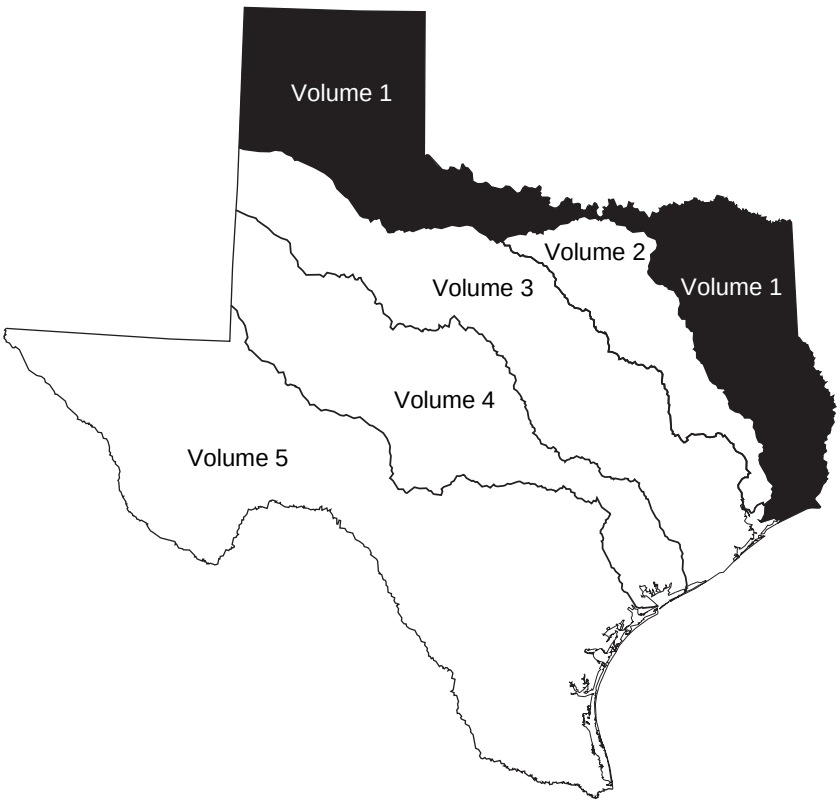
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data
Texas
Water Year 2002

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-02-1



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

UNITED STATES DEPARTMENT OF THE INTERIOR

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2003

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 2002 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 63 gaging stations; stage only at 3 gaging stations; stage and contents at 34 lakes and reservoirs; water quality at 35 gaging stations; and data for 8 partial-record stations comprised of 6 flood-hydrograph and 2 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; (p) precipitation.]

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

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Texas have been discontinued. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number are currently operated as partial-record stations. A pound sign (#) after a station indicates a tempoary discontinuance to redefine ratings. 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 Cheyenne Creek Tributary near Channing (e)	07227460	1.60	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
Palo Duro Creek near Spearman (d)	07233500#	1,076	1954-79, 1999-2001
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Middle Pease River near Paducah (d)	07307750	1,086	1973-79
Middle Pease River near Paducah (d)	07307760	1,123	1980-82
Middle Pease River near Kirkland (e)	07307780	1,250	1973-79
Canal Creek near Crowell (e)	07307950	49.0	1968-70, 1978-79
Pease River near Crowell (d)	07308000	3,037	1924-47
Plum Creek near Vernon (e)	07308220	4.99	1967-74
China Creek near Electra (e)	07308400	37	1967-76
North Fork Wichita River near Crowell (d)	07311622	591	1971-76
Middle Fork Wichita River near Truscott (d)	07311648	161	1971-76
South Fork Wichita River near Guthrie (d)	07311780	239	1952-54, 1956-57 1971-76
South Fork Wichita River at Ross Ranch near Benjamin (d)	07311790	499	1971-79
Beaver Creek Tributary near Crowell (e)	07312140	3.43	1966-74
Wolf Creek near Iowa Park (e)	07312300	8.5	1966-74
North Fork Little Wichita River Tributary near Archer City (e)	07314200	0.10	1966-74
Little Wichita River near Henrietta (d)	07315000	1,037	1953-79
Little Wichita River near Ringgold (d)	07315400	1,350	1959-65
Farmers Creek near Saint Jo (e)	07315550	0.82	1966-74
Mineral Creek near Sadler (d)	07316200	26	1968-77
Sandy Creek near Sadler (e)	07316230	24	1968-74
Lake Texoma near Denison (e)	07331500	39,719	1942-93, 2000
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 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
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
White Rock Creek at Keller Springs Road, Dallas (d)	08057100	29.40	1961-79

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
Caney Creek near Groveton (e)	08066145	41.4	1966-73

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
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
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
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
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
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
Cobb Creek near Abbott (d)	08093400	12.40	1967-79
Aquilla Creek near Aquilla (d)	08093500#	308	1939-2001
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
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	1961-95
Spring Creek near Tankersley (d)	08131000	699	1930-60
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
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
East Bouldin Creek at South 1st Street, Austin (d)	08157600	2.4	1997-2001
Blunn Creek near Little Stacey Park, Austin	08157700	1.2	1997-2001
Boggy Creek at US Highway 183, Austin	08158050	13.1	1977-86, 1994-2001
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
Madera Canyon near Toyahvale (d)	08424500	53.80	1932-49
Phantom Lake Spring near Toyahvale (d)	08425500*	N/A	1932-34, 1942-66
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Limpia Creek near Fort Davis (d)	08432000	303	1925-32
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
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
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

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
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
Middle Sulphur River near Commerce	07342480	44.1	Cl, pH	1987-2001
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
Cedar Bayou near Crosby	08067500	69.4	SC, pH, Cl	1971-79
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

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Salt Creek at Olney	08088100	11.80	SC, T	1958-60
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	196066,
				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

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Colorado River at Robert Lee	08124000	15,307	SC, T, pH, Cl	1948-51,
			S	1949-51
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
Blunn Creek near Little Stacey Park, Austin	08157700	1.2		1997-2001
Boggy Creek at US Highway 183, Austin	08158050	13.1	C	1977-86
			C, T	1994-2001
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

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
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
Frio River at Calliham	08207000	5,491	SC, T	1968-81
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, 2002

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 63 gaging stations; stage only at 3 gaging stations; stage and contents at 34 lakes and reservoirs; and water quality at 35 gaging stations. Also included are data for 8 partial-record stations comprised of 6 flood-hydrograph and 2 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-02-1." 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 2002 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

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Texas Water Development Board (TWDB), 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 normal during water year 2002.

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,481,000 acre-feet, increased from 76 percent at the end of September 2001 to 77 percent at the end of September 2002. Records from these reservoirs indicate that storage increased in 34, decreased in 39, and remained the same in 4.

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 stations in the area are shown in figure 1.

Streamflow

In the area covered in volume 1, streamflow averaged normal during water year 2002. Streamflow for water year 2002 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 2002 averaged normal. Monthly mean discharges for water year 2002 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 normal during November, February, March and June through September, above normal during October, December, January, and April, and below normal during May. The station North Bosque River near Clifton had normal streamflow April through June and August, above normal streamflow during November through March and July, and below normal streamflow in September. The station North Concho River near Carlsbad had normal streamflow for October, December through April,

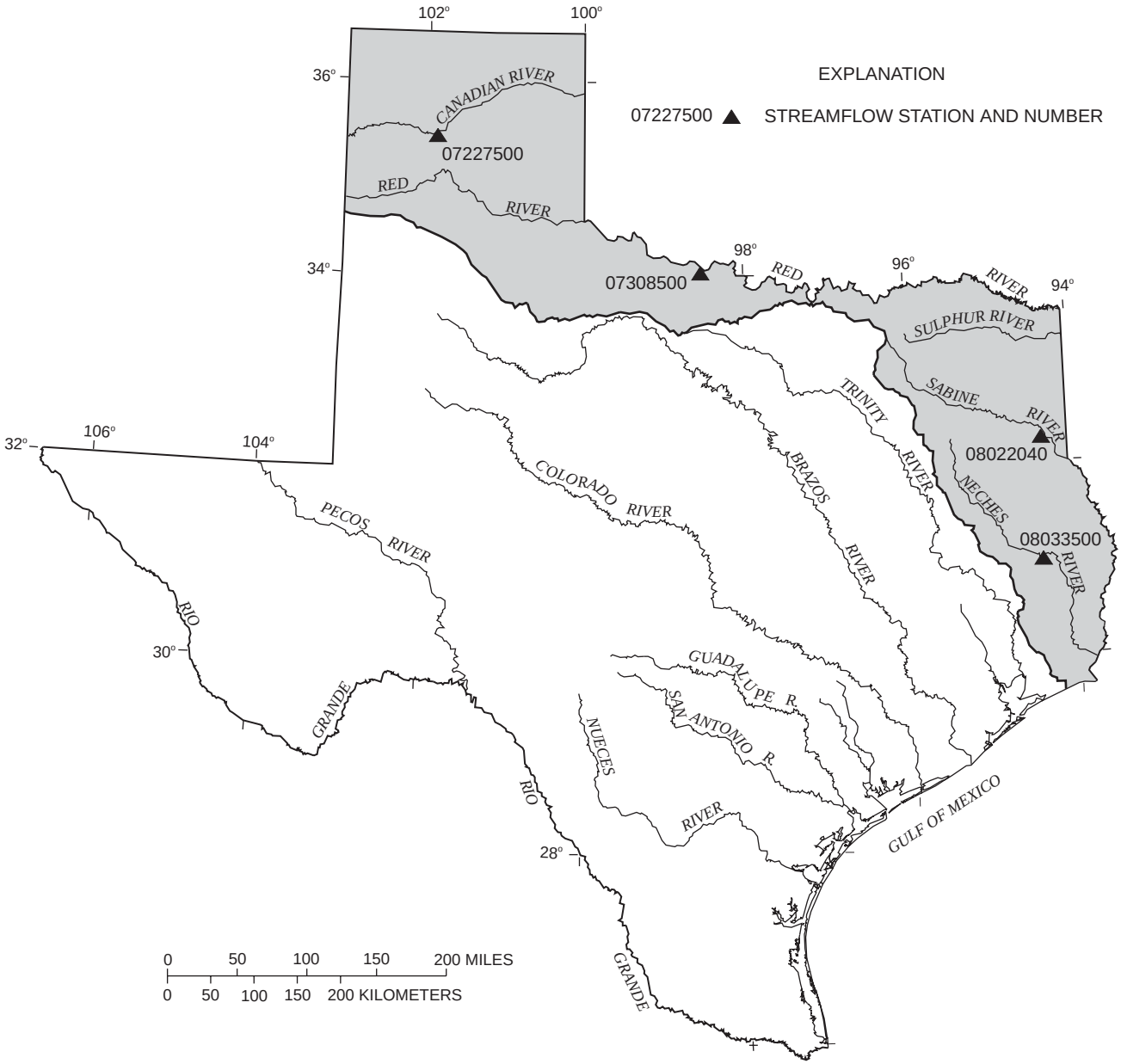

Figure 1. Area of Texas covered by volume 1 (shaded) and location of selected streamflow stations in volume 1.

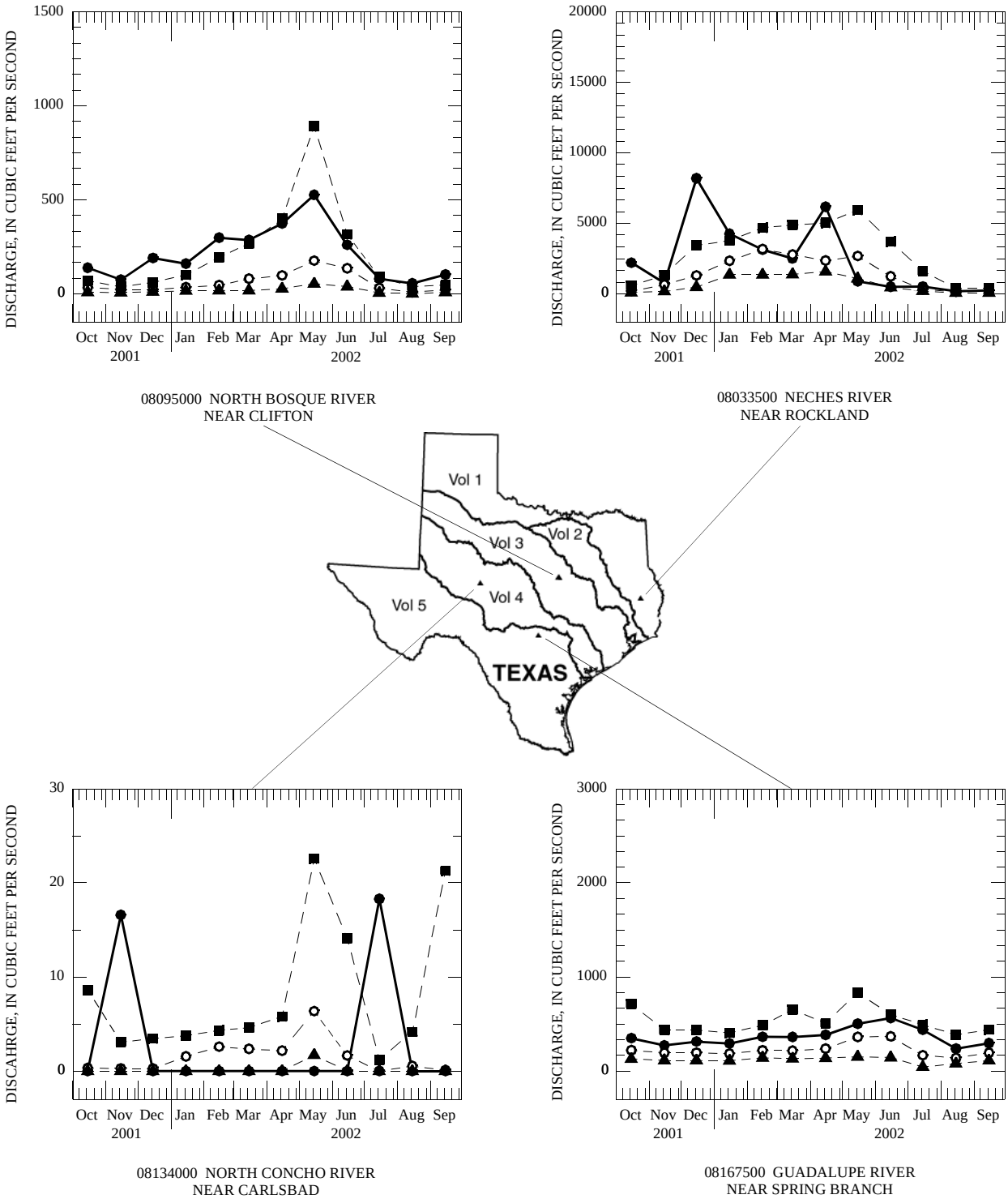

Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 2002 water year and median of the monthly mean discharges for 1961–90 water years.

June, August, and September, above normal streamflow during November and July, and below normal streamflow in May. Streamflow for the station Guadalupe River near Spring Branch was normal during October, February through June and September, above normal for November through January, July, and August of water year 2002.

Conservation storage in 22 selected reservoirs in this area of the State, with a total combined conservation capacity of 14,654,000 acre-feet, decreased from 83 percent of capacity at the end of September 2001 to 82 percent of capacity at the end of September 2002. Records from these reservoirs indicate that storage decreased in 14, increased in 6, and remained the same in 2 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.

Table 1. Streamflow at four selected stations

Station no. and name	Discharge during 2002 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	9,470	0	32	135,000	0	271 (1939-2002)
Red River Basin						
07308500 Red River near Burkburnett, TX	10,600	16	372	174,000	0	1,237 (1960-2002)
Sabine River Basin						
08022040 Sabine River near Beckville, TX	36,700	117	4,478	49,400	2.4	2,646 (1961-2002)
Neches River Basin						
08033500 Neches River near Rockland, TX1/	15,400	169	2,471	42,300	18	2,404 (1962-2002)

1/ Hydrologic index station.

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 was operated in the Mississippi, Columbia, Colorado, and Rio Grande basins. For the period 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 these 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. Reports and other information on the NADP/NTN Program, as well as all data from the individual sites, can be found at *http://bqs.usgs.gov/acidrain/*.

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

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

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

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 2002 water year that began October 1, 2001, and ended September 30, 2002. 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 SEVEN-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

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

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

manuscript or in a footnote. If the dates of occurrence for the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

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

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

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is 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 Col-

lection 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 Code
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
V	Analyte was detected in both the environmental sample and the associated blanks
M	Presence of material verified but not quantified

Printed Output	Value-Qualifier Code
d	Diluted sample: method hi range exceeded
v	Analyte detected in laboratory blank
q	Insufficient sample received
i	Result may be affected by interference
b	Value was extrapolated below
n	Below the NVD
r	Value verified by rerun, same method
p	Value reported is preferred
c	See laboratory coment
e	See field comment
k	Counts outside the acceptable range

Printed Output	Null Value-Qualifier Code
e	Required equipment not functional or available
i	Required sample type not received
r	Sample ruined in preparation
u	Unable to determine - matrix interference

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 contami-

nation 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. Definitions of common terms such as algae, water level, and precipitation are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting inch/pound units to International System (SI) units on the inside of the back cover.

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

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

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

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

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

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

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

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

aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved solids content of the pore water and lithology and porosity of the rock.

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

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

their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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")

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

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

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

***Escherichia coli** (E. coli)* are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing

for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with

higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

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

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. See NOAA web site:

http://www.co-ops.nos.noaa.gov/tideglos.html

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

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

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

Horizontal datum (See "Datum")

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be

the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms

of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

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

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

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

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

Return period (See "Recurrence interval")

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Stage (See "Gage height")

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

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

Substrate is the physical surface upon which an organism lives.

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

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

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

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

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

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

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

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

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

(ft^3/s) x 0.0027. (See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

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

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

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

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

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

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

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

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

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

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

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

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

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

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of 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 milliliters of sample. (See also "Bacteria")

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other

than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

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

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

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

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

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

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

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

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

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

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

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

Vertical datum (See "Datum")

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

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

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

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it

ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2002, is called the "2002 water year."

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

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

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

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

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

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

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

The USGS publishes a series of manuals titled the "Techniques of Water-Resources Investigations" that describe procedures for planning and conducting specialized work in water-resources investigations. The material in these manuals 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. Each chapter then is limited to a narrow field of the section subject matter. This publication format permits flexibility when revision or printing is required.

Manuals in the Techniques of Water-Resources Investigations series, which are listed below, are available online at http://water.usgs.gov/pubs/twri/. Printed copies are available for sale from the USGS, Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (an authorized agent of the Superintendent of Documents, Government Printing Office). Please telephone "1-888-ASK-USGS" for current prices, and refer to the title, book number, section number, chapter number, and mention the "U.S. Geological Survey Techniques of Water-Resources Investigations." Other products can be viewed online at http://www.usgs.gov/sales.html, or ordered by telephone or by FAX to (303)236-4693. Order forms for FAX requests are available online at *http://mac.usgs.gov/isb/pubs/forms/*. Prepayment by major credit card or by a check or money order payable to the "U.S. Geological Survey" is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

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

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

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

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

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

Section E. Subsurface Geophysical Methods

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

Section F. Drilling and Sampling Methods

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

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

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

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

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

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3–A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A7. 1968. 28 p.
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3–A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI book 3, chap. A9. 1989. 27 p.
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3–A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS–TWRI book 3, chap. A11. 1969. 22 p.
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3–A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI book 3, chap. A13. 1983. 53 p.
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3–A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI book 3, chap. A20. 1993. 38 p.
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Section B. Ground-Water Techniques

3–B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS–TWRI book 3, chap. B1. 1971. 26 p.
3–B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS–TWRI book 3, chap. B2. 1976. 172 p.
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Section C. Sedimentation and Erosion Techniques

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

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

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

Book 5. Laboratory Analysis

Section A. Water Analysis

5–A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI book 5, chap. A1. 1989. 545 p.
5–A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.

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Section C. Sediment Analysis

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

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

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Book 7. Automated Data Processing and Computations

Section C. Computer Programs

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

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

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

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

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

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

Section B. Instruments for Measurement of Discharge

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

Book 9. Handbooks for Water-Resources Investigations

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

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

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

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

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

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

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

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

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

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

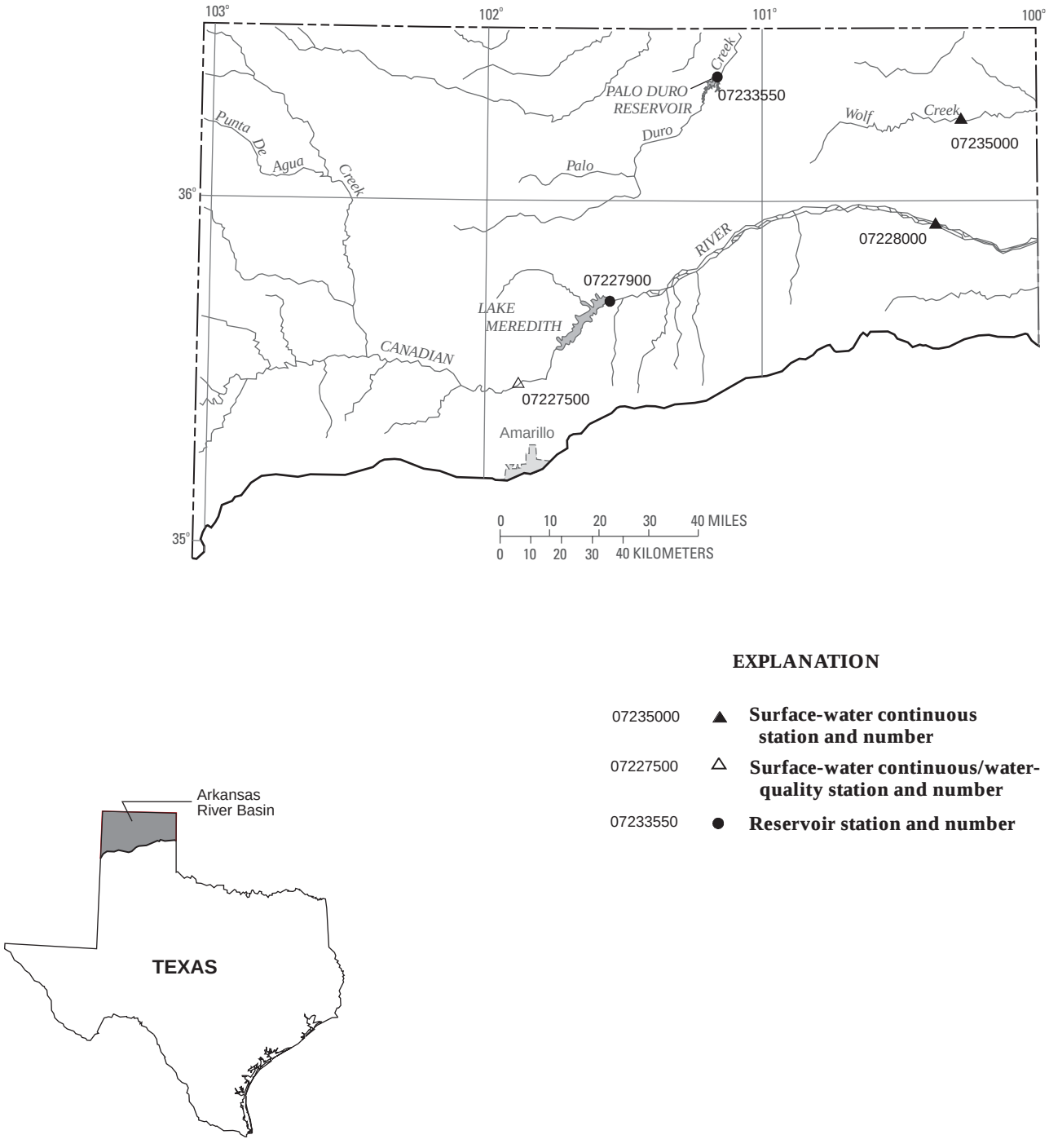


Figure 3.--Map showing location of gaging stations in the Arkansas River Basin

07227500 Canadian River near Amarillo, TX

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

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

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,989.16 ft above NGVD of 1929. 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. 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 FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	0.32	9.8	6.6	19	6.3	8.9	21	1.2	1.9	5.5	98
2	2.8	0.32	14	6.2	19	4.8	5.2	4.2	0.51	1.9	5.5	50
3	1.5	0.55	13	5.0	23	4.8	4.8	4.5	0.32	2.0	5.9	37
4	1.3	1.1	12	6.0	29	5.1	4.8	5.2	0.84	2.0	6.1	34
5	1.1	1.5	11	8.0	31	7.4	4.7	4.2	319	2.1	6.4	29
6	1.0	1.9	8.8	11	33	11	4.7	4.1	440	2.1	6.4	21
7	0.85	1.9	8.7	14	34	13	7.8	3.3	85	2.1	6.7	16
8	0.63	1.9	8.4	16	29	11	8.8	4.1	23	2.2	6.2	13
9	0.42	1.8	7.2	18	22	7.8	11	2.2	14	2.3	4.1	11
10	0.27	1.7	7.8	17	18	8.0	15	2.7	11	2.3	524	8.9
11	0.11	1.7	9.1	16	18	e6.7	13	7.7	7.0	2.4	281	7.2
12	0.04	1.8	9.8	16	18	e11	12	2.2	4.9	2.5	69	189
13	0.16	1.9	9.2	16	17	11	744	1.9	2.8	2.5	47	220
14	0.16	3.2	9.3	15	18	4.8	202	1.8	2.3	2.6	25	80
15	0.09	15	9.8	16	18	3.4	109	1.4	1.7	2.6	19	89
16	0.12	50	9.6	14	18	3.5	93	0.50	67	2.7	17	67
17	0.17	109	9.4	16	19	3.9	84	1.1	311	2.7	11	52
18	0.14	68	11	15	19	4.3	45	0.48	147	2.8	8.7	45
19	0.21	18	9.7	14	19	11	33	0.48	66	3.4	6.1	e1060
20	0.28	10	10	14	19	14	44	0.30	44	4.0	5.7	288
21	0.59	10	11	14	19	14	34	0.17	31	4.0	11	148
22	1.0	13	11	17	19	10	35	0.25	32	4.0	5.7	107
23	0.94	15	e7.5	15	19	13	40	0.06	22	4.1	6.2	102
24	1.0	14	e7.6	15	20	13	13	0.05	20	4.3	4.8	81
25	0.97	13	e6.3	14	16	11	9.6	e0.05	20	4.4	5.0	63
26	0.29	11	e6.5	15	14	11	9.0	0.06	18	4.5	5.4	48
27	0.28	8.4	6.8	16	13	13	9.9	1.3	11	4.7	5.3	44
28	0.29	6.7	5.8	17	9.9	13	9.0	0.36	3.2	4.8	9.6	41
29	0.31	5.8	6.6	18	---	11	8.0	1.3	1.8	4.9	199	30
30	0.30	8.4	4.2	19	---	9.4	12	1.4	1.9	5.0	932	18
31	0.40	---	4.9	19	---	8.6	---	1.5	---	5.4	764	---
TOTAL	19.92	396.89	275.8	438.8	569.9	279.8	1634.2	79.86	1709.47	99.2	3014.3	3097.1
MEAN	0.643	13.23	8.897	14.15	20.35	9.026	54.47	2.576	56.98	3.200	97.24	103.2
MAX	2.8	109	14	19	34	14	744	21	440	5.4	932	1060
MIN	0.04	0.32	4.2	5.0	9.9	3.4	4.7	0.05	0.32	1.9	4.1	7.2
AC-FT	40	787	547	870	1130	555	3240	158	3390	197	5980	6140

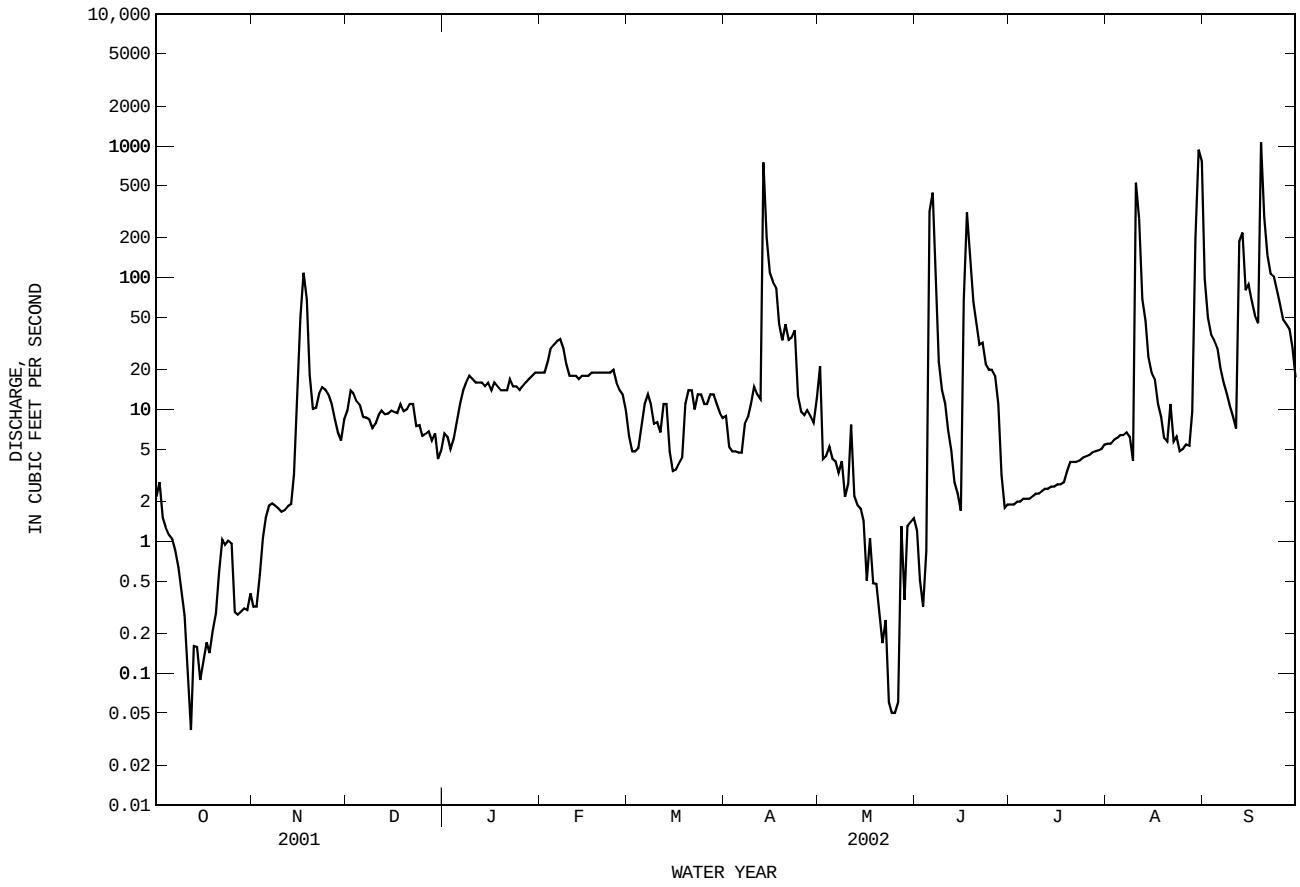
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002h, BY WATER YEAR (WY)

MEAN	300.9	77.62	49.51	55.38	50.06	53.03	175.1	425.1	490.2	544.0	511.7	503.8
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	0.57	1.52	1.25	4.75	3.00	1.86	1.52	2.58	0.95	0.24	0.11	0.000
(WY)	1981	1978	1984	1978	1939	1940	1978	2002	1990	1998	1983	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002h	
ANNUAL TOTAL	13323.82		11615.24			
ANNUAL MEAN	36.50		31.82		270.9	
HIGHEST ANNUAL MEAN					2351	1941
LOWEST ANNUAL MEAN					31.8	2002
HIGHEST DAILY MEAN	484	Mar 9	1060	Sep 19	79600	Sep 23 1941
LOWEST DAILY MEAN	0.00	Jul 30	0.04	Oct 12	0.00	Aug 7 1940
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 30	0.12	Oct 11	0.00	Sep 3 1983
MAXIMUM PEAK FLOW			9470	Aug 30	135000	Jul 25 1941
MAXIMUM PEAK STAGE			6.18	Aug 30	15.70	Jul 25 1941
ANNUAL RUNOFF (AC-FT)	26430		23040		196200	
10 PERCENT EXCEEDS	98		49		465	
50 PERCENT EXCEEDS	12		8.9		26	
90 PERCENT EXCEEDS	0.28		0.76		3.7	

e Estimated
h See PERIOD OF RECORD paragraph.

07227500 Canadian River near Amarillo, TX--Continued



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. Interruptions in the record were due to malfunction of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed 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 2002. The standard error of estimate for dissolved solids is 5%, chloride is 38%, sulfate is 21% and for hardness is 31%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 9,180 microsiemens/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, Nov. 19, 2000.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 7,760 microsiemens/cm, July 5; minimum, 350 microsiemens/cm, Aug. 11.
WATER TEMPERATURE: Maximum, 36.2°C, June 26; minimum, 0.0°C, on several days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
06...	1410	9.3	4930	8.3	12.2	11.1	104	640	470	153	63.8	794	14
FEB													
28...	1355	9.8	5530	8.3	9.7	11.0	111	900	710	227	80.2	915	13
APR													
29...	1445	8.9	4250	8.3	26.9	8.0	114	680	530	167	64.8	665	11
MAY													
22...	1550	.06	7060	8.3	25.3	8.0	113	890	780	215	85.8	1150	17
JUN													
28...	0955	1.7	4260	8.0	22.3	8.6	112	640	470	159	60.2	673	12
AUG													
07...	1555	6.6	1200	8.5	30.4	9.6	145	280	150	78.4	20.0	130	3

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, 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)
DEC													
06...	5.82	172	607	1180	.4	12.7	2920	1.34	.010	1.35	E.03	--	.29
FEB													
28...	6.93	190	796	1370	.5	12.3	3520	.97	.020	.99	E.03	--	.17
APR													
29...	7.41	160	614	936	.5	10.3	2570	1.32	.033	1.35	E.03	--	.41
MAY													
22...	6.35	112z	862	1780	.7	8.7	4180	--	<.008	E.04	.05	.22	.27
JUN													
28...	6.92	172	661	918	.5	13.7	2600	--	<.008	E.03	<.04	--	.18
AUG													
07...	5.63	131	174	176	.4	8.5	676	1.13	.020	1.15	<.04	--	.36

07227500 Canadian River near Amarillo, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
DEC			
06...	<.06	<.02	--
FEB			
28...	<.06	<.02	--
APR			
29...	.07	.05	.156
MAY			
22...	<.06	<.02	--
JUN			
28...	<.06	<.02	--
AUG			
07...	<.06	<.02	--

Remark codes used in this report:
< -- Less than
E -- Estimated value
Value qualifier codes used in this report:
z -- Value verified by rerun, diff method

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2001 TO SEPTEMBER 2002

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.	2001	19.92	3030	1790	96.2	650	34.7	400	21.5	410
NOV.	2001	396.89	1630	950	1020	300	325	230	243	220
DEC.	2001	275.8	5170	3080	2290	1200	912	650	484	700
JAN.	2002	438.8	4160	2470	2920	930	1100	540	638	560
FEB.	2002	569.9	5120	3050	4700	1200	1860	650	994	690
MAR.	2002	279.8	5380	3220	2430	1300	985	670	506	720
APR.	2002	1634.2	3730	2200	9730	810	3570	490	2160	500
MAY	2002	79.86	3690	2180	470	800	173	480	104	500
JUNE	2002	1709.47	1580	924	4260	300	1370	220	1010	210
JULY	2002	99.2	1970	1150	309	390	105	270	71.4	270
AUG.	2002	3014.3	777	450	3660	130	1060	110	913	110
SEPT	2002	3097.1	1270	735	6150	220	1880	180	1500	170
TOTAL		11615.24	**	**	38040	**	13370	**	8650	**
WTD.AVG.		32	2060	1210	**	430	**	280	**	280

07227500 Canadian River near Amarillo, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7060	3280	5580	2420	1250	1650	---	---	e4500	6400	5290	5630
2	6890	3370	5300	1600	1240	1380	---	---	e4670	6100	4940	5520
3	3370	2190	2790	2470	1120	1370	---	---	e4770	5740	4880	5160
4	4320	1980	2650	---	---	e2450	---	---	e4790	6010	4800	5130
5	2660	1630	2060	2300	1540	1910	---	---	e4880	5590	4770	5160
6	6580	1520	2750	3270	1700	2320	---	---	e4900	5490	4090	4670
7	4920	1470	2480	3040	2260	2670	5140	4240	4930	5220	4160	4620
8	4490	1460	2350	2840	1300	1540	5130	4990	5080	5300	4910	5080
9	3450	753	2400	1330	1240	1290	5320	5050	5200	5530	5140	5320
10	---	---	e2960	1380	1220	1280	5400	4920	5160	5480	4550	5020
11	---	---	e3740	1800	1340	1550	5240	4580	5070	5010	4730	4850
12	---	---	e4090	1870	1570	1670	5070	4910	4990	5230	4420	4820
13	3750	427	2880	2000	1570	1730	5060	4300	4640	5930	---	e5620
14	3060	2590	2790	1910	1120	1450	4760	4350	4570	---	---	e3300
15	2980	1880	2430	1500	1160	1240	5050	4710	4880	3450	3110	3250
16	---	---	e2230	1330	1200	1250	5110	4910	5000	3490	3080	3300
17	---	---	e2350	1840	752	1240	5330	5090	5170	3220	2930	3020
18	2090	1450	1830	---	---	e981	5560	5330	5470	3030	2830	2920
19	---	---	e1870	---	---	e1000	5670	5540	5590	3290	2900	3150
20	3000	1280	2120	---	---	e1020	5780	5620	5670	3360	3180	3230
21	2560	1300	1720	---	---	e1640	5750	5510	5610	---	---	e3210
22	1900	1310	1640	---	---	e1950	5920	5370	5680	3430	3230	3320
23	---	---	e2280	---	---	e2290	5950	5810	5870	3320	3180	3250
24	2120	1810	2020	---	---	e2620	6040	5860	5970	3300	3170	3220
25	1810	1530	1640	---	---	e2830	6080	5690	5980	3320	3170	3240
26	1670	1500	1570	---	---	e3100	6120	4930	5450	---	3200	e3290
27	1650	1060	1470	---	---	e3510	6500	4770	5520	---	---	e4540
28	2130	1200	1480	---	---	e3780	6340	4820	5610	---	---	e5150
29	2280	1450	1800	---	---	e4050	6310	5150	5590	5460	4170	5120
30	2390	1660	2080	---	---	e4190	5720	4780	5140	4620	3080	3660
31	2980	903	1790	---	---	---	5430	5010	5170	5190	4240	4660
MONTH	---	---	2490	---	---	2030	---	---	5210	---	---	4240

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

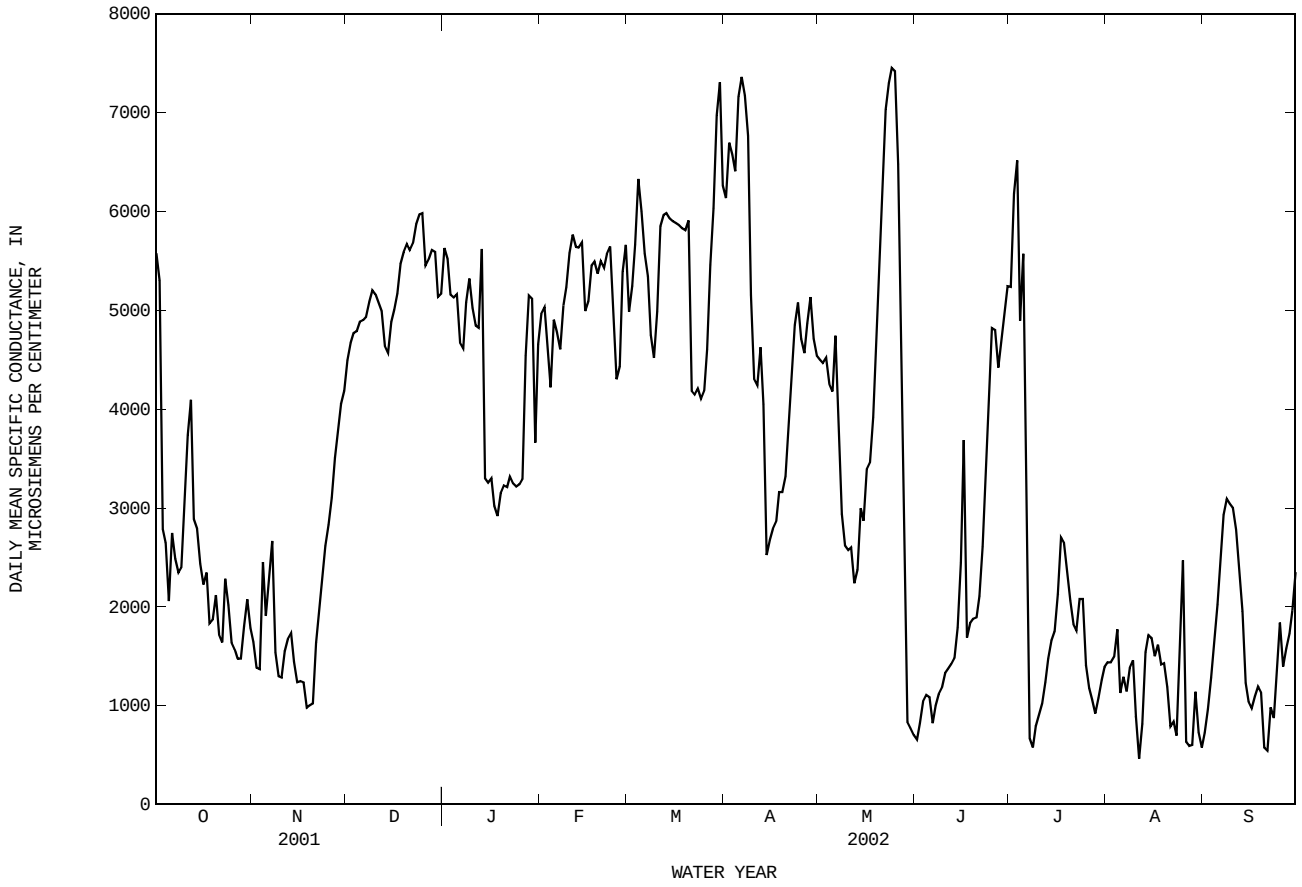
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5310	4460	4960	5770	4700	4980	6400	5860	6130	4710	4300	4500
2	5300	4780	5030	6190	4990	5250	7000	6330	6700	4640	4230	4470
3	4950	4050	4600	6140	5300	5660	7000	5790	6570	4680	4390	4520
4	4760	3810	4220	6980	5900	6330	6950	6100	6400	4580	4060	4250
5	5350	4620	4900	6140	5790	6000	7480	6950	7160	4660	3960	4180
6	5290	4410	4780	5910	5110	5570	7460	7230	7360	5190	4200	4740
7	5150	4360	4610	6360	4960	5340	7380	6880	7170	4200	3300	3700
8	5790	4370	5050	7040	3120	4750	7240	5150	6770	3340	2670	2940
9	5650	4990	5230	5000	4310	4520	5940	4510	5150	2840	2420	2620
10	5810	5260	5580	5840	4540	4980	4960	4200	4310	2700	2270	2580
11	6440	5480	5770	6040	5580	5850	4310	4060	4240	2920	2320	2600
12	6140	5480	5640	6350	5720	5960	5130	4030	4620	2420	2100	2240
13	6080	5390	5640	6320	5600	5980	6100	2200	4050	2590	2230	2370
14	6400	5340	5680	---	---	e5930	---	---	e2520	3510	2590	3000
15	5350	4760	4990	---	---	e5900	---	---	e2680	3430	2520	2870
16	5610	4730	5090	---	---	e5880	---	---	e2790	3680	3130	3390
17	5560	5370	5450	---	---	e5860	---	---	e2860	4190	2600	3460
18	5820	5290	5490	---	---	e5830	---	---	e3160	---	---	e3920
19	5530	5240	5370	---	---	e5810	3270	3060	3160	---	---	e4630
20	6030	5340	5500	6580	4440	5910	3780	2420	3320	---	---	e5220
21	5550	5330	5430	4480	3740	4180	4120	3780	3940	---	---	e6080
22	6040	5290	5570	4330	3950	4150	4640	4120	4370	---	---	e7030
23	5990	4850	5650	4340	4080	4210	5040	4640	4850	---	---	e7300
24	5630	4830	5030	4220	3990	4100	5250	4940	5080	---	---	e7450
25	4850	3920	4300	4280	4120	4180	5220	4540	4710	---	---	e7420
26	4560	4170	4430	4930	4260	4600	4710	4420	4570	---	---	e6480
27	6750	4460	5390	5730	4930	5460	5340	4460	4870	---	---	e4520
28	6600	4720	5660	6400	5690	6030	5390	5000	5130	---	937	e3140
29	---	---	---	7510	6400	6970	5320	4460	4710	937	728	838
30	---	---	---	7750	6570	7310	4850	4420	4540	873	651	772
31	---	---	---	6570	5970	6260	---	---	---	798	602	705
MONTH	6750	3810	5180	---	---	5480	---	---	4800	---	---	4000

07227500 Canadian River near Amarillo, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	724	574	657	6990	4420	5240	1490	1370	1440	842	619	727
2	934	644	824	7350	5080	6180	2010	1130	1440	1110	842	967
3	1110	847	1040	7120	5800	6520	1640	1340	1490	1530	1110	1280
4	1360	1040	1110	6720	2760	4890	2010	1370	1770	1860	1530	1670
5	1580	840	1090	7760	3890	5570	1370	988	1130	2280	1860	2030
6	979	740	825	7430	626	2680	1430	1060	1290	2860	2280	2500
7	1020	979	999	792	609	667	1290	971	1140	3090	2630	2930
8	---	---	e1120	702	518	576	1570	1050	1380	3270	2880	3090
9	---	---	e1180	829	584	793	1620	1270	1460	3200	2810	3040
10	---	---	e1330	952	818	908	3560	385	891	3120	2830	3000
11	---	---	e1370	1130	950	1020	594	350	463	2950	2650	2780
12	---	---	e1420	1360	1120	1240	1450	513	816	6370	1480	2330
13	---	---	e1480	1540	1360	1480	2030	1170	1540	2510	1430	1960
14	---	---	e1790	1840	1520	1660	2030	1440	1710	1430	1130	1230
15	---	---	e2440	1870	1660	1750	1820	1410	1680	1130	974	1040
16	---	---	e3690	2390	1870	2130	1580	1370	1500	1060	914	976
17	---	---	e1690	2880	2390	2710	1710	1480	1620	1240	965	1100
18	---	---	e1830	2750	2430	2650	1580	1050	1420	1290	1140	1200
19	1910	1800	1880	2520	2030	2360	1640	1230	1430	1360	585	1140
20	1990	1830	1890	2180	1880	2060	1310	904	1190	620	528	577
21	2370	1980	2110	1980	1620	1820	1230	583	788	682	519	544
22	3030	2370	2610	2830	1320	1760	1080	634	838	1090	682	982
23	3790	3030	3360	3920	827	2080	781	553	699	1010	789	874
24	4700	3790	4210	3100	1540	2080	4670	781	1630	2300	789	1280
25	5290	4560	4820	1720	1240	1410	5500	760	2470	2380	1440	1840
26	5220	4550	4800	1240	1080	1180	760	535	634	1480	1350	1400
27	---	---	e4420	1100	1040	1060	643	503	592	1660	1480	1580
28	5190	4130	4690	1070	787	920	1190	541	605	1840	1660	1730
29	6060	4400	4970	1200	940	1080	3270	487	1140	2190	1840	1970
30	6210	4250	5240	1420	1110	1260	940	495	731	2460	2190	2350
31	---	---	---	1480	1300	1390	875	481	576	---	---	---
MONTH	---	---	2360	7760	518	2230	5500	350	1210	6370	519	1670

e Estimated



07227500 Canadian River near Amarillo, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

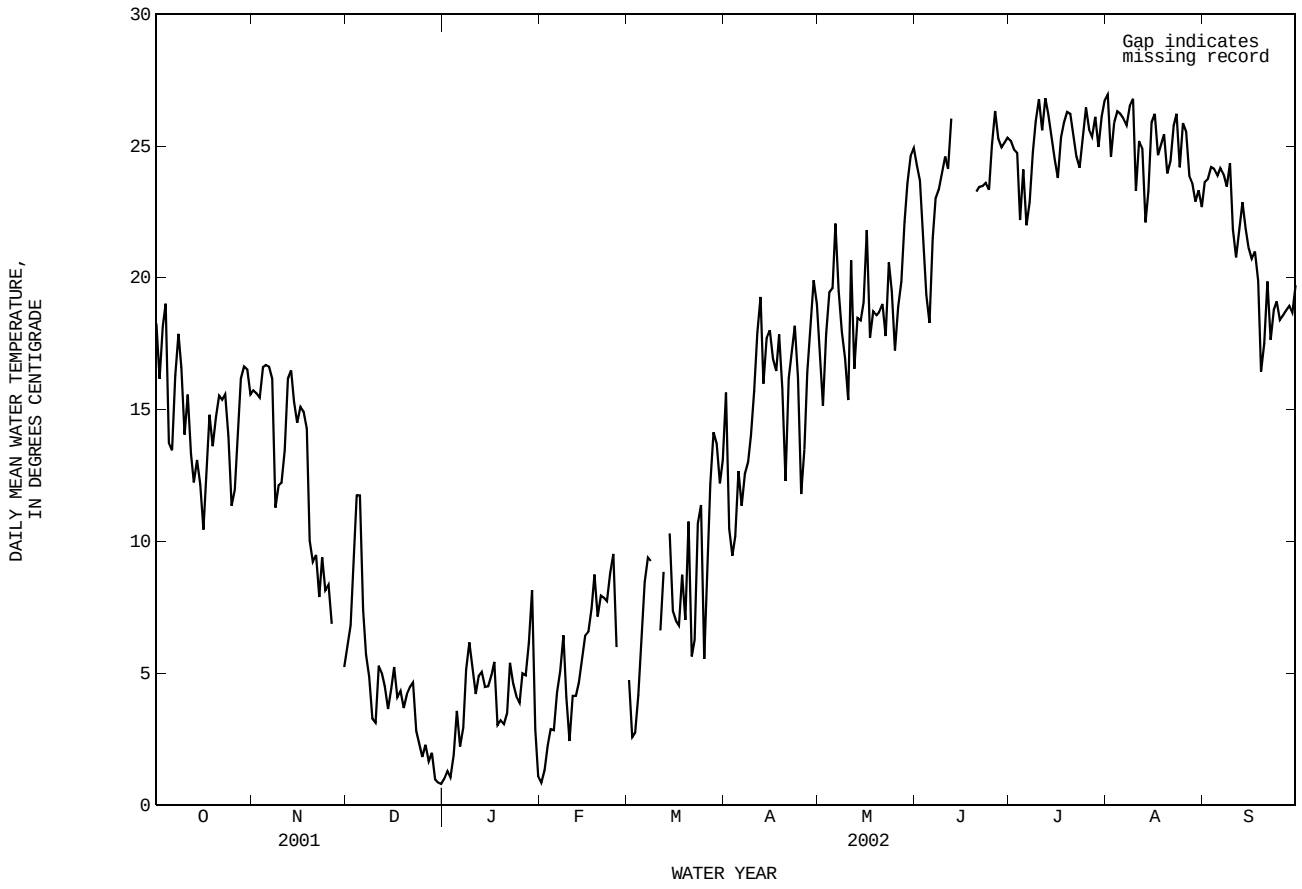
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.2	13.9	18.3	20.7	11.2	15.7	12.6	1.7	6.0	2.8	0.2	1.0
2	20.2	12.1	16.2	19.8	11.1	15.6	14.0	1.6	6.8	4.3	0.0	1.3
3	23.7	14.0	18.2	18.0	13.6	15.5	15.6	3.7	8.8	3.8	0.0	1.1
4	24.0	15.4	19.0	19.8	14.8	16.6	15.7	8.7	11.8	5.0	0.1	1.9
5	16.7	11.9	13.8	20.8	14.2	16.7	15.7	7.0	11.7	8.8	1.0	3.6
6	19.8	9.1	13.5	20.6	14.2	16.6	12.8	2.4	7.4	6.2	0.1	2.2
7	22.9	11.8	16.3	21.9	12.3	16.2	11.8	1.7	5.7	8.0	0.2	2.9
8	22.3	14.8	17.9	14.5	9.6	11.3	10.3	1.4	4.9	11.5	0.8	5.2
9	20.2	14.6	16.6	17.3	8.5	12.1	9.5	0.0	3.3	11.0	2.1	6.2
10	16.0	12.9	14.1	16.4	8.4	12.2	7.6	0.0	3.1	6.9	3.4	5.2
11	21.4	11.7	15.6	17.8	9.2	13.5	11.6	1.1	5.3	8.5	0.2	4.2
12	16.4	9.8	13.3	21.1	13.3	16.2	8.4	3.2	5.0	7.8	2.4	4.9
13	21.5	6.5	12.2	19.7	14.8	16.5	9.7	1.7	4.5	7.8	3.1	5.0
14	18.6	7.5	13.1	16.2	14.0	15.3	9.6	0.0	3.6	9.1	1.2	4.5
15	16.7	9.4	12.2	15.2	14.0	14.5	9.5	0.1	4.4	8.7	1.1	4.5
16	17.4	3.9	10.4	16.9	13.9	15.1	9.7	2.4	5.2	7.7	2.2	4.9
17	19.6	6.4	12.9	18.2	13.0	14.9	10.3	0.0	4.1	10.8	2.5	5.4
18	19.7	10.8	14.8	18.7	10.9	14.3	10.1	0.4	4.3	6.6	0.9	3.0
19	18.7	9.4	13.6	13.8	7.0	10.0	9.1	0.0	3.7	8.4	0.7	3.2
20	20.6	10.1	14.7	14.8	4.9	9.2	10.9	0.0	4.2	6.7	0.6	3.1
21	20.2	10.3	15.5	14.4	6.1	9.5	9.3	0.4	4.5	7.9	1.2	3.5
22	18.6	12.7	15.4	11.3	3.9	7.9	9.9	1.4	4.6	10.9	1.2	5.4
23	20.1	12.0	15.6	13.3	6.8	9.4	8.0	0.0	2.8	7.3	2.5	4.6
24	16.6	11.8	14.0	13.3	4.4	8.1	7.3	0.0	2.3	7.8	1.7	4.1
25	15.4	7.4	11.4	13.6	4.3	8.4	5.9	0.0	1.8	8.5	1.4	3.9
26	16.4	8.2	12.0	12.1	2.7	6.9	7.2	0.0	2.3	11.1	1.3	5.0
27	20.0	9.8	14.0	---	---	---	5.4	0.0	1.7	9.0	1.5	4.9
28	20.6	12.7	16.2	---	---	---	5.6	0.0	2.0	10.1	2.3	6.2
29	21.2	12.9	16.6	5.2	---	---	2.8	0.0	1.0	10.2	6.8	8.2
30	19.0	14.5	16.5	12.1	0.8	5.2	3.2	0.1	0.9	6.8	1.3	2.9
31	17.8	14.0	15.6	---	---	---	1.9	0.1	0.8	1.6	0.5	1.1
MONTH	24.2	3.9	14.8	---	---	---	15.7	0.0	4.5	11.5	0.0	4.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.2	0.3	0.9	7.8	2.9	4.8	24.7	8.9	15.6	23.7	12.2	17.1
2	3.2	0.5	1.3	3.2	1.9	2.6	16.7	5.4	10.5	25.0	9.4	15.2
3	6.4	0.3	2.3	4.7	2.1	2.7	20.2	2.4	9.5	28.1	9.8	17.9
4	6.2	0.3	2.9	8.7	2.0	4.2	21.0	2.7	10.2	28.8	12.0	19.4
5	3.9	1.4	2.9	11.6	2.3	6.2	22.5	5.5	12.7	25.8	15.2	19.6
6	9.7	0.8	4.3	16.1	3.6	8.5	12.9	10.2	11.4	32.1	16.2	22.1
7	11.2	0.2	5.1	15.4	4.7	9.4	18.8	9.8	12.6	27.5	13.2	19.5
8	12.9	1.8	6.4	15.5	2.3	9.3	18.2	8.9	13.0	27.7	11.4	18.0
9	6.4	1.7	4.1	---	0.1	---	21.4	10.4	14.0	27.2	9.9	17.0
10	6.8	0.3	2.4	---	0.8	---	22.7	10.8	15.7	22.4	10.7	15.4
11	11.0	0.4	4.2	12.0	2.9	6.6	26.0	12.2	17.9	29.6	15.4	20.7
12	7.7	1.3	4.2	15.0	3.0	8.8	28.2	14.4	19.3	25.1	11.9	16.5
13	11.0	0.8	4.6	---	5.2	---	22.0	13.9	16.0	29.7	9.7	18.5
14	11.4	0.9	5.5	15.3	7.6	10.3	23.4	13.2	17.7	26.7	12.1	18.4
15	11.7	2.8	6.4	10.6	5.0	7.4	21.7	14.8	18.0	28.1	13.6	19.1
16	12.4	1.8	6.6	9.6	4.9	7.0	18.7	15.1	16.9	32.0	14.9	21.8
17	12.0	4.4	7.5	9.2	5.3	6.8	19.0	13.8	16.5	23.9	13.9	17.7
18	15.1	5.5	8.8	12.7	5.7	8.7	23.2	14.2	17.9	28.3	12.7	18.7
19	8.8	5.0	7.2	10.1	5.4	7.0	20.5	10.7	15.8	26.8	12.3	18.6
20	14.0	2.9	8.0	19.8	4.8	10.8	15.6	10.8	12.3	26.7	12.5	18.7
21	10.6	5.6	7.9	10.4	1.5	5.6	24.3	10.2	16.2	26.5	14.2	19.0
22	15.1	2.1	7.7	14.1	0.0	6.3	24.9	11.1	17.2	24.4	14.2	17.8
23	14.1	4.8	8.8	19.9	3.8	10.7	27.3	11.6	18.2	28.1	16.0	20.6
24	12.7	6.7	9.5	20.9	6.1	11.4	22.8	11.5	16.2	24.7	14.7	19.5
25	8.3	3.9	6.0	10.4	2.9	5.5	14.4	10.2	11.8	24.3	11.8	17.2
26	4.9	---	---	19.2	1.4	9.0	21.1	9.5	13.5	28.0	15.2	18.9
27	8.8	---	---	21.2	5.6	12.2	22.1	12.2	16.4	28.3	16.0	19.9
28	---	---	---	23.9	7.2	14.1	28.8	10.7	18.1	31.3	15.2	22.1
29	---	---	---	21.7	8.1	13.7	28.8	13.7	19.9	32.8	17.0	23.6
30	---	---	---	17.7	9.0	12.2	25.5	14.8	19.0	30.6	19.7	24.6
31	---	---	---	23.8	5.1	13.1	---	---	---	33.4	19.2	24.9
MONTH	---	---	---	---	0.0	---	28.8	2.4	15.3	33.4	9.4	19.3

07227500 Canadian River near Amarillo, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	32.0	19.3	24.2	32.5	20.9	25.2	33.6	22.1	26.9	26.8	20.5	23.6
2	31.1	19.0	23.7	30.4	20.1	24.9	30.6	22.0	24.6	27.5	20.4	23.8
3	25.0	18.3	21.6	31.2	20.6	24.7	31.2	22.2	25.9	29.2	20.5	24.2
4	22.8	16.2	19.4	25.8	20.3	22.2	34.1	21.2	26.3	30.6	19.7	24.1
5	21.8	15.4	18.3	30.0	20.0	24.1	33.2	22.5	26.2	29.2	20.4	23.9
6	28.4	16.0	21.5	27.7	19.7	22.0	34.0	21.1	26.0	30.2	19.8	24.2
7	28.8	18.5	23.0	26.4	20.5	22.9	31.6	21.9	25.8	29.9	19.7	23.9
8	28.8	19.4	23.4	28.6	21.1	24.8	33.8	21.4	26.5	30.2	19.3	23.5
9	30.7	19.3	24.0	29.6	23.5	26.0	34.1	22.2	26.8	30.4	20.9	24.3
10	32.4	20.6	24.6	33.0	22.4	26.8	27.8	19.0	23.3	24.9	19.1	21.9
11	30.1	20.4	24.1	30.2	22.2	25.6	29.3	22.0	25.2	24.8	18.2	20.8
12	35.8	19.9	26.0	33.9	22.0	26.8	30.4	20.7	24.9	25.4	18.6	21.8
13	---	19.4	---	32.7	21.7	26.2	26.6	18.4	22.1	27.2	19.6	22.9
14	---	---	---	31.5	20.7	25.3	30.2	17.8	23.3	25.2	18.9	21.9
15	---	---	---	29.9	21.1	24.5	33.4	20.8	25.9	25.2	18.0	21.1
16	---	---	---	30.8	20.4	23.8	31.6	22.5	26.2	25.8	16.1	20.7
17	---	---	---	31.8	20.3	25.3	30.5	20.8	24.7	25.8	17.5	21.0
18	---	---	---	32.7	20.8	25.9	31.8	20.4	25.1	24.6	16.8	19.9
19	28.8	---	---	34.2	20.8	26.3	33.7	21.2	25.4	19.1	14.8	16.4
20	29.6	19.0	23.3	33.9	21.7	26.2	29.7	21.8	24.0	22.7	13.3	17.5
21	29.9	19.3	23.5	32.8	20.0	25.4	30.0	21.3	24.4	25.0	15.4	19.9
22	29.6	19.2	23.5	31.9	20.8	24.6	35.5	20.1	25.8	22.0	13.9	17.6
23	30.6	18.6	23.6	30.0	21.0	24.2	34.0	21.7	26.2	23.8	14.6	18.8
24	29.7	18.8	23.3	29.8	21.4	25.3	29.4	21.8	24.2	23.9	15.4	19.1
25	35.0	18.3	25.0	31.0	22.7	26.5	32.5	21.4	25.9	23.8	14.2	18.4
26	36.2	19.6	26.3	29.9	21.4	25.6	32.4	21.7	25.5	23.5	14.5	18.6
27	32.1	19.5	25.3	31.0	21.4	25.4	29.2	19.2	23.9	24.6	14.1	18.8
28	34.2	19.3	24.9	32.0	21.8	26.1	29.6	20.8	23.6	23.6	16.3	18.9
29	34.4	19.1	25.1	29.8	21.4	25.0	28.0	19.4	22.9	24.1	14.5	18.7
30	33.5	19.7	25.3	32.2	21.2	26.1	27.0	20.5	23.3	25.4	15.8	19.7
31	---	---	---	33.2	22.1	26.7	27.3	18.4	22.7	---	---	---
MONTH	---	---	---	34.2	19.7	25.2	35.5	17.8	25.0	30.6	13.3	21.0



07227900 Lake Meredith 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 NGVD of 1929. Prior to Aug. 1965, nonrecording gage read daily at same site and datum. Satellite telemeter at station.

