9780	3510	19600	4160	371	212	278	103	521
7	104	450	550	8790	3300	17500	3650	1200	196	239	104	522
8	105	725	450	7820	2860	15900	3160	1140	230	208	107	412
9	105	1190	448	6810	2220	14500	2660	691	199	182	110	350
10	105	1560	423	5690	1670	e13400	2210	518	184	164	112	330
11	106	1670	331	4700	1450	e12800	1810	451	185	152	112	296
12	111	1520	277	3990	1590	e12500	1510	400	171	148	111	257
13	110	963	281	3530	1600	12600	1310	372	148	134	112	206
14	108	656	448	3110	1450	13900	1320	368	132	123	111	179
15	114	787	785	2680	2060	18200	1390	332	254	118	110	167
16	132	743	823	2290	3800	19400	1350	271	299	116	116	238
17	148	512	716	2290	5960	17200	1220	219	303	114	127	529
18	163	329	569	3140	10400	15200	1070	172	259	112	389	982
19	154	246	551	3960	23000	13300	1010	134	221	113	678	1350
20	139	197	555	4590	27500	11600	1060	107	168	110	487	1270
21	132	168	470	5600	24800	10300	1110	93	139	109	320	1080
22	132	143	456	7040	20700	9080	1100	85	143	107	346	936
23	130	136	370	8170	17300	7850	965	78	166	106	283	767
24	127	454	332	8430	15300	6760	811	103	221	105	220	621
25	126	1170	392	8020	13700	5980	715	172	206	105	176	481
26	126	1730	1610	7350	12400	5370	658	114	180	104	156	386
27	126	1960	3390	6620	11300	5100	609	78	162	103	152	322
28	126	2200	4470	5890	11000	5520	523	84	288	103	164	273
29	136	2490	5200	5280	---	6410	431	108	516	104	176	258
30	138	2840	7450	4700	---	6940	360	122	461	103	153	238
31	138	---	12200	4140	---	6830	---	170	---	102	157	---
TOTAL	3773	26769	56341	209010	236620	392740	65392	9096	6778	5596	5703	14475
MEAN	122	892	1817	6742	8451	12670	2180	293	226	181	184	482
MAX	163	2840	12200	14300	27500	22900	6550	1200	516	482	678	1350
MIN	101	136	277	2290	1450	5100	360	78	132	102	102	167
AC-FT	7480	53100	111800	414600	469300	779000	129700	18040	13440	11100	11310	28710

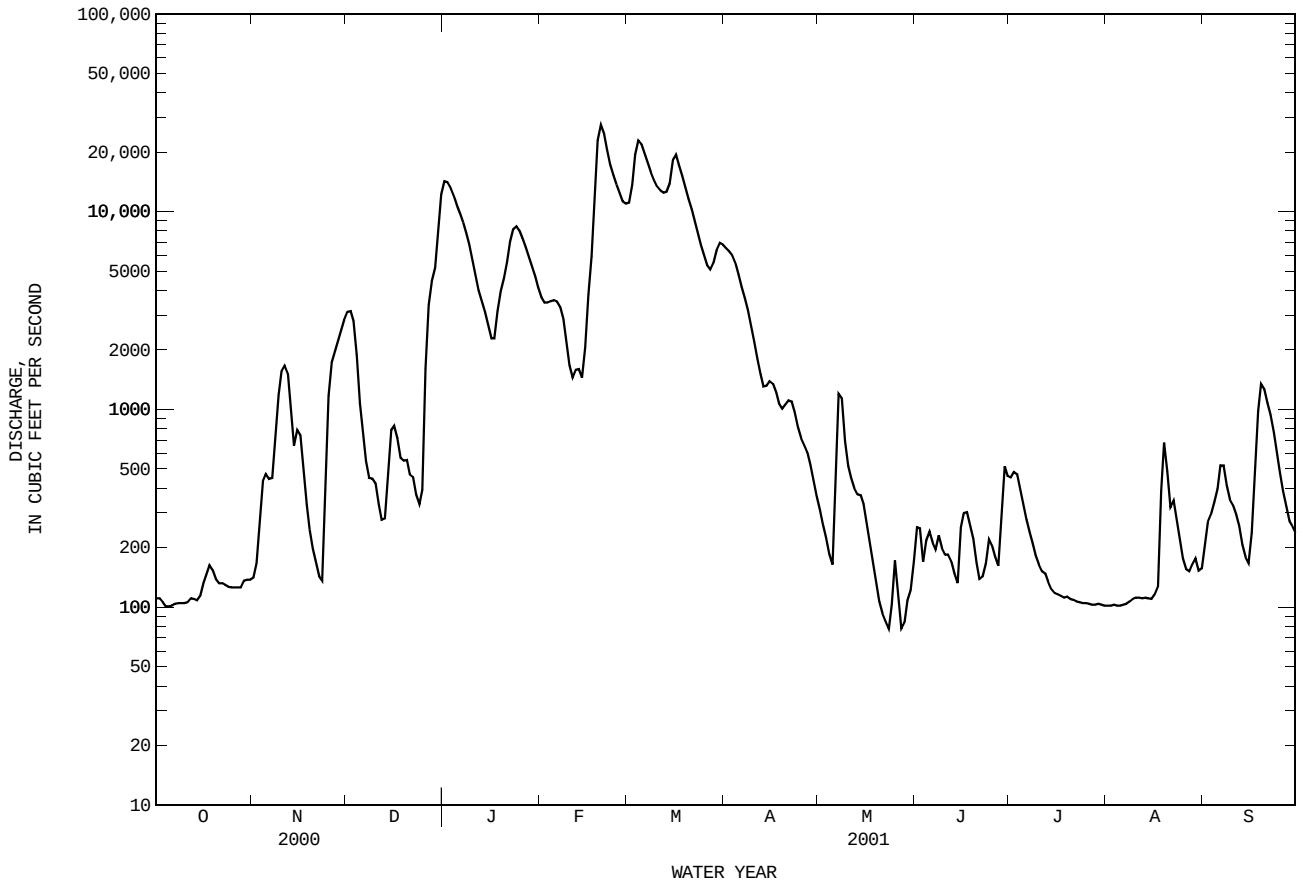
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2001, BY WATER YEAR (WY)

MEAN	522	931	2383	3608	3619	4514	1169	694	1914	392	101	222
MAX	1735	2569	6397	6742	8451	12670	2180	1867	4797	1139	184	482
(WY)	1999	1999	1999	2001	2001	2001	2001	1999	2000	2000	2001	2001
MIN	88.5	113	173	149	204	266	512	115	87.0	47.9	49.5	102
(WY)	2000	2000	2000	2000	2000	2000	2000	1998	1998	1998	1998	2000

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1997 - 2001	
ANNUAL TOTAL	321759		1032293			
ANNUAL MEAN	879		2828		1664	
HIGHEST ANNUAL MEAN					2828	2001
LOWEST ANNUAL MEAN					673	2000
HIGHEST DAILY MEAN	16900	Jun 20	27500	Feb 20	27500	Feb 20 2001
LOWEST DAILY MEAN	89	Aug 10	78	May 23	4.8	Oct 5 1997
ANNUAL SEVEN-DAY MINIMUM	93	Aug 4	102	May 22	4.9	Sep 30 1997
MAXIMUM PEAK FLOW			27800	Feb 20	27800	Feb 20 2001
MAXIMUM PEAK STAGE			33.89	Feb 20	33.89	Feb 20 2001
ANNUAL RUNOFF (AC-FT)	638200		2048000		1206000	
10 PERCENT EXCEEDS	1810		10600		5050	
50 PERCENT EXCEEDS	194		448		270	
90 PERCENT EXCEEDS	97		109		78	

e Estimated

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 Saint 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 Sept. 1986. Biochemical data: Oct. 1984 to Sept. 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 poor. Since water year 1962, at least 10% of contributing drainage area has been regulated.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--24 years (water years 1939-62), 200 ft^3/s (145,000 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	35	230	1310	279	1680	819	73	116	536	13	67
2	9.4	46	166	971	342	3410	725	70	114	414	12	91
3	9.6	77	138	729	389	2930	569	68	97	298	12	82
4	9.2	133	121	562	342	2370	454	67	90	213	12	84
5	9.5	189	110	452	274	1750	378	74	78	152	11	83
6	11	249	103	377	230	1350	324	116	73	116	11	71
7	13	290	98	320	202	1210	291	137	79	89	15	70
8	18	313	94	284	185	969	257	176	70	70	33	60
9	18	331	90	261	185	835	234	185	70	56	25	165
10	16	346	88	232	188	830	216	185	78	46	18	244
11	16	332	88	238	192	941	202	178	69	39	16	90
12	15	330	85	237	245	1420	195	157	60	34	15	62
13	14	349	105	229	269	1470	192	132	51	30	18	51
14	14	278	139	264	272	1830	177	121	44	28	23	45
15	14	194	137	316	344	2230	187	105	156	27	20	40
16	22	197	144	345	1400	1540	278	95	139	26	20	50
17	43	254	173	452	2420	1210	328	83	102	25	46	70
18	41	233	225	912	5310	1080	258	69	106	24	149	73
19	31	166	241	1180	3750	875	196	61	104	23	203	191
20	25	123	221	1800	1820	664	166	57	77	27	106	289
21	24	99	191	1820	1210	522	144	55	55	21	62	312
22	26	85	162	1370	922	432	131	55	46	19	42	309
23	24	84	140	1030	721	361	122	51	46	17	34	314
24	22	205	126	770	589	361	118	48	46	16	29	339
25	20	245	139	578	500	517	117	48	45	16	26	339
26	19	270	417	457	423	522	120	46	42	15	24	277
27	19	386	1140	372	486	1110	109	50	40	13	25	176
28	19	639	1500	316	1190	1150	95	62	46	13	34	110
29	21	557	2340	324	---	914	86	77	68	13	32	78
30	43	362	2400	328	---	770	78	74	282	13	29	64
31	42	---	1780	273	---	768	---	95	---	14	33	---
TOTAL	637.7	7397	13131	19109	24679	38021	7566	2870	2489	2443	1148	4296
MEAN	20.6	247	424	616	881	1226	252	92.6	83.0	78.8	37.0	143
MAX	43	639	2400	1820	5310	3410	819	185	282	536	203	339
MIN	9.2	35	85	229	185	361	78	46	40	13	11	40
AC-FT	1260	14670	26050	37900	48950	75410	15010	5690	4940	4850	2280	8520

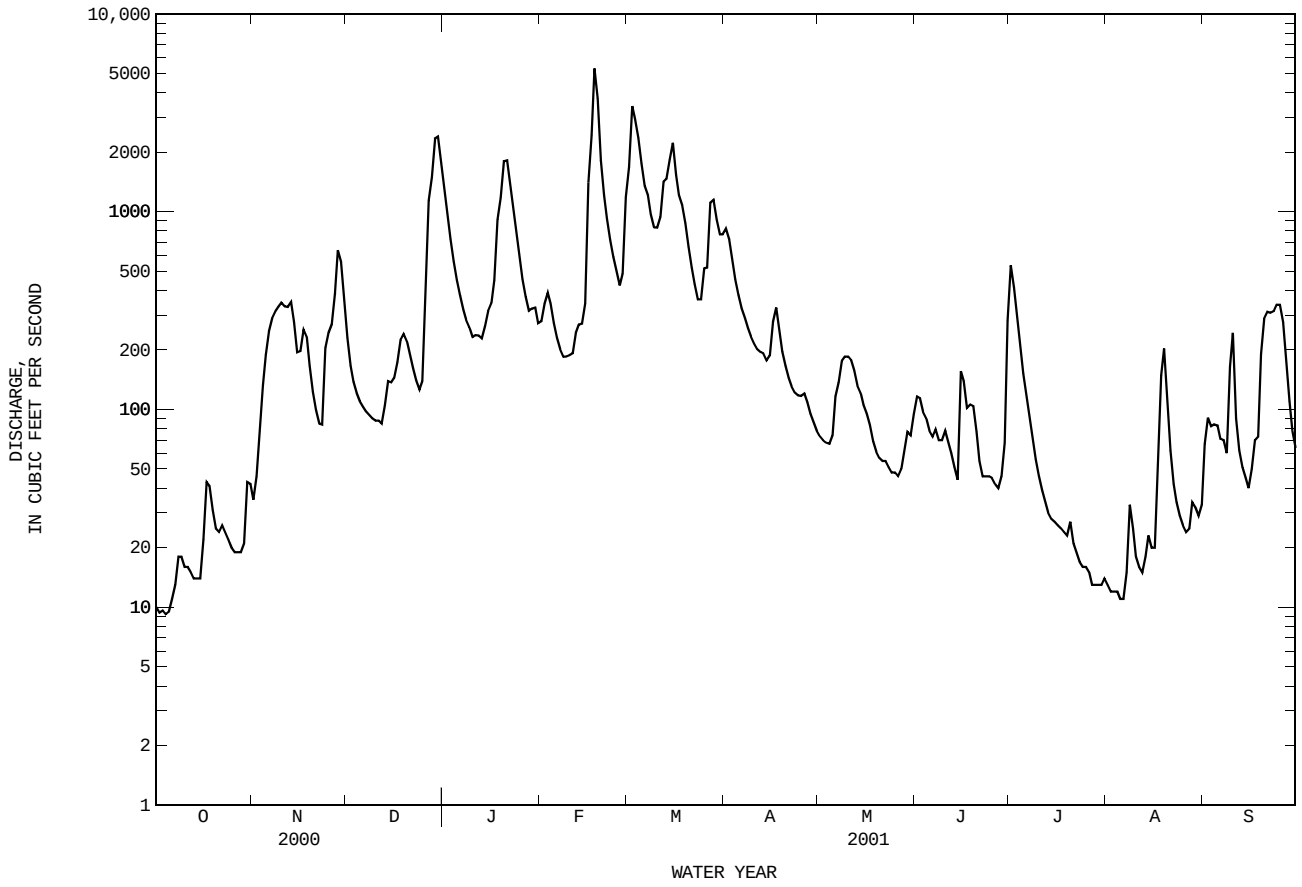
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2001z, BY WATER YEAR (WY)

MEAN	60.6	147	247	238	299	330	294	268	148	82.8	30.2	53.5
MAX	469	884	884	798	881	1226	1068	796	528	416	150	441
(WY)	1994	1975	1988	1993	2001	2001	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	8.47
(WY)	1979	1966	1966	1966	1996	1966	1981	1998	1984	1984	1984	2000

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1963 - 2001z	
ANNUAL TOTAL	54061.2		123786.7			
ANNUAL MEAN	148		339		183	
HIGHEST ANNUAL MEAN					358	1975
LOWEST ANNUAL MEAN					43.7	1964
HIGHEST DAILY MEAN	2400	Dec 30	5310	Feb 18	6240	May 19 1989
LOWEST DAILY MEAN	6.3	Sep 10	9.2	Oct 4	3.5	Jul 24 1984
ANNUAL SEVEN-DAY MINIMUM	6.5	Sep 6	10	Oct 1	4.0	Aug 16 1984
MAXIMUM PEAK FLOW			5890	Feb 18	6680	May 19 1989
MAXIMUM PEAK STAGE			17.79	Feb 18	18.30	May 19 1989
ANNUAL RUNOFF (AC-FT)	107200		245500		132200	
10 PERCENT EXCEEDS	336		952		420	
50 PERCENT EXCEEDS	70		131		78	
90 PERCENT EXCEEDS	8.0		19		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 and crest-stage gage. 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.--No estimated daily discharges. Records poor. Since water year 1961, at least 10% of contributing drainage area has been regulated. There are many diversions above station for oil field operations and municipal supply.

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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	190	3290	7220	6330	15200	7120	725	930	898	116	303
2	93	276	3440	10600	5820	15700	7070	656	1030	991	115	389
3	94	293	3470	14500	5320	16800	6980	605	876	951	114	430
4	91	578	3240	16400	4910	20200	6840	556	575	846	112	500
5	87	824	2460	16600	4620	22800	6630	541	512	692	111	581
6	86	1060	1560	15700	4430	23000	6370	913	592	565	116	614
7	90	1000	1070	14500	4280	21700	6010	1350	889	466	122	709
8	94	1160	840	13000	4070	20100	5560	2070	840	386	122	678
9	99	1440	710	11600	3750	18500	5020	1930	855	327	137	593
10	100	1750	688	10100	3200	16900	4330	1410	704	281	131	695
11	99	2000	658	8950	2590	15600	3580	1090	622	247	122	622
12	98	2090	572	7790	2550	15600	2860	969	536	224	118	449
13	102	2180	719	6900	3020	15500	2290	883	444	210	123	356
14	102	1740	1020	6170	3490	15700	1950	821	378	197	124	285
15	102	1340	1200	5460	3430	16500	1880	767	643	181	123	248
16	155	1200	1480	4770	6050	18700	1900	690	939	172	123	319
17	142	1090	1420	4590	7290	20000	1900	606	848	164	166	489
18	174	913	1260	5410	7750	19400	1780	527	668	157	425	743
19	182	703	1100	6150	9130	17900	1600	455	552	152	1270	1570
20	173	537	1050	6360	15100	16100	1500	398	469	150	1340	2460
21	156	427	1010	6480	22100	14500	1510	355	372	149	785	2530
22	145	358	907	6630	23400	13000	1530	325	321	137	482	2070
23	144	339	844	6860	21900	11700	1500	303	301	130	426	1580
24	140	1210	741	7170	19700	10600	1370	282	308	125	351	1290
25	135	2090	779	7570	17500	9780	1220	297	341	132	272	1110
26	131	2470	2280	7880	15600	8910	1120	363	322	131	220	908
27	131	2610	4870	7930	14800	8060	1060	322	326	125	203	716
28	130	2680	5920	7760	15000	7570	995	322	630	123	226	555
29	145	2870	6350	7520	---	7280	906	352	591	121	241	441
30	157	3090	6600	7200	---	7140	811	376	771	119	240	379
31	179	---	6850	6750	---	7130	---	623	---	117	233	---
TOTAL	3851	40508	68398	272520	257130	467570	95192	21882	18185	9666	8809	24612
MEAN	124	1350	2206	8791	9183	15080	3173	706	606	312	284	820
MAX	182	3090	6850	16600	23400	23000	7120	2070	1030	991	1340	2530
MIN	86	190	572	4590	2550	7130	811	282	301	117	111	248
AC-FT	7640	80350	135700	540500	510000	927400	188800	43400	36070	19170	17470	48820

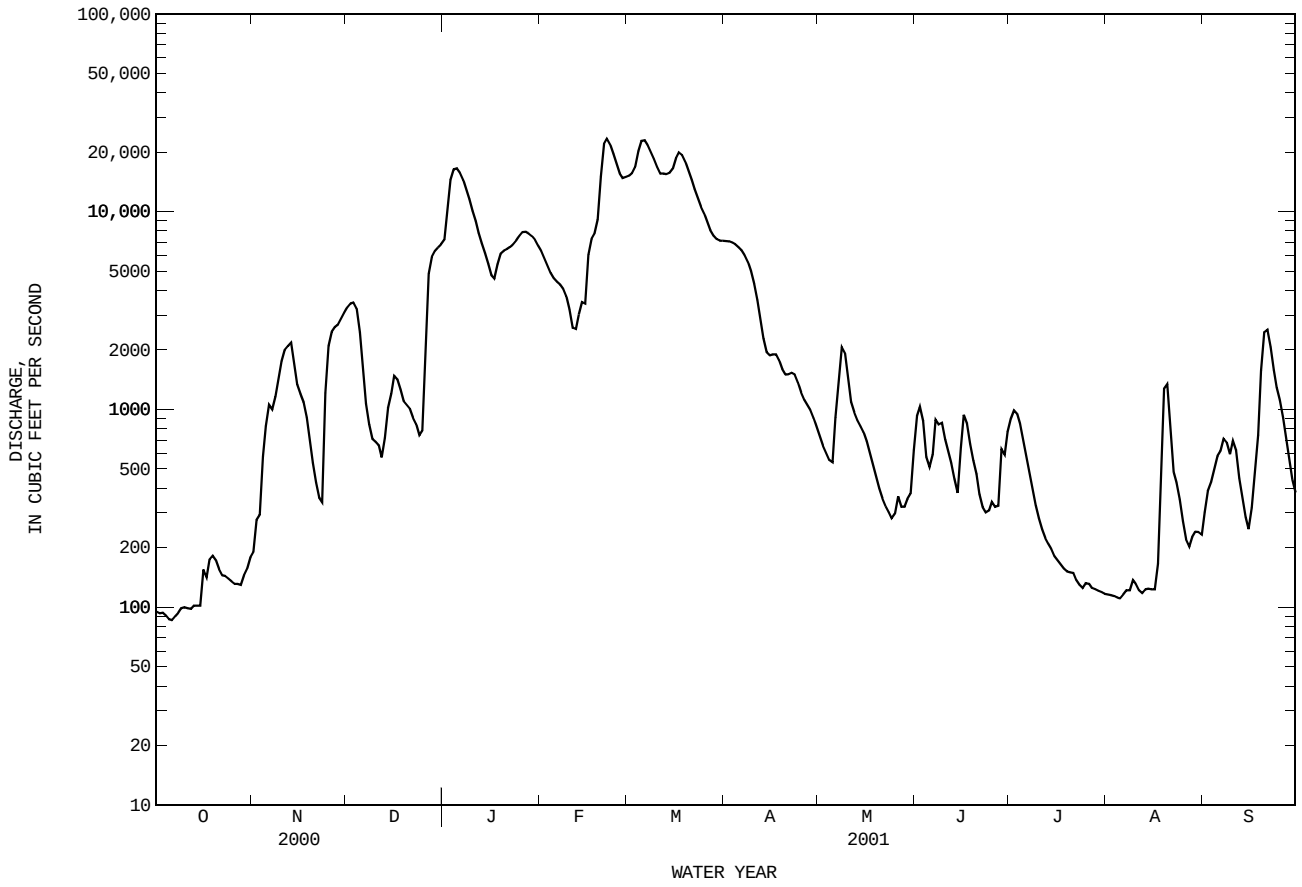
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2001z, BY WATER YEAR (WY)

MEAN	481	1293	2516	2298	2814	3632	2786	3822	1887	689	201	296
MAX	3361	7839	10580	8791	9664	15080	9644	17100	6745	4261	1291	2566
(WY)	1974	1975	1972	2001	1975	2001	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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1961 - 2001z	
ANNUAL TOTAL	398972		1288323			
ANNUAL MEAN	1090		3530		1890	
HIGHEST ANNUAL MEAN					3831	1992
LOWEST ANNUAL MEAN					209	1996
HIGHEST DAILY MEAN	13600	Jun 24	23400	Feb 22	51000	May 22 1989
LOWEST DAILY MEAN	70	Sep 5	86	Oct 6	7.4	Jul 20 1971
ANNUAL SEVEN-DAY MINIMUM	71	Sep 2	91	Oct 2	9.5	Jul 16 1971
MAXIMUM PEAK FLOW			23900	Feb 21	52300	May 22 1989
MAXIMUM PEAK STAGE			37.07	Feb 21	38.98	Apr 30 1966
ANNUAL RUNOFF (AC-FT)	791400		2555000		1369000	
10 PERCENT EXCEEDS	2550		13000		5540	
50 PERCENT EXCEEDS	364		906		542	
90 PERCENT EXCEEDS	84		130		62	

z Period of regulated streamflow.

08020000 Sabine River near Gladewater, TX--Continued



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 500 ft^3/s).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 230.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records poor. Since installation of gage in Aug. 1983, at least 10% of contributing drainage area has been regulated. 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, Sept. 4, 1985.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127	192	---	---	---	---	---	---	---	---	34	---
2	126	310	---	---	---	---	---	---	---	---	38	---
3	127	401	---	---	---	---	---	---	---	---	22	---
4	127	498	---	---	---	---	---	---	---	---	24	---
5	120	---	---	---	---	---	---	---	---	---	26	---
6	119	---	---	---	---	---	---	---	---	---	20	---
7	123	---	---	---	---	---	---	---	---	494	43	---
8	124	---	---	---	---	---	---	---	---	405	39	---
9	124	---	---	---	---	---	---	---	---	336	36	---
10	133	---	---	---	---	---	---	---	---	269	47	---
11	137	---	---	---	---	---	---	---	---	208	43	---
12	132	---	---	---	---	---	---	---	---	171	34	---
13	130	---	---	---	---	---	---	---	---	151	38	429
14	131	---	---	---	---	---	---	---	---	159	40	413
15	136	---	---	---	---	---	---	---	---	152	27	401
16	197	---	---	---	---	---	---	---	---	123	35	---
17	224	---	---	---	---	---	---	---	---	110	52	---
18	195	---	---	---	---	---	---	---	---	92	234	---
19	211	---	---	---	---	---	---	---	---	83	---	---
20	216	---	---	---	---	---	---	483	---	76	---	---
21	210	---	---	---	---	---	---	429	---	71	---	---
22	195	446	---	---	---	---	---	389	411	66	---	---
23	177	409	---	---	---	---	---	364	371	53	440	---
24	159	---	---	---	---	---	---	347	341	54	---	---
25	158	---	---	---	---	---	---	333	343	54	411	---
26	146	---	---	---	---	---	---	373	351	52	389	---
27	140	---	---	---	---	---	---	400	311	49	315	---
28	140	---	---	---	---	---	---	408	---	61	412	---
29	150	---	---	---	---	---	---	418	---	48	---	---
30	171	---	---	---	---	---	---	423	---	37	---	---
31	172	---	---	---	---	---	---	---	---	35	---	---
TOTAL	4777	2256	---	---	---	---	---	4367	2128	3409	2799	1243
MEAN	154	376	---	---	---	---	---	397	355	136	122	414
MAX	224	498	---	---	---	---	---	483	411	494	440	429
MIN	119	192	---	---	---	---	---	333	311	35	20	401
AC-FT	9480	4470	---	---	---	---	---	8660	4220	6760	5550	2470

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08020900 Sabine River below Longview, TX

LOCATION.--Lat 32°25'00", long 94°42'35", 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 220.00 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 Oct. 1995, at least 10% of contributing drainage area has been regulated. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e125	207	3310	8100	8810	19800	10100	874	2790	910	94	396
2	e124	383	3450	7990	8470	20600	9590	766	2460	1030	100	840
3	e125	530	3580	8090	8040	20500	9220	689	1940	1070	93	533
4	e126	762	3620	8490	7500	21000	8930	630	1150	1000	83	638
5	e127	822	3390	9260	6880	21800	8660	635	740	863	86	1010
6	129	1410	2610	10200	6260	24000	8400	2390	1370	695	85	777
7	133	1510	1750	11300	5760	25700	8160	3110	3180	571	120	698
8	140	2060	1260	12100	5360	25400	7860	2990	3020	465	96	675
9	133	2250	1000	12400	5070	24800	7470	2700	3640	392	84	721
10	134	1870	867	12300	4790	23200	6940	2160	3450	335	90	801
11	139	1900	807	12100	4260	21300	6200	1590	2460	284	91	700
12	141	2080	766	11700	4420	20400	5160	1270	1400	252	82	576
13	141	2950	1350	11100	4320	19800	3760	1130	867	226	81	409
14	142	2740	2150	10500	4080	18800	2960	1000	655	324	96	319
15	144	2000	2060	9770	4000	18500	2460	906	1020	279	80	249
16	287	1550	2040	9040	6360	18100	2190	839	1360	217	79	233
17	316	1380	1960	8870	9340	18100	2180	743	1380	190	212	321
18	215	1250	1730	9610	10600	18700	2120	648	1060	177	323	474
19	205	1120	1500	10500	10700	19300	1960	568	810	166	764	1300
20	215	915	1320	10600	10500	19100	1770	510	645	150	1410	2790
21	212	709	1230	10300	10600	18100	1700	459	541	141	1250	3420
22	205	577	1150	9800	12300	16800	1700	406	489	136	747	3190
23	191	527	1040	9250	16600	15900	1690	368	422	126	460	2430
24	182	2170	962	8810	21000	15300	1640	350	377	115	365	1790
25	182	4600	985	8490	22200	15000	1490	322	359	116	297	1430
26	183	4560	2830	8340	21400	14400	1370	316	377	115	230	1170
27	177	3950	6310	8310	20000	13500	1260	373	388	110	190	926
28	173	3250	8090	8380	19800	12700	1170	438	893	120	168	705
29	181	3090	8730	8650	---	12000	1100	421	1250	110	177	543
30	219	3190	8670	8980	---	11300	999	396	1020	97	193	430
31	202	---	8360	9000	---	10600	---	1660	---	97	272	---
TOTAL	5348	56312	88877	302330	279420	574500	130209	31657	41513	10879	8498	30494
MEAN	173	1877	2867	9753	9979	18530	4340	1021	1384	351	274	1016
MAX	316	4600	8730	12400	22200	25700	10100	3110	3640	1070	1410	3420
MIN	124	207	766	7990	4000	10600	999	316	359	97	79	233
AC-FT	10610	111700	176300	599700	554200	1140000	258300	62790	82340	21580	16860	60480