REMARKS.--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.--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, 283,400 acre-ft, Oct. 1; minimum contents, 203,800 acre-ft, Sept. 30, elevation, 2,883.51 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

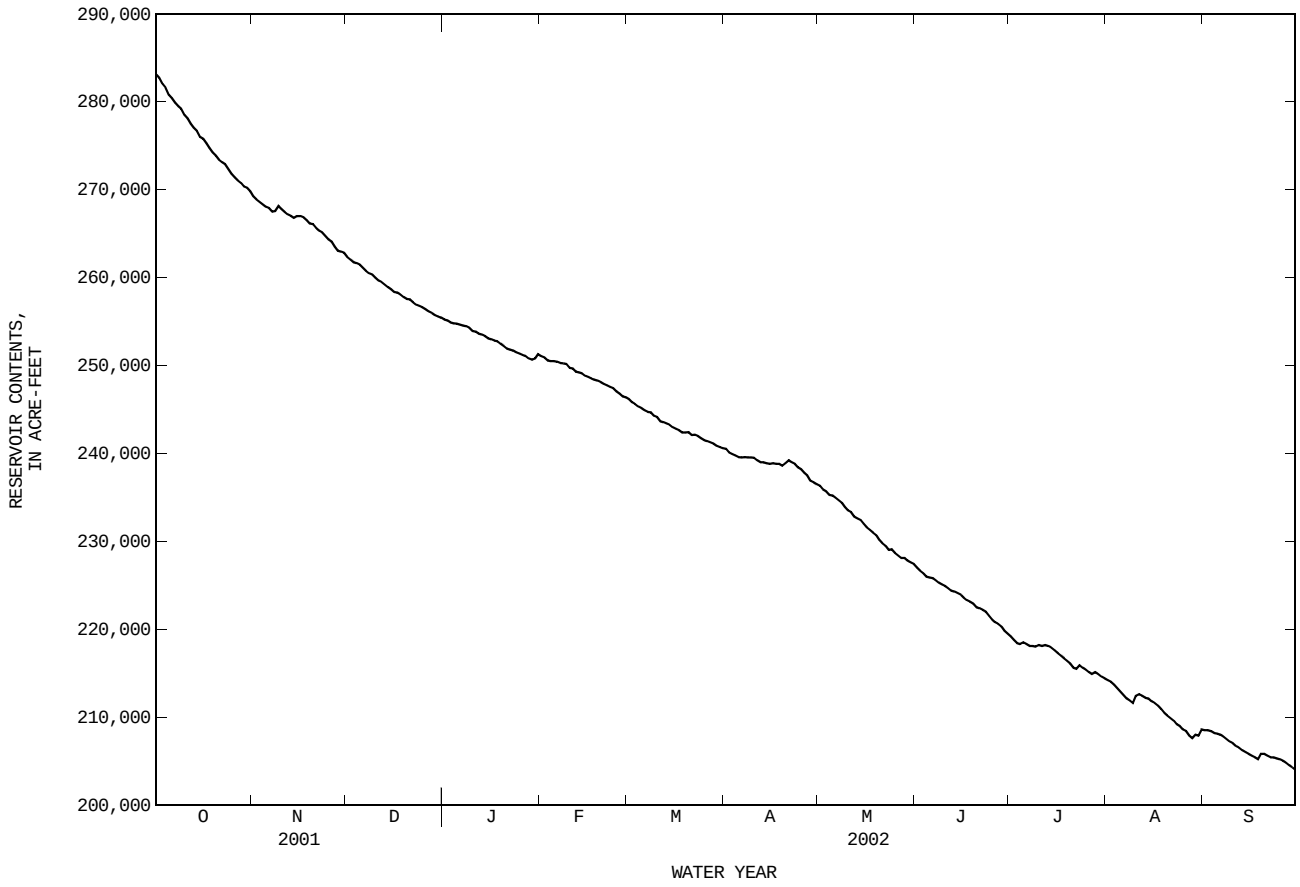
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	283100	269300	262300	255200	251100	246200	240500	236300	227000	219200	214200	208500
2	282700	268900	262100	255100	250900	245800	240100	235900	226700	218800	214000	208500
3	282000	268600	261800	254900	250600	245600	239900	235700	226400	218400	213700	208400
4	281600	268300	261600	254800	250500	245300	239700	235300	226000	218300	213300	208200
5	280800	268100	261500	254800	250500	245100	239600	235200	225900	218500	212900	208100
6	280400	267900	261100	254700	250400	244900	239500	235000	225800	218300	212500	208000
7	279900	267500	260800	254600	250300	244700	239600	234700	225600	218100	212100	207800
8	279500	267600	260500	254500	250300	244700	239500	234400	225300	218100	211900	207500
9	279200	268100	260300	254300	250200	244300	239600	233900	225100	218000	211600	207200
10	278500	267800	260000	253900	249700	244100	239500	233500	224900	218200	212400	207000
11	278100	267500	259600	253800	249700	243600	239200	233300	224700	218100	212600	206700
12	277500	267200	259500	253600	249300	243600	239000	232800	224400	218200	212400	206500
13	277100	267000	259200	253500	249200	243400	239000	232600	224300	218100	212200	206200
14	276700	266800	258900	253400	249100	243300	238900	232400	224100	217900	212100	206000
15	276000	267000	258700	253100	248800	243000	238800	232000	e223900	217600	211800	205800
16	275800	267000	258400	253000	248700	242800	238900	231600	e223600	217300	211600	205600
17	275300	266900	258300	252800	248500	242600	238800	231300	e223300	217000	211300	205400
18	274800	266500	258100	252800	248400	242400	238800	231000	223100	216700	210900	205200
19	274300	266200	257800	252500	248300	242400	238600	230700	222900	216400	210500	205800
20	273900	266100	257600	252200	248100	242400	238900	230200	222500	216100	210200	205800
21	273400	265700	257500	251900	247900	242100	239200	229800	222400	215600	209900	205600
22	273100	265300	257200	251800	247700	242100	239000	229500	222200	215500	209600	205400
23	272900	265200	256900	251700	247600	242000	238800	229000	222000	215900	209200	205400
24	272300	264800	256800	251500	247400	241700	238400	229100	221500	215600	209000	205300
25	271800	264300	256600	251400	247000	241500	238200	228700	221100	215400	208600	205200
26	271400	264100	256400	251200	246800	241400	237800	228400	220800	215100	208400	205000
27	271100	263500	256100	251100	246500	241300	237500	228100	220600	214900	207900	204800
28	270800	263100	256000	250800	246400	241100	236900	228100	220300	215100	207600	204500
29	270400	263000	255700	250600	---	240900	236700	227800	219800	214900	208000	204300
30	270200	262800	255600	250800	---	240700	236500	227600	219500	214600	207900	204000
31	269800	---	255400	251300	---	240600	---	227400	---	214400	208600	---
MEAN	275900	266400	258700	253000	248900	243100	238800	231700	223500	216900	210900	206300
MAX	283100	269300	262300	255200	251100	246200	240500	236300	227000	219200	214200	208500
MIN	269800	262800	255400	250600	246400	240600	236500	227400	219500	214400	207600	204000
(+)	2892.33	2891.53	2890.67	2890.18	2889.55	2888.77	2888.21	2886.93	2885.80	2885.07	2884.22	2883.53
(@)	-13700	-7000	-7400	-4100	-4900	-5800	-4100	-9100	-7900	-5100	-5800	-4600

CAL YR 2001 MAX 351300 MIN 256300 (@) -85600
WTR YR 2002 MAX 283100 MIN 204000 (@) -79500

e Estimated

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

07227900 Lake Meredith 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 NGVD of 1929. July 1, 1924, to Aug. 31, 1925, and Apr. 21 to Dec. 15, 1938, nonrecording gage; Dec. 16, 1938, to Sept. 30, 1953, Oct. 12, 1995, to Jan. 30, 1998, water-stage recorder and nonrecording gages; all at site 300 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. 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 FROM THE DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	21	41	50	63	59	50	40	221	35	27	40
2	7.0	21	42	53	63	e58	48	38	142	35	22	36
3	7.4	21	41	55	73	58	47	39	117	34	20	33
4	8.4	21	40	55	85	59	48	37	101	40	17	29
5	9.4	22	40	55	107	60	48	35	127	66	15	28
6	11	23	39	55	126	60	49	36	127	66	14	27
7	13	23	40	54	128	60	94	33	107	58	13	23
8	13	23	41	55	116	60	85	31	86	56	13	22
9	14	23	42	55	103	54	71	30	75	47	13	22
10	14	24	43	55	85	53	63	31	68	39	44	24
11	14	25	43	55	79	55	59	34	86	32	36	24
12	14	25	44	55	75	53	56	32	73	32	37	24
13	14	26	44	55	72	54	57	31	75	31	44	23
14	15	33	43	54	70	55	58	30	78	30	38	28
15	15	43	43	55	67	55	54	29	99	28	32	24
16	15	44	42	55	66	53	52	28	136	26	28	22
17	15	70	41	55	66	52	49	36	104	25	24	20
18	16	68	42	55	67	52	47	36	86	23	21	20
19	17	57	41	56	80	54	45	33	72	21	18	30
20	17	53	42	55	78	54	49	31	65	19	22	35
21	18	48	43	55	73	54	52	30	60	17	33	33
22	19	47	44	55	68	56	49	29	52	18	38	35
23	19	45	43	55	66	58	47	28	50	46	39	37
24	19	43	43	54	63	56	44	139	47	35	38	33
25	19	42	44	51	61	53	43	680	49	29	46	30
26	21	42	44	50	58	53	47	364	49	23	39	29
27	22	41	44	49	60	53	49	615	51	19	34	29
28	22	41	46	49	60	52	45	729	46	18	32	27
29	22	42	45	48	---	51	43	534	40	32	35	24
30	21	43	48	53	---	51	42	625	36	33	37	22
31	21	---	49	57	---	51	---	615	---	32	41	---
TOTAL	478.9	1100	1327	1668	2178	1706	1590	5058	2525	1045	910	833
MEAN	15.45	36.67	42.81	53.81	77.79	55.03	53.00	163.2	84.17	33.71	29.35	27.77
MAX	22	70	49	57	128	60	94	729	221	66	46	40
MIN	6.7	21	39	48	58	51	42	28	36	17	13	20
AC-FT	950	2180	2630	3310	4320	3380	3150	10030	5010	2070	1800	1650

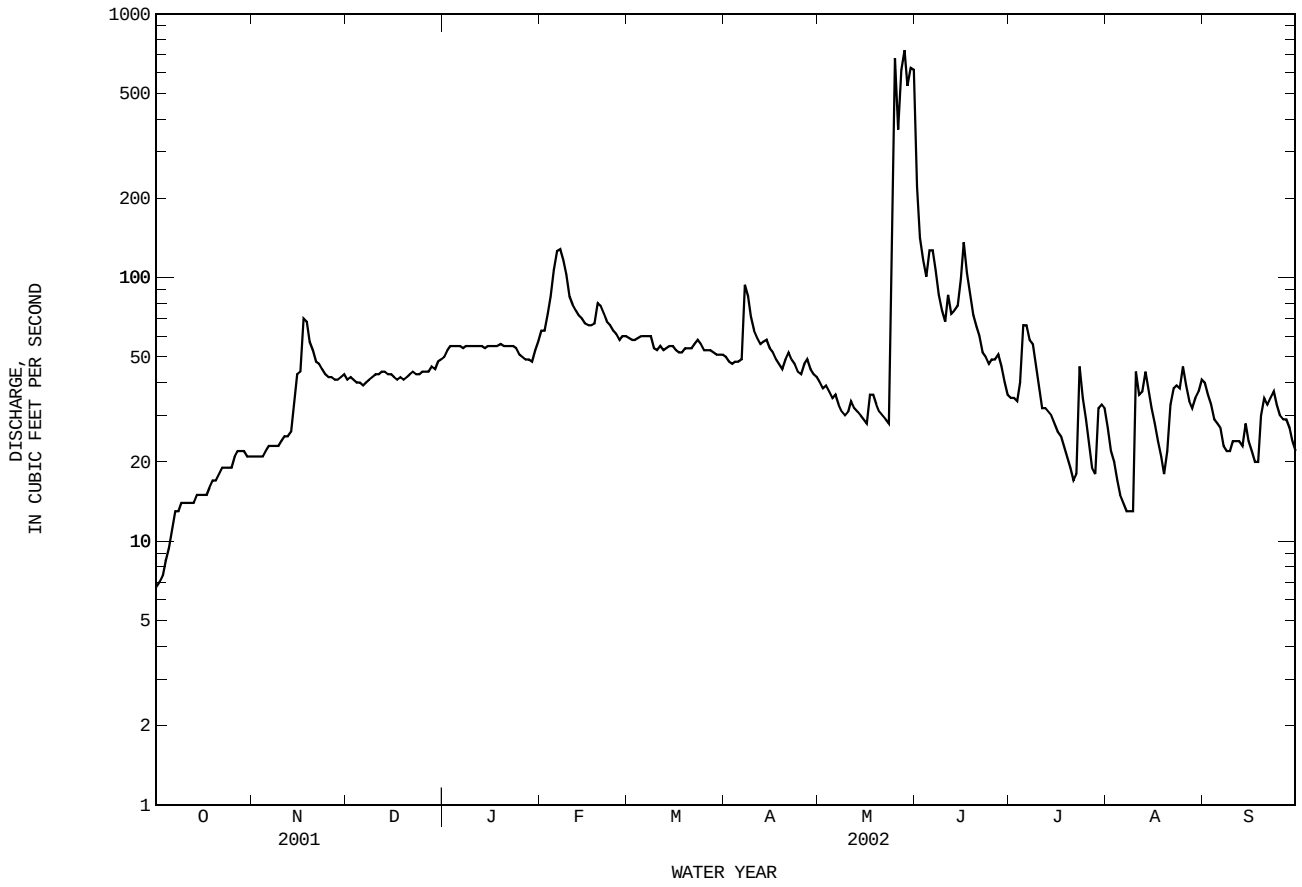
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	363.0	87.40	94.55	115.9	104.4	115.2	206.0	577.8	596.4	441.6	309.5	372.2
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	0.35	1.03	1.50	1.53	28.3	1.76	1.14	0.46	0.34	0.019	0.019	0.000
(WY)	1976	1946	1940	1957	1959	1946	1964	1962	1966	1970	1980	1983

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002	
ANNUAL TOTAL	20418.9			
ANNUAL MEAN	55.94		276.6	
HIGHEST ANNUAL MEAN			2963	1941
LOWEST ANNUAL MEAN			34.5	1964
HIGHEST DAILY MEAN	729	May 28	60600	Sep 24 1941
LOWEST DAILY MEAN	6.7	Oct 1	0.00	Jan 4 1941
ANNUAL SEVEN-DAY MINIMUM	9.0	Oct 1	0.00	Apr 8 1941
MAXIMUM PEAK FLOW	1140	May 27	38900	Oct 9 1968
MAXIMUM PEAK STAGE	3.91	May 27	9.83	Apr 15 1973
ANNUAL RUNOFF (AC-FT)	40500		200400	
10 PERCENT EXCEEDS	75		311	
50 PERCENT EXCEEDS	43		40	
90 PERCENT EXCEEDS	19		0.70	

e Estimated

07228000 Canadian River near Canadian, 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 NGVD of 1929. 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, 4,000 acre-ft, Sept. 30, 2002, elevation, 2,846.23 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 7,470 acre-ft, Oct. 1, elevation, 2,854.01 ft; minimum contents, 4,000 acre-ft, Sept. 30, elevation, 2,846.23 ft.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

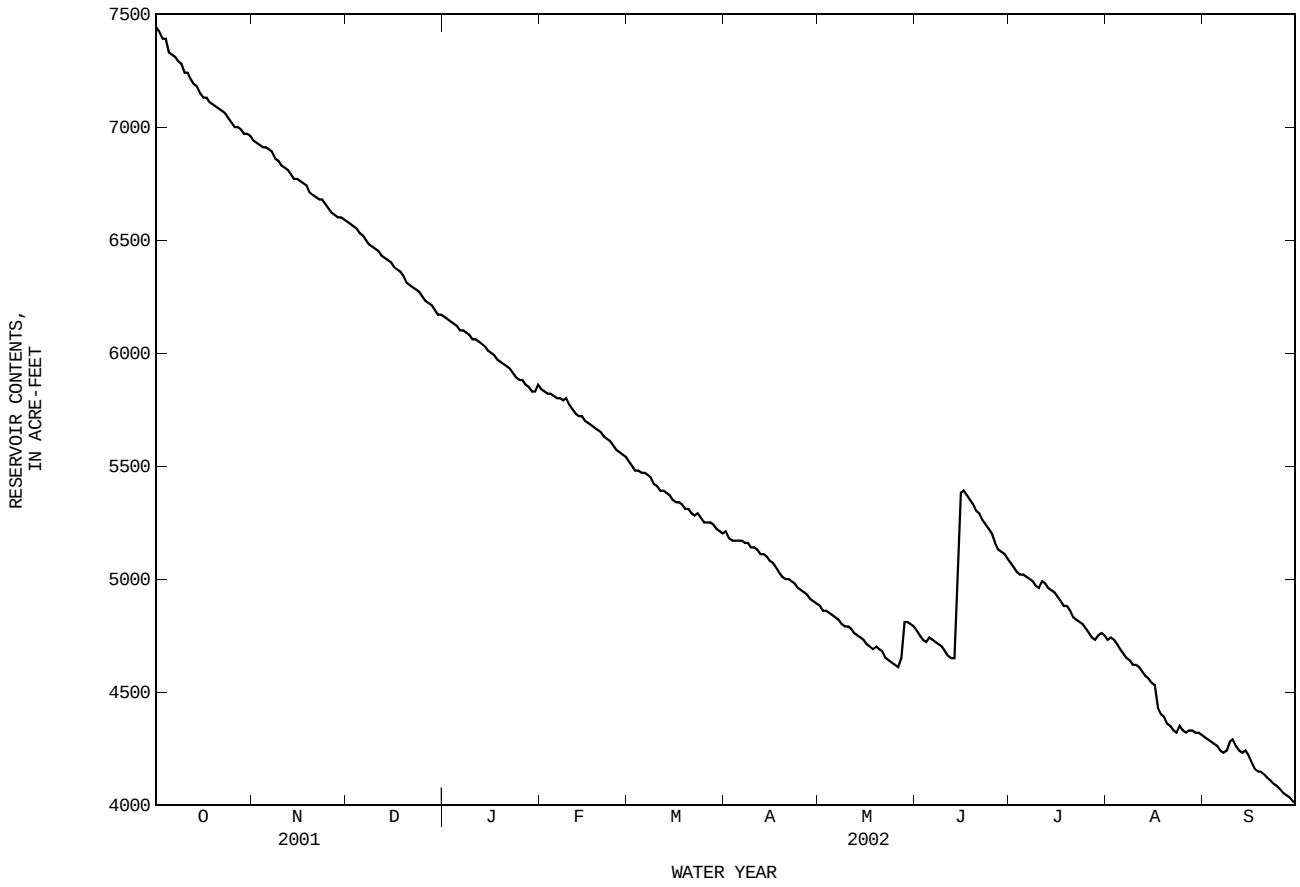
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7440	6940	e6580	6160	5840	5520	5210	4880	4770	5070	4730	e4300
2	7420	6930	e6570	6150	5830	5500	5180	4860	4750	5050	4740	e4290
3	7390	6920	e6560	6140	5820	5480	5170	4860	4730	5030	4730	e4280
4	7390	6910	e6550	6130	5820	5480	5170	4850	4720	5020	4710	e4270
5	7330	6910	e6530	6120	5810	5470	5170	4840	4740	5020	4690	e4260
6	7320	6900	e6520	6100	5800	5470	5170	4830	4730	5010	4670	e4240
7	7310	6890	e6500	6100	5800	5460	5160	4820	4720	5000	4650	e4230
8	7290	6860	e6480	6090	5790	5450	5160	4800	4710	4990	4640	e4240
9	7280	6850	e6470	6080	5800	5420	5140	4790	4700	4970	4620	e4280
10	7240	6830	e6460	6060	5770	5410	5140	4790	4680	4960	4620	e4290
11	7240	6820	e6450	6060	5750	5390	5130	4780	4660	4990	4610	e4260
12	7210	6810	e6430	6050	5730	5390	5110	4760	4650	4980	4590	4240
13	7190	6790	e6420	6040	5720	5380	5110	4750	4650	4960	4570	4230
14	7180	6770	e6410	6030	5720	5370	5100	4740	4970	4950	4560	4240
15	7150	6770	e6400	6010	5700	5350	5080	4730	5380	4940	4540	4220
16	7130	6760	e6380	6000	5690	5340	5070	4710	5390	4920	4530	4190
17	7130	6750	e6370	5990	5680	5340	5050	4700	5370	4900	4430	4160
18	7110	6740	e6360	5970	5670	5330	5030	4690	5350	4880	4400	4150
19	7100	6710	e6340	5960	5660	5310	5010	4700	5330	4880	4390	4150
20	7090	6700	6310	5950	5650	5310	5000	4690	5300	4860	4360	4140
21	7080	6690	e6300	5940	5630	5290	5000	4680	5290	4830	4350	4120
22	7070	6680	e6290	5930	5620	5280	4990	4650	5260	4820	4330	4110
23	7060	6680	e6280	5910	5610	5290	4980	4640	5240	4810	4320	4090
24	7040	6660	e6270	5890	5590	5270	4960	4630	5220	4800	e4350	4080
25	7020	6640	6250	5880	5570	5250	4950	4620	5200	4780	e4330	4070
26	7000	e6620	6230	5880	5560	5250	4940	4610	5160	4760	e4320	4050
27	7000	e6610	6220	5860	5550	5250	4930	4650	5130	4740	e4330	4040
28	6990	e6600	6210	5850	5540	5240	4910	4810	5120	4730	e4330	4030
29	6970	e6600	6190	5830	---	5220	4900	4810	5110	4750	e4320	4020
30	6970	e6590	6170	5830	---	5210	4890	4800	5090	4760	e4320	4010
31	6960	---	6170	5860	---	5200	---	4790	---	4750	e4310	---
MEAN	7160	6760	6380	6000	5700	5350	5060	4750	5000	4900	4500	4180
MAX	7440	6940	6580	6160	5840	5520	5210	4880	5390	5070	4740	4300
MIN	6960	6590	6170	5830	5540	5200	4890	4610	4650	4730	4310	4010
(+)	2853.02	2852.31	2851.49	2850.89	2850.27	2849.47	2848.64	2848.35	2849.16	2848.25	2847.06	2846.25
(@)	-440	-370	-420	-310	-320	-340	-310	-100	+300	-340	-440	-300

CAL YR 2001 MAX 13420 MIN 6170 (@) -7280
WTR YR 2002 MAX 7440 MIN 4010 (@) -3440

e Estimated

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

07233550 Palo Duro Reservoir near Spearman, TX--Continued



07235000 Wolf Creek at Lipscomb, TX

LOCATION.--Lat 36°14'19", long 100°16'31", Lipscomb County, Hydrologic Unit 11100202, on right bank at downstream side of State Highway 305, 0.3 mi north of Lipscomb, 0.6 mi downstream from Sand Creek, 2.0 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. 1940, monthly discharges only, published in WSP 1311, Oct. 1940 to Sept. 1942 and Oct. 1961 to current year.
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 NGVD of 1929. 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 reactivation of gage in Oct. 1961, 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^3/s, 28,760 acre-feet/yr.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 15.5 ft 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 Texas Department of Transportation.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.50	1.1	1.2	1.3	2.3	2.7	2.2	0.86	0.78	0.0	0.12	0.20
2	0.51	1.1	1.2	1.3	2.5	2.4	2.2	0.70	0.50	0.0	0.11	0.30
3	0.53	1.0	1.1	1.3	2.8	2.6	2.1	0.73	0.30	0.0	0.07	0.33
4	0.54	1.0	1.1	1.4	3.0	2.6	2.3	0.63	0.23	0.0	0.04	0.32
5	0.54	1.1	1.0	1.5	3.7	2.6	2.1	0.55	0.33	0.07	0.0	0.29
6	0.59	1.0	0.97	1.5	3.9	2.5	1.9	0.49	0.29	0.04	0.0	0.24
7	0.58	0.92	0.96	1.5	4.0	2.5	2.7	0.43	0.16	0.05	0.0	0.26
8	0.63	0.96	0.95	1.6	4.1	2.5	2.4	0.22	0.07	0.02	0.0	0.30
9	0.70	0.96	0.95	1.6	4.0	2.3	2.5	0.14	0.0	0.0	0.0	0.28
10	0.63	0.99	0.95	1.7	3.8	2.3	2.3	0.15	0.0	0.0	0.11	0.39
11	0.71	1.0	0.95	1.7	3.5	2.3	2.2	0.18	0.0	0.0	0.0	0.42
12	0.75	1.0	0.99	1.7	3.5	2.3	2.3	0.14	0.0	0.0	0.0	0.40
13	0.79	1.0	0.95	1.8	3.5	2.3	2.6	0.14	0.08	0.0	0.0	0.40
14	0.77	0.99	0.88	1.8	3.4	2.1	2.3	0.09	0.17	0.0	0.0	0.50
15	0.77	1.0	0.92	1.8	3.3	2.1	2.0	0.06	0.18	0.01	0.02	0.44
16	0.80	1.1	0.91	1.7	3.1	2.1	1.7	0.05	0.24	0.01	0.03	0.44
17	0.77	1.5	0.92	1.7	3.1	2.1	1.4	0.08	0.21	0.02	0.03	0.47
18	0.78	1.3	0.92	1.8	2.9	2.0	1.4	0.10	0.13	0.06	0.02	0.40
19	0.83	1.2	0.91	1.8	3.1	2.1	1.3	0.09	0.05	0.06	0.05	0.50
20	0.81	1.1	0.94	1.8	2.8	2.0	1.4	0.06	0.0	0.02	0.15	0.48
21	0.80	1.1	0.98	1.9	2.5	1.9	1.5	0.04	0.0	0.0	0.16	0.58
22	0.86	1.2	0.98	1.9	2.6	2.2	1.4	0.0	0.0	0.02	0.12	0.61
23	0.87	1.2	0.98	1.9	2.5	2.2	1.3	0.0	0.0	0.07	0.11	0.83
24	0.89	1.1	1.0	2.0	2.4	2.1	1.1	0.02	0.0	0.04	0.19	0.88
25	0.91	1.1	1.1	2.0	2.3	2.1	0.96	0.03	0.0	0.05	0.16	0.96
26	0.94	1.1	1.1	2.0	2.3	2.1	1.1	0.13	0.0	0.04	0.13	0.97
27	0.94	1.1	1.1	2.0	2.4	2.1	1.1	0.35	0.0	0.02	0.32	1.1
28	0.98	1.1	1.1	2.0	2.6	2.2	0.93	0.83	0.0	0.04	0.15	1.1
29	1.0	1.1	1.1	2.0	---	2.2	0.98	1.1	0.0	0.05	0.14	1.0
30	1.1	1.2	1.2	2.6	---	2.2	0.91	1.4	0.0	0.03	0.18	0.81
31	1.1	---	1.2	2.5	---	2.5	---	1.2	---	0.10	0.32	---
TOTAL	23.92	32.62	31.51	55.1	85.9	70.2	52.58	10.99	3.72	0.82	2.73	16.20
MEAN	0.772	1.087	1.016	1.777	3.068	2.265	1.753	0.355	0.124	0.026	0.088	0.540
MAX	1.1	1.5	1.2	2.6	4.1	2.7	2.7	1.4	0.78	0.10	0.32	1.1
MIN	0.50	0.92	0.88	1.3	2.3	1.9	0.91	0.00	0.00	0.00	0.00	0.20
AC-FT	47	65	63	109	170	139	104	22	7.4	1.6	5.4	32
CFSM	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
IN.	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00

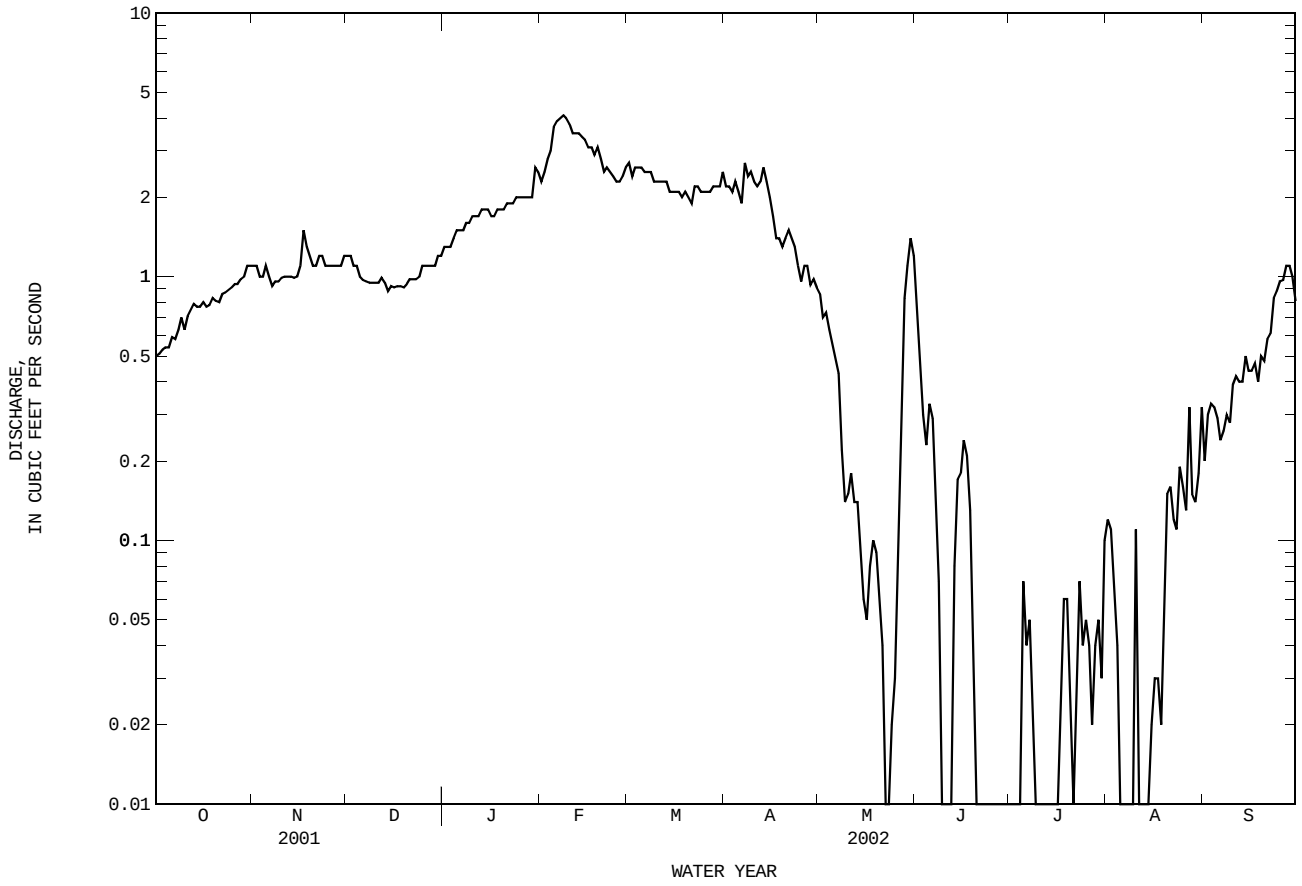
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002hz, BY WATER YEAR (WY)

MEAN	6.455	5.565	3.639	3.872	4.759	7.208	11.02	18.08	16.50	7.724	7.659	13.18
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	0.10	0.50	0.60	0.55	0.60	1.10	0.94	0.35	0.12	0.026	0.000	0.21
(WY)	1965	1995	1995	1986	1986	1986	1986	2002	2002	2002	1964	1984

07235000 Wolf Creek at Lipscomb, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1962 - 2002hz	
ANNUAL TOTAL	898.69		386.29			
ANNUAL MEAN	2.462		1.058		8.805	
HIGHEST ANNUAL MEAN					30.5	1965
LOWEST ANNUAL MEAN					1.06	2002
HIGHEST DAILY MEAN	7.1	Apr 11	4.1	Feb 8	5800	Sep 19 1996
LOWEST DAILY MEAN	0.29	Sep 13	0.00	May 22	0.00	May 24 1964
ANNUAL SEVEN-DAY MINIMUM	0.33	Sep 8	0.00	Jun 20	0.00	Jul 22 1964
MAXIMUM PEAK FLOW			4.2	Feb 8	10300	Sep 19 1996
MAXIMUM PEAK STAGE			2.43	Sep 29	12.44	Sep 19 1996
ANNUAL RUNOFF (AC-FT)	1780		766		6380	
ANNUAL RUNOFF (CFSM)	0.005		0.002		0.019	
ANNUAL RUNOFF (INCHES)	0.07		0.03		0.25	
10 PERCENT EXCEEDS	5.8		2.4		11	
50 PERCENT EXCEEDS	1.2		0.95		2.5	
90 PERCENT EXCEEDS	0.56		0.00		0.50	

h See PERIOD OF RECORD paragraph.
z Period of regulated streamflow.



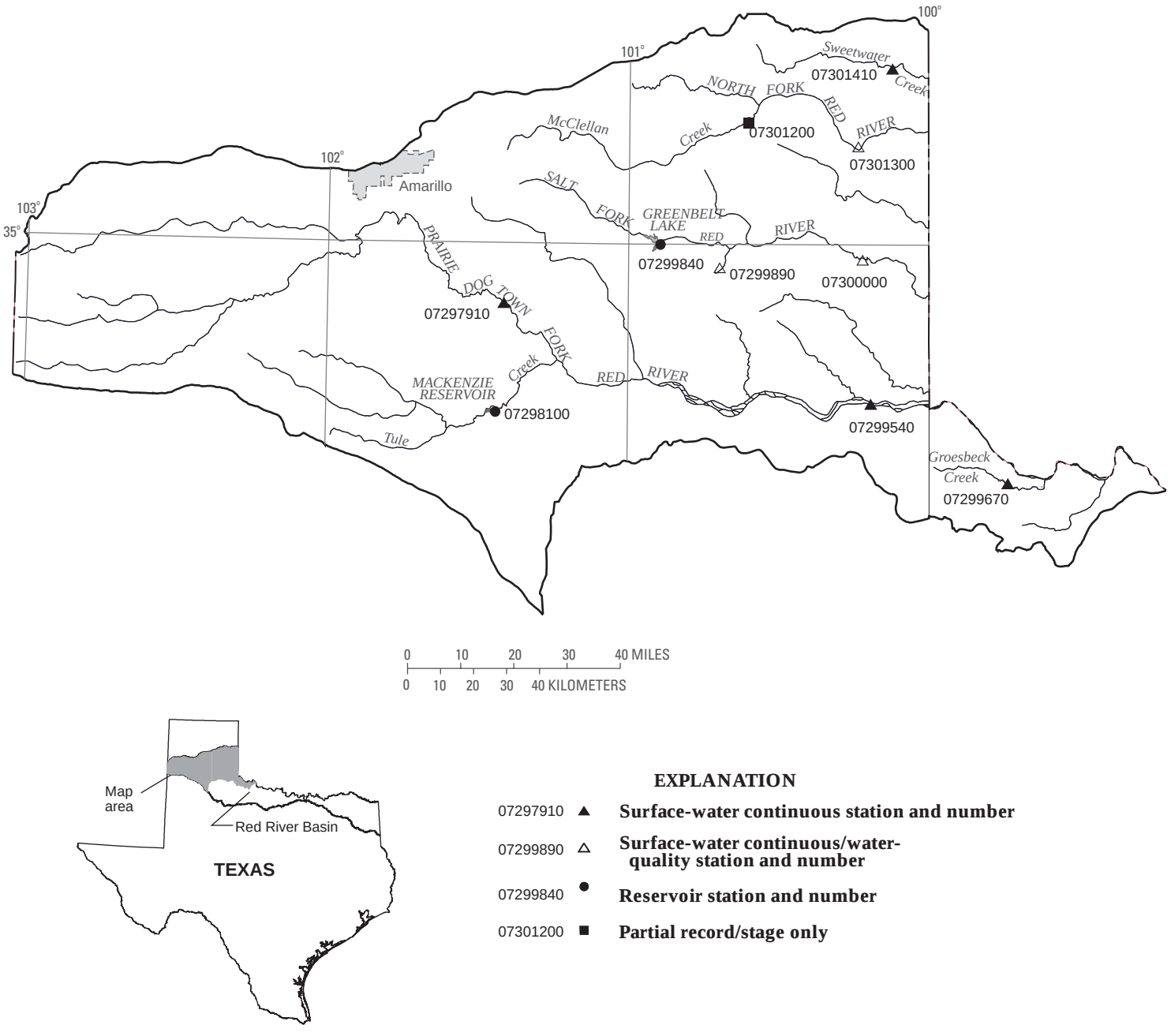


Figure 4.--Map showing location of gaging stations in the first section of the Red River Basin

* Station is not located within the illustrated map area.

07297910 Prairie Dog Town Fork Red River near Wayside, TX

LOCATION.--Lat 34°50'15", long 101°24'49", Armstrong County, Hydrologic Unit 11120103, on left bank at downstream side of bridge on 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. 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 FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

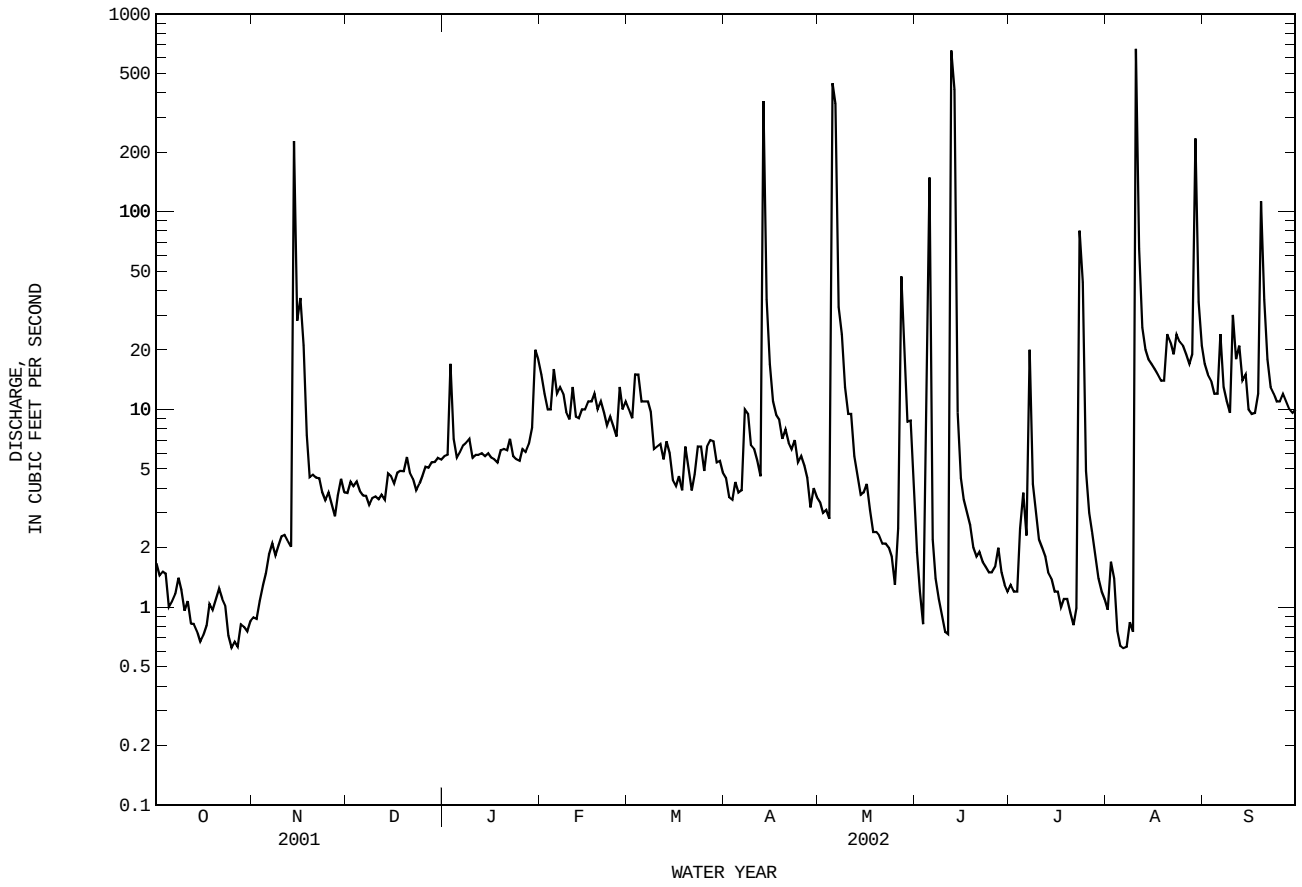
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	0.89	3.8	5.8	15	10	4.5	3.4	1.9	1.3	0.97	17
2	1.4	0.87	4.3	5.9	12	9.0	3.6	3.0	1.2	1.2	1.7	15
3	1.5	1.1	4.1	17	10	15	3.5	3.1	0.82	1.2	1.4	14
4	1.5	1.3	4.3	7.1	10	15	4.3	2.8	9.8	2.5	0.76	12
5	1.0	1.5	3.9	5.7	16	11	3.8	446	149	3.8	0.64	12
6	1.1	1.8	3.7	6.1	12	11	3.9	352	2.2	2.3	0.62	24
7	1.2	2.1	3.7	6.6	13	11	10	33	1.4	20	0.63	13
8	1.4	1.8	3.3	6.8	12	9.7	9.5	24	1.1	4.2	0.84	11
9	1.2	2.1	3.6	7.1	9.7	6.3	6.6	13	0.91	3.1	0.75	9.6
10	0.96	2.3	3.6	5.7	8.9	6.5	6.3	9.5	0.75	2.2	666	30
11	1.1	2.3	3.5	5.9	13	6.7	5.5	9.5	0.73	2.0	65	18
12	0.83	2.2	3.7	5.9	9.2	5.6	4.6	5.8	654	1.8	26	21
13	0.82	2.0	3.5	6.0	9.0	6.9	362	4.6	414	1.5	20	14
14	0.76	227	4.8	5.8	10	6.0	36	3.7	9.6	1.4	18	15
15	0.67	28	4.6	6.0	10	4.4	17	3.8	4.5	1.2	17	10
16	0.72	37	4.2	5.7	11	4.1	11	4.2	3.5	1.2	16	9.5
17	0.81	21	4.8	5.6	11	4.6	9.4	3.1	3.0	1.0	15	9.6
18	1.0	7.4	4.9	5.4	12	3.9	8.9	2.4	2.6	1.1	14	12
19	0.97	4.5	4.9	6.2	10	6.5	7.1	2.4	2.0	1.1	14	113
20	1.1	4.7	5.8	6.3	11	5.1	7.9	2.3	1.8	0.94	24	36
21	1.2	4.5	4.8	6.2	9.6	3.9	6.8	2.1	1.9	0.81	22	18
22	1.1	4.5	4.4	7.1	8.3	4.7	6.3	2.1	1.7	0.99	19	13
23	1.0	3.8	3.9	5.8	9.2	6.5	7.0	2.0	1.6	80	24	12
24	0.72	3.5	4.2	5.6	8.2	6.5	5.4	1.8	1.5	44	22	11
25	0.62	3.8	4.6	5.5	7.3	4.9	5.8	1.3	1.5	4.9	21	11
26	0.67	3.3	5.1	6.3	13	6.5	5.2	2.5	1.6	3.0	19	12
27	0.63	2.9	5.1	6.1	10	7.0	4.5	47	2.0	2.4	17	11
28	0.82	3.7	5.4	6.7	11	6.9	3.2	18	1.5	1.8	19	10
29	0.80	4.5	5.4	8.1	---	5.4	4.0	8.7	1.3	1.4	234	9.6
30	0.76	3.8	5.7	20	---	5.5	3.6	8.8	1.2	1.2	35	10
31	0.85	---	5.6	18	---	4.8	---	4.2	---	1.1	21	---
TOTAL	30.91	390.16	137.2	228.0	301.4	220.9	577.2	1030.1	1280.61	196.64	1356.31	533.3
MEAN	0.997	13.01	4.426	7.355	10.76	7.126	19.24	33.23	42.69	6.343	43.75	17.78
MAX	1.7	227	5.8	20	16	15	362	446	654	80	666	113
MIN	0.62	0.87	3.3	5.4	7.3	3.9	3.2	1.3	0.73	0.81	0.62	9.5
AC-FT	61	774	272	452	598	438	1140	2040	2540	390	2690	1060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

MEAN	25.94	11.88	6.097	5.853	5.524	9.115	25.17	61.51	54.23	29.55	81.74	24.78
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	0.000	0.066	0.099	0.30	0.16	0.34	0.17	0.13	0.47	0.000	0.12	0.000
(WY)	1976	1971	1971	1971	1976	1971	1978	1984	1998	1974	2000	1975

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1968 - 2002	
ANNUAL TOTAL	4995.15		6282.73			
ANNUAL MEAN	13.69		17.21		28.61	
HIGHEST ANNUAL MEAN					137	1968
LOWEST ANNUAL MEAN					1.90	1983
HIGHEST DAILY MEAN	704	Sep 16	666	Aug 10	22700	Aug 29 1968
LOWEST DAILY MEAN	0.00	Jul 16	0.62	Oct 25	0.00	Jul 30 1968
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 19	0.72	Oct 24	0.00	Jul 30 1968
MAXIMUM PEAK FLOW			4950	Jun 12	58000	Aug 28 1968
MAXIMUM PEAK STAGE			9.07	Jun 12	13.00	Aug 28 1968
ANNUAL RUNOFF (AC-FT)	9910		12460		20730	
10 PERCENT EXCEEDS	24		19		24	
50 PERCENT EXCEEDS	3.7		5.1		2.5	
90 PERCENT EXCEEDS	0.09		1.1		0.08	

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 NGVD of 1929. 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 23,950 acre-ft, Oct. 15, 1986, elevation, 3,065.08 ft; minimum contents, 598 acre-ft, Oct. 1, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,030 acre-ft, Oct. 1, elevation, 3,029.28 ft; minimum contents, 6,980 acre-ft, Sept. 30, elevation, 3,022.13 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

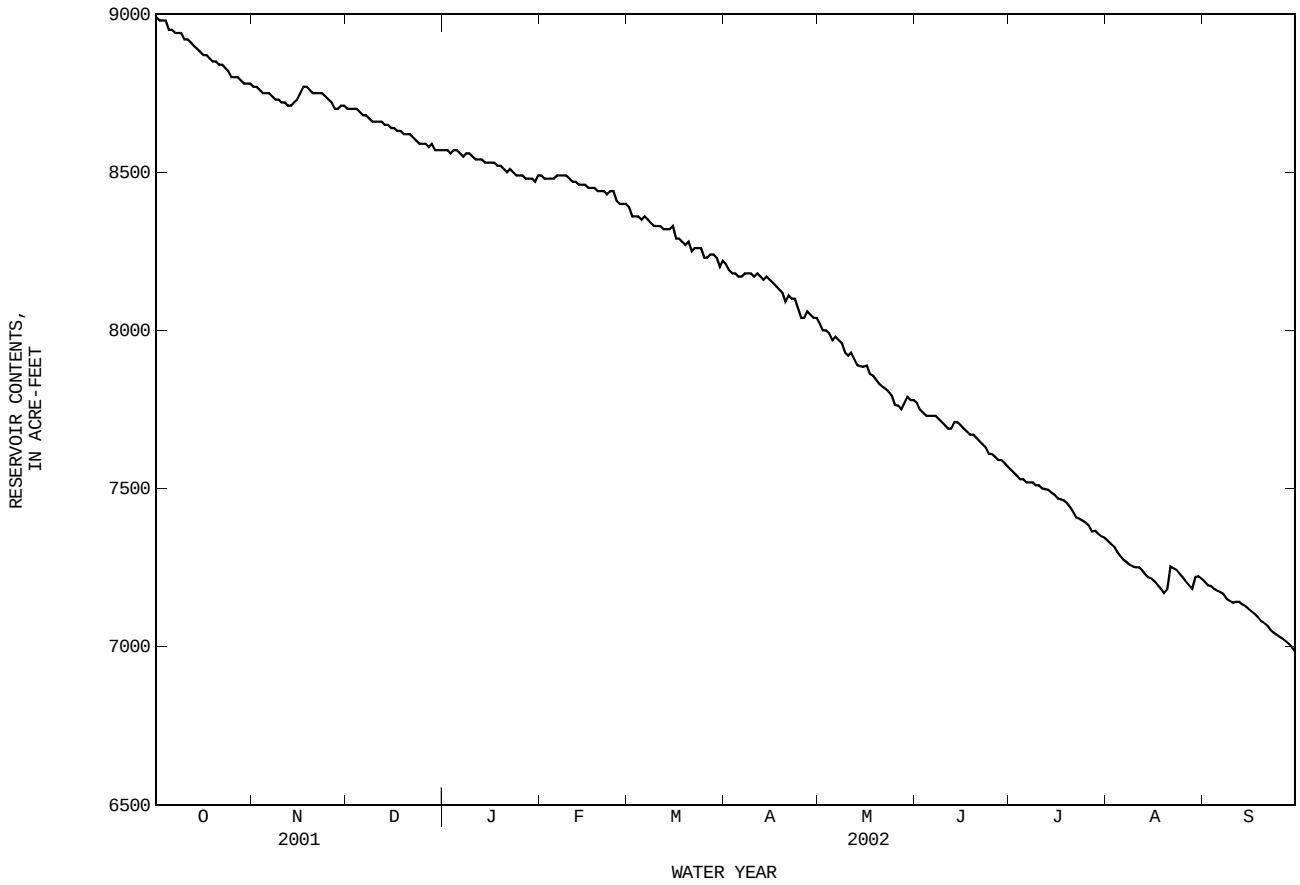
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8990	8770	8700	8570	8490	8390	8210	8020	7770	7560	7340	7210
2	8980	8770	8700	8570	8480	8360	8190	8000	7750	7550	7330	7200
3	8980	8760	8700	8560	8480	8360	8180	8000	7740	7540	7320	7190
4	8980	8750	8700	8570	8480	8360	8180	7990	7730	7530	7300	7180
5	8950	8750	8690	8570	8480	8350	8170	7970	7730	7530	7290	7180
6	8950	8750	8680	8560	8490	8360	8170	7980	7730	7520	7270	7170
7	8940	8740	8680	8550	8490	8350	8180	7970	7730	7520	7270	7170
8	8940	8730	8670	8560	8490	e8340	8180	7960	7720	7520	7260	7150
9	8940	8730	8660	8560	8490	e8330	8180	7930	7710	7510	7250	7140
10	8920	8720	8660	8550	8480	e8330	8170	7920	7700	7510	7250	7140
11	8920	8720	8660	8540	8470	e8330	8180	7930	7690	7500	7250	7140
12	8910	8710	8660	8540	8470	e8320	8170	7910	7690	7500	7240	7140
13	8900	8710	8650	8540	8460	e8320	8160	7890	7710	7500	7230	7130
14	8890	8720	8650	8530	8460	e8320	8170	7890	7710	7490	7220	7130
15	8880	8730	8640	8530	8460	8330	8160	7880	7700	7480	7220	7120
16	8870	8750	8640	8530	8450	8290	8150	7890	7690	7470	7210	7110
17	8870	8770	8630	8530	8450	8290	8140	7860	7680	7470	7190	7100
18	8860	8770	8630	8520	8450	8280	8130	7860	7670	7460	7180	7090
19	8850	8760	8620	8520	8440	8270	8120	7840	7670	7450	7170	7080
20	8850	8750	8620	8510	8440	8280	8090	7830	7660	7440	7180	7080
21	8840	8750	8620	8500	8440	8250	8110	7820	7650	7430	7250	7070
22	8840	8750	8610	8510	8430	8260	8100	7820	7640	7410	7250	7050
23	8830	8750	8600	8500	8440	8260	8100	7810	7630	7400	7240	7040
24	8820	8740	8590	8490	8440	8260	8070	7790	7610	7400	7230	7040
25	8800	8730	8590	8490	8410	8230	8040	7760	7610	7390	7220	7030
26	8800	8720	8590	8490	8400	8230	8040	7760	7600	7380	7200	7020
27	8800	8700	8580	8480	8400	8240	8060	7750	7590	7370	7190	7020
28	8790	8700	8590	8480	8400	8240	8050	7770	7590	7370	7180	7010
29	8780	8710	8570	8480	---	8230	8040	7790	7580	7360	7220	7000
30	8780	8710	8570	8470	---	8200	8040	7780	7570	7350	7220	6980
31	8780	---	8570	8490	---	8220	---	7780	---	7340	7210	---
MEAN	8880	8740	8640	8530	8460	8300	8130	7880	7680	7460	7240	7100
MAX	8990	8770	8700	8570	8490	8390	8210	8020	7770	7560	7340	7210
MIN	8780	8700	8570	8470	8400	8200	8040	7750	7570	7340	7170	6980
(+)	3028.44	3028.22	3027.72	3027.48	3027.16	3026.54	3025.94	3025.06	3024.30	3023.46	3022.99	3022.13
(@)	-230	-70	-140	-80	-90	-180	-180	-260	-210	-230	-130	-230

CAL YR 2001 MAX 9920 MIN 7930 (@) +560
WTR YR 2002 MAX 8990 MIN 6980 (@) -2030

e Estimated

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

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.--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 NGVD of 1929 (from Texas Department of Transportation benchmark). From Dec. 1964 to Mar. 1965, gage heights from water-stage recorder were not published. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in Dec. 1964, at least 10% of contributing drainage area has been regulated 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.

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 Texas Department of Transportation.

DISCHARGE FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	7.0	37	39	270	14	14	24	6.7	16	2.8	51
2	6.0	7.0	33	26	e184	e42	13	15	3.9	17	3.2	13
3	6.4	12	33	50	e187	e50	11	17	3.3	47	3.3	4.0
4	6.8	25	35	61	e192	17	9.0	17	7.7	136	3.2	3.6
5	6.5	14	26	76	e208	10	8.0	18	90	467	3.6	3.9
6	7.0	9.5	25	56	e234	9.3	10	21	39	233	3.7	5.3
7	6.8	7.0	22	61	e225	11	28	378	72	631	4.0	4.1
8	6.9	5.7	18	66	e213	11	47	107	24	524	3.9	4.4
9	6.8	5.8	17	67	e155	7.6	36	38	11	201	3.9	5.8
10	5.4	6.6	17	25	e88	9.5	e28	20	5.9	65	3.7	115
11	5.8	7.6	20	30	e42	15	20	16	4.2	30	332	183
12	7.0	9.8	21	31	29	15	16	11	5.2	34	182	149
13	6.6	11	20	25	25	13	75	8.5	293	94	18	89
14	5.9	87	16	24	22	12	79	7.5	350	27	6.5	248
15	5.9	118	19	22	18	17	269	8.8	127	18	1.3	502
16	5.6	105	22	8.8	17	15	108	16	772	9.9	0.43	98
17	5.7	669	18	13	17	14	54	8.2	122	9.9	0.14	35
18	5.5	147	14	2.3	19	13	40	7.3	49	8.3	0.07	12
19	5.8	73	13	11	15	636	28	6.7	24	7.6	1.9	14
20	6.4	58	13	11	16	250	32	6.4	16	6.8	5.7	14
21	6.3	47	14	15	13	57	38	6.0	13	7.0	677	149
22	7.0	44	12	8.9	12	39	26	6.2	9.9	7.9	128	58
23	6.0	36	12	9.6	12	27	23	22	8.8	8.7	24	25
24	5.0	27	12	e12	9.9	20	18	13	9.9	8.9	5.7	10
25	5.3	26	9.7	12	307	13	19	7.0	12	7.9	2.1	5.2
26	6.0	21	11	16	228	15	53	7.8	13	6.9	1.3	4.8
27	6.2	26	13	11	93	13	85	38	16	6.7	0.87	4.4
28	6.0	41	12	8.1	83	11	43	37	13	6.6	1.5	4.0
29	6.3	52	8.9	9.2	---	12	30	171	12	26	280	3.2
30	6.9	42	21	210	---	11	38	62	14	8.6	313	4.2
31	7.4	---	26	271	---	12	---	20	---	4.6	179	---
TOTAL	194.0	1747.0	590.6	1287.9	2933.9	1411.4	1298.0	1141.4	2147.5	2682.3	2195.81	1821.9
MEAN	6.258	58.23	19.05	41.55	104.8	45.53	43.27	36.82	71.58	86.53	70.83	60.73
MAX	7.4	669	37	271	307	636	269	378	772	631	677	502
MIN	5.0	5.7	8.9	2.3	9.9	7.6	8.0	6.0	3.3	4.6	0.07	3.2
AC-FT	385	3470	1170	2550	5820	2800	2570	2260	4260	5320	4360	3610

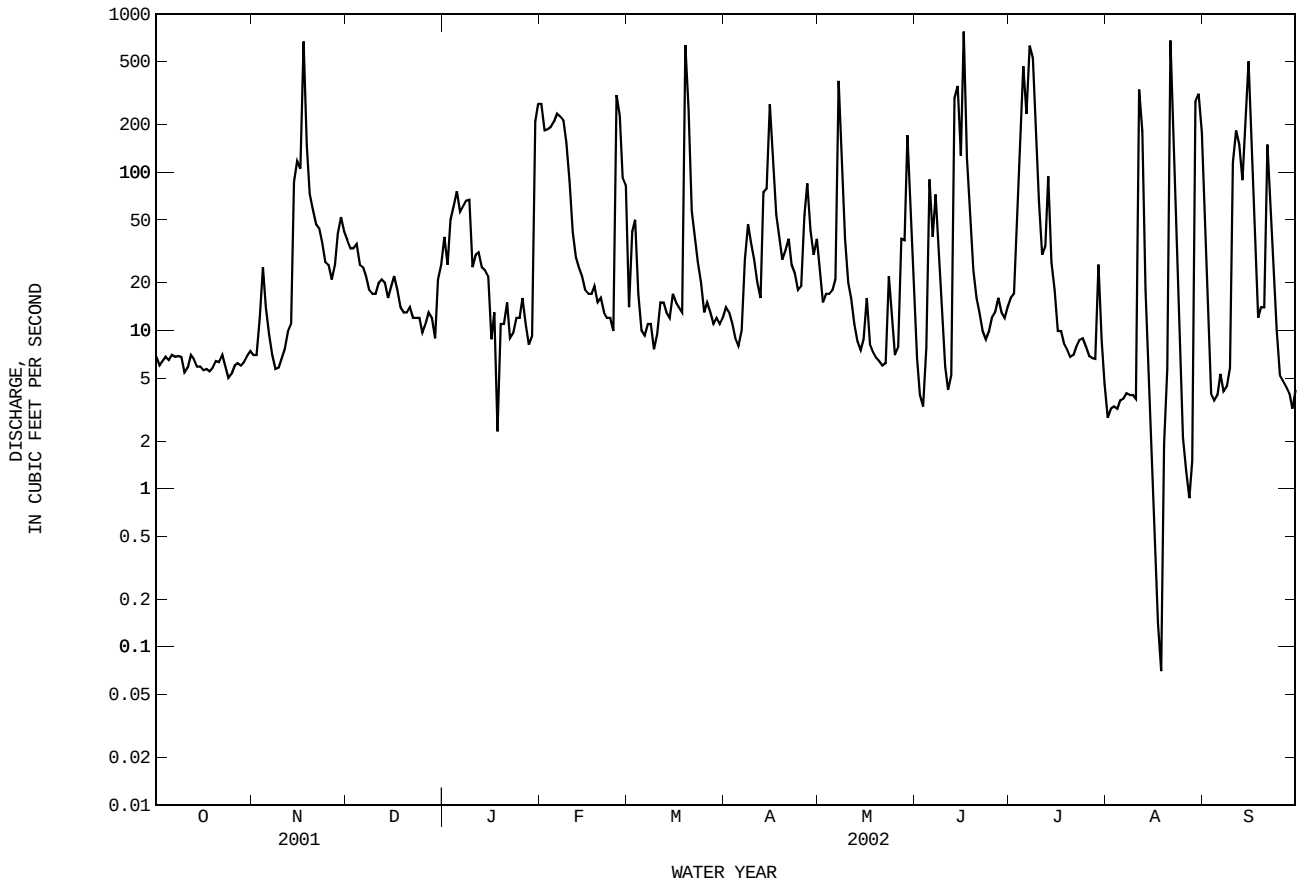
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002, BY WATER YEAR (WY)

MEAN	97.58	51.30	36.69	38.19	41.40	62.58	110.2	262.0	352.6	97.42	157.4	139.4
MAX	1279	377	265	296	358	500	735	1835	1413	367	1086	470
(WY)	1987	1987	1993	1993	1998	1998	1997	1978	1965	1972	1968	1966
MIN	3.14	1.85	2.27	2.05	2.00	1.72	2.95	1.18	3.46	0.66	1.56	3.39
(WY)	1985	1978	1983	1971	1974	1966	1978	1988	1994	1974	1980	1984

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1965 - 2002	
ANNUAL TOTAL	60473.94		19451.71			
ANNUAL MEAN	165.7		53.29		119.2	
HIGHEST ANNUAL MEAN					286	1987
LOWEST ANNUAL MEAN					27.6	1994
HIGHEST DAILY MEAN	11900	May 4	772	Jun 16	34200	May 28 1978
LOWEST DAILY MEAN	0.84	Jul 8	0.07	Aug 18	0.00	Aug 5 1970
ANNUAL SEVEN-DAY MINIMUM	0.96	Jul 6	2.3	Aug 14	0.00	Jun 7 1988
MAXIMUM PEAK FLOW			5910	Feb 25	86400	May 28 1978
MAXIMUM PEAK STAGE			9.62	Feb 25	13.94	May 21 1977
ANNUAL RUNOFF (AC-FT)	120000		38580		86370	
10 PERCENT EXCEEDS	256		151		176	
50 PERCENT EXCEEDS	38		15		9.4	
90 PERCENT EXCEEDS	1.7		5.2		1.2	

e Estimated

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



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, 2.0 mi downstream from confluence of North and South Groesbeck Creeks, 4.0 mi north of Quanah, and 9.0 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 NGVD of 1929. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e26	25	3.6	3.6	6.3	4.0	3.1	2.8	8.4	3.8	13	11
2	e26	29	3.6	3.6	4.5	3.9	2.8	2.5	8.1	3.4	13	10
3	e26	31	3.4	3.6	4.1	3.9	2.6	2.5	7.4	3.9	13	10
4	e27	31	3.4	3.6	4.1	3.8	2.6	2.5	12	100	13	10
5	e27	31	3.4	3.9	4.9	3.8	2.7	2.4	28	242	13	10
6	e26	31	3.3	3.6	5.3	3.8	2.8	2.4	12	63	13	11
7	e27	31	3.3	3.5	4.9	3.8	3.5	2.4	9.3	164	13	11
8	e27	31	3.2	3.7	4.7	3.8	3.4	2.2	8.6	326	13	11
9	e27	30	3.2	3.7	4.2	3.5	3.1	1.9	8.6	134	12	11
10	e27	31	3.3	3.6	3.6	3.4	2.9	2.2	8.0	51	12	12
11	e27	32	3.3	3.5	3.7	3.5	2.8	2.9	8.2	30	12	12
12	e27	32	3.3	3.3	3.5	3.4	2.8	2.7	8.2	37	12	12
13	e27	33	2.5	3.0	3.4	3.5	3.3	2.8	9.3	41	12	11
14	e28	39	3.0	2.9	3.8	3.6	3.2	4.4	9.6	26	12	12
15	e28	58	3.3	2.8	3.5	3.3	2.9	4.6	14	22	12	12
16	e28	67	3.4	2.9	3.5	3.3	2.8	4.6	121	21	12	11
17	e27	89	3.5	2.9	3.6	3.3	2.7	5.0	86	20	12	11
18	e28	318	3.4	3.0	3.7	3.7	2.8	5.3	31	19	11	11
19	28	181	3.3	3.1	3.8	4.5	2.8	5.2	7.8	18	11	11
20	27	39	3.4	3.1	3.8	3.9	2.8	5.3	5.7	18	12	11
21	26	13	3.4	3.0	3.8	3.3	2.8	5.2	5.1	17	11	11
22	26	6.2	3.4	3.1	3.8	3.2	2.7	5.2	4.5	18	10	11
23	25	4.2	3.4	3.1	3.9	3.3	2.6	5.5	4.2	18	10	11
24	24	3.7	3.4	3.0	3.8	3.3	2.5	11	4.0	18	11	11
25	23	3.5	3.4	3.0	3.7	2.9	2.5	17	3.9	17	11	11
26	23	3.4	3.4	3.0	3.5	2.9	3.8	7.8	3.9	15	11	11
27	23	3.4	3.5	3.1	3.5	3.0	3.2	7.3	4.0	13	11	11
28	25	3.9	3.6	3.4	3.8	3.1	2.9	7.3	3.9	12	11	11
29	26	3.7	3.5	3.3	---	3.0	2.8	6.9	3.8	23	12	10
30	26	3.7	3.5	26	---	3.4	2.9	7.2	3.7	40	10	9.7
31	29	---	3.6	30	---	3.6	---	7.9	---	15	10	---
TOTAL	817	1237.7	104.2	150.9	112.7	108.7	87.1	154.9	452.2	1549.1	364	328.7
MEAN	26.35	41.26	3.361	4.868	4.025	3.506	2.903	4.997	15.07	49.97	11.74	10.96
MAX	29	318	3.6	30	6.3	4.5	3.8	17	121	326	13	12
MIN	23	3.4	2.5	2.8	3.4	2.9	2.5	1.9	3.7	3.4	10	9.7
AC-FT	1620	2450	207	299	224	216	173	307	897	3070	722	652

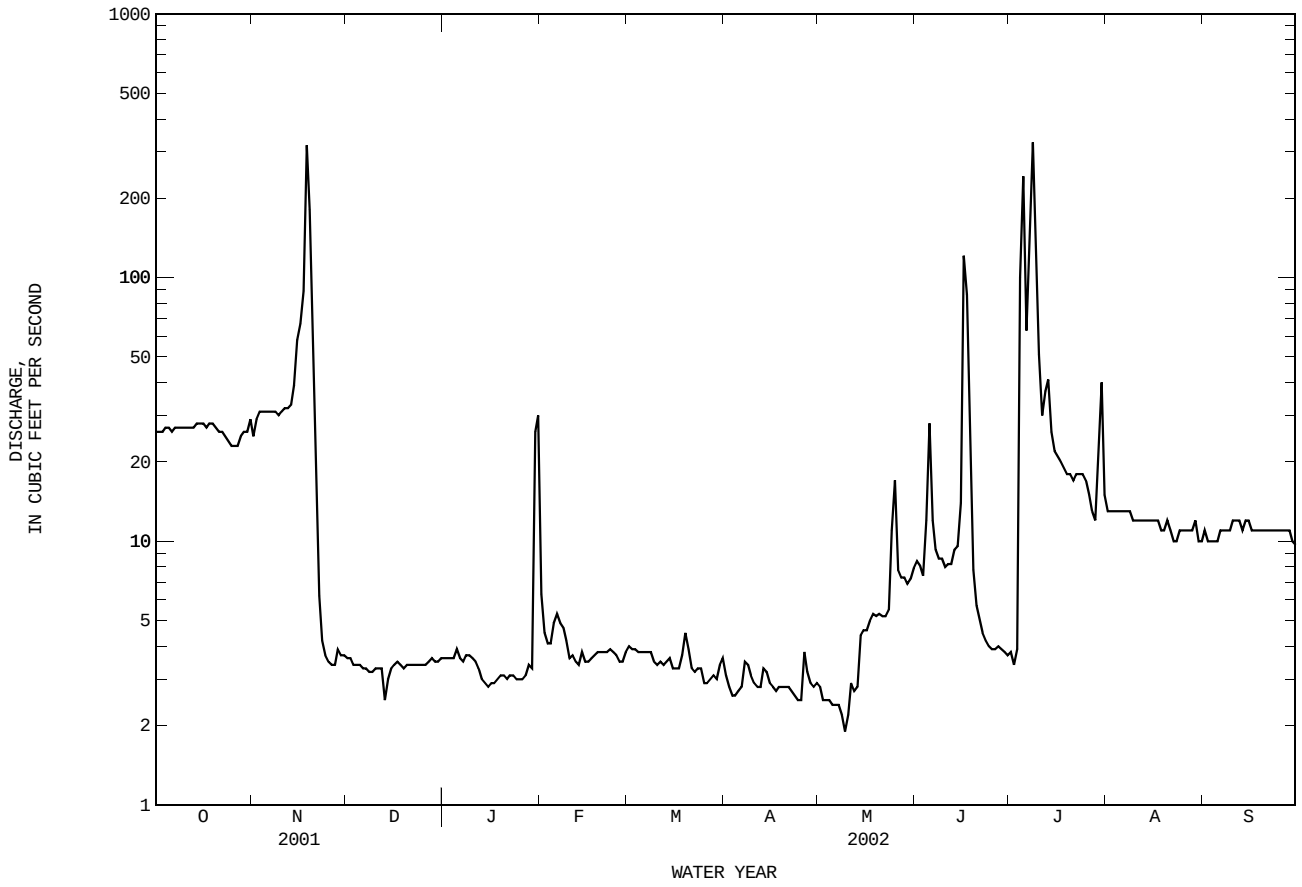
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

MEAN	32.68	12.22	10.57	9.492	11.38	13.94	21.11	30.57	54.56	21.86	26.48	45.57
MAX	393	41.3	43.0	26.4	62.0	91.2	271	163	502	228	545	286
(WY)	1984	2002	1992	2001	1997	1998	1997	1987	1995	1996	1995	1974
MIN	0.68	1.33	1.48	1.33	1.35	1.18	1.12	1.74	1.54	0.10	0.000	0.39
(WY)	1969	1969	1969	1971	1971	1971	1969	1967	1967	1964	1964	1968

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1962 - 2002	
ANNUAL TOTAL	9860.9		5467.2			
ANNUAL MEAN	27.02		14.98		23.82	
HIGHEST ANNUAL MEAN					112	1995
LOWEST ANNUAL MEAN					2.97	1964
HIGHEST DAILY MEAN	318	Nov 18	326	Jul 8	9570	Oct 20 1983
LOWEST DAILY MEAN	2.5	Dec 13	1.9	May 9	0.00	Jul 7 1964
ANNUAL SEVEN-DAY MINIMUM	3.1	Dec 8	2.3	May 4	0.00	Jul 7 1964
MAXIMUM PEAK FLOW			637	Jul 4	18000	Oct 20 1983
MAXIMUM PEAK STAGE			12.30	Jul 4	24.78	Oct 20 1983
ANNUAL RUNOFF (AC-FT)	19560		10840		17260	
10 PERCENT EXCEEDS	33		28		27	
50 PERCENT EXCEEDS	22		4.9		7.5	
90 PERCENT EXCEEDS	3.7		2.9		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 NGVD of 1929. Gage-height telemeter at station.

REMARKS.--Records good. 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 U.S. 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.-- 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, 24,540 acre-ft, Apr. 17, 18, 21, elevation, 2,641.05 ft; minimum contents, 21,760 acre-ft, Sept. 30, elevation, 2,638.39 ft.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

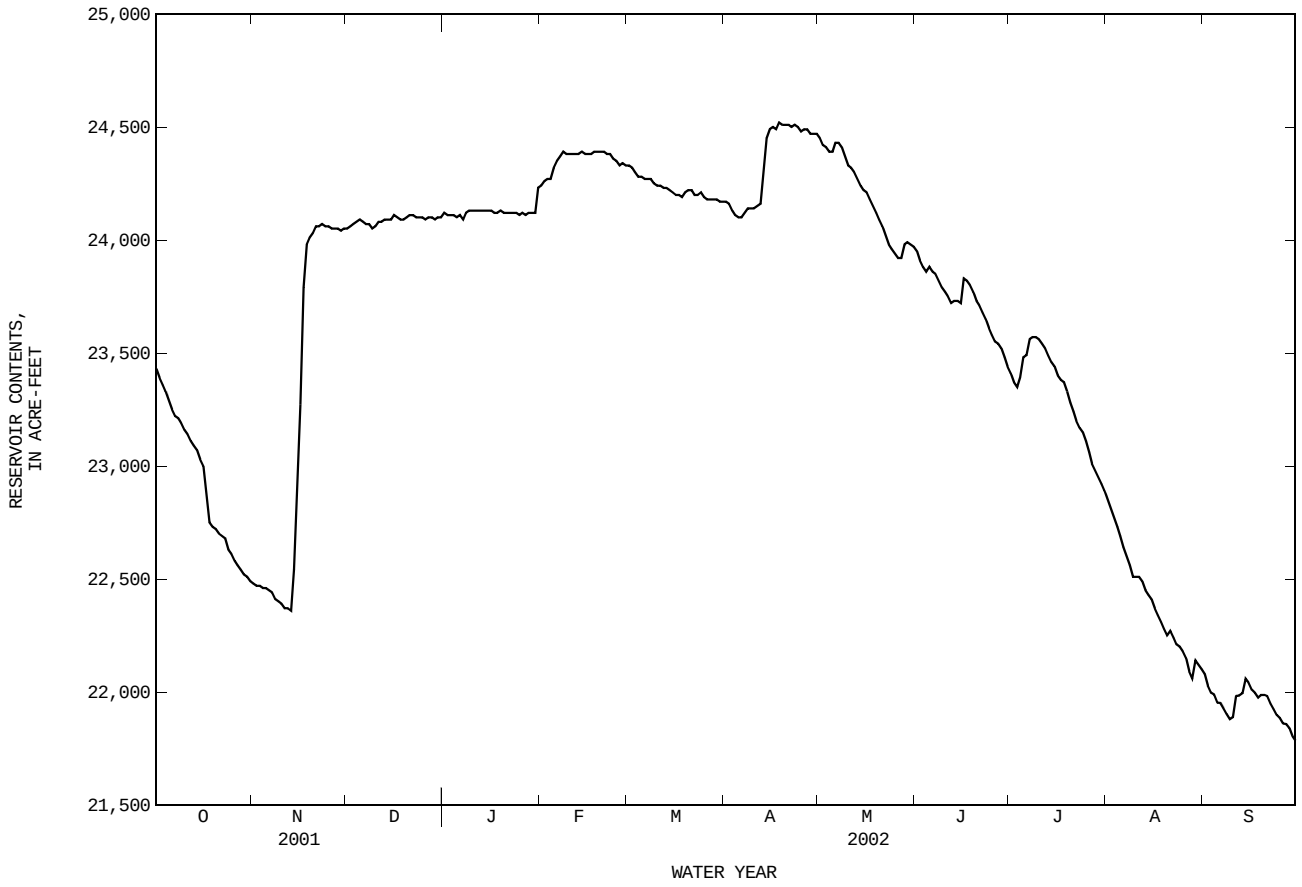
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23430	22480	24050	24120	24240	24330	24170	24450	23950	23410	22850	22080
2	23390	22470	24060	24110	24260	e24320	24160	24420	23910	23370	22810	22030
3	23360	22470	24070	24110	24270	e24300	24130	24410	23880	23350	22770	22000
4	23330	22460	24080	24110	24270	24280	24110	24390	23860	23390	22730	21990
5	23290	22460	24090	24100	24320	24280	24100	24390	23880	23480	22690	21950
6	23250	22450	24080	24110	24350	24270	24100	24430	23860	23490	22640	21950
7	23220	22440	24070	24090	24370	24270	24120	24430	23850	23560	22600	21930
8	23210	22410	24070	24120	24390	24270	24140	24410	23820	23570	22560	21900
9	23190	22400	24050	24130	24380	24250	24140	24370	23790	23570	22510	21880
10	23160	22390	24060	24130	24380	24240	24140	24330	23770	23560	22510	21890
11	23140	22370	24080	24130	24380	24240	24150	24320	23750	23540	22510	21980
12	23110	22370	24080	24130	24380	24230	24160	24300	23720	23520	22490	21980
13	23090	22360	24090	24130	24380	24230	24310	24270	23730	23490	22450	21990
14	23070	22540	24090	24130	24390	24220	24450	24240	23730	23460	22430	22060
15	23030	22970	24090	24130	24380	24210	24490	24220	23720	23440	22410	22040
16	23000	23270	24110	24130	24380	24200	24500	24210	23830	23400	22370	22010
17	22870	23790	24100	24120	24380	24200	24490	24180	23820	23380	22340	22000
18	22750	23980	24090	24120	24390	24190	24520	24150	23800	23370	22310	21980
19	22730	24010	24090	24130	24390	24210	24510	24120	23770	23330	22280	21990
20	22720	24030	24100	24120	24390	24220	24510	24090	23730	23280	22250	21990
21	22700	24060	24110	24120	24390	24220	24510	24060	23710	23240	22270	21980
22	22690	24060	24110	24120	24380	24200	24500	24020	23680	23200	22240	21950
23	22680	24070	24100	24120	24380	24200	24510	23980	23650	23170	22210	21920
24	22630	24060	24100	24120	24360	24210	24500	23960	23610	23150	22200	21900
25	22610	24060	24100	24110	24350	24190	24480	23940	23580	23110	22180	21880
26	22580	24050	24090	24120	24330	24180	24490	23920	23550	23060	22150	21860
27	22560	24050	24100	24110	24340	24180	24490	23920	23540	23010	22090	21860
28	22540	24050	24100	24120	24330	24180	24470	23980	23520	22980	22060	21840
29	22520	24040	24090	24120	---	24180	24470	23990	23480	22950	22140	21810
30	22510	24050	24100	24120	---	24170	24470	23980	23440	22920	22120	21780
31	22490	---	24100	24230	---	24170	---	23970	---	22890	22100	---
MEAN	22930	23220	24090	24120	24350	24230	24340	24190	23730	23310	22400	21950
MAX	23430	24070	24110	24230	24390	24330	24520	24450	23950	23570	22850	22080
MIN	22490	22360	24050	24090	24240	24170	24100	23920	23440	22890	22060	21780
(+)	2639.08	2640.59	2640.65	2640.76	2640.86	2640.71	2640.99	2640.52	2640.03	2639.50	2638.73	2638.41
(@)	-960	+1560	+50	+130	+100	-160	+300	-500	-530	-550	-790	-320

CAL YR 2001 MAX 26820 MIN 22360 (@) +870
WTR YR 2002 MAX 24520 MIN 22060 (@) -1670

e Estimated

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

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, on right downstream side of bridge of FM 2471, 1.0 mi downsteam from Bell Creek, and 5.0 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 NGVD of 1929. Satellite telemeter at site.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.47	0.97	3.5	2.2	1.8	0.82	1.4	2.6	0.69	0.00	0.55	0.69
2	0.48	0.98	3.4	2.1	1.5	0.76	1.6	2.3	0.59	0.00	0.53	0.62
3	0.47	1.0	3.4	2.1	1.4	0.68	1.6	2.5	0.48	0.00	0.52	0.64
4	0.51	1.4	3.3	2.2	1.4	0.64	1.7	2.4	0.45	0.06	0.48	0.61
5	0.52	1.4	3.2	2.2	2.1	0.60	1.8	2.7	0.56	e188	0.46	0.59
6	0.60	1.1	3.1	2.2	2.3	0.65	2.0	53	0.47	7.0	0.41	0.61
7	0.64	1.0	3.2	2.2	1.9	0.58	2.7	6.9	0.40	10	0.37	0.56
8	0.63	1.1	3.2	2.2	1.7	0.58	2.8	3.6	0.29	5.9	0.35	0.53
9	0.69	1.1	3.1	2.3	1.5	0.49	2.5	2.5	0.23	2.6	0.32	0.63
10	0.67	1.1	3.1	2.4	1.2	0.47	2.6	2.2	0.18	1.8	0.42	0.81
11	0.72	1.0	3.1	2.2	1.1	0.45	2.5	2.0	0.13	1.8	0.44	1.8
12	0.77	e1.0	3.4	2.3	1.2	0.48	2.4	1.4	0.06	1.7	0.33	0.87
13	0.78	e1.0	3.2	2.2	1.2	0.51	10	1.2	0.14	1.6	0.36	0.80
14	0.78	e1.0	3.2	2.1	1.1	0.50	8.0	1.3	0.10	1.7	0.49	0.84
15	0.80	e1.0	3.2	2.1	1.1	0.43	3.6	1.1	0.29	1.6	0.40	0.82
16	0.82	e1.0	3.0	2.4	0.99	0.44	2.6	1.1	18	1.7	0.32	0.83
17	0.89	e61	3.0	1.9	1.1	0.42	2.1	1.0	0.80	1.7	0.30	0.85
18	0.89	e53	3.0	2.4	1.1	0.43	2.0	0.98	0.23	1.6	0.28	0.86
19	0.91	e16	3.0	2.0	1.1	0.64	1.8	1.0	0.11	1.4	0.24	1.4
20	0.96	e7.0	3.0	1.8	1.1	0.70	1.8	1.0	0.05	1.3	0.53	1.3
21	0.95	4.7	3.0	1.7	0.96	0.56	2.0	0.99	0.02	1.1	1.1	1.2
22	1.0	4.6	2.9	1.7	0.84	e0.94	2.1	0.99	0.0	1.1	0.52	1.1
23	0.91	4.3	2.9	1.7	0.94	e1.0	2.2	0.94	0.00	1.0	0.43	1.1
24	0.83	3.9	2.9	1.6	0.98	e1.3	1.7	0.90	0.00	0.97	0.42	1.0
25	0.90	3.8	2.7	1.5	0.87	e1.7	1.6	0.93	0.00	0.84	0.41	1.00
26	0.95	3.7	2.5	1.4	0.77	1.8	2.0	0.99	0.00	0.73	0.47	0.97
27	1.1	3.7	2.2	1.4	0.79	1.8	9.0	1.2	0.00	0.65	0.46	0.97
28	1.4	3.7	2.1	1.3	0.82	1.7	6.2	2.2	0.00	0.61	0.47	0.93
29	0.99	3.7	2.1	1.3	---	1.5	3.5	1.8	0.00	0.60	1.2	0.83
30	0.84	3.7	2.1	1.4	---	1.5	3.1	1.3	0.00	0.62	0.80	0.83
31	1.0	---	2.2	2.4	---	1.4	---	0.96	---	0.61	0.69	---
TOTAL	24.87	193.95	91.2	60.9	34.86	26.47	90.9	105.98	24.27	240.29	15.07	26.59
MEAN	0.802	6.465	2.942	1.965	1.245	0.854	3.030	3.419	0.809	7.751	0.486	0.886
MAX	1.4	61	3.5	2.4	2.3	1.8	10	53	18	188	1.2	1.8
MIN	0.47	0.97	2.1	1.3	0.77	0.42	1.4	0.90	0.00	0.00	0.24	0.53
AC-FT	49	385	181	121	69	53	180	210	48	477	30	53

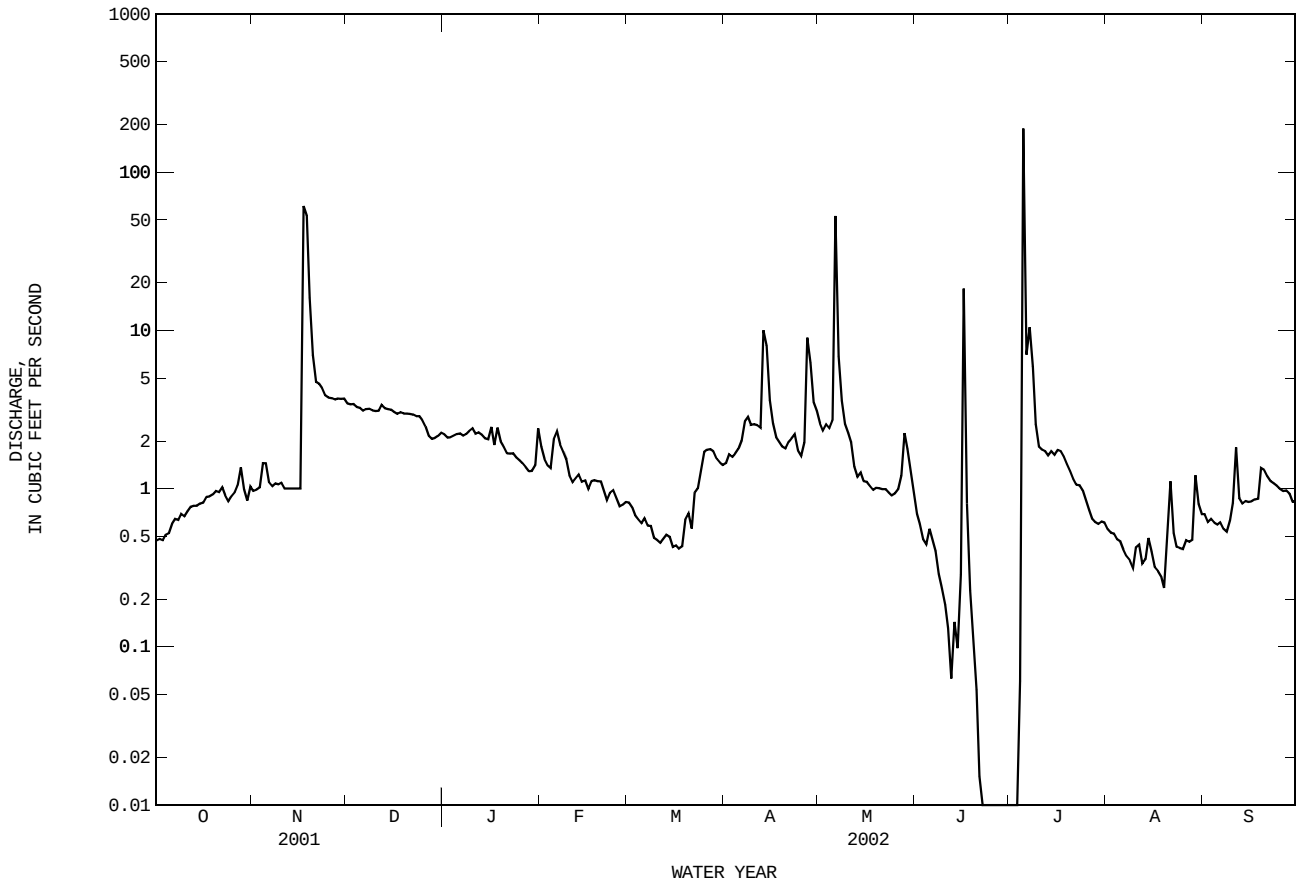
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

MEAN	1.872	3.387	3.089	3.252	3.736	6.802	4.963	4.012	2.866	2.176	1.064	1.234
MAX	3.41	6.47	5.04	5.70	7.73	13.5	7.48	4.41	8.71	7.75	3.87	4.11
(WY)	1998	2002	1998	1998	1998	1998	1998	2000	2000	2002	1997	1997
MIN	0.80	1.25	1.62	1.72	1.25	0.85	2.86	3.42	0.81	0.20	0.20	0.28
(WY)	2002	2000	2000	2000	2002	2002	2001	2002	2002	2001	2001	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002	
ANNUAL TOTAL	909.74		935.35			
ANNUAL MEAN	2.492		2.563		3.106	
HIGHEST ANNUAL MEAN					4.57	1998
LOWEST ANNUAL MEAN					2.09	2001
HIGHEST DAILY MEAN	63	May 4	188	Jul 5	188	Jul 5 2002
LOWEST DAILY MEAN	0.00	Aug 3	0.00	Jun 22	0.00	Aug 3 2001
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 3	0.00	Jun 22	0.00	Aug 3 2001
MAXIMUM PEAK FLOW			c1190	Jul 5	c1190	Jul 5 2002
MAXIMUM PEAK STAGE			a8.59	Jul 5	a8.59	Jul 5 2002
ANNUAL RUNOFF (AC-FT)	1800		1860		2250	
10 PERCENT EXCEEDS	4.4		3.2		5.7	
50 PERCENT EXCEEDS	1.7		1.1		2.0	
90 PERCENT EXCEEDS	0.20		0.41		0.44	

e Estimated
a From floodmark.
c From rating curve extended above 300 ft^3/s based on velocity-area study.

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.--Temperature records fair. Specific-conductance records good. Interruption in the record was caused by malfunctions of the instrument. No flow June 22-July 3.

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, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,200 microsiemens/cm, Aug. 21; minimum, 200 microsiemens/cm, Apr. 27.
WATER TEMPERATURE: Maximum, 32.3°C, June 12; minimum, 0.0°C, on several days.

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	932	894	915	977	926	951	1060	1040	1050	1020	984	1010
2	931	881	913	967	926	949	1060	1050	1060	1040	985	1010
3	928	885	909	1060	915	956	1060	1040	1060	1040	992	1010
4	930	885	909	1160	982	1040	1060	1050	1060	1020	1000	1010
5	930	895	915	1010	961	985	1060	1030	1050	1020	987	1010
6	942	897	915	973	934	960	1060	1030	1050	1020	972	1010
7	932	897	915	1010	970	986	1060	1030	1040	1020	999	1010
8	933	890	915	1010	937	975	1050	1030	1040	1030	1000	1020
9	941	893	916	958	902	929	1050	1030	1040	1030	974	1010
10	939	891	923	940	900	922	1050	1030	1040	1020	971	998
11	953	908	930	---	---	e920	1050	1020	1040	1010	976	998
12	947	914	933	---	---	e885	1060	1020	1040	1020	979	1000
13	957	919	936	---	---	e842	1050	1010	1030	1010	976	998
14	962	921	938	---	---	e784	1040	1020	1030	1010	973	996
15	976	920	942	---	---	e715	1040	1010	1030	1010	964	989
16	959	926	939	---	---	e601	1040	1010	1030	1030	969	1000
17	957	930	941	---	---	e552	1040	1010	1030	1010	972	998
18	960	926	945	---	---	e634	1040	1010	1030	1040	981	1000
19	964	931	947	---	---	e796	1040	1000	1030	1040	987	1000
20	972	936	953	---	---	e897	1040	1000	1030	1020	978	1000
21	981	929	950	999	946	977	1030	999	1020	1010	981	994
22	968	923	946	1020	998	1010	1030	996	1020	1010	973	996
23	966	930	949	1040	1020	1040	1030	999	1020	1010	966	992
24	969	919	944	1050	1040	1050	1020	996	1010	1000	967	990
25	976	937	953	1060	1050	1050	1020	1000	1020	1000	970	989
26	980	931	957	1060	1050	1050	1020	996	1010	997	968	987
27	977	940	956	1050	1040	1050	1020	997	1010	1000	927	980
28	967	935	954	1050	1030	1040	1020	995	1010	999	950	980
29	974	929	953	1060	1040	1040	1020	989	1010	998	950	980
30	972	929	951	1060	1050	1050	1020	994	1010	1000	985	994
31	969	926	950	---	---	---	1020	998	1010	999	981	990
MONTH	981	881	936	---	---	921	1060	989	1030	1040	927	998

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

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1020	983	996	984	949	969	957	893	931	988	912	962
2	1090	1020	1060	998	955	975	954	911	937	1000	935	979
3	1090	1030	1070	1020	959	986	967	912	945	1000	932	978
4	1050	991	1020	1020	970	992	966	912	943	1000	915	968
5	1020	973	995	996	970	987	968	899	941	987	453	936
6	---	---	e995	987	935	972	958	938	950	966	256	496
7	---	---	e1000	982	912	935	970	953	961	765	488	668
8	1040	1000	1020	999	949	981	973	920	954	---	---	e767
9	1040	988	1020	997	956	977	980	906	951	---	---	e840
10	1020	985	1010	986	935	968	987	905	955	---	---	e900
11	1020	992	1010	984	949	970	971	889	939	---	---	e941
12	1020	972	1000	990	939	968	955	879	928	---	---	e977
13	1010	959	987	980	926	926	---	---	e900	---	---	e1000
14	1000	959	986	977	920	953	---	---	e700	1030	1020	1030
15	1020	975	1000	975	925	953	---	---	e800	1040	1020	1030
16	1030	981	1010	972	924	952	---	---	e900	1040	1010	1030
17	1020	960	996	970	916	916	1010	---	e980	1040	1010	1020
18	1010	952	992	967	948	958	1020	948	996	1030	1000	1020
19	1000	941	978	1000	967	988	1020	957	994	1020	930	1010
20	999	943	979	994	948	975	1000	972	996	1020	992	1010
21	1010	953	989	990	961	978	1010	933	981	1020	980	1010
22	1010	952	985	---	---	e980	1000	928	973	1010	979	1000
23	1010	945	982	---	---	e973	994	915	965	1010	974	996
24	1000	940	978	---	---	e951	1000	932	977	1010	974	993
25	992	947	974	---	---	e964	1000	966	986	1000	984	993
26	992	958	976	972	933	957	995	973	985	997	888	986
27	1010	961	982	971	918	950	984	200	881	1010	965	983
28	991	952	974	963	899	937	1020	887	933	974	736	925
29	---	---	---	954	893	931	1060	927	1010	917	885	902
30	---	---	---	958	938	947	1000	889	958	939	888	912
31	---	---	---	962	904	940	---	---	---	979	933	950
MONTH	---	---	999	---	---	962	---	---	942	---	---	942

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	993	950	976	---	---	---	995	948	978	978	916	958
2	994	944	976	---	---	---	985	941	969	973	910	952
3	990	944	974	---	---	---	980	937	965	983	919	960
4	990	944	975	---	---	e500	978	924	957	989	911	958
5	983	944	969	---	---	e500	976	910	950	982	894	953
6	980	910	954	---	---	e300	975	915	949	983	890	946
7	962	891	933	---	---	e450	971	907	943	960	861	921
8	940	879	919	---	---	e629	965	903	939	930	876	911
9	933	880	913	---	---	e713	971	903	939	930	866	908
10	937	877	914	---	---	e799	977	916	952	926	842	901
11	944	887	923	---	---	e864	1000	917	963	948	868	926
12	953	876	930	---	---	e918	973	912	947	927	881	910
13	998	831	953	---	---	e965	961	931	946	923	868	904
14	984	898	945	---	---	e1010	982	923	956	926	878	907
15	955	457	890	---	---	e1030	975	911	948	936	878	915
16	---	---	e500	---	---	e1050	965	908	941	948	893	927
17	---	---	e698	---	---	e1080	952	915	935	943	875	919
18	---	---	e759	1110	1060	1090	952	910	932	932	872	909
19	---	---	e794	1110	1060	1090	945	905	930	922	877	904
20	---	---	e839	1110	1050	1090	1130	890	956	925	878	907
21	---	---	e882	1110	1040	1080	1200	974	1050	935	875	914
22	---	---	---	1100	1020	1080	986	929	965	935	865	910
23	---	---	---	1100	1020	1070	970	894	939	929	870	908
24	---	---	---	1090	1020	1060	958	877	927	933	877	913
25	---	---	---	1080	1010	1050	955	873	921	937	881	918
26	---	---	---	1070	1010	1050	951	880	923	937	875	914
27	---	---	---	1060	1010	1040	962	894	933	930	875	910
28	---	---	---	1050	1010	1030	967	830	927	926	869	906
29	---	---	---	1040	987	1020	1100	896	1010	924	865	905
30	---	---	---	1020	970	1000	1010	946	983	924	862	899
31	---	---	---	1010	961	991	999	943	981	---	---	---
MONTH	---	---	---	---	---	---	1200	830	953	989	842	920

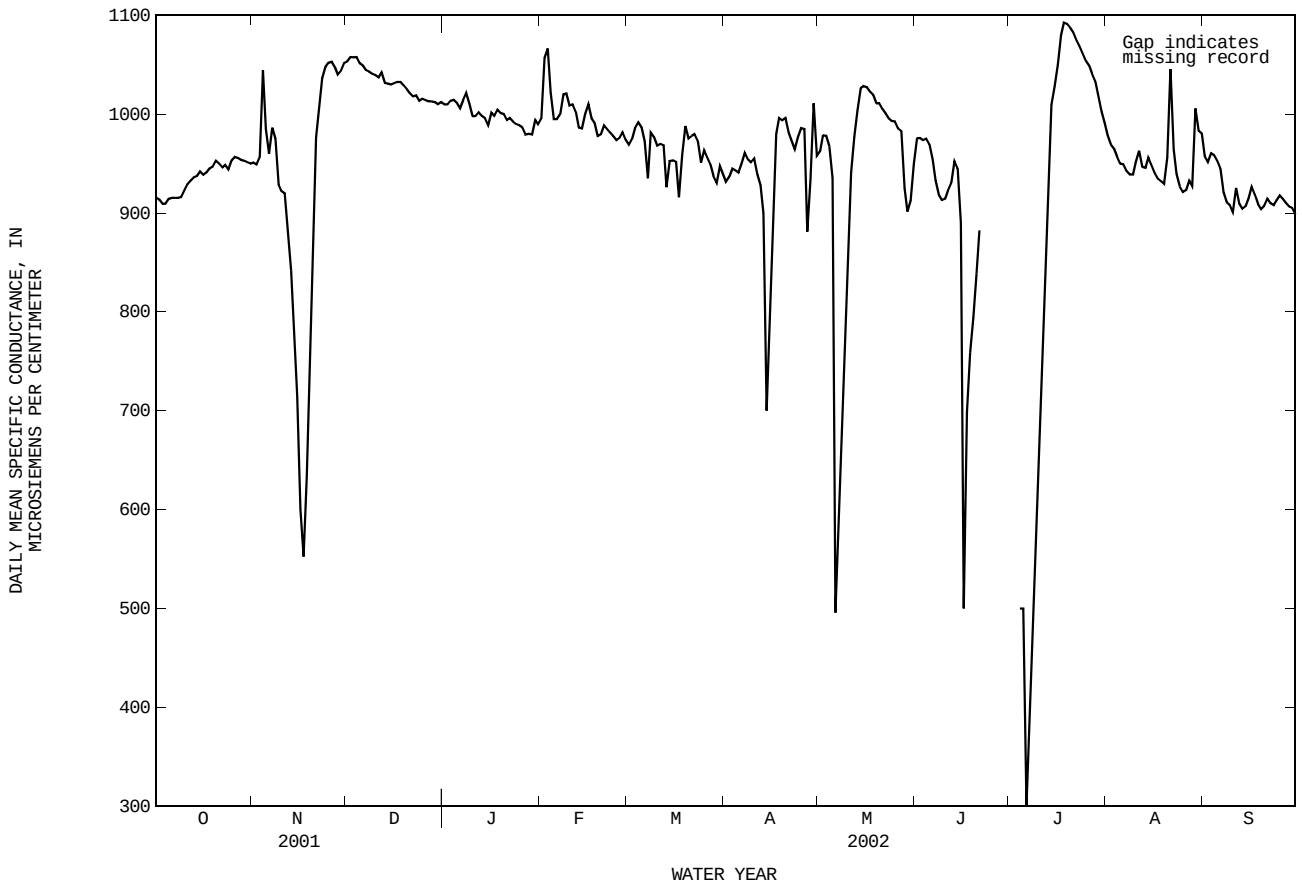
e Estimated

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

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	915	951	1050	1010	996	969	931	962	976	---	978	958
2	913	949	1060	1010	1060	975	937	979	976	---	969	952
3	909	956	1060	1010	1070	986	945	978	974	---	965	960
4	909	1040	1060	1010	1020	992	943	968	975	e500	957	958
5	915	985	1050	1010	995	987	941	936	969	e500	950	953
6	915	960	1050	1010	e995	972	950	496	954	e300	949	946
7	915	986	1040	1010	e1000	935	961	668	933	e450	943	921
8	915	975	1040	1020	1020	981	954	e767	919	e629	939	911
9	916	929	1040	1010	1020	977	951	e840	913	e713	939	908
10	923	922	1040	998	1010	968	955	e900	914	e799	952	901
11	930	e920	1040	998	1010	970	939	e941	923	e864	963	926
12	933	e885	1040	1000	1000	968	928	e977	930	e918	947	910
13	936	e842	1030	998	987	926	e900	e1000	953	e965	946	904
14	938	e784	1030	996	986	953	e700	1030	945	e1010	956	907
15	942	e715	1030	989	1000	953	e800	1030	890	e1030	948	915
16	939	e601	1030	1000	1010	952	e900	1030	e500	e1050	941	927
17	941	e552	1030	998	996	916	e980	1020	e698	e1080	935	919
18	945	e634	1030	1000	992	958	996	1020	e759	1090	932	909
19	947	e796	1030	1000	978	988	994	1010	e794	1090	930	904
20	953	e897	1030	1000	979	975	996	1010	e839	1090	956	907
21	950	977	1020	994	989	978	981	1010	e882	1080	1050	914
22	946	1010	1020	996	985	e980	973	1000	---	1080	965	910
23	949	1040	1020	992	982	e973	965	996	---	1070	939	908
24	944	1050	1010	990	978	e951	977	993	---	1060	927	913
25	953	1050	1020	989	974	e964	986	993	---	1050	921	918
26	957	1050	1010	987	976	957	985	986	---	1050	923	914
27	956	1050	1010	980	982	950	881	983	---	1040	933	910
28	954	1040	1010	980	974	937	933	925	---	1030	927	906
29	953	1040	1010	980	---	931	1010	902	---	1020	1010	905
30	951	1050	1010	994	---	947	958	912	---	1000	983	899
31	950	---	1010	990	---	940	---	950	---	991	981	---
MEAN	936	921	1030	998	999	962	942	942	---	---	953	920
MAX	957	1050	1060	1020	1070	992	1010	1030	---	---	1050	960
MIN	909	552	1010	980	974	916	700	496	---	---	921	899

e Estimated



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

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.7	12.5	16.7	19.4	12.8	15.6	11.1	6.7	8.4	4.2	2.2	3.1
2	20.8	12.1	16.2	18.9	11.5	14.8	12.9	6.6	9.4	5.8	1.2	3.1
3	21.1	13.7	17.3	19.2	12.4	15.5	14.5	9.0	11.3	4.4	0.0	2.4
4	23.6	14.8	18.8	17.9	14.8	16.1	14.7	11.3	13.0	6.8	1.4	3.8
5	19.4	13.2	16.0	17.0	13.9	14.9	16.1	11.4	14.0	9.0	3.8	5.7
6	17.5	9.4	13.1	18.7	13.0	15.3	13.3	8.6	10.7	8.5	2.8	5.1
7	19.1	10.0	14.2	18.2	12.3	14.8	12.0	7.3	9.3	8.6	1.4	4.6
8	22.0	14.0	17.3	14.6	10.8	12.6	10.8	6.2	8.1	11.2	3.4	6.7
9	22.9	16.9	19.2	14.5	8.4	11.1	9.6	3.1	6.0	10.6	4.9	7.5
10	19.6	14.6	16.8	15.1	8.3	11.3	9.3	3.0	6.0	9.0	5.6	7.1
11	20.6	13.9	16.5	---	9.4	---	10.1	5.4	7.5	9.8	4.0	6.5
12	15.5	12.3	14.3	---	---	---	10.8	7.7	9.2	9.1	3.2	5.6
13	17.9	9.6	13.1	---	---	---	9.8	6.1	7.6	9.6	3.8	6.1
14	17.5	9.1	12.9	---	---	---	9.5	3.3	6.3	9.2	3.6	5.9
15	16.3	10.3	13.0	---	---	---	9.8	5.3	7.5	8.9	2.4	5.4
16	15.4	6.9	10.7	---	---	---	10.5	7.9	9.2	8.5	4.3	6.2
17	16.8	8.2	12.0	---	---	---	10.9	5.0	7.7	8.8	4.1	5.7
18	18.5	11.1	14.1	---	---	---	11.1	4.7	7.5	4.1	1.5	2.8
19	18.7	10.9	14.2	---	---	---	9.9	4.6	6.9	6.9	0.3	3.0
20	18.7	9.8	13.9	---	---	---	10.8	4.3	7.2	8.0	1.4	4.0
21	19.4	12.6	15.6	14.6	9.0	11.3	10.5	4.2	7.3	8.0	0.1	3.6
22	18.9	13.1	15.5	13.9	10.2	11.8	10.8	6.4	8.1	10.4	3.1	5.9
23	20.1	13.4	16.3	13.7	11.2	12.3	8.6	3.7	5.6	7.9	3.6	5.5
24	17.3	11.4	14.3	14.2	9.7	11.3	7.2	1.9	4.1	8.5	3.0	5.0
25	15.2	7.7	11.0	12.8	8.0	10.5	7.1	0.6	3.5	7.9	0.0	3.9
26	15.4	7.3	10.9	11.7	8.3	10.4	8.0	1.4	4.2	9.7	1.5	4.9
27	15.4	7.7	11.2	8.3	4.2	5.6	6.0	1.7	3.6	8.8	2.4	5.5
28	17.0	10.6	13.4	4.2	2.0	3.3	7.0	1.1	3.7	9.9	3.9	6.9
29	18.9	12.4	15.2	7.3	1.8	4.4	6.0	1.4	3.5	10.4	6.9	8.3
30	17.2	12.6	14.7	10.8	4.6	7.3	3.3	1.8	2.4	7.3	---	---
31	17.8	13.2	15.2	---	---	---	3.2	1.8	2.4	6.6	1.3	3.8
MONTH	23.6	6.9	14.6	---	---	---	16.1	0.6	7.1	11.2	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.5	0.0	3.1	11.9	1.8	5.8	22.2	10.8	15.9	21.6	16.3	19.2
2	5.1	1.4	3.2	4.7	0.0	2.3	16.6	10.0	13.4	18.8	13.6	15.8
3	8.1	3.0	4.8	5.3	0.0	3.4	16.6	7.0	11.2	22.3	11.4	16.3
4	6.2	2.6	4.4	9.3	0.1	5.6	17.3	6.3	11.3	23.1	14.4	18.2
5	4.8	2.7	3.8	12.1	0.9	5.8	16.0	7.8	11.7	22.9	16.3	19.3
6	---	---	---	14.9	4.1	8.7	12.7	11.0	11.8	22.2	16.1	19.3
7	---	---	---	15.1	4.7	9.5	13.1	10.6	11.3	26.4	19.1	21.9
8	11.7	3.2	6.7	16.2	9.1	11.9	17.6	11.0	13.7	24.3	17.3	20.8
9	9.6	4.5	6.7	13.3	3.5	8.0	21.3	11.2	15.4	18.8	11.8	15.1
10	7.8	1.1	4.0	11.6	3.3	7.0	22.2	11.9	16.7	17.4	9.7	13.6
11	7.4	0.0	2.5	10.9	5.0	7.5	24.8	14.5	18.9	---	16.7	---
12	8.7	2.1	5.0	14.6	4.1	9.0	24.8	15.9	19.9	---	---	---
13	9.9	2.2	5.4	18.5	7.1	12.0	---	16.6	---	23.7	---	---
14	9.4	2.6	5.6	18.2	10.0	13.8	---	---	---	23.3	13.4	17.8
15	11.0	3.6	6.6	14.7	6.0	10.2	---	---	---	23.5	15.2	18.5
16	10.0	2.0	4.7	14.3	6.0	9.4	---	---	---	27.8	17.3	21.6
17	10.8	4.4	7.4	16.1	7.6	11.0	23.9	---	---	21.6	16.7	19.2
18	12.8	6.2	8.7	12.1	9.1	10.8	25.1	18.2	20.9	23.6	13.1	17.6
19	13.3	7.9	10.3	11.7	8.6	10.3	20.2	17.2	18.6	24.1	14.3	18.4
20	14.3	5.8	9.6	17.8	7.4	11.7	17.6	14.7	15.5	24.2	14.8	18.8
21	11.6	7.4	9.1	11.6	4.3	7.3	22.3	12.8	16.7	24.8	15.8	19.3
22	12.9	4.1	8.2	---	---	---	22.7	12.8	17.4	26.3	16.0	20.1
23	14.1	5.5	9.4	---	---	---	24.9	16.7	20.3	26.7	18.1	21.4
24	15.9	8.0	11.1	---	---	---	21.9	15.7	18.7	28.1	18.0	21.8
25	10.6	2.8	7.1	9.6	---	---	17.8	12.8	14.4	18.7	15.0	16.7
26	6.2	0.1	3.0	15.3	3.1	8.5	12.8	11.9	12.4	27.3	15.8	20.3
27	7.4	0.0	4.2	18.6	6.7	12.1	21.5	12.4	16.1	25.8	18.2	20.6
28	8.6	0.0	4.0	20.2	10.5	14.9	23.0	14.1	17.9	23.9	17.2	20.4
29	---	---	---	20.0	11.3	15.1	24.7	15.3	19.3	28.6	17.4	22.2
30	---	---	---	14.6	10.6	12.4	23.2	17.7	20.2	30.0	19.8	24.0
31	---	---	---	19.4	7.5	12.8	---	---	---	30.7	19.3	24.3
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

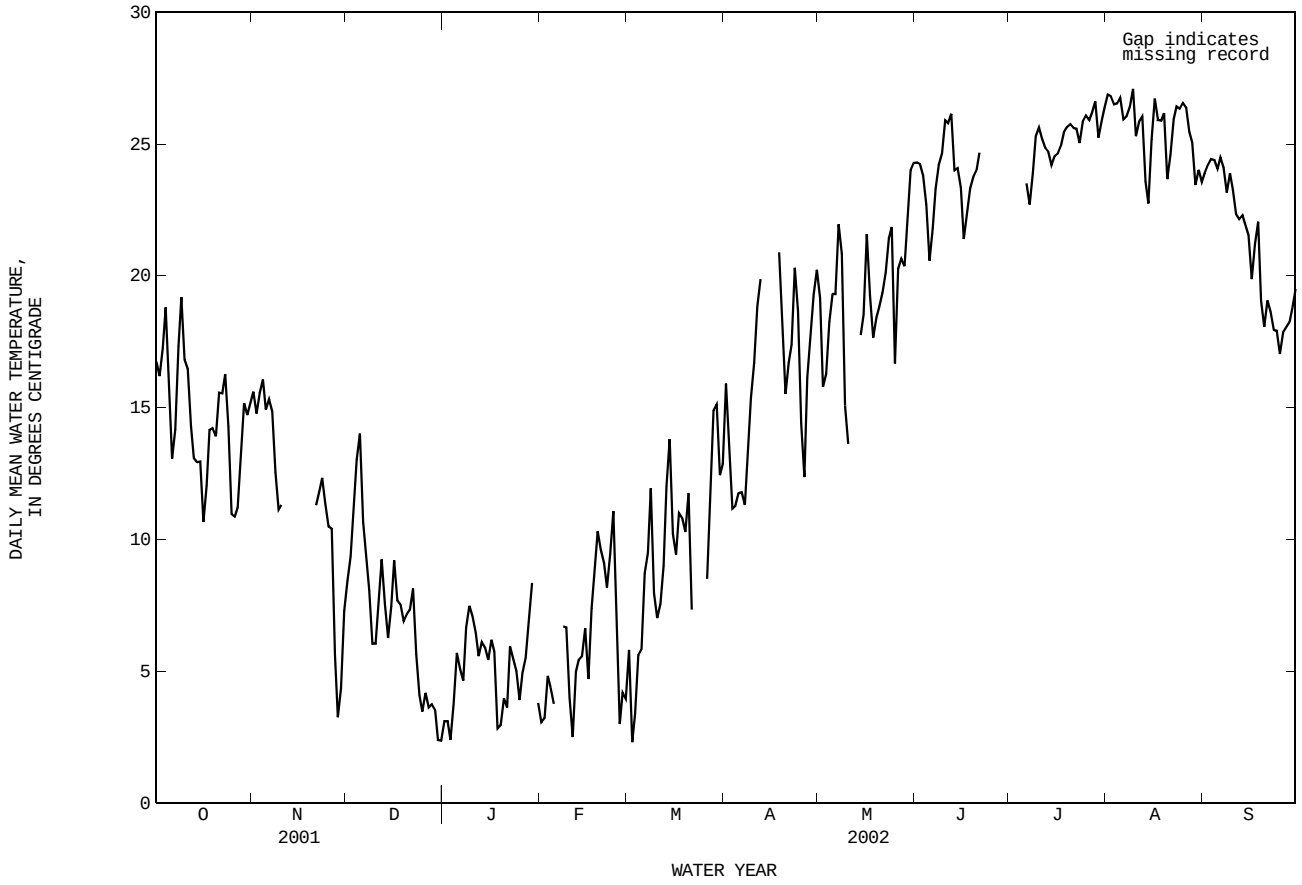
07299890 Lelia Lake Creek below Bell Creek near Hedley, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.5	19.5	24.3	---	---	---	31.8	23.2	26.9	28.5	20.4	23.9
2	30.1	19.7	24.2	---	---	---	31.2	23.4	26.8	28.7	20.6	24.2
3	28.6	19.9	23.8	---	---	---	30.9	23.1	26.5	29.0	20.7	24.4
4	25.9	20.9	22.7	---	---	---	31.5	22.5	26.5	29.0	20.7	24.4
5	22.8	19.2	20.6	---	---	---	31.3	23.1	26.7	27.7	21.1	24.0
6	28.4	17.4	21.8	24.8	22.8	23.5	29.9	22.4	25.9	28.8	21.3	24.5
7	28.4	19.1	23.3	23.9	21.5	22.7	30.6	22.0	26.1	28.1	20.8	24.1
8	29.2	20.4	24.2	26.8	21.5	23.9	31.2	22.3	26.4	26.0	21.1	23.2
9	29.4	20.5	24.6	28.4	23.0	25.3	31.1	23.8	27.1	27.2	21.8	23.9
10	31.6	21.8	25.9	28.9	23.5	25.6	28.4	22.4	25.3	25.8	21.7	23.3
11	30.1	22.4	25.8	28.0	23.4	25.2	30.6	22.1	25.8	25.4	20.6	22.3
12	32.3	22.2	26.1	28.9	22.3	24.8	30.2	22.6	26.0	25.4	19.8	22.1
13	28.9	20.9	24.0	28.3	22.5	24.7	26.0	21.9	23.6	25.8	20.3	22.3
14	28.9	21.0	24.1	28.4	21.3	24.2	27.8	18.6	22.7	25.1	19.8	21.9
15	28.5	19.9	23.3	28.9	21.6	24.5	30.0	21.1	25.2	25.4	19.6	21.5
16	22.6	20.2	21.4	28.7	21.8	24.6	30.8	23.8	26.7	24.4	16.2	19.9
17	24.5	20.8	22.4	29.3	21.9	24.9	29.0	23.6	25.9	25.6	18.0	21.2
18	25.2	21.8	23.3	29.8	22.3	25.4	30.2	22.3	25.9	25.6	19.5	22.0
19	25.8	22.0	23.7	29.5	22.6	25.6	30.2	23.5	26.2	21.0	17.1	19.1
20	26.2	22.1	24.0	30.1	22.6	25.8	25.5	21.9	23.7	22.7	14.5	18.1
21	26.4	22.9	24.7	30.3	22.2	25.6	29.4	21.5	24.6	23.8	15.4	19.1
22	---	---	---	30.5	22.5	25.6	30.6	22.3	25.9	22.2	15.9	18.6
23	---	---	---	29.8	21.8	25.0	31.2	22.6	26.4	22.2	14.7	17.9
24	---	---	---	30.7	22.2	25.8	30.1	22.8	26.3	21.9	15.0	17.9
25	---	---	---	31.2	22.2	26.1	30.8	23.4	26.6	21.3	13.5	17.0
26	---	---	---	30.5	22.3	25.9	30.8	22.8	26.4	22.0	14.6	17.8
27	---	---	---	31.0	22.7	26.2	29.4	21.9	25.4	22.0	14.8	18.0
28	---	---	---	31.0	23.6	26.6	28.4	22.5	25.0	22.5	14.9	18.2
29	---	---	---	28.5	22.9	25.2	25.9	21.3	23.4	22.8	15.8	18.8
30	---	---	---	31.1	21.9	25.9	28.3	21.2	24.0	22.6	17.2	19.5
31	---	---	---	31.1	22.5	26.4	26.8	21.6	23.6	---	---	---
MONTH	---	---	---	---	---	---	31.8	18.6	25.6	29.0	13.5	21.1

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.7	15.6	8.4	3.1	3.1	5.8	15.9	19.2	24.3	---	26.9	23.9
2	16.2	14.8	9.4	3.1	3.2	2.3	13.4	15.8	24.2	---	26.8	24.2
3	17.3	15.5	11.3	2.4	4.8	3.4	11.2	16.3	23.8	---	26.5	24.4
4	18.8	16.1	13.0	3.8	4.4	5.6	11.3	18.2	22.7	---	26.5	24.4
5	16.0	14.9	14.0	5.7	3.8	5.8	11.7	19.3	20.6	---	26.7	24.0
6	13.1	15.3	10.7	5.1	---	8.7	11.8	19.3	21.8	23.5	25.9	24.5
7	14.2	14.8	9.3	4.6	---	9.5	11.3	21.9	23.3	22.7	26.1	24.1
8	17.3	12.6	8.1	6.7	6.7	11.9	13.7	20.8	24.2	23.9	26.4	23.2
9	19.2	11.1	6.0	7.5	6.7	8.0	15.4	15.1	24.6	25.3	27.1	23.9
10	16.8	11.3	6.0	7.1	4.0	7.0	16.7	13.6	25.9	25.6	25.3	23.3
11	16.5	---	7.5	6.5	2.5	7.5	18.9	---	25.8	25.2	25.8	22.3
12	14.3	---	9.2	5.6	5.0	9.0	19.9	---	26.1	24.8	26.0	22.1
13	13.1	---	7.6	6.1	5.4	12.0	---	---	24.0	24.7	23.6	22.3
14	12.9	---	6.3	5.9	5.6	13.8	---	17.8	24.1	24.2	22.7	21.9
15	13.0	---	7.5	5.4	6.6	10.2	---	18.5	23.3	24.5	25.2	21.5
16	10.7	---	9.2	6.2	4.7	9.4	---	21.6	21.4	24.6	26.7	19.9
17	12.0	---	7.7	5.7	7.4	11.0	---	19.2	22.4	24.9	25.9	21.2
18	14.1	---	7.5	2.8	8.7	10.8	20.9	17.6	23.3	25.4	25.9	22.0
19	14.2	---	6.9	3.0	10.3	10.3	18.6	18.4	23.7	25.6	26.2	19.1
20	13.9	---	7.2	4.0	9.6	11.7	15.5	18.8	24.0	25.8	23.7	18.1
21	15.6	11.3	7.3	3.6	9.1	7.3	16.7	19.3	24.7	25.6	24.6	19.1
22	15.5	11.8	8.1	5.9	8.2	---	17.4	20.1	---	25.6	25.9	18.6
23	16.3	12.3	5.6	5.5	9.4	---	20.3	21.4	---	25.0	26.4	17.9
24	14.3	11.3	4.1	5.0	11.1	---	18.7	21.8	---	25.8	26.3	17.9
25	11.0	10.5	3.5	3.9	7.1	---	14.4	16.7	---	26.1	26.6	17.0
26	10.9	10.4	4.2	4.9	3.0	8.5	12.4	20.3	---	25.9	26.4	17.8
27	11.2	5.6	3.6	5.5	4.2	12.1	16.1	20.6	---	26.2	25.4	18.0
28	13.4	3.3	3.7	6.9	4.0	14.9	17.9	20.4	---	26.6	25.0	18.2
29	15.2	4.4	3.5	8.3	---	15.1	19.3	22.2	---	25.2	23.4	18.8
30	14.7	7.3	2.4	---	---	12.4	20.2	24.0	---	25.9	24.0	19.5
31	15.2	---	2.4	3.8	---	12.8	---	24.3	---	26.4	23.6	---
MEAN	14.6	---	7.1	---	---	---	---	---	---	---	25.6	21.1
MAX	19.2	---	14.0	---	---	---	---	---	---	---	27.1	24.5
MIN	10.7	---	2.4	---	---	---	---	---	---	---	22.7	17.0

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



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, 4.0 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	4.4	12	16	36	21	15	14	6.1	11	3.7	2.8
2	2.8	4.4	11	19	27	21	15	12	5.4	13	3.6	2.6
3	2.9	4.6	10	19	27	21	14	12	5.3	13	3.7	2.5
4	3.0	4.8	9.0	21	25	20	14	12	7.2	21	3.5	2.5
5	3.1	4.8	9.2	22	43	21	14	12	9.5	831	3.3	2.5
6	3.2	5.1	8.7	21	103	21	15	15	8.8	490	3.2	2.6
7	3.3	5.1	9.6	18	69	21	26	14	7.6	709	3.2	2.5
8	3.6	5.3	8.8	18	44	21	49	14	6.4	580	3.3	2.7
9	4.3	5.7	8.0	19	32	18	34	10	5.9	127	3.3	3.0
10	4.0	5.8	7.9	19	22	18	21	9.3	5.8	36	e2.8	109
11	4.0	6.0	8.5	18	20	19	16	9.7	6.2	28	e2.4	585
12	4.0	5.9	9.7	19	20	19	15	9.5	6.2	48	1.9	17
13	3.8	5.9	12	21	21	18	314	9.2	24	29	1.9	6.1
14	3.8	8.8	12	20	21	17	438	8.5	15	25	2.0	10
15	3.8	24	12	21	21	15	136	8.8	16	22	1.9	8.1
16	3.8	143	12	21	22	14	53	9.0	20	17	1.9	3.3
17	3.8	504	12	20	23	15	26	8.5	16	12	1.9	1.9
18	4.0	290	13	e21	24	15	19	8.3	14	9.1	1.8	1.1
19	4.0	62	12	e21	23	20	15	7.4	12	7.3	1.9	1.3
20	4.1	25	11	e20	20	21	16	6.8	11	5.8	4.7	3.6
21	4.3	18	11	e21	20	19	22	6.4	9.6	5.0	5.4	2.5
22	4.4	15	12	e20	20	17	20	6.2	9.3	4.9	3.5	1.3
23	4.2	15	12	e20	21	16	18	7.1	9.1	5.1	3.0	0.79
24	3.9	12	11	18	22	17	15	7.0	9.2	4.8	2.7	0.64
25	3.9	10	12	19	20	15	14	6.9	9.3	4.3	2.5	0.61
26	4.1	9.7	12	18	20	15	15	7.8	9.6	3.7	2.3	0.69
27	4.2	8.8	13	19	20	16	69	8.2	11	3.7	2.1	0.73
28	4.2	8.4	14	19	19	16	61	11	10	3.9	2.4	0.77
29	4.3	9.2	14	20	---	16	28	9.2	9.9	4.1	4.3	0.76
30	4.2	15	15	37	---	15	17	8.8	9.7	4.0	3.3	0.80
31	4.4	---	15	65	---	14	---	7.7	---	3.9	2.9	---
TOTAL	118.1	1245.7	349.4	670	805	552	1544	296.3	305.1	3081.6	90.3	779.69
MEAN	3.810	41.52	11.27	21.61	28.75	17.81	51.47	9.558	10.17	99.41	2.913	25.99
MAX	4.4	504	15	65	103	21	438	15	24	831	5.4	585
MIN	2.7	4.4	7.9	16	19	14	14	6.2	5.3	3.7	1.8	0.61
AC-FT	234	2470	693	1330	1600	1090	3060	588	605	6110	179	1550

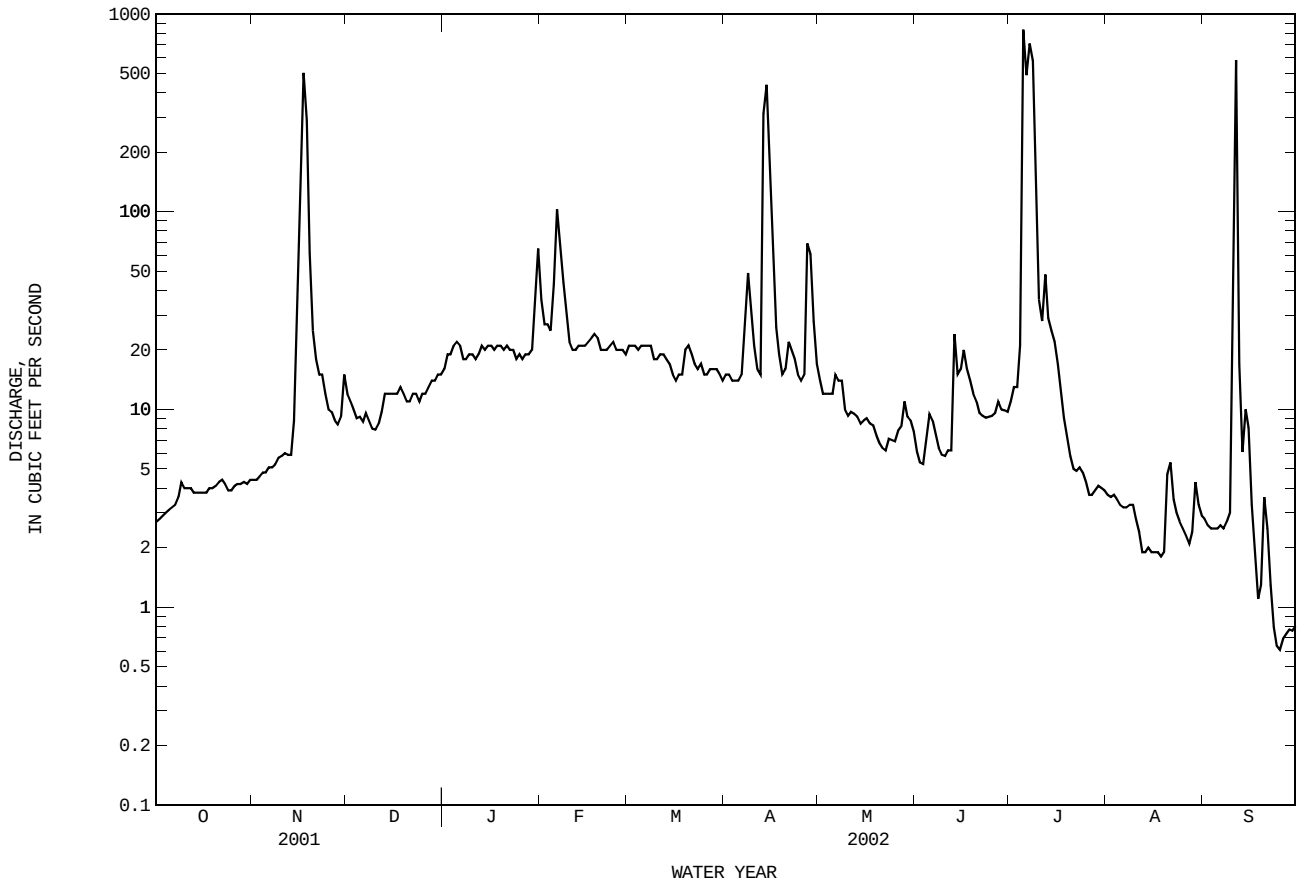
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002z, BY WATER YEAR (WY)

MEAN	29.97	28.65	27.57	32.31	39.46	47.42	91.11	108.9	140.9	30.96	26.63	29.84
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	3.81	8.03	3.59	10.5	10.9	8.15	6.10	2.61	8.17	2.65	1.68	2.22
(WY)	2002	1981	1984	1971	1967	1972	1971	1971	1970	1970	1970	1984

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002z	
ANNUAL TOTAL	16922.9		9837.19			
ANNUAL MEAN	46.36		26.95		52.69	
HIGHEST ANNUAL MEAN					165	1997
LOWEST ANNUAL MEAN					10.5	1971
HIGHEST DAILY MEAN	1920	May 4	831	Jul 5	17500	Apr 3 1997
LOWEST DAILY MEAN	1.6	Aug 21	0.61	Sep 25	0.40	Jun 2 1985
ANNUAL SEVEN-DAY MINIMUM	1.8	Aug 1	0.71	Sep 23	0.71	Sep 23 2002
MAXIMUM PEAK FLOW			2850	Sep 10	81100	Apr 3 1997
MAXIMUM PEAK STAGE			5.36	Sep 10	17.10	Apr 3 1997
ANNUAL RUNOFF (AC-FT)	33570		19510		38170	
10 PERCENT EXCEEDS	91		25		71	
50 PERCENT EXCEEDS	12		11		17	
90 PERCENT EXCEEDS	2.9		2.8		4.1	

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 2001 TO SEPTEMBER 2002

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)
DEC													
28...	1320	15	3420	8.1	7.6	12.5	103	6k	10k	1500	1300	456	88.6
MAR													
28...	1000	17	3330	8.0	14.2	10.0	108	36	63	1600	1400	467	93.8
JUN													
04...	1220	6.7	3220	7.6	28.2	7.6	98	360	220	1700	1600	553	89.0
SEP													
05...	0905	2.7	3170	7.8	21.4	7.6	98	120	280	1700	1600	553	84.3

Date	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS 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)
DEC													
28...	234	3	17.4	165	1380	351	.6	20.4	2660	12	--	<.008	1.53
MAR													
28...	244	3	4.19	141	1380	336	.7	17.6	2640	<10	1.47	.012	1.48
JUN													
04...	153	2	4.21	129	1580	223	.6	19.5	2710	<10	2.58	.019	2.60
SEP													
05...	148	2	3.41	139	1570	201	.6	21.6	2670	<10	1.99	.017	2.01

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,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)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
DEC									
28...	.18	1.7	--	.18	.17	<.004	E.003	.02	.058
MAR									
28...	.17	1.6	--	.14	.16	.005	<.004	<.02	--
JUN									
04...	.16	2.8	.08	.15	.24	E.003	E.002	<.02	--
SEP									
05...	.21	2.2	--	.15	.16	.005	E.003	<.02	--

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

Value qualifier codes used in this report:
k -- Counts outside acceptable range

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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 NGVD of 1929. (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:

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 VIA SATELLITE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	25	e17	76	e24	29	18	9.7	2.4	0.63	0.00
2	0.00	0.00	21	e16	73	e22	25	13	8.6	1.8	0.37	0.00
3	0.00	0.00	23	e16	54	e22	22	11	7.3	1.9	0.24	0.00
4	0.00	0.00	22	e22	44	e23	22	9.4	6.2	19	0.17	0.00
5	0.00	0.00	21	29	49	e25	22	6.6	53	94	0.10	0.00
6	0.00	0.00	18	28	60	29	22	10	22	321	0.04	0.00
7	0.00	0.00	17	27	77	29	28	19	21	346	0.00	0.00
8	0.00	0.00	17	28	86	30	35	17	18	166	0.00	0.00
9	0.00	0.00	16	30	70	27	37	8.4	10	315	0.00	0.00
10	0.00	0.00	16	27	56	27	43	5.9	6.2	138	0.00	0.00
11	0.00	0.00	15	26	48	25	39	6.5	4.3	76	0.00	0.00
12	0.00	0.00	16	26	41	24	36	5.2	3.1	136	0.00	82
13	0.00	0.00	17	25	37	24	724	5.0	5.0	41	0.00	61
14	0.00	0.00	19	24	36	24	174	4.9	19	40	0.00	49
15	0.00	22	20	24	34	23	148	4.4	20	25	0.00	36
16	0.00	46	21	24	33	23	90	4.1	38	15	0.00	16
17	0.00	66	22	23	33	24	55	3.7	45	7.8	0.00	14
18	0.00	141	22	24	33	26	41	3.3	35	4.2	0.00	6.9
19	0.00	147	20	24	32	34	31	2.9	22	2.0	0.00	5.7
20	0.00	84	20	24	31	38	23	2.7	14	0.83	0.00	2.1
21	0.00	55	20	24	32	38	19	2.2	9.6	0.43	0.00	0.57
22	0.00	40	19	24	30	36	16	2.0	6.8	0.26	0.00	0.10
23	0.00	34	18	24	30	35	15	1.9	5.0	0.18	0.00	0.00
24	0.00	28	17	24	29	34	13	3.2	3.3	0.13	0.00	0.00
25	0.00	25	17	24	27	30	11	56	2.7	0.08	0.00	0.00
26	0.00	22	17	25	e22	30	10	15	1.7	0.03	0.00	0.00
27	0.00	17	19	25	e20	30	14	10	1.3	0.00	0.00	0.00
28	0.00	16	19	24	25	29	16	9.5	0.79	0.00	0.00	0.00
29	0.00	20	18	24	---	27	16	9.9	0.63	100	0.00	0.00
30	0.00	26	20	38	---	27	23	9.8	2.1	29	0.00	0.00
31	0.00	---	e19	48	---	30	---	10	---	1.1	0.00	---
TOTAL	0.00	789.00	591	788	1218	869	1799	290.5	401.32	1884.14	1.55	273.37
MEAN	0.000	26.30	19.06	25.42	43.50	28.03	59.97	9.371	13.38	60.78	0.050	9.112
MAX	0.00	147	25	48	86	38	724	56	53	346	0.63	82
MIN	0.00	0.00	15	16	20	22	10	1.9	0.63	0.00	0.00	0.00
AC-FT	0.00	1560	1170	1560	2420	1720	3570	576	796	3740	3.1	542