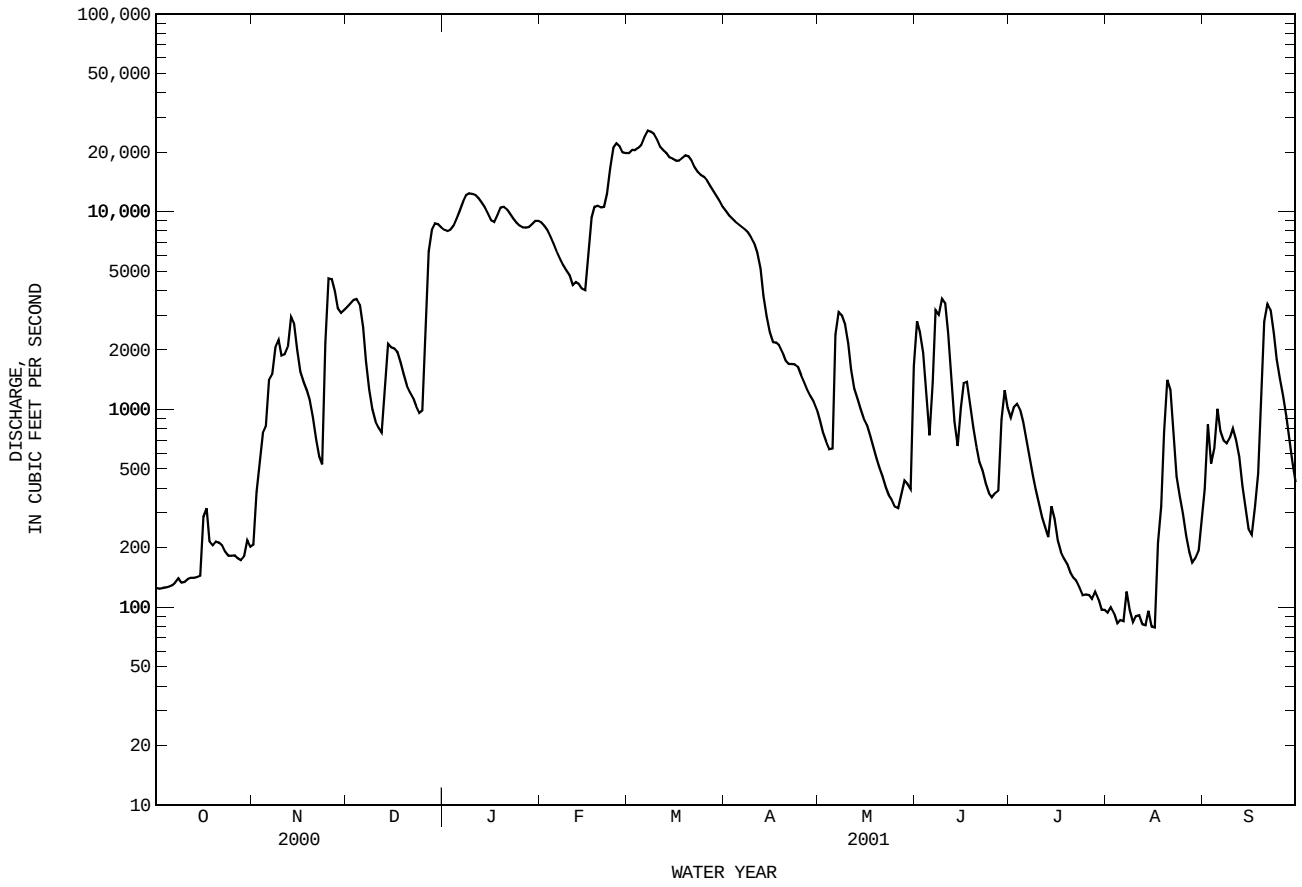
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

MEAN	693	1140	2448	4283	4488	6556	2807	1859	1754	933	219	467
MAX	2905	3519	7498	9753	9979	18530	6302	5846	3986	3423	491	1016
(WY)	1999	1999	1999	2001	2001	2001	1997	1997	1999	2000	1997	2001
MIN	121	151	287	340	236	260	533	324	184	48.5	66.0	113
(WY)	2000	1996	1996	1996	1996	1996	1996	1998	1998	1998	1998	2000

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1996 - 2001	
ANNUAL TOTAL	505898		1560037			
ANNUAL MEAN	1382		4274		2296	
HIGHEST ANNUAL MEAN					4274	2001
LOWEST ANNUAL MEAN					294	1996
HIGHEST DAILY MEAN	12300	Jul 1	25700	Mar 7	25700	Mar 7 2001
LOWEST DAILY MEAN	89	Sep 5	79	Aug 16	23	Aug 1 1998
ANNUAL SEVEN-DAY MINIMUM	92	Sep 3	86	Aug 10	26	Jul 28 1998
MAXIMUM PEAK FLOW			25900	Mar 7	25900	Mar 7 2001
MAXIMUM PEAK STAGE			34.48	Mar 7	34.48	Mar 7 2001
ANNUAL RUNOFF (AC-FT)	1003000		3094000		1664000	
10 PERCENT EXCEEDS	3490		12300		7620	
50 PERCENT EXCEEDS	528		1300		556	
90 PERCENT EXCEEDS	124		140		107	

e Estimated

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.

PERIOD OF RECORD.--Oct. 1938 to current year. Prior to Oct. 1978, published as "near Tatum" (station 08022000).
Water-quality records.--Chemical data: Feb. 1952 to Mar. 1999. Biochemical data: Jan. 1968 to Mar. 1999. Pesticide data: Mar. 1968 to June 1981. Specific conductance: Feb. 1952 to Sept. 1998. Water temperature: Feb. 1952 to Sept. 1998.

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 Sept. 21, 1945, nonrecording gage. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since water year 1961, at least 10% of contributing drainage area has been regulated. 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) and Sabine River at Logansport, La. (station 08022500).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	177	3640	10000	9370	e24000	11600	e1100	2850	1050	137	381
2	117	184	3670	9210	8880	e25200	11200	e1150	3160	926	130	671
3	110	368	3790	8690	8410	e25300	10700	e1190	3100	943	137	1050
4	130	666	3870	8500	7890	e24000	e10800	e1220	2600	1030	150	776
5	136	910	3810	8560	7270	e24000	e10500	e1280	1790	1060	120	991
6	122	1020	3420	8880	6660	e24800	e10400	e1800	1570	1010	116	1290
7	109	1620	2550	9420	6000	e26200	e10300	2900	4520	869	128	1090
8	142	1790	1820	9950	5450	e26200	e10200	3320	6360	775	169	1020
9	154	2560	1420	10400	5110	e26000	e8500	2990	7890	727	151	1020
10	143	2330	1160	10800	4940	e24200	6970	2550	9160	690	121	1220
11	123	2010	1010	11100	4720	e24200	e7000	1930	8630	650	126	1180
12	132	2100	952	11300	4970	e23800	5410	1320	5880	610	127	1040
13	123	2610	1160	11300	5640	e20200	e5000	e1220	3450	576	139	803
14	133	3230	2780	11100	5570	e20500	e4600	e1250	2340	544	115	597
15	137	2680	3410	10800	4980	e19200	e4100	e1290	2140	511	121	478
16	132	2030	3580	10400	6520	e18800	e3990	e1300	2680	471	117	378
17	236	1710	3400	10500	10800	e18700	e3940	e1200	2650	433	145	363
18	322	1580	2870	11800	11700	e18700	e3920	e1150	2150	392	417	486
19	231	1440	2300	13800	11700	e18700	e3900	e1280	1670	354	590	711
20	167	1320	1970	13900	11500	e18900	e3870	e1320	1340	313	1110	2220
21	164	1090	1700	13400	11100	e18800	e3800	e1310	1110	289	1640	3780
22	165	898	1520	12900	e10900	e19300	e3780	e1340	951	268	1360	4590
23	178	778	1380	12000	e11000	e19800	e3600	e1350	836	254	914	3900
24	164	2100	1250	11300	e22000	e19300	e3580	e1360	710	234	642	2950
25	136	5600	1220	10300	e25200	e23200	e2500	e1360	625	215	511	2420
26	135	6400	2480	9320	e26000	e22100	e2300	e1400	597	198	403	1870
27	152	5380	7160	8630	e27000	e21700	e2200	e1500	625	186	322	1520
28	149	4270	11000	8270	e26000	e21900	e1980	e1520	770	178	282	1250
29	125	3810	11400	8480	---	e18700	e1800	e1530	1050	179	262	1030
30	127	3660	11300	9220	---	e17100	e1700	e1580	1140	178	256	824
31	181	---	10800	9600	---	e16800	---	e1580	---	155	266	---
TOTAL	4707	66321	113792	323830	307280	670300	174140	48590	84344	16268	11224	41899
MEAN	152	2211	3671	10450	10970	21620	5805	1567	2811	525	362	1397
MAX	322	6400	11400	13900	27000	26200	11600	3320	9160	1060	1640	4590
MIN	109	177	952	8270	4720	16800	1700	1100	597	155	115	363
AC-FT	9340	131500	225700	642300	609500	1330000	345400	96380	167300	32270	22260	83110

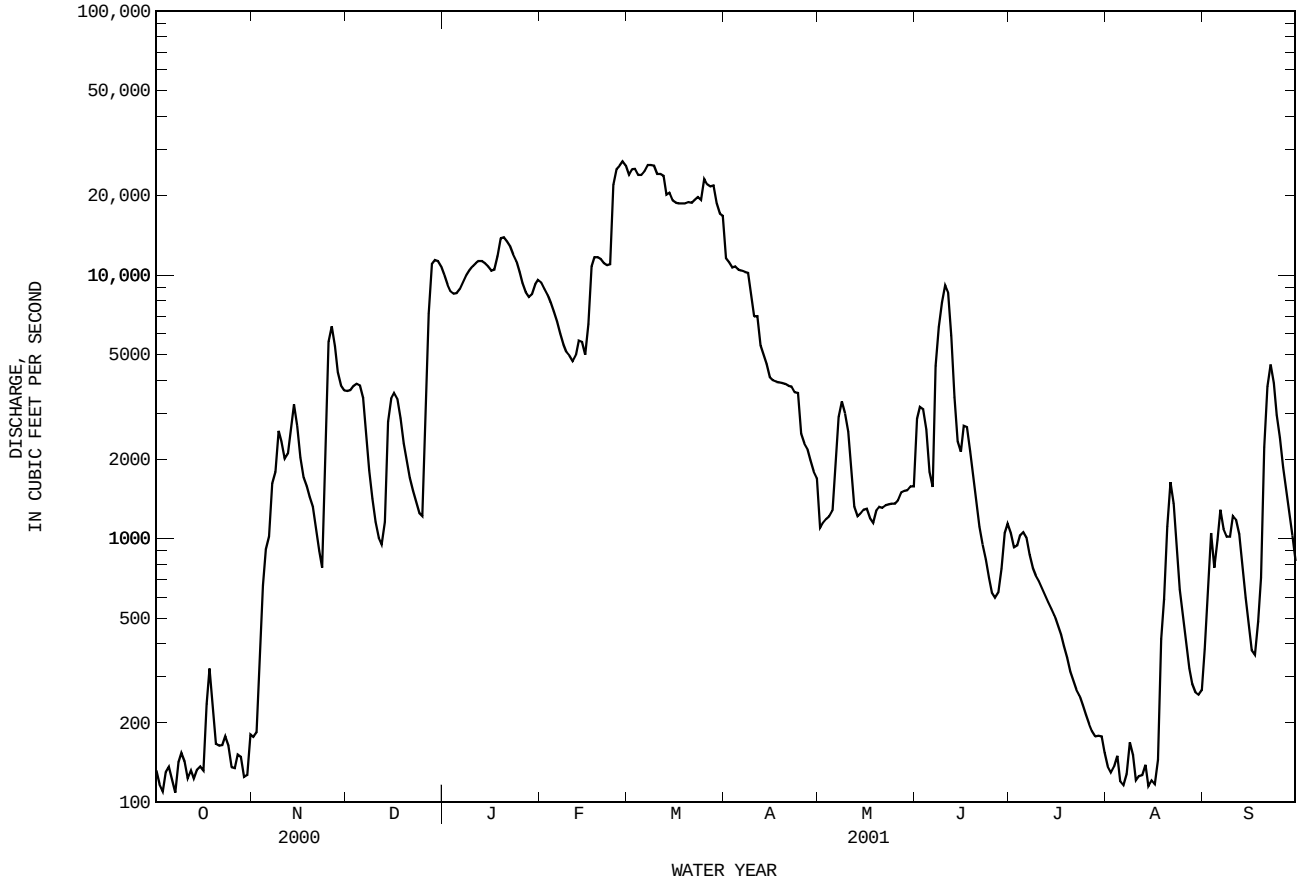
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2001z, BY WATER YEAR (WY)

MEAN	657	1669	3250	3467	4174	4904	3980	4608	2809	1015	316	457
MAX	4325	8221	9866	10960	11930	21620	11330	21010	11580	4552	1725	3434
(WY)	1974	1975	1975	1992	1975	2001	1990	1966	1989	2000	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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1961 - 2001z	
ANNUAL TOTAL	610809		1862695			
ANNUAL MEAN	1669		5103		2601	
HIGHEST ANNUAL MEAN					5103	2001
LOWEST ANNUAL MEAN					311	1964
HIGHEST DAILY MEAN	11400	Jul 3	27000	Feb 27	48100	May 2 1966
LOWEST DAILY MEAN	65	Sep 6	109	Oct 7	2.4	Aug 11 1964
ANNUAL SEVEN-DAY MINIMUM	72	Sep 1	122	Oct 1	3.8	Aug 7 1964
MAXIMUM PEAK FLOW			25400	Mar 2	49400	May 2 1966
MAXIMUM PEAK STAGE			30.12	Mar 2	g38.87	Mar 30 1989
ANNUAL RUNOFF (AC-FT)	1212000		3695000		1884000	
10 PERCENT EXCEEDS	4720		15100		7690	
50 PERCENT EXCEEDS	721		1800		899	
90 PERCENT EXCEEDS	114		152		94	

e Estimated
g At site and datum then in use.
z Period of regulated streamflow.



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 Sept. 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.--No estimated daily contents. 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. The dam is owned by the Texas Utilities Services, Inc. There are no known diversions. Conservation pool storage is 75,116 acre-ft. 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
Crest of gated spillway	294.0
Lowest gated outlet (invert)	284.0

COOPERATION.--Capacity Table No. 1 was replaced by Table No. 2, which was provided by the Texas Water Development Board, and put into effect Oct. 1, 2000.

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, Sept. 18, 1996, elevation, 298.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 77,230 acre-ft, Mar. 4, 5, elevation, 306.44 ft; minimum contents, 55,580 acre-ft, Nov. 1, 2, elevation, 301.53 ft.

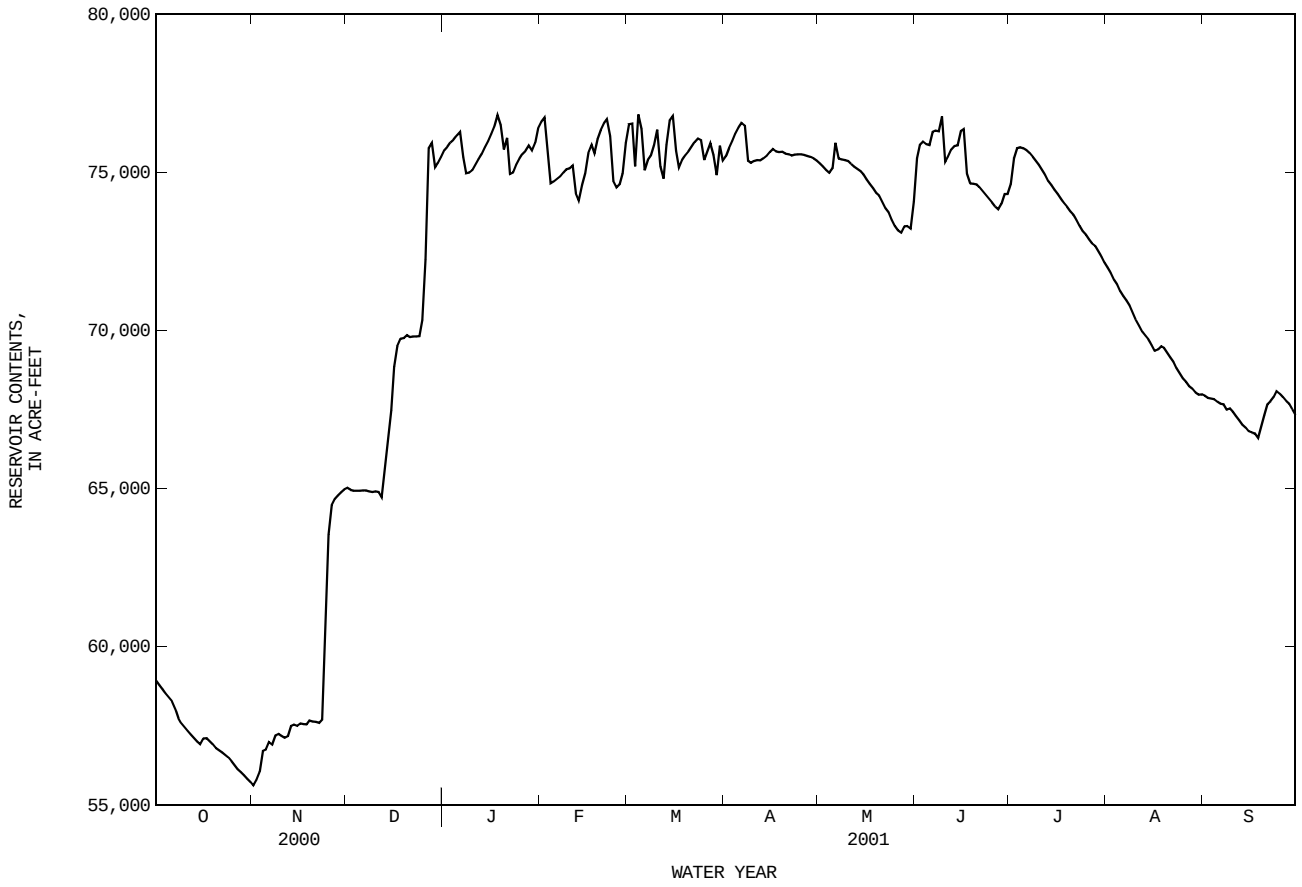
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58920	55610	65020	75700	76590	76520	75510	75270	75440	74630	71980	67940
2	58780	55800	64960	75810	76720	76540	75770	75180	75870	75430	71810	67870
3	58650	56050	64930	75940	75640	75180	75990	75070	75970	75760	71600	67850
4	58520	56710	64930	76030	74650	76820	76210	74980	75890	75790	71450	67830
5	58400	56750	64930	76160	74710	76370	76410	75120	75860	75760	71250	67740
6	58270	56990	64940	76270	74790	75060	76560	75930	76270	75700	71080	67680
7	58040	56910	64940	75470	74870	75380	76480	75430	76310	75610	70940	67660
8	57740	57190	64910	74970	74990	75520	75360	75400	76290	75490	70780	67490
9	57580	57240	64890	74990	75090	75850	75290	75380	76760	75360	70550	67530
10	57460	57180	64910	75070	75120	76340	75350	75350	75320	75230	70340	67430
11	57330	57120	64890	75250	75210	75180	75380	75260	75500	75070	70150	67290
12	57220	57170	64730	75410	74330	74800	75370	75170	75720	74910	69960	67160
13	57120	57500	65590	75580	74110	75870	75430	75100	75830	74730	69830	67020
14	57010	57540	66600	75790	74580	76630	75520	75030	75850	74590	69720	66930
15	56920	57500	67470	75980	74960	76770	75640	74930	76290	74440	69550	66810
16	57100	57580	68850	76210	75610	75680	75740	74770	76360	74310	69350	66770
17	57110	57560	69510	76440	75860	75140	75660	74630	74950	74160	69390	66740
18	57020	57550	69740	76800	75600	75380	75640	74490	74650	74030	69500	66600
19	56920	57670	69760	76490	76050	75540	75650	74340	74640	73910	69440	66930
20	56800	57640	69850	75720	76330	75660	75590	74260	74610	73770	69290	67310
21	56730	57630	69790	76080	76550	75810	75570	74060	74520	73650	69140	67660
22	56660	57600	69810	74940	76670	75950	75530	73860	74400	73500	69000	67770
23	56580	57700	69810	74990	76140	76060	75560	73720	74280	73310	68810	67900
24	56500	60380	69820	75240	74730	76010	75570	73500	74160	73140	68650	68080
25	56380	63550	70330	75430	74520	75380	75570	73300	74050	73030	68480	68000
26	56250	64480	72240	75580	74630	75630	75550	73160	73920	72870	68370	67890
27	56130	64680	75750	75680	74960	75910	75520	73090	73830	72750	68230	67770
28	56040	64780	75920	75840	75930	75540	75490	73290	74000	72670	68160	67670
29	55940	64880	75150	75690	---	74910	75430	73300	74310	72500	68040	67510
30	55830	64970	75290	75930	---	75840	75360	73220	74310	72330	67970	67330
31	55720	---	75490	76390	---	75360	---	74070	---	72150	67980	---
MEAN	57150	58730	68570	75740	75360	75760	75660	74510	75210	74210	69700	67470
MAX	58920	64970	75920	76800	76720	76820	76560	75930	76760	75790	71980	68080
MIN	55720	55610	64730	74940	74110	74800	75290	73090	73830	72150	67970	66600
(+)	301.56	303.77	306.08	306.26	306.17	306.05	306.05	305.77	305.83	305.36	304.45	304.30
(@)	-4940	+9250	+10520	+900	-460	-570	0	-1290	+240	-2160	-4170	-650

CAL YR 2000 MAX 80810 MIN 55720 (@) +15220
WTR YR 2001 MAX 77230 MIN 55580 (@) +6670

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

08022060 Martin Lake near Tatum, TX--Continued



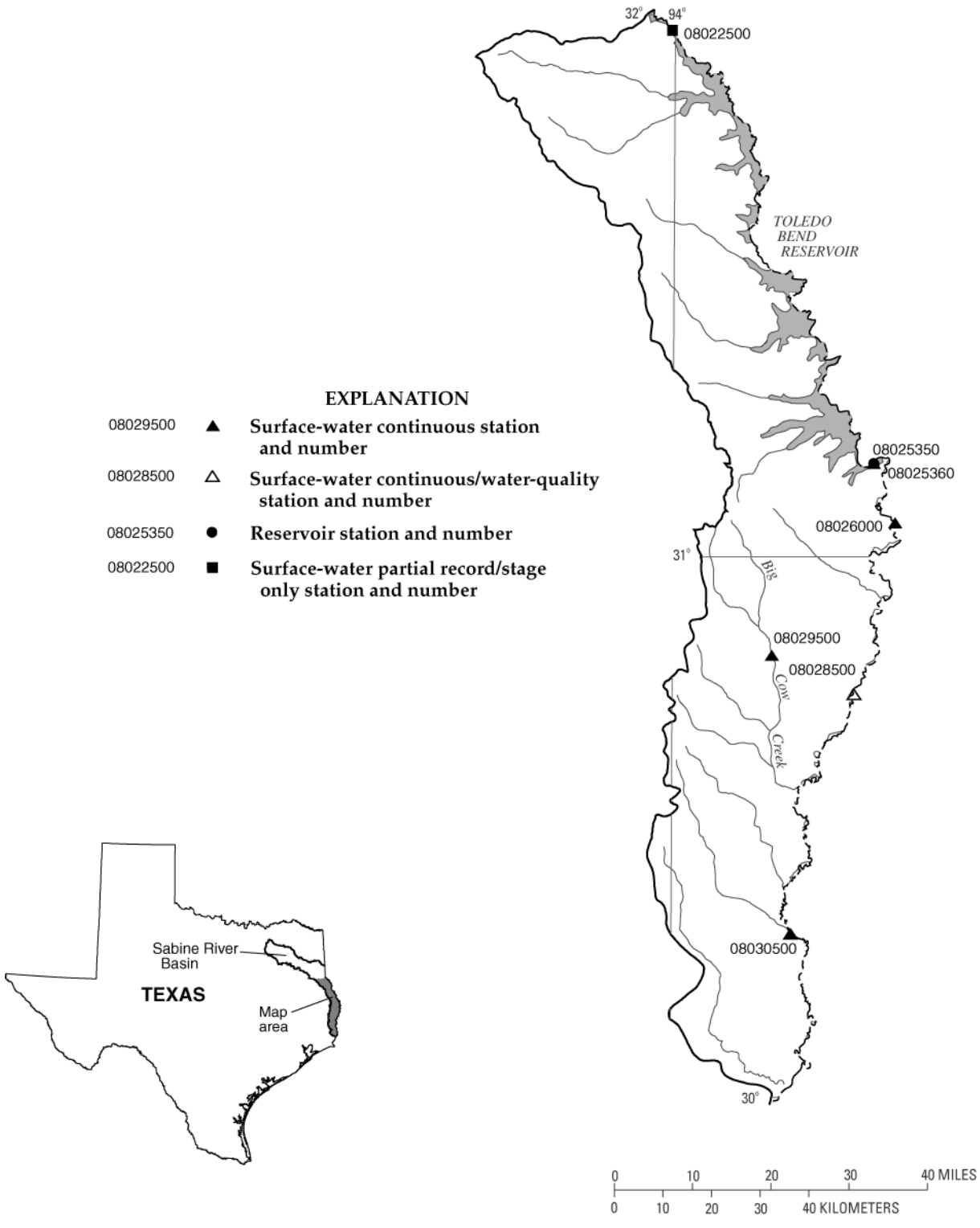


Figure 9.--Map showing location of gaging stations in the second section of the Sabine River Basin

08022500 Sabine River at Logansport, LA 374
08025350 Toledo Bend Reservoir near Burkeville, TX 376
08025360 Sabine River at Toledo Bend Reservoir near Burkeville, TX 378
08026000 Sabine River near Burkeville, TX 380
08028500 Sabine River near Bon Weir, TX 382
08029500 Big Cow Creek near Newton, TX 386
08030500 Sabine River near Ruliff, TX 388

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.--July 1903 to Feb. 1968 (daily mean discharge), Mar. 1968 to current year (daily maximum 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. July 1, 1903, to Sept. 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. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure. 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, Sept. 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 June 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.