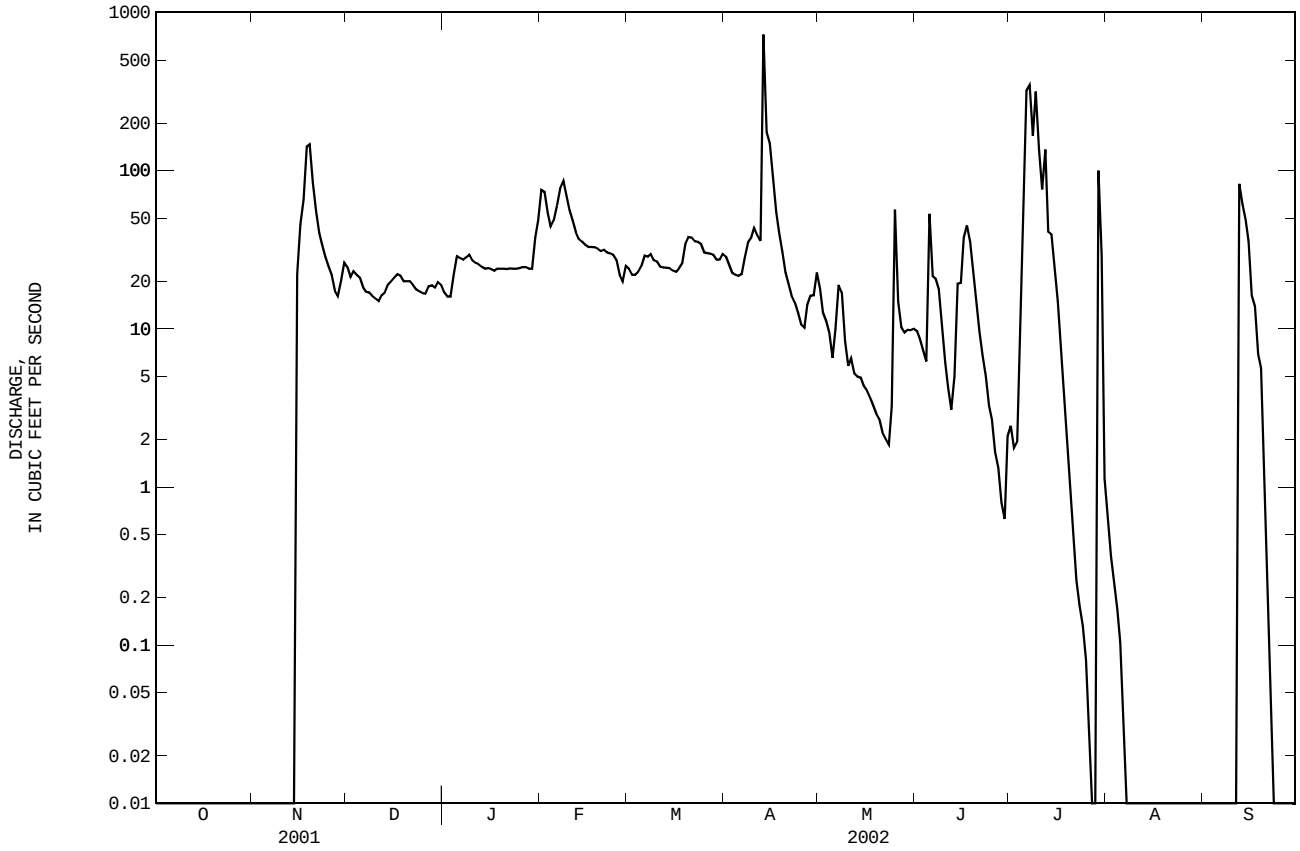
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	75.55	31.95	38.15	47.30	57.19	56.04	104.1	256.5	232.7	64.14	38.97	49.48
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	0.000	0.000	0.000	0.000	0.000	0.12	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1941	1940	1940	1940	1953	1971	1955	1953	1952	1963	1943	1939

e Estimated

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

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002	
ANNUAL TOTAL	18021.58		8904.88			
ANNUAL MEAN	49.37		24.40		87.72	
HIGHEST ANNUAL MEAN					277	1941
LOWEST ANNUAL MEAN					12.3	1940
HIGHEST DAILY MEAN	1320	May 5	724	Apr 13	22600	May 28 1978
LOWEST DAILY MEAN	0.00	at times	0.00	at times	0.00	most years
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 1	0.00	Oct 1	0.00	Aug 14 1938
MAXIMUM PEAK FLOW			2760	Apr 13	72000	May 16 1957
MAXIMUM PEAK STAGE			8.31	Apr 13	14.70	Jun 16 1938
ANNUAL RUNOFF (AC-FT)	35750		17660		63550	
10 PERCENT EXCEEDS	113		45		128	
50 PERCENT EXCEEDS	20		17		19	
90 PERCENT EXCEEDS	0.00		0.00		0.00	



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 (daily mean discharge), Oct. 1981 to Sept. 1992 (annual maximum), Oct. 1992 to current year (peak discharges 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. 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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 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.				July 7	0800	Unknown	*4.50

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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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. 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.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.0	0.0	6.2	12	46	44	30	15	3.8	0.14	0.69	0.0
2	0.0	0.0	5.6	15	41	32	25	12	2.1	0.43	0.65	0.0
3	0.0	0.0	6.2	16	31	36	19	10	0.80	0.23	0.52	0.0
4	0.0	0.0	6.8	18	27	37	20	9.4	1.4	4.5	0.45	0.0
5	0.0	0.0	6.9	22	44	52	19	8.4	4.2	9.0	0.40	0.63
6	0.0	0.0	6.5	18	44	49	21	8.1	6.6	160	0.33	0.44
7	0.0	0.0	6.1	16	36	47	39	6.8	5.6	99	0.30	0.16
8	0.0	0.0	5.6	16	39	33	50	5.3	3.8	86	0.24	0.13
9	0.0	0.0	5.3	17	42	23	46	3.4	1.6	48	0.13	0.12
10	0.0	0.0	5.5	17	46	19	32	3.2	0.63	28	0.15	0.10
11	0.0	0.0	6.4	16	40	22	24	4.4	0.57	17	0.09	0.05
12	0.0	0.0	7.7	16	35	20	39	4.7	0.52	12	0.02	0.03
13	0.0	0.0	7.7	16	30	23	80	4.0	2.7	9.4	0.01	0.27
14	0.0	2.1	7.2	16	37	24	81	3.3	5.4	7.2	0.04	0.90
15	0.0	4.6	7.6	17	42	21	55	2.6	7.7	5.4	0.01	0.54
16	0.0	28	7.5	17	45	18	44	2.3	23	4.0	0.0	0.44
17	0.0	106	6.7	16	52	20	39	2.7	12	2.8	0.0	0.30
18	0.0	60	6.6	15	55	28	35	3.2	8.1	1.5	0.0	0.31
19	0.0	27	5.9	15	57	38	27	1.7	5.8	0.59	0.01	0.80
20	0.0	14	5.8	17	51	35	28	0.87	2.4	0.43	0.0	0.54
21	0.0	12	5.9	21	52	29	36	0.78	1.0	0.34	0.0	0.42
22	0.0	10	6.1	21	49	25	31	0.75	0.67	4.4	0.0	0.22
23	0.0	9.8	5.7	23	51	31	26	0.76	0.35	34	0.0	0.15
24	0.0	8.4	5.5	21	53	35	22	0.70	0.20	8.2	0.0	0.07
25	0.0	6.9	5.5	21	45	35	19	0.75	0.16	3.3	0.0	0.02
26	0.0	5.7	5.7	21	32	31	26	1.2	0.95	1.3	0.0	0.01
27	0.0	4.5	6.3	24	33	34	43	2.4	1.4	0.81	0.0	0.0
28	0.0	8.8	6.6	27	55	35	31	7.4	0.50	0.80	0.0	0.0
29	0.0	6.9	6.7	28	---	35	23	9.8	0.17	1.4	0.25	0.0
30	0.0	7.8	7.4	42	---	31	19	6.5	0.07	0.82	0.0	0.0
31	0.0	---	9.4	45	---	31	---	5.1	---	0.73	0.0	---
TOTAL	0.0	322.5	200.6	622	1210	973	1029	147.51	104.19	551.72	4.29	6.65
MEAN	0.000	10.75	6.471	20.06	43.21	31.39	34.30	4.758	3.473	17.80	0.138	0.222
MAX	0.00	106	9.4	45	57	52	81	15	23	160	0.69	0.90
MIN	0.00	0.00	5.3	12	27	18	19	0.70	0.07	0.14	0.00	0.00
AC-FT	0.00	640	398	1230	2400	1930	2040	293	207	1090	8.5	13

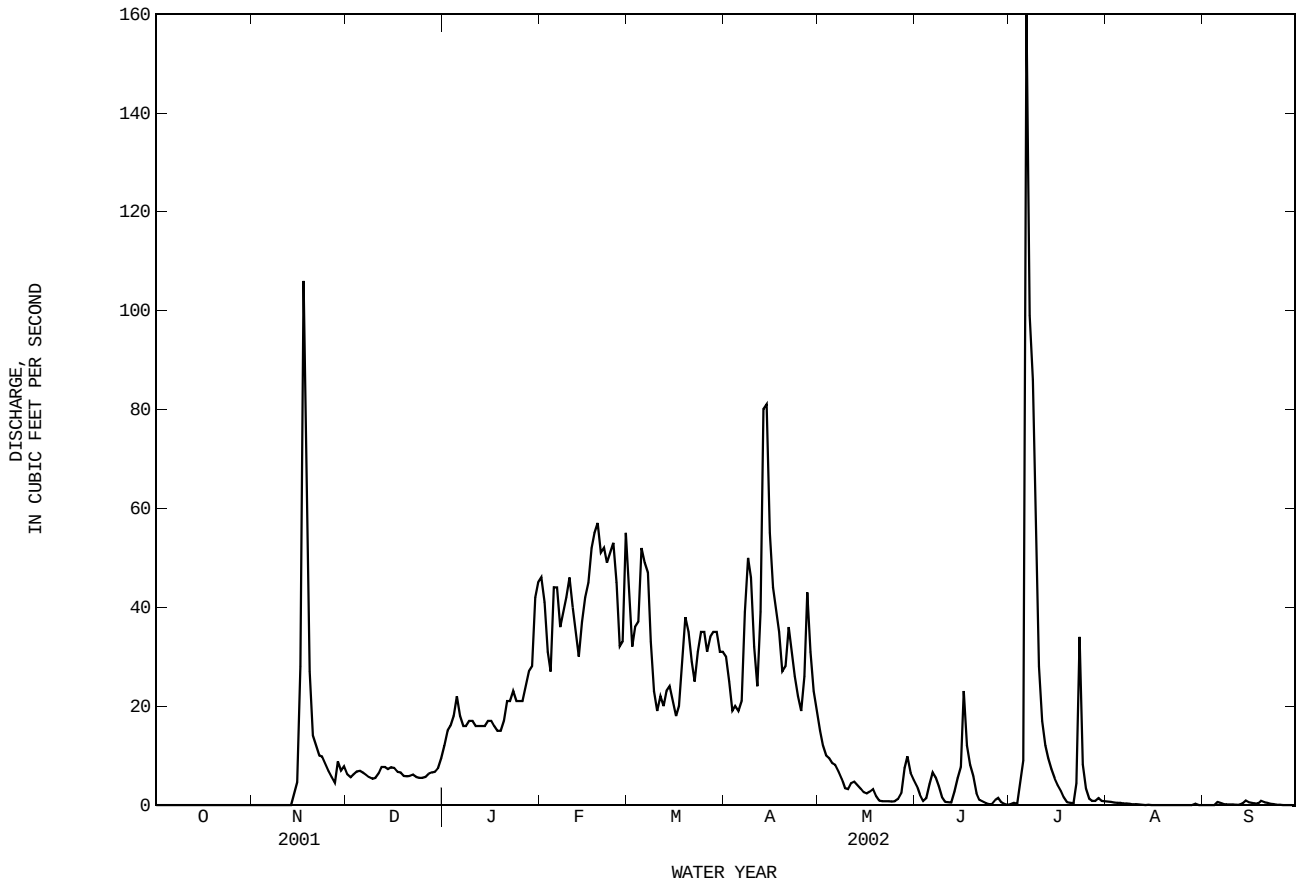
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2002h, BY WATER YEAR (WY)

MEAN	17.06	15.21	19.81	27.05	32.04	38.19	46.69	85.86	78.13	12.16	6.016	14.37
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	0.000	0.000	0.000	0.000	0.48	0.061	0.000	0.36	0.000	0.000	0.000	0.000
(WY)	1967	1967	1971	1971	1981	1972	1971	1984	1966	1969	1965	1970

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1965 - 2002h	
ANNUAL TOTAL	10901.23		5171.46			
ANNUAL MEAN	29.87		14.17		32.66	
HIGHEST ANNUAL MEAN					91.7	1977
LOWEST ANNUAL MEAN					3.68	1971
HIGHEST DAILY MEAN	680	May 4	160	Jul 6	14200	Feb 2 1996
LOWEST DAILY MEAN	0.00	Jul 19	0.00	Oct 1	0.00	Oct 1 1964
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 19	0.00	Oct 1	0.00	Oct 1 1964
MAXIMUM PEAK FLOW			803	Jul 6	25600	Jun 3 1995
MAXIMUM PEAK STAGE			2.51	Jul 6	8.49	Jun 3 1995
ANNUAL RUNOFF (AC-FT)	21620		10260		23660	
10 PERCENT EXCEEDS	75		41		64	
50 PERCENT EXCEEDS	6.6		5.8		1.5	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

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 2001 TO SEPTEMBER 2002

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)
DEC													
28...	1150	7.0	2670	7.8	.9	14.6	101	7k	9k	810	650	249	45.8
MAR													
28...	0815	35	2420	7.9	8.3	11.3	106	127	160	680	550	200	43.5
JUN													
04...	1055	.84	2300	7.9	23.9	9.2	109	42600k	20000k	800	580	247	43.5

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, 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)
DEC													
28...	226	3	3.79	162	548	453	.6	21.1	1650	12	<.008	.25	E.04
MAR													
28...	238	4	4.28	123	440	464	.7	17.6	1480	<10	<.008	.09	<.04
JUN													
04...	171	3	4.39	222	556	329	.7	24.3	1510	<10	<.008	<.05	.08

Date	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)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)
DEC								
28...	.42	--	--	.17	.17	E.003	<.004	<.02
MAR								
28...	.24	--	--	.13	.15	.005	E.002	<.02
JUN								
04...	--	.26	.26	.33	.34	.012	.005	<.02

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

Value qualifier codes used in this report:
k -- Counts outside acceptable range

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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, 5.0 mi north of Kelton, 8.0 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--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 from DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.65	2.0	5.1	10	14	12	12	11	6.5	2.6	1.6	0.27
2	0.64	2.0	5.3	10	15	15	11	11	6.0	2.9	1.3	0.23
3	0.61	2.2	6.0	11	14	14	11	11	5.6	2.7	1.2	0.19
4	0.64	2.3	6.6	10	12	13	12	10	5.6	4.0	1.1	0.19
5	0.64	2.2	6.4	10	14	13	12	10	7.2	6.9	0.98	0.22
6	0.68	2.5	6.3	10	17	13	13	9.8	7.8	8.1	0.87	0.29
7	0.75	2.6	6.6	10	17	13	14	9.4	6.6	7.1	0.79	0.23
8	0.77	2.5	6.8	10	15	13	16	8.9	6.1	6.4	0.77	0.23
9	0.79	2.7	7.1	11	14	11	15	8.6	5.7	5.6	0.72	0.32
10	0.79	2.8	7.3	11	12	12	14	8.6	5.5	4.7	0.76	0.53
11	0.86	3.1	7.6	11	12	11	13	8.8	5.3	3.8	0.73	0.48
12	0.91	3.2	7.9	11	11	11	13	8.6	5.1	3.3	0.63	0.41
13	0.93	3.4	8.4	10	12	12	16	8.6	7.4	2.9	0.65	0.40
14	0.95	4.6	8.4	10	12	12	16	8.1	15	2.5	0.74	0.68
15	0.94	5.7	8.5	10	12	12	15	7.8	12	2.2	0.58	0.48
16	1.0	6.1	8.6	10	12	12	14	7.6	9.6	2.0	0.54	0.47
17	1.1	9.0	9.3	10	12	12	13	9.3	8.5	2.0	0.52	0.49
18	1.2	7.9	9.0	11	12	12	13	9.1	7.9	1.8	0.46	0.49
19	1.4	6.0	8.7	11	12	13	14	8.4	7.1	1.6	0.42	0.66
20	1.2	5.4	8.7	11	12	13	13	7.8	6.1	1.4	0.49	0.64
21	1.4	6.0	9.2	10	12	13	13	7.3	5.6	1.3	0.60	0.62
22	1.4	6.9	9.2	10	11	12	13	6.9	5.1	1.3	0.45	0.59
23	1.5	7.1	8.7	10	12	13	12	6.7	4.7	10	0.37	0.60
24	1.5	7.2	8.6	10	12	12	12	6.7	4.0	8.1	0.36	0.62
25	1.5	7.7	9.2	9.8	12	12	11	6.7	3.3	3.9	0.37	0.59
26	1.8	8.1	9.1	9.9	12	13	12	6.8	3.1	2.4	0.31	0.60
27	1.8	6.2	9.3	9.7	12	13	15	6.7	3.3	2.0	0.30	0.62
28	1.8	5.1	9.5	9.7	12	13	14	8.6	3.2	1.8	0.33	0.62
29	1.9	5.1	9.6	9.7	---	12	12	9.2	2.8	2.0	0.36	0.58
30	1.8	5.3	10	e10	---	12	12	8.3	2.5	1.9	0.35	0.56
31	1.9	---	10	e13	---	12	---	7.4	---	1.8	0.30	---
TOTAL	35.75	142.9	251.0	319.8	358	386	396	263.7	184.2	111.0	19.95	13.90
MEAN	1.153	4.763	8.097	10.32	12.79	12.45	13.20	8.506	6.140	3.581	0.644	0.463
MAX	1.9	9.0	10	13	17	15	16	11	15	10	1.6	0.68
MIN	0.61	2.0	5.1	9.7	11	11	11	6.7	2.5	1.3	0.30	0.19
AC-FT	71	283	498	634	710	766	785	523	365	220	40	28

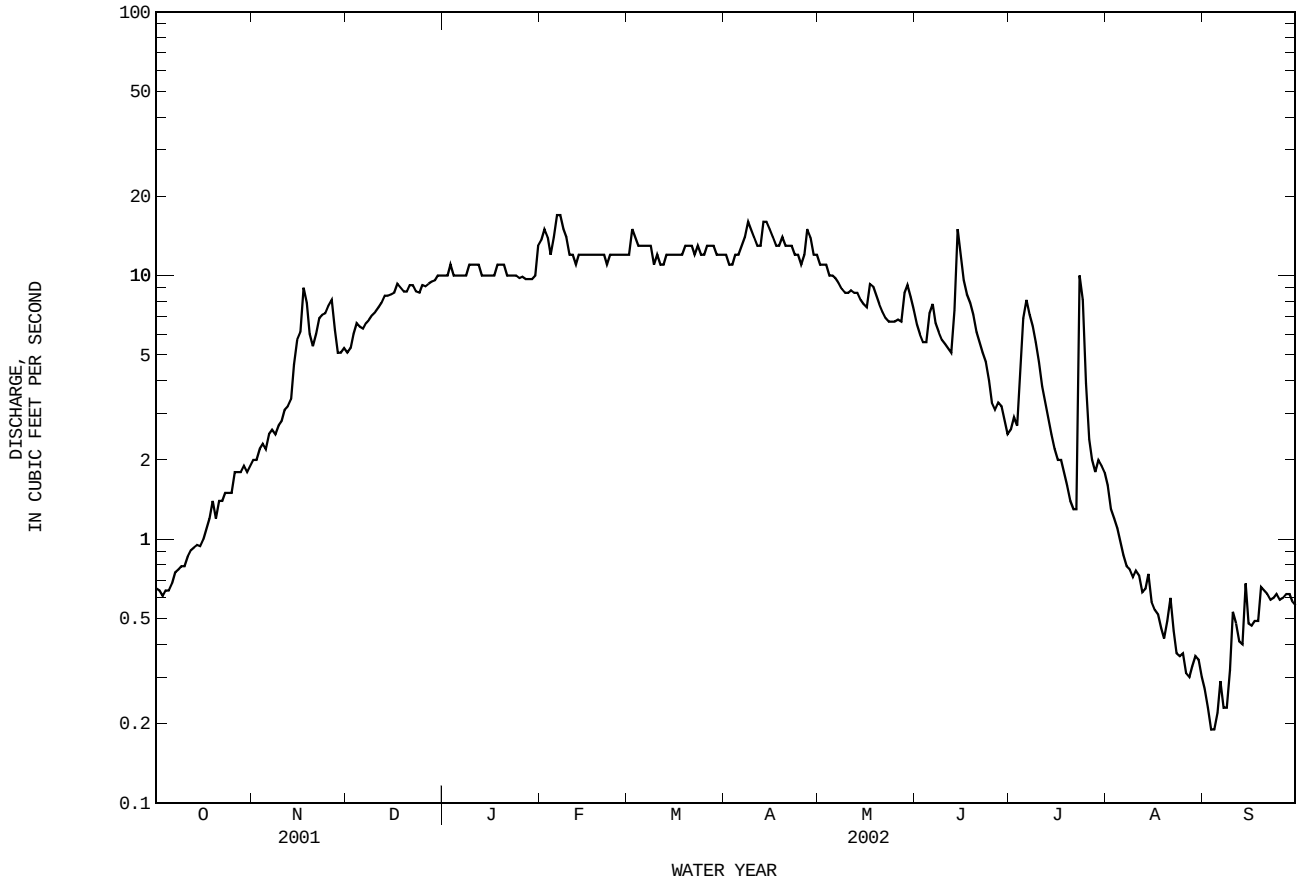
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

MEAN	8.316	10.38	12.11	13.38	16.21	18.77	22.07	25.94	22.64	6.019	5.109	7.064
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	0.30	1.05	3.11	5.78	6.82	9.09	8.72	3.38	2.80	0.44	0.000	0.027
(WY)	1985	1985	1984	1995	1995	1977	1971	1971	1966	1974	1964	1984

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1962 - 2002	
ANNUAL TOTAL	5260.54		2482.20			
ANNUAL MEAN	14.41		6.801		13.82	
HIGHEST ANNUAL MEAN					33.5	1997
LOWEST ANNUAL MEAN					4.89	1984
HIGHEST DAILY MEAN	244	May 20	17	Feb 6	1820	May 21 1977
LOWEST DAILY MEAN	0.31	Aug 9	0.19	Sep 3	0.00	Jul 29 1964
ANNUAL SEVEN-DAY MINIMUM	0.33	Aug 19	0.23	Sep 2	0.00	Jul 29 1964
MAXIMUM PEAK FLOW			23	Mar 2	2890	May 20 1977
MAXIMUM PEAK STAGE			6.55	Mar 2	15.73	May 20 1977
ANNUAL RUNOFF (AC-FT)	10430		4920		10010	
10 PERCENT EXCEEDS	31		13		23	
50 PERCENT EXCEEDS	8.7		7.2		10	
90 PERCENT EXCEEDS	0.48		0.59		0.84	

e Estimated

07301410 Sweetwater Creek near Kelton, TX--Continued



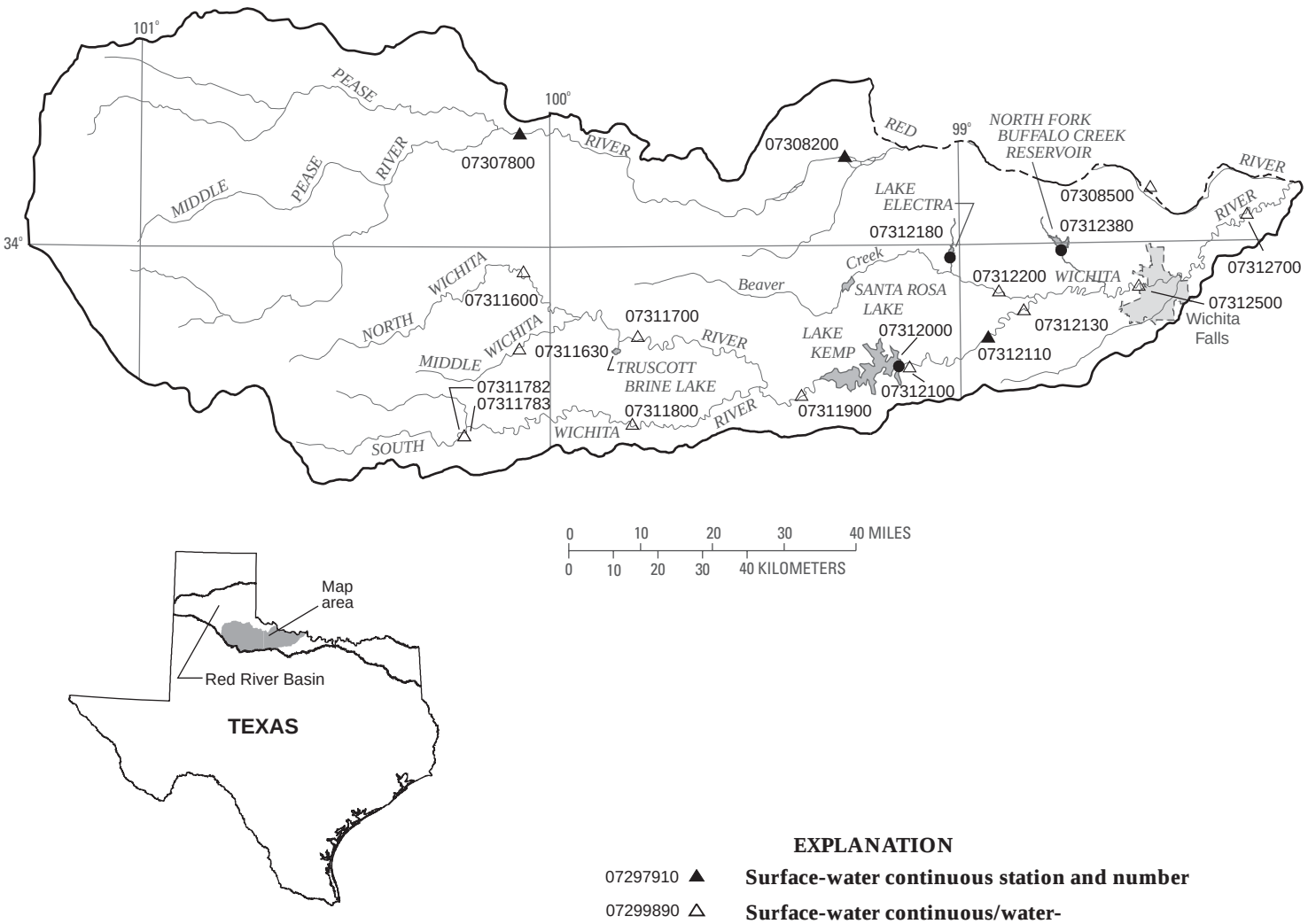


Figure 5.--Map showing location of gaging stations in the second section of the Red River Basin

07307800 Pease River near Childress, TX

LOCATION.--Lat 34°13'39", long 100°04'24", Cottle County, Hydrologic Unit 11130105, near right bank at downstream side of bridge on 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 NGVD of 1929. Prior to Dec. 21, 1959, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are three small diversions for irrigation above station. Flow is affected at times by discharge from the flood-detention pools of six 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	5.4	72	20	e33	7.8	7.3	6.7	6.5	12	1.6	4.3
2	15	3.4	42	16	e21	6.4	6.0	5.9	7.4	15	1.5	3.2
3	13	3.4	39	11	e16	6.4	4.8	5.7	2.9	12	1.5	2.8
4	8.8	4.4	29	13	e15	6.5	4.3	5.5	23	e83	0.68	2.6
5	9.2	4.2	e23	17	e21	6.8	4.6	5.4	235	e31	1.9	2.4
6	8.2	4.3	e21	16	e26	6.4	6.0	5.4	63	e172	2.9	4.1
7	7.7	4.1	e19	13	e27	6.5	9.8	5.0	20	394	2.9	2.8
8	6.5	3.8	e18	13	e24	6.5	9.9	4.3	10	213	3.0	2.3
9	6.8	3.6	e17	11	e19	5.7	8.4	3.7	16	85	2.9	2.5
10	6.5	4.2	e16	15	e14	5.8	7.0	4.3	8.6	63	2.9	2.7
11	7.1	4.5	e15	16	e11	6.1	5.9	4.7	5.5	52	4.9	2.8
12	7.1	4.8	13	17	e8.8	6.3	5.8	4.4	11	147	2.9	2.8
13	7.4	5.1	12	17	8.3	6.3	7.3	4.2	219	255	2.4	2.8
14	7.2	9.0	11	13	8.2	5.8	6.7	4.2	70	99	2.5	5.0
15	6.3	96	13	13	8.8	5.7	5.2	4.1	38	61	2.7	3.4
16	6.3	47	13	13	e9.7	5.9	4.3	4.3	279	37	2.5	2.9
17	5.3	478	13	11	e9.1	6.4	4.2	4.2	119	27	2.4	2.8
18	8.6	151	12	9.2	e7.2	8.4	6.0	4.0	30	22	2.3	2.6
19	5.8	111	12	6.7	e7.6	15	5.9	3.8	27	18	2.2	7.6
20	7.7	95	19	6.7	7.5	15	1.8	3.7	21	15	2.3	8.0
21	6.4	80	26	6.2	7.8	11	2.5	3.5	17	11	2.3	4.5
22	4.6	64	31	5.6	7.7	9.0	2.6	3.5	16	9.8	3.0	2.9
23	4.7	66	21	6.7	7.7	8.1	3.9	3.5	16	8.5	6.7	2.6
24	4.0	47	15	6.9	7.0	6.8	4.4	3.9	15	7.8	3.1	2.3
25	4.7	40	28	7.8	6.5	5.5	5.7	35	14	7.0	2.0	2.0
26	6.0	57	24	9.8	5.9	6.9	20	7.9	15	5.6	1.8	1.7
27	4.3	36	38	e8.5	6.7	6.7	54	266	13	4.4	1.6	1.6
28	4.1	98	18	e7.3	7.3	6.3	17	153	5.7	4.5	1.6	1.3
29	3.7	139	e16	6.8	---	5.3	9.3	31	5.8	7.3	15	1.1
30	6.4	130	15	15	---	7.4	8.2	16	11	7.3	13	0.73
31	7.4	---	16	61	---	9.6	---	9.4	---	3.2	6.5	---
TOTAL	220.8	1799.2	677	409.2	358.8	228.3	248.8	626.2	1340.4	1889.4	105.48	91.13
MEAN	7.123	59.97	21.84	13.20	12.81	7.365	8.293	20.20	44.68	60.95	3.403	3.038
MAX	15	478	72	61	33	15	54	266	279	394	15	8.0
MIN	3.7	3.4	11	5.6	5.9	5.3	1.8	3.5	2.9	3.2	0.68	0.73
AC-FT	438	3570	1340	812	712	453	493	1240	2660	3750	209	181
CFSM	0.00	0.03	0.01	0.01	0.01	0.00	0.00	0.01	0.02	0.03	0.00	0.00
IN.	0.00	0.03	0.01	0.01	0.01	0.00	0.00	0.01	0.02	0.03	0.00	0.00

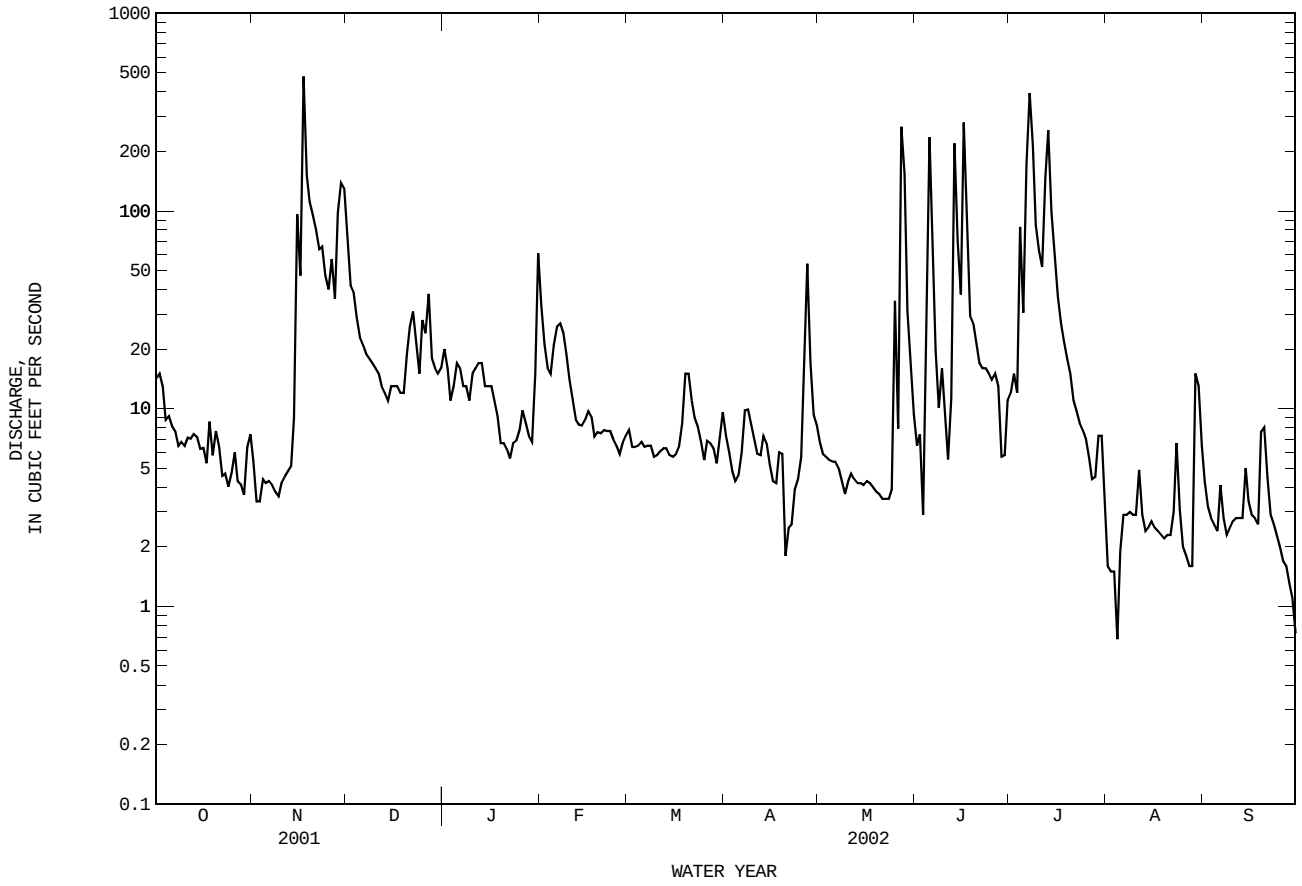
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002h, BY WATER YEAR (WY)

MEAN	91.36	22.70	20.04	20.26	25.47	33.39	57.02	89.35	200.4	49.88	61.29	83.51
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	0.28	0.13	0.58
(WY)	1981	1978	1979	1971	1971	1971	1960	1961	2001	1980	1980	2000

07307800 Pease River near Childress, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002h	
ANNUAL TOTAL	9912.69		7994.71			
ANNUAL MEAN	27.16		21.90		62.37	
HIGHEST ANNUAL MEAN					204	1995
LOWEST ANNUAL MEAN					15.8	1994
HIGHEST DAILY MEAN	1230	May 4	478	Nov 17	14800	Oct 20 1983
LOWEST DAILY MEAN	0.44	Jul 31	0.68	Aug 4	0.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	0.45	Jul 31	1.5	Sep 24	0.00	Aug 10 1969
MAXIMUM PEAK FLOW			1110	Nov 17	28500	Jun 5 1995
MAXIMUM PEAK STAGE			9.04	Nov 17	17.12	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	19660		15860		45180	
ANNUAL RUNOFF (CFSM)	0.012		0.010		0.028	
ANNUAL RUNOFF (INCHES)	0.17		0.14		0.39	
10 PERCENT EXCEEDS	42		44		92	
50 PERCENT EXCEEDS	11		7.3		9.0	
90 PERCENT EXCEEDS	0.73		2.8		1.7	

e Estimated
h See PERIOD OF RECORD paragraph.



07308200 Pease River near Vernon, TX

LOCATION.--Lat 34°10'47", long 99°19'23", Wilbarger County, Hydrologic Unit 11130105, near left bank at downstream side of bridge on U.S. Highway 287, 1.0 mi west of Vernon, and 12.0 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 maximum), 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 1,179.04 ft above NGVD of 1929. From Nov. 28, 1959 to Mar. 21, 2002, at site 2.0 mi downstream at different datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily dischrages, which are fair. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.3	1.2	92	18	64	e12	45	57	129	66	63	2.2
2	e0.53	1.2	76	18	44	e12	32	41	101	54	48	1.9
3	e0.43	1.2	57	17	39	e11	28	37	76	99	39	2.5
4	e0.43	1.4	50	17	34	e13	27	34	62	697	33	1.6
5	e0.48	1.4	46	21	35	e16	24	31	1010	2760	29	0.84
6	e0.47	1.4	40	21	41	e15	24	30	806	857	26	0.46
7	e0.50	1.4	38	21	44	15	140	27	294	1010	24	0.29
8	e0.52	1.4	33	21	44	15	138	24	197	2730	22	0.25
9	0.53	1.4	30	20	38	14	63	19	136	963	20	0.26
10	0.55	1.7	28	20	31	13	42	18	107	416	19	0.22
11	0.50	1.6	23	18	32	13	41	19	93	245	18	0.13
12	0.50	1.6	26	18	30	12	30	18	75	182	16	0.11
13	0.58	1.9	23	18	27	13	62	16	63	154	15	0.09
14	0.60	5.1	26	17	24	13	68	15	55	157	16	0.22
15	0.60	328	24	16	23	12	54	15	160	249	15	0.08
16	0.67	270	24	15	21	12	32	14	621	152	14	0.07
17	0.70	337	24	14	20	13	21	12	843	118	12	0.07
18	0.70	890	23	14	19	16	22	11	627	100	11	0.19
19	0.71	575	22	14	18	103	21	12	305	87	9.4	0.83
20	0.71	253	21	14	17	148	e23	17	180	76	8.4	0.15
21	0.70	155	20	13	16	e65	e29	11	122	67	7.2	0.07
22	0.76	119	19	13	16	e44	e34	7.6	126	59	5.6	0.05
23	0.80	98	18	13	16	e43	e34	8.2	95	e55	4.8	0.05
24	0.80	88	18	14	15	e42	e45	9.9	95	e51	3.6	0.05
25	0.84	80	18	14	14	e42	81	48	87	48	2.9	0.05
26	0.90	64	17	15	14	e32	118	21	72	42	2.3	0.06
27	0.90	67	17	16	13	25	138	e95	65	38	1.7	0.05
28	0.94	73	17	15	e13	25	79	1120	58	35	1.2	0.04
29	1.0	76	17	15	---	23	77	421	48	57	2.5	0.03
30	1.0	94	17	18	---	34	77	195	46	126	2.3	0.03
31	1.1	---	17	20	---	81	---	113	---	118	2.4	---
TOTAL	21.75	3590.9	921	518	762	947	1649	2516.7	6754	11868	494.3	12.94
MEAN	0.702	119.7	29.71	16.71	27.21	30.55	54.97	81.18	225.1	382.8	15.95	0.431
MAX	1.3	890	92	21	64	148	140	1120	1010	2760	63	2.5
MIN	0.43	1.2	17	13	13	11	21	7.6	46	35	1.2	0.03
AC-FT	43	7120	1830	1030	1510	1880	3270	4990	13400	23540	980	26

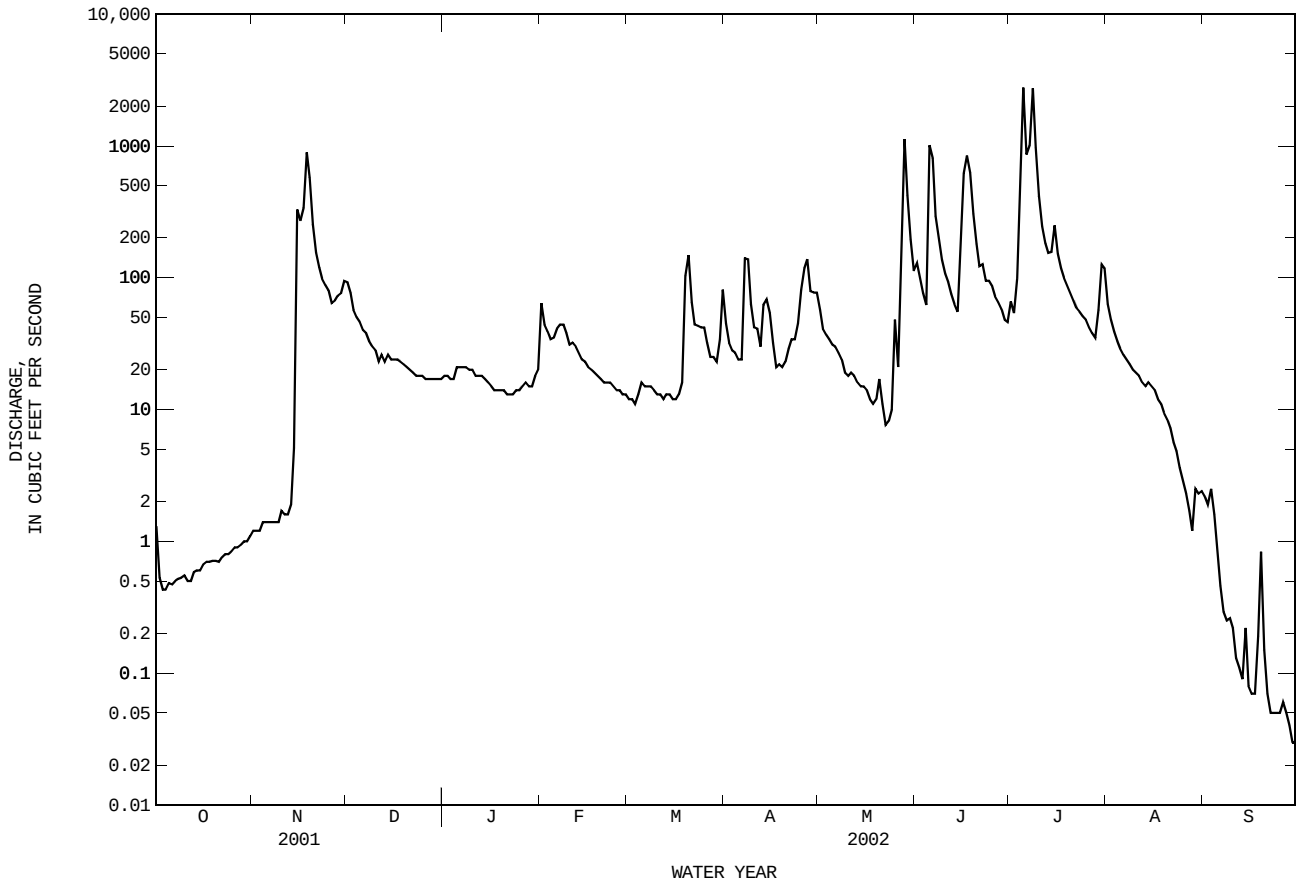
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002h, BY WATER YEAR (WY)

MEAN	94.67	54.35	26.00	24.73	28.36	47.61	65.47	186.3	313.9	125.2	105.1	174.2
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.12	6.86	0.000	0.000	0.20
(WY)	1964	1971	1971	1971	1971	1971	1971	1961	1998	1964	1980	1980

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002h	
ANNUAL TOTAL	29865.06		30055.59			
ANNUAL MEAN	81.82		82.34		104.8	
HIGHEST ANNUAL MEAN					441	1995
LOWEST ANNUAL MEAN					7.23	2000
HIGHEST DAILY MEAN	1900	May 5	2760	Jul 5	20400	Jun 5 1995
LOWEST DAILY MEAN	0.20	Sep 19	0.03	Sep 29	0.00	Aug 7 1960
ANNUAL SEVEN-DAY MINIMUM	0.23	Sep 17	0.04	Sep 24	0.00	Aug 7 1960
MAXIMUM PEAK FLOW			4940	Jul 8	40500	Oct 2 1983
MAXIMUM PEAK STAGE			10.65	Jul 8	20.15	Oct 2 1983
ANNUAL RUNOFF (AC-FT)	59240		59620		75930	
10 PERCENT EXCEEDS	179		138		151	
50 PERCENT EXCEEDS	25		21		10	
90 PERCENT EXCEEDS	0.80		0.59		0.00	

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, OK, Hydrologic Unit 11130102, on downstream guardrail of downstream bridge on U.S. Highways 277 and 281, 2.5 mi northeast of Burkburnett, and at mile 933.

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

WATER-DISCHARGE RECORDS

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

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

REMARKS.--Records fair except those for estimated daily discharges, which are poor. There are many small diversions upstream from station for irrigation, 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 FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	97	44	354	e124	260	128	421	264	295	e96	153	17
2	87	45	322	e117	1090	136	451	209	184	102	183	18
3	79	47	315	e125	1120	136	374	163	135	124	221	17
4	74	59	e304	143	765	135	372	135	97	121	202	18
5	64	63	e283	192	654	131	307	117	1210	189	163	32
6	63	63	252	217	590	126	208	106	1990	2890	128	38
7	61	60	220	214	557	131	402	97	2250	2120	106	28
8	60	55	203	199	560	139	1340	88	1060	2290	94	23
9	84	55	e181	192	627	111	1190	70	487	4390	85	26
10	104	57	e178	175	581	108	781	86	414	5330	77	26
11	128	64	172	169	488	108	724	87	303	4950	66	24
12	118	66	164	165	448	99	661	115	216	4260	51	30
13	76	73	158	158	374	99	2290	96	173	4400	49	26
14	61	70	e156	151	352	93	2080	83	230	3550	50	21
15	51	71	144	146	321	83	5390	72	254	e1890	e58	19
16	52	80	194	142	293	84	3080	63	247	e932	e81	16
17	51	313	183	137	295	89	1620	54	356	e487	68	16
18	50	1470	166	143	283	114	1180	51	1340	e302	57	18
19	53	3590	155	149	294	204	837	50	1570	e204	45	26
20	53	1570	e159	150	277	391	829	45	e1010	e150	41	58
21	53	938	154	145	264	609	742	43	e634	e118	35	63
22	54	658	136	139	223	559	579	41	e315	e101	32	42
23	52	472	128	141	176	363	487	38	e184	e92	29	59
24	47	362	130	139	159	316	361	40	e112	78	26	59
25	46	290	129	141	138	263	245	46	91	66	22	45
26	45	221	132	137	130	231	380	62	70	63	22	34
27	42	179	131	131	131	208	814	87	54	164	47	30
28	37	195	131	130	127	190	e541	546	42	116	32	25
29	35	173	128	128	---	175	e363	1080	33	273	25	23
30	36	e352	e131	144	---	233	266	951	32	232	22	21
31	41	---	e129	184	---	315	---	533	---	158	19	---
TOTAL	1954	11755	5722	4767	11577	6107	29315	5518	15388	40238	2289	898
MEAN	63.03	391.8	184.6	153.8	413.5	197.0	977.2	178.0	512.9	1298	73.84	29.93
MAX	128	3590	354	217	1120	609	5390	1080	2250	5330	221	63
MIN	35	44	128	117	127	83	208	38	32	63	19	16
AC-FT	3880	23320	11350	9460	22960	12110	58150	10940	30520	79810	4540	1780

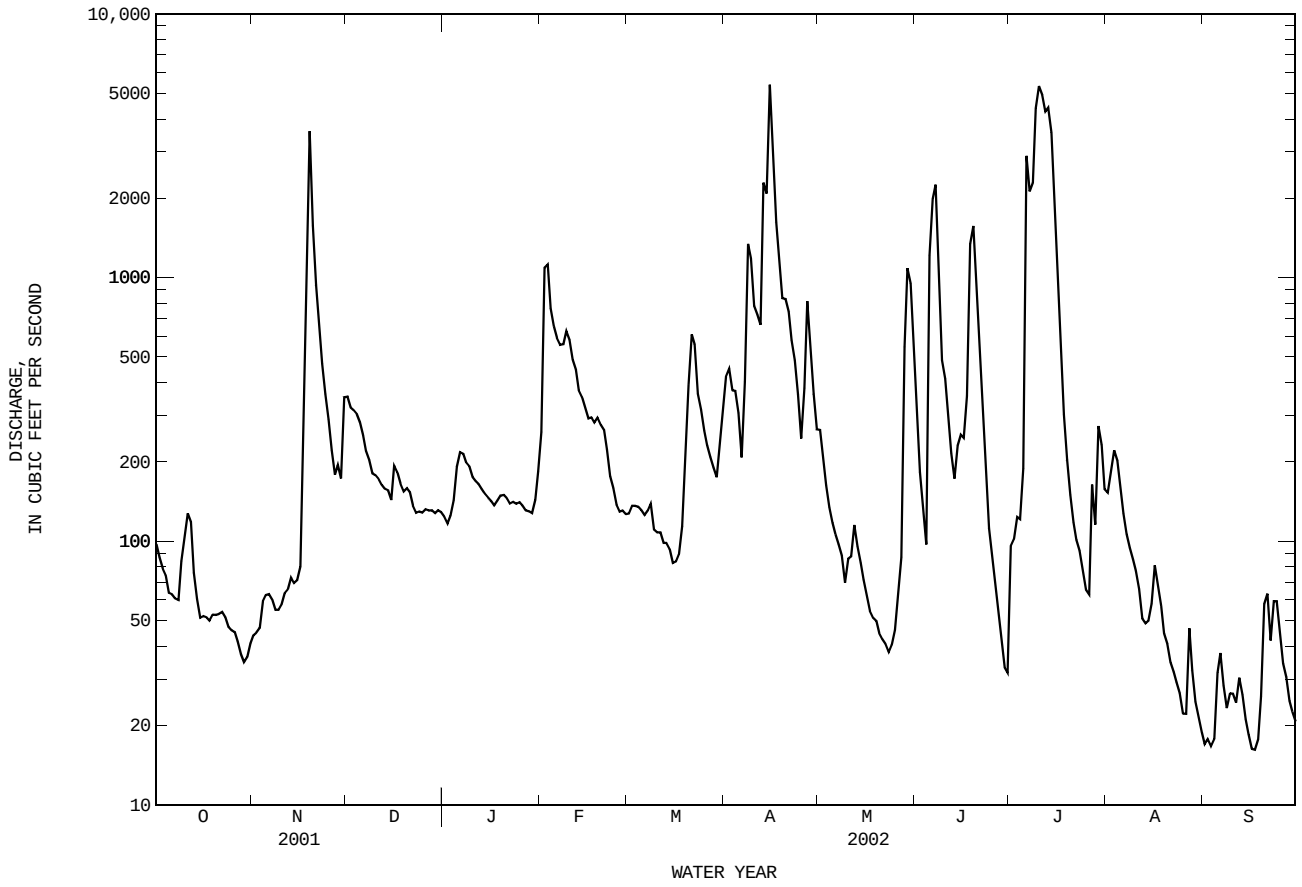
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	1481	692.9	571.0	501.4	728.2	971.6	1112	2361	3339	882.3	852.0	1306
MAX	14900	4960	4435	2293	4986	10050	13040	12470	24780	5947	10540	6381
(WY)	1987	1987	1992	1998	1998	1998	1997	1977	1995	1975	1995	1996
MIN	21.9	0.96	2.98	5.53	8.37	7.97	0.15	11.4	148	0.058	1.29	29.9
(WY)	1971	1971	1971	1971	1971	1971	1971	1971	1970	1970	1964	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	331186		135528			
ANNUAL MEAN	907.4		371.3		1237	
HIGHEST ANNUAL MEAN					4424	1987
LOWEST ANNUAL MEAN					178	1964
HIGHEST DAILY MEAN	14300	May 21	5390	Apr 15	144000	Jun 6 1995
LOWEST DAILY MEAN	35	Oct 29	16	Sep 16	0.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	40	Oct 26	19	Aug 29	0.00	Jul 19 1964
MAXIMUM PEAK FLOW			10600	Apr 15	174000	Jun 6 1995
MAXIMUM PEAK STAGE			7.01	Apr 15	16.90	Oct 21 1983
ANNUAL RUNOFF (AC-FT)	656900		268800		895900	
10 PERCENT EXCEEDS	1920		820		2470	
50 PERCENT EXCEEDS	373		136		307	
90 PERCENT EXCEEDS	72		36		53	

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. Interruptions in the record were due to malfunction of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed 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 2002. The standard error of estimate for dissolved solids is 3%, chloride is 8%, sulfate is 14% and for hardness is 10%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 17,400 microsiemens/cm, July 30, 1972; minimum, 440 microsiemens/cm, Apr. 13, 2002.
WATER TEMPERATURE: Maximum, 38.0°C, July 24, 2001; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 15,200 microsiemens/cm, Aug. 29; minimum, 440 microsiemens/cm, Apr. 13.
WATER TEMPERATURE: Maximum, 36.9°C, Aug. 7; minimum, 0.0°C, Jan. 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
24...	1050	50	8210	8.0	14.4	9.8	103	1400	1300	343	130	1360	16
NOV													
01...	1130	48	8600	8.2	19.4	9.5	111	1400	1300	354	132	1320	15
DEC													
19...	1205	190	9820	8.1	7.2	12.4	109	1600	1400	426	126	1580	17
JAN													
09...	1345	184	10100	8.3	11.3	11.7	116	1700	1500	444	135	1670	18
FEB													
22...	1305	242	10300	8.3	11.7	12.2	120	1700	1500	437	140	1680	18
MAR													
22...	1020	480	6760	8.1	5.2	12.2	101	1100	940	284	89.0	911	12
APR													
18...	1110	796	2750	8.0	22.5	7.4	90	480	390	133	35.1	368	7
MAY													
29...	1030	1090	4830	7.7	22.8	7.2	85	940	840	255	73.8	696	10
JUN													
28...	1345	31	8850	8.0	32.5	7.7	109	1400	1300	383	111	1480	17
JUL													
31...	1125	147	6100	8.2	28.1	7.8	105	1100	970	280	90.2	945	13
AUG													
29...	1025	28	15600	7.8	23.1	7.8	96	2200	2100	597	176	2680	25
SEP													
18...	1130	24	7810	7.9	24.5	8.2	102	1400	1300	349	131	1250	15

07308500 Red River near Burkburnett, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
24...	10.6	82	1190	2140	.4	2.3	5230	120	--	<.008	<.05	.08	--
NOV													
01...	9.28	110	1220	2190	.4	3.2	5300	38	--	<.008	<.05	.06	--
DEC													
19...	8.71	154	1320	2590	.5	7.1	6150	20	.78	.014	.79	.12	1.3
JAN													
09...	8.86	140	1350	2710	.5	3.9	6410	42	.66	.028	.69	.12	1.1
FEB													
22...	10.7	126	1530	2910	.47	2.96	6790	34	.24	.009	.25	.10	.82
MAR													
22...	7.86	134	966	1620	.4	3.3	3970	296	.34	.014	.36	E.02	1.9
APR													
18...	8.04	87	403	578	.3	7.9	1590	1340	.66	.052	.71	.07	2.9
MAY													
29...	8.41	104	800	1100	.4	5.8	3010	2430	.47	.048	.52	.09	4.7
JUN													
28...	12.2	111	1220	2430	.5	7.1	5700	131	--	<.008	<.05	.09	--
JUL													
31...	9.05	102	891	1520	.5	7.3	3810	<10	--	<.008	<.05	E.04	--
AUG													
29...	18.1	86	1920	4230	.6	7.9	9670	54	--	<.008	<.05	.26	--
SEP													
18...	10.0	92	1250	1980	.5	8.6	5030	68	--	<.008	<.05	<.04	--

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)	ORTHO-PHOSPHATE, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)
OCT													
24...	.99	1.1	.08	<.06	<.02	--	4	2.3	102	93	E.08	<.10	<3.0
NOV													
01...	.92	.99	E.05	<.06	<.02	--	4	2.3	89	83	<.14	<.10	<4.0
DEC													
19...	.38	.50	.07	<.06	.02	.064	5	2.7	70	70	<.14	<.10	<1.6
JAN													
09...	.32	.43	E.03	<.06	<.02	--	E2	2.3	56	54	<.18	<.20	<1.6
FEB													
22...	.47	.57	E.05	<.06	<.02	--	<4	2.7	68	53	<.18	<.20	<1.6
MAR													
22...	--	1.5	.33	<.06	<.02	--	5	2.6	100	66	.14	<.1	3
APR													
18...	2.1	2.2	.85	E.04	.03	.092	9	2.7	323	96	.17	<.07	13.4
MAY													
29...	4.1	4.2	1.43	<.06	E.01	--	15	2.2	406	85	.22	<.07	18.9
JUN													
28...	.77	.85	.17	<.06	<.02	--	6	5.4	169	157	<.04	<.10	.8
JUL													
31...	--	1.1	.18	<.06	<.02	--	19	4.1	182	158	<.11	<.10	1.0
AUG													
29...	.93	1.2	.09	<.06	<.02	--	5	5.2	151	137	E.06n	<.30	E1.2n
SEP													
18...	--	1.2	.10	<.06	<.02	--	6	5.9	102	95	<.11	<.10	.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
24...	<2.4	6.0	4.5	380	<50	<4	<.30	70	15.8	E.01	<.01	8	4.99
NOV													
01...	<4.0	5.6	4.1	100	<50	<4	<.30	38	15.4	<.011	<.01	8	5.98
DEC													
19...	<.8	6.6	7.4	50	<50	<4	E.17	21	11.2	<.01	<.01	9	9.96
JAN													
09...	<1.6	5.0	4.4	<40	<100	<5	<.40	17	12.8	<.01	<.01	6	<.30
FEB													
22...	2.0	6.8	5.9	E30n	<100	<5	<.40	23	8.8	<.01	<.01	10	<.30
MAR													
22...	.4	8.5	3.9	970	<50	3	2.70	136	8.3	E.01n	E.01n	14	2.92
APR													
18...	<.8	22.6	2.7	11400	<30	16	<.20	695	.2	.02	<.01	29	4.51
MAY													
29...	<.8	23.9	3.6	15600	<30	18	<.20	1160	.4	.03	<.01	41	5.74
JUN													
28...	<.8	14.0	8.0	700	<50	<1	E.16	26	7.9	<.01	<.01	3	4.08
JUL													
31...	<.8	8.9	4.8	860	<30	<3	<.20	161	2.0	E.01n	<.01	12	2.00
AUG													
29...	<1.6	17.1	12.9	340	<100	<3	<.60	159	60.2	<.01	<.01	26	7.74
SEP													
18...	<.8	16.4	6.7	630	<50	<4	<.20	143	20.1	<.01	<.01	18	7.14

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													
24...	5.6	5.6	<.20	<4	13	6	--	--	--	--	--	--	--
NOV													
01...	7.0	6.4	<.20	<4	8	<10	--	--	--	--	--	--	--
DEC													
19...	6.7	7.3	<.20	<4	6	4	--	--	--	--	--	--	--
JAN													
09...	7.2	7.6	<.25	<5	6	<5	--	--	--	--	--	--	--
FEB													
22...	6.6	9.4	<.25	<5	8	<5	--	--	--	--	--	--	--
MAR													
22...	4.3	6.0	<.15	<3	168	12	--	--	--	--	--	--	--
APR													
18...	2.2	2.5	<.10	<2	45	<2	<.04	<.1	<1	<.1	<.1	<.1	<.1
MAY													
29...	3.9	4.5	E.08n	<2	65	3	--	--	--	--	--	--	--
JUN													
28...	1.4	4.1	<.05	<4	14	7	<.040	<.10	<1.0	<.1	<.1	<.1	<.1
JUL													
31...	4.0	2.7	<.15	<3	14	<3	--	--	--	--	--	--	--
AUG													
29...	6.3	5.3	<.15	<7	14	7	--	--	--	--	--	--	--
SEP													
18...	3.9	5.3	<.15	<3	9	5	--	--	--	--	--	--	--

07308500 Red River near Burkburnett, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLORDANE, TECHNICAL TOTAL (UG/L) (39350)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDEHYDE TOTAL (UG/L) (34366)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOXAPHENE, TOTAL (UG/L) (39400)	ENDOSULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)
OCT													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
18...	<.1	<.02	<.6	<.06	<.2	<.03	<.8	<.03	18.7	<2	<.1	<.03	97.7
MAY													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
28...	<.1	<.020	<.6	<.060	<.2	<.030	<.800	<.0300	39.9	<2	<.1	<.03	59.7
JUL													
31...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	ENDOSULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXACHLORIDE TOTAL (UG/L) (39338)	CHLORDANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXACHLORIDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLORDANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT								
24...	--	--	--	--	--	--	--	--
NOV								
01...	--	--	--	--	--	--	--	--
DEC								
19...	--	--	--	--	--	--	--	--
JAN								
09...	--	--	--	--	--	--	--	--
FEB								
22...	--	--	--	--	--	--	--	--
MAR								
22...	--	--	--	--	--	--	--	--
APR								
18...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY								
29...	--	--	--	--	--	--	--	--
JUN								
28...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL								
31...	--	--	--	--	--	--	--	--
AUG								
29...	--	--	--	--	--	--	--	--
SEP								
18...	--	--	--	--	--	--	--	--

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

Value qualifier codes used in this report:
n -- Below the NDV

07308500 Red River near Burkburnett, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2001 TO SEPTEMBER 2002

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.	2001	1954	8240	5190	27390	2000	10680	1300	6740	1500
NOV.	2001	11755	7530	4750	150800	1800	57980	1200	37920	1400
DEC.	2001	5722	10760	6760	104400	2800	43550	1500	22890	1700
JAN.	2002	4767	10670	6700	86200	2800	35780	1500	19090	1700
FEB.	2002	11577	10780	6760	211500	2800	88030	1500	46580	1700
MAR.	2002	6107	7310	4610	75990	1800	29240	1200	19080	1300
APR.	2002	29315	3840	2440	192900	860	67940	690	54550	800
MAY	2002	5518	6620	4180	62320	1600	23650	1100	15960	1200
JUNE	2002	15388	3150	2000	83040	690	28660	580	24050	670
JULY	2002	40238	3970	2520	273300	880	96090	710	77430	830
AUG.	2002	2289	7180	4530	27990	1800	10840	1100	6960	1300
SEPT	2002	898	9100	5730	13890	2300	5590	1300	3240	1600
TOTAL		135528	**	**	1309700	**	498000	**	334500	**
WTD.AVG.		371	5670	3580	**	1400	**	910	**	1100

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8850	8580	8720	8680	8530	8580	---	---	e9100	10500	10400	10500
2	8700	8420	8570	8680	8450	8570	---	---	e9480	10600	10500	10500
3	8540	8180	8340	8570	8370	8490	---	---	e10100	10800	10600	10700
4	8290	8160	8240	8450	8150	8260	---	---	e10500	10900	10700	10800
5	8380	8280	8330	8280	8140	8210	12200	11000	11500	10800	10600	10700
6	8390	8240	8330	8240	8110	8190	13000	12200	12700	10900	10700	10800
7	8370	8220	8300	8260	8090	8190	---	---	e12900	11000	10700	10900
8	8330	8160	8260	8240	8140	8190	---	---	e12700	10900	10600	10800
9	8260	8120	8210	8290	8150	8210	12500	12100	12200	10800	10300	10600
10	8270	8190	8230	8350	8200	8280	12100	11800	12000	10500	10400	10400
11	8330	8170	8240	8290	8180	8240	11900	11400	11700	10600	10400	10500
12	8280	8170	8230	8260	8210	8250	11400	11300	11400	10600	10400	10500
13	8290	8160	8230	8290	8200	8250	11500	11400	11400	10600	10500	10600
14	8310	8090	8180	8300	8230	8270	11600	11400	11500	10700	10500	10600
15	8200	8060	8140	8340	8290	8320	11500	11500	11500	10700	10500	10600
16	8190	7920	8080	8720	8330	8520	11500	11200	11400	10600	10500	10600
17	8050	7940	8000	8650	4630	7320	11300	10400	10900	10700	10600	10600
18	8040	7900	7980	6390	4860	5710	10600	9530	10200	10800	10700	10800
19	8010	7860	7950	7810	5230	6380	9640	9320	9540	10800	10600	10700
20	8000	7850	7940	8760	7550	8600	9750	9600	9670	10800	10700	10800
21	7980	7840	7920	8700	8660	8680	9780	9650	9710	10800	10600	10700
22	7970	7860	7930	8670	8640	8650	9810	9690	9740	10800	10600	10700
23	8010	7900	7960	8650	8630	8640	9940	9810	9870	10700	10600	10600
24	8160	8010	8100	8650	8610	8620	10000	9920	9970	10800	10600	10700
25	8230	8130	8180	8620	8520	8550	10100	9950	10000	10800	10600	10700
26	8290	8180	8240	8590	8520	8560	10200	10000	10100	10800	10600	10700
27	8360	8250	8310	8670	8580	8620	10200	10100	10100	10800	10600	10700
28	8400	8290	8360	8700	8640	8670	10200	10100	10200	10700	10500	10600
29	8440	8320	8390	---	---	e8920	10300	10200	10300	10700	10500	10600
30	8490	8380	8450	---	---	e9100	10400	10300	10400	10800	10600	10700
31	8540	8460	8500	---	---	---	10500	10300	10400	10800	10700	10800
MONTH	8850	7840	8220	---	---	8270	---	---	10700	11000	10300	10700

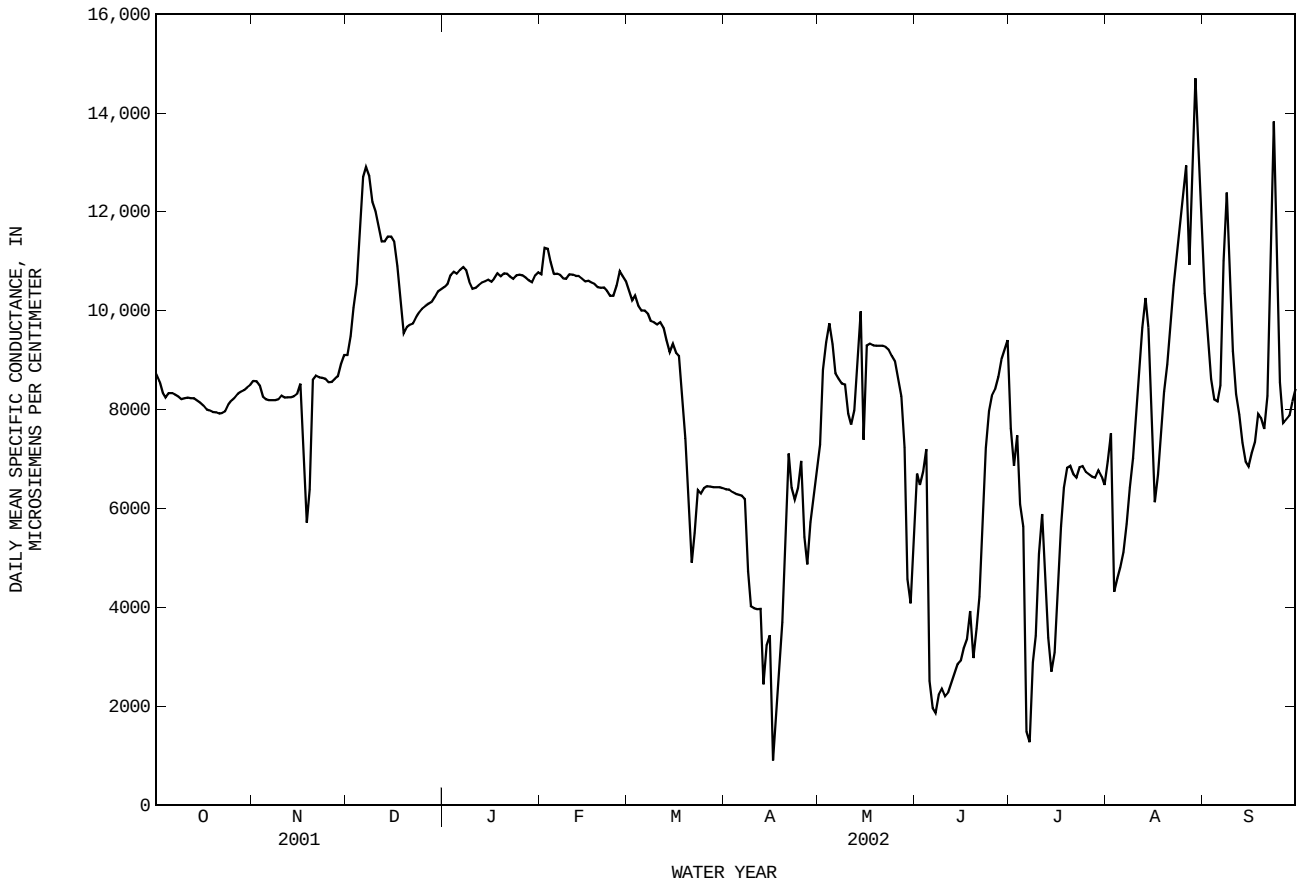
07308500 Red River near Burkburnett, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10900	10600	10700	10500	10200	10400	6410	6370	6380	7890	7120	7290
2	11400	10800	11300	10300	10100	10200	6390	6360	6380	9100	7890	8800
3	11300	11200	11300	10700	10000	10300	6380	6310	6330	9710	8890	9360
4	11200	10800	11000	10200	9980	10100	6320	6280	6300	---	---	e9740
5	10800	10700	10700	10100	9900	10000	6290	6270	6280	---	---	e9320
6	10800	10700	10700	10100	9960	10000	6280	6230	6260	---	---	e8730
7	10800	10600	10700	10000	9770	9940	6300	5810	6190	8680	8560	8620
8	10700	10600	10600	9950	9560	9790	6460	4020	4730	8720	8190	8530
9	10700	10600	10600	9890	9560	9760	4220	3960	4020	8560	8430	8510
10	10800	10700	10700	9810	9610	9720	4000	3940	3980	8450	7220	7910
11	10800	10600	10700	9810	9700	9760	3990	3920	3960	8180	7320	7690
12	10800	10600	10700	9770	9540	9650	3980	3950	3970	8240	7840	7980
13	10800	10600	10700	9570	9220	9400	4010	440	2440	11400	7800	9050
14	10800	10600	10700	9450	8690	9160	---	---	e3230	11400	8010	9980
15	10700	10500	10600	9430	9080	9330	---	---	e3430	9350	3820	7390
16	10700	10500	10600	9320	9000	9150	1300	700	900	9380	9180	9290
17	10600	10500	10600	9120	9000	9080	---	---	e1940	9360	9280	9330
18	10600	10500	10500	9080	7910	8290	3210	---	e2800	9390	9170	9300
19	10500	10400	10500	8210	6680	7410	4200	3210	3700	9350	9220	9290
20	10600	10400	10500	6840	5090	6200	7120	4200	5620	9330	9240	9290
21	10500	10400	10500	---	---	e4900	7380	6670	7110	9340	9250	9290
22	10600	10200	10400	6420	---	e5500	6670	6210	6410	9300	9210	9260
23	10400	10200	10300	6450	6280	6370	6340	6040	6180	9230	9180	9200
24	10400	10300	10300	6340	6230	6300	---	6130	e6410	9370	8930	9090
25	10600	10400	10500	6450	6340	6410	7260	---	6960	9080	8890	8980
26	10800	10600	10800	6500	6420	6450	6130	4740	5420	9090	7490	8620
27	10900	10600	10700	6460	6420	6440	5210	4720	4870	8810	7780	8270
28	10800	10500	10600	6440	6410	6430	6160	5210	5720	8200	5240	7230
29	---	---	---	6450	6410	6430	6620	5750	6200	5240	3850	4570
30	---	---	---	6440	6410	6430	7120	6420	6750	4990	3530	4080
31	---	---	---	6440	6380	6410	---	---	---	6080	4990	5420
MONTH	11400	10200	10700	---	---	8250	---	---	5030	---	---	8370

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6950	6080	6700	9040	6680	7620	8110	6420	6950	11000	9910	10400
2	6800	6250	6470	7420	6590	6860	8180	5930	7520	9910	9070	9500
3	---	---	e6740	7750	7200	7480	5930	2920	4310	9070	8350	8610
4	---	---	e7200	7300	5500	6090	---	---	e4580	8400	8020	8200
5	5700	939	2510	5880	5030	5630	---	---	e4800	8260	7960	8170
6	2260	1550	1960	5030	663	1480	5390	4940	5110	9690	7910	8490
7	2000	1750	1860	2890	671	1270	6050	5390	5680	12700	9690	11000
8	2370	2000	2230	4150	2080	2880	---	---	e6420	12900	11700	12400
9	2370	2310	2350	5240	2080	3420	---	---	e7020	11700	9750	10800
10	2310	2130	2200	6570	3370	5080	---	---	e7870	9750	8660	9180
11	2370	2190	2270	6610	---	e5880	---	---	e8770	8660	8140	8310
12	2560	2370	2460	---	---	e4560	---	---	e9660	8220	7610	7900
13	2820	2560	2650	---	---	e3380	---	---	e10300	7610	7080	7330
14	2910	2790	2850	---	---	e2700	---	---	e9660	7120	6790	6940
15	3090	2870	2930	---	---	e3090	---	---	e7720	7020	6780	6850
16	3270	3080	3170	---	---	e4390	---	---	e6120	7310	7020	7120
17	3450	3270	3350	---	---	e5640	---	---	e6680	7490	7250	7340
18	4560	3440	3920	---	---	e6420	---	---	e7500	8560	7490	7910
19	4780	---	e2970	6860	---	e6810	---	---	e8360	8430	7630	7820
20	---	---	e3570	6990	6630	6860	---	---	e8910	7900	7310	7610
21	---	---	e4210	6900	6420	6690	---	---	e9660	9620	7680	8270
22	---	---	e5930	6790	6500	6620	---	---	e10500	14000	9620	11500
23	---	---	e7220	6880	6770	6830	---	---	e11100	14700	12800	13800
24	8210	---	e7970	6910	6790	6850	---	---	e11700	12800	9820	11100
25	8370	8210	8280	6840	6640	6740	---	---	e12300	9820	7850	8550
26	8550	8360	8410	6750	6620	6690	---	---	e12900	7870	7550	7720
27	8860	8550	8650	6700	6570	6640	---	---	e10900	7870	7720	7800
28	9260	8860	9020	6650	6580	6620	---	---	e12700	8090	7760	7880
29	9390	9110	9220	7180	6620	6770	---	---	e14700	8330	8060	8160
30	9440	9040	9400	6690	6600	6640	14300	12500	13300	8760	8160	8420
31	---	---	---	6600	6260	6470	12500	11000	11600	---	---	---
MONTH	---	---	4960	---	---	5520	---	---	8880	14700	6780	8840

e Estimated



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

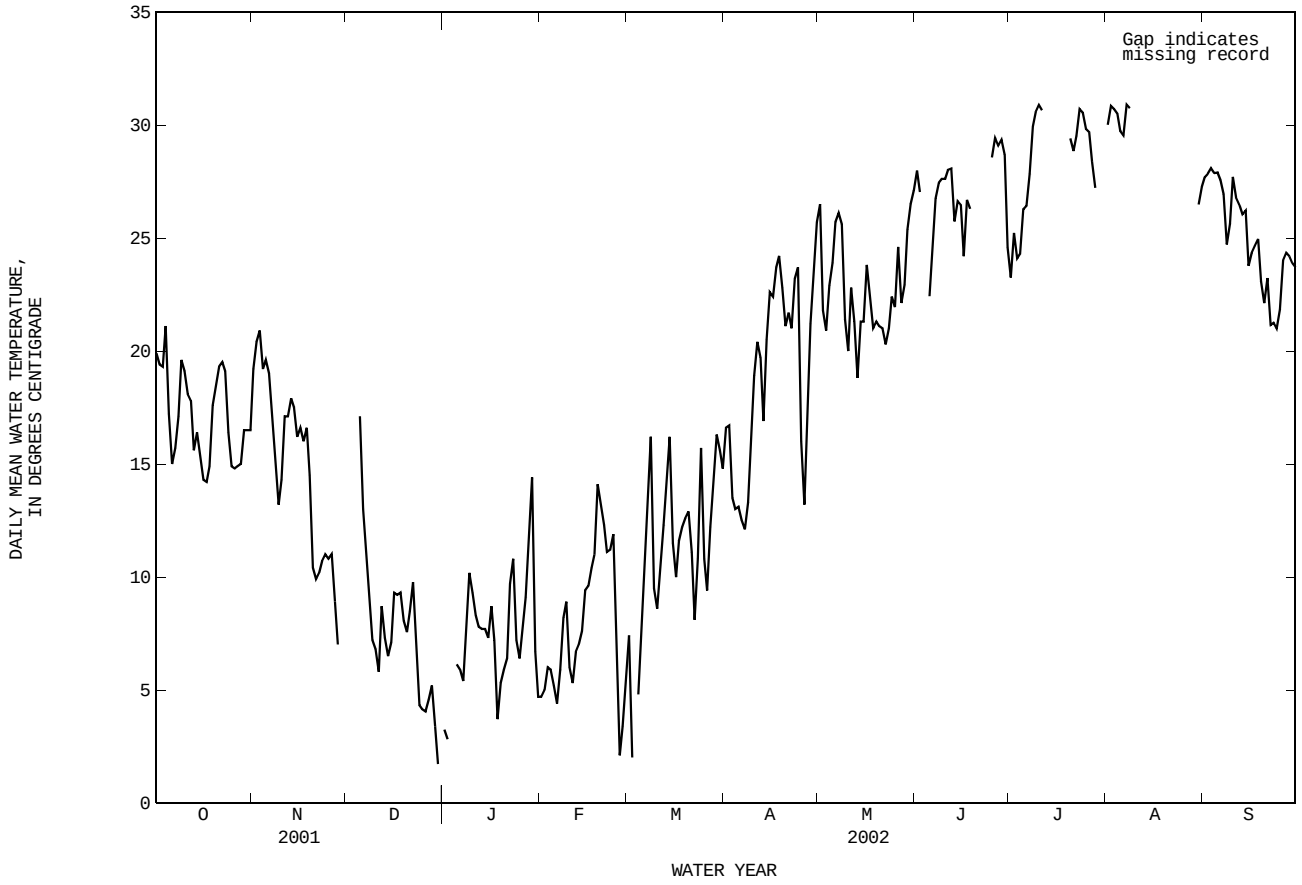
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.4	15.2	19.9	23.6	16.1	19.2	---	---	---	5.9	1.3	3.2
2	24.0	15.5	19.4	25.0	16.7	20.4	---	---	---	4.0	0.8	2.8
3	23.6	15.6	19.3	25.4	18.0	20.9	---	---	---	4.2	---	---
4	26.0	17.6	21.1	20.9	18.0	19.2	18.2	---	---	5.0	---	---
5	21.1	13.9	17.2	23.1	16.8	19.6	18.6	14.9	17.1	8.6	4.7	6.1
6	20.2	11.2	15.0	22.9	16.1	19.0	14.9	11.4	13.0	9.1	3.0	5.9
7	20.2	12.3	15.7	21.0	14.0	17.2	12.8	9.2	11.0	8.6	2.3	5.4
8	22.6	13.0	17.1	17.7	12.4	15.4	11.3	7.2	8.9	11.8	4.0	7.5
9	22.8	17.8	19.6	16.7	10.9	13.2	10.4	4.4	7.2	13.7	7.0	10.2
10	20.3	17.4	19.1	19.1	10.0	14.3	9.9	4.0	6.8	11.1	8.0	9.3
11	22.1	15.1	18.1	20.5	14.5	17.1	6.9	4.9	5.8	11.8	5.1	8.3
12	20.8	14.8	17.8	19.0	15.9	17.1	11.0	6.8	8.7	10.8	4.9	7.8
13	19.1	12.4	15.6	21.0	15.8	17.9	9.0	6.2	7.3	11.4	4.4	7.7
14	21.1	12.8	16.4	19.5	16.3	17.5	9.6	3.6	6.5	11.1	4.4	7.7
15	17.8	13.2	15.3	17.0	15.3	16.2	8.3	6.2	7.1	10.5	4.2	7.3
16	19.7	10.1	14.3	18.4	15.2	16.6	10.4	8.3	9.3	11.9	6.7	8.7
17	17.9	11.1	14.2	16.7	15.4	16.0	11.7	6.9	9.2	9.4	5.7	7.2
18	20.3	10.8	14.9	18.2	15.4	16.6	12.5	6.5	9.3	5.7	3.0	3.7
19	22.8	13.5	17.6	17.1	11.8	14.5	10.4	6.0	8.1	9.2	2.4	5.3
20	23.3	14.7	18.5	11.8	9.6	10.4	11.2	4.4	7.6	9.7	2.7	5.9
21	23.7	15.9	19.3	10.5	9.4	9.9	11.3	5.5	8.5	10.5	2.8	6.4
22	23.6	16.6	19.5	10.4	10.1	10.2	11.9	8.1	9.8	14.9	5.6	9.7
23	22.3	16.6	19.1	11.0	10.4	10.7	8.9	5.0	6.8	12.5	8.3	10.8
24	19.3	13.6	16.4	11.1	10.8	11.0	6.7	2.4	4.3	10.0	4.9	7.2
25	18.8	11.7	14.9	11.1	10.1	10.8	7.6	1.2	4.1	10.5	2.6	6.4
26	19.3	11.3	14.8	11.2	10.5	11.0	7.3	1.1	4.0	12.2	3.4	7.6
27	18.8	11.7	14.9	10.5	7.6	8.9	6.6	2.4	4.6	12.8	5.5	9.1
28	19.5	11.5	15.0	7.6	6.4	7.0	8.0	2.4	5.2	16.9	7.7	12.0
29	21.2	13.0	16.5	---	---	---	5.9	0.4	3.4	18.0	10.4	14.4
30	21.0	13.0	16.5	---	---	---	3.3	0.9	1.7	10.4	4.8	6.7
31	20.1	13.9	16.5	---	---	---	5.1	---	---	7.2	2.8	4.7
MONTH	26.0	10.1	17.1	---	---	---	---	---	---	18.0	---	---

07308500 Red River near Burkburnett, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.5	0.6	4.7	9.2	5.2	7.4	18.3	14.9	16.6	30.9	22.7	26.5
2	6.2	3.6	5.0	5.2	0.2	2.0	18.0	15.2	16.7	26.9	18.8	21.8
3	7.5	4.9	6.0	6.3	---	---	15.2	12.4	13.5	26.3	16.2	20.9
4	6.9	5.0	5.9	10.4	0.2	4.8	13.7	12.2	13.0	27.2	19.5	22.9
5	6.1	4.0	5.2	12.5	3.5	7.6	13.8	12.1	13.1	27.8	20.4	23.9
6	6.2	3.0	4.4	16.6	6.3	11.0	13.4	11.8	12.5	29.2	22.3	25.7
7	10.0	2.7	5.9	19.0	9.9	14.1	12.6	11.8	12.1	29.1	23.3	26.1
8	12.2	4.7	8.2	19.6	13.9	16.2	15.0	11.9	13.3	29.7	22.5	25.6
9	11.4	7.1	8.9	15.4	5.2	9.5	20.6	12.9	16.1	25.6	17.5	21.4
10	8.0	4.2	6.0	13.2	4.6	8.6	23.0	15.7	18.9	23.5	17.0	20.0
11	9.2	2.0	5.3	14.7	7.3	10.6	24.6	17.1	20.4	24.7	20.6	22.8
12	10.6	3.5	6.7	17.8	7.1	12.3	21.1	18.4	19.7	23.1	17.1	21.3
13	10.7	3.7	7.0	19.6	9.7	14.3	19.4	12.9	16.9	24.7	13.8	18.8
14	11.0	4.3	7.6	21.0	11.9	16.2	24.4	17.3	20.5	26.6	16.7	21.3
15	12.6	6.6	9.4	15.4	7.2	11.5	24.5	20.6	22.6	25.5	17.8	21.3
16	13.7	5.7	9.6	12.9	7.3	10.0	23.7	21.3	22.4	29.0	19.2	23.8
17	13.9	7.2	10.4	13.6	10.0	11.6	26.9	21.3	23.7	25.6	20.3	22.3
18	13.3	7.9	11.0	13.6	11.3	12.2	25.9	22.8	24.2	26.6	16.4	21.0
19	17.0	12.5	14.1	13.2	11.3	12.6	24.0	22.1	22.8	25.3	17.7	21.3
20	17.0	9.6	13.2	17.0	9.7	12.9	22.7	19.3	21.1	24.4	18.4	21.1
21	13.8	10.7	12.3	13.3	7.4	11.1	25.1	19.2	21.7	23.9	18.5	21.0
22	15.2	7.5	11.1	12.1	5.1	8.1	24.3	17.9	21.0	22.6	18.5	20.3
23	14.9	7.8	11.2	16.2	6.2	10.8	27.4	19.7	23.2	22.4	20.0	21.0
24	16.0	8.6	11.9	21.0	11.7	15.7	26.7	20.5	23.7	28.2	19.6	22.4
25	10.7	3.5	7.6	15.4	8.8	10.8	20.5	13.5	16.0	27.3	17.2	21.9
26	5.2	0.2	2.1	12.9	6.4	9.4	13.5	13.0	13.2	31.6	20.0	24.6
27	8.1	0.2	3.4	14.7	9.9	12.2	23.2	12.9	17.7	26.2	20.7	22.1
28	10.1	1.2	5.2	16.8	12.1	14.2	25.6	17.7	21.2	27.8	19.8	22.9
29	---	---	---	18.0	14.8	16.3	28.4	19.7	23.6	29.2	22.3	25.4
30	---	---	---	17.5	14.5	15.6	28.9	22.8	25.7	29.9	23.6	26.5
31	---	---	---	17.3	12.9	14.8	---	---	---	31.4	23.9	27.1
MONTH	17.0	0.2	7.8	21.0	---	---	28.9	11.8	18.9	31.6	13.8	22.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	32.0	24.5	28.0	27.2	20.9	23.3	35.0	25.8	30.0	31.6	24.0	27.7
2	31.2	23.9	27.0	28.4	23.0	25.2	35.1	27.3	30.8	33.5	23.2	27.8
3	---	22.8	---	25.1	23.3	24.1	34.7	27.0	30.7	33.8	24.0	28.1
4	30.4	---	---	27.0	22.2	24.3	34.7	27.4	30.5	33.2	23.5	27.9
5	24.2	21.1	22.4	29.8	23.1	26.3	34.7	26.2	29.7	32.5	23.9	27.9
6	28.8	21.8	24.8	27.6	25.1	26.4	33.7	25.9	29.5	31.8	23.7	27.6
7	29.5	24.3	26.7	30.6	25.6	27.8	36.9	26.0	30.9	31.9	23.6	26.9
8	30.0	25.5	27.4	32.5	27.7	29.9	35.4	27.5	30.7	27.1	23.2	24.7
9	31.1	24.9	27.6	32.6	28.8	30.6	---	26.5	---	30.3	22.8	25.6
10	30.6	24.9	27.6	32.8	29.1	30.9	---	---	---	32.9	24.1	27.7
11	32.3	24.5	28.0	33.2	29.0	30.6	---	---	---	32.3	22.2	26.8
12	32.4	25.1	28.1	---	---	---	---	---	---	30.5	22.8	26.5
13	28.7	24.0	25.7	---	---	---	---	---	---	30.1	22.8	26.0
14	31.5	22.7	26.6	---	---	---	---	---	---	32.4	22.0	26.2
15	29.2	23.1	26.5	---	---	---	---	---	---	27.0	21.4	23.8
16	28.4	20.8	24.2	---	---	---	---	---	---	30.6	19.1	24.3
17	31.0	23.1	26.7	---	---	---	---	---	---	29.1	20.8	24.7
18	29.0	23.7	26.3	---	---	---	---	---	---	29.9	21.6	25.0
19	---	23.8	---	34.2	---	---	---	---	---	26.6	19.6	23.1
20	---	---	---	33.4	26.2	29.4	---	---	---	28.8	16.8	22.1
21	---	---	---	33.3	25.1	28.8	---	---	---	29.4	18.6	23.2
22	---	---	---	34.7	25.1	29.5	---	---	---	25.1	17.0	21.1
23	---	---	---	36.2	26.2	30.7	---	---	---	27.4	16.5	21.2
24	33.0	---	---	35.9	27.3	30.5	---	---	---	26.7	16.6	21.0
25	34.1	24.2	28.6	36.2	25.4	29.8	---	---	---	28.8	16.2	21.8
26	34.7	25.0	29.4	34.1	26.3	29.7	---	---	---	29.9	18.8	24.0
27	34.2	25.1	29.1	33.1	24.8	28.4	---	---	---	30.1	19.5	24.3
28	34.8	25.1	29.3	30.0	24.7	27.2	---	---	---	29.3	19.8	24.2
29	33.9	25.0	28.7	---	---	---	29.2	---	---	29.5	19.4	23.9
30	27.2	22.2	24.6	---	---	---	32.2	22.5	26.5	27.9	19.9	23.7
31	---	---	---	34.3	---	---	33.5	22.2	27.3	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	33.8	16.2	25.0


Gap indicates
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DAILY MEAN WATER TEMPERATURE,
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WATER YEAR

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07311600 North Wichita River near Paducah, TX

LOCATION.--Lat 33°57′02", long 100°03′52", Cottle County, Hydrologic Unit 11130204, at right downstream end of old abandoned county bridge, 4.0 mi downsteam from Cottonwood Creek, 7.0 mi downstream from Salt Creek, 10.0 mi upstream from Middle Fork, 14.0 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. One small diversion for irrigation above station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.6	12	10	9.7	11	9.5	12	10	9.3	11	12	12
2	7.5	12	9.5	9.7	11	e8.9	9.8	9.6	9.7	9.2	13	12
3	7.7	13	9.8	11	11	e9.9	8.0	10	10	12	11	13
4	e10	12	9.7	10	11	e10	8.9	10	9.0	14	e11	13
5	9.5	11	10	11	12	9.6	11	10	21	15	e11	9.4
6	9.9	11	11	9.9	12	e8.7	9.5	10	14	21	11	9.3
7	10	11	10	10	11	8.9	9.8	10	13	14	10	8.7
8	10	10	10	9.9	11	9.0	8.6	9.9	11	30	10	9.8
9	10	10	11	10	11	8.2	9.4	8.9	13	21	10	12
10	9.6	11	10	9.6	10	8.4	10	9.7	12	13	10	15
11	9.8	11	10	9.7	12	8.0	11	10	11	11	11	12
12	9.8	12	11	9.9	11	8.2	e10	9.8	10	11	13	12
13	9.8	12	11	10	11	8.4	e9.8	9.7	11	14	12	9.8
14	10	14	11	10	12	8.2	e9.8	9.8	11	18	13	8.0
15	9.6	23	11	10	11	7.3	e9.7	10	11	12	13	7.9
16	9.8	18	12	10	11	7.4	e9.7	9.8	23	11	11	8.2
17	10	592	11	10	11	8.1	e9.7	9.4	e18	12	12	8.0
18	9.9	226	10	10	11	9.6	e9.9	9.5	e14	11	11	8.9
19	10	35	9.8	10	10	9.6	e10	9.5	e12	11	13	6.1
20	10	21	10	10	11	9.6	10	9.4	13	11	12	6.5
21	10	19	11	10	10	9.3	10	9.5	10	12	11	6.0
22	10	18	10	10	11	9.9	10	9.6	9.2	12	10	6.3
23	10	17	9.8	10	11	9.0	10	9.1	9.6	12	10	6.8
24	9.7	16	10	9.8	11	7.6	9.5	9.3	10	e11	13	7.3
25	10	14	10	11	10	6.6	11	9.1	11	e11	12	7.8
26	10	11	9.9	10	10	7.3	15	9.4	9.9	11	11	7.9
27	11	11	9.8	10	12	8.3	12	11	10	11	e12	7.8
28	11	11	10	11	10	8.0	11	10	10	11	10	8.1
29	12	11	9.8	11	---	7.4	10	9.5	11	13	14	8.0
30	12	10	9.8	12	---	8.5	10	9.3	11	14	12	7.8
31	12	---	12	11	---	9.0	---	9.1	---	14	13	---
TOTAL	308.2	1215	319.9	316.2	307	266.4	305.1	299.9	357.7	414.2	358	275.4
MEAN	9.942	40.50	10.32	10.20	10.96	8.594	10.17	9.674	11.92	13.36	11.55	9.180
MAX	12	592	12	12	12	10	15	11	23	30	14	15
MIN	7.5	10	9.5	9.6	10	6.6	8.0	8.9	9.0	9.2	10	6.0
AC-FT	611	2410	635	627	609	528	605	595	709	822	710	546

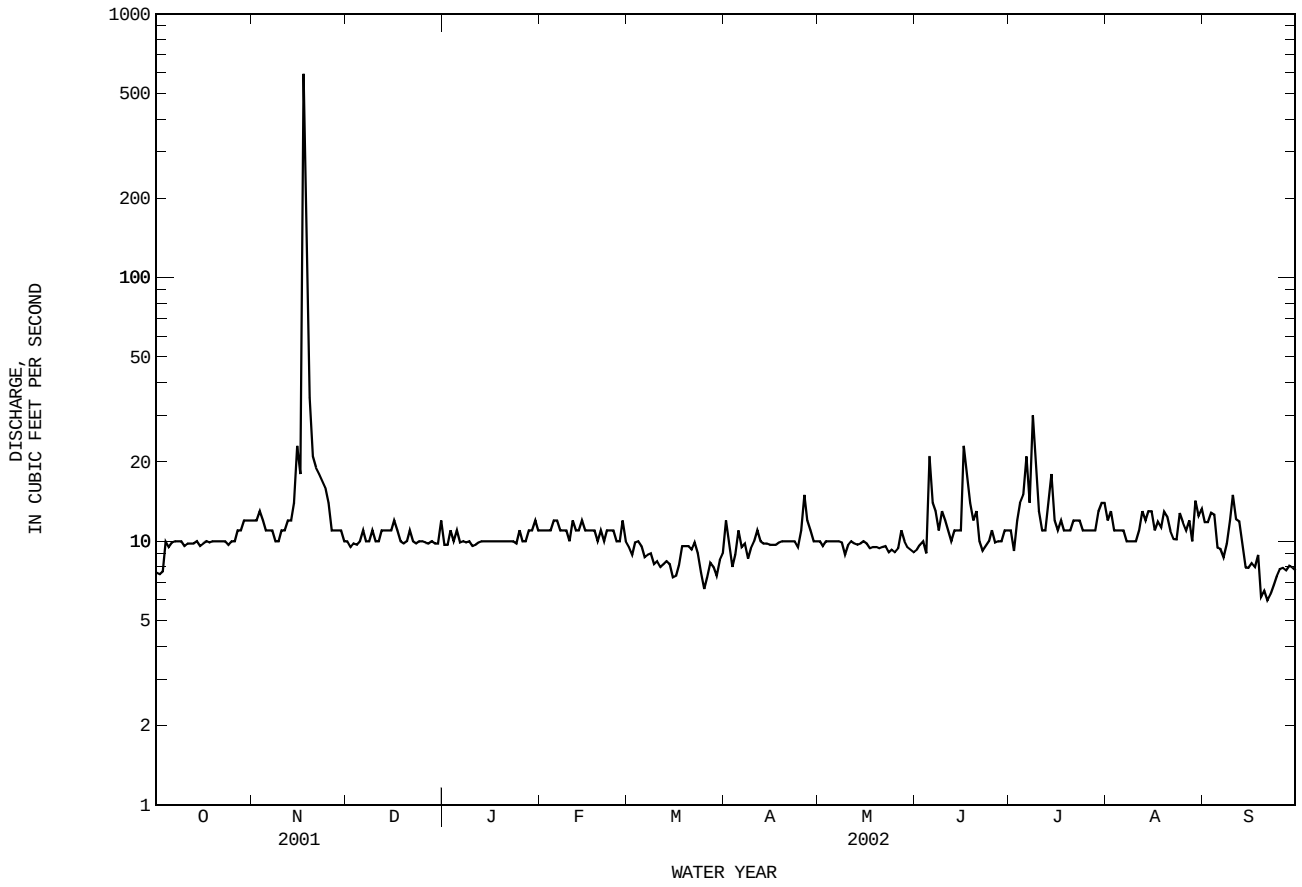
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002h, BY WATER YEAR (WY)

MEAN	18.54	13.60	11.75	10.92	11.40	14.81	25.68	41.39	63.11	14.91	34.02	31.98
MAX	62.4	40.5	24.8	19.9	19.7	49.7	265	186	452	80.4	239	141
(WY)	1966	2002	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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002h	
ANNUAL TOTAL	5771.6		4743.0			
ANNUAL MEAN	15.81		12.99		24.49	
HIGHEST ANNUAL MEAN					75.5	1995
LOWEST ANNUAL MEAN					6.10	1964
HIGHEST DAILY MEAN	592	Nov 17	592	Nov 17	8930	Jun 5 1995
LOWEST DAILY MEAN	5.9	Jul 12	6.0	Sep 21	0.50	Sep 2 1964
ANNUAL SEVEN-DAY MINIMUM	6.4	Jun 19	6.7	Sep 19	0.74	Aug 31 1964
MAXIMUM PEAK FLOW			1420	Nov 17	18100	Jun 5 1995
MAXIMUM PEAK STAGE			7.40	Nov 17	19.76	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	11450		9410		17740	
10 PERCENT EXCEEDS	18		13		21	
50 PERCENT EXCEEDS	9.9		10		11	
90 PERCENT EXCEEDS	7.3		8.6		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 2002. The standard error of estimate for dissolved solids is 4%, chloride is 6%, sulfate is 6% 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, 27,600 microsiemens/cm, Oct. 25, 26; minimum, 650 microsiemens/cm, Nov. 18.
WATER TEMPERATURE: Maximum, 34.4°C, Aug. 2; minimum, 0.9°C, Jan. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
03...	1415	7.7	21700	7.8	22.0	9.4	123	2500	2400	746	158	4280	37
NOV													
26...	1325	11	19600	7.9	11.7	10.9	115	2300	2200	702	142	3670	33
DEC													
20...	1315	10	23600	7.8	8.7	12.7	125	2800	2700	835	176	4450	36
JAN													
16...	1200	10	24300	7.7	8.9	9.6	96	2700	2500	793	168	4390	37
FEB													
20...	1240	10	24400	7.7	12.6	9.6	105	2700	2500	792	170	4500	38
MAR													
07...	1220	9.4	24600	7.7	12.3	10.0	109	2900	2800	869	187	5020	40
APR													
23...	1220	10	24000	7.6	22.9	7.0	94	2800	2700	824	175	4480	37
MAY													
16...	1205	9.9	25000	7.6	22.1	6.7	84	2600	2500	766	165	5080	43
JUN													
12...	1620	10	23700	8.0	32.1	10.9	160	2800	2700	816	174	4660	39
JUL													
10...	1235	14	7810	7.7	30.1	6.9	93	1000	940	314	63.5	1310	18
AUG													
06...	1130	10	25700	7.5	28.3	5.6	79	2900	2800	853	184	4970	40
SEP													
24...	1400	6.7	26400	7.9	22.5	9.7	122	3000	2900	895	191	5550	44

07311600 North Wichita River near Paducah, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	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, SUSPENDED (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)
OCT													
03...	14.6	1	109	92	2130	6630	.6	.8	14000	15	.34	.008	.35
NOV													
26...	13.8	2	186	156	2110	5790	.4	7.3	12500	18	--	E.007	.41
DEC													
20...	15.4	2	176	147	2500	7330	.6	7.5	15400	30	.41	.008	.42
JAN													
16...	14.8	1	172	144	2600	7430	.6	5.0	15500	12	.74	.012	.75
FEB													
20...	14.8	1	158	132	2620	7760	.6	2.7	15900	10	.54	.009	.55
MAR													
07...	16.6	1	166	138	2470	7550	.6	5.2	16200	<10	.62	.008	.630
APR													
23...	15.2	1	146	121	2480	7060	.7	1.4	15100	12	.42	.031	.45
MAY													
16...	15.2	0	118	99	2550	7530	.6	1.4	16200	25	.37	.012	.38
JUN													
12...	15.1	1	109	92	2390	7060	.7	1.4	15200	22	.20	.016	.22
JUL													
10...	9.35	0	121	100	860	2060	.5	8.1	4690	14	.21	.013	.22
AUG													
06...	17.5	0	86	72	2560	7950	.7	2.0	16600	<10	.20	.016	.21
SEP													
24...	15.9	1	87	73	2620	8180	.6	2.0	17500	27	.22	.011	.23

Date	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOSPHATE, 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)
OCT													
03...	.28	.54	--	.20	<.06	<.06	<.02	<6	1.7	65	54	<.32	<.30
NOV													
26...	.22	.59	--	.18	<.06	<.06	<.02	E2	E.8	86	82	<.28	<.30
DEC													
20...	.22	.71	.07	.29	<.06	<.06	<.02	7	E1.3	29	33	<.35	<.40
JAN													
16...	.26	.93	--	.18	<.06	<.06	<.02	E4	2.9	26	25	<.35	<.40
FEB													
20...	.16	.86	.15	.31	<.06	<.06	<.02	E1	<.2	20	19	<.35n	<.04
MAR													
07...	.330	.85	--	.22	<.060	<.060	<.020	E1	<.2	21	22	.05	E.03
APR													
23...	.35	.68	--	.23	<.06	<.06	<.02	<8	2.6	26	29	<.32	<.30
MAY													
16...	.21	.71	.12	.33	<.06	<.06	<.02	<6	3.9	28	27	<.35	<.40
JUN													
12...	.25	.47	.01	.26	<.06	<.06	<.02	E3	3.2	53	56	<.32	<.30
JUL													
10...	.07	.68	.39	.45	<.06	<.06	<.02	4	4.0	100	99	<.11	<.10
AUG													
06...	.41	.74	.12	.53	<.06	<.06	<.02	3	2.1	40	47	<.35	<.40
SEP													
24...	.12	.56	.21	.33	<.06	<.06	<.02	<6	E1.9n	32	36	<.39	<.40

07311600 North Wichita River near Paducah, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)
OCT													
03...	E1.2	E1.3	10.6	6.8	<10	<150	<9	<.70	17	13.1	<.01	<.01	17
NOV													
26...	<2.4	E1.4	10.3	5.9	<10	<100	<8	<.60	30	29.3	E.01	E.01	14
DEC													
20...	<2.4	<2.4	9.8	8.4	<10	<150	<10	<.80	14	16.5	<.01	<.01	18
JAN													
16...	<2.4	<2.4	13.8	6.6	<110	<150	<10	E.43	21	22.1	<.01	E.01	17
FEB													
20...	<.8	2.6	8.0	10.3	<10	E6	<10	.18	57	57.7	E.01n	<.01	20
MAR													
07...	E.7	<.8	12.3	10.6	<10	<10	<1	1.26	55	59.8	<.01	<.01	24
APR													
23...	<1.6	<1.6	14.2	11.8	<60	<150	<9	<.70	40	41.7	.02	E.01n	28
MAY													
16...	<2.4	<2.4	20.1	17.6	<60	<150	<10	<.80	48	41.7	<.011	<.01	26
JUN													
12...	<2.4	<2.4	18.7	14.6	<60	<150	<9	E.38	47	43.5	E.01n	E.01n	19
JUL													
10...	<.8	<.8	10.4	7.3	Mn	<50	<3	<.20	72	65.8	E.01	<.01	10
AUG													
06...	<2.4	<.8	15.7	10.2	<70	<150	<10	<.80	45	37.4	<.01	<.01	26
SEP													
24...	<2.4	<2.4	15.1	15.8	<10	<150	<11	<.90	13	14.5	E.01n	E.01n	46

Date	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
OCT													
03...	<.50	7.5	10.5	<.45	<9	10	10	--	--	--	--	--	--
NOV													
26...	7.02	8.5	6.4	<.40	<8	9	<8	--	--	--	--	--	--
DEC													
20...	18.2	11.1	11.9	<.50	<10	10	<10	--	--	--	--	--	--
JAN													
16...	13.4	12.6	13.2	<.50	<10	10	<10	--	--	--	--	--	--
FEB													
20...	<.06	10.6	13.3	<.50n	<1	<10	8	--	--	--	--	--	--
MAR													
07...	9.76	12.7	14.7	<.05	<1	8	9	--	--	--	--	--	--
APR													
23...	4.65	13.5	10.4	<.45	<9	13	<9	<.04	<.1	<1	<.1	<.1	<.1
MAY													
16...	<.60	8.4	12.4	<.50	<10	11	11	--	--	--	--	--	--
JUN													
12...	<.50	11.6	11.6	<.45	<9	14	12	<.04	<.1	<1	<.1	<.1	<.1
JUL													
10...	7.36	3.9	5.7	<.15	<3	6	5	--	--	--	--	--	--
AUG													
06...	23.0	11.1	8.8	<.50	<10	<10	<10	--	--	--	--	--	--
SEP													
24...	17.4	9.7	14.6	<.55	<11	20	17	--	--	--	--	--	--

07311600 North Wichita River near Paducah, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
23...	<.1	<.1	<.02	<.6	<.06	<.2	<.03	<.8	<.03	45.0	<2	<.1	<.03
MAY													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
12...	<.1	<.1	<.02	<.6	<.06	<.2	<.03	<.8	<.03	43.9	<2	<.1	<.03
JUL													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT									
03...	--	--	--	--	--	--	--	--	--
NOV									
26...	--	--	--	--	--	--	--	--	--
DEC									
20...	--	--	--	--	--	--	--	--	--
JAN									
16...	--	--	--	--	--	--	--	--	--
FEB									
20...	--	--	--	--	--	--	--	--	--
MAR									
07...	--	--	--	--	--	--	--	--	--
APR									
23...	109	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY									
16...	--	--	--	--	--	--	--	--	--
JUN									
12...	70.4	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL									
10...	--	--	--	--	--	--	--	--	--
AUG									
06...	--	--	--	--	--	--	--	--	--
SEP									
24...	--	--	--	--	--	--	--	--	--

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

Value qualifier codes used in this report:
n -- Below the NDV

07311600 North Wichita River near Paducah, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2001 TO SEPTEMBER 2002

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.	2001	308.2	25980	16720	13910	8000	6670	2600	2130	2900
NOV.	2001	1215	11990	8050	26410	3600	11770	1500	4860	1700
DEC.	2001	319.9	22780	14890	12860	6900	6000	2500	2120	2800
JAN.	2002	316.2	23230	15150	12940	7100	6060	2500	2110	2800
FEB.	2002	307	23950	15570	12900	7300	6080	2500	2070	2900
MAR.	2002	266.4	24440	15850	11400	7500	5390	2500	1810	2900
APR.	2002	305.1	23900	15540	12800	7300	6030	2500	2060	2800
MAY	2002	299.9	24880	16100	13040	7600	6190	2500	2050	2900
JUNE	2002	357.7	20990	13810	13340	6400	6160	2300	2260	2700
JULY	2002	414.2	18900	12470	13950	5700	6410	2100	2390	2500
AUG.	2002	358	26000	16740	16180	8000	7750	2600	2490	2900
SEPT	2002	275.4	26630	17090	12710	8200	6120	2600	1930	2900
TOTAL		4743	**	**	172400	**	80630	**	28280	**
WTD.AVG.		13	20620	13470	**	6300	**	2200	**	2500

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20700	20000	20300	27300	26800	27100	22100	21500	21800	23100	22600	22900
2	21300	20800	21100	27200	26800	27000	22100	21900	22000	23400	22100	23100
3	22400	21200	21800	27200	23500	26500	22000	21700	22000	23400	19600	22200
4	---	---	e23400	26600	25800	26200	22200	21900	22100	23300	22400	23100
5	24400	23600	24000	26800	26400	26600	22500	22200	22300	22900	21000	22600
6	24600	24300	24500	27000	26700	26900	22700	22400	22600	23200	22300	23000
7	24800	24600	24700	27100	26700	26900	23000	22500	22700	23300	22000	23100
8	25000	24700	24900	27100	26800	26900	23400	23000	23200	23400	21900	23000
9	25400	25000	25200	27200	27000	27100	23500	23300	23400	23100	20600	22900
10	25900	25400	25700	27200	26600	26900	23700	23200	23500	23300	22400	23000
11	26200	25900	26000	26800	26400	26600	23500	23200	23400	23400	23100	23300
12	26300	26000	26200	26600	26400	26500	23500	23200	23400	23300	23100	23200
13	26400	26100	26300	26600	26400	26600	23600	23400	23500	23600	23000	23300
14	26600	26300	26500	26700	23200	25800	23500	23100	23400	23800	22500	23600
15	26900	26500	26700	24900	22200	23500	23600	23300	23400	23900	23000	23700
16	27200	26700	27000	24900	18000	23300	23400	22700	22900	23800	23400	23600
17	27300	26900	27100	21100	666	10400	23000	22700	22800	23800	23600	23700
18	27200	26700	27000	3690	650	1870	23100	22800	23000	23700	22900	23600
19	27200	26800	27100	7430	3690	5590	23500	23100	23300	23800	23300	23500
20	27300	26700	27000	10200	7430	8800	23500	22100	22800	23900	23400	23700
21	26900	26300	26700	12500	10200	11300	22300	21800	22100	24100	23500	23800
22	27000	26600	26800	14500	12500	13400	22400	22100	22200	23900	23100	23400
23	27100	26800	26900	16200	14500	15400	22700	22400	22500	23600	23100	23300
24	27500	27000	27300	17800	16200	17000	22600	22200	22500	23700	23400	23600
25	27600	27200	27400	18900	17400	18200	22700	21500	22500	24000	21400	23500
26	27600	27200	27400	19700	18900	19200	22900	22600	22700	23800	22500	23600
27	27400	27000	27200	20600	19700	20100	23000	22600	22900	23800	23300	23600
28	27300	27000	27100	20300	18800	19800	22900	21900	22600	24000	23400	23800
29	27200	27000	27100	20900	19500	20100	23000	22400	22800	23700	23300	23500
30	27400	27000	27200	21500	20900	21200	23100	22100	22900	23300	17900	21800
31	27400	27000	27200	---	---	---	23100	20400	22600	23100	22100	22600
MONTH	---	---	25800	27300	650	20800	23700	20400	22800	24100	17900	23200

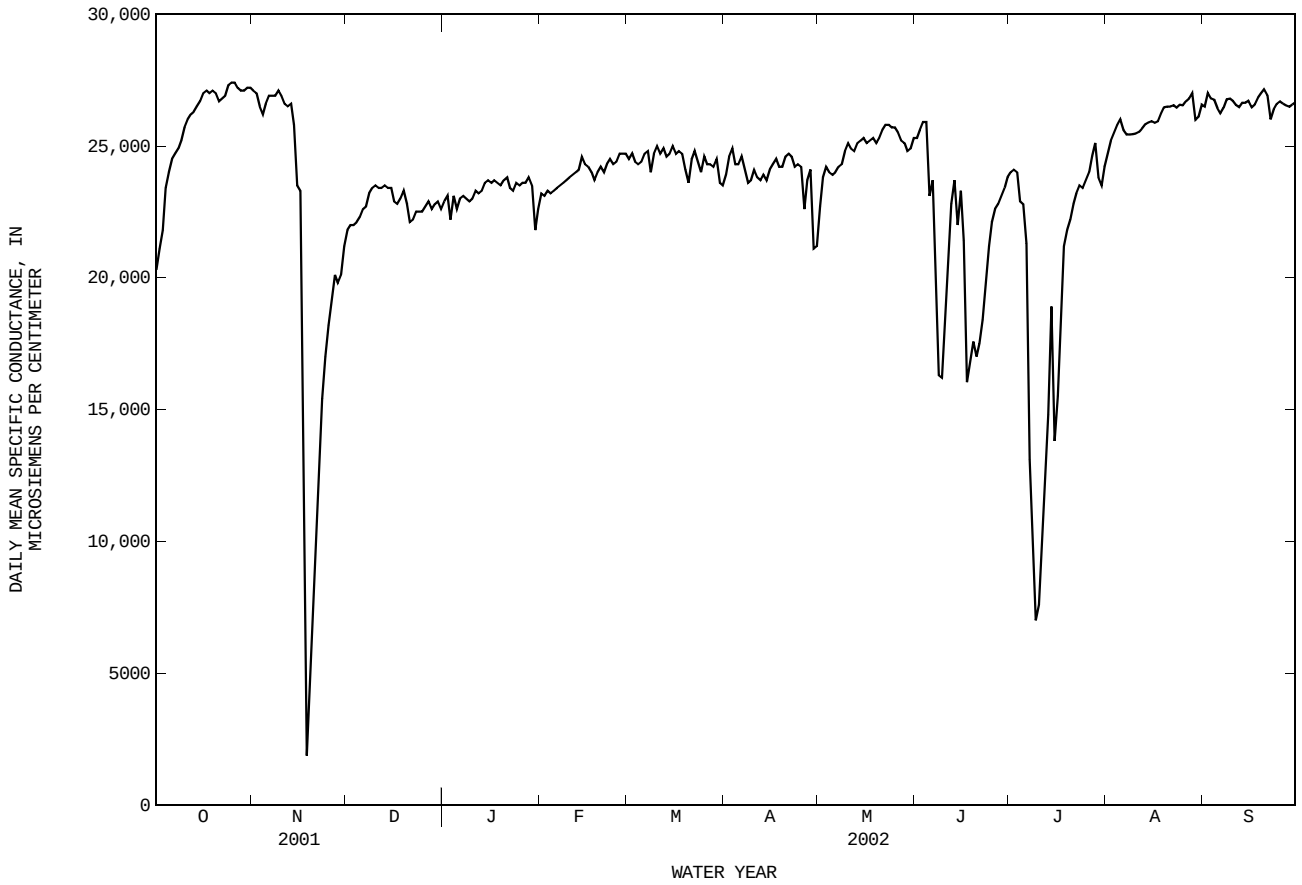
07311600 North Wichita River near Paducah, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e23200	24800	24100	24500	24100	23800	23900	23100	22100	22700
2	---	---	e23100	---	---	e24700	25000	24100	24600	24300	23100	23800
3	---	---	e23300	---	---	e24400	25000	24700	24900	24400	23900	24200
4	---	---	e23200	---	---	e24300	24700	24100	24300	24300	23800	24000
5	---	---	e23300	---	---	e24400	24400	24300	24300	24100	23800	23900
6	---	---	e23400	---	---	e24700	24800	24400	24600	24100	23900	24000
7	---	---	e23500	24900	24500	24800	24600	23700	24100	24300	24000	24200
8	---	---	e23600	24500	23800	24000	23900	23300	23600	24400	24000	24300
9	---	---	e23700	25000	24400	24700	24100	23400	23700	25000	24400	24800
10	---	---	e23800	25000	24700	25000	24400	23700	24100	25300	25000	25100
11	---	---	e23900	24800	24600	24700	24200	23400	23800	25000	24700	24900
12	---	---	e24000	25100	24800	24900	24100	23400	23700	25100	24700	24800
13	---	---	e24100	24900	24100	24600	24100	23600	23900	25300	24900	25100
14	24800	24500	24600	24800	24500	24700	24000	23300	23700	25400	25100	25200
15	24500	24000	24300	25400	24700	25000	24200	23900	24100	25500	25100	25300
16	24300	23900	24200	25300	24200	24700	24600	24200	24300	25300	24900	25100
17	24200	23900	24000	24800	24700	24800	24800	24100	24500	25400	25000	25200
18	24100	23500	23700	24900	24500	24700	24500	24000	24200	25500	25100	25300
19	24400	23700	24000	---	---	e24100	24500	24100	24200	25300	24900	25100
20	24400	23700	24200	23900	23300	23600	24700	24500	24600	25400	25100	25300
21	24300	23600	24000	25100	23500	24500	25000	24400	24700	25900	25400	25600
22	24400	24000	24300	25200	24400	24800	24800	24300	24600	26000	25600	25800
23	24500	24400	24500	24600	24100	24400	24500	24000	24200	26000	25600	25800
24	24500	24100	24300	24200	23900	24000	24700	24100	24300	25800	25400	25700
25	24500	24400	24400	25200	24100	24600	24900	21000	24200	25900	25600	25700
26	---	---	e24700	25200	23800	24300	23700	21300	22600	25700	24900	25500
27	---	---	e24700	24600	23900	24300	24300	23400	23700	25300	24900	25200
28	---	---	e24700	24300	24100	24200	24800	22600	24100	25300	25000	25100
29	---	---	---	24700	24300	24500	22600	20300	21100	25100	24400	24800
30	---	---	---	24300	23200	23600	22100	20400	21200	25100	24800	24900
31	---	---	---	23800	23200	23500	---	---	---	25400	25100	25300
MONTH	---	---	24000	---	---	24500	25000	20300	23900	26000	22100	24900

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	25500	25100	25300	24100	23900	24000	24900	24400	24700	26700	26300	26500
2	25800	25400	25600	24100	24000	24100	25400	24900	25200	27300	26600	27000
3	26000	25700	25900	24200	23600	24000	25700	25300	25500	27100	26500	26800
4	26100	25100	25900	23800	22500	22900	---	---	e25800	27000	26600	26700
5	25100	20900	23100	---	---	e22800	---	---	e26000	26800	26100	26400
6	24400	23200	23700	---	---	e21300	25700	25500	25600	26500	26000	26200
7	23200	17400	20500	---	---	e13100	25600	25200	25400	26600	26100	26400
8	17400	15900	16300	---	---	e10000	25600	25300	25400	27000	26600	26800
9	17000	15400	16200	---	---	e7000	25600	25300	25400	27000	26600	26800
10	19000	17000	17900	8980	---	e7600	25600	25200	25500	26900	26500	26700
11	21100	19000	19900	11500	8980	10200	25700	25400	25500	27000	26100	26600
12	24000	21100	22800	13400	11500	12500	25800	25500	25700	26700	26300	26500
13	24500	22700	23700	17300	13400	14800	26000	25600	25800	26800	26500	26600
14	23100	21300	22000	23200	14900	18900	26100	25600	25900	26800	26500	26600
15	24100	17300	23300	14900	13400	13800	26200	25700	25900	26900	26600	26700
16	---	---	e21400	17200	14100	15500	26200	25600	25900	26700	26200	26500
17	---	---	e16000	20600	17200	18900	26100	25700	25900	26700	26400	26600
18	---	---	e16800	21500	20600	21200	26500	26000	26200	27000	26700	26800
19	17600	---	e17600	21900	21500	21800	26700	26300	26500	27100	26800	27000
20	17300	16800	17000	22500	21900	22200	26700	26300	26500	27300	26900	27100
21	17900	17300	17500	23000	22500	22800	26700	26300	26500	27300	26300	26900
22	19100	17900	18400	23300	22900	23200	26800	26300	26500	26300	25700	26000
23	20600	19100	19900	23700	23200	23500	26700	26200	26400	26700	25800	26400
24	21700	20600	21200	23600	23200	23400	26800	26400	26600	26900	26200	26600
25	22400	21700	22100	23900	23500	23700	26900	26200	26500	27000	26400	26700
26	22700	22400	22600	24300	24300	24000	26900	26400	26700	26900	26300	26600
27	23000	22700	22800	25000	24300	24600	---	---	e26800	26800	26300	26500
28	23200	22900	23100	25200	25000	25100	---	---	e27000	26700	26300	26500
29	23600	23100	23400	25200	21700	23800	27300	25400	26000	26800	26400	26600
30	24000	23600	23800	23800	23100	23500	26600	25600	26100	26800	26500	26600
31	---	---	---	24400	23600	24200	26900	26300	26600	---	---	---
MONTH	---	---	21200	---	---	19600	---	---	26000	27300	25700	26600

e Estimated



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.3	19.3	22.6	21.1	16.3	18.8	10.1	7.2	8.7	5.7	3.7	4.6
2	24.7	19.2	22.2	21.4	16.7	19.3	12.6	7.5	10.2	5.0	3.0	4.3
3	---	20.3	---	22.4	17.4	19.9	15.8	11.6	13.6	5.9	0.9	3.6
4	---	---	---	22.0	19.0	20.4	16.8	14.7	15.7	6.3	3.0	4.8
5	23.6	16.5	19.7	20.7	18.3	19.6	17.6	15.5	16.3	9.5	5.5	7.3
6	19.8	13.9	17.0	20.8	17.0	19.1	15.5	12.7	13.9	9.5	4.6	7.1
7	21.4	14.4	18.0	20.2	16.0	18.4	13.1	10.8	12.0	9.3	4.1	7.0
8	24.0	16.9	20.4	18.7	14.2	16.3	11.9	8.8	10.4	11.2	5.8	8.6
9	25.6	20.5	22.4	16.0	12.9	14.4	10.8	7.0	8.9	12.7	7.9	10.5
10	22.0	19.8	21.0	16.9	11.9	14.6	10.7	6.7	8.9	12.4	9.6	10.9
11	22.9	17.4	20.0	18.1	14.2	16.2	---	7.8	---	11.8	7.6	9.8
12	20.4	16.7	18.5	18.3	15.7	17.0	13.1	---	---	11.2	7.0	9.2
13	19.2	13.7	16.6	18.8	16.5	17.5	10.8	8.9	9.5	11.5	7.2	9.3
14	20.6	13.8	17.3	17.5	16.1	17.0	10.2	6.0	8.1	11.1	6.8	9.1
15	18.6	15.5	17.2	16.4	15.9	16.2	10.7	8.0	9.3	10.9	6.5	9.0
16	18.6	12.3	15.7	18.4	15.7	16.8	11.4	10.3	10.9	11.9	8.6	10.1
17	19.3	12.9	16.2	17.2	15.2	16.0	12.1	8.2	10.2	11.4	8.0	9.7
18	20.0	14.1	17.2	18.3	15.1	16.5	12.8	8.3	10.5	9.0	6.9	7.5
19	20.7	14.5	17.6	17.2	11.8	14.2	11.6	8.2	9.9	9.5	4.8	7.3
20	22.0	15.1	18.7	13.5	9.7	11.5	10.9	7.5	9.3	10.4	5.5	7.8
21	23.8	17.4	20.5	14.3	9.8	12.1	11.3	6.9	9.4	10.4	4.7	7.8
22	23.6	18.9	21.3	15.1	11.0	13.2	11.6	8.3	10.2	13.0	7.5	10.2
23	23.0	18.3	20.7	14.1	12.2	13.5	9.8	6.5	8.3	13.2	9.9	11.3
24	20.2	16.0	18.2	13.6	10.7	12.2	8.1	5.6	6.8	11.3	8.2	9.6
25	18.2	13.3	16.1	13.8	10.2	12.3	8.3	3.8	6.1	10.4	4.8	7.9
26	17.5	12.6	15.4	13.2	10.4	11.8	8.3	3.9	6.2	11.5	5.9	8.9
27	18.5	13.5	16.2	---	6.6	---	7.0	4.7	6.0	11.8	7.8	9.9
28	19.4	13.9	17.0	---	---	---	7.9	3.9	6.1	14.3	8.4	11.5
29	20.1	15.2	17.9	6.5	2.2	4.2	6.8	3.8	5.6	15.7	12.3	13.8
30	20.2	15.4	17.8	9.9	5.1	7.5	5.3	3.4	4.0	13.1	7.6	9.6
31	19.7	15.8	17.8	---	---	---	4.6	2.6	3.6	8.9	5.2	7.2
MONTH	---	---	---	---	---	---	---	---	---	15.7	0.9	8.6

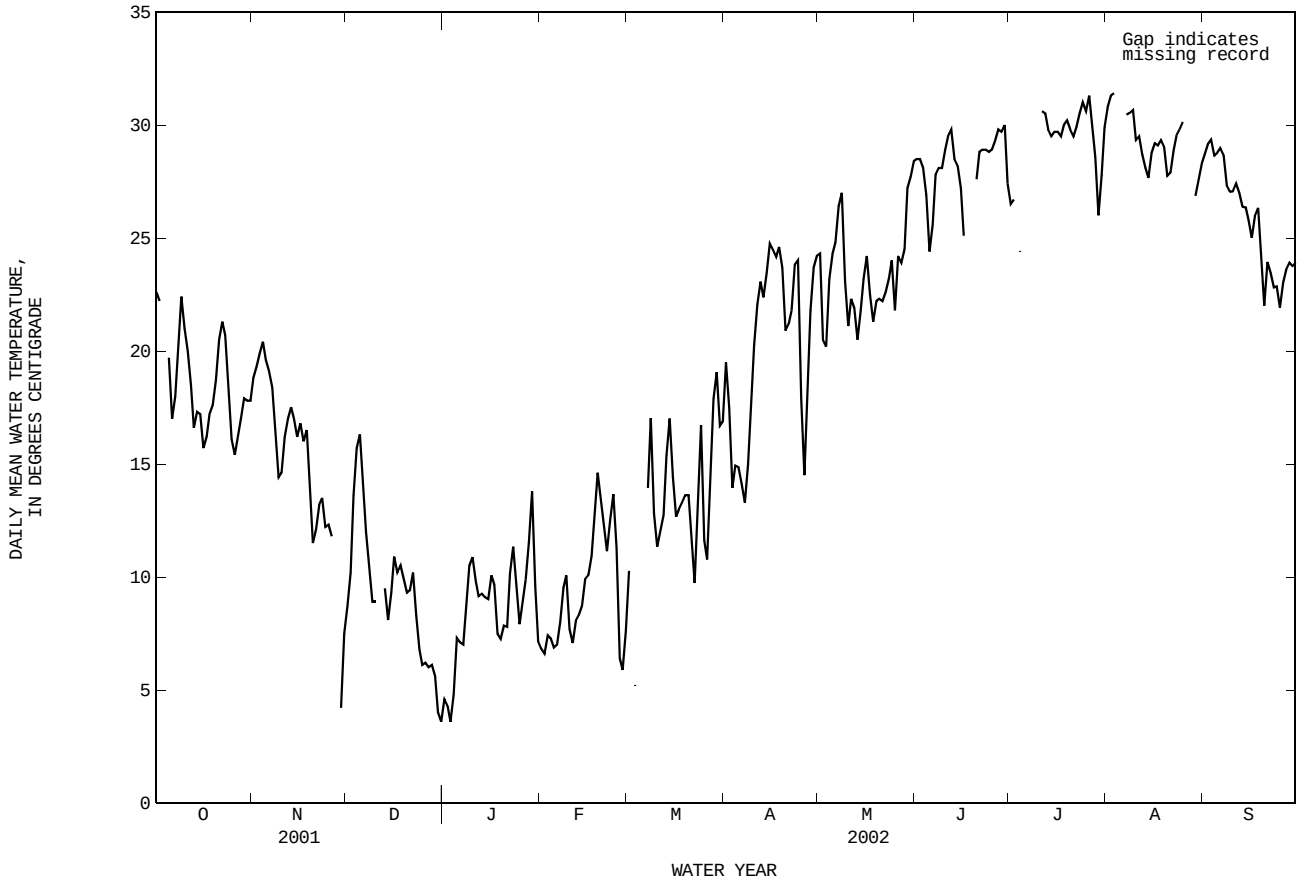
07311600 North Wichita River near Paducah, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.5	3.8	6.8	14.4	7.3	10.3	23.4	15.4	19.5	26.9	21.4	24.3
2	7.6	5.2	6.6	9.2	---	---	20.9	14.1	17.5	25.1	18.2	20.5
3	8.7	6.4	7.4	8.4	1.7	5.2	16.7	10.9	13.9	24.7	16.3	20.2
4	8.3	6.0	7.3	---	3.2	---	18.3	11.3	14.9	26.8	19.3	23.2
5	7.6	6.0	6.9	13.0	---	---	16.2	13.4	14.8	26.0	22.1	24.3
6	9.5	5.0	7.0	---	---	---	15.0	13.3	14.1	26.8	23.2	24.8
7	10.9	4.9	8.0	17.1	10.3	13.9	13.9	12.9	13.3	29.7	23.6	26.4
8	12.2	6.4	9.5	19.9	14.8	17.0	17.6	13.2	15.0	29.7	24.6	27.0
9	11.8	8.3	10.1	16.1	9.9	12.8	21.7	13.8	17.6	26.1	20.1	23.1
10	9.4	5.7	7.7	14.0	8.0	11.3	24.1	16.5	20.3	23.1	19.6	21.1
11	9.7	3.9	7.1	14.2	10.0	12.0	25.8	18.4	22.1	24.1	20.8	22.3
12	10.4	5.7	8.1	16.0	8.9	12.7	25.2	20.8	23.1	23.3	19.9	21.9
13	10.7	5.7	8.3	18.9	11.5	15.4	24.0	20.4	22.4	24.2	16.9	20.5
14	11.1	5.8	8.7	19.5	14.2	17.0	27.3	19.7	23.4	25.1	18.3	21.8
15	12.1	7.6	9.9	17.2	11.8	14.4	27.9	21.5	24.8	26.6	19.6	23.2
16	12.9	6.8	10.1	14.6	10.6	12.7	26.9	22.4	24.5	26.2	22.2	24.2
17	12.8	8.4	10.9	14.3	11.8	13.0	27.5	20.6	24.2	25.0	20.6	22.5
18	15.7	9.3	12.6	14.2	12.2	13.3	26.3	22.9	24.6	24.9	18.2	21.3
19	16.6	12.6	14.6	14.2	12.4	13.6	24.8	22.7	23.7	25.6	19.1	22.2
20	15.9	10.6	13.5	16.9	11.0	13.6	22.7	20.0	20.9	25.2	19.2	22.3
21	14.2	10.7	12.3	14.8	8.9	11.8	24.8	17.9	21.2	25.4	19.4	22.2
22	14.0	7.9	11.1	13.1	6.3	9.7	24.1	18.7	21.8	26.4	19.5	22.6
23	15.2	9.5	12.5	16.7	8.0	12.6	26.2	21.1	23.8	24.9	21.5	23.2
24	16.2	11.5	13.7	20.5	13.5	16.7	26.5	21.7	24.0	27.4	21.4	24.0
25	13.5	8.6	11.3	16.0	9.1	11.6	22.5	14.3	17.9	24.2	19.6	21.8
26	8.6	4.0	6.4	14.8	6.6	10.8	15.1	13.8	14.5	28.3	20.9	24.2
27	9.0	2.2	5.9	18.6	10.4	14.6	22.7	14.9	18.4	25.9	22.1	23.9
28	10.2	4.4	7.6	20.8	14.8	17.9	25.6	18.1	21.8	28.9	21.2	24.5
29	---	---	---	21.9	16.1	19.1	26.6	20.4	23.7	31.3	23.5	27.2
30	---	---	---	19.7	15.0	16.7	26.1	22.0	24.2	30.6	24.7	27.7
31	---	---	---	20.6	13.2	16.9	---	---	---	32.1	25.1	28.4
MONTH	16.6	2.2	9.4	---	---	---	27.9	10.9	20.2	32.1	16.3	23.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	31.8	25.4	28.5	29.2	24.7	26.5	34.0	27.9	30.8	31.6	26.0	28.7
2	31.6	25.5	28.5	28.9	24.6	26.7	34.4	28.4	31.3	32.1	26.4	29.1
3	31.5	25.0	28.1	25.2	---	---	34.1	28.6	31.4	32.2	26.6	29.3
4	28.5	25.4	26.9	25.9	23.2	24.4	---	---	---	30.8	26.6	28.6
5	25.9	23.1	24.4	---	---	---	---	---	---	31.2	26.3	28.8
6	29.3	22.7	25.6	---	---	---	32.7	---	---	31.7	26.4	29.0
7	32.0	24.0	27.8	---	---	---	33.6	27.5	30.5	31.4	26.3	28.7
8	30.7	25.6	28.1	---	---	---	33.2	27.8	30.5	29.2	26.1	27.3
9	31.2	25.2	28.1	---	---	---	33.3	28.2	30.7	28.9	25.7	27.1
10	31.9	26.3	28.9	33.9	---	---	32.0	27.0	29.3	28.4	25.9	27.1
11	32.6	26.6	29.5	34.0	27.5	30.6	32.2	27.1	29.5	30.4	24.7	27.4
12	32.5	27.4	29.8	33.7	27.3	30.5	31.3	26.1	28.7	28.4	25.1	27.0
13	31.4	26.0	28.5	32.3	27.1	29.8	30.7	26.2	28.1	28.2	24.6	26.4
14	31.1	25.5	28.2	31.9	27.0	29.5	30.5	25.0	27.7	28.5	24.6	26.4
15	29.9	24.4	27.2	32.9	26.6	29.7	31.6	26.0	28.8	27.7	24.0	25.8
16	27.7	22.4	25.1	32.2	27.1	29.7	32.1	26.7	29.2	28.1	22.1	25.0
17	---	---	---	32.8	26.9	29.5	31.7	26.6	29.1	28.8	23.6	26.0
18	---	---	---	33.0	27.0	30.0	32.1	26.9	29.3	29.3	24.0	26.3
19	30.5	---	---	33.0	27.2	30.2	31.8	26.9	29.0	26.2	21.9	24.2
20	31.0	24.1	27.6	32.7	26.9	29.8	29.0	26.7	27.8	25.4	18.5	22.0
21	32.0	25.5	28.8	32.7	26.2	29.5	31.3	25.3	27.9	27.1	20.9	23.9
22	31.8	26.0	28.9	33.2	26.6	29.9	31.1	26.7	28.9	25.4	21.0	23.5
23	32.2	25.6	28.9	33.7	27.3	30.5	32.7	26.8	29.5	25.4	20.2	22.8
24	31.9	25.5	28.8	33.6	28.3	31.0	32.4	27.2	29.8	25.2	20.3	22.9
25	32.1	25.9	28.9	34.2	27.4	30.6	33.4	27.3	30.1	24.7	18.7	21.9
26	32.5	26.4	29.3	33.6	29.9	31.3	33.0	26.6	---	26.1	19.9	23.0
27	32.5	27.2	29.8	33.0	27.1	30.0	---	---	---	26.1	20.9	23.6
28	33.0	26.6	29.7	29.9	27.1	28.6	31.5	---	---	26.5	21.4	23.9
29	32.8	27.1	30.0	28.1	23.7	26.0	29.1	24.6	26.9	26.4	21.3	23.8
30	29.6	26.0	27.4	31.5	24.6	27.8	30.5	25.2	27.6	25.9	22.0	23.9
31	---	---	---	33.3	26.8	29.9	31.1	25.5	28.3	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	32.2	18.5	25.8

07311600 North Wichita River near Paducah, TX--Continued



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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, 0.71 mi upstream from Forrer Creek, 1.0 mi downstream from ranch road crossing, 12.0 mi upstream from confluence with North Wichita River and 19.0 mi northeast of Guthrie.