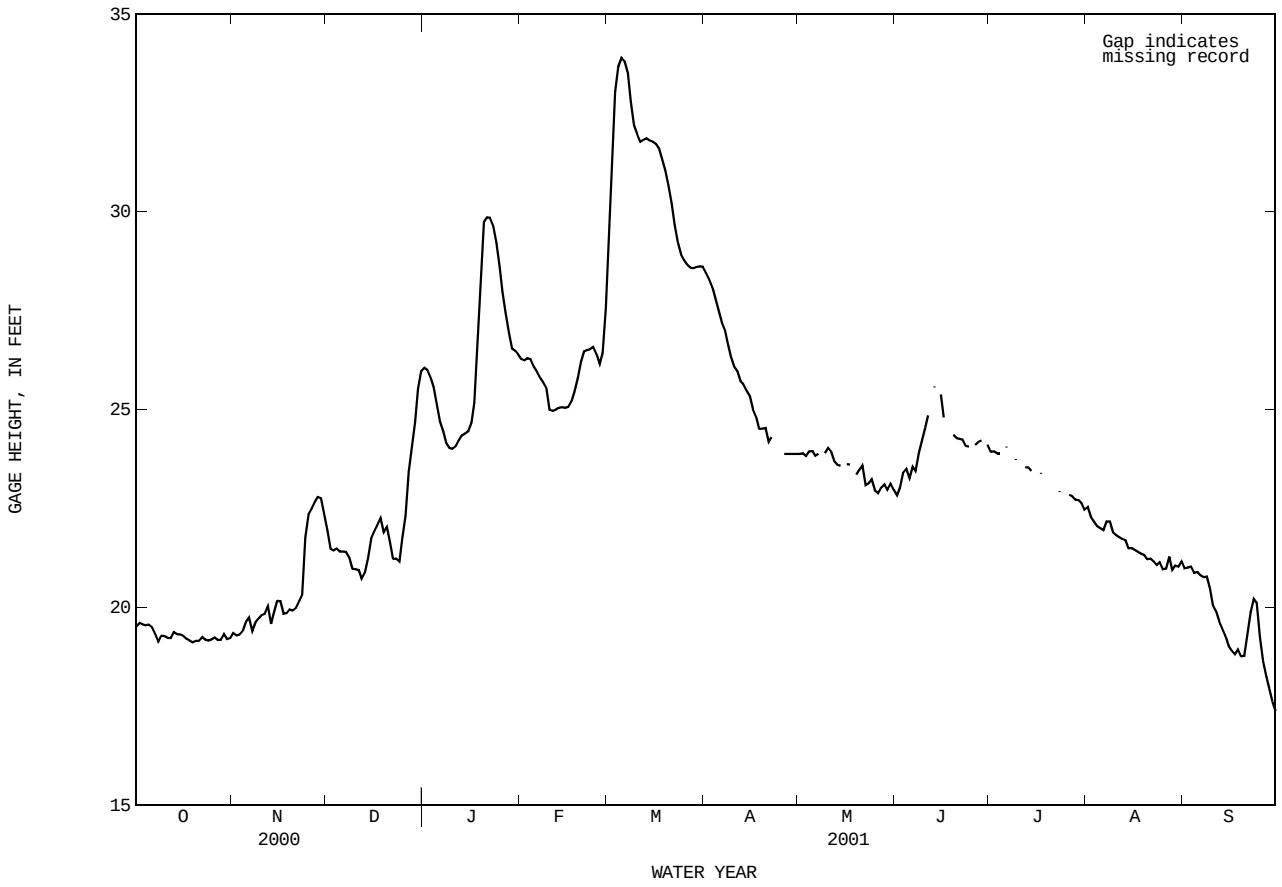
EXTREMES FOR CURRENT YEAR.--Maximum gage height, 33.89 ft, Mar. 5; minimum gage height, 17.14 ft, Sept. 30.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.51	19.35	21.94	26.05	26.27	29.22	28.46	23.88	22.83	23.93	22.53	20.99
2	19.60	19.29	21.47	26.00	26.24	31.37	28.30	23.89	23.02	23.94	22.28	21.00
3	19.56	19.31	21.43	25.82	26.30	33.03	28.09	23.82	23.40	23.89	22.16	21.03
4	19.55	19.41	21.48	25.56	26.27	33.68	27.82	23.94	23.50	23.89	22.05	20.87
5	19.56	19.62	21.41	25.12	26.09	33.89	27.51	23.95	23.26	---	22.00	20.89
6	19.50	19.73	21.41	24.69	25.96	33.79	27.22	23.83	23.55	24.05	21.95	20.81
7	19.33	19.40	21.40	24.44	25.80	33.50	27.02	23.88	23.45	---	22.17	20.76
8	19.13	19.61	21.26	24.16	25.68	32.79	26.64	---	23.89	---	22.17	20.78
9	19.28	19.72	20.97	24.03	25.55	32.19	26.33	23.89	24.22	23.73	21.89	20.47
10	19.27	19.80	20.96	24.01	24.99	31.96	26.09	24.02	24.53	---	21.83	20.06
11	19.22	19.83	20.94	24.07	24.96	31.77	25.97	23.93	24.85	---	21.77	19.90
12	19.22	20.02	20.72	24.21	24.99	31.82	25.71	23.69	---	23.54	21.72	19.64
13	19.37	19.58	20.87	24.34	25.04	31.86	25.64	23.60	25.57	23.54	21.69	19.46
14	19.32	19.87	21.25	24.39	25.06	31.80	25.48	23.58	---	23.45	21.49	19.26
15	19.31	20.16	21.74	24.44	25.04	31.77	25.34	---	25.38	---	21.50	19.03
16	19.27	20.15	21.91	24.66	25.07	31.71	25.00	23.62	24.80	---	21.45	18.90
17	19.20	19.84	22.07	25.17	25.21	31.61	24.81	23.61	---	23.38	21.40	18.80
18	19.16	19.85	22.25	26.80	25.45	31.33	24.51	---	---	---	21.35	18.93
19	19.11	19.94	21.89	28.45	25.78	31.04	24.52	23.35	24.36	---	21.33	18.76
20	19.15	19.92	22.02	29.73	26.19	30.65	24.53	23.46	24.28	---	21.21	18.77
21	19.15	19.98	21.67	29.86	26.47	30.20	24.18	23.58	24.26	---	21.23	19.31
22	19.25	20.15	21.22	29.85	26.50	29.67	24.30	23.08	24.24	---	21.16	19.87
23	19.18	20.31	21.23	29.65	26.52	29.23	---	23.13	24.08	22.92	21.07	20.21
24	19.16	21.77	21.16	29.22	26.58	28.93	---	23.23	24.06	---	21.14	20.11
25	19.18	22.35	21.75	28.62	26.40	28.77	---	22.95	---	---	20.96	19.25
26	19.23	22.49	22.31	27.97	26.15	28.67	23.88	22.88	24.10	22.84	20.98	18.63
27	19.17	22.66	23.42	27.43	26.43	28.59	23.88	23.03	24.18	22.81	21.28	18.25
28	19.17	22.78	24.09	26.95	27.56	28.57	23.88	23.11	24.22	22.72	20.94	17.91
29	19.32	22.75	24.69	26.54	---	28.60	23.88	22.97	---	22.71	21.05	17.61
30	19.19	22.36	25.52	26.48	---	28.62	23.88	23.12	24.11	22.63	21.03	17.37
31	19.22	---	25.97	26.39	---	28.61	---	22.97	---	22.47	21.16	---
MAX	19.60	22.78	25.97	29.86	27.56	33.89	28.46	24.02	25.57	24.05	22.53	21.03
MIN	19.11	19.29	20.72	24.01	24.96	28.57	23.88	22.88	22.83	22.47	20.94	17.37

CAL YR 2000 MAX 25.79 MIN 17.48
WTR YR 2001 MAX 33.74 MIN 17.24

08022500 Sabine River at Logansport, LA--Continued



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 July 20, 1967, nonrecording gage at same site and datum. July 20, 1967, to June 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.--No estimated daily contents. 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 dam is owned by the Sabine River Authority. 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. There are many diversions above station for oil field operations and municipal supply. Conservation pool storage is 4,472,900 acre-ft. 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 (top of conservation pool)	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 June 1968, 3,287,000 acre-ft, Sept. 30, 2001, elevation, 164.76 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,773,000 acre-ft, Mar. 3, 4, elevation, 173.60 ft; minimum contents, 3,287,000 acre-ft, Sept. 30, elevation, 164.76 ft.

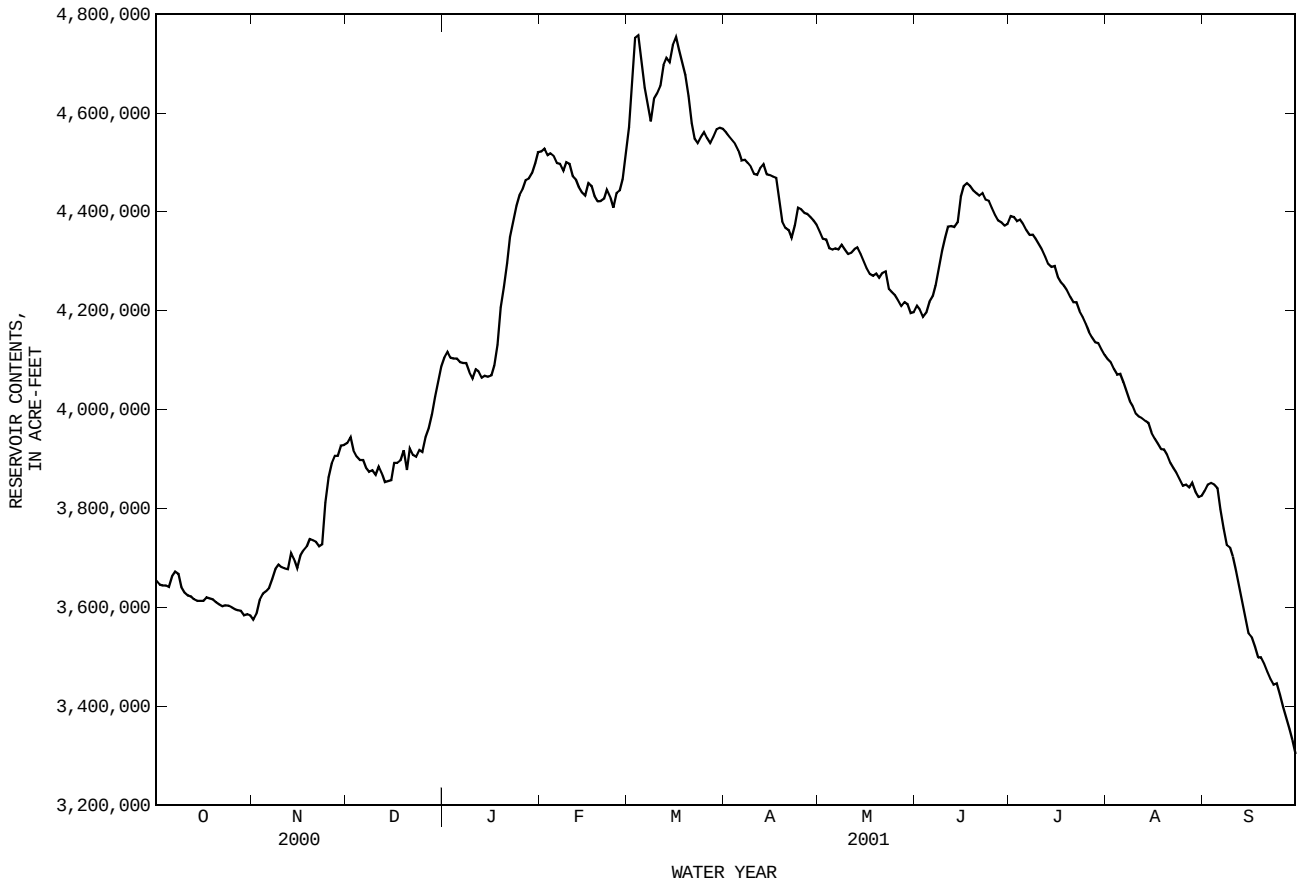
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3654000	3575000	3932000	4105000	4522000	4571000	4561000	4359000	4210000	4391000	4102000	3835000
2	3646000	3587000	3944000	4117000	4528000	4669000	4552000	4345000	4202000	4389000	4095000	3848000
3	3644000	3615000	3917000	4105000	4514000	4752000	4544000	4344000	4187000	4381000	4082000	3851000
4	3644000	3627000	3905000	4103000	4518000	4757000	4537000	4326000	4196000	4384000	4071000	3848000
5	3641000	3632000	3898000	4103000	4513000	4703000	4524000	4323000	4218000	4375000	4072000	3841000
6	3662000	3639000	3898000	4096000	4499000	4651000	4504000	4326000	4229000	4363000	4055000	3798000
7	3672000	3657000	3882000	4094000	4497000	4616000	4505000	4324000	4251000	4353000	4036000	3760000
8	3667000	3677000	3874000	4094000	4483000	4583000	4498000	4333000	4286000	4354000	4017000	3726000
9	3641000	3686000	3877000	4076000	4500000	4628000	4491000	4323000	4320000	4345000	4006000	3721000
10	3630000	3681000	3868000	4063000	4497000	4639000	4477000	4314000	4348000	4334000	3992000	3702000
11	3624000	3678000	3885000	4081000	4472000	4654000	4475000	4317000	4370000	4323000	3985000	3673000
12	3622000	3677000	3872000	4077000	4465000	4697000	4489000	4324000	4371000	4309000	3982000	3641000
13	3616000	3710000	3853000	4064000	4450000	4711000	4496000	4328000	4369000	4295000	3977000	3608000
14	3613000	3698000	3855000	4068000	4439000	4703000	4476000	4315000	4378000	4288000	3973000	3576000
15	3613000	3679000	3857000	4066000	4433000	4737000	4474000	4301000	4431000	4290000	3953000	3547000
16	3613000	3704000	3892000	4069000	4458000	4753000	4471000	4286000	4452000	4268000	3941000	3539000
17	3620000	3715000	3892000	4089000	4452000	4728000	4468000	4274000	4458000	4257000	3931000	3520000
18	3618000	3723000	3897000	4131000	4432000	4703000	4426000	4270000	4452000	4251000	3920000	3498000
19	3616000	3738000	3917000	4207000	4421000	4676000	4380000	4275000	4443000	4241000	3919000	3499000
20	3610000	3735000	3878000	4248000	4422000	4634000	4367000	4266000	4437000	4228000	3908000	3486000
21	3606000	3732000	3922000	4296000	4426000	4579000	4363000	4276000	4433000	4217000	3892000	3470000
22	3602000	3723000	3908000	4349000	4445000	4548000	4347000	4279000	4438000	4217000	3881000	3455000
23	3604000	3727000	3904000	4381000	4431000	4539000	4372000	4244000	4424000	4199000	3872000	3443000
24	3603000	3812000	3918000	4411000	4408000	4551000	4408000	4238000	4422000	4187000	3859000	3446000
25	3600000	3862000	3914000	4434000	4438000	4561000	4405000	4231000	4408000	4173000	3846000	3423000
26	3596000	3891000	3944000	4445000	4443000	4549000	4398000	4221000	4394000	4156000	3848000	3398000
27	3594000	3906000	3962000	4464000	4466000	4539000	4396000	4209000	4382000	4146000	3842000	3376000
28	3593000	3906000	3990000	4467000	4519000	4552000	4389000	4217000	4378000	4136000	3851000	3353000
29	3584000	3927000	4026000	4478000	---	4567000	4382000	4213000	4372000	4134000	3834000	3331000
30	3586000	3928000	4055000	4498000	---	4570000	4373000	4195000	4375000	4121000	3823000	3303000
31	3583000	---	4086000	4521000	---	4568000	---	4197000	---	4111000	3825000	---
MAX	3672000	3928000	4086000	4521000	4528000	4757000	4561000	4359000	4458000	4391000	4102000	3851000
MIN	3583000	3575000	3853000	4063000	4408000	4539000	4347000	4195000	4187000	4111000	3823000	3303000
(+)	166.71	168.85	169.78	172.24	172.23	172.50	171.42	170.42	171.43	169.93	168.22	164.87
(@)	-72000	+345000	+158000	+435000	-2000	+49000	+195000	-176000	+178000	-264000	-286000	-522000

CAL YR 2000 MAX 4513000 MIN 3431000 (@) +579000
WTR YR 2001 MAX 4757000 MIN 3303000 (@) -352000

(+) 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 Sept. 1986. Biochemical data: Oct. 1967 to Sept. 1986.

GAGE.--Water-stage recorders. Datum of gage is 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

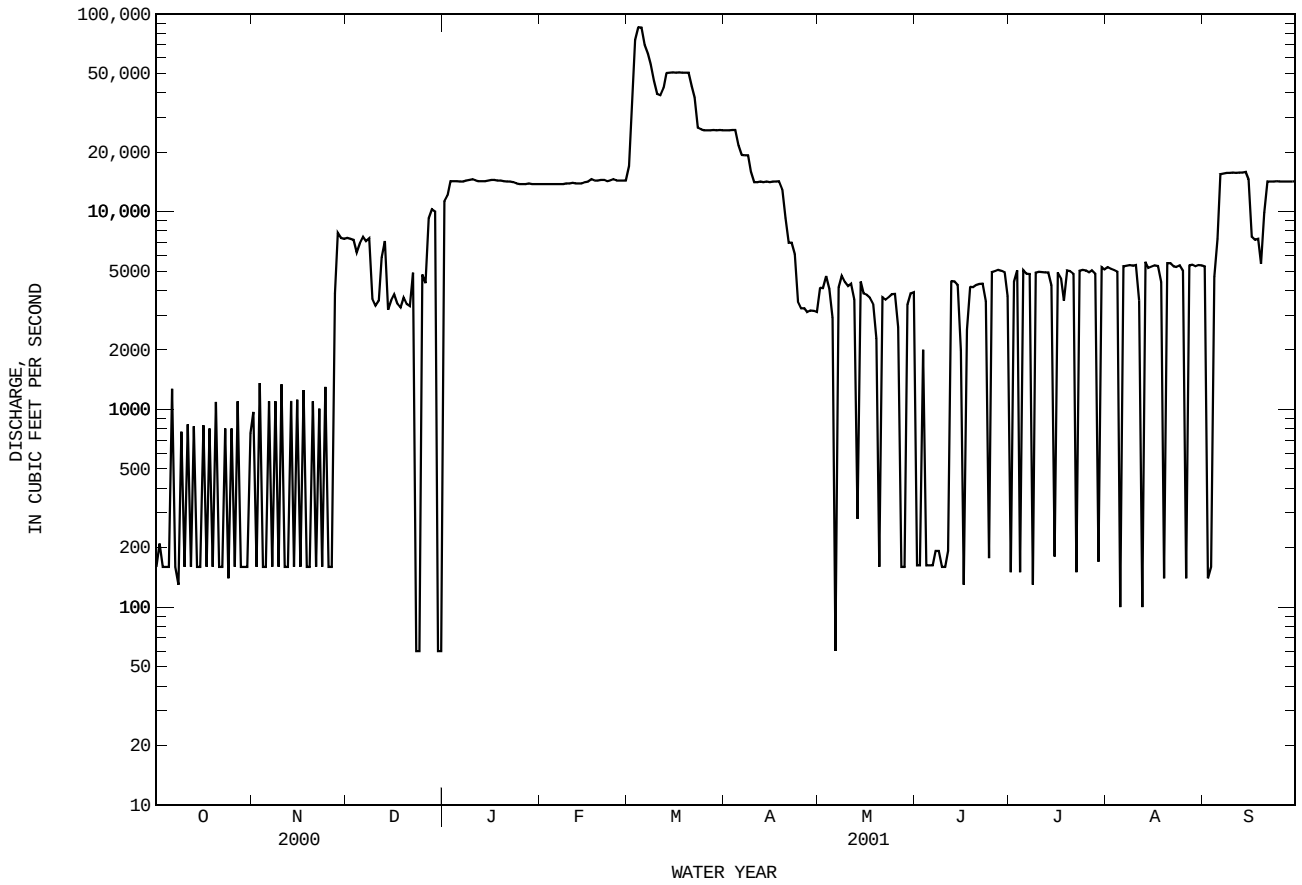
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	160	970	7380	11300	13800	17000	25800	4130	163	150	5230	5290
2	210	160	7300	12100	13800	36800	25800	4110	163	4430	5150	140
3	160	1360	7210	14300	13800	74000	25900	4710	2000	5040	5070	160
4	160	160	6220	14300	13800	85600	25900	4070	163	150	4980	4680
5	160	160	6930	14300	13800	85300	21700	2910	163	5060	100	7310
6	1270	1100	7450	14200	13800	69700	19400	60	163	4860	5300	15500
7	160	160	7100	14200	13800	62900	19300	4140	193	4840	5340	15600
8	130	1100	7340	14400	13800	55400	19300	4750	193	130	5370	15700
9	770	160	3630	14500	13900	45800	15900	4410	160	4910	5330	15700
10	160	1340	3350	14600	13900	39300	14100	4210	160	4980	5370	15800
11	840	160	3540	14400	14000	38700	14100	4320	193	4950	3550	15700
12	160	160	5880	14300	13900	42200	14200	3590	4460	4930	100	15800
13	820	1100	7110	14300	13900	50300	14100	280	4450	4930	5590	15800
14	160	160	3190	14300	13900	50600	14200	4430	4260	4230	5190	15900
15	160	1120	3570	14400	14100	50700	14100	3860	1990	180	5280	14600
16	830	160	3810	14500	14200	50600	14200	3800	130	4930	5350	7490
17	160	1250	3420	14500	14600	50700	14200	3680	2530	4620	5320	7220
18	800	160	3280	14400	14400	50600	14300	3430	4170	3550	4420	7300
19	160	160	3690	14400	14400	50500	13000	2280	4160	5050	140	5450
20	1090	1100	3410	14300	14500	50600	9300	160	4270	5010	5490	9860
21	160	160	3330	14200	14500	43000	6970	3700	4320	4860	5500	14200
22	160	1010	4920	14200	14300	37700	6980	3590	4330	150	5300	14200
23	800	160	60	14100	14400	26600	6100	3700	3530	5030	5250	14200
24	140	1300	60	13900	14600	26100	3520	3830	177	5090	5360	14300
25	800	160	4800	13800	14400	25800	3250	3840	4950	5040	5040	14200
26	160	160	4350	13800	14400	25800	3250	2610	5000	4940	140	14200
27	1100	3860	9280	13800	14400	25800	3110	160	5080	5050	5360	14200
28	160	7840	10300	13900	14400	25900	3170	160	5020	4870	5400	14200
29	160	7370	10000	13800	---	25800	3160	3390	4930	170	5300	14200
30	160	7310	60	13800	---	25900	3110	3860	3750	5230	5380	14300
31	760	---	60	13800	---	25800	---	3920	---	5100	5350	---
TOTAL	13080	41530	152030	435100	395500	1371500	391420	100090	75221	122460	141050	353200
MEAN	422	1384	4904	14040	14120	44240	13050	3229	2507	3950	4550	11770
MAX	1270	7840	10300	14600	14600	85600	25900	4750	5080	5230	5590	15900
MIN	130	160	60	11300	13800	17000	3110	60	130	130	100	140
AC-FT	25940	82370	301600	863000	784500	2720000	776400	198500	149200	242900	279800	700600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2001, BY WATER YEAR (WY)

MEAN	1168	2218	5455	9361	10240	11490	8223	7528	5676	4621	3684	3261
MAX	6809	13340	17720	27680	23850	44240	19270	22170	24960	18790	6732	11770
(WY)	1992	1995	1975	1974	1999	2001	1991	1991	1989	1989	1976	2001
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1972 - 2001	
ANNUAL TOTAL	813595		3592181			
ANNUAL MEAN	2223		9842		6060	
HIGHEST ANNUAL MEAN					10370	1995
LOWEST ANNUAL MEAN					517	1996
HIGHEST DAILY MEAN	14200	Jul 12	85600	Mar 4	117000	Jan 31 1999
LOWEST DAILY MEAN	60	Dec 23	60	Dec 23	30	Oct 1 1972
ANNUAL SEVEN-DAY MINIMUM	204	Apr 1	171	Jun 4	34	Nov 21 1975
ANNUAL RUNOFF (AC-FT)	1614000		7125000		4390000	
10 PERCENT EXCEEDS	5590		19300		14900	
50 PERCENT EXCEEDS	1130		5070		3850	
90 PERCENT EXCEEDS	160		160		144	

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.--Sept. 1955 to current year. Published as "below Toledo Bend near Burkeville" for period 1955-75.
Water-quality records.--Chemical data: May 1968 to Sept. 1986. Biochemical data: May 1968 to Sept. 1986. Pesticide data: Oct. 1972 to Sept. 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 present site 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.

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, Sept. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	346	645	6350	5900	14400	14900	26600	3900	e2170	2780	e4550	5530
2	299	647	6280	11400	14100	25100	26300	4880	484	4380	5150	2920
3	308	678	6340	14300	14000	39800	26000	4980	965	6000	5010	659
4	272	892	6200	14500	14000	59100	25900	5400	1310	3040	4920	3000
5	277	363	5270	14500	13900	78900	24500	3950	263	3160	2440	6080
6	877	769	6070	14600	13900	84400	21000	2520	274	5310	2790	15100
7	666	792	5990	14600	13900	73400	20200	2330	1260	5200	5040	16100
8	197	1160	6410	14600	14000	66300	20100	4880	1660	2660	5140	16200
9	227	1720	4690	14600	14000	58700	18500	5410	1530	3060	5180	16400
10	614	1350	3260	14600	14000	49400	15600	5040	717	5290	5090	16600
11	278	1030	3240	15400	14000	43300	15300	4950	490	5310	3690	16500
12	656	375	3730	15900	14000	41200	15200	4450	2430	5350	2720	16400
13	547	634	6200	15400	14000	45800	15100	2770	4500	5290	2840	16400
14	635	703	5750	15000	14000	49800	15100	2470	4370	4710	5080	16500
15	216	611	2730	14800	e14000	52100	15100	4740	3580	2810	5110	16300
16	256	751	3760	15100	e14300	52900	15000	4230	1590	3060	5080	9710
17	657	766	3430	16200	e14500	52600	15000	4230	1650	4920	5130	7610
18	255	970	3280	16200	e14800	51900	15100	3970	3470	4230	4460	7510
19	638	e1400	3320	17000	e14800	51300	15000	3230	4360	4830	2290	6240
20	510	e1500	3210	16900	e14600	51000	11600	1590	4450	5310	2830	7460
21	606	993	3150	15800	e14500	49900	9120	2120	4470	5200	5110	12300
22	198	782	4230	14900	e14400	43900	7620	4020	5180	2720	5180	13000
23	227	813	2170	14600	e14400	37100	7520	4060	4260	2980	5180	13100
24	607	3400	451	14300	14400	31200	4750	4130	2320	e4500	4970	13400
25	269	4860	2570	14100	14400	28500	4540	4200	2500	e4600	4840	13600
26	697	3360	4690	14100	14400	27300	4270	3500	5110	e4720	2450	13200
27	576	2700	6720	14100	14300	26700	4110	1730	5500	e5000	2920	13100
28	648	6180	10500	14000	14300	27500	4070	364	5760	e4600	5280	13000
29	240	6450	10500	14700	---	27900	4050	1640	5510	e2400	5290	13000
30	231	6420	4890	15700	---	27500	4000	3760	4830	e2600	5230	12900
31	640	---	737	15100	---	26900	---	e4000	---	e4450	5330	---
TOTAL	13670	53714	146118	452900	398300	1396300	426250	113444	86963	130470	136320	349819
MEAN	441	1790	4713	14610	14220	45040	14210	3659	2899	4209	4397	11660
MAX	877	6450	10500	17000	14800	84400	26600	5410	5760	6000	5330	16600
MIN	197	363	451	5900	13900	14900	4000	364	263	2400	2290	659
AC-FT	27110	106500	289800	898300	790000	2770000	845500	225000	172500	258800	270400	693900

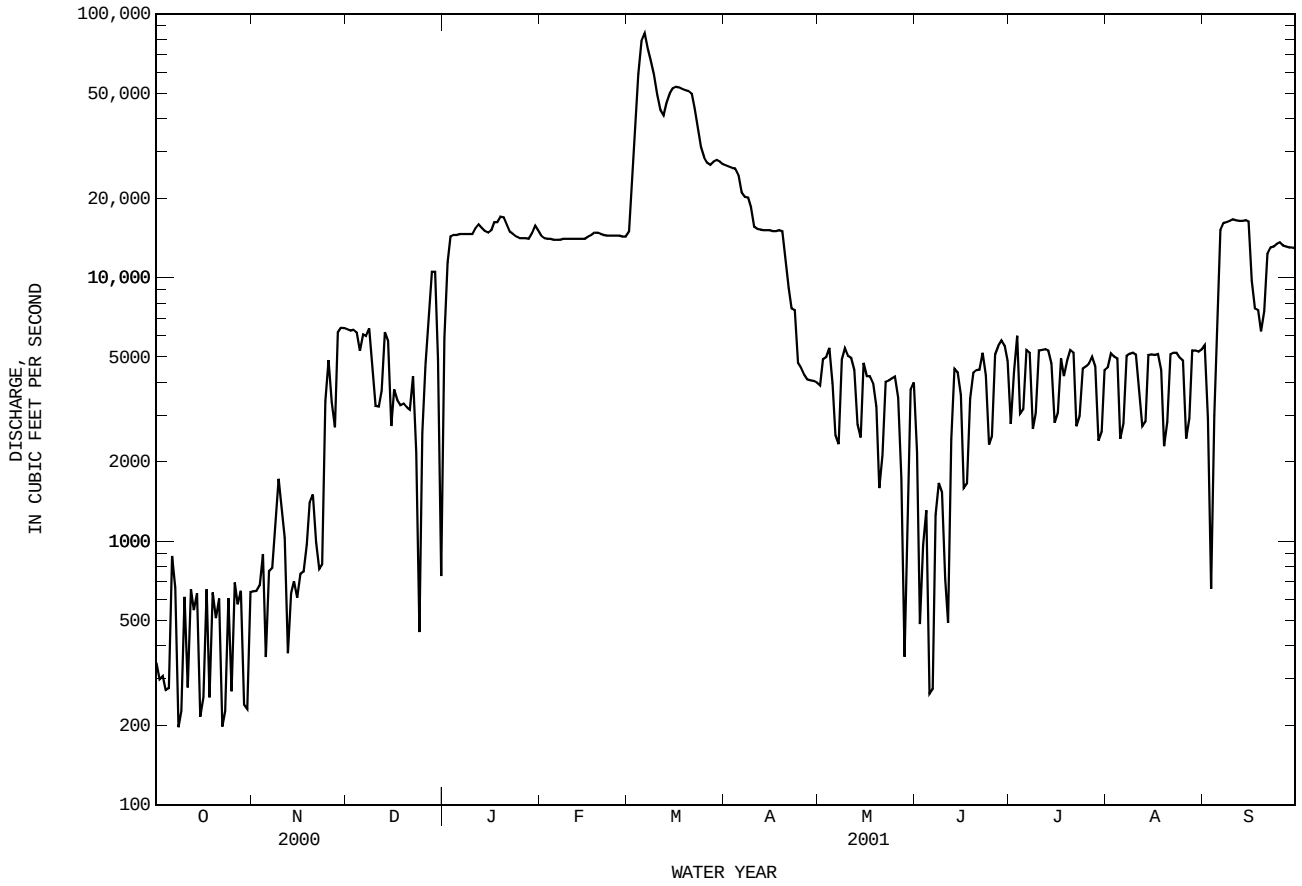
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2001z, BY WATER YEAR (WY)

MEAN	1125	1999	5562	8448	9379	10570	8196	7936	5385	4012	2966	2872
MAX	6846	12880	17990	28510	27320	45040	26530	32070	25310	23750	6662	11660
(WY)	1992	1995	1962	1974	1999	2001	1969	1966	1989	1989	1976	2001
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1961 - 2001z	
ANNUAL TOTAL	785506		3704268			
ANNUAL MEAN	2146		10150		5689	
HIGHEST ANNUAL MEAN					11190	1995
LOWEST ANNUAL MEAN					548	1967
HIGHEST DAILY MEAN	12200	Jul 14	84400	Mar 6	117000	Feb 1 1999
LOWEST DAILY MEAN	197	Oct 8	197	Oct 8	38	Sep 14 1967
ANNUAL SEVEN-DAY MINIMUM	403	Oct 3	403	Oct 3	41	Sep 9 1967
MAXIMUM PEAK FLOW			88900	Mar 6	124000	Feb 1 1999
MAXIMUM PEAK STAGE			45.39	Mar 6	48.05	Feb 1 1999
ANNUAL RUNOFF (AC-FT)	1558000		7347000		4121000	
10 PERCENT EXCEEDS	4780		20500		15300	
50 PERCENT EXCEEDS	1120		5110		2710	
90 PERCENT EXCEEDS	366		646		270	

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 July 8, 1931, nonrecording gage at site 0.8 mi downstream at datum 13.00 ft higher. July 8, 1931, to Oct. 15, 1958, nonrecording gage at present site at datum 13.00 ft higher. Oct. 16, 1958, to Sept. 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.--Records fair. Since water year 1960, at least 10% of contributing drainage area has been regulated.