DRAINAGE AREA.--50.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1994 to Sept. 1996 (daily mean discharges less than 30 ft^3/s), Oct. 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,583.90 ft above NGVD of 1929. 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.

EXTREMES FOR PERIOD OF DAILY MEAN DISCHARGES BELOW BASE.--Maximum gage height, 16.02 ft, Aug. 2, 1995; minimum daily discharge, 2.7 ft^3/s, Aug. 23, 1996.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	6.1	5.2	4.8	4.4	4.2	4.3	5.6	4.1	4.0	2.3	3.1
2	e5.3	6.8	5.5	4.9	4.4	4.3	4.3	5.3	4.1	3.9	2.2	3.2
3	e5.6	6.5	5.2	4.7	4.4	4.2	4.3	5.3	4.0	4.2	2.4	3.2
4	e5.7	6.4	5.4	4.7	4.4	4.2	4.3	5.2	4.3	4.8	2.5	3.2
5	6.2	6.0	5.3	4.7	4.8	4.2	4.3	e5.2	19	4.0	2.7	3.2
6	5.7	4.1	5.2	4.6	4.8	4.2	4.4	e5.3	4.5	14	2.4	3.2
7	5.7	4.4	5.0	4.6	4.6	4.2	6.2	5.3	4.3	5.0	2.3	3.1
8	5.7	5.2	4.9	4.6	4.5	4.2	4.8	5.1	4.4	4.1	2.2	3.1
9	5.4	5.2	4.9	4.6	4.5	4.0	4.6	5.0	6.9	2.8	2.4	3.0
10	5.2	5.0	4.9	4.5	4.4	3.9	4.7	5.2	4.6	2.6	2.3	3.0
11	5.2	5.1	4.9	4.5	4.4	8.6	4.8	5.4	4.5	3.3	2.4	2.6
12	5.2	5.1	4.9	4.4	4.3	3.6	4.9	5.2	4.6	3.4	2.2	3.4
13	5.1	5.0	4.9	4.4	4.4	3.7	5.1	5.1	5.0	3.4	2.0	3.4
14	5.1	e21	5.2	4.4	4.4	3.7	5.1	e4.9	4.8	3.4	1.8	3.5
15	5.2	e73	5.5	e4.5	4.4	3.8	5.2	e4.9	5.5	3.5	1.9	3.6
16	5.4	6.0	5.6	4.7	4.4	3.8	5.3	5.0	7.9	3.5	1.9	3.6
17	5.3	26	5.5	4.4	4.4	3.9	5.7	4.9	4.5	3.5	1.9	3.6
18	5.1	14	5.3	4.4	4.4	4.1	7.7	4.8	4.6	3.6	2.0	3.4
19	5.1	5.8	5.1	4.4	4.4	6.7	5.4	4.7	4.6	3.5	2.0	e2.7
20	5.2	5.3	5.1	4.4	4.3	4.6	5.3	4.6	4.7	3.4	2.2	3.2
21	5.2	5.3	5.1	4.3	4.3	4.2	5.2	4.5	4.8	3.1	2.3	3.3
22	5.4	5.3	5.1	4.4	4.3	4.1	5.2	4.5	4.7	2.9	2.3	3.4
23	5.7	5.2	5.0	4.3	4.4	4.1	5.2	4.6	4.7	2.9	1.9	3.4
24	6.3	5.3	5.0	4.4	4.3	4.1	5.2	4.5	4.5	2.9	2.2	e3.4
25	5.9	5.1	4.9	4.4	4.3	4.0	6.1	4.4	4.6	2.9	2.2	e3.5
26	4.4	5.2	4.9	4.4	4.2	4.0	9.1	4.3	4.4	2.8	2.2	e6.0
27	4.0	5.3	4.8	4.3	4.2	4.1	6.0	4.8	4.3	2.8	2.5	3.1
28	5.5	6.6	4.8	4.4	4.2	4.1	5.7	4.4	4.2	2.7	3.1	3.6
29	5.6	5.8	4.8	4.4	---	4.3	5.7	4.1	4.1	7.2	11	3.8
30	5.7	3.9	4.8	5.4	---	9.9	5.7	4.1	4.0	2.5	3.4	3.8
31	5.7	---	4.8	4.6	---	5.2	---	4.1	---	2.4	3.3	---
TOTAL	167.2	275.0	157.5	140.5	123.2	140.2	159.8	150.3	155.2	119.0	80.4	101.6
MEAN	5.394	9.167	5.081	4.532	4.400	4.523	5.327	4.848	5.173	3.839	2.594	3.387
MAX	6.3	73	5.6	5.4	4.8	9.9	9.1	5.6	19	14	11	6.0
MIN	4.0	3.9	4.8	4.3	4.2	3.6	4.3	4.1	4.0	2.4	1.8	2.6
AC-FT	332	545	312	279	244	278	317	298	308	236	159	202

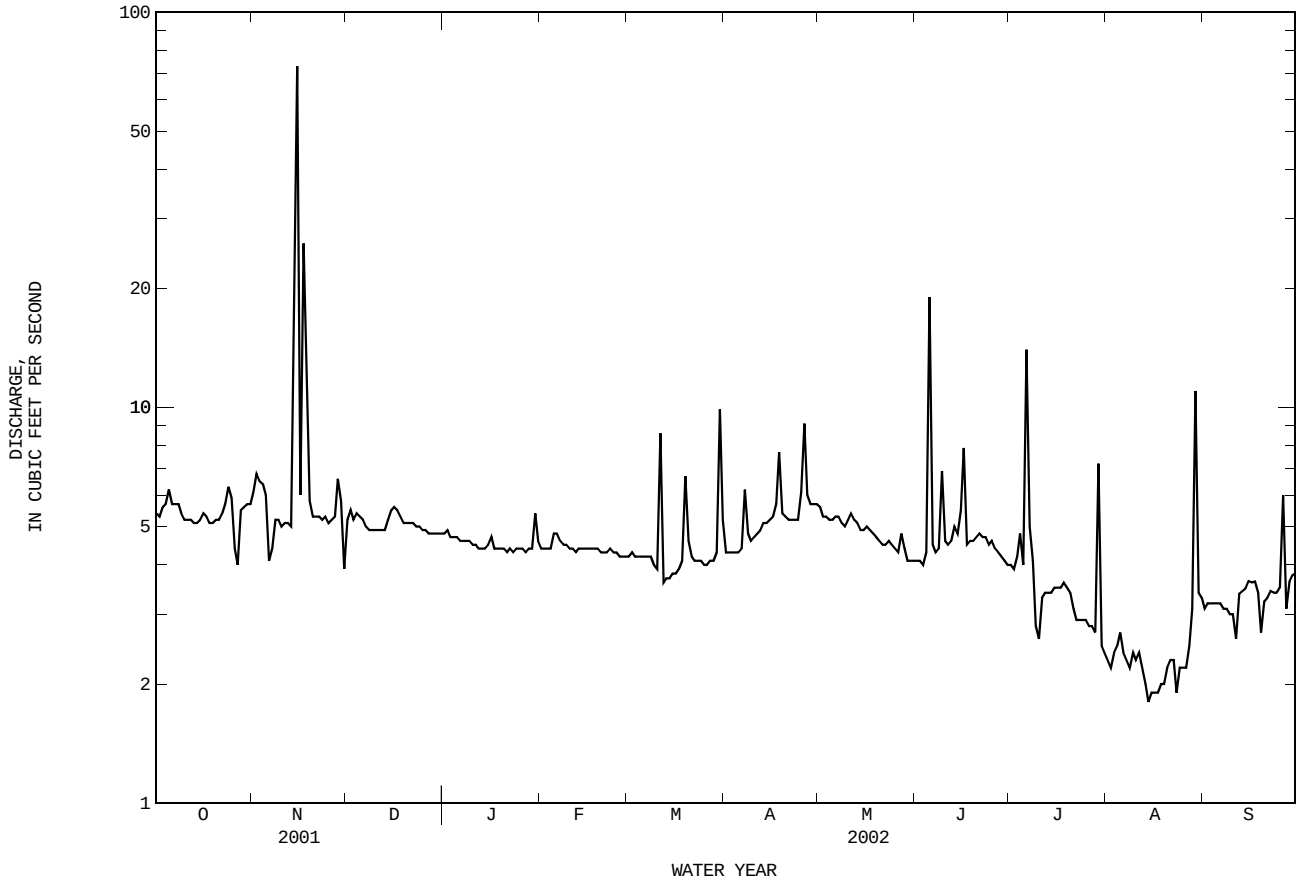
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

MEAN	6.544	7.132	6.328	6.319	6.020	9.201	6.612	6.765	5.973	5.696	5.581	5.037
MAX	9.37	10.1	8.22	7.54	7.58	24.1	7.77	11.5	7.59	8.25	8.39	6.45
(WY)	2001	2001	1998	2001	1997	2000	1999	1999	1997	1999	2001	1997
MIN	4.98	4.85	4.79	4.53	4.40	4.52	5.33	4.85	4.31	3.84	2.59	3.39
(WY)	2000	1999	1999	2002	2002	2002	2002	2002	1998	2002	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002	
ANNUAL TOTAL	2292.5		1769.9			
ANNUAL MEAN	6.281		4.849		6.440	
HIGHEST ANNUAL MEAN					7.75	2000
LOWEST ANNUAL MEAN					4.85	2002
HIGHEST DAILY MEAN	73	Nov 15	73	Nov 15	514	Mar 23 2000
LOWEST DAILY MEAN	3.0	Aug 28	1.8	Aug 14	1.8	Sep 19 1999
ANNUAL SEVEN-DAY MINIMUM	3.7	Aug 28	1.9	Aug 13	1.9	Aug 13 2002
MAXIMUM PEAK FLOW			393	Nov 14	1410	Mar 23 2000
MAXIMUM PEAK STAGE			10.74	Nov 14	13.34	Mar 23 2000
ANNUAL RUNOFF (AC-FT)	4550		3510		4670	
10 PERCENT EXCEEDS	7.6		5.7		7.9	
50 PERCENT EXCEEDS	5.2		4.5		5.5	
90 PERCENT EXCEEDS	4.4		2.9		4.1	

e Estimated

07311630 Middle Wichita River near Guthrie, TX--Continued



07311630 Middle Wichita River near Guthrie, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1993 to current year.
PESTICIDE DATA: Oct. 1996 to 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 2002. 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, 13,500 microsiemens/cm, Oct. 25, Feb. 20, 21, Aug. 12, 13; minimum, 429 microsiemens/cm, Nov. 14.
WATER TEMPERATURE: Maximum, 34.9°C, June 11; minimum, 0.2°C, Nov. 28.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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...	1255	6.7	12900	7.8	20.5	8.1	98	2600	2400	780	147	2140	18
NOV													
02...	1215	5.7	13300	7.8	18.2	9.0	106	2500	2400	776	147	2160	19
DEC													
14...	1220	5.1	12600	8.0	7.8	11.3	106	2500	2300	747	143	1940	17
JAN													
15...	1220	4.5	13000	7.9	8.2	10.8	102	2500	2300	761	143	2090	18
FEB													
19...	1240	4.6	13100	7.9	13.9	9.8	106	2500	2300	761	146	2090	18
MAR													
25...	1120	3.8	13000	7.8	14.2	9.3	101	2600	2500	790	154	2180	19
APR													
24...	1155	5.3	12800	7.7	24.0	8.8	117	2500	2400	771	146	2050	18
MAY													
01...	1155	5.4	12700	7.7	21.9	8.1	104	2500	2300	753	142	2030	18
JUN													
11...	1535	4.6	12300	8.0	34.3	10.4	154	2400	2300	728	141	1990	18
JUL													
23...	1120	3.0	13100	7.6	29.2	7.4	106	2600	2400	777	148	2190	19
AUG													
13...	1120	2.3	13200	7.8	26.4	9.4	123	2400	2300	748	141	2110	19
SEP													
11...	1030	2.7	13100	7.8	25.0	10.9	138	2500	2400	776	141	2060	18

07311630 Middle Wichita River near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
05...	12.3	140	2350	3310	.5	8.8	8830	<10	.20	.010	.21	.22	.47
NOV													
02...	13.0	149	2360	3380	.5	9.5	8930	16	.31	.010	.32	.21	.60
DEC													
14...	10.4	173	2340	3230	.5	12.2	8540	<10	.69	.009	.70	.30	.80
JAN													
15...	11.4	175	2310	3360	.6	11.7	8790	14	.62	.010	.63	.23	.78
FEB													
19...	11.4	162	2370	3360	.6	9.9	8840	<10	.54	.008	.54	.16	.71
MAR													
25...	10.8	155	2380	3400	.5	8.0	9020	12	.30	.011	.31	.27	.59
APR													
24...	11.2	149	2290	3210	.5	7.9	8570	39	.14	.026	.17	.29	.54
MAY													
01...	11.8	160	2310	3170	.5	8.5	8520	27	.20	.011	.21	.27	.61
JUN													
11...	11.3	126	2260	3160	.7	7.7	8370	50	.09	.009	.09	.18	.66
JUL													
23...	12.3	128	2360	3360	.6	8.2	8920	<10	.07	.009	.08	.32	.31
AUG													
13...	12.6	136	2360	3470	.5	8.6	8940	13	.10	.008	.11	.41	.49
SEP													
11...	11.8	131	2290	3330	.5	9.2	8690	22	.16	.010	.17	.29	.54

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)	ORTHO-PHOSPHATE, 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													
05...	.04	.25	<.06	<.06	<.02	<4	2.3	20	20	<.21	<.20	1.8	2.0
NOV													
02...	.07	.28	<.06	<.06	<.02	E2	E.9	18	17	<.21	<.20	<4.0	E2.2
DEC													
14...	--	.10	<.06	<.06	<.02	E3n	E.8n	17	17	E.09n	<.20	<1.6	<1.6
JAN													
15...	--	.15	<.06	<.06	<.02	E2	2.1	17	18	<.21	<.20	<1.6	<1.6
FEB													
19...	.01	.17	<.06	<.06	<.02	E1	.7n	17	<1	.04	<.04	.9n	2.2
MAR													
25...	.01	.28	<.06	<.06	<.02	<6	2.1	23	23	<.21	<.20	E.8	--r
APR													
24...	.07	.37	E.03	<.06	<.02	<4	2.5	27	26	<.18	<.20	<.8	<.8
MAY													
01...	.13	.40	<.06	<.06	<.02	E2n	1.4	26	21	E.09n	<.20	<1.6	<1.6
JUN													
11...	.39	.56	E.04	<.06	<.02	5	2.5	34	27	<.18	<.20	<1.6	<1.6
JUL													
23...	--	.23	<.06	<.06	<.02	E2n	3.0	23	22	<.18	<.20	<.8	<1.6
AUG													
13...	--	.38	<.06	<.06	<.02	4	1.1	23	23	<.18	<.20	<1.6	<1.6
SEP													
11...	.09	.38	E.03	<.06	<.02	<4	1.3	23	23	E.04n	<.20	<1.6	<1.6

07311630 Middle Wichita River near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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...	8.6	6.6	<40	<100	<6	<.50	14	13.0	<.01	<.01	11	1.16	11.3
NOV													
02...	11.1	6.6	<40	<100	<6	<.50	10	9.4	<.01	<.01	19	8.61	14.1
DEC													
14...	9.2	8.7	<10	<100	<5	<.40	6	5.9	<.01	<.01	13	11.1	13.2
JAN													
15...	11.1	5.6	<40	<150	<6	E.40	7	7.3	<.01	<.01	12	10.9	12.4
FEB													
19...	9.9	.3	<10	<10	<1	.29n	49	2.9	<.01	<.01	3	<.06	12.6
MAR													
25...	9.6	11.7	<120	<100	<6	<.50	18	18.6	E.01n	<.01	23	5.36	11.4
APR													
24...	8.0	9.6	150	<100	<5	<.40	31	28.2	E.01n	<.01	23	6.62	14.3
MAY													
01...	35.1	9.6	100	<100	<5	<.40	29	22.9	<.01	<.01	40	<.30	13.2
JUN													
11...	14.0	12.4	230	<100	<5	E.23	30	17.7	<.01	<.01	15	<.30	12.1
JUL													
23...	10.5	8.5	<40	<100	<5	<.40	26	22.3	.01	E.01n	16	7.96	10.5
AUG													
13...	11.2	10.3	<40	<100	<5	.40	21	16.5	<.01	<.01	18	<.30	12.7
SEP													
11...	17.1	7.6	<40	<100	<2	<.50	20	16.5	<.01	<.01	38	32.0	11.3

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...	17.1	<.30	<6	8	7	--	--	--	--	--	--	--	--
NOV													
02...	14.3	<.30	<6	7	6	--	--	--	--	--	--	--	--
DEC													
14...	15.9	<.25	<5	8	8	--	--	--	--	--	--	--	--
JAN													
15...	14.0	<.30	<6	8	<6	--	--	--	--	--	--	--	--
FEB													
19...	12.7	<.05	<1	7	<1	--	--	--	--	--	--	--	--
MAR													
25...	18.5	<.30	<6	7	10	--	--	--	--	--	--	--	--
APR													
24...	12.5	<.25	<5	16	8	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1
MAY													
01...	12.6	<.25	<5	16	7	--	--	--	--	--	--	--	--
JUN													
11...	13.6	<.25	<5	13	9	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1
JUL													
23...	16.2	<.25	<5	8	5	--	--	--	--	--	--	--	--
AUG													
13...	10.5	<.25	<5	7	7	--	--	--	--	--	--	--	--
SEP													
11...	11.7	<.10	<6	11	8	--	--	--	--	--	--	--	--

07311630 Middle Wichita River near Guthrie, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	<.02	<.6	<.06	<.2	<.03	<.8	<.03	36.2	<2	<.1	<.03	107	<.04
MAY													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
11...	<.02	<.6	<.06	<.2	<.03	<.8	<.03	45.4	<2	<.1	<.03	73.2	<.04
JUL													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
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							
05...	--	--	--	--	--	--	--
NOV							
02...	--	--	--	--	--	--	--
DEC							
14...	--	--	--	--	--	--	--
JAN							
15...	--	--	--	--	--	--	--
FEB							
19...	--	--	--	--	--	--	--
MAR							
25...	--	--	--	--	--	--	--
APR							
24...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
01...	--	--	--	--	--	--	--
JUN							
11...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL							
23...	--	--	--	--	--	--	--
AUG							
13...	--	--	--	--	--	--	--
SEP							
11...	--	--	--	--	--	--	--

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

Value qualifier codes used in this report:
n -- Below the NDV

Null value qualifier codes used in this report:
r -- Sample ruined in preparation

07311630 Middle Wichita River near Guthrie, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2001 TO SEPTEMBER 2002

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.	2001	167.2	12820	8690	3920	3300	1470	2300	1040	2500
NOV.	2001	275	8890	6520	4840	2200	1620	2000	1480	2100
DEC.	2001	157.5	12030	8330	3540	3000	1290	2300	981	2500
JAN.	2002	140.5	12210	8420	3190	3100	1170	2300	876	2500
FEB.	2002	123.2	12440	8520	2830	3200	1050	2300	769	2500
MAR.	2002	140.2	12020	8310	3150	3000	1150	2300	868	2500
APR.	2002	159.8	10980	7790	3360	2700	1180	2200	970	2400
MAY	2002	150.3	11100	7870	3200	2800	1120	2300	923	2400
JUNE	2002	155.2	9840	7160	3000	2400	1020	2200	902	2300
JULY	2002	119	10520	7540	2420	2600	840	2200	713	2400
AUG.	2002	80.4	12340	8470	1840	3100	678	2300	501	2500
SEPT	2002	101.6	12590	8590	2360	3200	877	2300	635	2500
TOTAL		1769.9	**	**	37650	**	13480	**	10660	**
WTD.AVG.		4.8	11240	7880	**	2800	**	2200	**	2400

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10600	10500	10500	13400	13400	13400	11500	10800	11300	11900	11500	11800
2	---	---	e10900	13400	12700	13200	11500	11300	11400	12000	11700	11900
3	---	---	e11500	12700	12600	12600	11700	11400	11600	12100	12000	12000
4	---	---	e12300	12600	12300	12500	11900	11600	11700	12200	12000	12200
5	---	---	e12900	12600	12300	12400	12000	11800	11900	12300	10800	11900
6	---	---	e12900	12500	12200	12400	12200	12000	12100	12400	12200	12300
7	---	---	e13100	12500	12300	12300	12400	12100	12200	12600	12400	12500
8	---	---	e12900	12300	12300	12300	12400	12100	12200	12700	12300	12600
9	---	---	e12900	12300	12200	12300	12500	12200	12300	12800	12400	12700
10	12700	12500	12600	12300	12300	12300	12500	12300	12400	12900	11300	12800
11	12600	12400	12500	12300	12100	12200	12600	12300	12400	13000	12900	12900
12	12700	12500	12600	12200	12000	12100	12700	12400	12500	13100	13000	13000
13	12700	12600	12700	12100	12000	12000	12800	12500	12700	13000	12900	13000
14	12800	12700	12800	---	429	e7000	12800	12700	12800	13200	13000	13100
15	13000	12800	12900	---	---	e6100	12700	12300	12500	---	---	e13000
16	13100	12900	13000	9280	7580	8470	12300	12100	12200	12700	12500	12700
17	13200	13000	13100	9710	2050	6080	12100	12000	12000	12500	12200	12300
18	13200	13100	13100	5910	3960	4750	12100	11600	12000	12300	12200	12200
19	13200	13100	13100	9030	5910	7670	12300	11700	12000	12200	11900	12000
20	13200	13000	13100	10500	9030	9880	12300	11700	12100	11900	11900	11900
21	13200	13100	13100	11000	10500	10700	12200	12000	12100	12000	11800	11900
22	13100	13100	13100	11100	10800	11000	12100	11900	12000	12100	11900	11900
23	13200	13100	13100	11200	11000	11100	12000	11900	11900	12100	12000	12000
24	13400	13200	13200	11400	11100	11300	12000	11600	11900	12000	11700	11900
25	13500	13300	13400	11600	11300	11500	13100	11900	12100	12000	11800	11900
26	---	13300	13500	11600	11400	11500	12800	11700	12400	12100	11900	12000
27	---	13200	13500	11800	11500	11600	12300	11700	11900	12000	11800	11900
28	13300	13200	13200	11600	10900	11100	11700	10800	11400	12100	12000	12000
29	13400	13200	13300	11400	11000	11200	11700	10700	11300	12200	12100	12200
30	13400	13300	13300	---	---	e11200	11900	11600	11700	12200	10500	11700
31	13400	13300	13400	---	---	---	11900	11800	11900	10800	10400	10600
MONTH	---	---	12800	---	---	10800	13100	10700	12000	---	---	12200

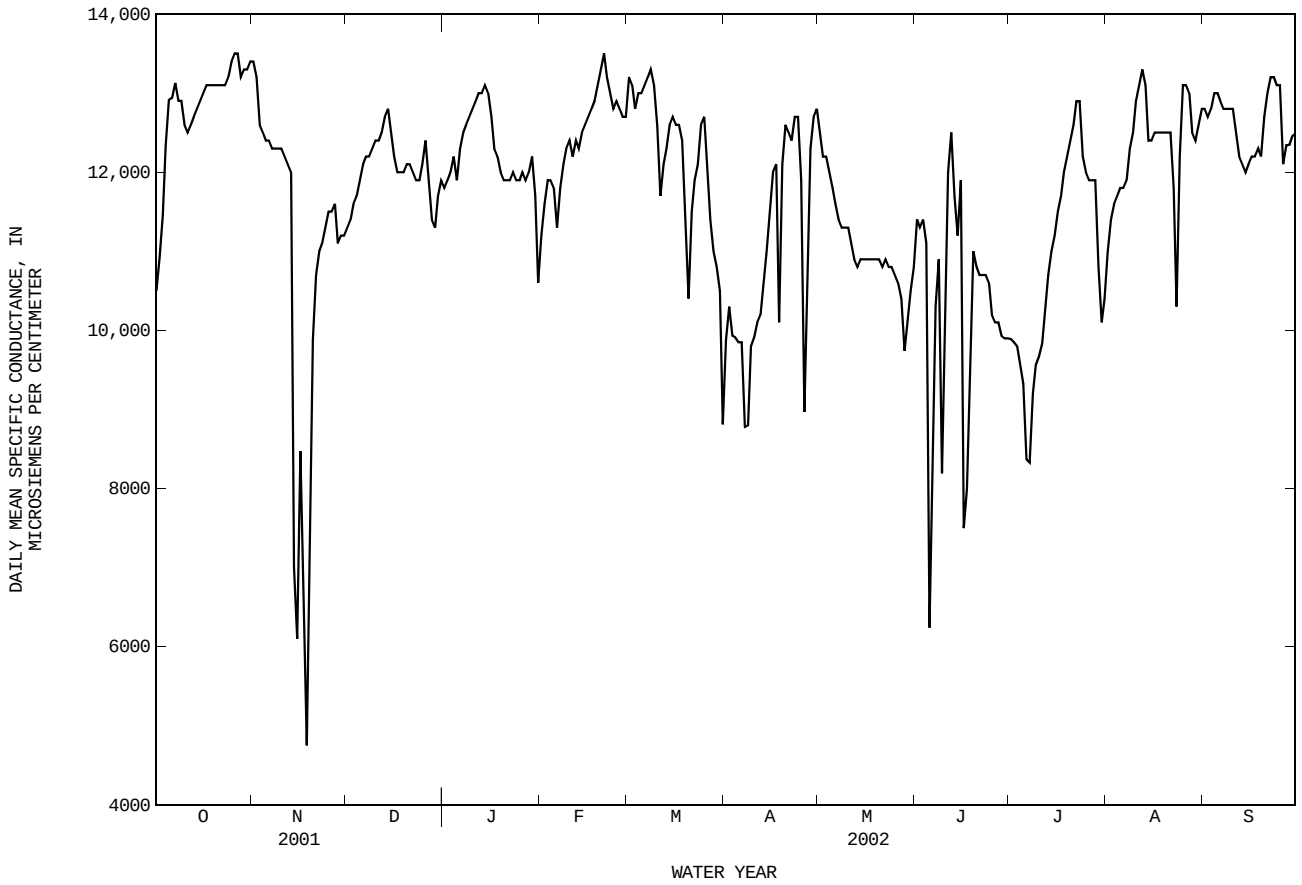
07311630 Middle Wichita River near Guthrie, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11600	10500	11200	13300	12800	13200	10400	9570	9880	12900	12000	12500
2	11900	11300	11600	13300	12700	13100	10400	10200	10300	12300	12000	12200
3	12000	11800	11900	13100	12500	12800	10200	9710	9930	12400	12100	12200
4	12000	11800	11900	13200	12800	13000	10000	9800	9910	12100	11900	12000
5	12000	11500	11800	13100	12800	13000	9990	9790	9850	---	---	e11800
6	11500	10900	11300	13200	12900	13100	9920	9750	9850	---	---	e11600
7	11900	11500	11800	13300	13100	13200	9750	8030	8780	11400	11000	11400
8	12200	11900	12100	13400	13200	13300	10000	7560	8800	11300	11200	11300
9	12500	12200	12300	13300	12800	13100	10100	9540	9800	11300	11200	11300
10	12400	12300	12400	12800	12500	12600	10100	9700	9910	11300	11200	11300
11	12400	12000	12200	12600	8320	11700	10300	9860	10100	11200	10900	11100
12	12600	12000	12400	12300	12000	12100	10600	10100	10200	11000	10900	10900
13	12400	12300	12300	12400	12100	12300	10700	10400	10600	10900	10800	10800
14	12700	12300	12500	12700	12400	12600	11400	10600	11000	---	---	e10900
15	12800	12400	12600	12700	12600	12700	12000	11200	11500	10900	10800	10900
16	12800	12600	12700	12700	12600	12600	12200	11700	12000	11100	10800	10900
17	12900	12600	12800	12600	12500	12600	12600	10800	12100	11000	10800	10900
18	13100	12800	12900	12500	12300	12400	11500	8590	10100	11000	10800	10900
19	13200	12700	13100	12400	10400	11400	12500	10400	12100	11000	10800	10900
20	13500	13200	13300	11000	9760	10400	12700	12500	12600	11000	10800	10900
21	13500	13300	13500	11900	10800	11500	12600	12300	12500	10900	10800	10800
22	13400	12800	13200	---	---	e11900	12600	12200	12400	11000	10800	10900
23	13100	12700	13000	---	---	e12100	13000	12400	12700	10800	10700	10800
24	13000	12500	12800	---	---	e12600	12900	12500	12700	10800	10700	10800
25	12900	12700	12900	---	---	e12700	12700	9340	11900	10700	10600	10700
26	12900	12600	12800	12500	11700	12100	10500	7600	8970	10700	10400	10600
27	12900	12500	12700	11700	11100	11400	11900	9740	11100	10500	10200	10400
28	12900	12600	12700	11100	10900	11000	12700	11900	12300	10200	9490	9740
29	---	---	---	10900	10600	10800	12800	12600	12700	10400	9680	10100
30	---	---	---	---	---	e10500	12800	12700	12800	10600	10400	10500
31	---	---	---	---	---	e8810	---	---	---	11300	10500	10800
MONTH	13500	10500	12500	---	---	12100	13000	7560	11000	---	---	11100

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11600	11200	11400	9900	9800	9890	11500	10600	11000	13100	12300	12800
2	11500	11200	11300	9900	9800	9850	11500	11300	11400	13000	12300	12700
3	11500	11300	11400	9800	9700	9800	11700	11500	11600	13000	12600	12800
4	11300	9500	11100	9800	9400	9580	11800	11500	11700	13200	12800	13000
5	9500	5230	6240	9400	9300	9330	12100	11300	11800	13300	12700	13000
6	9730	7460	8730	9400	7510	8370	12200	11500	11800	13200	12500	12900
7	10700	9680	10300	8910	7770	8330	12200	11700	11900	13200	12500	12800
8	11000	10700	10900	9520	8910	9200	12700	11900	12300	13000	12600	12800
9	11000	6020	8190	9700	9480	9560	12800	12300	12500	12900	12700	12800
10	11300	9180	10200	9810	9520	9670	13000	12700	12900	12900	12600	12800
11	12200	11300	12000	9940	9680	9830	13300	12900	13100	12900	12000	12500
12	13400	12200	12500	10500	9940	10300	13500	13000	13300	12400	12000	12200
13	12200	8930	11700	10800	10500	10700	13500	12200	13100	12300	12000	12100
14	12200	8930	11200	11100	10800	11000	12700	12200	12400	12100	11800	12000
15	12200	6920	11900	11400	11100	11200	12500	12300	12400	12200	11900	12100
16	7920	6920	7500	11600	11300	11500	12600	12400	12500	12300	12000	12200
17	8920	6920	8000	11800	11500	11700	12700	12300	12500	12400	12000	12200
18	11000	8920	9820	12100	11800	12000	12600	12400	12500	12400	11600	12300
19	11000	9920	11000	12300	12100	12200	12700	12300	12500	12700	11600	12200
20	11000	10700	10800	12500	12200	12400	12700	12400	12500	12800	12500	12700
21	10700	10700	10700	12800	12500	12600	12600	12300	12500	13100	12800	13000
22	10800	10600	10700	13000	12700	12900	12800	10000	11800	13200	13000	13200
23	10800	10600	10700	13100	12500	12900	11100	9260	10300	---	---	e13200
24	10800	10300	10600	12500	12000	12200	13000	11100	12200	---	---	e13100
25	10500	10000	10200	12200	11700	12000	13100	13000	13100	---	---	e13100
26	10200	10000	10100	12100	11700	11900	13200	13100	13100	13400	12100	12100
27	10200	10000	10100	12100	11700	11900	13200	12600	13000	12500	12100	12300
28	10100	9810	9930	12000	11800	11900	12600	12400	12500	12400	12300	12300
29	9910	9810	9900	12000	9930	10800	12900	11900	12400	12500	12400	12500
30	9900	9900	9900	10600	9630	10100	13300	12000	12600	12500	12400	12500
31	---	---	---	10700	10100	10400	13100	12400	12800	---	---	---
MONTH	13400	5230	10300	13100	7510	10800	13500	9260	12300	---	---	12600

e Estimated



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.4	18.7	19.9	18.8	16.3	17.4	9.2	2.3	8.4	5.4	3.7	4.8
2	19.0	18.4	18.7	18.7	17.7	18.2	10.7	8.1	9.4	5.7	4.6	5.4
3	---	---	---	20.1	17.0	18.6	14.9	10.7	12.7	5.1	3.4	4.2
4	---	---	---	21.0	17.3	19.2	16.1	14.9	15.5	5.3	3.3	4.7
5	---	---	---	20.5	16.5	18.3	16.5	15.5	16.1	8.0	5.1	6.8
6	---	---	---	21.2	14.5	17.2	15.5	11.6	13.9	8.1	6.2	7.4
7	---	---	---	18.5	13.2	16.6	11.6	10.2	11.1	7.7	5.6	6.5
8	---	---	---	16.8	14.5	16.1	10.6	8.7	10.0	8.8	5.6	7.4
9	21.2	---	---	15.0	13.1	13.9	8.8	6.3	8.1	10.9	8.4	9.8
10	21.1	19.2	20.4	15.0	12.2	13.5	8.0	6.3	7.3	11.3	9.9	10.8
11	19.5	17.8	18.5	16.4	13.5	14.9	8.8	7.4	8.2	10.3	8.6	9.5
12	18.2	16.0	17.5	17.0	15.7	16.4	11.4	8.8	10.6	9.2	7.3	8.4
13	16.2	14.7	15.2	17.5	16.1	17.0	11.2	8.4	10.3	8.9	7.3	8.1
14	16.9	14.2	15.1	17.7	---	---	8.4	6.6	7.6	9.3	7.4	8.4
15	16.4	14.6	15.6	---	---	---	9.1	6.9	8.0	---	---	---
16	15.8	12.8	14.3	19.3	15.7	17.1	10.7	9.1	10.1	9.6	---	---
17	15.0	12.6	13.6	17.3	15.3	16.4	10.7	8.7	9.9	9.4	7.7	8.9
18	16.3	13.7	14.9	19.8	15.6	17.3	10.1	8.6	9.2	7.8	5.9	7.1
19	16.9	14.8	16.0	17.2	9.8	13.6	9.9	7.8	8.9	7.2	5.3	6.1
20	18.2	15.8	16.7	13.5	7.0	10.0	8.9	7.5	8.1	8.2	5.8	6.9
21	19.5	16.8	18.1	14.9	8.1	11.2	9.7	7.7	8.7	8.3	6.2	7.0
22	20.4	18.9	19.6	15.4	10.3	12.7	10.6	9.1	9.9	9.6	6.2	8.2
23	20.3	18.4	19.4	14.9	11.4	13.1	9.2	6.5	8.5	11.3	9.4	10.6
24	18.7	16.6	17.5	15.1	10.0	11.9	6.9	5.1	6.3	10.6	8.0	9.8
25	16.8	11.0	14.1	14.4	8.4	11.4	6.5	4.7	5.5	8.6	5.8	7.4
26	16.7	9.7	13.0	12.5	9.8	11.7	7.0	4.7	5.7	8.5	5.6	6.9
27	16.9	10.7	14.2	9.8	3.2	5.9	6.1	4.9	5.6	9.3	7.3	8.5
28	16.8	14.6	15.6	3.2	0.2	0.9	6.4	4.8	5.5	11.8	8.3	10.2
29	17.8	15.5	16.4	8.5	1.6	4.9	6.3	4.9	5.5	13.7	11.8	12.8
30	17.8	16.1	16.8	12.9	2.7	7.0	4.9	3.3	4.4	12.6	7.2	10.7
31	17.8	16.0	16.8	---	---	---	4.0	3.1	3.6	7.5	5.4	6.6
MONTH	---	---	---	---	---	---	16.50	2.30	8.79	---	---	---

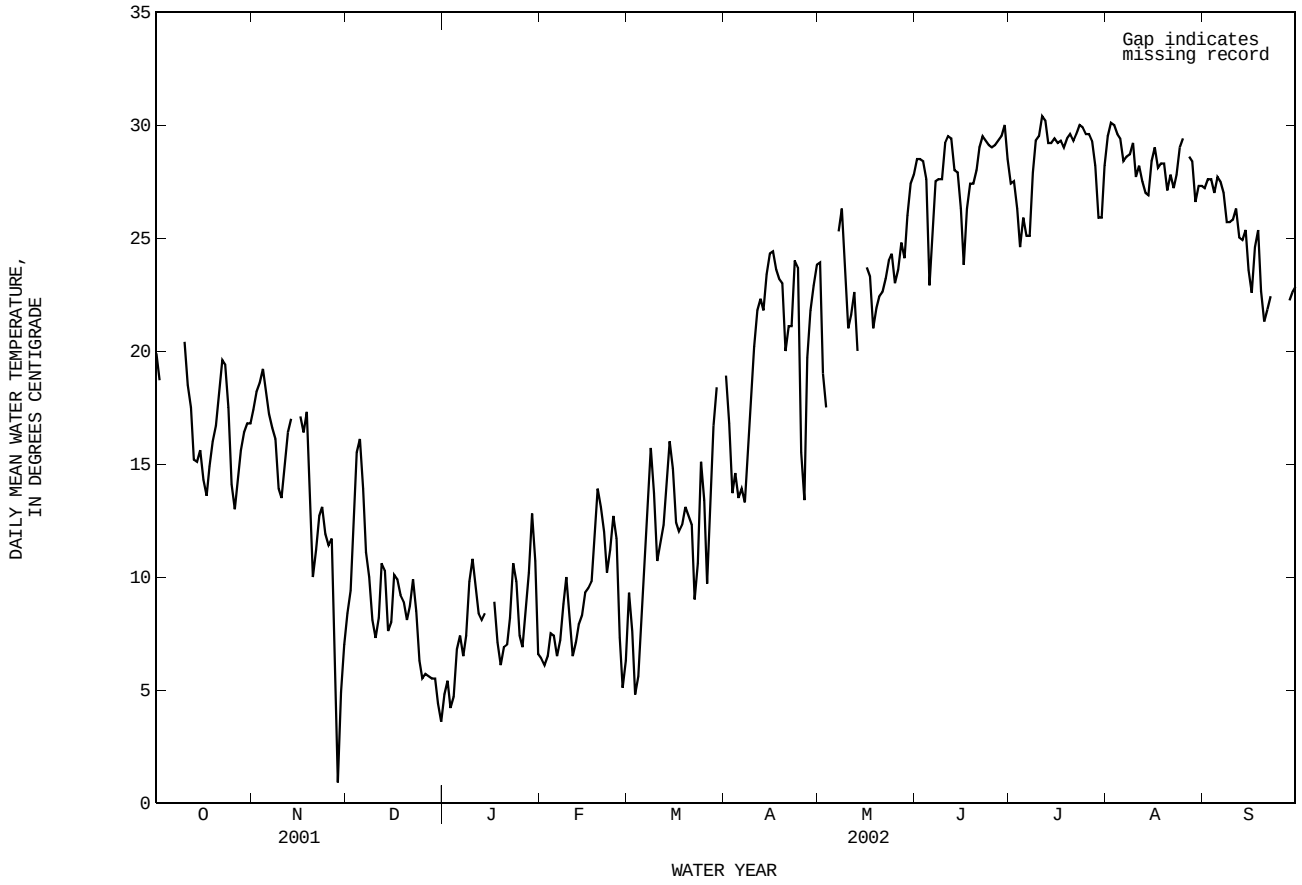
07311630 Middle Wichita River near Guthrie, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.5	5.3	6.4	11.4	6.5	9.3	25.5	13.8	18.9	28.5	19.5	23.9
2	6.8	5.3	6.1	8.8	5.0	7.6	19.4	13.2	16.8	23.4	16.5	19.0
3	7.3	5.5	6.5	6.6	3.7	4.8	19.0	9.1	13.7	21.3	13.2	17.5
4	8.1	7.0	7.5	7.8	3.8	5.6	20.9	9.4	14.6	---	19.7	---
5	7.8	6.8	7.4	9.9	6.3	8.1	15.1	11.3	13.5	---	---	---
6	7.0	6.1	6.5	12.5	8.2	10.6	14.9	13.2	13.9	---	---	---
7	9.2	6.0	7.2	14.3	11.6	12.9	14.2	12.6	13.3	27.1	24.0	25.3
8	10.3	7.0	8.8	17.0	14.1	15.7	19.9	12.7	15.5	27.4	25.4	26.3
9	11.1	8.7	10.0	15.8	11.6	13.7	24.9	12.6	18.0	25.4	22.2	23.7
10	9.2	6.5	8.3	12.3	9.3	10.7	26.8	14.8	20.2	22.2	20.1	21.0
11	8.0	5.5	6.5	15.7	9.4	11.5	28.2	16.9	21.8	23.1	20.2	21.6
12	8.5	5.3	7.1	14.5	10.9	12.3	25.8	19.2	22.3	23.3	20.8	22.6
13	9.3	6.6	7.9	15.7	12.5	13.9	25.9	19.0	21.8	20.8	19.0	20.0
14	9.6	7.1	8.3	17.2	14.7	16.0	30.1	18.2	23.4	---	19.5	---
15	10.6	8.1	9.3	15.9	13.3	14.8	30.0	19.8	24.3	24.1	---	---
16	11.1	8.6	9.5	13.3	11.5	12.4	29.0	21.7	24.4	25.2	22.5	23.7
17	10.9	8.6	9.8	12.7	11.4	12.0	29.7	18.5	23.6	24.4	21.7	23.3
18	13.2	10.1	11.5	12.7	11.6	12.3	26.6	20.9	23.2	21.8	19.7	21.0
19	14.7	13.2	13.9	13.5	12.6	13.1	25.9	21.6	23.0	24.0	20.7	21.9
20	14.4	12.1	13.1	13.8	11.7	12.7	22.0	19.1	20.0	24.2	21.2	22.4
21	12.6	10.2	12.0	13.8	9.8	12.3	26.6	16.5	21.1	24.4	21.6	22.6
22	11.8	9.1	10.2	10.3	8.0	9.0	25.3	16.5	21.1	25.3	21.7	23.2
23	12.6	9.4	11.2	12.9	7.9	10.6	29.0	19.7	24.0	25.3	23.3	24.0
24	13.9	11.8	12.7	16.9	12.8	15.1	27.9	20.5	23.7	26.3	23.1	24.3
25	13.0	9.2	11.7	15.2	10.1	13.4	20.5	12.0	15.5	24.1	22.0	23.0
26	9.2	4.9	7.3	11.9	8.1	9.7	14.6	12.1	13.4	26.2	21.5	23.6
27	6.8	3.9	5.1	15.4	10.2	12.8	26.2	14.6	19.7	25.8	23.3	24.8
28	8.0	4.1	6.3	18.8	15.2	16.7	28.2	16.7	21.8	26.3	22.6	24.1
29	---	---	---	19.4	16.7	18.4	28.2	18.4	22.9	28.2	24.5	26.0
30	---	---	---	---	---	---	28.1	19.8	23.8	28.2	26.0	27.4
31	---	---	---	---	---	---	---	---	---	28.9	26.6	27.8
MONTH	14.70	3.90	8.86	---	---	---	30.10	9.10	19.77	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.4	27.1	28.5	28.6	26.5	27.4	31.0	28.3	29.5	32.8	23.0	27.2
2	30.1	27.2	28.5	28.3	27.0	27.5	31.5	29.1	30.1	33.1	23.4	27.6
3	30.1	27.1	28.4	27.0	25.1	26.3	31.0	29.1	30.0	32.8	23.4	27.6
4	29.0	24.0	27.6	25.1	24.1	24.6	30.9	28.2	29.6	31.0	23.4	27.0
5	26.0	20.7	22.9	27.3	24.8	25.9	32.2	26.1	29.4	33.4	23.5	27.7
6	31.9	20.9	25.5	27.3	23.6	25.1	32.7	24.4	28.4	32.8	23.4	27.5
7	33.8	22.6	27.5	28.6	22.9	25.1	34.3	24.1	28.6	32.3	23.1	27.0
8	31.3	24.6	27.6	33.4	23.8	27.9	34.0	24.3	28.7	28.6	24.0	25.7
9	32.3	24.3	27.6	33.6	25.4	29.3	34.4	25.3	29.2	28.8	23.7	25.7
10	34.0	25.6	29.2	31.3	26.2	29.5	32.6	24.1	27.7	28.6	23.8	25.8
11	34.9	25.7	29.5	31.5	29.6	30.4	33.3	24.6	28.2	31.2	22.4	26.3
12	34.8	25.6	29.4	31.0	29.5	30.2	33.1	23.5	27.5	27.91	21.78	25.02
13	33.3	25.1	28.0	29.6	28.8	29.2	31.9	24.2	27.0	28.98	21.63	24.91
14	33.2	24.6	27.9	30.0	28.6	29.2	32.2	22.9	26.9	30.00	22.01	25.35
15	31.8	22.0	26.3	30.4	28.6	29.4	33.9	24.1	28.4	27.08	21.63	23.58
16	26.4	21.7	23.8	29.6	28.6	29.2	34.4	25.2	29.0	28.21	17.79	22.57
17	28.7	24.0	26.3	30.0	28.7	29.3	32.3	24.6	28.1	30.22	20.45	24.60
18	28.8	26.2	27.4	29.9	28.3	29.0	34.0	24.2	28.3	31.33	21.80	25.34
19	28.7	26.5	27.4	30.7	28.6	29.4	33.4	24.7	28.3	24.23	20.95	22.66
20	29.3	27.0	28.0	30.6	28.9	29.6	30.1	24.7	27.1	22.87	20.01	21.30
21	30.1	28.0	29.0	30.4	28.6	29.3	33.4	23.9	27.8	23.92	20.20	21.84
22	30.6	28.7	29.5	31.0	28.6	29.6	30.3	24.8	27.2	23.50	21.25	22.42
23	30.5	28.3	29.3	31.4	29.2	30.0	30.5	25.6	27.8	---	---	---
24	30.0	28.1	29.1	31.0	29.0	29.9	30.8	27.2	29.0	---	---	---
25	30.1	27.9	29.0	31.3	28.6	29.6	30.9	28.3	29.4	---	---	---
26	29.6	28.4	29.1	31.1	28.6	29.6	31.4	---	---	---	---	---
27	30.2	28.7	29.3	30.8	28.4	29.3	30.2	27.9	28.6	23.63	---	---
28	30.3	28.7	29.5	28.8	26.9	28.2	29.5	27.8	28.4	23.70	21.03	22.23
29	31.2	28.9	30.0	30.5	23.3	25.9	29.8	23.2	26.6	24.22	21.46	22.59
30	29.4	27.3	28.5	28.0	24.3	25.9	32.8	23.3	27.3	24.11	22.02	22.83
31	---	---	---	30.0	26.8	28.2	33.0	22.8	27.3	---	---	---
MONTH	34.90	20.70	27.99	33.60	22.90	28.35	34.40	---	---	---	---	---

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 NGVD of 1929. Prior to Jan. 2, 1960, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	9.8	27	15	20	14	25	18	8.6	6.5	25	9.0
2	10	9.9	23	15	15	e13	15	16	6.7	7.6	28	6.8
3	8.9	9.7	20	15	14	e12	12	17	5.7	e52	26	5.6
4	8.1	9.2	21	16	13	e13	12	16	24	e100	24	5.1
5	7.3	14	21	20	17	12	13	15	163	e140	23	5.0
6	7.8	13	19	19	27	12	14	14	73	e200	23	5.2
7	7.9	11	18	17	27	11	223	16	45	e482	25	5.1
8	7.1	11	18	16	19	12	91	14	32	441	25	5.4
9	7.6	9.1	17	15	16	10	34	12	38	129	22	5.7
10	9.2	7.9	17	14	13	10	21	13	48	79	20	6.8
11	11	11	17	14	11	11	17	14	24	50	21	16
12	9.4	12	19	14	11	11	15	16	16	37	21	12
13	8.0	13	18	14	11	12	15	17	34	33	19	7.4
14	7.7	44	17	14	12	9.4	16	10	69	31	22	7.8
15	7.4	217	17	14	11	8.2	13	6.6	27	39	16	7.9
16	7.6	132	17	14	10	9.3	9.8	6.4	173	30	14	7.3
17	8.5	851	19	14	11	11	8.2	6.4	79	24	13	6.6
18	8.3	1090	18	14	12	14	9.2	6.6	34	22	11	5.9
19	7.8	182	15	14	13	91	14	6.5	22	20	12	59
20	8.5	74	15	13	12	51	15	6.1	17	18	8.5	18
21	8.9	45	15	13	9.4	27	12	5.5	17	16	6.4	11
22	8.7	35	15	13	9.8	20	10	5.6	15	15	7.2	5.9
23	8.3	30	14	13	11	18	11	5.4	13	14	8.4	4.4
24	7.3	27	13	12	10	18	9.6	14	11	14	7.6	5.1
25	6.7	24	13	14	9.4	14	32	32	8.6	16	9.6	5.2
26	7.8	22	13	15	8.4	14	150	12	10	14	7.9	5.7
27	9.2	21	15	16	9.6	14	73	16	9.1	12	5.2	4.8
28	10	27	15	17	11	14	35	34	8.5	10	4.3	3.9
29	8.2	31	15	18	---	12	23	20	8.2	635	25	8.4
30	7.1	29	14	21	---	21	20	12	6.9	134	19	5.0
31	9.8	---	15	20	---	32	---	10	---	43	16	---
TOTAL	261.1	3021.6	530	473	373.6	550.9	967.8	413.1	1046.3	2864.1	515.1	267.0
MEAN	8.423	100.7	17.10	15.26	13.34	17.77	32.26	13.33	34.88	92.39	16.62	8.900
MAX	11	1090	27	21	27	91	223	34	173	635	28	59
MIN	6.7	7.9	13	12	8.4	8.2	8.2	5.4	5.7	6.5	4.3	3.9
AC-FT	518	5990	1050	938	741	1090	1920	819	2080	5680	1020	530

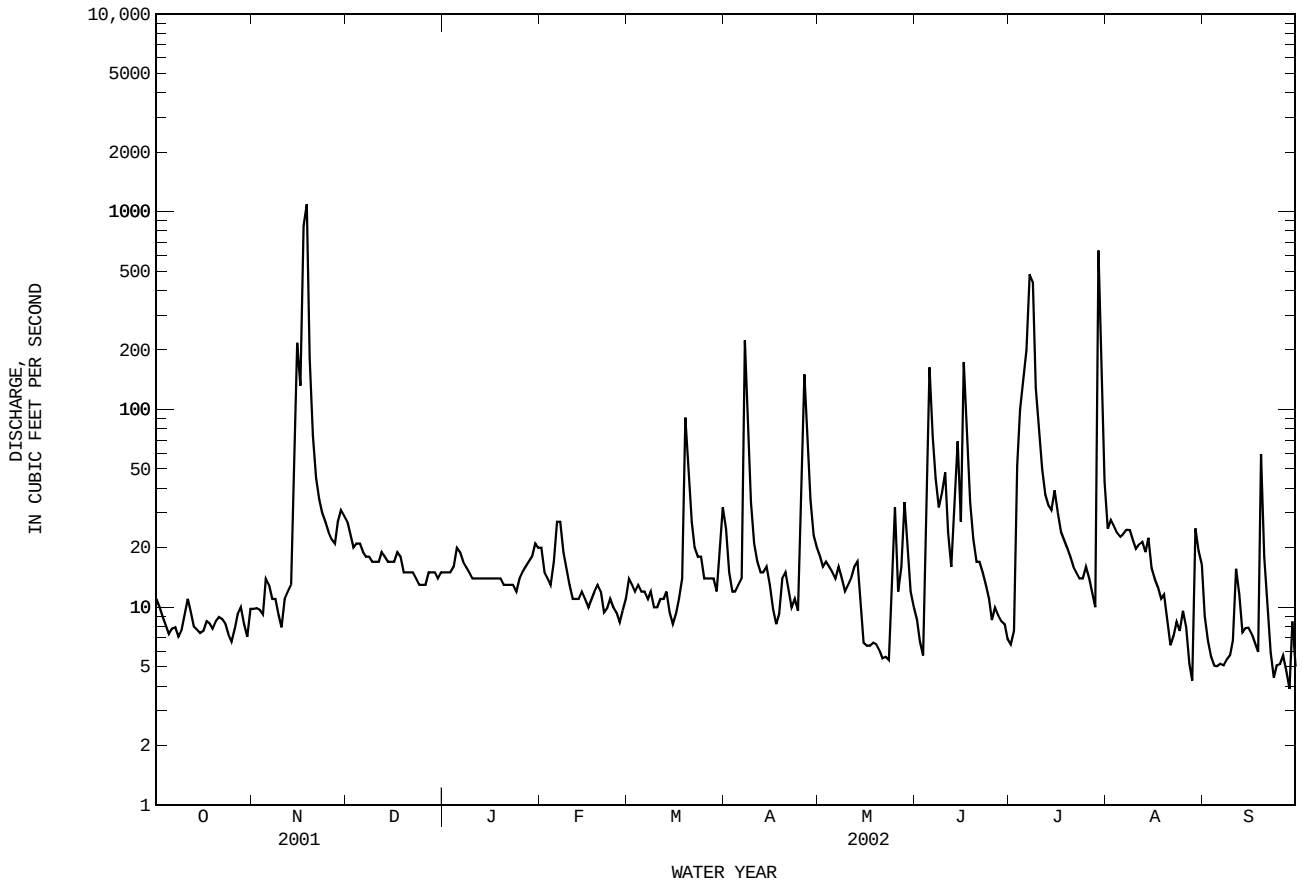
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	98.04	34.24	27.33	24.66	28.85	37.44	50.70	111.5	147.2	47.05	77.73	96.83
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	13.3	9.34	0.72	1.17	3.51
(WY)	1964	1968	1964	1965	1965	1965	1964	2002	2001	1964	1964	1968

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	11223.70		11283.6			
ANNUAL MEAN	30.75		30.91		64.84	
HIGHEST ANNUAL MEAN					193	1966
LOWEST ANNUAL MEAN					17.2	1983
HIGHEST DAILY MEAN	1090	Nov 18	1090	Nov 18	19400	Sep 19 1965
LOWEST DAILY MEAN	0.79	Jul 23	3.9	Sep 28	0.02	Aug 22 1974
ANNUAL SEVEN-DAY MINIMUM	0.97	Jul 19	5.0	Sep 22	0.13	Jul 30 1965
MAXIMUM PEAK FLOW			1650	Nov 18	28900	Sep 19 1965
MAXIMUM PEAK STAGE			13.50	Nov 18	21.96	Sep 19 1965
ANNUAL RUNOFF (AC-FT)	22260		22380		46980	
10 PERCENT EXCEEDS	44		37		66	
50 PERCENT EXCEEDS	17		14		20	
90 PERCENT EXCEEDS	3.8		7.0		7.5	

e Estimated

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 1993 to 2002. The standard error of estimate for dissolved solids is 5%, chloride is 11%, sulfate is 8% 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, 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, 26,200 microsiemens/cm, Sept. 8, 10; minimum, 1,020 microsiemens/cm, July 29.
WATER TEMPERATURE: Maximum, 35.0°C, July 23, Aug. 25, 26; minimum, 0.2°C, Jan. 3, Mar. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
10...	1100	11	15200	7.7	20.1	7.7	95	2400	2300	688	157	2730	24
NOV													
14...	1225	12	21200	8.0	18.2	8.7	105	2800	2800	821	193	3850	31
DEC													
18...	1235	18	17800	7.8	8.7	10.1	98	2700	2500	776	177	3280	28
JAN													
24...	1225	12	20000	8.0	8.5	10.8	104	2900	2800	841	191	3590	29
FEB													
26...	1130	8.9	20800	7.8	5.3	12.1	106	2800	2700	812	198	3780	31
MAR													
05...	1225	13	20900	7.9	10.4	11.0	111	2900	2800	830	196	3880	31
APR													
11...	1145	17	14300	7.9	20.1	8.4	103	2300	2100	646	156	2340	21
MAY													
02...	1155	17	13400	7.8	20.0	8.6	105	2400	2300	660	177	2390	21
JUN													
25...	1035	8.7	17300	8.1	26.0	6.7	87	2500	2500	732	170	3210	28
JUL													
02...	1125	7.5	17500	7.9	25.6	7.3	95	2400	2400	701	169	3160	28
AUG													
27...	1110	3.8	23800	7.8	27.7	7.1	98	3700	3700	1090	247	4500	32
SEP													
10...	1120	6.5	23400	7.9	26.4	6.8	91	3500	3400	1020	229	4430	33

07311700 North Wichita River near Truscott, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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, 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)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT													
10...	11.8	45	2170	4290	.3	1.2	10100	10	<.008	<.05	.17	--	.13
NOV													
14...	15.8	77	2600	6450	.4	.5	14000	10	<.008	<.05	<.04	--	--
DEC													
18...	13.7	125	2450	5420	.4	1.5	12200	18	<.008	<.05	.21	--	--
JAN													
24...	14.8	121	2550	5890	.4	2.2	13200	10	E.006	.202	.21	.38	--
FEB													
26...	16.1	105	2630	5990	.4	.9	13500	22	<.008	<.05	.18	--	--
MAR													
05...	15.9	110	2650	6090	.5	.9	13700	<10	<.008	<.05	.32	--	--
APR													
11...	14.1	108	2030	3970	.3	2.8	9220	34	<.008	E.02	.15	--	--
MAY													
02...	14.1	87	2060	3590	.3	1.7	8950	18	<.008	<.050	.18	--	.12
JUN													
25...	13.5	52	2190	5070	.4	2.6	11400	10	<.008	<.05	.16	--	.17
JUL													
02...	15.4	50	2290	5210	.4	1.9	11600	<10	<.008q	<.05	.27	--	--
AUG													
27...	18.1	72	3080	6840	.5	3.3	15800	28	<.008	<.05	.43	--	--
SEP													
10...	17.0	63	2880	6980	.5	1.7	15600	70	<.008	<.05	.36	--	.03

Date	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOSPHATE, 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)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT													
10...	.30	<.06	<.06	<.02	6	<1.0	92	94	<.21	<.20	3.4	2.7	8.8
NOV													
14...	<.10	<.06	<.06	<.02	E4	<2.0	39	36	<.32	<.30	<8.0	<8.0	12.5
DEC													
18...	.10	<.06	<.06	<.02	8	1.6	43	43	<.28	<.30	<2.4	<1.6	11.6
JAN													
24...	.17	<.06	<.06	<.02	5	2.6	30	29	<.28	<.30	<3.2	<3.2	15.4
FEB													
26...	.10	<.06	<.06	<.02	3n	<.2	29	30	E.03	<.04	.9	<.8	10.1
MAR													
05...	.21	<.06	<.06	<.02	E1	2.8	26	27	<.32	<.30	<1.6	<2.4	12.3
APR													
11...	.12	<.06	<.06	<.02	9	2.0	104	104	<.21	<.20	E1.2n	<1.6	7.9
MAY													
02...	.30	E.030	<.060	<.020	4	4.1	69	69	<.28n	<.20	<3.2	<1.6	33.8
JUN													
25...	.33	<.06	<.06	<.02	8	5.4	116	120	E.03	E.13	<.8	<1.6	23.1
JUL													
02...	.21	<.06	<.06	<.02	7	5.6	86	88	<.28	<.30	<1.6	<1.6	23.9
AUG													
27...	.42	E.03	<.06	<.02	7	7.2	74	66	.07	<.40	E1.6n	<1.6	23.1
SEP													
10...	.38	E.05	<.06	<.02	6	4.7	63	65	E.05n	<.40	E1.2n	<1.6	20.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	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)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT													
10...	11.9	<10	<100	<6	<.50	17	10.2	<.01	<.01	10	<.60	3.5	E1.9
NOV													
14...	7.1	<10	<150	<9	<.70	9	5.2	E.01	<.01	15	<.50	3.9	6.2
DEC													
18...	13.0	<10	<100	<8	<.60	14	11.4	<.01	<.01	16	18.9	8.7	9.7
JAN													
24...	8.3	<60	<100	<8	<.60	13	9.4	<.01	<.01	21	4.76	9.5	11.1
FEB													
26...	11.3	<10	32	<1	.86	13	12.3	<.01	<.01	22	.82	9.7	E.2
MAR													
05...	10.7	<110	<150	<9	1.86	11	10.8	<.01	<.01	22	8.09	11.0	12.7
APR													
11...	6.7	230	<100	<6	<.50	26	12.4	E.01n	<.01	17	8.90	5.8	5.4
MAY													
02...	11.0	90	<100	<6	<.50	19	9.5	<.01	<.01	44	2.12	6.5	6.9
JUN													
25...	11.2	<50	<20	<1	<.60	16	10.8	<.01	E.01n	24	.95	5.4	3.5
JUL													
02...	12.6	<50	<200	<7	<.60	10	7.6	<.01	E.01n	23	2.25	.6	6.3
AUG													
27...	19.1	<60	<150	<2	<.80	46	25.3	.01	E.01	43	7.82	6.5	5.4
SEP													
10...	9.9	100	<150	<2	E.49n	40	15.7	<.01	<.01	50	39.5	5.7	5.3

Date	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)	DI-ELDRIN TOTAL (UG/L) (39380)
OCT													
10...	<.30	<6	9	11	--	--	--	--	--	--	--	--	--
NOV													
14...	<.45	<9	<9	<9	--	--	--	--	--	--	--	--	--
DEC													
18...	<.40	<8	11	<8	--	--	--	--	--	--	--	--	--
JAN													
24...	<.40	<8	11	<8	--	--	--	--	--	--	--	--	--
FEB													
26...	<.05	<1	7	9	--	--	--	--	--	--	--	--	--
MAR													
05...	<.45	<9	16	20	--	--	--	--	--	--	--	--	--
APR													
11...	<.30	<6	7	<6	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1	<.02
MAY													
02...	<.40	<6	15	8	--	--	--	--	--	--	--	--	--
JUN													
25...	<.05	<7	13	12	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1	<.02
JUL													
02...	<.35	<7	15	9	--	--	--	--	--	--	--	--	--
AUG													
27...	<.10	<10	16	8	--	--	--	--	--	--	--	--	--
SEP													
10...	<.10	<10	14	<10	--	--	--	--	--	--	--	--	--

07311700 North Wichita River near Truscott, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	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)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)
OCT													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
24...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
11...	<.6	<.06	<.2	<.03	<.8	<.03	47.4	<2	<.1	<.03	108	<.04	<.03
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
25...	<.6	<.06	<.2	<.03	<.8	<.03	66.7	<2	<.1	<.03	92.7	<.04	<.03
JUL													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	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						
10...	--	--	--	--	--	--
NOV						
14...	--	--	--	--	--	--
DEC						
18...	--	--	--	--	--	--
JAN						
24...	--	--	--	--	--	--
FEB						
26...	--	--	--	--	--	--
MAR						
05...	--	--	--	--	--	--
APR						
11...	<.1	<.09	<.1	<.04	<.1	<.1
MAY						
02...	--	--	--	--	--	--
JUN						
25...	<.1	<.09	<.1	<.04	<.1	<.1
JUL						
02...	--	--	--	--	--	--
AUG						
27...	--	--	--	--	--	--
SEP						
10...	--	--	--	--	--	--

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

Value qualifier codes used in this report:
n -- Below the NDV
q -- Insufficient sample received

07311700 North Wichita River near Truscott, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2001 TO SEPTEMBER 2002

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.	2001	261.1	17340	11750	8280	5100	3570	2400	1720	2700
NOV.	2001	3021.6	5160	3500	28590	1400	11410	830	6790	950
DEC.	2001	530	17420	11800	16880	5000	7220	2500	3570	2800
JAN.	2002	473	18710	12670	16180	5500	6990	2600	3360	2900
FEB.	2002	373.6	17020	11530	11630	4900	4970	2400	2460	2700
MAR.	2002	550.9	15750	10670	15870	4500	6740	2300	3400	2600
APR.	2002	967.8	10450	7090	18520	2900	7540	1600	4260	1900
MAY	2002	413.1	15810	10710	11950	4500	5060	2300	2570	2600
JUNE	2002	1046.3	7820	5300	14990	2100	6040	1200	3510	1400
JULY	2002	2864.1	6480	4400	34020	1800	13540	1000	8110	1200
AUG.	2002	515.1	12470	8450	11760	3500	4860	1900	2630	2100
SEPT	2002	267	17570	11900	8580	5200	3740	2400	1750	2700
TOTAL		11283.6	**	**	197300	**	81660	**	44150	**
WTD.AVG.		31	9550	6470	**	2700	**	1400	**	1600