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, Sept. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2330	630	8560	2050	17900	16300	28000	4840	4660	6860	6170	6420
2	764	817	8320	8940	17000	19100	27300	5060	2550	4480	6350	7050
3	584	932	8110	13600	16500	28100	26800	5710	1090	7210	6580	4440
4	557	934	8080	15500	16200	36000	26400	6040	1600	8690	6260	3750
5	519	1340	7510	15800	16000	47400	26200	5990	1790	4570	5940	5240
6	538	918	7230	15900	15900	65700	24700	4660	1000	5010	2890	e13500
7	1040	1340	7720	16000	15900	76000	22400	2670	2620	6390	3920	15800
8	1100	1860	7770	16000	15800	74900	21600	3590	9710	6400	5670	16300
9	524	3840	7880	15700	15800	71100	21300	5790	13500	3440	5800	e16800
10	456	3450	5740	15700	15800	65500	19600	6070	11300	4470	5860	e17100
11	758	2460	4870	16400	15800	58400	18000	5760	9160	6090	5760	17200
12	522	1800	4720	17900	15800	51800	17700	5760	6150	6060	4530	16900
13	791	1070	5990	17900	15800	48600	e17500	5140	5520	6010	2790	16700
14	666	1150	8010	17300	15800	48500	e17200	2880	6320	5940	3920	16600
15	910	1320	6320	16900	15800	52200	e17200	3740	6350	5410	5710	16500
16	476	1120	4900	16900	16000	56500	e17200	5310	6110	3230	5720	15100
17	445	1530	5440	19100	16900	58100	17200	5010	3290	4250	5710	9900
18	783	1640	5030	20300	17100	58200	17200	4930	3030	5470	5980	8210
19	498	2800	4860	20500	16700	56500	17200	4620	4770	4720	e3900	7930
20	747	3190	4870	21500	16400	55500	16000	3660	5400	5390	e2300	6570
21	613	3080	4730	20800	16200	54700	13700	2000	5510	5740	3690	9220
22	864	2340	4670	19300	16100	53700	10400	3060	5640	5620	5480	12800
23	462	1840	5760	17800	16000	50000	9300	4590	6930	2780	5600	13500
24	404	3160	2860	17100	16000	42300	8540	4660	6390	3820	5530	13900
25	700	10300	1270	16600	16000	34000	6500	4750	3280	5570	5410	14300
26	479	9270	4200	16300	15900	29900	5850	4780	4030	5680	e5100	14000
27	790	7450	6340	16300	16000	28200	5410	3890	6070	5680	2410	13600
28	678	7770	9550	16400	16300	27900	5140	2060	7180	5780	3790	13400
29	870	10100	12000	16600	---	29000	5040	964	8120	6000	5720	13300
30	476	9000	11700	18800	---	29300	4960	2270	7530	3290	5710	13200
31	416	---	4850	19000	---	28800	---	4330	---	4500	5780	---
TOTAL	21760	98451	199860	514890	453400	1452200	491540	134584	166600	164550	155980	369230
MEAN	702	3282	6447	16610	16190	46850	16380	4341	5553	5308	5032	12310
MAX	2330	10300	12000	21500	17900	76000	28000	6070	13500	8690	6580	17200
MIN	404	630	1270	2050	15800	16300	4960	964	1000	2780	2300	3750
AC-FT	43160	195300	396400	1021000	899300	2880000	975000	266900	330500	326400	309400	732400

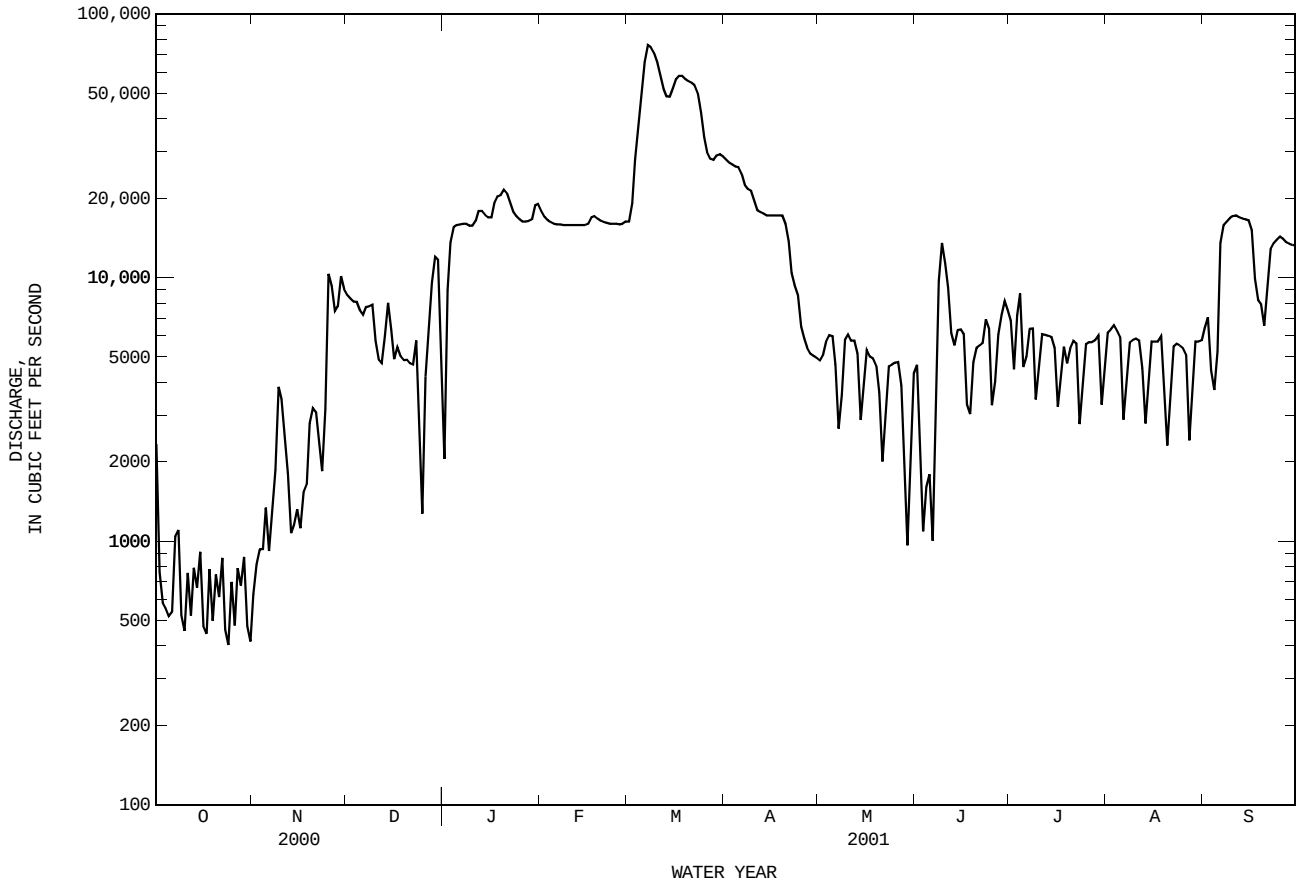
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001z, BY WATER YEAR (WY)

MEAN	1648	2751	6847	10170	11380	12250	9638	8863	6238	4789	3432	3389
MAX	7315	13250	21420	30930	31390	46850	27370	31210	26340	31490	7288	12310
(WY)	1992	1995	1983	1974	1999	2001	1969	1966	1989	1989	1976	2001
MIN	188	217	822	994	746	1288	634	1011	663	530	211	206
(WY)	1968	1968	1981	2000	1968	1981	1971	1996	1970	1964	1967	1967

08028500 Sabine River near Bon Wier, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001z	
ANNUAL TOTAL	1151021		4223045			
ANNUAL MEAN	3145		11570		6763	
HIGHEST ANNUAL MEAN					12670	1975
LOWEST ANNUAL MEAN					1172	1967
HIGHEST DAILY MEAN	13300	Jul 14	76000	Mar 7	98000	Jul 4 1989
LOWEST DAILY MEAN	404	Oct 24	404	Oct 24	134	Nov 9 1966
ANNUAL SEVEN-DAY MINIMUM	610	Oct 20	610	Oct 20	142	Nov 3 1966
MAXIMUM PEAK FLOW			78100	Mar 7	98200	Jul 4 1989
MAXIMUM PEAK STAGE			36.74	Mar 7	37.90	Jul 4 1989
ANNUAL RUNOFF (AC-FT)	2283000		8376000		4899000	
10 PERCENT EXCEEDS	6360		21900		17000	
50 PERCENT EXCEEDS	2180		6150		3600	
90 PERCENT EXCEEDS	755		1060		704	

e Estimated
z Period of regulated streamflow.



08028500 Sabine River near Bon Wier, TX--Continued

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 Sept. 1962.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Nov. 1969 to June 1983.
WATER TEMPERATURE: Nov. 1969 to June 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 407 microsiemens/cm, Aug. 31, 1978; minimum daily, 34 microsiemens/cm, Feb. 3, 1983.
WATER TEMPERATURE: Maximum daily, 33.0°C, July 17, 1978, and July 14, 26, 1980; minimum daily, 4.0°C, Feb. 2, 1980.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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							
04...	1615	1030	238	23.5	80	36.2	20.6
12...	1612	1510	219	18.5	200	40.8	17.2
18...	1523	1810	274	13.0	180	49.4	23.5
22...	1705	2010	255	14.0	180	45.8	19.3
JAN							
05...	1440	14500	164	11.5	20	16.0	16.0
13...	1540	18300	159	10.5	30	16.6	15.6
19...	1250	20800	135	10.0	50	12.5	12.6
24...	1234	17500	159	12.5	30	15.3	15.4
31...	1653	19100	147	11.5	60	13.5	13.5
FEB							
08...	1304	16000	167	12.5	20	16.1	17.4
15...	1327	15800	172	13.0	20	16.9	18.4
22...	1038	16200	173	13.0	20	17.0	18.7
MAR							
01...	1215	16300	174	13.5	30	17.3	18.3
08...	1103	75300	166	14.0	70	18.1	18.7
16...	1822	57400	140	14.5	75	17.2	13.1
22...	1651	53100	138	15.5	70	17.1	13.4
29...	1645	29300	126	14.0	70	16.2	12.1
JUL							
07...	1708	6950	120	29.5	50	15.2	9.9
14...	1840	6360	116	29.0	50	14.4	10.1
21...	1800	6290	118	31.0	60	15.0	9.7
28...	1935	6120	117	29.0	50	14.2	9.9
AUG							
03...	1625	7320	120	30.0	60	14.6	9.6
12...	1342	4550	126	28.0	50	16.5	9.6
17...	1625	6640	119	28.5	60	15.6	9.5

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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.--Records good except those for estimated daily discharges, which are fair. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	31	88	69	140	72	128	43	38	98	44	174
2	27	31	82	65	112	604	108	43	64	111	42	161
3	26	35	78	63	98	1310	99	43	43	98	61	173
4	27	66	72	62	90	1120	96	42	41	115	46	199
5	27	123	68	61	85	326	93	42	61	121	40	226
6	33	244	68	61	81	165	87	42	153	82	37	195
7	52	170	74	60	78	127	81	45	289	70	35	111
8	65	329	79	59	78	110	76	50	1550	65	36	100
9	43	537	71	57	80	441	73	47	2980	60	37	100
10	36	206	66	57	101	403	71	45	1050	56	36	165
11	33	90	64	392	93	188	68	43	280	53	34	128
12	32	67	62	402	84	407	66	41	164	51	33	75
13	31	61	73	173	88	866	71	81	123	48	34	62
14	30	59	223	122	83	338	78	44	103	47	39	56
15	29	55	153	109	80	1150	68	38	371	47	43	53
16	30	61	106	182	184	671	61	36	431	50	38	50
17	32	101	92	771	405	214	61	34	151	47	35	49
18	e33	117	79	390	151	156	55	34	99	44	112	48
19	e33	448	73	476	107	133	53	33	83	43	75	46
20	32	246	72	376	93	119	53	33	74	43	52	46
21	30	105	68	177	86	109	53	33	72	42	47	50
22	30	73	66	132	81	102	52	36	78	41	42	73
23	32	64	63	115	75	98	51	30	69	40	37	76
24	e33	619	62	103	72	95	59	29	64	38	35	81
25	e34	1540	70	94	70	101	65	29	58	38	34	73
26	e33	476	113	90	69	106	60	29	61	e36	33	59
27	31	157	127	126	70	93	52	28	138	e35	32	51
28	30	117	131	159	71	231	48	30	118	e59	36	47
29	30	99	111	395	---	404	46	31	195	e89	57	45
30	31	93	88	773	---	229	44	33	115	e60	51	43
31	31	---	75	231	---	160	---	32	---	49	69	---
TOTAL	1023	6420	2717	6402	2905	10648	2076	1199	9116	1876	1382	2815
MEAN	33.0	214	87.6	207	104	343	69.2	38.7	304	60.5	44.6	93.8
MAX	65	1540	223	773	405	1310	128	81	2980	121	112	226
MIN	26	31	62	57	69	72	44	28	38	35	32	43
AC-FT	2030	12730	5390	12700	5760	21120	4120	2380	18080	3720	2740	5580

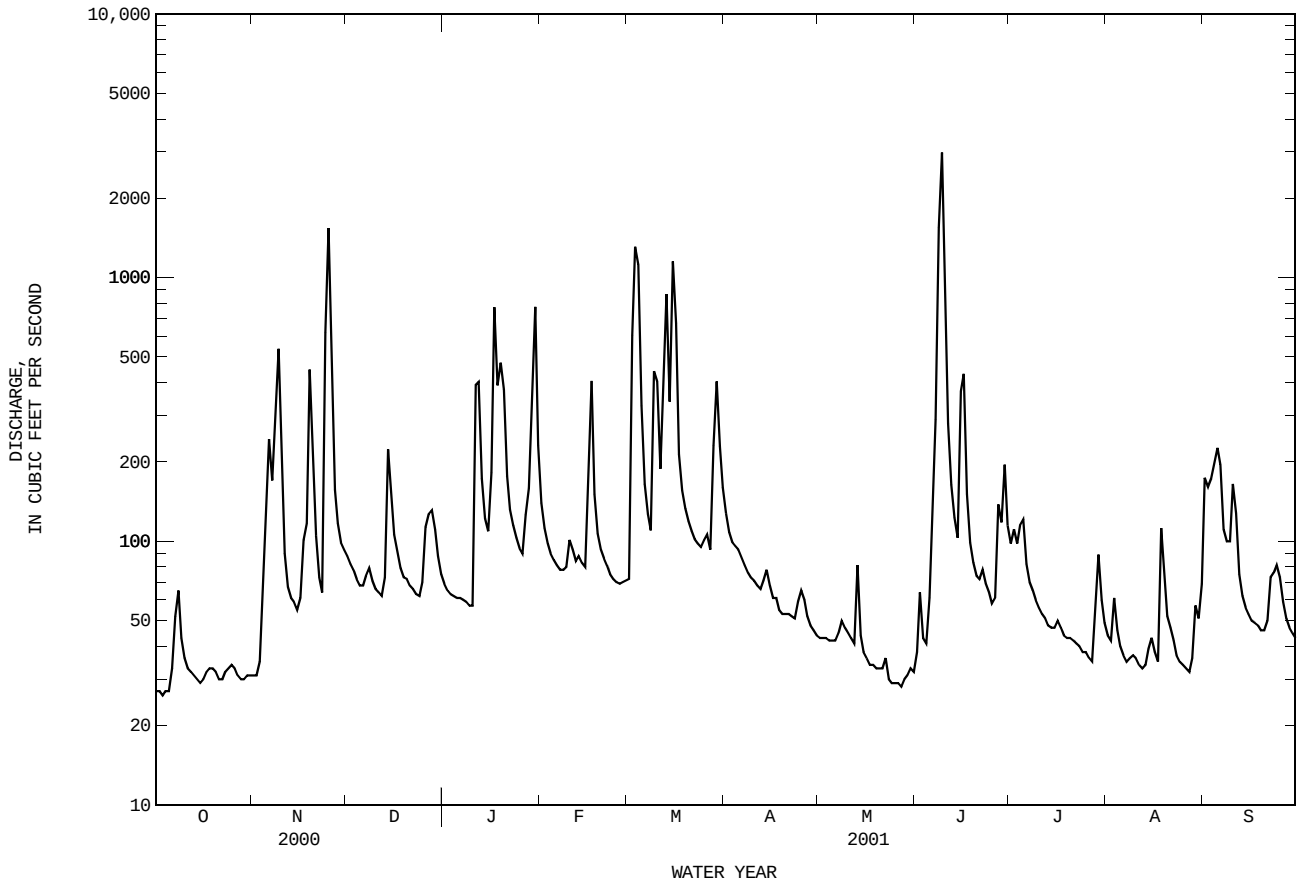
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2001, BY WATER YEAR (WY)

MEAN	68.0	112	165	193	209	177	166	150	114	70.8	55.3	71.8
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1952 - 2001	
ANNUAL TOTAL	27836		48579			
ANNUAL MEAN	76.1		133		129	
HIGHEST ANNUAL MEAN					266	1999
LOWEST ANNUAL MEAN					46.1	1965
HIGHEST DAILY MEAN	1540	Nov 25	2980	Jun 9	9720	Feb 12 1984
LOWEST DAILY MEAN	17	Sep 6	26	Oct 3	10	Jul 7 1971
ANNUAL SEVEN-DAY MINIMUM	18	Sep 2	29	May 23	11	Jul 17 1971
MAXIMUM PEAK FLOW			4170	Jun 9	20200	Apr 29 1953
MAXIMUM PEAK STAGE			16.22	Jun 9	19.45	Apr 29 1953
ANNUAL RUNOFF (AC-FT)	55210		96360		93470	
10 PERCENT EXCEEDS	110		236		225	
50 PERCENT EXCEEDS	55		69		64	
90 PERCENT EXCEEDS	25		33		28	

e Estimated

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: Sept. 1945 to Sept. 1946, Oct. 1947 to Sept. 1998. Biochemical data: Feb. 1968 to Sept. 1998. Radiochemical data: Oct. 1969 to Sept. 1995. Pesticide data: Jan. 1968 to May 1982. Sediment data: Oct. 1974 to Sept. 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 except those for extimated daily discharges, which are fair. Since water year 1960, at least 10% of contributing drainage area has been regulated.

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, Sept. 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 June 1884 (adjusted to present site and datum on basis of slope of flood of June 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4120	e550	11100	9640	15600	15200	29900	5150	2980	7210	4430	9090
2	3650	e500	11200	7860	16400	15600	28900	5020	3830	7450	4950	12000
3	2000	668	11000	6410	16700	16100	27600	4850	3830	7180	5620	11900
4	1040	860	10600	7360	16300	16700	26400	5130	2590	6550	5960	10600
5	781	837	10200	8740	15700	19300	25200	5440	1890	6860	6170	9050
6	720	1170	9900	10000	15200	29400	24300	5670	2480	7270	6160	7540
7	671	1200	9450	11200	14700	44300	23800	5510	3530	6620	5610	7350
8	685	1230	9040	12100	14400	59300	22900	4520	6650	6280	4060	8480
9	1110	1900	8880	12600	14400	75400	21300	3360	14400	6380	4550	10500
10	927	2920	8960	12900	14300	82500	19800	4120	21000	6150	5290	12700
11	654	3970	8800	13600	14300	82600	19000	4980	25700	4910	5570	14100
12	638	3420	7580	13800	14300	78100	18300	5430	26400	5160	5730	14600
13	703	2690	6390	14300	14300	70400	17300	5470	22100	5710	5660	15100
14	673	1800	6040	14800	14400	62500	16500	5320	17500	5930	4890	15400
15	713	1320	6800	15500	14400	57400	15800	4560	13900	6040	3630	15500
16	810	1420	7740	16300	14600	54400	15400	3390	10800	6010	4410	15400
17	774	1340	7440	17000	14500	54200	14900	4060	9180	5560	5270	15200
18	567	1660	6750	17000	14700	56400	14700	4550	8270	4370	5580	15000
19	591	2500	6220	18100	15200	57800	14500	4620	6650	4790	5700	14000
20	671	3690	5750	19700	15600	57700	14500	4550	5600	5240	5670	12300
21	621	4490	5490	21100	15700	56800	14400	4220	5570	5210	5020	10700
22	664	4370	5240	21900	15700	55600	14100	3390	5790	5420	3540	9640
23	740	3690	5030	21700	15500	54500	13600	e2720	5840	5620	4320	9620
24	720	3050	5340	20200	15400	53400	12700	e3470	5970	5200	5150	10700
25	e520	3780	4950	18300	15300	51900	11100	4050	6290	3760	5500	11800
26	e500	6580	3060	16900	15200	46900	9530	4260	5990	4390	5610	12500
27	614	9010	2870	15800	15200	39600	7980	4380	4660	5220	5680	12900
28	599	10600	4820	15000	15100	37000	6790	4250	5080	5560	5250	13100
29	662	11200	6370	14900	---	33100	5990	3490	5900	5700	3820	13200
30	761	11000	7840	15000	---	30900	5490	2200	6610	5780	4880	13100
31	711	---	9210	15100	---	30200	---	1740	---	5540	6330	---
TOTAL	29610	103415	230060	454810	423100	1495200	512680	133870	266980	179070	160010	363070
MEAN	955	3447	7421	14670	15110	48230	17090	4318	8899	5776	5162	12100
MAX	4120	11200	11200	21900	16700	82600	29900	5670	26400	7450	6330	15500
MIN	500	500	2870	6410	14300	15200	5490	1740	1890	3760	3540	7350
AC-FT	58730	205100	456300	902100	839200	2966000	1017000	265500	529600	355200	317400	720100

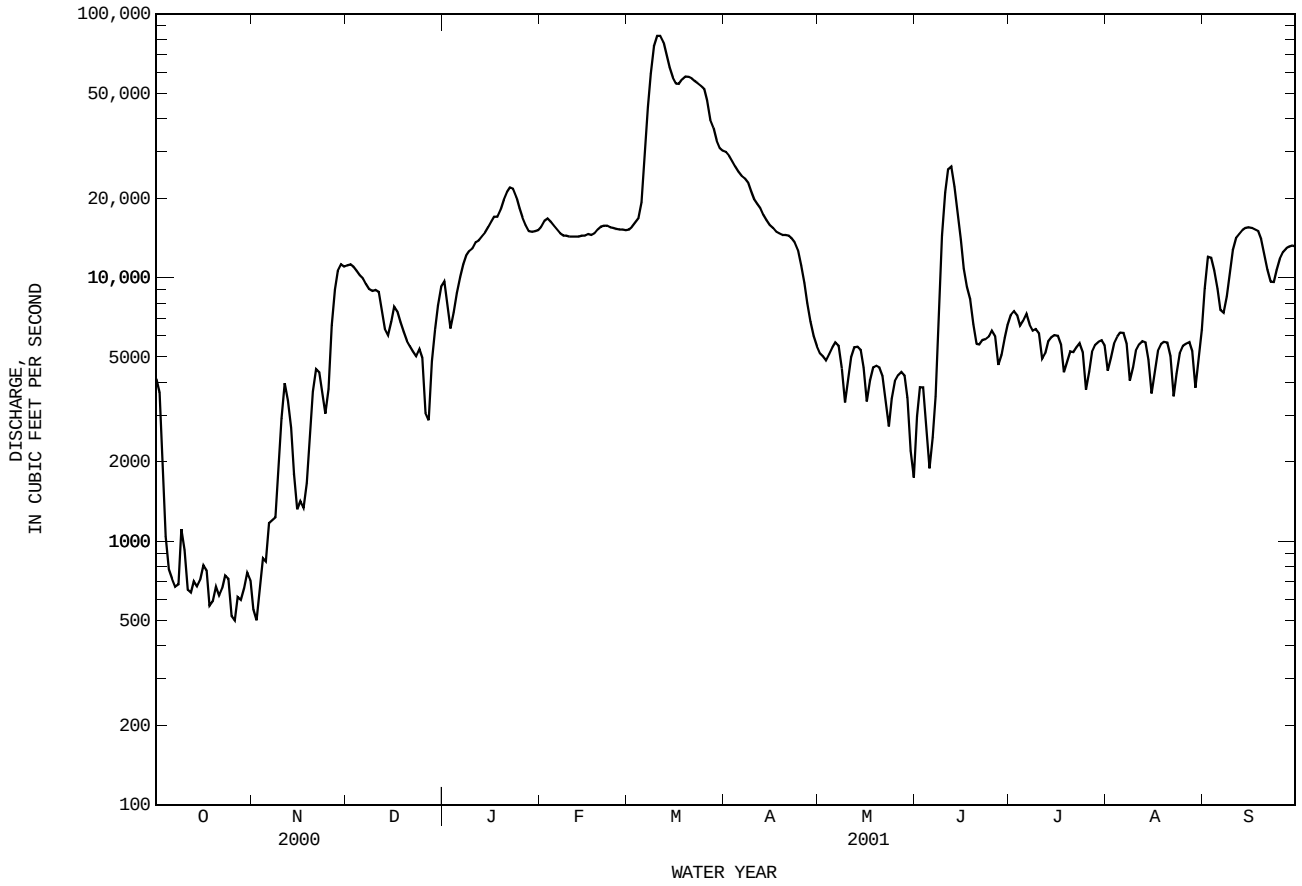
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001z, BY WATER YEAR (WY)

MEAN	2363	3509	8317	12170	13110	14020	11340	9914	7634	5744	3967	4090
MAX	9591	14910	22070	35570	33170	48230	33240	32980	26240	42320	7982	12530
(WY)	1995	1995	1983	1961	1999	2001	1969	1966	1989	1989	1975	1998
MIN	292	327	1366	1237	1344	1679	1030	1395	1383	805	382	333
(WY)	1968	1968	1981	2000	2000	2000	1971	1996	1963	1967	1967	1967

08030500 Sabine River near Ruliff, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1960 - 2001z	
ANNUAL TOTAL	1199695		4351875			
ANNUAL MEAN	3278		11920		7991	
HIGHEST ANNUAL MEAN					14210	1975
LOWEST ANNUAL MEAN					1959	1967
HIGHEST DAILY MEAN	11200	Nov 29	82600	Mar 11	108000	Jul 6 1989
LOWEST DAILY MEAN	500	Oct 26	e500	Oct 26	278	Oct 28 1967
ANNUAL SEVEN-DAY MINIMUM	622	Oct 23	622	Oct 23	282	Oct 9 1967
MAXIMUM PEAK FLOW			86300	Mar 11	109000	Jul 6 1989
MAXIMUM PEAK STAGE			27.84	Mar 11	29.15	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	2380000		8632000		5789000	
10 PERCENT EXCEEDS	6540		22400		18600	
50 PERCENT EXCEEDS	2330		6790		4680	
90 PERCENT EXCEEDS	1070		1280		1160	

e Estimated
z Period of regulated streamflow.



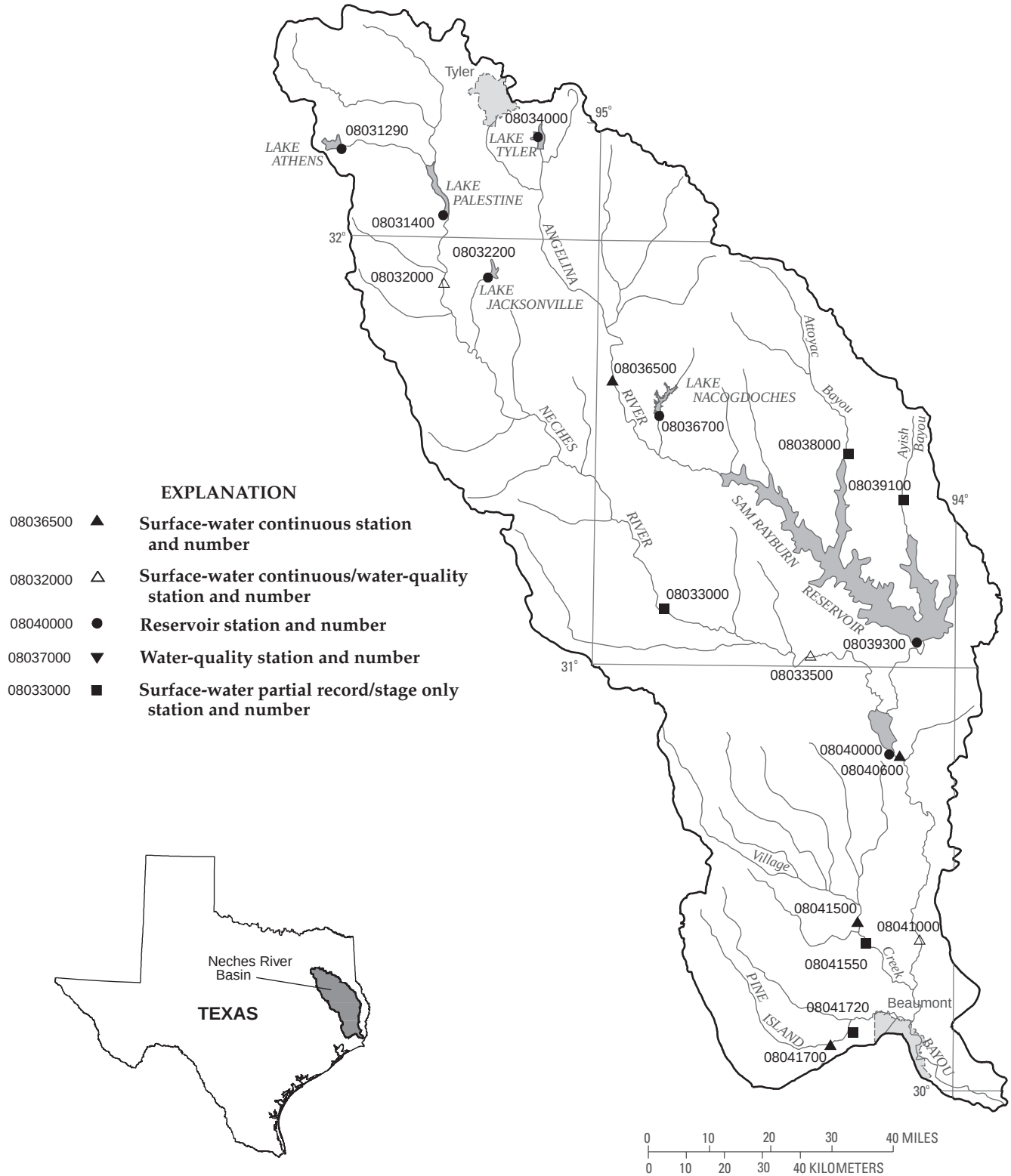


Figure 10.--Map showing location of gaging stations in the Neches River Basin

08031290	Lake Athens near Athens, TX	392
08031400	Lake Palestine near Frankston, TX	394
08032000	Neches River near Neches, TX	396
08032200	Lake Jacksonville near Jacksonville, TX	400
08033000	Neches River near Diboll, TX	402
08033500	Neches River near Rockland, TX	404
08034000	Lake Tyler near Whitehouse, TX	408
08036500	Angelina River near Alto, TX	410
08036700	Lake Nacogdoches near Nacogdoches, TX	412
08038000	Attoyac Bayou near Chireno, TX	414
08039100	Ayish Bayou near San Augustine, TX	416
08039300	Sam Rayburn Reservoir near Jasper, TX	418
08040000	B.A. Steinhagen Lake at Town Bluff, TX	420
08040600	Neches River at Town Bluff, TX	422
08041000	Neches River near Evadale, TX	424
08041500	Village Creek near Kountze, TX	428
08041550	Village Creek at State Highway 327 near Silsbee, TX	439
08041700	Pine Island Bayou near Sour Lake, TX	430
08041720	Pine Island Bayou at State Highway 105 near Sour Lake, TX	439

08031290 Lake Athens near Athens, TX

LOCATION.--Lat 32°12'15", long 95°43'30", Henderson County, Hydrologic Unit 12020001, at upstream side of dam on Flat Creek, 5 mi downstream from Underwood Lake, 8 mi east of Athens, and 18 mi upstream from Neches River.

DRAINAGE AREA.--21.6 mi^2.

PERIOD OF RECORD.--Oct. 1967 to Sept. 1983, Apr. 1999 to current year.
Water-quality records.--Chemical data: Oct. 1975 to Sept. 1983.

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

REMARKS.--Records good except those for estimated daily contents, which are fair. The lake is formed by a rolled earthfill dam 3,000 ft long. Deliberate impoundment began Nov. 1, 1962, and the dam was completed in May 1963. The emergency spillway is an uncontrolled 300-foot-wide channel cut through natural ground at the left end of the dam. The service spillway is an uncontrolled 6- x 6-foot square drop inlet that is connected to a concrete conduit of the same size that extends through the dam. A 4.0- by 5.5-foot inlet box with slide valve that connects to an 18-inch diameter concrete conduit extends through the dam and serves as the low-flow service outlet. Water is used for municipal supply by the city of Athens. Conservation pool storage is 29,440 acre-ft. Data regarding the dam and lake are given in the following table:

	Elevation (feet)
Top of dam	453.0
Crest of spillway	446.0
Crest of drop inlet (top of conservation pool)	440.0
Normal operating level	440.0
Lowest gated outlet (invert)	396.5

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 36,500 acre-ft, May 10, 1968, elevation, 442.37 ft; minimum contents since operating level was reached (May 7, 1968), 25,180 acre-ft, Oct. 15, 2000, elevation, 437.48 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,630 acre-ft, Feb. 16, Mar. 12, elevation, 440.95 ft; minimum contents, 25,180 acre-ft, Oct. 15, elevation, 437.48 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

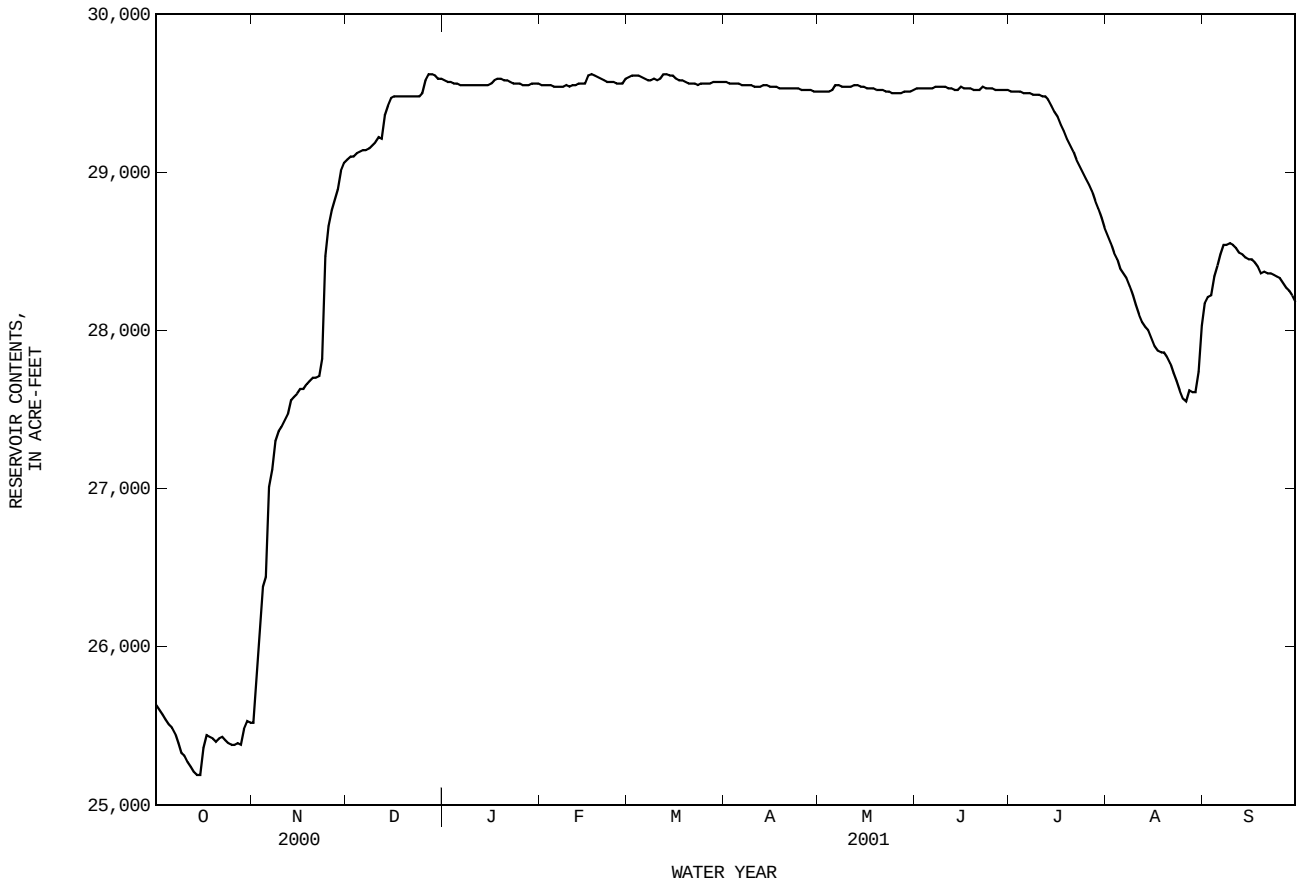
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25630	25520	29080	29580	29550	29600	29570	29510	29530	29510	28600	28170
2	25600	25770	29100	29570	29550	29610	29560	29510	29530	29510	28550	28210
3	25570	26060	29100	29570	29550	29610	29560	29510	29530	29510	28490	28220
4	25540	26380	29120	29560	29550	29610	29560	29510	29530	29510	28450	28340
5	25510	26440	29130	29560	29540	29600	29560	29520	29530	29500	28390	28410
6	25490	27010	29140	29550	29540	29590	29550	29550	29530	29500	28360	28480
7	25450	27120	29140	29550	29540	29580	29550	29550	29540	29500	28330	28540
8	25390	27300	29150	29550	29540	29580	29550	29540	29540	29490	28280	28540
9	25330	27360	29170	29550	29550	29590	29550	29540	29540	29490	28220	28550
10	25310	27390	29190	29550	29540	29580	29540	29540	29540	29490	28160	28540
11	25270	27430	29220	29550	29550	29590	29540	29540	29530	29480	28100	28520
12	25240	27470	29210	29550	29550	29620	29540	29550	29530	29480	28050	28490
13	25210	27560	29360	29550	29560	29620	29550	29550	29520	29460	28020	28480
14	25190	27580	29420	29550	29560	29610	29550	29540	29520	29420	28000	28460
15	25190	27600	29470	29550	29560	29610	29540	29540	29540	29380	27950	28450
16	25360	27630	29480	29560	29610	29590	29540	29530	29530	29350	27900	28450
17	25440	27630	29480	29580	29620	29580	29540	29530	29530	29300	27870	28430
18	25430	27660	29480	29590	29610	29580	29530	29530	29530	29260	27860	28400
19	25420	27680	29480	29590	29600	29570	29530	29520	29520	29210	27860	28360
20	25400	27700	29480	29580	29590	29560	29530	29520	29520	29170	27830	28370
21	25420	27700	29480	29580	29580	29560	29530	29520	29520	29130	27790	28360
22	25430	27710	29480	29570	29570	29560	29530	29510	29540	29080	27730	e28360
23	25410	27820	29480	29560	29570	29550	29530	29510	29530	29040	27680	e28350
24	25390	28470	29480	29560	29570	29560	29530	29500	29530	29000	27620	e28340
25	25380	28660	29500	29560	29560	29560	29520	29500	29530	28960	27570	e28330
26	25380	28760	29580	29550	29560	29560	29520	29500	29520	28920	27550	28300
27	25390	28830	29620	29550	29560	29560	29520	29500	29520	28880	27620	28270
28	25380	28890	29620	29550	29590	29570	29520	29510	29520	28820	27610	28250
29	25480	29010	29610	29560	---	29570	29510	29510	29520	28770	27610	28220
30	25530	29060	29590	29560	---	29570	29510	29510	29520	28710	27740	28180
31	25520	---	29590	29560	---	29570	---	29520	---	28650	28030	---
MEAN	25410	27570	29370	29560	29560	29580	29540	29520	29530	29240	27990	28380
MAX	25630	29060	29620	29590	29620	29620	29570	29550	29540	29510	28600	28550
MIN	25190	25520	29080	29550	29540	29550	29510	29500	29520	28650	27550	28170
(+)	437.70	439.77	440.69	440.50	440.70	440.59	440.23	440.29	440.25	439.54	439.19	439.28
(@)	-130	+3540	+530	-30	+30	-20	-60	+10	0	-870	-620	+150

CAL YR 2000 MAX 29620 MIN 25190 (@) +3160
WTR YR 2001 MAX 29620 MIN 25190 (@) +2530

e Estimated

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

08031290 Lake Athens near Athens, TX--Continued



08031400 Lake Palestine near Frankston, TX

LOCATION.--Lat 32°03'12", long 95°26'12", Anderson-Cherokee County line, Hydrologic Unit 12020001, in outlet tower near right bank, 140 ft upstream from Blackburn Crossing Dam on Neches River, 5 mi east of Frankston, 21 mi upstream from gage (station 08032000), and at mile 354.0.

DRAINAGE AREA.--839 mi^2.

PERIOD OF RECORD.--Feb. 1962 to June 1995, May 1999 to current year.
Water-quality records.--Chemical data: Oct. 1976 to Sept. 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Sept. 20, 1962, non-recording gage read once daily. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. The lake is formed by a rolled earthfill dam with a 500-foot-wide uncontrolled spillway near left end of dam. Deliberate impoundment began May 1, 1962. Enlargement of the lake began Sept. 26, 1969, and was completed on Mar. 3, 1971. The outlet works consist of two 5- x 7-foot gates located in concrete tower near center of dam and connected to an 8.5-foot-diameter concrete conduit through the dam. The low-flow outlet consists of two 3-foot iron pipes connected to the tower structure for low-flow releases. The dam is owned by the Upper Neches River Municipal Water Authority. The water is used for municipal and industrial purposes in the Palestine area. The diversion point is downstream from gage (station 08032000). There are no large diversions above station. Conservation pool storage is 411,300 acre-ft. Data regarding the dam and lake are given in the following table:

	Elevation (feet)
Top of dam	364.0
Design flood	355.3
Crest of spillway (top of conservation pool)	345.0
Lowest gated outlet (invert)	298.0

COOPERATION.--The capacity table, furnished by the Upper Neches River Municipal Water Authority, is based on Geological Survey topographic maps dated 1946 and 1948-49.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 531,100 acre-ft, May 19, 1989, elevation, 349.31 ft; minimum since first appreciable storage, 11,450 acre-ft Nov. 28, 1970, elevation 310.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 479,500 acre-ft, Mar. 4, elevation, 347.52 ft; minimum contents, 345,500 acre-ft, Oct. 15, elevation, 342.26 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

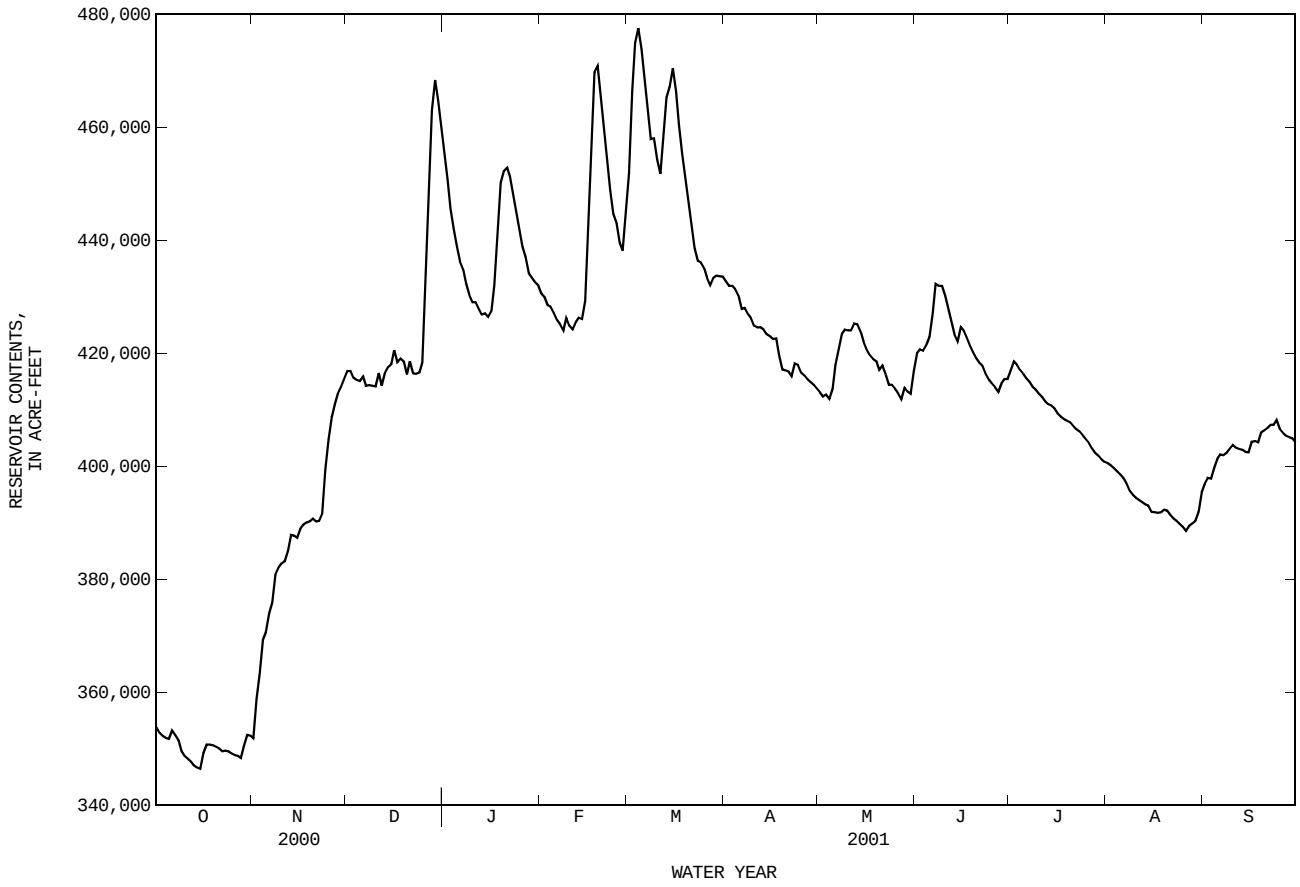
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	353800	351800	416800	455300	430500	451900	432700	413000	419900	417000	400500	396800
2	352800	358800	416800	450700	429900	466400	431900	412300	420600	418500	400100	397900
3	352200	363300	415600	445600	428400	474900	431900	412600	420400	417900	399600	397800
4	351900	369300	415200	442000	428200	477500	431300	411900	421400	417000	399000	399700
5	351700	370600	415000	438900	427100	473800	430200	413600	422900	416300	398500	401300
6	353200	373800	415800	436200	425900	468000	427800	417900	427000	415500	397900	402000
7	352400	375800	414200	434800	425100	462400	428000	420600	432200	414900	396900	401900
8	351500	380800	414300	432300	424000	457900	426900	423300	431900	414000	395600	402300
9	349600	382000	414200	430300	426200	458000	426200	424100	431900	413500	394900	403100
10	348700	382700	414100	429000	424800	454200	424800	424000	430100	412800	394400	403700
11	348200	383100	416400	429000	424200	451700	424500	424000	428100	412200	394000	403200
12	347700	384900	414200	427900	425400	459300	424600	425200	425700	411400	393600	403000
13	347000	387800	416400	426800	426200	465200	424200	425100	423300	410900	393200	402900
14	346600	387700	417500	427000	426000	467100	423300	423800	422100	410700	393000	402500
15	346400	387300	418000	426400	429200	470400	423000	422000	424600	410200	391900	402400
16	349200	388900	420500	427400	444200	466300	422500	420600	424000	409300	391800	404300
17	350700	389600	418400	432000	456800	460400	422600	419600	422700	408700	391700	404400
18	350700	390000	419000	441400	469700	455300	419600	418900	421300	408300	391800	404200
19	350600	390200	418500	450100	470800	450900	417100	418500	420100	408000	392300	405900
20	350300	390700	416200	452200	465900	446300	416900	417000	419000	407700	392100	406300
21	350000	390200	418500	452800	460500	442000	416700	417700	418300	407000	391300	406700
22	349500	390300	416400	451200	455000	438500	415900	416200	417700	406500	390700	407300
23	349600	391500	416300	448200	448900	436300	418100	414400	416300	406100	390300	407300
24	349500	399400	416500	445100	444600	436000	417900	414400	415300	405400	389700	408100
25	349100	404700	418300	441700	443000	435000	416500	413700	414600	404700	389200	406500
26	348800	408600	431100	438800	439500	433300	416000	412900	413900	404000	388500	405800
27	348700	411000	450100	436900	438100	432000	415400	411800	413100	403100	389400	405300
28	348300	e412800	463000	434100	444300	433300	414900	413800	414600	402300	389800	405100
29	350500	e414000	468300	433300	---	433700	414400	413200	415400	401800	390300	404900
30	352400	415400	464900	432500	---	433600	413700	412800	415400	401100	391900	404200
31	352300	---	460000	432000	---	433500	---	416800	---	400700	395400	---
MAX	353800	415400	468300	455300	470800	477500	432700	425200	432200	418500	400500	408100
MIN	346400	351800	414100	426400	424000	432000	413700	411800	413100	400700	388500	396800
(+)	342.56	345.14	346.82	345.77	346.24	345.83	345.07	345.19	345.14	344.56	344.35	344.70
(@)	-2000	+63100	+44600	-28000	+12300	-10800	-19800	+3100	-1400	-14700	-5300	+8800

CAL YR 2000 MAX 468300 MIN 346400 (@) +106200
WTR YR 2001 MAX 477500 MIN 346400 (@) +49900

e Estimated

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

08031400 Lake Palestine near Frankston, TX--Continued



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.--Records fair except those for estimated daily discharges, which are poor. Since water year 1962, at least 10% of the contributing drainage area has been regulated. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	78	499	5940	1730	3340	1850	318	552	615	98	198
2	97	100	527	5270	1620	4470	1790	290	673	1100	97	363
3	96	138	558	4560	1500	6420	1730	258	675	1200	97	563
4	95	368	473	3870	1390	8880	1660	245	660	1030	97	385
5	93	373	405	3260	1280	9780	1600	247	661	777	96	573
6	e120	373	375	2770	1200	9030	1530	551	748	584	94	477
7	e110	411	406	2390	1120	7810	1430	908	1420	478	93	310
8	e105	533	363	2090	1040	6790	1300	883	3600	413	93	239
9	e100	565	317	1880	990	7050	1210	874	3800	362	92	187
10	e99	462	303	1690	986	6780	1120	888	2950	322	91	178
11	98	367	291	1590	1010	6020	1050	877	2320	287	91	166
12	98	304	405	1500	1020	5310	986	861	1890	254	89	144
13	98	405	507	1400	1070	5460	962	900	1590	223	89	125
14	98	409	703	1310	1090	6860	949	927	1330	199	91	116
15	99	290	722	1210	1090	7930	908	897	1170	186	89	111
16	112	227	740	1140	1300	8250	861	811	1170	171	88	127
17	130	222	782	1200	2050	7600	831	704	1190	155	90	149
18	102	200	726	1580	3870	6460	816	614	1130	144	91	133
19	77	216	667	2560	5200	5480	714	555	1010	136	94	276
20	75	216	610	3900	6220	4710	572	519	869	128	98	449
21	73	184	504	4190	6260	4030	509	452	736	122	93	459
22	77	166	521	4380	5590	3390	488	473	643	120	90	562
23	80	160	433	4400	4970	2840	457	410	596	117	88	436
24	80	695	395	4090	4200	2470	527	312	516	114	87	403
25	76	1040	444	3600	3470	2260	538	296	438	110	86	394
26	74	860	935	3140	2970	2150	480	264	385	108	86	286
27	73	634	1980	2720	2700	2050	438	245	341	107	86	232
28	74	508	4310	2380	2920	1980	404	240	321	105	91	203
29	74	480	5530	2150	---	1950	374	320	483	106	111	188
30	75	519	6440	1980	---	1930	346	284	451	104	132	182
31	76	---	6470	1830	---	1900	---	274	---	101	208	---
TOTAL	2830	11503	38341	85970	69856	161380	28430	16697	34318	9978	3016	8614
MEAN	91.3	383	1237	2773	2495	5206	948	539	1144	322	97.3	287
MAX	130	1040	6470	5940	6260	9780	1850	927	3800	1200	208	573
MIN	73	78	291	1140	986	1900	346	240	321	101	86	111
AC-FT	5610	22820	76050	170500	138600	320100	56390	33120	68070	19790	5980	17090

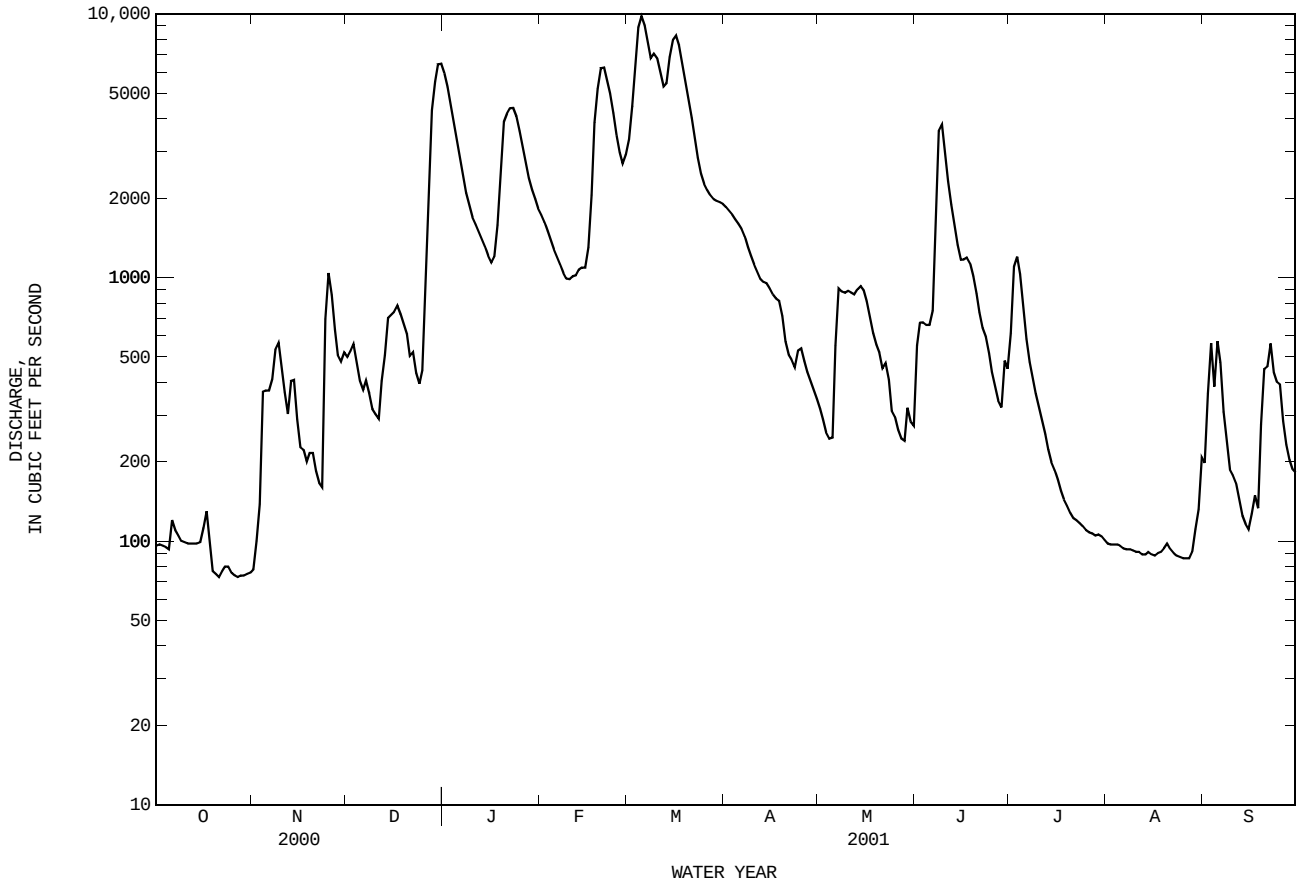
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001z, BY WATER YEAR (WY)

MEAN	216	419	783	941	1115	1332	1193	1243	786	223	118	194
MAX	2064	2559	3344	4389	3097	5206	4162	5289	4129	1076	617	1313
(WY)	1974	1975	1992	1998	1992	2001	1966	1968	1973	1976	1979	1973
MIN	12.8	16.0	82.1	102	180	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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1962 - 2001z	
ANNUAL TOTAL	167206		470933			
ANNUAL MEAN	457		1290		711	
HIGHEST ANNUAL MEAN					1358	1995
LOWEST ANNUAL MEAN					106	1972
HIGHEST DAILY MEAN	6470	Dec 31	9780	Mar 5	26200	May 13 1968
LOWEST DAILY MEAN	73	Oct 21	73	Oct 21	3.3	Nov 1 1963
ANNUAL SEVEN-DAY MINIMUM	75	Oct 25	75	Oct 25	3.4	Oct 29 1963
MAXIMUM PEAK FLOW			9970	Mar 5	26900	May 13 1968
MAXIMUM PEAK STAGE			16.97	Mar 5	19.46	May 13 1968
ANNUAL RUNOFF (AC-FT)	331700		934100		515300	
10 PERCENT EXCEEDS	1020		4050		1760	
50 PERCENT EXCEEDS	176		516		258	
90 PERCENT EXCEEDS	97		94		58	

e Estimated
z Period of regulated streamflow.