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9620	8720	9040	22900	22000	22400	14200	13000	13700	19200	18900	19100
2	9620	9140	9370	23000	22200	22700	14600	14200	14500	19000	19000	19000
3	10000	9620	9830	22200	21300	22000	14800	14300	14600	19200	18900	19000
4	10400	10000	10200	22000	21600	21800	15700	14800	15200	19100	18300	19000
5	10900	10400	10600	22000	21800	21900	15700	15200	15500	18300	17700	18000
6	---	---	e11000	21900	21400	21600	16000	15300	15700	18200	17900	18100
7	---	---	e11500	22800	21400	21700	16600	16000	16300	18500	18100	18300
8	---	---	e12400	21900	21600	21700	17000	16600	16800	18500	18200	18400
9	---	---	e14100	22000	21600	21800	17400	17000	17200	18400	18200	18300
10	---	---	e15200	22100	21700	21800	17600	17400	17500	18500	18300	18400
11	16700	15700	16100	22300	21700	21800	17800	17600	17600	18600	18400	18500
12	17600	16700	17000	22400	22100	22300	17900	17600	17700	18700	18500	18600
13	18500	17500	18000	22100	21000	21400	18300	17900	18100	18800	18600	18700
14	18900	18500	18700	21500	2590	16900	18500	18200	18400	19000	18800	18900
15	19300	18800	19000	12200	2650	6360	18500	18300	18400	19100	18900	19000
16	19800	19300	19500	10100	7700	9480	18500	18400	18400	19100	18900	19000
17	20200	19700	19900	7860	1270	3830	18700	18500	18500	19200	19000	19100
18	20400	20100	20200	8260	1120	2360	18800	18400	18600	19300	19100	19200
19	20700	20300	20500	3060	1320	2100	18900	18600	18800	19300	19100	19200
20	20800	20500	20700	4980	3060	4050	18900	18600	18700	19300	19100	19200
21	20900	20600	20800	6360	4980	5730	18800	18500	18600	19400	19200	19300
22	21000	20800	20900	7290	6360	6860	18600	18400	18500	19400	19200	19300
23	21500	21000	21300	8000	7290	7670	18800	18500	18600	19400	19200	19300
24	21900	21500	21700	8670	8000	8340	18800	18700	18700	19500	19200	19300
25	22100	21900	21900	9330	8670	9000	18900	18700	18800	19700	19200	19600
26	22200	22000	22100	10300	9330	9770	19100	18800	18900	19700	19500	19600
27	22200	22000	22100	11000	10300	10700	19100	18800	18900	19700	19500	19600
28	22200	21900	22100	11300	10900	11100	19100	18800	19000	19700	19300	19400
29	21900	21500	21700	12100	11300	11700	19000	18800	19000	19900	19300	19500
30	21700	21400	21500	13000	12100	12500	19200	18900	19100	19500	13100	18400
31	22000	21600	21800	---	---	---	19100	19000	19100	17700	11200	14100
MONTH	---	---	17400	23000	1120	14100	19200	13000	17700	19900	11200	18800

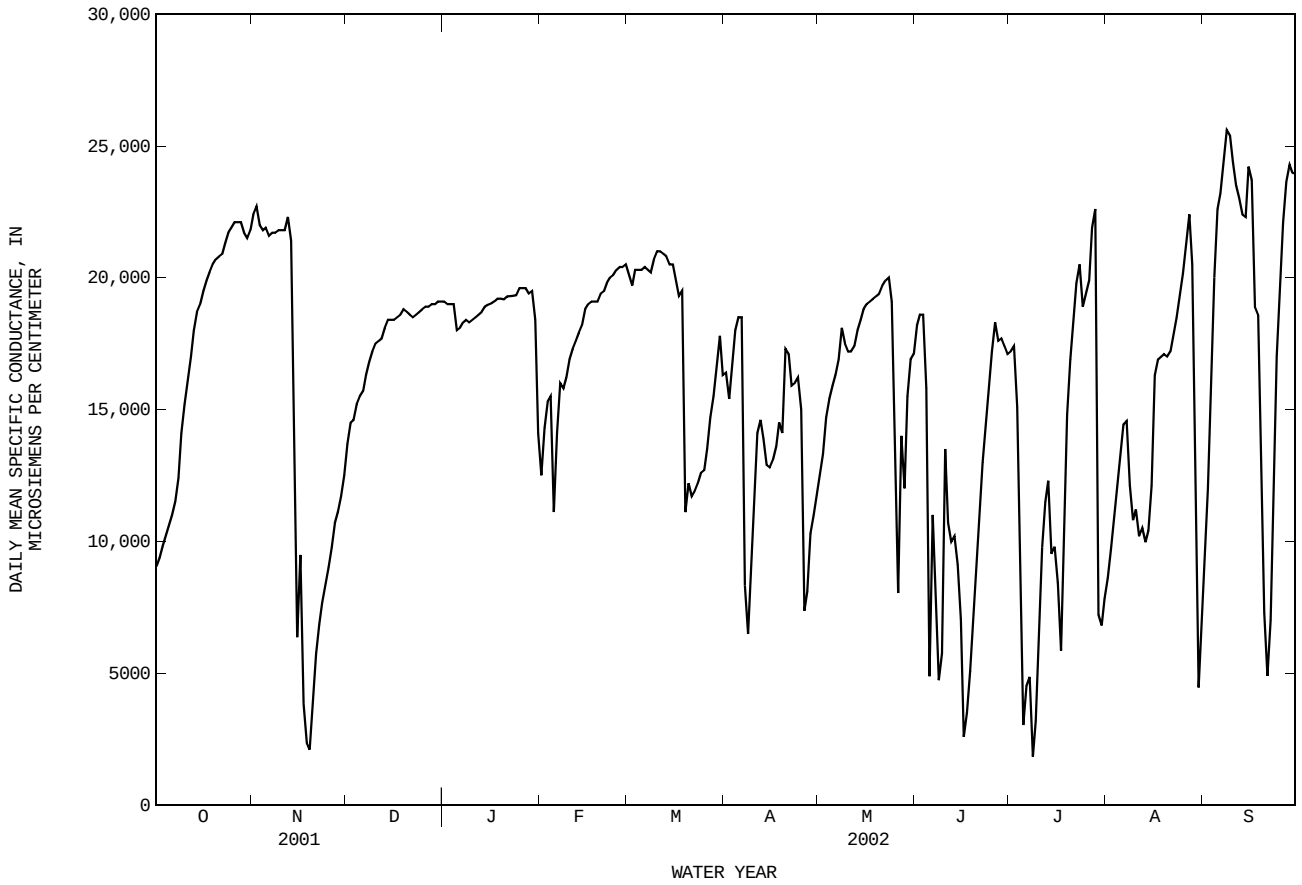
07311700 North Wichita River near Truscott, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	13900	11200	12500	20500	19300	20100	17400	14500	16400	---	---	e12600
2	15000	13900	14300	20300	19300	19700	16300	14400	15400	14100	---	e13300
3	16600	14800	15300	20300	20300	20300	17600	15100	16700	15200	14100	14700
4	16000	13600	15500	20300	20300	20300	18300	17600	18000	15700	15200	15400
5	14100	4940	11100	20400	20300	20300	18600	18100	18500	16200	15700	15900
6	15400	12300	14100	20500	20300	20400	18600	18300	18500	16500	16200	16300
7	16200	15400	16000	20500	20100	20300	18300	1910	8330	17700	16500	16900
8	16000	13500	15800	20300	20000	20200	7340	4850	6480	18400	17700	18100
9	16600	16000	16200	20900	20600	20700	9680	5500	8540	18000	17300	17500
10	17400	16400	16900	21200	20900	21000	13100	9420	10800	17400	17200	17200
11	17400	17200	17300	21100	20900	21000	14900	12900	14100	17200	17000	17200
12	18000	17300	17600	21100	19900	20900	15300	14200	14600	17600	17100	17400
13	18300	17700	17900	21000	20000	20800	14300	13100	13900	18200	17600	18000
14	18500	17500	18200	21000	19700	20500	13100	12800	12900	18600	18200	18400
15	18900	18400	18800	21000	19500	20500	13000	12600	12800	18900	18600	18800
16	19200	18700	19000	21000	18200	19900	13800	12700	13100	19100	18800	19000
17	19600	18800	19100	20700	17600	19300	14600	12700	13600	19200	19000	19100
18	19600	19000	19100	20300	18400	19500	15000	13900	14500	19300	19000	19200
19	19200	18800	19100	19700	5410	11100	14700	13500	14100	19500	19200	19300
20	20200	19200	19400	14400	9740	12200	18600	14100	17300	19700	19300	19400
21	19600	19100	19500	12700	11000	11700	17800	16400	17100	19900	19300	19700
22	19900	19700	19800	12500	11100	11900	17100	14500	15900	20100	19800	19900
23	20400	19700	20000	12600	11800	12200	16700	15100	16000	20100	19900	20000
24	20200	19700	20100	13800	12100	12600	18100	14200	16200	20100	11400	19100
25	20500	20100	20300	13600	12200	12700	17800	6700	15000	18400	5560	13000
26	20800	19900	20400	14800	12800	13500	10400	3020	7360	11800	6600	8030
27	20700	20300	20400	17200	13300	14700	9520	7350	8090	17400	9760	14000
28	20700	20400	20500	17800	14100	15500	---	---	e10300	18000	6200	12000
29	---	---	---	18300	14800	16700	---	---	e11000	16500	10000	15500
30	---	---	---	18100	17400	17800	---	---	e11800	17200	16300	16900
31	---	---	---	17800	14800	16300	---	---	---	17700	16500	17100
MONTH	20800	4940	17600	21200	5410	17600	---	---	13600	---	---	16700

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18900	17500	18200	17200	16900	17200	---	---	e8610	11500	9180	9670
2	19000	18000	18600	17600	17200	17400	---	---	e9690	13800	11500	12000
3	19000	17700	18600	---	---	e15100	---	---	e11000	18800	13800	15800
4	19300	2250	15800	---	---	e8850	---	---	e12300	22400	18700	20000
5	7800	1300	4880	---	---	e3030	---	---	e13300	23600	22000	22600
6	13200	7510	11000	---	---	e4520	---	---	e14400	25300	22500	23200
7	14400	5500	7990	7390	---	e4850	---	---	e14600	25700	23800	24500
8	5950	3950	4730	2320	1130	1830	---	---	e12100	26200	25200	25600
9	12700	4160	5750	5500	2320	3190	11400	10400	10800	26100	24700	25400
10	14600	11800	13500	7670	5500	6270	11800	10100	11200	26200	23500	24400
11	11800	10400	10700	11100	7670	9770	10400	9940	10200	24000	22900	23500
12	10700	8790	9970	12000	11100	11500	10800	10300	10500	---	---	e23000
13	14000	6030	10200	13500	10400	12300	12300	2930	9960	22500	22000	22400
14	12000	3050	9130	13500	6100	9530	15000	5670	10400	22800	22000	22300
15	10300	2540	7030	14400	5420	9790	15000	9080	12100	25100	22800	24200
16	6740	1120	2580	10800	4860	8420	17000	15000	16300	25100	21300	23700
17	4440	2630	3500	8200	3840	5850	17100	16900	16900	21300	17800	18900
18	5470	4440	5080	14300	5980	10600	17100	16900	17000	20400	13000	18600
19	---	---	e7200	15900	14100	14800	17300	17000	17100	20600	5660	13700
20	---	---	e9000	18300	15900	16900	17300	16800	17000	12900	3940	7290
21	---	---	e11000	19700	18100	18500	17600	16900	17200	5270	4510	4890
22	---	---	e13000	20600	19500	19800	---	---	e17900	---	---	e7000
23	---	---	e14500	21100	19100	20500	---	---	e18500	---	---	e12000
24	---	---	e16000	20400	17100	18900	---	---	e19300	---	---	e17000
25	---	---	e17200	21000	17600	19400	---	---	e20200	---	---	e20000
26	19700	17400	18300	22400	17500	19900	---	---	e21200	---	---	e22100
27	17800	17400	17600	22600	20800	21900	23200	22400	22400	24300	22800	23600
28	17900	17500	17700	23300	21000	22600	21500	19900	20500	24600	24000	24300
29	17600	17100	17400	22700	1020	7210	20100	4450	10200	24200	23700	24000
30	17300	16600	17100	8190	1750	6810	5960	2760	4450	24200	23700	24000
31	---	---	---	8420	7450	7830	9180	5080	6960	---	---	---
MONTH	---	---	11800	---	---	12100	---	---	14000	---	---	19300

e Estimated



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

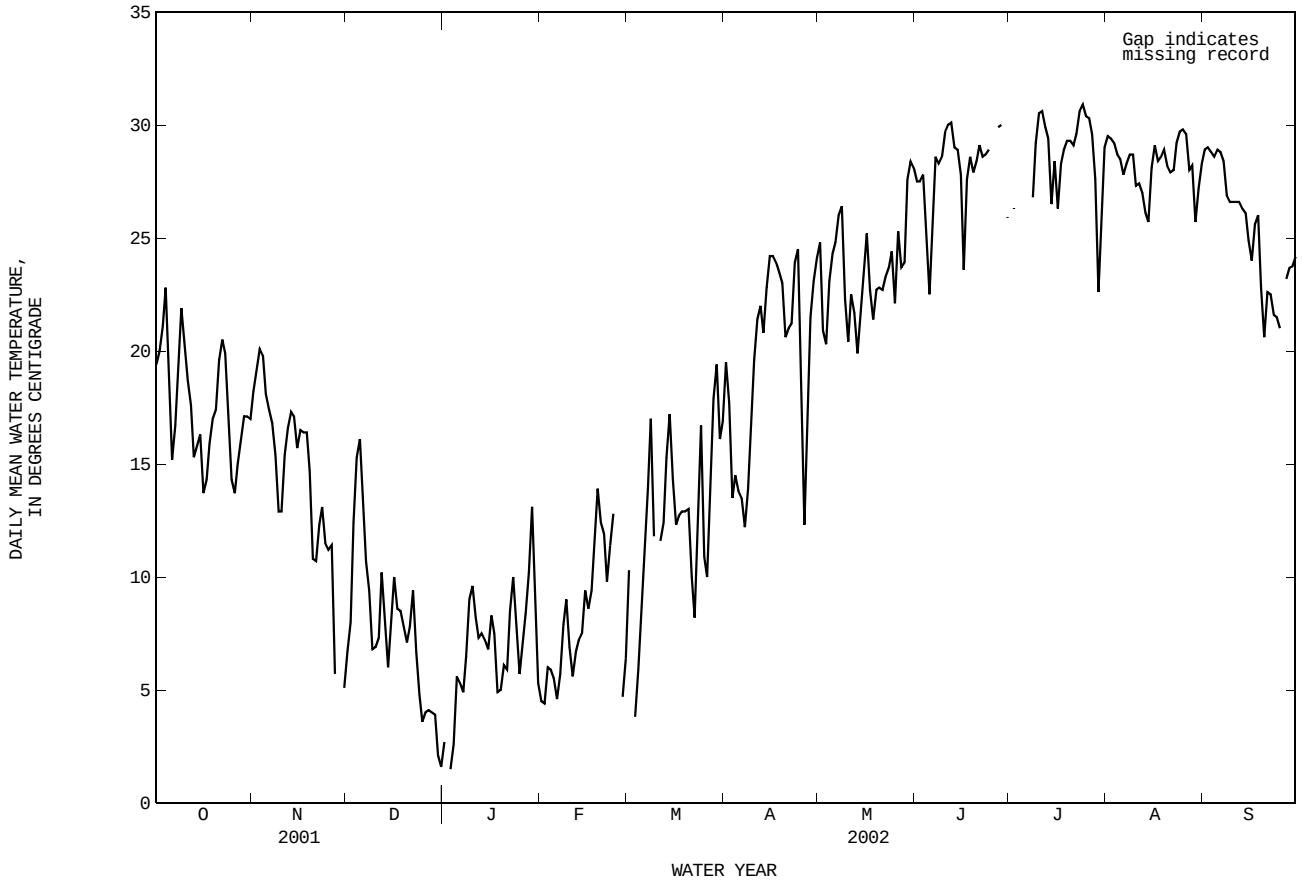
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.7	12.2	19.4	21.1	15.4	18.2	7.9	5.2	6.7	3.9	1.8	2.7
2	23.4	16.3	20.0	21.6	16.8	19.1	10.6	4.9	8.0	---	1.1	---
3	24.2	17.9	21.1	22.9	17.4	20.1	14.5	10.3	12.4	3.0	0.2	1.5
4	26.1	19.9	22.8	21.7	18.7	19.8	16.4	14.3	15.3	4.2	1.1	2.6
5	23.1	14.8	18.7	19.4	17.2	18.1	17.3	15.2	16.1	7.6	4.1	5.6
6	18.6	11.6	15.2	19.7	15.2	17.4	15.2	11.4	13.1	6.8	3.2	5.3
7	20.3	13.1	16.7	19.0	14.3	16.8	12.1	9.2	10.7	6.5	2.6	4.9
8	23.1	16.0	19.5	17.2	13.2	15.4	10.7	7.9	9.4	8.6	4.0	6.5
9	24.9	20.0	21.9	14.9	11.8	12.9	8.2	4.6	6.8	11.0	6.5	9.0
10	22.1	18.2	20.2	15.8	9.4	12.9	8.4	4.5	6.9	10.6	8.7	9.6
11	21.6	15.8	18.7	18.1	13.4	15.4	8.5	5.5	7.3	9.8	6.2	8.2
12	20.5	15.3	17.6	18.4	15.2	16.6	12.3	8.5	10.2	9.1	5.6	7.3
13	18.2	12.4	15.3	18.6	16.0	17.3	10.2	6.6	8.3	9.6	5.5	7.5
14	19.1	12.4	15.8	18.3	15.8	17.1	7.6	3.5	6.0	8.9	5.4	7.2
15	18.8	14.5	16.3	16.1	15.4	15.7	9.5	6.5	7.9	8.6	4.6	6.8
16	16.9	10.3	13.7	17.8	15.4	16.5	10.4	9.4	10.0	9.9	7.1	8.3
17	17.8	11.3	14.3	17.4	15.4	16.4	10.0	6.4	8.6	8.8	6.4	7.5
18	19.4	12.7	15.9	17.2	15.5	16.4	9.9	6.2	8.5	6.6	4.3	4.9
19	20.1	13.9	17.0	17.0	11.8	14.7	9.1	6.2	7.8	6.9	2.9	5.0
20	20.7	13.8	17.4	11.9	9.0	10.8	8.8	4.8	7.1	8.5	3.9	6.1
21	22.8	16.7	19.6	12.6	8.5	10.7	9.7	5.2	7.8	7.9	3.2	5.9
22	23.1	18.2	20.5	14.0	10.1	12.3	10.8	8.1	9.4	11.3	6.1	8.5
23	22.2	17.6	19.9	14.0	11.8	13.1	8.2	5.1	6.7	12.0	8.3	10.0
24	19.6	15.3	17.5	13.0	9.8	11.5	5.8	3.8	4.8	9.3	6.0	7.8
25	17.2	11.4	14.3	12.7	8.8	11.2	5.4	1.3	3.6	7.8	2.9	5.7
26	16.4	10.6	13.7	12.6	9.8	11.4	5.5	1.9	4.0	9.4	4.2	7.0
27	17.8	12.2	15.0	9.8	2.3	5.7	4.8	2.7	4.1	10.3	6.1	8.4
28	18.9	13.0	16.0	---	---	---	5.6	1.7	4.0	12.8	7.0	10.2
29	20.1	14.5	17.1	3.9	---	---	5.0	2.3	3.9	15.7	11.4	13.1
30	19.9	14.5	17.1	7.4	2.4	5.1	3.5	1.4	2.1	12.8	5.4	8.6
31	19.4	15.0	17.0	---	---	---	2.6	0.5	1.6	6.7	4.0	5.3
MONTH	26.1	10.3	17.6	---	---	---	17.3	0.5	7.7	---	0.2	---

07311700 North Wichita River near Truscott, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.6	1.8	4.5	14.3	7.3	10.3	23.6	15.0	19.5	27.2	21.9	24.8
2	5.5	2.8	4.4	---	---	---	21.0	13.8	17.7	25.3	18.1	20.9
3	7.5	4.6	6.0	6.8	0.2	3.8	16.5	9.6	13.5	25.4	15.9	20.3
4	6.7	4.3	5.9	9.4	1.3	5.9	18.3	10.4	14.5	27.0	18.5	23.1
5	6.6	4.3	5.5	12.6	5.1	9.0	15.2	12.3	13.8	27.0	21.4	24.3
6	6.4	2.7	4.6	15.5	7.9	11.7	14.2	12.7	13.5	27.5	22.5	24.8
7	8.6	2.4	5.7	17.4	9.9	13.9	12.7	11.1	12.2	29.7	22.9	26.0
8	10.5	4.5	7.9	20.2	14.6	17.0	16.3	12.2	13.9	30.5	23.4	26.4
9	10.7	7.1	9.0	14.3	9.0	11.8	21.4	12.7	16.8	25.3	18.4	22.3
10	8.5	4.7	6.9	---	6.0	---	23.7	15.5	19.6	22.4	18.3	20.4
11	8.1	2.1	5.6	14.9	9.3	11.6	25.2	17.7	21.4	25.4	20.5	22.5
12	9.1	3.5	6.7	15.9	8.5	12.4	24.0	19.6	22.0	23.2	18.5	21.7
13	9.6	4.6	7.2	18.9	11.1	15.3	23.2	18.5	20.8	24.2	15.3	19.9
14	10.0	4.0	7.5	20.1	14.1	17.2	27.1	18.9	22.8	25.9	16.8	21.6
15	11.5	6.8	9.4	16.8	11.2	14.3	27.7	20.6	24.2	27.4	19.1	23.1
16	11.2	5.3	8.6	14.7	9.8	12.3	27.4	21.7	24.2	29.1	21.6	25.2
17	11.5	6.4	9.4	14.1	11.6	12.7	27.6	19.7	23.9	26.0	20.0	22.7
18	14.3	8.2	11.5	13.6	11.9	12.9	26.4	21.5	23.5	26.1	16.7	21.4
19	16.0	12.0	13.9	13.4	11.9	12.9	24.4	22.0	23.0	27.3	18.2	22.7
20	14.8	9.4	12.4	16.0	10.2	13.0	22.2	19.8	20.6	26.8	18.8	22.8
21	13.0	10.7	11.9	11.3	7.2	10.0	25.1	17.3	21.0	27.1	19.1	22.7
22	12.8	6.7	9.8	11.7	4.3	8.2	23.6	17.9	21.2	28.3	19.5	23.3
23	14.0	8.3	11.4	16.1	7.1	11.8	27.7	20.3	23.9	27.4	21.7	23.7
24	15.7	10.5	12.8	20.7	13.2	16.7	27.3	22.1	24.5	29.8	20.9	24.4
25	---	---	---	15.8	7.7	10.9	22.1	11.3	16.4	23.9	19.6	22.1
26	7.5	1.9	---	14.2	5.2	10.0	13.8	10.8	12.3	30.4	21.1	25.3
27	7.8	1.0	4.7	18.3	9.2	14.1	23.2	13.8	17.9	26.5	21.1	23.7
28	9.2	3.0	6.4	21.0	14.1	17.9	25.8	17.3	21.5	28.4	20.3	23.9
29	---	---	---	22.6	16.3	19.4	26.2	19.8	23.1	32.0	23.3	27.6
30	---	---	---	19.6	14.3	16.1	26.9	21.3	24.1	32.2	24.8	28.4
31	---	---	---	21.2	12.7	16.9	---	---	---	31.5	24.6	28.1
MONTH	---	---	---	---	---	---	27.7	9.6	19.6	32.2	15.3	23.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	31.5	23.8	27.5	---	23.5	---	33.3	26.1	29.5	32.5	25.3	28.9
2	31.0	23.6	27.5	30.3	23.6	26.3	33.1	26.1	29.4	32.7	25.5	29.0
3	31.8	24.5	27.8	---	23.4	---	32.7	25.9	29.2	31.7	25.6	28.8
4	28.5	22.6	25.3	---	---	---	31.7	25.6	28.7	32.0	25.7	28.6
5	25.8	19.9	22.5	---	---	---	31.2	25.6	28.5	32.2	25.9	28.9
6	30.4	22.5	25.9	---	---	---	29.9	25.2	27.8	32.2	25.9	28.8
7	32.8	24.4	28.6	---	---	---	31.4	25.1	28.3	32.1	25.5	28.4
8	30.4	26.1	28.3	29.9	24.6	26.8	32.1	25.6	28.7	28.7	25.9	26.9
9	32.3	25.5	28.6	32.2	26.5	29.2	31.2	26.3	28.7	29.1	24.9	26.6
10	33.3	26.5	29.7	33.7	27.7	30.5	30.2	25.1	27.3	27.9	25.6	26.6
11	33.9	26.4	30.0	34.1	27.3	30.6	30.6	24.8	27.4	29.7	23.4	26.6
12	34.1	27.0	30.1	33.0	27.1	29.9	30.2	24.2	27.0	30.0	23.8	26.6
13	32.3	26.1	29.0	32.5	26.4	29.4	29.4	22.6	26.1	29.6	23.7	26.3
14	32.4	26.4	28.9	29.7	24.5	26.5	29.0	23.1	25.7	30.4	23.0	26.1
15	31.3	21.8	27.8	32.4	25.3	28.4	32.3	24.5	28.1	27.8	22.9	24.9
16	26.5	20.2	23.6	29.0	23.8	26.3	33.4	25.6	29.1	28.2	19.8	24.0
17	32.0	23.9	27.6	30.9	25.5	28.3	31.7	25.3	28.4	29.9	22.2	25.6
18	32.0	25.4	28.6	32.2	25.9	28.9	33.4	25.1	28.6	31.0	22.9	26.0
19	31.2	24.5	27.9	32.7	26.3	29.3	33.9	25.3	28.9	24.8	20.4	22.8
20	31.8	25.1	28.4	33.1	25.9	29.3	32.4	25.6	28.2	23.8	17.0	20.6
21	31.9	26.1	29.1	33.2	25.2	29.1	32.6	24.7	27.9	25.3	19.9	22.6
22	31.0	26.5	28.6	33.8	25.7	29.6	33.5	24.9	28.0	24.7	20.3	22.5
23	32.3	25.4	28.7	35.0	26.5	30.6	34.5	25.3	29.2	24.3	19.0	21.6
24	32.4	25.7	28.9	34.6	27.8	30.9	34.6	25.9	29.7	24.1	19.0	21.5
25	---	---	---	34.6	26.8	30.4	35.0	26.3	29.8	24.0	17.9	21.0
26	---	---	---	34.5	26.9	30.3	35.0	25.5	29.6	27.3	---	---
27	34.1	26.8	29.9	34.1	26.0	29.6	32.5	23.6	28.0	27.4	19.4	23.2
28	33.9	25.9	30.0	30.4	25.9	27.6	33.5	24.9	28.2	27.9	20.0	23.7
29	---	26.5	---	26.5	20.2	22.6	27.6	23.6	25.7	27.7	20.2	23.7
30	27.0	24.4	25.9	30.7	23.1	26.1	30.0	24.6	27.2	28.1	21.1	24.2
31	---	---	---	33.4	25.3	29.0	31.4	25.1	28.3	---	---	---
MONTH	---	---	---	---	---	---	35.0	22.6	28.2	32.7	---	---


DAILY MEAN WATER TEMPERATURE, IN DEGREES CENTIGRADE
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WATER YEAR

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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 NGVD of 1929. 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.

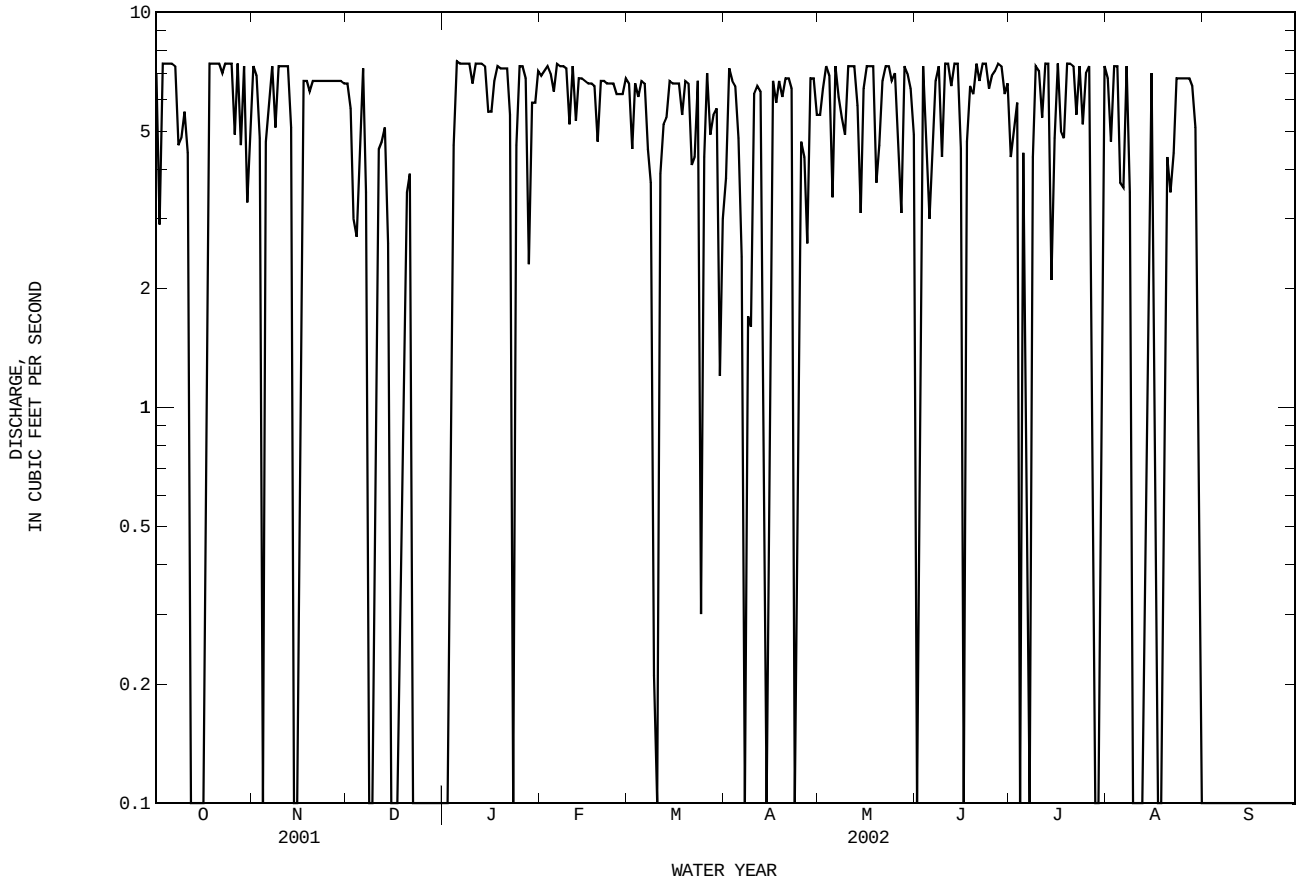
COOPERATION.--Discharge data furnished by the U.S. Army Corps of Engineers, Tulsa District.

DISCHARGE FLOW THRU PIPELINE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.0	7.3	6.6	0.0	e6.9	6.6	3.8	5.5	0.0	4.3	6.8	0.0
2	2.9	6.9	5.7	e0.00	e7.1	4.5	7.2	6.4	3.1	5.0	4.7	0.0
3	7.4	4.8	3.0	0.43	e7.3	6.6	6.7	7.3	7.3	5.9	7.3	0.0
4	7.4	0.0	2.7	4.6	e7.0	6.1	6.5	6.9	4.7	0.0	7.3	0.0
5	7.4	4.7	4.6	7.5	e6.3	6.7	4.8	3.4	3.0	4.4	3.7	0.0
6	7.4	5.8	7.2	7.4	7.4	6.6	2.4	7.3	4.7	1.4	3.6	0.0
7	7.3	7.3	3.5	7.4	7.3	4.5	0.00	6.1	6.7	0.0	7.3	0.0
8	4.6	5.1	0.0	7.4	7.3	3.7	1.7	5.4	7.3	4.3	3.5	0.0
9	4.8	7.3	0.0	7.4	7.2	0.21	e1.6	4.9	4.3	7.3	0.0	0.0
10	5.6	7.3	0.46	6.6	5.2	0.0	e6.2	7.3	7.4	7.1	e0.00	0.0
11	4.4	7.3	4.5	7.4	7.3	3.9	e6.5	7.3	7.4	5.4	e0.00	0.0
12	0.0	7.3	4.7	7.4	5.3	5.2	6.3	7.3	6.5	7.4	e0.00	0.0
13	0.0	5.1	5.1	7.4	6.8	5.4	2.9	5.8	7.4	7.4	1.5	0.0
14	0.0	e0.00	2.6	7.3	6.8	6.7	0.0	3.1	7.4	2.1	3.2	0.0
15	0.0	e0.00	0.0	5.6	6.7	6.6	2.2	6.4	4.5	4.8	7.0	0.0
16	0.0	2.8	0.0	5.6	6.6	6.6	6.7	7.3	0.0	7.4	1.7	0.0
17	2.9	6.7	0.0	6.7	6.6	6.6	5.9	7.3	4.7	5.0	0.0	0.0
18	7.4	6.7	0.19	7.3	6.5	5.5	6.7	7.3	6.5	4.8	0.0	0.00
19	7.4	6.3	0.65	7.2	4.7	6.7	6.1	3.7	6.2	7.4	1.4	0.00
20	7.4	6.7	3.5	7.2	6.7	6.6	6.8	4.6	7.4	7.4	4.3	0.0
21	7.4	6.7	3.9	7.2	6.7	4.1	6.8	6.7	6.7	7.3	3.5	0.0
22	7.0	6.7	0.0	5.5	6.6	4.3	6.4	7.3	7.4	5.5	4.4	0.0
23	7.4	6.7	0.0	0.0	6.6	6.7	0.0	7.3	7.4	7.3	6.8	0.0
24	7.4	6.7	0.0	4.6	6.6	0.30	1.5	6.7	6.4	5.2	6.8	0.0
25	7.4	6.7	0.0	7.3	6.2	4.3	4.7	7.0	6.9	7.0	6.8	0.00
26	4.9	6.7	0.0	7.3	6.2	7.0	4.3	4.7	7.1	7.3	6.8	0.0
27	7.4	6.7	0.0	6.8	6.2	4.9	2.6	3.1	7.4	0.29	6.8	0.0
28	4.6	6.7	0.0	2.3	6.8	5.5	6.8	7.3	7.3	0.0	6.5	0.0
29	7.3	6.7	0.0	5.9	---	5.7	6.8	7.0	6.2	0.0	5.1	0.0
30	3.3	6.6	0.0	5.9	---	1.2	5.5	6.4	6.6	2.7	0.80	0.0
31	5.0	---	0.0	7.1	---	3.0	---	4.9	---	7.3	0.00	---
TOTAL	160.4	172.30	58.90	177.73	184.9	152.31	136.40	189.0	175.9	148.69	117.60	0.00
MEAN	5.174	5.743	1.900	5.733	6.604	4.913	4.547	6.097	5.863	4.796	3.794	0.000
MAX	7.4	7.3	7.2	7.5	7.4	7.0	7.2	7.3	7.4	7.4	7.3	0.00
MIN	0.00	0.00	0.00	0.00	4.7	0.00	0.00	3.1	0.00	0.00	0.00	0.00
AC-FT	318	342	117	353	367	302	271	375	349	295	233	0.00

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. 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 1993 to 2002. The standard error of estimate for dissolved solids is 6%, chloride is 8%, sulfate is 7% 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. Samples for chemical analyses are collected 0.5 mi upstream from the collection pool. No flow through the pipeline for many days.

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, 51,100 microsiemens/cm, Aug. 13; minimum, 33,100 microsiemens/cm, May 2.
WATER TEMPERATURE: Maximum, 33.4°C, Aug. 4; minimum, 4.8°C, Mar. 2.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
03...	1200	7.4	54200	7.5	19.8	5.8	83	4800	4700	1360	348	13100	82
NOV													
05...	1335	7.3	54400	7.6	20.0	8.6	123	4700	4600	1330	336	12600	80
DEC													
13...	1250	.01	48900	7.6	10.6	8.6	100	4300	4100	1210	304	10400	70
JAN													
17...	1340	7.3	52100	7.8	10.4	10.0	118	4400	4200	1230	312	11400	75
FEB													
21...	1345	6.7	53200	7.7	12.0	9.3	113	4400	4200	1230	313	11500	76
MAR													
26...	1230	7.2	56400	7.8	11.3	11.2	137	5300	5200	1490	386	12100	72
APR													
17...	1300	6.8	54800	8.0	22.3	10.7	163	4500	4400	1260	323	12200	79
MAY													
14...	1220	2.1	52800	7.9	19.5	9.7	137	4400	4300	1240	321	12000	79
JUN													
20...	1420	7.4	53100	7.8	28.1	11.0	170	4400	4300	1240	317	12100	79
JUL													
17...	1353	.10	56400	7.6	27.2	9.4	154	4700	4600	1330	340	12600	80
AUG													
21...	1215	.10	58400	7.4	26.2	5.6	86	4800	4700	1370	345	13100	82
SEP													
16...	1310	.01	58600	7.5	22.2	6.3	91	4800	4700	1340	346	13600	85

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
03...	46.5	115	2990	18600	.5	10.1	36500	25	.12	.105	.23	.70	.77
NOV													
05...	44.1	122	3260	20200	.4	8.9	37800	20	.13	.100	.23	.52	.68
DEC													
13...	39.2	126	3050	17600	.4	8.0	32700	16	.14	.114	.25	.53	.60
JAN													
17...	26.5	120	3220	19600	.4	<21.0	35800	70	.15	.107	.26	.53	.58
FEB													
21...	39.2	118	3270	20000	.5	6.7	36400	14	.12	.100	.22	.38	.59
MAR													
26...	47.7	113	3220	20800	.5	6.3	38200	10	.11	.107	.22	.42	.52
APR													
17...	44.9	99	3150	19700	.5	1.3	36700	79	.03	.046	.08	.37	.27
MAY													
14...	42.8	93	3040	19100	.5	.4	35800	23	.03	.053	.08	.29	.32
JUN													
20...	43.5	95	3060	18900	.6	1.5	35700	32	--	.010	E.02	.28	--
JUL													
17...	46.2	132	3090	20100	.6	7.1	37600	E41	.04	.044	.09	.48	.78
AUG													
21...	51.5	108	3230	21400	.6	9.8	39600	36	.08	.067	.15	.96	.86
SEP													
16...	41.7	108	3210	21400	.6	10.1	40000	49	.13	.088	.22	.59	.82

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)	ORTHO-PHOSPHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOSPHATE, 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 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)
OCT													
03...	--	.54	<.06	<.06	<.02	--	<11	E2.5	40	40	<.77	<.80	5.2
NOV													
05...	--	.44	<.06	<.06	<.02	--	<11	<4.0	34	33	<.77	<.80	<8.0
DEC													
13...	--	.34	<.06	<.06	<.02	--	6n	<.2	34	34	.04	<.04	2.2n
JAN													
17...	--	.33	<.06	<.06	E.01	--	E6	<4.0	31	31	<.70	<.70	<4.0
FEB													
21...	--	.37	<.06	<.06	<.02	--	4	<.2	28	25	.08	<.04	<.8
MAR													
26...	--	.30	<.06	<.06	<.02	--	<21	E2.2n	31	33	<.77	<.80	<4.0
APR													
17...	--	.19	<.06	<.06	<.02	--	<19	<4.0	32	31	<.74	<.80	<4.0
MAY													
14...	--	.24	<.06	<.06	.02	.061	<10	<3.0	35	36	<.67	<.70	<4.0
JUN													
20...	.11	.40	<.06	<.06	<.02	--	6	<4.0	36	41	<.70	<.70	<4.0
JUL													
17...	.21	.70	<.06	<.06	E.01	--	<10d	E3.4dn	36	39	<.70d	<.70d	<.8
AUG													
21...	--	.71	<.06	<.06	<.02	--	<10	<4.0	36	35	<.74	<.80	<4.0
SEP													
16...	.01	.60	<.06	<.06	<.02	--	<11	<4.0	32	37	<.84	<.90	E2.0n

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
03...	E3.9	14.4	11.4	<140	<500	<22	<2.00	106	109	<.01	<.01	26	<1.00
NOV													
05...	<8.0	17.6	9.3	<140	<300	<22	<2.00	96	93.0	E.01	E.01	40	<1.00
DEC													
13...	1.0	16.4	14.1	<10	<10	<1	.17	61	60.1	<.01	<.01	30	25.3
JAN													
17...	<4.8	20.4	9.6	<140	<300	<20	<2.00	77	84.2	<.01	<.01	29	24.0
FEB													
21...	3.5n	14.3	14.8	<10	11	<1	.59	106	98.2	<.01	<.01	38	<.06
MAR													
26...	<4.0	15.6	18.5	<240	<400	<22	<2.00	74	86.6	<.01	<.01	46	6.40
APR													
17...	<4.0	E12.4n	11.4	<180	<300	<21	<2.00	88	83.7	E.01n	E.01n	45	27.0
MAY													
14...	<4.0	20.6	16.3	<140	<360	<19	<2.00	20	19.3	.01	E.01	41	24.1
JUN													
20...	<.8	39.1	17.7	<140	20	<20	E1.32	47	43.7	.02	.01	71	15.7
JUL													
17...	<4.0d	21.1	17.0	<140d	<500d	<20d	<2.00d	147	104	.04	.02	28	33.6
AUG													
21...	<.8	33.1	12.9	<140	51	<21	<2.00	137	132	.01	E.01	32	28.6
SEP													
16...	<4.0	16.7	17.3	<10	<500	<24	<2.00	86	97.6	.01	.01	84	33.4

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													
03...	E5.2	<6.0	<1.10	<22	<22	<22	--	--	--	--	--	--	--
NOV													
05...	<7.9	<8.0	<1.10	<22	<22	<22	--	--	--	--	--	--	--
DEC													
13...	14.1	16.1	.21	<1	16	14	--	--	--	--	--	--	--
JAN													
17...	E5.7	12.5	<1.00	<20	<20	<20	--	--	--	--	--	--	--
FEB													
21...	9.3	11.7	.08	<1	11	9	--	--	--	--	--	--	--
MAR													
26...	<7.9	<7.0	<1.10	<22	<22	<22	--	--	--	--	--	--	--
APR													
17...	E4.9n	<7.0	<1.10	<21	29	<21	<.04	<.1	<1	<.1	<.1	<.1	<.1
MAY													
14...	E6.0n	8.3	<.95	<19	<19	<19	--	--	--	--	--	--	--
JUN													
20...	16.1	E4.4	<1.00	<20	<20	<20	<.04	<.1	<1	<.1	<.1	<.1	<.1
JUL													
17...	<7.2d	13.8	<1.00d	<20d	<20d	22	--	--	--	--	--	--	--
AUG													
21...	15.7	E7.2n	<1.10	<22	44	36	--	--	--	--	--	--	--
SEP													
16...	E8.4n	9.9	<1.20	<24	<24	<24	--	--	--	--	--	--	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	CHLORDANE, TECHNICAL TOTAL (UG/L) (39350)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDEHYDE TOTAL (UG/L) (34366)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOXAPHENE, TOTAL (UG/L) (39400)	ENDOSULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)
OCT													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	<.1	<.02	<.6	<.06	<.2	<.03	<.8	<.03	29.8	<2	<.1	<.03	70.5
MAY													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
20...	<.1	<.02	<.6	<.06	<.2	<.03	<.8	<.03	81.5	<2	<.1	<.03	116
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	ENDOSULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXACHLORIDE TOTAL (UG/L) (39338)	CHLORDANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXACHLORIDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLORDANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT								
03...	--	--	--	--	--	--	--	--
NOV								
05...	--	--	--	--	--	--	--	--
DEC								
13...	--	--	--	--	--	--	--	--
JAN								
17...	--	--	--	--	--	--	--	--
FEB								
21...	--	--	--	--	--	--	--	--
MAR								
26...	--	--	--	--	--	--	--	--
APR								
17...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY								
14...	--	--	--	--	--	--	--	--
JUN								
20...	<.04	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL								
17...	--	--	--	--	--	--	--	--
AUG								
21...	--	--	--	--	--	--	--	--
SEP								
16...	--	--	--	--	--	--	--	--

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

Value qualifier codes used in this report:
  d -- Diluted sample: method hi range exceeded
  n -- Below the NDV

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

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2001 TO SEPTEMBER 2002

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.	2001	160.4	45690	31300	13550	16400	7100	3100	1350	4300
NOV.	2001	172.3	43790	30030	13970	15700	7290	3100	1420	4200
DEC.	2001	58.9	40450	27800	4420	14400	2290	3000	472	4000
JAN.	2002	177.73	43070	29560	14180	15400	7390	3000	1460	4100
FEB.	2002	184.9	43930	30130	15040	15700	7850	3100	1530	4200
MAR.	2002	152.31	45900	31440	12930	16500	6780	3100	1280	4300
APR.	2002	136.4	45120	30920	11390	16200	5960	3100	1140	4300
MAY	2002	189	44320	30390	15510	15900	8100	3100	1570	4200
JUNE	2002	175.9	44830	30730	14590	16100	7630	3100	1470	4200
JULY	2002	148.69	46410	31780	12760	16700	6700	3100	1250	4300
AUG.	2002	117.6	48680	33290	10570	17600	5580	3200	1000	4400
SEPT	2002	0	--	--	--	--	--	--	--	--
TOTAL		1674.13	**	**	138900	**	72660	**	13930	**
WTD.AVG.		4.6	44840	30730	**	16100	**	3100	**	4200

SPECIFIC CONDUCTANCE US FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	46600	44200	45800	46800	45800	46200	41900	40600	41400	42100	41800	42900
2	46300	45000	46000	46500	45600	46000	40600	39800	40200	42200	42000	42900
3	46800	45000	45900	45900	45100	45500	40400	39800	40100	42400	42000	42200
4	46000	44800	45500	45400	45200	45300	39800	38800	39300	42500	42100	42300
5	45900	45300	45500	45900	45300	45500	39100	37700	38300	42600	40600	41500
6	46400	44800	45600	47400	45500	46200	39900	38200	39200	41700	40800	41300
7	45300	44700	45000	47600	46300	47100	40200	39800	40100	41600	41000	41400
8	44400	44100	44300	47600	46000	46400	40500	40200	40300	41900	41400	41600
9	44500	44100	44300	47000	45700	46500	40800	40500	40600	42100	41400	41900
10	45200	44400	44800	46300	45700	46000	42600	40700	41400	43000	42100	42600
11	45500	45000	45200	46400	45300	45900	42800	42100	42400	43700	42500	43200
12	45900	45300	45600	45400	44400	44900	42200	41800	42000	43800	43100	43400
13	46200	45800	46000	44900	44400	44600	41900	40600	41000	44200	43500	43900
14	46800	46000	46200	---	---	e44500	41000	40700	40800	44300	43300	43900
15	47100	46400	46700	---	---	e44300	41100	40300	40800	43900	42800	43400
16	47300	46500	46900	---	---	e44100	41100	40600	40900	43600	41700	43200
17	47300	46300	46800	---	---	e44000	41000	40600	40800	43600	43000	43300
18	47800	46000	46900	---	---	e43800	40900	40400	40600	43700	43100	43600
19	46600	45400	46000	---	---	e43100	41000	40400	40700	44100	43400	43700
20	46300	45200	45900	---	---	e42600	40700	40000	40400	44200	43300	43700
21	46400	45400	45900	---	---	e42300	40600	39900	40200	43700	42700	43400
22	46000	44500	45200	---	---	e41900	40600	40300	40400	43300	42300	42800
23	45700	44700	45300	---	---	e41200	40700	40400	40600	43000	42500	42700
24	45900	45400	45700	---	---	e40900	40900	40600	40800	43300	42800	43100
25	45800	45200	45500	---	---	e40700	41100	40700	40900	43900	43300	43500
26	45900	45400	45600	---	---	e40500	41200	40900	41000	44600	43700	44000
27	46600	45800	46200	41800	40700	41200	41300	40900	41200	44300	43500	43900
28	46700	46200	46400	42000	41200	41600	41400	41100	41300	44700	43600	43900
29	46700	46100	46400	42900	41400	42100	41700	41400	41500	44200	43400	43900
30	46500	46000	46200	43100	41500	42400	42000	41300	41800	44200	43300	43700
31	46300	45700	46000	---	---	---	42100	41800	41900	44100	43400	43700
MONTH	47800	44100	45800	---	---	43900	42800	37700	40700	44700	40600	43000

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

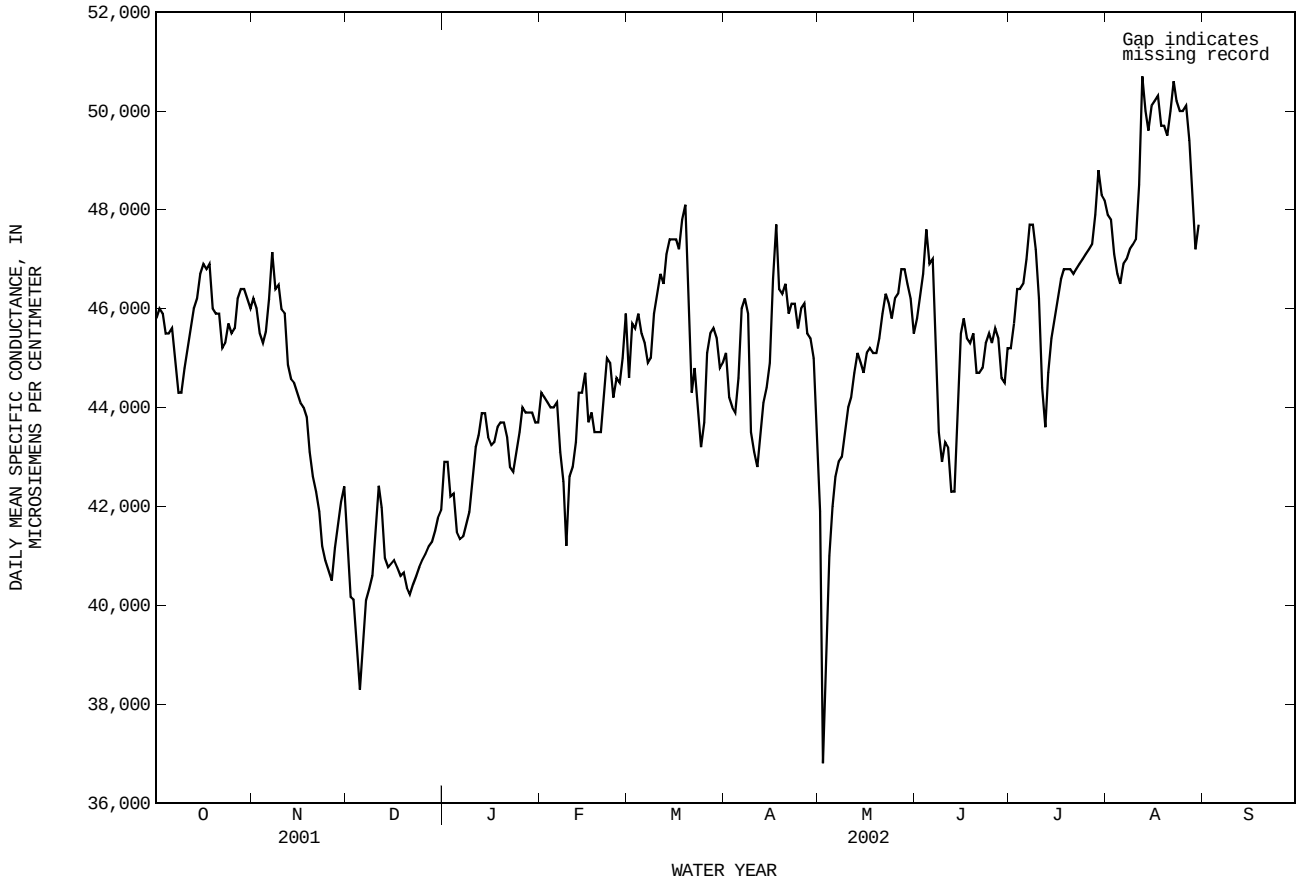
SPECIFIC CONDUCTANCE US FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e44300	45500	42800	44600	45300	44900	45100	43600	37600	41900
2	---	---	e44200	46400	43800	45700	45200	43600	44200	42000	33100	36800
3	---	---	e44100	45900	44400	45600	44400	43600	44000	40500	38200	39100
4	---	---	e44000	46700	43400	45900	44100	43600	43900	42100	39900	41000
5	---	---	e44000	46000	43100	45500	45800	43600	44600	42400	41500	42000
6	44700	43100	44100	46100	43900	45300	46400	45700	46000	43000	42300	42600
7	43600	42500	43100	45300	44400	44900	46400	---	e46200	43500	42700	42900
8	43200	42100	42500	45200	44700	45000	46400	44200	45900	43200	42800	43000
9	42700	40800	41200	46200	45200	45900	---	---	e43500	43700	43000	43500
10	43100	41700	42600	46700	46000	46300	---	---	e43100	44400	43600	44000
11	43200	42400	42800	47100	45000	46700	---	---	e42800	44600	43900	44200
12	43800	42800	43300	47800	43800	46500	43700	43200	43500	45100	44100	44700
13	44800	43800	44300	48100	44600	47100	44300	43600	44100	45500	44600	45100
14	44800	44000	44300	48100	46700	47400	44500	44100	44400	45100	44600	44900
15	45000	44400	44700	47700	46800	47400	45800	44200	44900	45100	44200	44700
16	44900	43000	43700	47900	46400	47400	47300	45800	46600	45400	44700	45100
17	44100	43400	43900	47500	46700	47200	49100	46700	47700	45400	44900	45200
18	44200	43000	43500	48200	47000	47800	47100	45700	46400	45500	44700	45100
19	43700	43400	43500	48200	47500	48100	46500	45700	46300	45300	44900	45100
20	43800	43200	43500	48200	44000	46000	46700	46100	46500	45700	45200	45400
21	45000	43500	44300	45200	43400	44300	46200	45600	45900	46500	45700	45900
22	45400	44500	45000	45300	44200	44800	46300	45600	46100	46700	45700	46300
23	45400	42400	44900	44600	43200	44000	46200	45800	46100	46500	45600	46100
24	45400	42000	44200	43500	42800	43200	46100	45200	45600	46100	45200	45800
25	45000	42600	44600	44100	42900	43700	46400	45600	46000	46500	45800	46200
26	45600	42800	44500	45600	44100	45100	46300	45500	46100	46700	45500	46300
27	46500	43300	45000	45700	45300	45500	45700	45100	45500	47000	46500	46800
28	46700	44900	45900	46000	45200	45600	45800	45200	45400	47200	46300	46800
29	---	---	---	45700	45200	45400	45800	44100	45000	47100	45800	46500
30	---	---	---	45600	44200	44800	45300	40300	43700	46700	45500	46200
31	---	---	---	45300	44300	44900	---	---	---	46200	44700	45500
MONTH	---	---	43900	48200	42800	45700	---	---	45200	47200	33100	44300

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	46100	45500	45800	45700	44900	45200	48300	47400	47900	---	---	---
2	46400	46000	46200	46300	45300	45700	48100	47400	47800	---	---	---
3	47500	46300	46700	46900	46000	46400	47600	46700	47100	---	---	---
4	48000	46300	47600	46600	46300	46400	47200	46400	46700	---	---	---
5	47200	46300	46900	46700	46300	46500	46900	45800	46500	---	---	---
6	47500	46500	47000	47400	46600	47000	47000	46800	46900	---	---	---
7	46600	44500	45500	48000	47400	47700	47200	46900	47000	---	---	---
8	45900	41500	43500	48000	47400	47700	47400	47000	47200	---	---	---
9	43400	41500	42900	47800	46500	47200	47400	47100	47300	---	---	---
10	43700	42800	43300	47800	45300	46200	---	---	e47400	---	---	---
11	43800	42700	43200	46400	42700	44400	---	---	e48500	---	---	---
12	42900	41600	42300	44700	43100	43600	---	---	e50700	---	---	---
13	43300	42000	42300	45300	44000	44700	51100	48200	50000	---	---	---
14	44800	43300	44100	45500	45300	45400	50500	48400	49600	---	---	---
15	45800	44800	45500	46000	45500	45800	50400	49700	50100	---	---	---
16	45900	45700	45800	46800	45800	46200	50500	50000	50200	---	---	---
17	45800	45000	45400	47000	46200	46600	50600	49900	50300	---	---	---
18	45600	45000	45300	46900	46600	46800	49900	49400	49700	---	---	---
19	45900	44900	45500	47000	46600	46800	49800	49400	49700	---	---	---
20	45100	44100	44700	47000	46600	46800	49900	49200	49500	---	---	---
21	45100	44100	44700	---	---	e46700	50700	49600	50000	---	---	---
22	45100	44300	44800	---	---	e46800	50900	50200	50600	---	---	---
23	45600	44900	45300	---	---	e46900	50600	49700	50200	---	---	---
24	45900	45100	45500	---	---	e47000	50400	49600	50000	---	---	---
25	45700	44900	45300	---	---	e47100	50500	49300	50000	---	---	---
26	46000	45200	45600	---	---	e47200	50500	49700	50100	---	---	---
27	45900	44800	45400	---	---	e47300	50300	49000	49400	---	---	---
28	45300	43900	44600	48800	47300	47900	49100	47400	48300	---	---	---
29	45100	44000	44500	49300	48500	48800	48000	46500	47200	---	---	---
30	45600	44700	45200	48600	48000	48300	48400	47400	47700	---	---	---
31	---	---	---	48400	47900	48200	---	---	---	---	---	---
MONTH	48000	41500	45000	---	---	46600	---	---	---	---	---	---

e Estimated

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



WATER TEMPERATURE US FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	26.2	22.1	24.7	21.2	17.0	18.7	11.7	10.3	10.9	8.7	6.1	7.3
2	23.6	21.2	22.5	22.4	17.8	19.5	12.9	11.6	12.2	8.7	7.5	8.0
3	23.8	19.4	21.5	22.2	18.3	20.4	14.6	12.9	13.5	9.7	6.9	8.1
4	25.3	20.2	22.8	21.2	20.0	20.6	19.6	14.6	16.3	9.3	7.3	8.5
5	22.7	18.3	19.8	21.4	19.8	20.5	17.7	15.7	16.4	10.2	6.9	8.8
6	20.6	16.1	18.1	21.8	19.5	20.5	16.1	13.8	15.1	11.0	7.9	9.6
7	20.6	15.8	17.8	20.9	17.9	19.3	14.4	12.5	13.4	12.1	9.3	10.6
8	22.6	13.9	18.7	19.4	15.7	17.0	12.8	10.6	11.6	14.0	9.7	11.6
9	25.2	20.5	22.2	17.0	15.1	15.8	11.0	9.2	10.0	15.2	11.8	13.3
10	22.4	20.5	21.5	17.6	14.1	15.7	12.8	8.9	10.8	14.1	12.7	13.3
11	23.1	18.9	20.9	19.0	15.5	16.9	12.8	10.8	11.4	14.7	11.1	13.1
12	21.5	17.6	19.8	19.3	16.7	17.7	12.6	11.2	11.7	14.0	11.5	12.8
13	18.8	15.8	17.2	18.8	17.5	18.1	11.7	9.9	10.4	14.1	10.7	12.5
14	18.3	16.0	17.0	---	17.6	---	10.9	9.3	10.0	14.3	10.2	12.2
15	19.1	16.9	17.8	---	---	---	11.7	10.3	10.8	13.0	---	---
16	17.8	15.5	16.5	---	---	---	11.9	11.5	11.7	13.8	11.8	12.7
17	18.3	15.1	16.9	17.8	---	---	12.8	11.5	12.1	12.8	10.9	12.1
18	20.0	15.3	17.6	18.3	17.6	17.8	13.6	11.3	12.4	12.0	10.1	10.9
19	20.8	15.5	18.0	17.7	15.1	16.1	12.7	10.6	11.4	11.8	8.2	10.1
20	21.5	17.0	19.2	16.1	14.0	14.9	12.8	10.7	11.6	12.2	8.3	10.2
21	22.9	18.7	20.6	15.1	13.9	14.4	13.2	10.8	11.9	12.8	8.3	10.4
22	23.3	19.4	21.1	15.8	14.5	15.1	13.1	11.3	12.3	14.8	9.9	12.1
23	22.4	19.2	20.8	16.0	15.7	15.8	12.3	10.8	11.5	13.8	11.9	13.0
24	20.7	17.2	19.2	16.5	15.7	16.1	11.1	10.0	10.5	12.6	10.2	11.3
25	19.5	15.5	17.2	16.5	15.8	16.1	10.8	8.4	9.7	11.7	8.8	10.4
26	18.5	14.9	16.2	16.0	15.2	15.5	10.3	8.8	9.5	13.5	8.8	11.2
27	19.5	15.4	17.0	15.3	13.8	14.8	9.7	8.4	9.1	13.9	9.8	11.6
28	19.7	15.5	17.2	14.3	8.0	11.5	11.2	8.1	9.6	14.6	10.8	12.7
29	20.6	16.8	18.2	10.3	7.1	8.8	9.8	8.3	9.0	15.9	13.5	14.4
30	19.3	16.6	17.7	10.7	9.2	10.2	9.7	6.9	8.0	15.5	10.3	12.4
31	19.4	16.8	17.8	---	---	---	8.3	6.1	7.2	10.9	8.8	10.0
MONTH	26.2	13.9	19.1	---	---	---	19.6	6.1	11.4	15.9	---	---

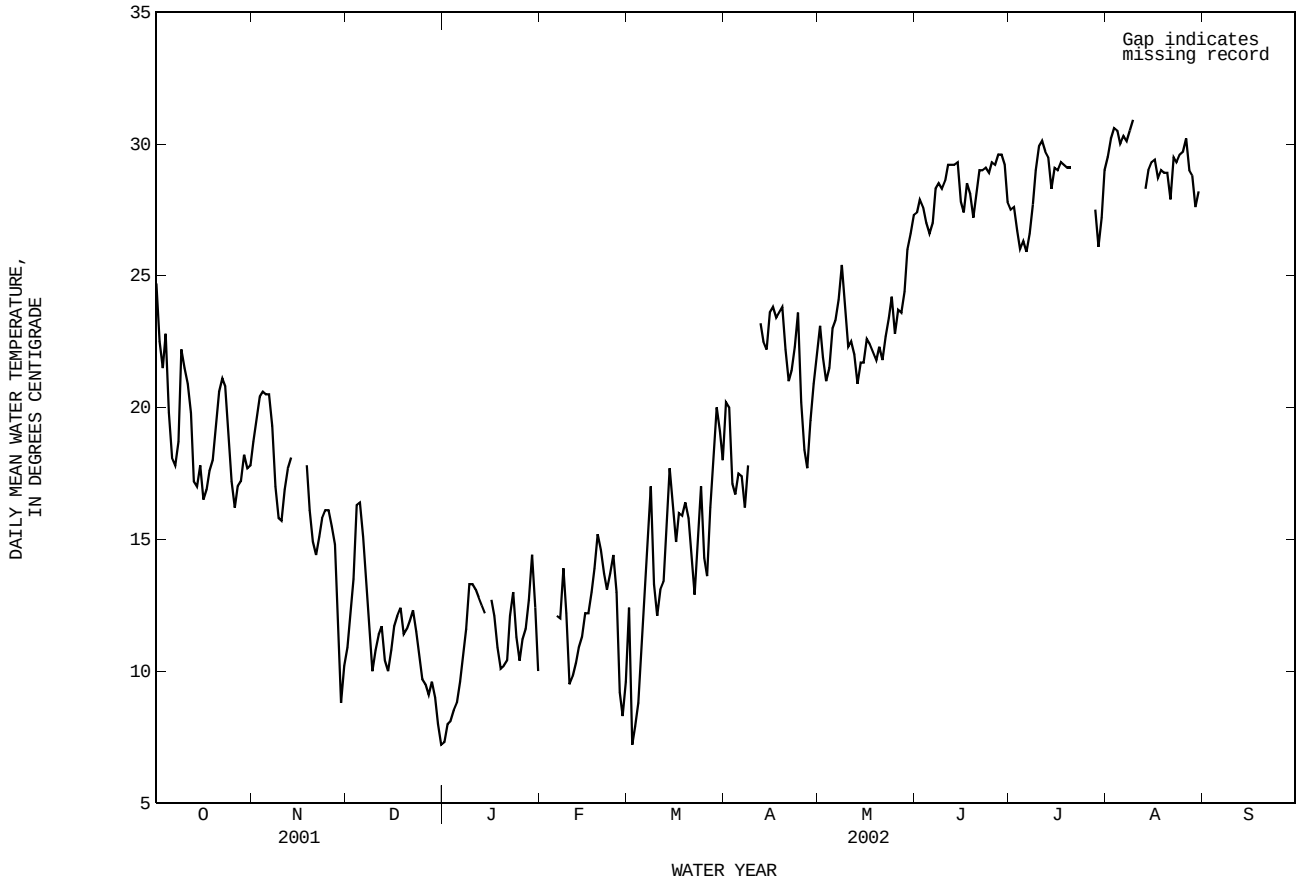
07311782 South Wichita River at low-flow dam near Guthrie, TX--Continued