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 Sept. 1991.
WATER TEMPERATURE: Dec. 1983 to Sept. 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1974-88): Maximum, 1,190 microsiemens/cm, Aug. 29, 1976; minimum 65 microsiemens/cm, June 1, 1990.
WATER TEMPERATURE: Maximum, 36.0°C, July 16, 1985; minimum, 0.0°C, Dec. 24, 25, 1989.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
NOV													
28...	0935	575	168	6.7	11.0	8.8	80.0	34.0	24	7.87	3.47	13.3	.994
FEB													
28...	1215	3100	152	7.2	14.0	7.6	73.9	35.5	16	9.11	3.11	12.4	.904
APR													
30...	1205	388	141	6.8	21.0	9.2	103	35.1	11	8.42	3.42	11.2	.821
JUN													
13...	1425	1710	130	6.2	29.5	6.2	81.6	34.0	12	8.31	3.23	9.7	.727
AUG													
07...	1720	96	148	7.5	32.0	5.2	70.5	36.4	14	8.64	3.61	10.9	.786
SEP													
05...	1146	683	121	6.4	25.0	6.8	82.0	25.7	15	5.93	2.65	8.0	.687

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN,AM-MONIA + ORGANIC 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)
NOV													
28...	4.48	10	25.7	21.6	<.2	18.9	102	<.006	.281	E.021	.27	<.060	<.018
FEB													
28...	4.04	20	19.0	18.0	E.1	8.3	86.2	E.003	.051	E.025	.45	<.060	<.018
APR													
30...	3.50	24	16.6	15.8	E.1	10	84.2	E.004	.198	E.025	.48	<.060	<.018
JUN													
13...	3.36	22	14.2	15.0	E.1	7.8	74.9	<.006	E.041	<.040	.41	<.060	<.020
AUG													
07...	3.73	22	14.1	16.9	E.1	9.5	80.8	<.006	.066	E.038	.36	<.060	<.020
SEP													
05...	4.68	11	16.6	14.0	<.2	14.7	73.2	E.007	E.156	E.026	E.49	E.023	E.001

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08032200 Lake Jacksonville near Jacksonville, TX

LOCATION.--Lat 31°54'30", long 95°18'35", Cherokee County, Hydrologic Unit 12020001, on concrete deck of City of Jacksonville pump platform, on Gum Creek, 2.0 mi upstream of Pine Grove, and 5 mi southwest of Jacksonville.

DRAINAGE AREA.--34 mi^2.

PERIOD OF RECORD.--May 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is obtained from Texas Water Development Board Report 126, "Engineering Data on Dams and Reservoirs in Texas", Part I, Nov. 1973. Satellite telemeter at station.

REMARKS.--Records fair. The lake is formed by a rolled earthfill dam 2,700 ft long, including a 350-ft uncontrolled spillway. Deliberate impoundment began in June 1957. The uncontrolled spillway is an excavated channel cut through natural ground and located at the right end of the dam. The low-flow outlet consists of an 18-inch concrete pressure pipe through the dam with valve on the upstream side. The dam is owned by the city of Jacksonville. The water is used for municipal and recreational purposes in the Jacksonville area. There are no known diversions. In 2000, levels were used to determine elevations from sea level datum. The reference elevation was found to differ from the TWDB published value by -0.52 ft. Conservation pool storage is 30,500 acre-ft. Data regarding the dam and lake use the datum from TWDB Report 126 and are given in the following table:

	Elevation (feet)
Top of dam	438.0
Crest of uncontrolled spillway	431.0
Top of conservation pool	422.0
Lowest gated outlet (invert)	372.0

COOPERATION.--The capacity table was obtained from Texas Water Development Board Report 126, "Engineering Data on Dams and Reservoirs in Texas", Part I, Nov. 1973.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,800 acre-ft, June 8, 2001 (elevation, 423.43 ft); minimum contents, 26,610 acre-ft, Sept. 30, 2000 (elevation, 418.84 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 32,800 acre-ft, June 8, elevation, 423.43 ft; minimum contents, 26,730 acre-ft, Oct. 19, 20, 21, 31, Nov. 1, elevation, 418.94 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

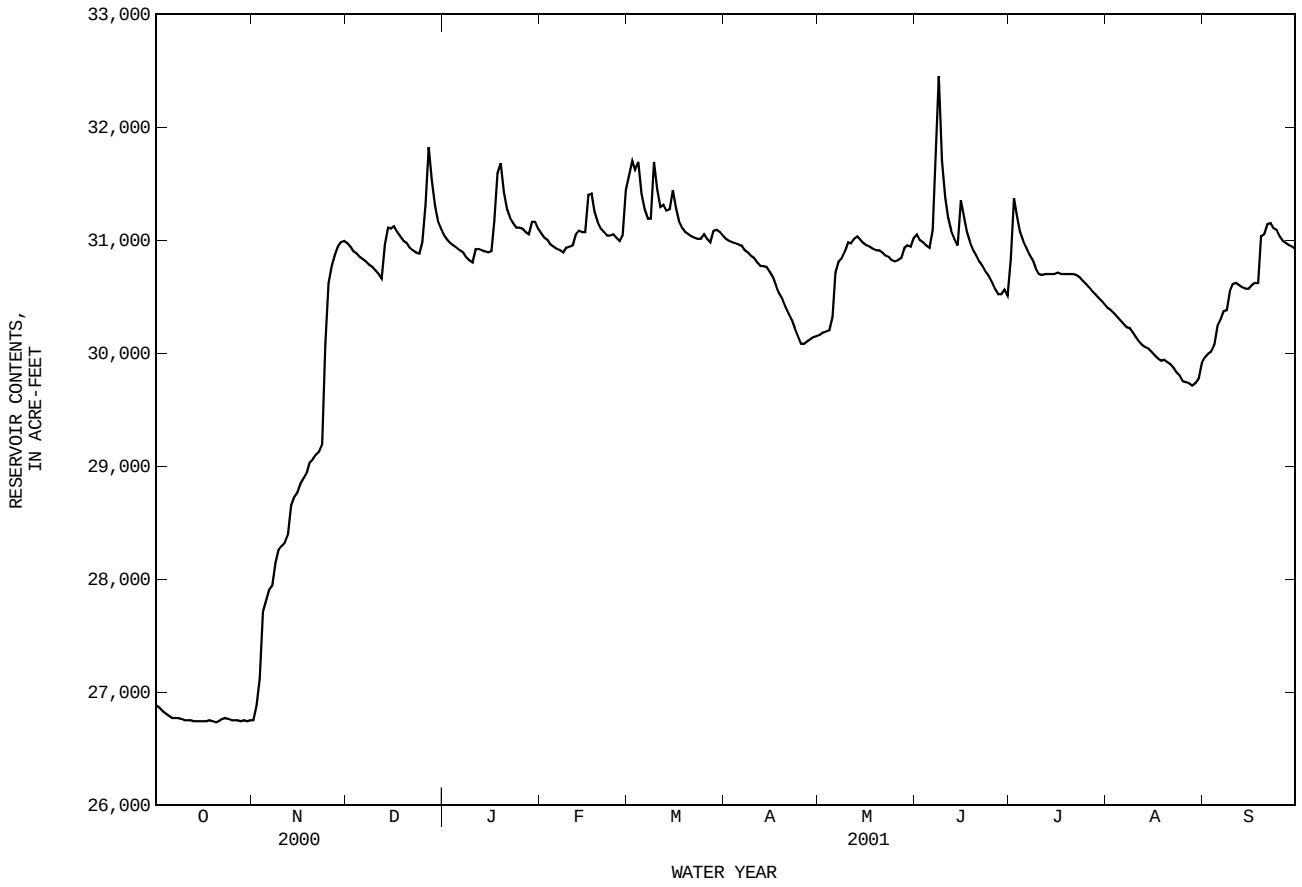
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26880	26750	30970	31040	31060	31570	31010	30160	31050	30830	30400	29960
2	26860	26880	30940	31000	31020	31700	30990	30180	31000	31370	30380	29990
3	26830	27120	30900	30970	31000	31620	30980	30190	30980	31200	30350	30010
4	26810	27710	30880	30950	30960	31690	30970	30200	30950	31070	30320	30070
5	26790	27800	30850	30930	30940	31410	30960	30320	30930	30990	30290	30240
6	e26770	27900	30830	30910	30920	31270	30950	30710	31090	30930	30260	30290
7	e26770	27940	30810	30890	30910	31190	30910	30810	31790	30870	30230	30370
8	e26770	28140	30780	30850	30890	31190	30890	30840	32450	30820	30220	30380
9	e26760	28260	30760	30820	30930	31690	30860	30900	31700	30750	30180	30550
10	e26750	28290	30730	30800	30940	31450	30840	30980	31380	30700	30140	30610
11	e26750	28320	30700	30920	30950	31290	30800	30970	31200	30690	30100	30620
12	e26750	28390	30660	30920	31050	31310	30770	31010	31080	30700	30070	30600
13	e26740	28650	30960	30910	31080	31260	30770	31030	31010	30700	30050	30580
14	e26740	28720	31110	30900	31070	31270	30760	31000	30950	30700	30040	30570
15	e26740	28760	31100	30890	31070	31440	30720	30970	31350	30700	30010	30570
16	e26740	28840	31120	30900	31400	31280	30670	30950	31220	30710	29980	30600
17	e26740	28890	31070	31170	31410	31170	30590	30940	31070	30700	29950	30620
18	26750	28940	31030	31590	31250	31110	30530	30920	30980	30700	29930	30620
19	26740	29030	30990	31680	31160	31070	30480	30910	30910	30700	29940	31030
20	26730	29060	30970	31420	31100	31050	30410	30910	30860	30700	29920	31050
21	26740	29100	30930	31270	31070	31030	30350	30890	30810	30700	29900	31140
22	26760	29130	30910	31200	31040	31020	30300	30860	30770	30690	29870	31150
23	26770	29190	30890	31150	31040	31010	30220	30850	30720	30670	29830	31100
24	26760	30080	30880	31110	31050	31010	30150	30820	30680	30640	29800	31090
25	26750	30620	30980	31110	31020	31050	30080	30810	30630	30610	e29750	31030
26	26750	30770	31310	31100	30990	31010	30080	30820	30570	30580	e29740	30990
27	26750	30870	31820	31070	31040	30980	30100	30840	30520	30550	e29730	30970
28	26740	30940	31520	31050	31440	31080	30120	30930	30520	30520	e29710	30950
29	26750	30980	31300	31160	---	31090	30140	30950	30560	30490	29730	30940
30	26740	30990	31170	31160	---	31070	30150	30940	30510	30460	29770	30920
31	26750	---	31100	31100	---	31040	---	31020	---	30430	29910	---
MAX	26880	30990	31820	31680	31440	31700	31010	31030	32450	31370	30400	31150
MIN	26730	26750	30660	30800	30890	30980	30080	30160	30510	30430	29710	29960
(+)	418.96	422.14	422.21	422.22	422.46	422.17	421.53	422.16	421.80	421.74	421.36	422.09
(@)	+140	+4240	+110	0	+340	-400	-890	+870	-510	-80	-520	+1010

CAL YR 2000 MAX 31510 MIN 26470 (@) +3060
WTR YR 2001 MAX 32450 MIN 26730 (@) +4310

e Estimated

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

08032200 Lake Jacksonville near Jacksonville, TX--Continued



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 Sept. 1925, Mar. 1939 to Sept. 1985. Monthly discharge only for some periods, published in WSP 1312. Oct. 1985 to Sept. 1989 (annual maximum), Oct. 1989 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical data: Oct. 1969 to Sept. 1981. Biochemical data: Oct. 1969 to Sept. 1981. Specific conductance: Oct. 1969 to Sept. 1981. Water temperature: Oct. 1969 to Sept. 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 July 10, 1925, nonrecording gage at site 630 ft upstream; July 10 to Aug. 31, 1925, and Mar. 30, 1939, to Sept. 24, 1943, nonrecording gage at site 500 ft upstream; Sept. 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.

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)
Dec. 28	1900	9,530	14.32	Mar. 3	2200	20,400	15.86
Jan. 20	0200	12,000	14.73	June 9	1200	26,400	16.61

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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.--July 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 Sept. 30, 1975, recording gage at present site at datum 3.00 ft higher. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1962, at least 10% of contributing drainage area has been regulated.

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 Sept. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	107	4650	9930	8800	4700	9640	1110	693	2470	255	730
2	112	128	4700	9900	9040	5800	9610	1050	746	1830	244	815
3	110	153	4630	9420	9260	7900	9350	989	754	1640	223	1310
4	106	376	4650	8640	9210	11400	8910	927	758	1700	218	1680
5	103	1420	4640	7710	8890	16000	8340	889	782	1870	208	1880
6	150	2430	4540	6800	8370	18900	7720	851	1340	1880	198	1800
7	129	3030	4370	5910	7730	20100	7040	834	2480	1720	182	1670
8	109	3480	4140	5130	7020	20400	6270	838	7370	1620	180	1480
9	100	4200	3750	4680	6290	21100	5500	1040	10400	1600	247	1900
10	97	4780	3000	4640	5660	21400	4930	1470	14500	1610	221	2070
11	96	5010	2170	5450	5160	21900	4550	1600	22000	1630	195	1820
12	94	5120	1650	5980	4920	22100	4240	1540	25900	1620	172	1860
13	92	4940	1500	6310	4720	21900	4020	1420	26400	1550	164	1920
14	92	4190	1900	6660	4520	21700	3980	1350	24500	1370	163	2030
15	93	3000	2890	6880	4310	22200	3850	1350	22800	1110	155	2110
16	94	2310	3540	7040	4100	22100	3640	1360	20800	901	147	2140
17	100	2120	3440	7380	4150	22600	3370	1350	18800	757	393	1950
18	104	2340	3530	7990	4530	22100	3070	1340	17400	637	209	1430
19	105	3010	3740	9120	4530	20800	2800	1340	15800	560	180	946
20	108	3600	3910	9830	4480	19200	2560	1340	14100	511	163	712
21	122	3520	3980	11200	4400	17600	2350	1330	12300	471	141	592
22	146	3440	3910	12200	4270	15800	2180	1300	10500	443	132	762
23	186	3390	3650	12500	4130	13900	2020	1250	8980	413	118	1110
24	207	4590	3530	12400	4000	12300	1900	1180	7610	380	113	1780
25	204	4990	4800	12000	3890	11100	1780	1080	6400	354	111	1950
26	188	5020	5690	11200	3860	10300	1680	970	5410	321	110	1790
27	165	4850	6390	10400	4080	9590	1570	878	4730	303	137	1710
28	142	4710	6890	9500	4330	9450	1430	821	4200	308	263	e1770
29	123	4590	7460	9120	---	9340	1300	769	3750	287	278	e1800
30	110	4480	8430	8950	---	9380	1190	710	3230	266	529	e1740
31	106	---	9420	8750	---	9540	---	686	---	263	680	---
TOTAL	3808	99324	135490	263620	158650	492600	130790	34962	315433	32395	6729	47257
MEAN	123	3311	4371	8504	5666	15890	4360	1128	10510	1045	217	1575
MAX	207	5120	9420	12500	9260	22600	9640	1600	26400	2470	680	2140
MIN	92	107	1500	4640	3860	4700	1190	686	693	263	110	592
AC-FT	7550	197000	268700	522900	314700	977100	259400	69350	625700	64260	13350	93730

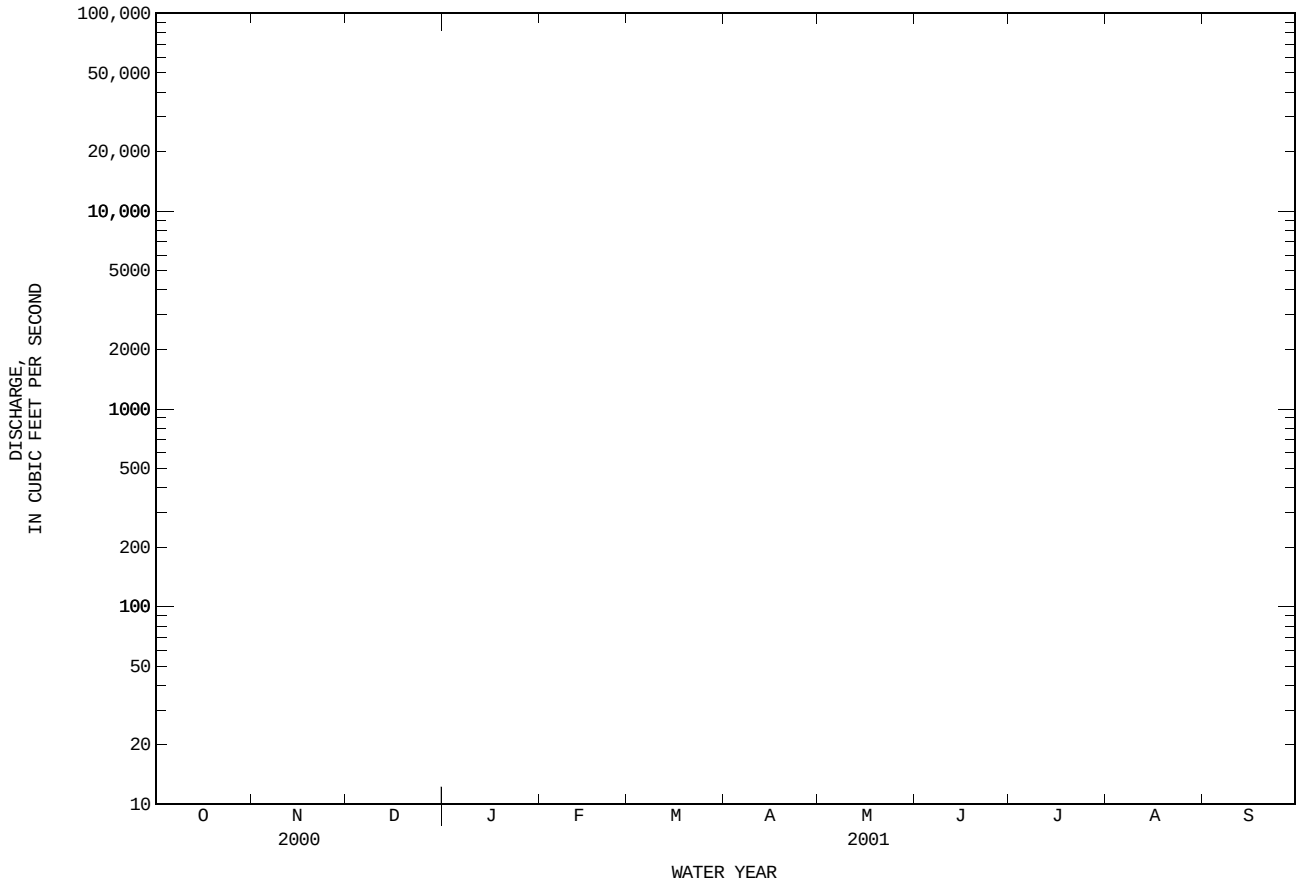
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001z, BY WATER YEAR (WY)

MEAN	788	1310	2541	3801	4009	4304	3677	3721	2783	1122	382	485
MAX	10620	7673	8982	13170	13930	15890	11990	12730	10510	11260	2673	3042
(WY)	1995	1999	1995	1998	1992	2001	1979	1969	2001	1989	1991	1979
MIN	36.6	65.8	213	263	311	395	282	307	102	42.9	34.2	43.1
(WY)	1964	1965	1981	1981	2000	1996	1971	1996	1971	1971	1964	1964

08033500 Neches River near Rockland, TX--Continued
(Hydrologic index station)

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1962 - 2001z	
ANNUAL TOTAL	475356		1721058			
ANNUAL MEAN	1299		4715		2402	
HIGHEST ANNUAL MEAN					5328	1995
LOWEST ANNUAL MEAN					352	1971
HIGHEST DAILY MEAN	9420	Dec 31	26400	Jun 13	41600	Jul 2 1989
LOWEST DAILY MEAN	86	Sep 7	92	Oct 13	18	Aug 30 1970
ANNUAL SEVEN-DAY MINIMUM	89	Sep 3	94	Oct 10	23	Jul 21 1971
MAXIMUM PEAK FLOW			28200	Jun 13	42300	Oct 20 1994
MAXIMUM PEAK STAGE			29.25	Jun 13	33.29	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	942900		3414000		1740000	
10 PERCENT EXCEEDS	3790		11600		6310	
50 PERCENT EXCEEDS	427		2470		932	
90 PERCENT EXCEEDS	100		152		111	

e Estimated
z Period of regulated streamflow.



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 Oct. 2000 (U.S. Army Corps of Engineers furnished contents), Oct. 2000 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.--No estimated daily contents. Records good. 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 June 1951. The uncontrolled spillway is 6,100 ft long. A 326-foot-long gated service spillway with six 40.0- x 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. The dam is owned by the U.S. Army Corps of Engineers. The water is used for industrial, municipal and irrigation supplies. Conservation pool storage is 69,700 acre-ft. 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	81.0
Bottom of tainter gates (sill)	50.0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 128,400 acre-ft, May 22, 1953 elevation, 85.21 ft; no storage Sept. 18 to Oct. 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 97,350 acre-ft, June 17, elevation, 83.48 ft; minimum contents, 38,740 acre-ft, Sept. 27, elevation, 77.58 ft.

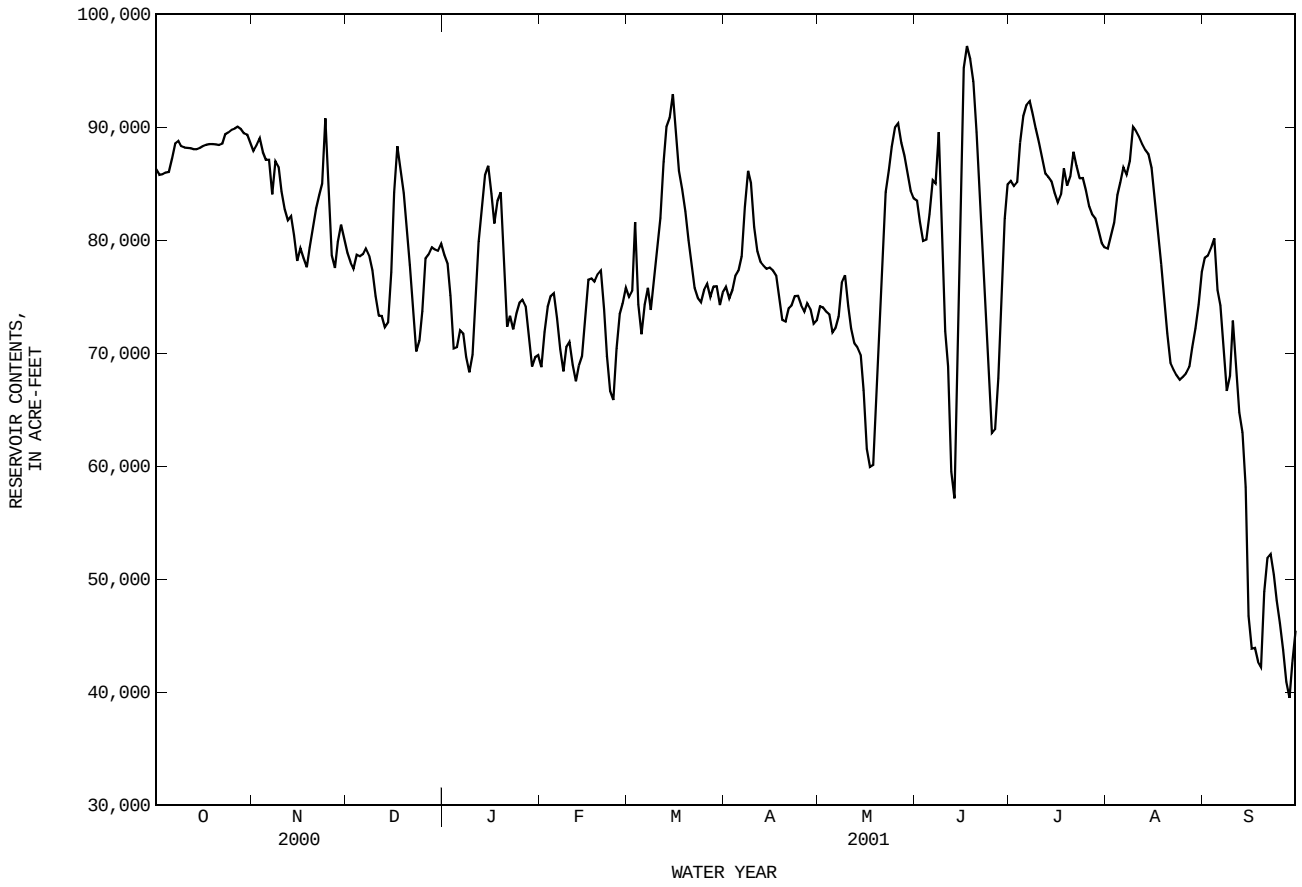
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86240	87880	78860	78650	68740	74950	75830	74140	83470	85220	79240	78400
2	85780	88380	78020	77900	71870	75480	74840	74030	81610	84780	80330	78610
3	85840	89000	77460	75050	74100	81570	75570	73670	79920	85110	81520	79280
4	85960	87750	78680	70380	75040	74290	76780	73410	80020	88600	83970	80130
5	86030	87100	78540	70510	75300	71650	77260	71810	82290	90950	85050	75580
6	87230	87100	78750	72000	73090	74310	78550	72160	85300	91950	86460	74210
7	88550	84050	79250	71730	70320	75760	82940	73230	85020	92290	85800	70470
8	88770	86980	78630	69650	68370	73810	86120	76230	89530	91060	86980	66640
9	88300	86480	77340	68290	70510	76310	85030	76890	80890	89850	90010	67990
10	88170	84290	75030	69840	70950	79090	81150	74170	71950	88620	89690	72860
11	88140	82700	73300	75790	68940	81960	79000	72170	68830	87300	89130	68850
12	88130	81730	73270	79840	67510	86900	78030	70880	59520	85890	88480	64750
13	88050	82080	72250	82650	68850	90010	77730	70500	57130	85590	87950	62980
14	88030	80440	72670	85730	69700	90810	77440	69850	67070	85200	87620	58110
15	88140	78150	77130	86570	73280	92920	77570	66710	84010	84160	86370	46740
16	88310	79260	84200	84110	76480	89530	77300	61520	95230	83310	83470	43830
17	88430	78390	88300	81470	76580	86100	76860	59920	97150	84020	80500	43910
18	88480	77580	86300	83480	76300	84490	74980	60090	96020	86330	77880	42660
19	88480	79350	84170	84220	76960	82540	72920	65740	94010	84820	74910	42200
20	88470	81040	80720	77270	77310	79970	72770	71410	89540	85640	71760	48850
21	88410	82760	77770	72320	73870	77810	73950	77970	83800	87820	69130	51870
22	88520	83990	73540	73280	69730	75730	74210	84230	77000	86590	68530	52190
23	89340	84980	70130	72100	66610	74870	75030	86190	71440	85460	68030	50380
24	89520	90750	71090	73480	65830	74510	75070	88270	66820	85490	67650	48090
25	89740	84380	73700	74480	70380	75600	74240	89950	62910	84360	67890	46070
26	89850	78630	78350	74730	73450	76100	73670	90300	63260	82980	68210	43740
27	90030	77540	78720	74170	74370	74950	74410	88570	67760	82290	68770	40910
28	89810	79860	79340	71540	75780	75890	73900	87410	75450	81910	70490	39470
29	89440	81360	79150	68790	---	75900	72610	85950	81900	80870	72170	42650
30	89300	80120	79030	69620	---	74250	72900	84370	84910	79730	74300	45430
31	88540	---	79660	69800	---	75350	---	83680	---	79330	77180	---
MEAN	88260	83140	77850	75470	72150	79140	76620	75980	78790	85730	79020	57600
MAX	90030	90750	88300	86570	77310	92920	86120	90300	97150	92290	90010	80130
MIN	85780	77540	70130	68290	65830	71650	72610	59920	57130	79330	67650	39470
(+)	82.56	81.90	81.86	81.01	81.53	81.49	81.28	82.19	82.28	81.83	81.65	78.44
(@)	+1610	-8420	-460	-9860	+5980	-430	-2450	+10780	+1230	-5580	-2150	-31750

CAL YR 2000 MAX 96600 MIN 27600 (@) +7090
WTR YR 2001 MAX 97150 MIN 39470 (@) -41500

(+) 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"(station 08040500).

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.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in water year 1951, at least 10% of contributing drainage area has been regulated. There are some diversions upstream from station.

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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1140	1150	5800	10100	11300	9890	17800	13500	4350	16000	3780	1880
2	1130	997	5750	10600	10700	12400	18200	13500	4350	15800	3770	1890
3	986	1060	4970	11400	11200	15800	18100	12800	4170	14800	3550	2010
4	996	2760	4940	11400	11800	17500	18300	12000	3570	13600	3260	3010
5	993	2970	5260	9000	12700	17000	18300	11200	3280	13900	3680	5810
6	987	4150	5060	7800	13700	17300	18200	10300	4070	14300	3600	4370
7	977	4810	5030	7700	13700	18300	17700	9610	5670	14700	4460	6180
8	978	3600	5230	7230	13200	18600	17700	8670	11100	15100	3220	5730
9	968	e5620	5220	5800	11600	19300	17700	9500	17500	15100	2190	5730
10	961	e5960	5210	4780	11400	20200	17600	10600	15700	15100	2130	7300
11	953	e5930	3970	5470	11400	20500	17600	10700	15000	15200	2130	8810
12	948	e5920	2960	6160	10500	21500	17500	10500	18300	14500	2140	7300
13	952	e5900	2920	6000	9460	23200	17500	10200	19600	12800	2110	6640
14	955	e5880	2070	6410	9450	23800	17500	10200	21100	11700	2100	8990
15	956	4970	1310	7470	9840	25400	17500	9440	22700	11200	2570	9500
16	958	3800	1440	9440	10600	25700	17400	7700	23500	10700	3260	7540
17	960	3740	3350	10600	11300	24700	17400	6110	24200	9220	3350	6700
18	958	3750	5120	10600	11300	24000	17400	5090	23600	7060	3340	6650
19	950	3910	5100	12300	11300	23800	17100	3240	22300	6140	3320	5780
20	944	3870	5650	14000	11300	23300	16400	3130	21000	4650	3320	3420
21	946	3780	6080	13600	11300	22200	15900	2780	19700	4470	2770	5070
22	959	3760	6060	12900	11000	20900	15800	3290	19300	4390	2050	5980
23	957	3760	5390	13900	10200	20100	15800	4260	19000	4120	2020	7230
24	984	8500	4070	13400	8640	19900	15900	4460	18800	3740	2010	7680
25	985	12900	4030	13700	7510	19900	15800	4470	18000	4260	2010	7620
26	985	9130	5230	13700	7780	19900	15500	4470	16300	4290	2010	7560
27	1020	6080	7070	13700	8400	19900	15100	4460	15000	4290	1950	7520
28	1060	4760	7280	13700	8740	19300	15000	4450	14400	4290	1800	6550
29	1060	5240	8060	13300	---	18100	14600	4430	14700	4300	1800	5640
30	1130	5790	8090	12600	---	17600	13900	4110	15500	4150	1820	5660
31	1290	---	9010	11900	---	17500	---	4330	---	3750	1840	---
TOTAL	31026	144447	156730	320660	301320	617490	506200	233500	455760	297620	83360	181750
MEAN	1001	4815	5056	10340	10760	19920	16870	7532	15190	9601	2689	6058
MAX	1290	12900	9010	14000	13700	25700	18300	13500	24200	16000	4460	9500
MIN	944	997	1310	4780	7510	9890	13900	2780	3280	3740	1800	1880
AC-FT	61540	286500	310900	636000	597700	1225000	1004000	463100	904000	590300	165300	360500

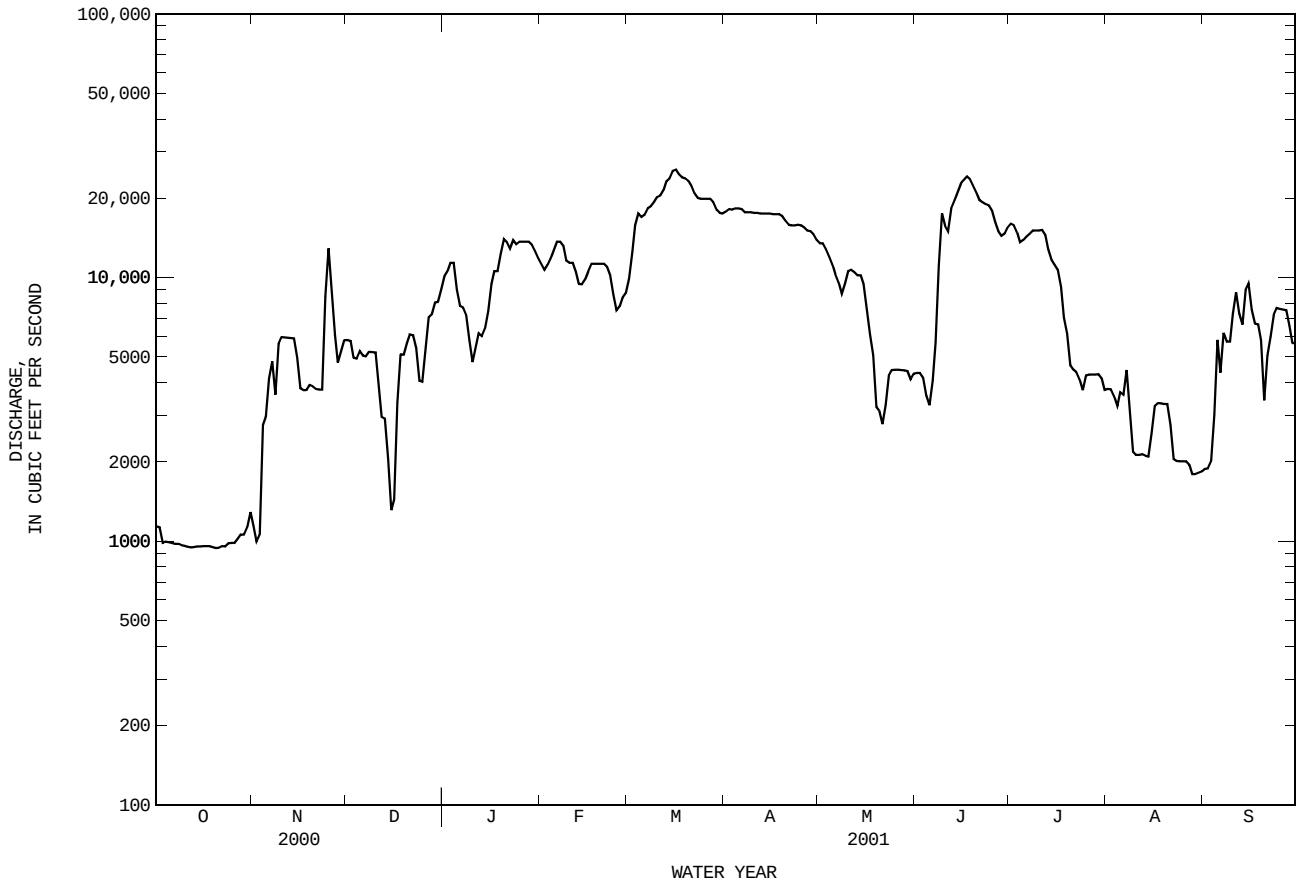
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2001, BY WATER YEAR (WY)

MEAN	2278	2841	4439	6453	7656	8740	8041	8909	5932	3890	2484	2304
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	1038	1231	1003	856	756	288	124
(WY)	1955	1957	1957	1957	1981	2000	1981	1971	1956	1964	1951	1956

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1951 - 2001	
ANNUAL TOTAL	913092		3329863			
ANNUAL MEAN	2495		9123		5356	
HIGHEST ANNUAL MEAN					12010	1995
LOWEST ANNUAL MEAN					961	1971
HIGHEST DAILY MEAN	12900	Nov 25	25700	Mar 16	90100	May 21 1953
LOWEST DAILY MEAN	903	Mar 16	944	Oct 20	.00	Oct 6 1956
ANNUAL SEVEN-DAY MINIMUM	950	Mar 15	953	Oct 15	.00	Nov 17 1956
MAXIMUM PEAK FLOW			29100	Jun 17	90900	May 21 1953
MAXIMUM PEAK STAGE			73.16	Jun 17	82.85	May 21 1953
ANNUAL RUNOFF (AC-FT)	1811000		6605000		3880000	
10 PERCENT EXCEEDS	5110		18300		15100	
50 PERCENT EXCEEDS	1820		7470		3000	
90 PERCENT EXCEEDS	992		1660		535	

e Estimated

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.--July 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. July 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.--Records good except those for estimated daily discharges, which are fair. Since water year 1951, at least 10% of contributing drainage area has been regulated. 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 Sept. 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 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	1120	6190	9150	14900	8410	22700	17500	4750	17000	4320	2270
2	1040	1150	6280	10000	13900	9080	22200	16800	4820	17800	4210	2270
3	1030	1010	6270	11000	12800	10600	21800	16200	4830	18300	4160	2250
4	957	957	5940	12000	12100	13000	22000	15800	4810	18000	4120	2290
5	897	1900	5450	12900	12100	16200	22100	15200	4580	17200	3660	2740
6	894	2750	5530	13000	12500	18900	22100	14300	5150	16100	3830	4800
7	899	3460	5600	11300	13400	20100	22000	13400	5310	16000	3770	4900
8	878	4550	5440	9640	14400	20500	21900	12400	7760	e16100	4330	5620
9	876	4260	5520	8780	15000	22100	21700	11200	12300	e16400	4040	6180
10	880	4960	5600	7720	14700	22800	21500	10500	17400	16800	3010	6170
11	884	5620	5600	6660	13600	23200	21400	10800	21500	17200	2540	6570
12	884	5910	5070	6210	12800	24400	21300	11500	21300	17400	2410	7760
13	888	6060	3850	6700	12200	25200	21200	11900	20100	e16900	2390	8210
14	887	6090	3390	6880	11300	26200	21200	11800	20700	e15800	2380	7600
15	891	6090	2880	6960	10300	27800	21000	11600	23100	e14700	2340	7600
16	893	5900	1910	7640	10200	28700	20900	11400	24800	e13400	2500	8830
17	893	4880	1810	9150	10600	30300	21000	10400	26400	12600	3140	8940
18	889	4350	2680	11000	11200	31400	20900	8680	27400	11700	3440	8010
19	879	4340	4570	12800	11700	31400	20900	7100	28100	9930	3510	7310
20	877	4370	e5230	13700	11900	30800	20800	5260	28300	8000	3520	6750
21	879	4390	5620	14900	11900	30000	20700	4210	27500	6440	3440	5260
22	879	4240	6120	16500	11900	29400	20100	3770	26300	5330	3110	4970
23	888	4130	6390	16500	11900	28500	19500	3560	24500	5070	2420	5640
24	894	4390	6230	15700	11500	27200	19300	4360	23100	4810	2060	6540
25	900	6010	5270	15500	10600	25900	19300	4850	22400	4400	2000	7340
26	913	9200	4650	15300	8970	24900	18800	5010	21800	4560	1970	7720
27	912	11600	5040	15300	8040	24700	18800	5050	21100	4700	2010	7810
28	920	10800	6430	15400	8050	26300	18600	5030	19700	4720	2050	7790
29	965	7880	7450	15800	---	26100	18200	5010	18300	4680	1910	7480
30	978	6300	8150	16000	---	25400	17900	4960	17500	4680	1880	6580
31	992	---	8700	15600	---	24000	---	4840	---	4650	2020	---
TOTAL	28376	148667	164860	365690	334460	733490	621800	294390	535610	361370	92490	184200
MEAN	915	4956	5318	11800	11940	23660	20730	9496	17850	11660	2984	6140
MAX	1040	11600	8700	16500	15000	31400	22700	17500	28300	18300	4330	8940
MIN	876	957	1810	6210	8040	8410	17900	3560	4580	4400	1880	2250
AC-FT	56280	294900	327000	725300	663400	1455000	1233000	583900	1062000	716800	183500	365400

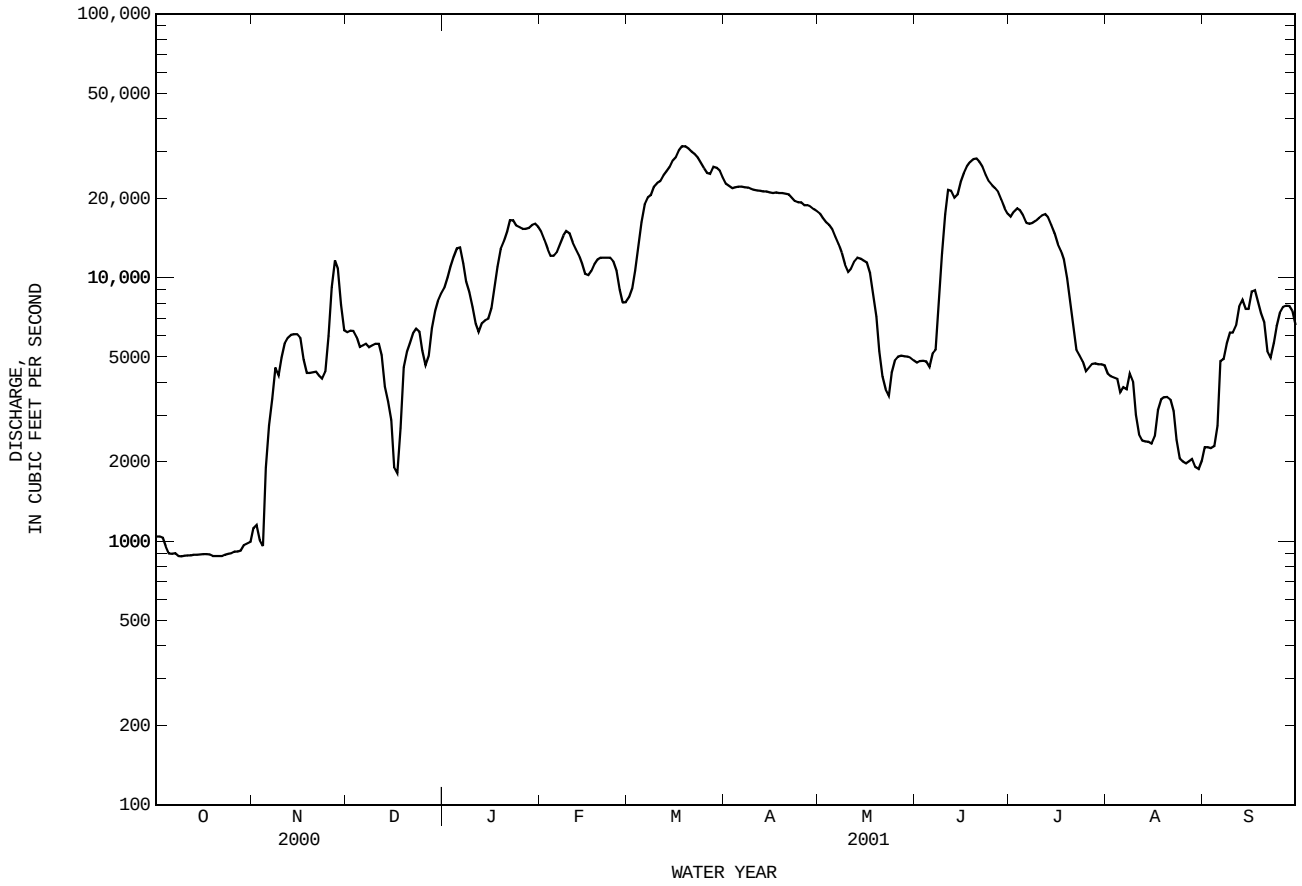
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2001z, BY WATER YEAR (WY)

MEAN	2477	3011	4865	7194	8387	9586	8973	9511	6683	4465	2727	2462
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	963	1432	1220	1112	863	358	194
(WY)	1955	1957	1957	1957	1957	2000	1981	1981	1963	1955	1951	1956

08041000 Neches River at Evadale, TX--Continued

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1951 - 2001z	
ANNUAL TOTAL	911533		3865403			
ANNUAL MEAN	2491		10590		5849	
HIGHEST ANNUAL MEAN					13480	1995
LOWEST ANNUAL MEAN					1128	1971
HIGHEST DAILY MEAN	11600	Nov 27	31400	Mar 18	80000	May 24 1953
LOWEST DAILY MEAN	827	Mar 18	876	Oct 9	63	Nov 26 1956
ANNUAL SEVEN-DAY MINIMUM	861	Mar 17	882	Oct 8	66	Nov 23 1956
MAXIMUM PEAK FLOW			31700	Mar 19	47900	Jul 6 1989
MAXIMUM PEAK STAGE			17.95	Mar 19	20.79	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	1808000		7667000		4237000	
10 PERCENT EXCEEDS	5370		22100		16500	
50 PERCENT EXCEEDS	1900		7880		3200	
90 PERCENT EXCEEDS	921		1850		695	

e Estimated
z Period of regulated streamflow.



08041000 Neches River at Evadale, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Sept. 1939 to current year.
BIOCHEMICAL DATA: Sept. 1939 to Aug. 1994.
PESTICIDE DATA: Feb. 1968 to July 1981.
SEDIMENT DATA: Oct. 1960 to Aug. 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1947 to Sept. 1997.
WATER TEMPERATURE: Oct. 1947 to Sept. 1997.

INSTRUMENTATION.--Graphic recorder with thermograph Oct. 1954 to Sept. 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. The computation of the selected constituent loads might include estimated discharge or specific conductance data. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 670 microsiemens/cm, Mar. 21, 25, 31, 1994; minimum daily, 23 microsiemens/cm, Sept. 19, 1963.
WATER TEMPERATURE: 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 2000 TO SEPTEMBER 2001

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)	SODIUM AD-SORP-TION RATIO (00931)
DEC													
05...	1010	5430	123	6.7	10.0	9.5	82.2	26.1	14	6.86	2.17	12.1	1.03
APR													
24...	1310	17700	152	7.0	20.5	7.6	83.6	30.3	13	7.26	2.95	15.3	1.21
AUG													
07...	1105	3810	146	7.2	33.0	6.7	92.4	30.3	8	7.19	2.99	12.6	.997

DATE	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	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)	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)
DEC								
05...	46.8	3.00	12	19.1	15.0	<.2	11.6	77.0
APR								
24...	49.2	3.18	17	20.6	15.9	<.2	7.4	82.8
AUG								
07...	44.6	2.93	22	16.2	13.8	E.1	8.5	77.4

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08041500 Village Creek at 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.--June 1924 to Oct. 1929, Apr. 1939 to current year.
Water-quality records.--Chemical data: Nov. 1967 to Sept. 1985. Water temperature: Nov. 1967 to Sept. 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 Sept. 30, 1966, water-stage recorder at site 2,000 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

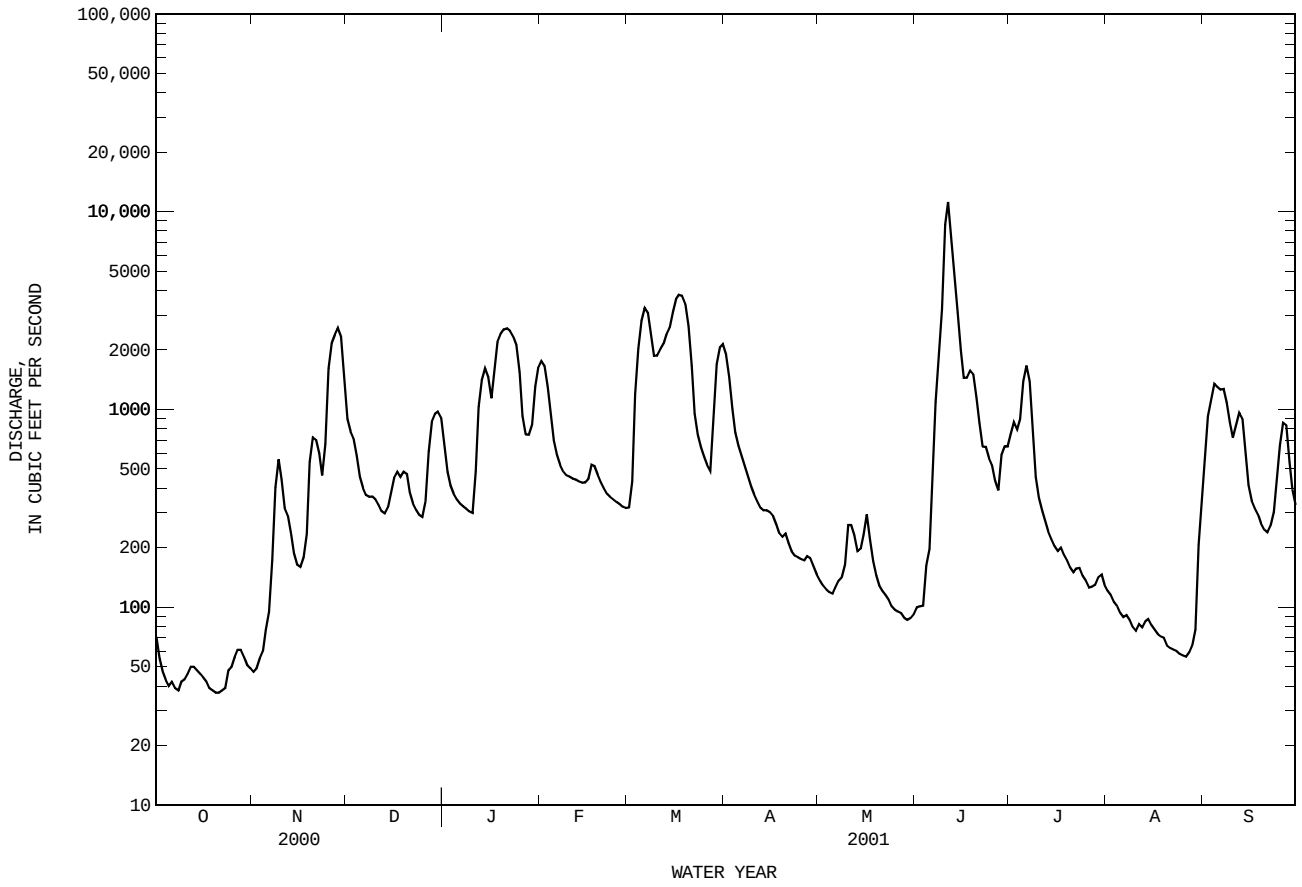
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	47	895	657	1760	320	1900	136	100	755	121	582
2	55	49	773	482	1660	432	1460	129	101	866	115	924
3	47	55	715	414	1300	1190	1010	123	102	795	106	1120
4	43	60	585	376	969	2030	765	119	163	891	101	1350
5	40	77	456	351	698	2810	655	117	197	1390	94	1300
6	42	95	400	334	587	3260	584	126	492	1670	89	1260
7	39	172	370	323	523	3080	518	136	1090	1390	91	1270
8	38	405	362	315	484	2430	457	142	1810	808	86	1080
9	42	559	363	305	465	1870	410	164	3200	455	79	852
10	43	445	351	299	458	1870	373	261	8640	356	76	721
11	46	317	328	487	448	2020	343	261	11200	308	82	837
12	50	290	306	1030	442	2150	319	231	6880	270	79	964
13	50	235	298	1410	432	2390	309	192	4460	242	85	897
14	48	187	321	1610	426	2590	309	198	3100	221	87	576
15	46	164	382	1460	428	3100	302	233	1990	204	81	413
16	44	160	451	1140	446	3610	289	295	1450	193	77	346
17	42	178	484	1560	526	3800	263	220	1450	201	73	316
18	39	235	455	2200	518	3760	237	171	1570	185	71	294
19	38	543	484	2410	469	3430	227	144	1500	173	70	265
20	37	724	472	2540	430	2640	236	129	1140	159	64	247
21	37	702	379	2570	398	1660	210	121	856	150	62	239
22	38	598	334	2500	375	953	192	115	650	157	61	259
23	39	464	310	2340	362	742	182	109	647	158	60	303
24	48	669	292	2120	351	642	179	101	567	144	58	442
25	50	1610	286	1550	341	574	175	97	525	136	57	659
26	56	2170	343	928	332	526	172	95	436	126	56	858
27	61	2390	612	747	322	489	181	93	390	127	59	834
28	61	2580	867	746	318	865	177	88	590	130	64	544
29	56	2330	950	838	---	1700	161	86	653	142	77	394
30	51	1510	976	1310	---	2060	146	88	650	146	207	329
31	49	---	908	1620	---	2140	---	92	---	130	362	---
TOTAL	1446	20020	15508	36972	16268	61133	12741	4612	56599	13078	2850	20475
MEAN	46.6	667	500	1193	581	1972	425	149	1887	422	91.9	682
MAX	71	2580	976	2570	1760	3800	1900	295	11200	1670	362	1350
MIN	37	47	286	299	318	320	146	86	100	126	56	239
AC-FT	2870	39710	30760	73330	32270	121300	25270	9150	112300	25940	5650	40610
CFSM	.05	.78	.58	1.39	.68	2.29	.49	.17	2.19	.49	.11	.79
IN.	.06	.87	.67	1.60	.70	2.64	.55	.20	2.45	.57	.12	.89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2001, BY WATER YEAR (WY)

MEAN	393	706	1090	1481	1447	1222	1147	1155	873	490	255	332
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

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1939 - 2001	
ANNUAL TOTAL	98086		261702			
ANNUAL MEAN	268		717		883	
HIGHEST ANNUAL MEAN					2248	1950
LOWEST ANNUAL MEAN					190	1971
HIGHEST DAILY MEAN	2580	Nov 28	11200	Jun 11	62200	Nov 26 1940
LOWEST DAILY MEAN	27	Sep 6	37	Oct 20	16	Oct 1 1956
ANNUAL SEVEN-DAY MINIMUM	28	Sep 4	39	Oct 17	18	Sep 28 1956
MAXIMUM PEAK FLOW			12000	Jun 11	67200	Nov 26 1940
MAXIMUM PEAK STAGE			19.14	Jun 11	27.60	Nov 26 1940
ANNUAL RUNOFF (AC-FT)	194600		519100		639600	
ANNUAL RUNOFF (CFSM)	.31		.83		1.03	
ANNUAL RUNOFF (INCHES)	4.24		11.32		13.95	
10 PERCENT EXCEEDS	582		1880		2140	
50 PERCENT EXCEEDS	160		351		332	
90 PERCENT EXCEEDS	37		60		80	

08041500 Village Creek at Kountze, TX--Continued



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 June 1989. Specific conductance: Feb. 1968 to Sept. 1989. Water temperature: Feb. 1968 to Sept. 1989.

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

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. Low flow for period Mar. through Sept. is affected by small diversions and return flow from irrigated fields. No flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	601	1890	115	e415	210	1970	11	37	215	46	1650
2	.53	225	1600	127	e445	e335	1830	12	21	197	32	1770
3	.73	104	1270	113	e470	e615	1650	14	18	192	44	1780
4	.82	46	959	91	e495	e965	1450	22	18	311	36	1820
5	.92	42	614	70	e495	e1250	1200	15	130	348	23	1560
6	.96	239	333	55	e415	1330	796	15	444	303	24	1320
7	1.0	246	200	44	272	1340	365	21	4050	225	21	1060
8	.96	373	137	38	170	1410	169	14	8630	154	20	833
9	.83	568	101	30	122	1750	107	15	12700	104	19	753
10	.79	555	74	27	e98	1870	76	16	14400	68	19	697
11	.80	542	54	351	e81	1780	56	12	13800	50	22	474
12	.79	584	40	601	70	1550	43	12	12000	35	21	279
13	.87	628	70	731	e62	1260	38	26	9170	27	20	148
14	1.4	595	136	808	e57	1030	30	20	6450	22	22	82
15	2.4	466	138	839	e48	1010	23	17	4830	19	20	49
16	2.3	321	126	1040	e84	1110	18	14	4110	17	19	30
17	2.5	307	107	1680	e155	1220	14	15	3560	18	13	22
18	1.9	618	94	1900	e125	1270	11	23	3030	19	9.4	21
19	1.5	1220	85	2250	e115	1270	9.3	26	2460	19	7.9	28
20	1.5	1320	79	2460	e95	1230	11	27	2030	22	7.2	33
21	1.6	1310	70	2560	e85	1120	28	26	1750	30	7.1	24
22	2.1	1250	59	2540	e70	901	36	30	1540	30	8.1	21
23	2.6	1230	47	2340	57	569	26	23	1310	29	10	88
24	2.7	1570	36	2060	46	277	24	16	951	40	13	361
25	2.5	1800	29	1840	e40	156	24	12	605	30	8.6	466
26	361	1800	23	1560	e36	112	14	35	384	37	4.5	441
27	1220	1740	22	1220	e33	120	14	46	247	39	4.0	304
28	1780	1910	26	819	78	1260	13	34	171	38	6.0	155
29	1710	2200	29	466	---	1790	18	23	172	44	13	75
30	1370	2120	50	378	---	1950	11	14	197	49	237	39
31	1000	---	85	e390	---	2030	---	30	---	52	879	---
TOTAL	7476.64	26530	8583	29543	4734	34090	10074.3	636	109215	2783	1635.8	16383
MEAN	241	884	277	953	169	1100	336	20.5	3640	89.8	52.8	546
MAX	1780	2200	1890	2560	495	2030	1970	46	14400	348	879	1820
MIN	.53	42	22	27	33	112	9.3	11	18	17	4.0	21
AC-FT	14830	52620	17020	58600	9390	67620	19980	1260	216600	5520	3240	32500

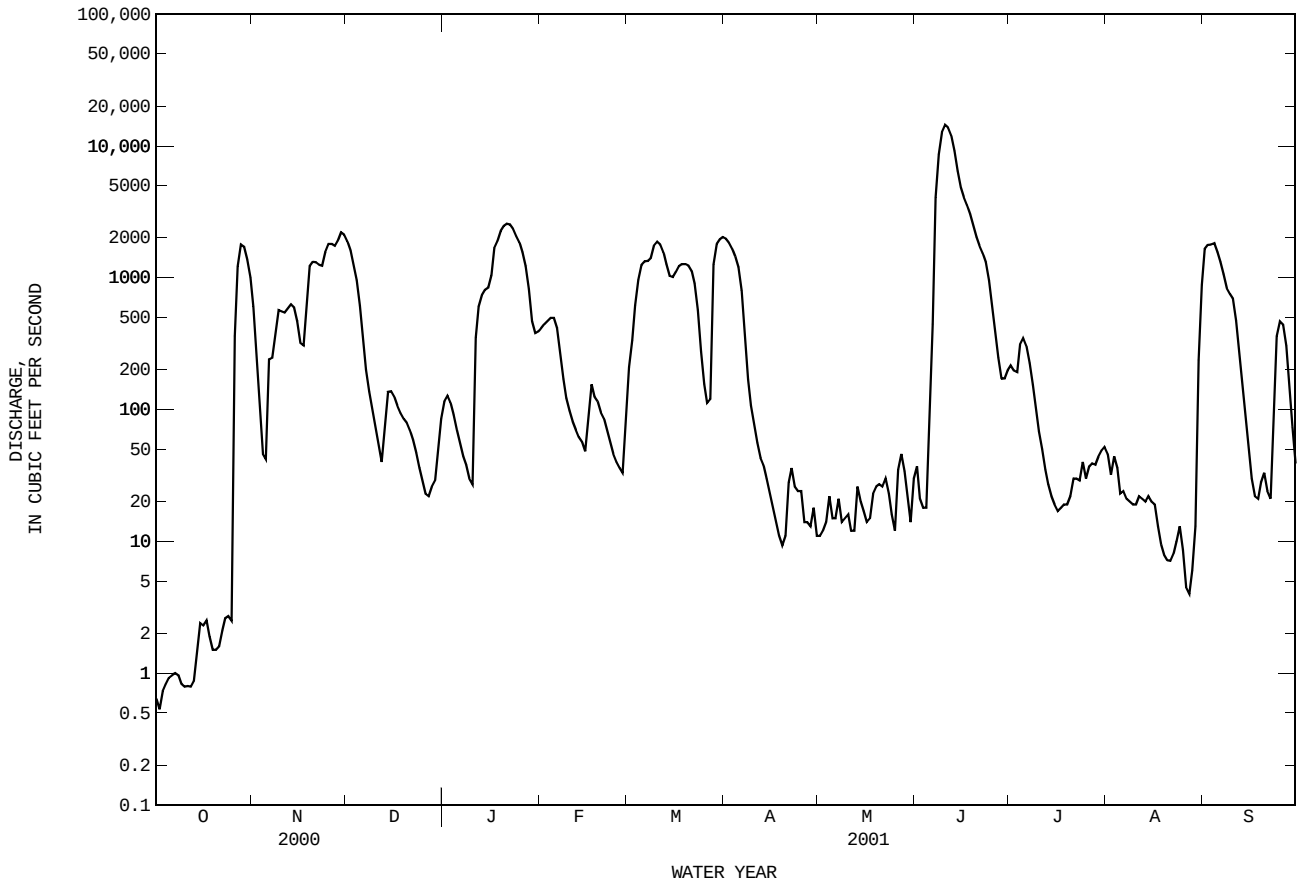
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2001, BY WATER YEAR (WY)

MEAN	463	387	553	720	590	583	559	495	686	358	166	248
MAX	8080	2095	2159	2245	1850	1838	4972	3589	3640	3291	1660	1715
(WY)	1995	1987	1987	1998	1992	1993	1979	1989	2001	1989	1983	1998
MIN	2.90	2.48	12.4	4.75	5.87	7.09	21.4	20.5	25.1	15.8	4.54	1.00
(WY)	1970	1989	1990	1971	2000	2000	1987	2001	1998	2000	2000	2000

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1968 - 2001	
ANNUAL TOTAL	67062.40		251683.74			
ANNUAL MEAN	183		690		483	
HIGHEST ANNUAL MEAN					1167	1979
LOWEST ANNUAL MEAN					69.2	2000
HIGHEST DAILY MEAN	2200	Nov 29	14400	Jun 10	47400	Oct 20 1994
LOWEST DAILY MEAN	.51	Sep 6	.53	Oct 2	.00	Oct 21 1979
ANNUAL SEVEN-DAY MINIMUM	.56	Sep 1	.80	Oct 1	.56	Sep 1 2000
MAXIMUM PEAK FLOW			14600	Jun 10	48800	Oct 20 1994
MAXIMUM PEAK STAGE			31.91	Jun 10	37.50	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	133000		499200		350100	
10 PERCENT EXCEEDS	615		1780		1350	
50 PERCENT EXCEEDS	10		88		79	
90 PERCENT EXCEEDS	.95		11		8.5	

e Estimated

08041700 Pine Island Bayou near Sour Lake, TX--Continued



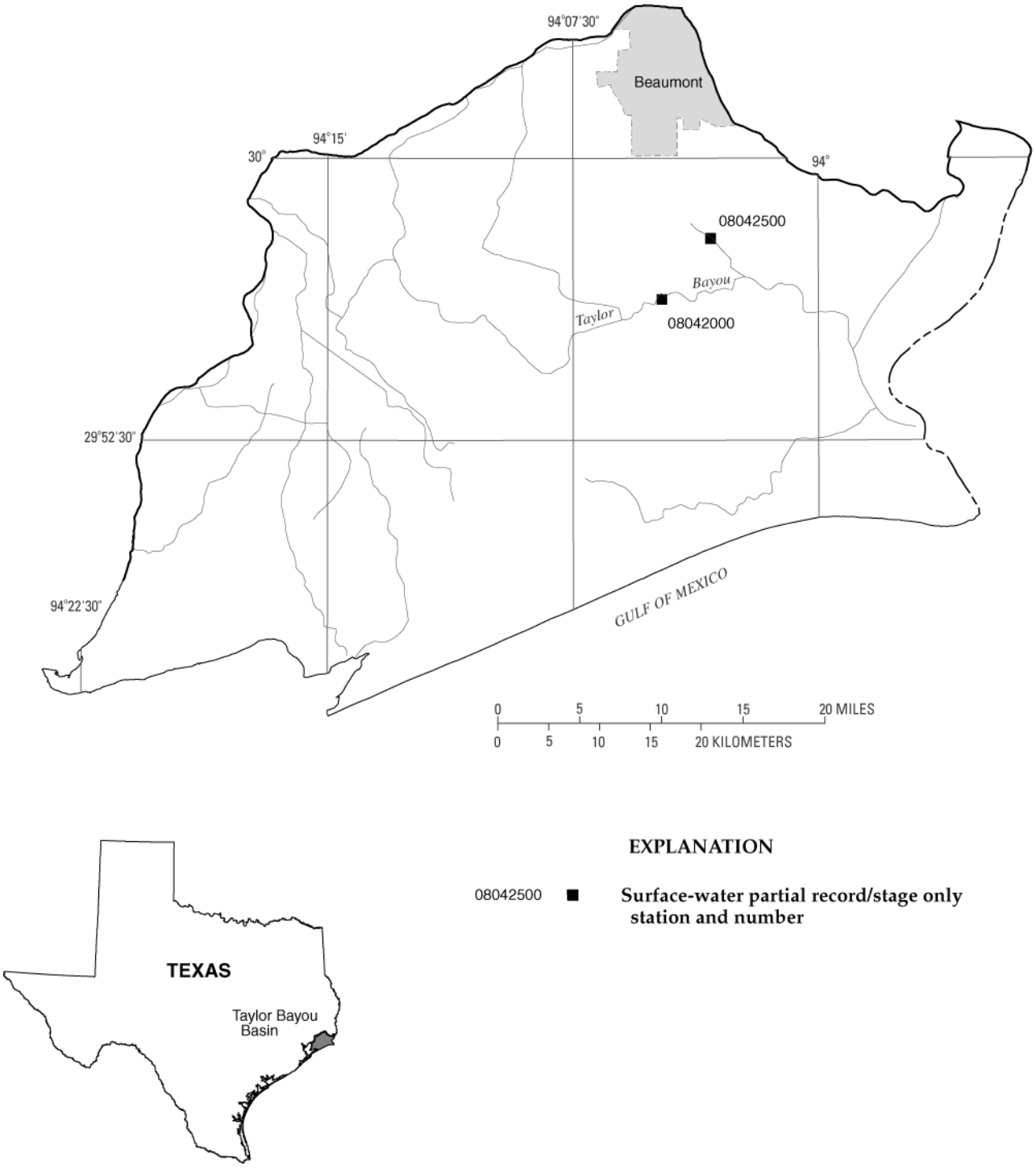


Figure 11.--Map showing location of gaging stations in the Taylor Bayou Basin

08042000 Taylor Bayou near LaBelle, TX 434
08042500 Hillebrandt Bayou near Lovell Lake, TX 436

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 Sept. 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for period Sept. 10-22, 1961), Oct. 1984 to current year (daily maximum gage heights).

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 fair. 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 Sept. 22, 1963, and Apr. 23, 1979; maximum gage height, 11.78 ft Sept. 20, 1963 (backwater from Hillebrandt Bayou); minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.31 ft July 17, 1954. Maximum stage since at least 1941, that of Sept. 20, 1963, and Apr. 23, 1979. Flood of Sept. 13, 1961 (Hurricane Carla), reached a stage of 11.51 ft.

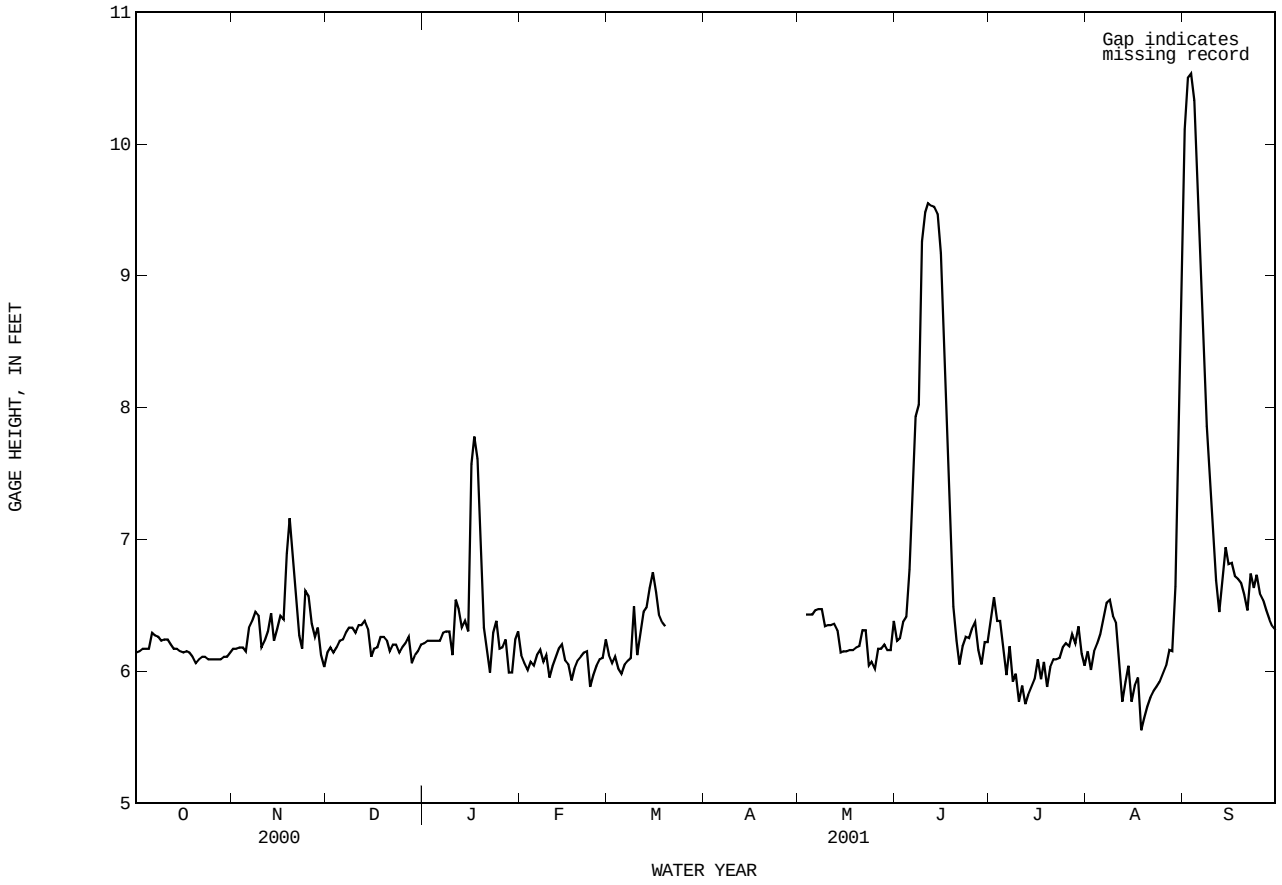
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1941 reached a stage of 11.3 ft, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 10.53 ft, Sept. 3; minimum gage height, 5.26 ft, Mar. 4.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.14	6.17	6.14	6.21	6.12	6.12	---	---	6.23	6.38	6.15	10.11
2	6.15	6.17	6.18	6.23	6.06	6.06	---	---	6.25	6.56	6.01	10.50
3	6.17	6.18	6.14	6.23	6.01	6.11	---	6.43	6.37	6.38	6.15	10.53
4	6.17	6.18	6.18	6.23	6.07	6.02	---	6.43	6.41	6.38	6.21	10.33
5	6.17	6.15	6.23	6.23	6.04	5.98	---	6.43	6.77	6.19	6.28	9.89
6	6.29	6.33	6.24	6.23	6.12	6.05	---	6.46	7.40	5.97	6.40	9.39
7	6.27	6.38	6.29	6.29	6.16	6.08	---	6.47	7.93	6.19	6.52	8.71
8	6.26	6.45	6.33	6.30	6.07	6.10	---	6.47	8.02	5.92	6.54	7.86
9	6.23	6.42	6.33	6.30	6.12	6.49	---	6.34	9.26	5.98	6.42	7.54
10	6.24	6.18	6.29	6.12	5.95	6.12	---	6.35	9.48	5.77	6.37	7.17
11	6.24	6.23	6.35	6.54	6.04	6.29	---	6.35	9.55	5.89	6.04	6.69
12	6.20	6.30	6.35	6.47	6.11	6.45	---	6.36	9.53	5.75	5.77	6.45
13	6.17	6.44	6.38	6.33	6.17	6.48	---	6.31	9.52	5.82	5.92	6.70
14	6.17	6.23	6.32	6.38	6.20	6.63	---	6.14	9.47	5.88	6.04	6.94
15	6.15	6.32	6.11	6.30	6.08	6.75	---	6.15	9.17	5.94	5.77	6.81
16	6.14	6.42	6.17	7.57	6.05	6.60	---	6.15	8.57	6.09	5.89	6.82
17	6.15	6.39	6.18	7.78	5.93	6.43	---	6.16	7.66	5.94	5.95	6.72
18	6.14	6.89	6.26	7.61	6.02	6.37	---	6.16	7.03	6.07	5.55	6.70
19	6.11	7.16	6.26	6.87	6.08	6.34	---	6.18	6.49	5.88	5.64	6.67
20	6.06	6.86	6.23	6.33	6.11	---	---	6.19	6.23	6.03	5.73	6.58
21	6.09	6.57	6.15	6.14	6.14	---	---	6.31	6.05	6.09	5.80	6.46
22	6.11	6.27	6.20	5.99	6.15	---	---	6.31	6.19	6.09	5.85	6.74
23	6.11	6.17	6.20	6.29	5.88	---	---	6.04	6.26	6.10	5.88	6.63
24	6.09	6.61	6.14	6.38	5.97	---	---	6.07	6.25	6.18	5.92	6.73
25	6.09	6.57	6.18	6.17	6.04	---	---	6.02	6.32	6.21	5.98	6.59
26	6.09	6.36	6.21	6.18	6.09	---	---	6.17	6.37	6.19	6.04	6.54
27	6.09	6.26	6.26	6.24	6.10	---	---	6.17	6.16	6.28	6.16	6.46
28	6.09	6.33	6.06	5.99	6.24	---	---	6.20	6.05	6.21	6.15	6.39
29	6.11	6.12	6.12	5.99	---	---	---	6.16	6.22	6.34	6.64	6.34
30	6.11	6.03	6.15	6.24	---	---	---	6.16	6.22	6.13	7.90	6.31
31	6.14	---	6.20	6.30	---	---	---	6.38	---	6.04	9.42	---
MAX	6.29	7.16	6.38	7.78	6.24	6.75	---	6.47	9.55	6.56	9.42	10.53

08042000 Taylor Bayou near LaBelle, TX--Continued



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 Sept. 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for the period Sept. 11-18, 1961), Oct. 1984 to current year (daily maximum 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 Sept. 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 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 rice irrigation.

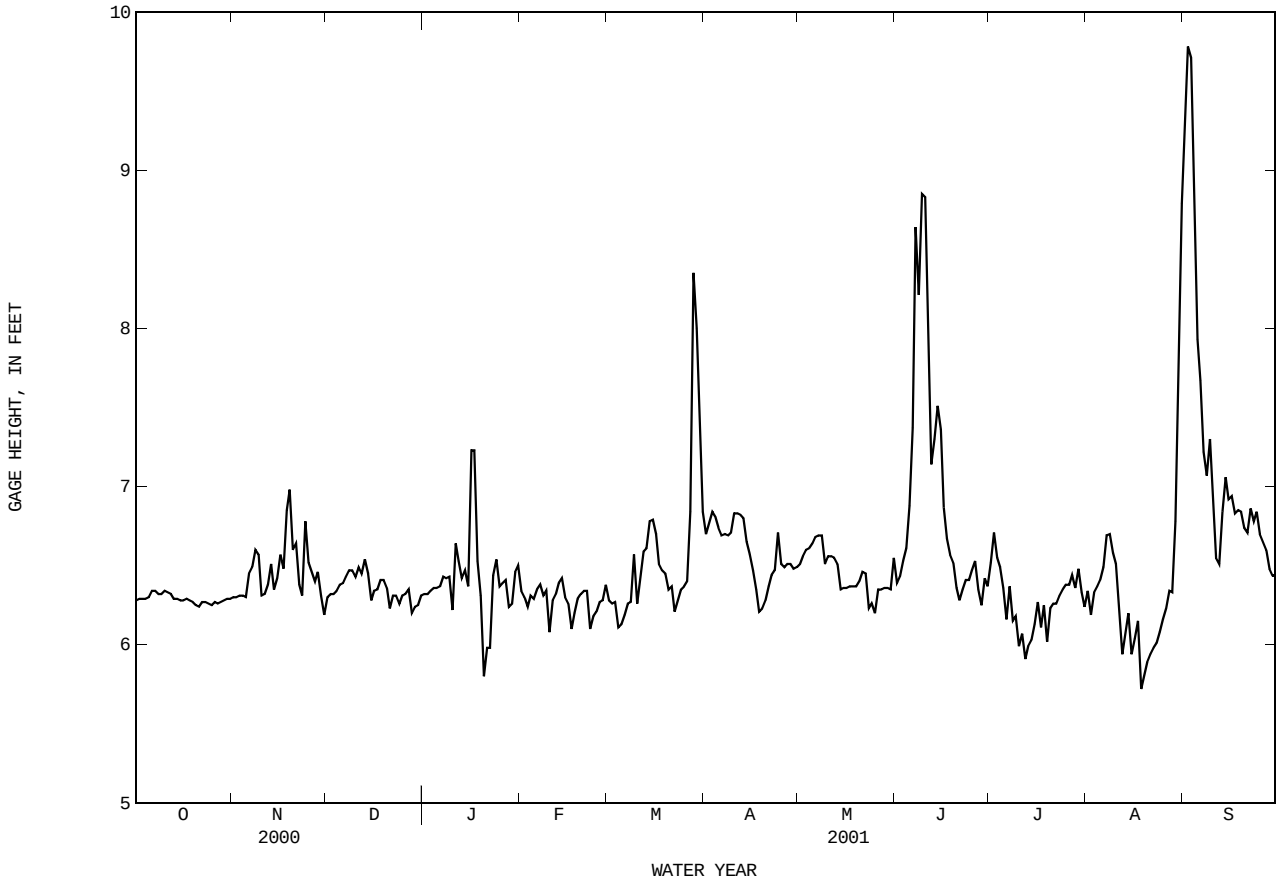
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft^3/s Sept. 18, 1963; maximum gage height, 12.34 ft Sept. 19, 1963; minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.33 ft July 17, 1954. Maximum stage since at least 1941, 12.34 ft Sept. 19, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 9.78 ft, Sept. 2; minimum gage height, 4.40 ft, Jan. 20.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.28	6.30	6.30	6.32	6.34	6.28	6.70	6.51	6.39	6.52	6.34	9.28
2	6.29	6.30	6.32	6.32	6.30	6.26	6.77	6.56	6.43	6.71	6.19	9.78
3	6.29	6.31	6.32	6.34	6.24	6.27	6.84	6.60	6.53	6.55	6.33	9.71
4	6.29	6.31	6.34	6.36	6.31	6.11	6.81	6.61	6.61	6.49	6.37	8.63
5	6.30	6.30	6.38	6.36	6.29	6.13	6.74	6.64	6.88	6.36	6.41	7.93
6	6.34	6.45	6.39	6.37	6.35	6.19	6.69	6.68	7.37	6.16	6.49	7.67
7	6.34	6.49	6.43	6.43	6.38	6.26	6.70	6.69	8.64	6.37	6.69	7.22
8	6.32	6.60	6.47	6.42	6.31	6.27	6.69	6.69	8.21	6.15	6.70	7.07
9	6.32	6.57	6.47	6.43	6.34	6.57	6.71	6.51	8.85	6.18	6.58	7.30
10	6.34	6.31	6.43	6.22	6.08	6.26	6.83	6.56	8.83	5.99	6.51	6.89
11	6.33	6.32	6.49	6.64	6.28	6.42	6.83	6.56	7.92	6.07	6.21	6.55
12	6.32	6.38	6.45	6.53	6.32	6.59	6.82	6.55	7.14	5.91	5.94	6.51
13	6.29	6.51	6.54	6.42	6.39	6.61	6.80	6.51	7.30	5.99	6.08	6.84
14	6.29	6.35	6.45	6.47	6.42	6.78	6.65	6.35	7.51	6.03	6.20	7.06
15	6.28	6.42	6.28	6.37	6.30	6.79	6.57	6.36	7.36	6.13	5.94	6.92
16	6.28	6.57	6.34	7.23	6.26	6.70	6.47	6.36	6.87	6.27	6.04	6.94
17	6.29	6.48	6.35	7.23	6.10	6.51	6.35	6.37	6.67	6.11	6.15	6.83
18	6.28	6.85	6.41	6.53	6.20	6.47	6.21	6.37	6.57	6.25	5.72	6.85
19	6.27	6.98	6.41	6.31	6.29	6.45	6.23	6.37	6.52	6.02	5.80	6.84
20	6.25	6.60	6.36	5.80	6.32	6.35	6.28	6.40	6.36	6.23	5.89	6.74
21	6.24	6.64	6.23	5.98	6.34	6.37	6.37	6.46	6.28	6.26	5.94	6.71
22	6.27	6.38	6.31	5.98	6.34	6.21	6.44	6.45	6.35	6.26	5.98	6.86
23	6.27	6.31	6.31	6.44	6.10	6.28	6.47	6.23	6.41	6.31	6.01	6.78
24	6.26	6.78	6.26	6.54	6.18	6.35	6.71	6.26	6.41	6.35	6.08	6.84
25	6.25	6.52	6.31	6.37	6.21	6.37	6.51	6.20	6.47	6.38	6.16	6.70
26	6.27	6.46	6.32	6.39	6.27	6.40	6.49	6.35	6.53	6.38	6.23	6.65
27	6.26	6.40	6.35	6.41	6.28	6.84	6.51	6.35	6.35	6.44	6.34	6.60
28	6.27	6.46	6.20	6.24	6.38	8.35	6.51	6.36	6.25	6.36	6.33	6.48
29	6.28	6.31	6.24	6.26	---	8.00	6.48	6.36	6.42	6.48	6.78	6.44
30	6.29	6.19	6.25	6.46	---	7.35	6.49	6.35	6.37	6.33	7.69	6.44
31	6.29	---	6.31	6.50	---	6.84	---	6.55	---	6.24	8.79	---
MAX	6.34	6.98	6.54	7.23	6.42	8.35	6.84	6.69	8.85	6.71	8.79	9.78

08042500 Hillebrandt Bayou near Lovell Lake, TX--Continued



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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 2001

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Red River Basin				
07314801	Little Wichtia River below Dam near Lake Arrowhead near Henrietta, TX	Lat 33°45'57", long 98°22'12", Clay County, 500 ft below the dam at Lake Arrowhead near Henrietta. Flow passing through a pipe through the dam.	826		09-10-01 09-14-01 09-14-01	19.2 18.2 20.3
07314810	Little Wichita River at Halsell Ranch near Lake Arrowhead near Henrietta, TX	Lat 33°46'38", long 98°21'18", Clay County, 2.0 mi downstream from release point of pipe passing through center of dam in Lake Arrowhead.	902		09-06-01 09-07-01 09-07-01 09-10-01 09-14-01 09-14-01 09-16-01 09-18-01 09-20-01 09-24-01	0 17.1 16.9 16.7 16.9 17.1 0.97 0.10 0.07 0
07314850	Little Wichita River at Priddy Ranch near Henrietta, TX	Lat 33°48'21", long 98°15'43", Clay County, 11.8 mi downstream from the release point of pipe passing through the center of dam in Lake Arrowhead.	919		07-17-01 09-07-01 09-09-01 09-10-01 09-14-01 09-17-01 09-20-01 09-24-01	16.0 0 14.7 15.0 15.9 1.58 0.08 0
		Neches River Basin				
08041550	Village Creek at State Highway. 327 near Silsbee, TX	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	1979-2001	05-08-01 09-19-01	139 250
08041720	Pine Island Bayou at State Highway 105 near Sour Lake, TX	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	1979-2001	05-09-01 09-19-01	12.0 24.1

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