WATER TEMPERATURE US FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	16.9	9.8	12.4	22.0	18.8	20.2	24.2	22.6	23.1
2	---	---	---	9.8	4.8	7.2	22.0	17.8	20.0	24.2	20.6	21.9
3	---	---	---	11.1	5.4	7.9	18.8	15.5	17.1	22.4	19.9	21.0
4	---	---	---	12.3	5.8	8.8	18.3	15.1	16.7	23.3	19.9	21.5
5	12.0	---	---	14.5	8.1	11.0	18.1	16.8	17.5	24.7	22.0	23.0
6	12.5	11.6	12.1	16.6	10.5	13.1	18.0	16.5	17.4	24.2	22.6	23.3
7	13.4	10.6	12.0	18.3	12.0	15.0	16.5	16.0	16.2	25.9	22.9	24.1
8	15.2	12.4	13.9	19.4	15.6	17.0	20.3	16.3	17.8	26.9	24.1	25.4
9	13.7	10.5	12.2	17.0	11.5	13.3	---	---	---	26.2	22.4	23.9
10	11.2	8.3	9.5	13.4	10.7	12.1	---	---	---	23.9	21.5	22.3
11	12.2	7.2	9.8	15.2	11.7	13.1	24.4	---	---	24.1	21.5	22.5
12	12.1	7.5	10.3	15.2	11.8	13.4	24.9	21.4	23.2	23.3	20.7	22.0
13	12.8	9.0	10.9	17.9	13.7	15.4	24.4	21.6	22.5	23.9	18.8	20.9
14	13.9	9.1	11.3	19.1	16.1	17.7	22.9	21.3	22.2	23.0	20.3	21.7
15	13.8	9.9	12.2	18.1	14.2	16.2	25.4	22.5	23.6	24.1	19.8	21.7
16	15.6	9.0	12.2	16.5	13.1	14.9	25.4	22.6	23.8	24.6	21.1	22.6
17	14.5	10.9	13.0	16.8	15.2	16.0	25.5	21.8	23.4	23.8	21.6	22.4
18	16.8	11.1	13.9	16.6	15.3	15.9	25.0	22.8	23.6	25.3	19.8	22.1
19	16.5	14.0	15.2	16.6	15.8	16.4	24.5	23.1	23.8	24.1	19.8	21.8
20	16.8	12.5	14.6	16.4	14.3	15.8	23.9	21.1	22.2	24.0	20.9	22.3
21	15.4	12.8	13.7	16.1	12.3	14.3	23.7	19.4	21.0	24.5	19.8	21.8
22	15.8	10.7	13.1	14.4	10.3	12.9	23.2	19.7	21.4	26.3	20.1	22.7
23	16.7	11.4	13.7	17.1	12.7	15.0	22.8	21.7	22.3	25.8	22.0	23.4
24	17.3	12.6	14.4	19.7	15.3	17.0	25.0	22.6	23.6	27.5	22.3	24.2
25	15.9	11.0	13.0	17.5	13.0	14.3	23.5	19.0	20.2	24.1	21.7	22.8
26	11.0	7.3	9.2	15.7	11.9	13.6	19.1	16.9	18.4	27.2	21.1	23.7
27	11.2	5.5	8.3	18.5	14.6	16.2	18.7	16.8	17.7	25.1	22.7	23.6
28	12.2	7.4	9.6	19.3	16.8	17.9	20.4	18.7	19.5	28.0	22.0	24.4
29	---	---	---	21.9	18.3	20.0	21.5	20.3	20.9	29.5	23.4	26.0
30	---	---	---	21.1	17.2	19.1	22.7	21.5	22.0	29.2	24.6	26.6
31	---	---	---	19.2	16.3	18.0	---	---	---	29.9	24.9	27.3
MONTH	---	---	---	21.9	4.8	14.5	---	---	---	29.9	18.8	23.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.3	25.7	27.4	29.5	25.6	27.5	32.3	27.1	29.5	---	---	---
2	30.0	26.3	27.9	30.0	25.6	27.6	32.2	28.3	30.2	---	---	---
3	30.3	25.2	27.6	27.2	26.2	26.7	33.0	28.3	30.6	---	---	---
4	28.1	25.7	27.0	26.6	25.3	26.0	33.4	27.4	30.5	---	---	---
5	27.0	26.3	26.6	27.3	25.3	26.3	32.4	25.7	30.0	---	---	---
6	28.3	26.2	27.0	26.6	25.5	25.9	31.6	28.9	30.3	---	---	---
7	29.6	26.4	28.3	26.9	26.5	26.6	32.2	28.0	30.1	---	---	---
8	29.1	27.1	28.5	28.6	26.9	27.7	32.9	28.2	30.5	---	---	---
9	29.2	27.1	28.3	29.5	28.2	29.0	32.1	29.9	30.9	---	---	---
10	30.6	26.6	28.6	30.8	29.0	29.9	---	29.0	---	---	---	---
11	31.8	27.2	29.2	31.3	28.8	30.1	---	---	---	---	---	---
12	30.7	28.2	29.2	31.5	28.1	29.7	30.2	---	---	---	---	---
13	31.7	27.3	29.2	31.8	27.6	29.5	30.2	27.0	28.3	---	---	---
14	32.0	27.1	29.3	29.9	27.1	28.3	30.6	27.8	29.0	---	---	---
15	29.3	26.3	27.8	30.8	27.8	29.1	30.8	27.8	29.3	---	---	---
16	27.8	27.1	27.4	30.8	27.6	29.0	30.8	28.3	29.4	---	---	---
17	30.0	27.6	28.5	31.0	27.9	29.3	29.6	27.8	28.7	---	---	---
18	29.5	26.7	28.1	30.7	27.9	29.2	30.8	27.7	29.0	---	---	---
19	29.1	25.6	27.2	31.2	27.2	29.1	30.5	27.4	28.9	---	---	---
20	30.5	26.0	28.1	31.2	26.9	29.1	29.7	27.9	28.9	---	---	---
21	31.4	27.3	29.0	---	26.2	---	29.6	26.5	27.9	---	---	---
22	31.3	27.2	29.0	---	---	---	30.8	28.7	29.5	---	---	---
23	31.9	26.9	29.1	---	---	---	30.9	27.7	29.3	---	---	---
24	32.1	26.8	28.9	---	---	---	31.6	27.9	29.6	---	---	---
25	32.4	26.8	29.3	---	---	---	31.6	28.1	29.7	---	---	---
26	32.3	27.2	29.2	---	---	---	33.0	28.3	30.2	---	---	---
27	32.4	27.7	29.6	29.5	---	---	30.9	27.2	29.0	---	---	---
28	32.2	27.6	29.6	29.0	26.9	27.5	32.1	26.6	28.8	---	---	---
29	30.9	27.8	29.2	27.3	24.9	26.1	29.7	25.6	27.6	---	---	---
30	29.4	26.4	27.8	29.5	25.6	27.2	29.3	26.8	28.2	---	---	---
31	---	---	---	31.6	26.9	29.0	---	---	---	---	---	---
MONTH	32.4	25.2	28.4	---	---	---	---	---	---	---	---	---

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.--Oct. 1985 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,590.0 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good 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 (discontinued station 07311780) located about 1.1 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.06	0.05	8.2	8.4	e2.0	0.02	5.4	5.3	0.03	0.04	0.66	e0.03
2	0.06	0.05	8.2	8.6	e1.5	0.03	2.2	1.8	0.04	0.04	0.62	e0.03
3	0.12	0.04	7.8	7.7	e1.0	0.03	0.80	0.17	0.05	0.04	0.45	e0.03
4	0.13	0.04	16	4.5	e0.40	0.04	1.4	0.11	0.55	0.04	0.25	e0.03
5	0.09	0.04	0.04	0.04	e0.04	0.04	1.4	2.4	5.8	0.04	0.23	e0.03
6	0.11	0.06	0.04	0.02	0.07	0.06	2.6	0.06	3.2	4.2	0.20	e0.03
7	0.11	0.11	0.04	0.03	0.15	0.06	12	0.05	0.09	11	0.18	e0.03
8	0.07	0.12	0.66	0.04	0.14	0.06	21	0.03	0.06	6.7	0.17	e0.03
9	0.06	0.17	4.6	0.05	0.19	0.18	e0.50	0.71	2.3	0.10	3.0	e0.02
10	0.04	0.15	6.0	0.11	0.18	2.4	e0.10	0.04	0.26	0.08	e5.3	e0.02
11	0.04	0.14	3.9	0.14	0.20	4.3	e0.05	0.04	0.08	0.14	e5.7	e0.02
12	0.04	0.11	2.5	0.08	0.15	0.38	0.05	0.03	0.07	0.08	e5.9	e0.02
13	2.7	0.12	2.9	0.04	0.12	2.4	0.07	0.03	0.06	0.06	5.7	e0.02
14	4.1	e13	4.7	0.03	0.07	0.41	1.9	0.03	0.05	0.06	3.8	e0.02
15	4.2	12	9.1	0.03	0.05	2.7	3.9	0.03	0.11	1.6	0.04	e0.01
16	5.2	0.04	10	0.03	0.04	3.5	0.04	0.03	4.2	0.14	1.4	e0.01
17	5.2	37	9.3	0.04	0.04	3.5	0.08	0.03	4.2	0.16	5.3	e0.01
18	0.25	60	8.5	0.06	0.04	4.4	0.06	0.03	0.50	0.14	5.2	e0.01
19	0.20	7.8	7.4	0.12	0.04	4.7	0.05	0.03	0.38	0.18	4.8	e0.02
20	0.12	7.5	6.0	0.16	0.13	2.3	0.05	0.03	0.32	0.11	3.0	e0.02
21	0.05	5.6	2.5	0.17	0.06	0.84	0.05	0.04	0.28	0.05	0.73	e0.02
22	0.05	2.4	8.0	0.22	0.04	5.0	0.06	0.04	0.23	0.05	3.1	e0.02
23	0.05	0.56	8.4	0.19	0.04	0.61	2.6	0.03	0.18	0.05	0.04	e0.02
24	0.09	0.05	8.6	0.27	0.04	4.0	4.9	0.03	0.12	0.04	0.06	e0.02
25	0.13	0.04	8.8	0.43	0.03	5.1	5.9	0.03	0.10	0.04	0.07	e0.02
26	0.12	0.04	8.9	0.57	0.01	0.37	16	0.03	0.05	0.04	0.04	e0.02
27	0.09	0.03	8.9	0.79	0.01	0.53	22	0.03	0.05	0.04	0.03	e0.02
28	0.06	3.0	8.7	0.82	0.01	2.4	6.6	0.03	0.05	0.04	0.03	e0.02
29	0.06	8.3	8.8	0.94	---	3.1	8.4	0.03	0.05	7.7	0.03	e0.02
30	0.05	8.3	8.8	2.3	---	6.8	8.1	0.03	0.04	6.1	0.02	e0.03
31	0.05	---	8.5	2.4	---	3.9	---	0.04	---	0.92	e0.02	---
MEAN	0.765	5.562	6.606	1.268	0.242	2.070	4.275	0.366	0.783	1.291	1.809	0.022
MAX	5.2	60	16	8.6	2.0	6.8	22	5.3	5.8	11	5.9	0.03
MIN	0.04	0.03	0.04	0.02	0.01	0.02	0.04	0.03	0.03	0.04	0.02	0.01
AC-FT	47	331	406	78	13	127	254	22	47	79	111	1.3

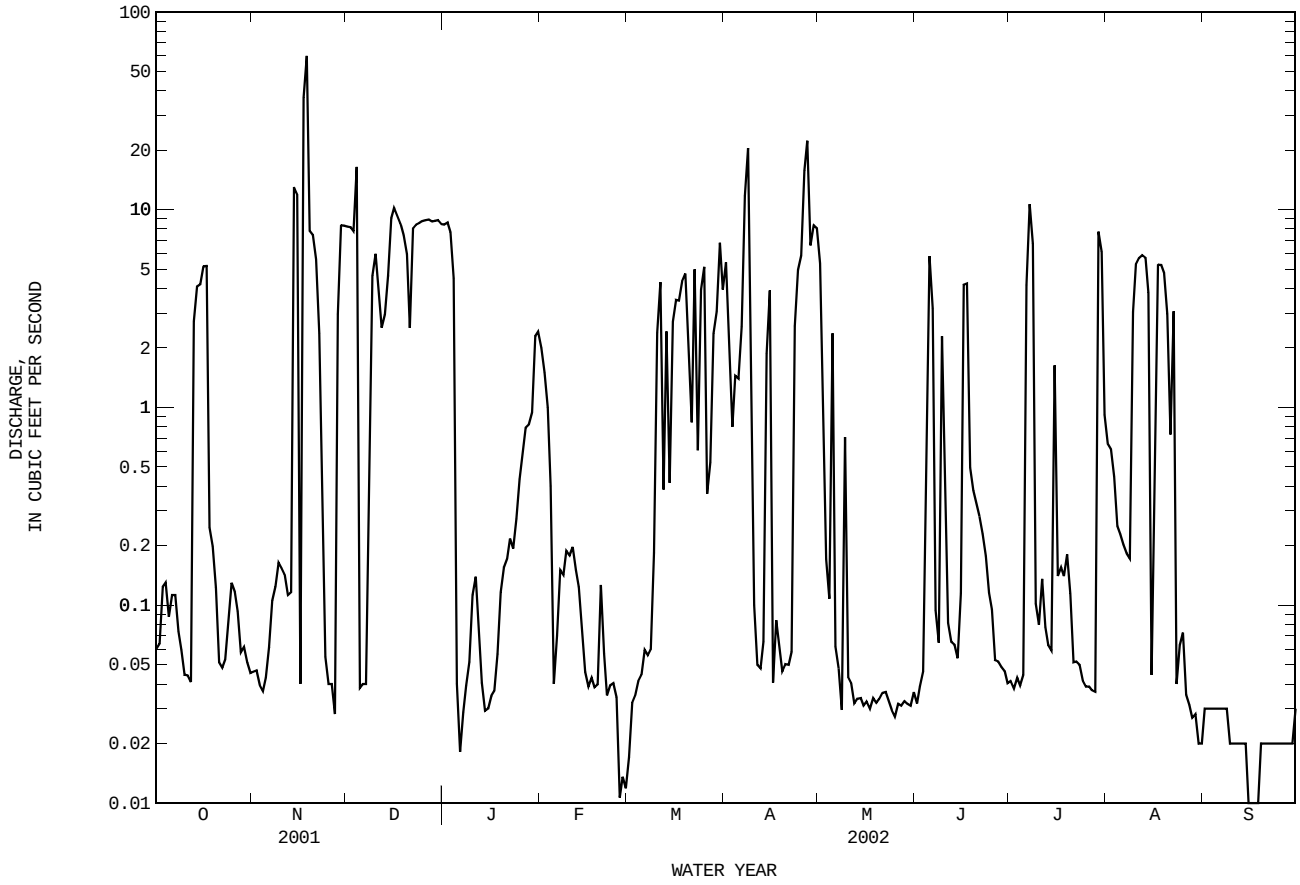
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2002, BY WATER YEAR (WY)

MEAN	4.165	1.932	2.593	2.716	2.659	1.841	2.250	7.452	3.695	11.01	3.001	11.08
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	0.027	0.018	0.028	0.073	0.038	0.016	0.011	0.043	0.097	0.025	0.021	0.016
(WY)	2000	1997	1989	1989	1995	1991	1996	1988	1998	1993	1994	1990

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1986 - 2002	
ANNUAL MEAN	2.209		2.097		4.545	
HIGHEST ANNUAL MEAN					20.8	1986
LOWEST ANNUAL MEAN					0.75	1988
HIGHEST DAILY MEAN	60	Nov 18	60	Nov 18	3520	Jul 3 1986
LOWEST DAILY MEAN	0.00	Mar 16	0.00	Feb 26	0.00	Jan 4 1986
ANNUAL SEVEN-DAY MINIMUM	0.02	May 10	0.01	Sep 12	0.01	Sep 10 2000
MAXIMUM PEAK FLOW			255	Dec 4	13100	Jul 3 1989
MAXIMUM PEAK STAGE			5.60	Dec 4	19.01	Jul 3 1989
ANNUAL RUNOFF (AC-FT)	1600		1520		3290	
10 PERCENT EXCEEDS	8.2		7.6		7.2	
50 PERCENT EXCEEDS	0.11		0.11		0.06	
90 PERCENT EXCEEDS	0.03		0.03		0.02	

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 2001 TO SEPTEMBER 2002

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													
03...	1130	.14	44700	7.6	20.9	11.2	157	4500	4300	1280	305	9730	63
NOV													
05...	1215	.04	44800	7.6	21.6	12.2	172	4600	4500	1320	316	9830	63
DEC													
13...	1135	.04	41300	7.6	10.3	10.6	118	4000	3800	1130	280	8530	59
JAN													
17...	1230	.03	42000	7.9	11.7	10.5	122	4300	4200	1240	297	9250	61
FEB													
21...	1300	.02	43800	7.7	12.7	11.9	141	4200	4000	1200	289	9000	61
MAR													
26...	1130	.02	43500	7.6	14.3	10.8	132	4900	4800	1400	348	9260	57
APR													
17...	1140	.04	44400	7.7	23.6	9.0	133	4100	4000	1170	290	9240	63
MAY													
14...	1130	.04	43700	7.4	20.0	9.5	130	4300	4100	1220	295	9650	64
JUN													
20...	1340	.30	43800	7.7	28.5	10.3	154	4100	4000	1180	286	9720	66
JUL													
17...	1308	.20	45700	7.7	29.1	13.1	211	4300	4200	1210	300	9480	63
AUG													
21...	1110	.02	47800	7.4	27.2	10.0	150	4300	4100	1220	298	9690	65
SEP													
16...	1050	.01	44500	7.7	24.3	9.6	134	4500	4300	1310	306	9490	61

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													
03...	44.9	155	3220	15700	.5	12.7	30400	35	--	<.008	<.05	.45	--
NOV													
05...	39.4	148	3320	15800	.4	10.2	30800	50	--	E.005	<.05	.46	--
DEC													
13...	35.3	138	3040	14900	.5	8.7	28000	20	.08	.056	.14	.46	.36
JAN													
17...	29.5	143	3320	15800	.4	3.7	30000	32	--	<.008	E.02	.40	--
FEB													
21...	33.2	132	3200	15300	.5	1.4	29100	20	--	<.008	<.05	.24	--
MAR													
26...	35.5	125	3050	15600	.5	7.3	29800	16	--	E.007	E.03	.44	--
APR													
17...	37.8	119	3060	15200	.5	4.9	29100	28	--	E.004	E.03	.38	--
MAY													
14...	36.3	145	3130	14800	.5	8.5	29300	22	--	<.008	<.05	.39	--
JUN													
20...	37.7	118	2990	15100	.6	5.6	29400	41	--	<.008	<.05	.34	--
JUL													
17...	38.5	98	3040	15600	.6	11.4	29700	E16	--	<.008	<.05	.44	--
AUG													
21...	46.5	124	3060	16200	.6	12.1	30600	<10	--	E.005	<.05	.79	--
SEP													
16...	39.4	195	3140	15300	.6	18.6	29700	43	--	<.008	<.05	.97	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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)	ORTHO-PHOS-PHATE, 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													
03...	--	.45	<.06	<.06	<.02	E5	4.3	35	37	<.63	<.70	E2.3	E2.6
NOV													
05...	.12	.58	E.04	<.06	<.02	E5	<3.0	32	31	<.63	<.70	<6.4	<6.4
DEC													
13...	--	.22	<.06	<.06	<.02	15	<3.0	22	29	<.56	<.60	<4.0	<4.0
JAN													
17...	.12	.51	E.03	<.06	<.02	E6	E2.9	30	28	<.60	<.60	<4.0	<4.0
FEB													
21...	.35	.59	E.04	<.06	<.02	6n	.8	26	22	E.03	<.04	<.8	4.1
MAR													
26...	.11	.56	<.06	<.06	<.02	7	4.0	32	30	<.04	.07	<.8	<.8
APR													
17...	.03	.41	<.06	<.06	<.02	<15	<3.0	29	29	<.60	<.60	<3.2	<3.2
MAY													
14...	--	.31	<.06	<.06	E.02	E5n	<1.0	32	31	<.56	<.30	<3.2	<3.2
JUN													
20...	.37	.70	<.06	<.06	<.02	5	E2.7	39	43	<.60	<.60	<4.0	<.8
JUL													
17...	.36	.80	<.06	<.06	E.01	<8	4.8	34	37	<.56	<.60	<.8	<3.2
AUG													
21...	--	.67	<.06	<.06	<.02	<8	E2.9n	33	30	<.60	<.60	<3.2	<.8
SEP													
16...	.38	1.3	E.04	<.06	<.02	<10	7.0	47	49	<.63	<.70	E2.8n	<4.0

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													
03...	14.8	10.6	<140	<250	<18	E.85	211	233	<.01	<.01	23	<1.00	7.2
NOV													
05...	18.6	10.1	<140	<250	<18	<1.00	427	418	<.01	<.01	37	<1.00	<6.5
DEC													
13...	10.3	11.4	<10	<300	<16	<1.00	65	92.0	E.01	<.01	<16	9.52	E3.5n
JAN													
17...	20.8	8.9	<140	<300	<17	<1.00	188	162	E.01	<.01	28	28.2	8.2
FEB													
21...	16.5	14.0	<10	55	<1	.41	222	206	.01	E.01n	28	<.06	<.4
MAR													
26...	14.3	16.9	<10	22	<1	<.08	223	240	<.01	<.01	43	37.0	<6.1
APR													
17...	11.7	10.7	<140	<300	<17	<1.00	384	378	E.01n	<.01	38	24.0	<6.1
MAY													
14...	23.9	19.1	<120	E165n	<16	<.60	283	257	E.01n	E.01n	39	38.7	E2.9n
JUN													
20...	36.4	17.7	<120	12	<17	E1.02	231	230	.01	E.01n	62	16.4	11.8
JUL													
17...	19.9	23.4	<120	<500	<16	<1.00	292	316	.04	E.01	23	26.2	E5.7
AUG													
21...	29.4	10.2	<120	71	<17	<1.00	260	235	.03	.02	27	19.9	11.5
SEP													
16...	12.8	19.2	<10	<300	<18	<1.00	661	689	.02	E.01n	67	28.8	<6.5

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
03...	<7.2	<.90	<18	<18	<18	--	--	--	--	--	--	--	--
NOV													
05...	<6.5	<.90	<18	<18	<18	--	--	--	--	--	--	--	--
DEC													
13...	3.4	<.80	<16	<16	<16	--	--	--	--	--	--	--	--
JAN													
17...	10.2	<.85	<17	<17	<17	--	--	--	--	--	--	--	--
FEB													
21...	12.2	<.05	<1	14	9	--	--	--	--	--	--	--	--
MAR													
26...	3.4	<.05	<1	8	16	--	--	--	--	--	--	--	--
APR													
17...	E4.3n	<.85	<17	<17	<17	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1
MAY													
14...	10.9	<.80	<16	<16	15	--	--	--	--	--	--	--	--
JUN													
20...	E4.3	<.85	<17	19	<17	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1
JUL													
17...	15.7	<.80	<16	<16	18	--	--	--	--	--	--	--	--
AUG													
21...	E3.6n	<.85	<17	39	28	--	--	--	--	--	--	--	--
SEP													
16...	13.8	<.90	<18	61	<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													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
17...	<.02	<.6	<.06	<.2	<.03	<.8	<.03	31.2	<2	<.1	<.03	96.2	<.04
MAY													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
20...	<.02	<.6	<.06	<.2	<.03	<.8	<.03	53.7	<2	<.1	<.03	77.9	<.04
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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							
03...	--	--	--	--	--	--	--
NOV							
05...	--	--	--	--	--	--	--
DEC							
13...	--	--	--	--	--	--	--
JAN							
17...	--	--	--	--	--	--	--
FEB							
21...	--	--	--	--	--	--	--
MAR							
26...	--	--	--	--	--	--	--
APR							
17...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
14...	--	--	--	--	--	--	--
JUN							
20...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL							
17...	--	--	--	--	--	--	--
AUG							
21...	--	--	--	--	--	--	--
SEP							
16...	--	--	--	--	--	--	--

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

Value qualifier codes used in this report:
  n -- Below the NDV

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, 2.0 mi downstream from Panhandle and Santa Fe Railway Co. bridge, 4.0 mi north of Benjamin, and 41.0 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 NGVD of 1929. 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 FROM THE DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.0	0.0	13	8.6	5.6	0.99	11	18	0.00	0.44	25	0.73
2	0.0	0.0	7.1	7.2	2.0	0.84	2.9	12	0.00	0.07	21	0.52
3	0.0	0.0	5.3	8.5	1.9	0.80	3.5	9.8	0.00	265	16	0.36
4	0.0	0.15	6.0	11	2.1	0.83	3.0	7.5	71	373	14	0.25
5	0.0	0.0	7.6	19	7.9	0.81	2.4	6.1	577	195	11	0.19
6	0.0	0.0	4.8	14	13	0.80	2.5	e6.8	41	220	10	0.13
7	0.0	0.0	11	11	9.4	0.78	297	e4.4	30	330	7.7	0.10
8	0.0	0.0	11	8.0	7.8	0.83	40	3.0	24	142	6.9	0.11
9	0.0	0.0	2.1	5.4	7.1	0.58	16	1.6	13	90	5.2	0.09
10	63	0.0	1.5	3.4	4.5	0.52	19	1.6	7.8	68	5.3	0.05
11	11	0.0	1.4	2.0	3.1	0.61	17	1.9	5.5	58	5.5	0.43
12	0.08	0.0	1.7	1.9	2.5	0.57	9.1	1.6	20	51	4.6	0.71
13	0.0	0.0	1.6	1.9	2.2	0.62	4.8	1.3	8.9	49	3.6	0.47
14	0.0	13	3.2	1.7	2.0	0.59	3.2	1.0	24	44	36	0.58
15	0.0	e643	3.6	1.7	1.8	0.40	2.0	0.92	11	40	8.8	0.52
16	0.0	e78	2.7	1.8	1.5	0.34	1.5	0.88	349	39	3.4	0.50
17	0.0	e427	2.0	1.5	1.5	0.49	1.4	0.78	39	37	2.7	0.49
18	0.0	e218	e3.7	1.6	1.5	1.2	1.3	0.65	25	35	1.8	9.9
19	0.0	121	e6.2	1.6	1.4	87	1.5	0.56	23	34	1.4	78
20	0.0	64	e6.2	1.7	1.2	55	1.7	0.46	17	30	1.2	9.1
21	0.0	37	e6.2	1.6	1.2	13	1.2	0.36	11	29	1.1	1.8
22	0.0	25	e6.1	1.7	1.1	4.3	1.1	0.34	9.1	27	0.93	1.2
23	0.0	19	e6.0	1.7	1.2	3.0	1.2	0.29	e5.0	26	10	0.94
24	0.0	14	e5.9	1.9	1.2	2.0	1.0	0.99	e3.0	24	4.9	1.0
25	0.0	11	e5.8	2.0	0.93	1.2	34	22	2.6	24	1.4	0.92
26	0.0	6.1	e5.7	2.0	0.86	0.94	282	2.1	2.6	20	0.81	0.82
27	0.0	4.9	6.1	1.9	0.89	0.89	36	1.9	1.8	17	0.52	0.76
28	0.0	13	6.2	2.0	0.90	0.91	32	1.0	1.1	15	0.39	0.75
29	0.0	18	6.6	2.2	---	1.0	27	0.29	0.78	1020	38	0.77
30	0.0	13	7.9	7.7	---	61	25	0.11	0.58	e190	11	0.72
31	0.0	---	8.5	49	---	91	---	0.0	---	e70	1.5	---
TOTAL	74.08	1725.15	172.7	187.2	88.28	333.84	881.3	110.23	1323.76	3562.51	261.65	112.91
MEAN	2.390	57.51	5.571	6.039	3.153	10.77	29.38	3.556	44.13	114.9	8.440	3.764
MAX	63	643	13	49	13	91	297	22	577	1020	38	78
MIN	0.00	0.00	1.4	1.5	0.86	0.34	1.0	0.00	0.00	0.07	0.39	0.05
AC-FT	147	3420	343	371	175	662	1750	219	2630	7070	519	224
IN.	0.00	0.11	0.01	0.01	0.01	0.02	0.06	0.01	0.08	0.23	0.02	0.01

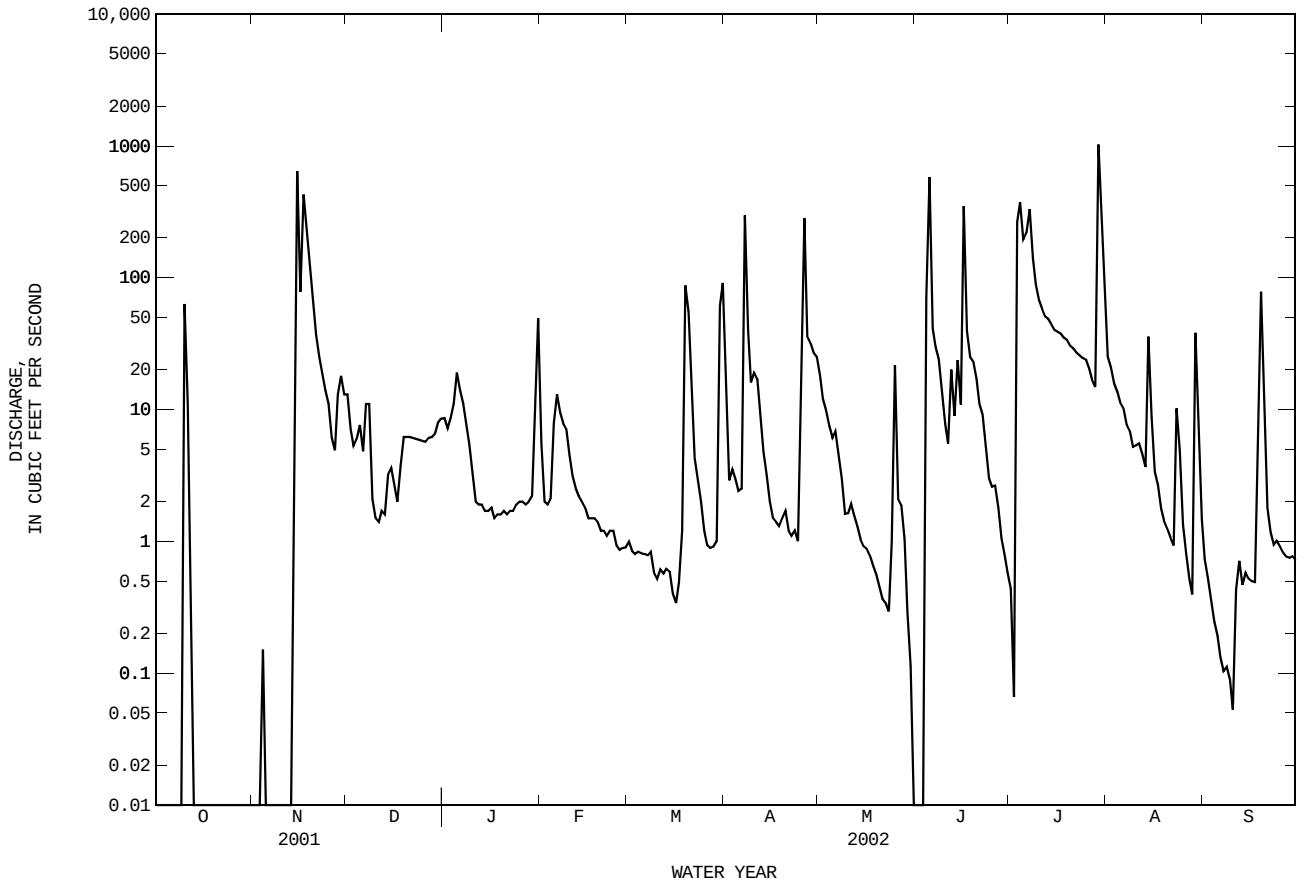
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	68.14	19.63	11.60	11.15	17.59	25.23	29.30	73.39	77.95	24.94	44.24	73.45
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	0.000	0.000	0.000	0.000	0.46	0.97	0.073	0.92	0.061	0.000	0.000	0.000
(WY)	2000	2000	1999	2000	2000	1989	1989	1988	2001	2001	1963	1998

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	5651.03		8833.61			
ANNUAL MEAN	15.48		24.20		40.15	
HIGHEST ANNUAL MEAN					107	1966
LOWEST ANNUAL MEAN					11.2	1988
HIGHEST DAILY MEAN	643	Nov 15	1020	Jul 29	8260	Oct 20 1983
LOWEST DAILY MEAN	0.00	Jun 10	0.00	Oct 1	0.00	May 24 1960
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 10	0.00	Oct 1	0.00	Jun 27 1960
MAXIMUM PEAK FLOW			4160	Jul 29	14900	Jun 1 1990
MAXIMUM PEAK STAGE			16.41	Jul 29	17.07	Jun 1 1990
ANNUAL RUNOFF (AC-FT)	11210		17520		29080	
ANNUAL RUNOFF (INCHES)	0.36		0.56		0.93	
10 PERCENT EXCEEDS	33		39		45	
50 PERCENT EXCEEDS	1.0		2.0		6.6	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

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 since Aug. 1968.

REMARKS.--Records good. Interruption in the record was caused by malfunctions of the instrument and no flow. No flow Oct. 1-9, Oct. 13 to Nov. 3, Nov. 5-13, May 31 to June 3. 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.

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, 39.5°C, July 23, 2002; minimum, -0.7°C, Dec. 14, 2000.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 30,600 microsiemens/cm, Jan. 3; minimum, 527 microsiemens/cm, July 29.
WATER TEMPERATURE: Maximum, 39.5°C, July 23; minimum, -0.4°C, Jan. 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
16...	1200	3.5	1940	7.4	16.7	9.2	99	660	620	214	30.8	192	3
DEC													
21...	1150	6.2	19400	7.9	6.5	10.7	98	3000	2900	838	220	3370	27
JAN													
08...	1145	5.2	29700	7.9	6.7	10.7	104	3600	3500	1010	261	5680	41
FEB													
13...	1050	2.0	22700	7.9	6.3	12.1	110	3400	3300	909	279	3850	29
MAR													
18...	1110	5.5	23100	7.9	13.1	9.3	102	3700	3600	962	317	3360	24
APR													
10...	1130	15	10700	7.7	17.6	9.0	102	2200	2100	625	165	1590	15
MAY													
07...	1145	4.5	17200	7.8	26.6	7.0	98	2900	2900	812	223	2900	23
JUN													
05...	1430	530	1720	7.7	20.0	7.2	80	640	610	204	32.7	119	2
JUL													
09...	1415	82	4100	7.7	31.7	6.9	95	1600	1600	495	100	379	4
AUG													
19...	1130	1.4	8930	8.0	29.7	6.9	94	2100	2000	606	151	1150	11
SEP													
03...	1140	.30	7520	7.7	32.1	6.8	96	1900	1800	549	136	961	10

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)
NOV													
16...	7.60	40	533	371	.3	6.8	1380	4040	--	<.008	.11	<.04	2.5
DEC													
21...	16.8	129	2400	5820	.3	3.2	12700	62	--	<.008	E.03	.28	--
JAN													
08...	23.9	134	2600	10000	.3	4.7	19700	22	--	<.008	E.03	.29	--
FEB													
13...	22.0	147	2610	6970	.2	4.0	14700	12	--	<.008	E.04	.19	--
MAR													
18...	21.3	144	2810	6020	.1	5.3	13600	48	--	<.008	E.04	.21	--
APR													
10...	16.0	91	1790	2800	.2	6.0	7040	196	.15	.008	.16	.22	.56
MAY													
07...	18.6	96	2250	5100	.3	4.4	11400	46	--	<.008	E.04	.22	--
JUN													
05...	7.30	38	599	195	.2	6.0	1190	4830	.30	.012	.31	<.04	4.5
JUL													
09...	13.3	90	1400	655	.3	8.3	3110	400	--	<.008	.06	.09	.64
AUG													
19...	14.8	156	1690	2090	.2	9.1	5810	<10	--	<.008	<.05	.29	--
SEP													
03...	14.8	119	1570	1720	.2	8.5	5030	13	--	<.008	E.03	.23	--

07311800 South Wichita River near Benjamin, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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)	ORTHO-PHOS-PHATE, 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)
NOV													
16...	--	2.4	2.50	<.06	<.02	29	5.1	661	115	.14	E.02	42.3	<3.2
DEC													
21...	--	.19	<.06	<.06	<.02	9	3.5	63	58	<.28	<.30	<2.4	<1.6
JAN													
08...	--	.13	<.06	<.06	<.02	5	3.1	59	54	<.42	<.40	E2.1	<2.4
FEB													
13...	--	.12	<.06	<.06	<.02	6	4.7	58	52	<.32	<.30	<2.4	2.5
MAR													
18...	.01	.21	E.04	<.06	<.02	10	6.3	55	50	.06	.10	1.4	1.2n
APR													
10...	.17	.39	.12	<.06	<.02	14	4.3	252	220	<.18	<.20	5.3	<.8
MAY													
07...	--	E.08	<.06	<.06	<.02	8	5.4	83	75	<.25	E.13n	<1.6	<1.6
JUN													
05...	--	4.2	2.03	<.06	<.02	34	4.8	661	67	.23	.05	37.1	<.8
JUL													
09...	.49	.58	.29	<.06	<.02	10	6.3	262	189	<.07	<.07	5.6	<.8
AUG													
19...	.04	.33	E.03	<.06	<.02	10	11.0	112	105	<.14	<.10	E.5	<.8
SEP													
03...	.06	.28	<.06	<.06	<.02	9	10.3	116	136	<.11	<.10	<1.6	<.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)
NOV													
16...	46.2	5.2	28900	<10	23	E.05	1440	5.9	<.01	<.01	89	1.68	1.2
DEC													
21...	11.7	14.3	190	<100	<8	<.60	13	3.0	<.01	<.01	16	<.50	3.4
JAN													
08...	10.7	10.4	<110	<250	<12	E.68	14	4.3	E.01	<.01	14	<.70	<4.3
FEB													
13...	11.8	12.6	<40	<150	<9	<.70	13	5.2	<.01	<.01	25	<.50	5.2
MAR													
18...	11.9	10.9	40	14	<1	<.08	32	14.2	E.01n	<.01	29	6.57	1.4n
APR													
10...	10.5	6.4	3190	<100	<5	<.40	88	3.7	<.01	<.01	19	7.82	3.8
MAY													
07...	15.4	11.2	460	<100	<7	<.60	25	3.3	<.01	<.01	17	12.8	3.5
JUN													
05...	69.4	3.3	23000	<10	33	.09	1890	5.8	.03	<.01	85	2.59	1.2
JUL													
09...	19.5	11.3	6180	<30	3	<.20	154	4.1	E.01	<.01	20	8.01	2.3
AUG													
19...	14.5	6.7	260	<10	<4	<.30	33	19.3	<.01	<.01	9	5.28	3.9
SEP													
03...	13.7	10.4	40	<50	<3	E.21n	41	29.6	<.01	<.01	25	<.20	2.9

07311800 South Wichita River near Benjamin, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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)
NOV													
16...	.8	.08	<1	115	4	--	--	--	--	--	--	--	--
DEC													
21...	7.9	<.40	<8	11	<8	--	--	--	--	--	--	--	--
JAN													
08...	7.7	<.60	<12	13	<12	--	--	--	--	--	--	--	--
FEB													
13...	8.6	<.45	<9	25	10	--	--	--	--	--	--	--	--
MAR													
18...	9.8	<.05	<1	13	12	--	--	--	--	--	--	--	--
APR													
10...	E1.6n	<.25	<5	17	<5	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1
MAY													
07...	6.1	<.35	<7	8	9	--	--	--	--	--	--	--	--
JUN													
05...	.7	.10	<1	114	5	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1
JUL													
09...	3.0	<.10	<2	29	6	--	--	--	--	--	--	--	--
AUG													
19...	1.4	<.20	<4	14	8	--	--	--	--	--	--	--	--
SEP													
03...	2.7	<.15	<3	9	10	--	--	--	--	--	--	--	--

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)
NOV													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
21...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
10...	<.02	<.6	<.06	<.2	<.03	<.8	<.03	30.0	<2	<.1	<.03	103	<.04
MAY													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	<.02	<.6	<.06	<.2	<.03	<.8	<.03	47.5	<2	<.1	<.03	83.3	<.04
JUL													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--

07311800 South Wichita River near Benjamin, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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)
NOV							
16...	--	--	--	--	--	--	--
DEC							
21...	--	--	--	--	--	--	--
JAN							
08...	--	--	--	--	--	--	--
FEB							
13...	--	--	--	--	--	--	--
MAR							
18...	--	--	--	--	--	--	--
APR							
10...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
07...	--	--	--	--	--	--	--
JUN							
05...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL							
09...	--	--	--	--	--	--	--
AUG							
19...	--	--	--	--	--	--	--
SEP							
03...	--	--	--	--	--	--	--

Remark codes used in this report:
  < -- Less than
  E -- Estimated value
Value qualifier codes used in this report:
  n -- Below the NDV

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	8540	6720	7200	26000	25700	25900
2	---	---	---	---	---	---	10500	8540	9820	26600	25900	26000
3	---	---	---	---	---	---	10100	9110	9720	30600	26600	27800
4	---	---	---	1280	703	952	10200	9170	9750	27600	25400	26500
5	---	---	---	---	---	---	10600	9240	10300	---	---	e27700
6	---	---	---	---	---	---	10400	9730	9930	---	---	e28800
7	---	---	---	---	---	---	11500	10400	10900	---	---	e29200
8	---	---	---	---	---	---	12800	11500	12100	---	---	e29800
9	---	---	---	---	---	---	---	---	e12900	30400	29400	30000
10	---	---	e11300	---	---	---	---	---	e13700	30000	29500	29800
11	---	---	e2550	---	---	---	---	---	e14400	30000	28700	29400
12	---	---	e4500	---	---	---	---	---	e15000	29300	26800	28200
13	---	---	---	---	---	---	---	---	e15400	28200	26700	27600
14	---	---	---	---	---	e3000	16900	15900	16400	29300	27600	28400
15	---	---	---	---	---	e2500	17000	16800	16900	29400	27800	28700
16	---	---	---	---	---	e2240	16800	14800	15900	29000	27600	28300
17	---	---	---	9040	1190	2570	15500	14900	15200	29200	27900	28500
18	---	---	---	8950	1480	4480	15800	15400	15700	29200	28200	28600
19	---	---	---	7980	2610	4360	18000	17000	17400	28800	27800	28400
20	---	---	---	9030	2650	6130	19000	17900	18500	29300	27600	28500
21	---	---	---	10300	7260	9340	20300	19000	19500	29700	28300	29100
22	---	---	---	12400	9870	10800	22100	20300	21200	29300	27900	28700
23	---	---	---	13200	12400	12900	22700	22100	22500	28800	27600	28400
24	---	---	---	13000	11900	12500	22600	22100	22400	29000	26900	28200
25	---	---	---	12700	11700	12200	22600	21200	22100	29100	27400	28200
26	---	---	---	12400	11900	12100	23800	22400	23100	29300	27600	28400
27	---	---	---	12300	10900	11700	24300	23800	23900	28800	27900	28300
28	---	---	---	11400	6200	9160	24300	23500	23800	28700	27500	28200
29	---	---	---	9310	5920	7300	24500	23800	24200	28100	26900	27600
30	---	---	---	9170	8140	8800	25600	24500	25100	28400	19000	26300
31	---	---	---	---	---	---	25900	25500	25800	22100	5210	7550
MONTH	---	---	---	---	---	---	---	---	16800	---	---	27600

07311800 South Wichita River near Benjamin, TX--Continued

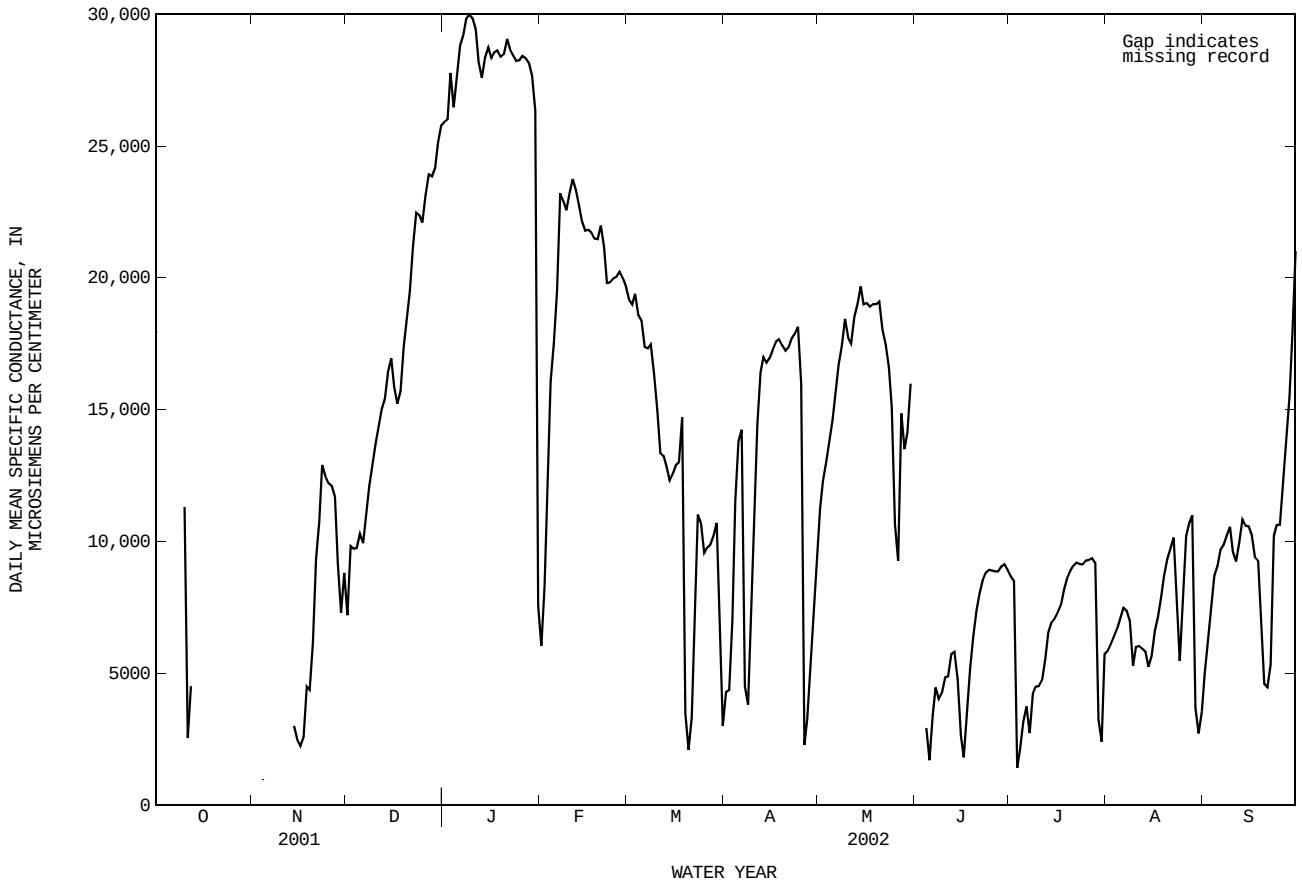
SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6990	5300	6030	19500	18600	19200	4830	3830	4270	11800	10500	11200
2	9730	6990	8280	19400	18000	19000	4970	3930	4350	---	---	e12300
3	14400	9730	11700	21000	17800	19400	9820	4970	7010	---	---	e13000
4	17600	14400	16100	20200	16700	18600	13100	9820	11500	---	---	e13800
5	---	---	e17500	18900	17500	18400	14300	13100	13800	---	---	e14600
6	---	---	e19500	18000	16000	17400	14400	14000	14200	---	---	e15600
7	---	---	e23200	18000	16500	17300	14200	1390	4500	---	---	e16700
8	23600	22200	22900	18300	16900	17500	5500	2500	3810	18100	17000	17400
9	23100	21800	22600	17900	15900	16400	8100	5500	6680	19100	17500	18400
10	24300	22400	23200	16000	13500	15000	14800	8100	11300	18800	17300	17700
11	24300	22900	23700	14600	12900	13300	15500	13600	14400	---	---	e17500
12	23800	22500	23300	14100	12200	13200	16900	15500	16400	---	---	e18500
13	23400	22100	22800	13900	12400	12800	17300	16700	17000	---	---	e19000
14	22500	21400	22100	12800	12100	12300	17200	16500	16800	---	---	e19700
15	22000	21500	21800	12900	12100	12600	17400	16600	17000	---	---	e19000
16	22100	21400	21800	13000	12900	12900	17800	17100	17300	---	---	e19000
17	22100	21100	21700	16800	12000	13000	18000	17300	17600	---	---	e18900
18	22100	20800	21500	17000	11700	14700	18000	17300	17700	---	---	e19000
19	21800	21200	21500	---	1400	e3470	17800	16800	17400	---	---	e19000
20	23200	21400	22000	---	---	e2100	17500	16800	17200	---	---	e19100
21	22400	19900	21200	4140	---	e3320	17500	17300	17400	18500	17600	18000
22	20100	19600	19800	8610	4140	5960	17800	17500	17700	17900	17000	17500
23	20100	19500	19800	12600	8610	11000	18000	17800	17900	17000	15700	16600
24	20200	19900	20000	12900	8240	10700	18400	18000	18100	16600	9200	15100
25	20400	19700	20000	9700	9370	9550	19100	1690	16000	22100	4600	10600
26	21400	19400	20200	9830	9700	9760	3910	1390	2270	12100	7100	9260
27	21500	18700	20000	9960	9830	9870	4520	2390	3280	17100	12100	14800
28	20000	19100	19700	10600	9960	10200	6080	4520	5380	15400	12400	13500
29	---	---	---	10900	10600	10700	8390	5870	7110	15900	12500	14100
30	---	---	---	11400	1090	6860	10500	8390	9410	17800	15200	16000
31	---	---	---	4810	1790	3000	---	---	---	---	---	---
MONTH	---	---	19800	---	---	12200	19100	1390	12200	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	8860	8650	8680	---	---	e5850	---	---	e4990
2	---	---	---	---	---	e8500	---	---	e6100	---	---	e6240
3	---	---	---	8540	825	1410	---	---	e6400	7840	---	e7420
4	4270	1630	2920	---	1120	e2120	---	---	e6700	---	7740	e8690
5	3190	830	1700	---	---	e3150	7330	6650	e7060	---	---	e9060
6	5030	2250	3410	---	---	e3730	7620	7330	7480	---	---	e9660
7	5030	2670	4450	---	---	e2730	7520	7220	7370	---	---	e9850
8	4920	3740	4020	---	---	e4220	7410	5250	6980	---	---	e10200
9	4710	3960	4260	---	---	e4490	5840	5060	5280	---	---	e10500
10	4920	4710	4840	---	---	e4510	6030	5840	5980	---	---	e9600
11	5030	4710	4880	4960	4650	4740	6120	5930	6030	---	---	e9230
12	6200	4920	5720	6290	4960	5560	6220	5730	5930	11000	9200	9970
13	6090	5560	5800	6900	5980	6530	6020	5630	5810	11100	10600	10800
14	5560	2720	4760	7100	6700	6920	10800	1850	5240	10700	10500	10600
15	2940	1120	2640	7310	6900	7060	---	---	e5640	10800	10400	10600
16	2940	1020	1810	7510	7100	7300	---	---	e6590	10800	9600	10200
17	---	---	e3550	8020	7310	7600	---	---	e7130	9600	9170	9400
18	---	---	e5190	8520	7920	8150	---	---	e7910	10100	1990	9240
19	---	---	e6410	9130	8220	8590	---	---	e8700	19500	2090	6980
20	---	---	e7390	9430	8320	8870	9530	9110	9320	---	---	e4600
21	---	---	e8000	9530	8520	9080	10100	9530	9730	---	---	e4460
22	---	---	e8500	9530	8720	9180	10300	9950	10100	---	---	e5320
23	---	---	e8810	9630	8420	9140	10600	4800	7740	---	---	e10200
24	---	---	e8920	9620	8320	9120	---	4700	e5460	---	---	e10600
25	---	---	e8900	9620	8820	9280	---	---	e7760	---	---	e10600
26	8890	8780	8860	9520	9120	9300	---	---	e10200	---	---	e12500
27	8980	8780	8860	10000	8910	9360	---	---	e10700	---	---	e14000
28	9190	8880	9040	9510	8910	9180	---	---	e11000	---	---	e15500
29	9280	8980	9130	8910	527	3240	---	1680	e3670	---	---	e17900
30	9180	8450	8930	---	1050	e2400	---	---	e2710	---	---	e21000
31	---	---	---	---	---	e5730	---	---	e3540	---	---	---
MONTH	---	---	---	---	---	6450	---	---	6970	---	---	10000

e Estimated

07311800 South Wichita River near Benjamin, TX--Continued



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	6.6	4.2	5.6	4.2	1.5	2.7
2	---	---	---	---	---	---	11.2	4.2	7.5	3.2	0.0	1.9
3	---	---	---	---	---	---	15.9	9.7	12.3	---	0.0	---
4	---	---	---	18.9	14.7	17.3	16.4	14.1	15.1	4.0	0.0	2.0
5	---	---	---	---	---	---	18.2	14.0	15.7	8.5	3.3	5.6
6	---	---	---	---	---	---	14.8	9.9	12.2	7.9	1.4	4.7
7	---	---	---	---	---	---	11.4	7.9	10.1	7.5	0.7	4.3
8	---	---	---	---	---	---	11.0	6.9	8.8	10.8	2.9	6.7
9	---	---	---	---	---	---	9.2	3.3	6.0	13.5	5.6	9.1
10	---	---	---	---	---	---	9.2	2.7	5.6	11.8	7.4	9.0
11	---	---	---	---	---	---	8.4	4.8	6.5	13.2	4.6	7.7
12	---	---	---	---	---	---	13.9	8.0	10.1	12.3	3.3	6.5
13	---	---	---	---	---	---	9.0	4.3	7.0	12.8	3.1	6.6
14	---	---	---	18.3	15.3	16.7	8.5	1.3	4.7	13.2	3.2	6.6
15	---	---	---	---	---	---	9.2	5.1	7.0	13.1	1.7	6.2
16	---	---	---	18.1	---	---	10.4	8.3	9.5	13.2	5.7	7.9
17	---	---	---	17.3	15.5	16.3	12.5	5.0	8.0	12.2	3.6	6.8
18	---	---	---	17.4	15.5	16.4	---	4.3	---	5.8	2.8	3.9
19	---	---	---	17.0	11.7	14.7	---	4.9	---	12.3	0.6	5.1
20	---	---	---	12.4	8.6	10.7	10.0	2.8	6.5	13.9	1.7	5.7
21	---	---	---	12.9	7.2	10.0	10.4	3.4	7.3	14.1	0.4	5.7
22	---	---	---	14.2	8.8	11.6	11.7	6.7	8.8	18.0	3.8	9.1
23	---	---	---	13.7	11.0	12.3	8.0	2.9	5.3	18.4	5.4	9.8
24	---	---	---	13.4	8.6	10.9	7.1	1.8	3.9	13.2	2.4	6.6
25	---	---	---	12.2	7.4	10.3	8.2	0.5	3.5	13.8	0.1	5.6
26	---	---	---	11.9	9.2	10.9	6.8	0.2	3.2	15.5	1.0	6.8
27	---	---	---	9.2	1.0	4.5	4.0	1.1	3.0	14.3	2.7	7.7
28	---	---	---	4.3	0.3	1.6	6.2	0.3	3.3	20.1	4.6	10.9
29	---	---	---	2.0	0.1	0.9	5.3	0.4	3.1	22.0	9.5	13.6
30	---	---	---	6.9	0.6	3.8	2.3	0.2	1.0	9.5	4.4	6.4
31	---	---	---	---	---	---	3.2	0.0	1.4	6.7	2.3	4.3
MONTH	---	---	---	---	---	---	---	0.0	---	---	0.0	---

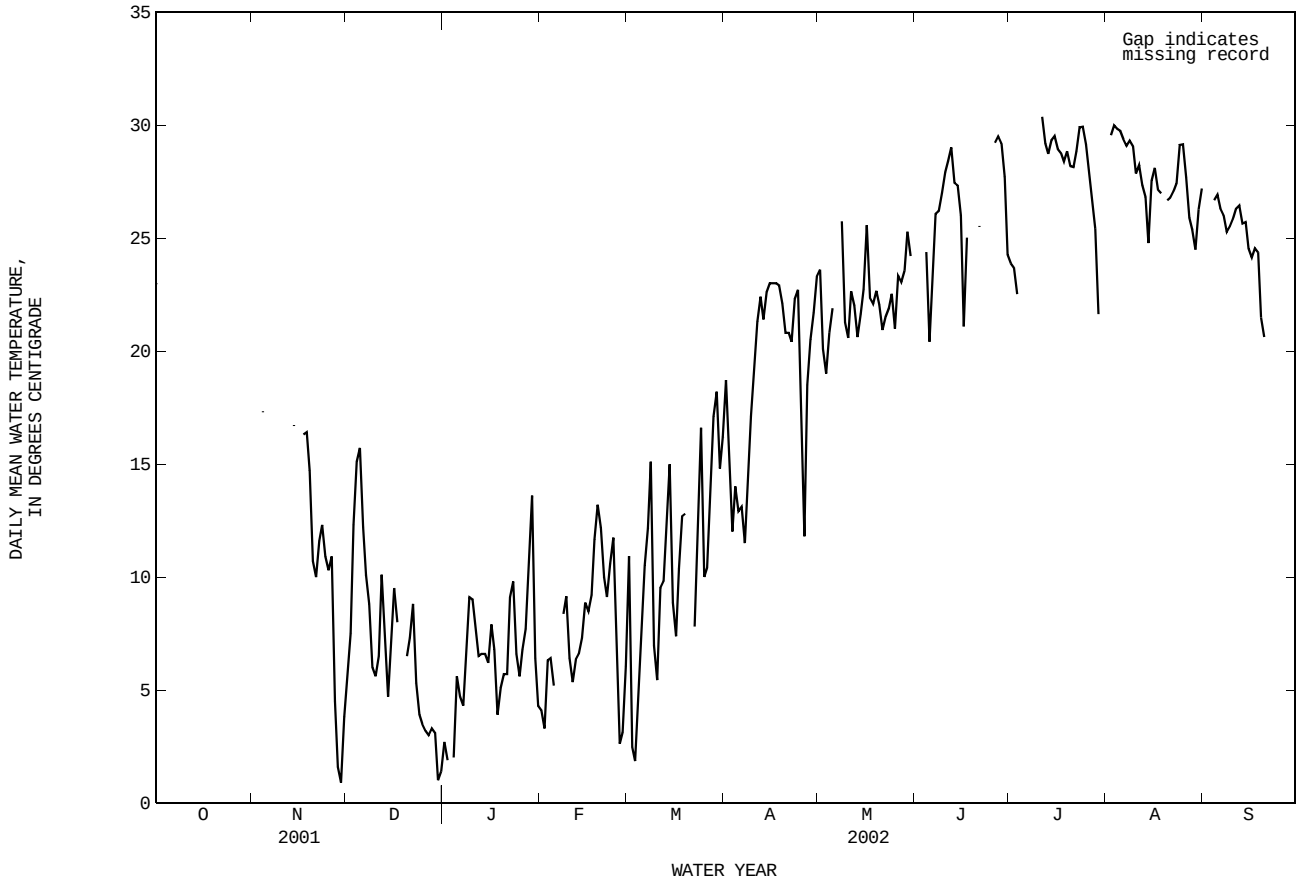
07311800 South Wichita River near Benjamin, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.3	0.5	4.1	19.0	4.4	10.9	25.0	12.7	18.7	25.4	20.9	23.6
2	5.4	0.9	3.3	5.8	0.4	2.5	20.2	10.0	15.9	24.4	17.7	20.1
3	10.1	4.0	6.3	4.8	0.0	1.8	17.7	6.7	12.0	21.9	15.8	19.0
4	8.1	5.1	6.4	9.7	0.0	4.4	20.8	8.4	14.0	22.9	17.7	20.8
5	6.1	3.5	5.2	13.2	2.4	7.4	14.6	10.4	12.9	22.7	20.7	21.9
6	---	2.0	---	17.8	5.9	10.5	15.1	11.9	13.1	---	---	---
7	11.4	---	---	17.6	6.2	12.2	12.3	10.3	11.5	31.8	---	---
8	13.9	3.7	8.4	19.6	11.6	15.1	17.3	12.2	14.2	32.1	22.4	25.7
9	13.9	6.1	9.1	11.6	3.6	7.0	22.7	11.9	17.1	26.7	16.5	21.3
10	11.6	3.2	6.4	9.5	0.5	5.4	24.2	14.0	19.2	24.6	17.8	20.6
11	12.1	0.3	5.4	12.8	7.2	9.5	26.6	16.5	21.3	25.6	20.4	22.6
12	13.1	2.0	6.4	13.7	5.6	9.8	26.3	18.8	22.4	22.8	19.9	22.0
13	13.8	2.3	6.6	16.1	7.1	12.2	25.1	18.4	21.4	24.0	17.7	20.6
14	14.6	2.2	7.3	17.9	11.6	15.0	27.1	18.3	22.6	26.1	17.7	21.6
15	15.8	4.5	8.9	13.6	5.2	8.9	26.5	19.7	23.0	26.8	19.2	22.7
16	16.4	2.9	8.5	10.3	4.9	7.4	26.0	20.8	23.0	32.8	21.3	25.6
17	16.3	4.5	9.2	13.0	8.4	10.4	26.9	19.5	23.0	25.5	19.4	22.4
18	19.7	6.0	11.7	15.0	10.8	12.7	25.5	21.1	22.9	30.5	15.4	22.1
19	19.8	9.8	13.2	13.7	10.6	12.8	23.4	21.3	22.1	31.8	15.8	22.7
20	20.0	7.0	12.2	---	8.9	---	21.7	19.9	20.8	31.7	15.8	22.0
21	13.4	6.9	10.0	10.4	---	---	23.5	18.3	20.8	30.6	14.2	20.9
22	15.9	4.5	9.1	14.7	2.3	7.8	22.3	17.9	20.4	28.5	16.2	21.5
23	16.7	6.0	10.6	19.3	5.3	12.1	24.7	19.8	22.3	27.0	18.6	21.9
24	17.6	8.1	11.7	23.3	12.3	16.6	24.7	20.4	22.7	28.1	18.6	22.5
25	14.5	2.6	8.1	13.4	7.2	10.0	20.4	10.2	16.1	23.6	16.9	21.0
26	4.9	0.7	2.6	17.3	5.1	10.4	13.4	10.4	11.8	26.5	20.9	23.3
27	8.2	0.0	3.1	18.6	8.8	13.3	24.2	13.4	18.5	24.4	22.1	23.1
28	11.9	0.7	6.0	22.3	12.9	17.1	23.9	16.0	20.5	27.1	20.9	23.6
29	---	---	---	22.9	14.9	18.2	24.5	18.5	21.7	28.9	22.0	25.3
30	---	---	---	17.9	12.2	14.8	25.8	20.7	23.3	27.4	22.5	24.2
31	---	---	---	22.7	11.6	16.2	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	27.1	6.7	19.0	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	25.9	22.3	23.9	---	---	---	---	---	---
2	---	---	---	25.5	22.1	23.7	31.8	27.1	29.5	---	---	---
3	---	---	---	23.3	21.7	22.5	32.8	27.2	30.0	34.6	---	---
4	29.7	20.5	24.4	---	21.5	---	32.4	27.3	29.8	32.3	21.9	26.7
5	21.9	19.1	20.4	---	---	---	33.4	26.8	29.7	31.4	23.7	26.9
6	27.4	20.0	23.1	---	---	---	32.7	26.3	29.4	29.0	23.5	26.3
7	30.3	22.3	26.1	---	---	---	31.9	26.1	29.1	28.7	23.4	26.0
8	28.6	24.2	26.2	---	---	---	31.6	27.4	29.3	27.2	24.0	25.3
9	30.9	23.7	27.0	---	---	---	30.9	27.6	29.1	28.0	23.8	25.5
10	30.8	24.6	27.9	34.7	---	---	30.0	26.3	27.9	28.5	23.7	25.8
11	31.0	25.0	28.4	34.8	25.9	30.4	32.0	25.9	28.2	29.9	23.2	26.3
12	31.5	25.5	29.0	33.3	26.0	29.2	31.6	24.4	27.3	28.7	24.3	26.4
13	29.8	25.5	27.4	32.9	25.1	28.7	30.7	24.6	26.8	27.6	23.9	25.6
14	30.1	24.6	27.3	33.8	25.0	29.3	27.1	21.8	24.8	29.7	22.6	25.7
15	28.4	18.6	26.0	34.2	25.7	29.5	31.2	24.2	27.5	26.6	23.2	24.5
16	24.9	18.4	21.1	33.6	25.4	28.9	32.0	25.6	28.1	26.9	21.6	24.1
17	29.5	21.4	25.0	34.4	25.8	28.7	30.3	24.4	27.1	26.6	22.8	24.5
18	---	24.2	---	34.0	24.7	28.4	30.8	24.3	27.0	26.6	21.1	24.4
19	---	---	---	35.9	24.9	28.8	35.9	---	---	22.4	20.3	21.5
20	26.8	---	---	34.8	24.1	28.2	33.0	22.8	26.7	22.5	18.4	20.6
21	26.5	24.2	25.5	35.9	23.2	28.1	33.9	22.7	26.8	---	---	---
22	---	---	---	37.7	23.1	28.8	36.6	22.3	27.1	---	---	---
23	---	---	---	39.5	23.4	29.9	32.0	22.7	27.4	---	---	---
24	---	---	---	39.1	24.1	29.9	34.0	26.1	29.1	---	---	---
25	35.4	---	---	38.9	23.4	29.1	35.1	24.8	29.1	---	---	---
26	36.5	24.3	29.2	36.4	22.3	28.0	31.7	24.3	27.7	---	---	---
27	36.9	25.1	29.5	32.6	22.3	26.8	27.6	23.8	25.9	---	---	---
28	37.2	23.1	29.2	28.7	23.3	25.4	27.3	23.6	25.4	---	---	---
29	32.8	23.9	27.7	23.7	20.1	21.6	27.1	20.9	24.5	---	---	---
30	26.4	22.3	24.3	---	22.2	---	29.8	23.2	26.3	---	---	---
31	---	---	---	---	---	---	31.4	23.9	27.2	---	---	---
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, 6.0 mi upstream from the head of Lake Kemp (station 07312000), 10.0 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 4.0 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversions.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	6.3	193	18	55	12	400	89	23	52	1010	33
2	7.9	6.0	92	18	53	12	134	65	17	38	330	26
3	6.9	7.1	64	19	30	11	85	50	14	973	178	22
4	6.5	21	49	19	22	12	63	39	173	4590	133	19
5	5.7	27	41	26	36	12	52	34	e2300	2200	106	17
6	5.6	11	34	40	62	12	49	29	e634	1000	87	16
7	5.5	8.8	30	26	40	12	884	25	286	3030	75	16
8	5.3	8.7	25	23	33	12	1270	22	117	2850	66	14
9	5.5	8.0	22	21	27	11	452	20	81	948	60	14
10	71	8.3	22	19	21	11	170	19	56	409	63	14
11	258	8.5	22	17	18	11	116	20	51	257	461	13
12	128	8.0	23	16	17	11	93	19	39	192	99	13
13	25	7.9	22	16	15	11	83	18	32	171	54	13
14	13	85	21	15	14	11	58	17	60	119	142	14
15	9.8	1980	22	15	15	11	46	17	62	99	80	12
16	8.2	1280	87	14	14	10	38	17	577	84	57	12
17	7.8	1470	48	14	14	11	32	16	459	78	39	11
18	7.3	1830	28	14	14	20	27	15	237	68	32	85
19	7.1	1410	26	14	14	223	28	15	92	66	28	988
20	7.0	532	24	13	13	689	27	14	58	55	27	227
21	6.7	267	23	13	13	260	26	14	41	49	25	106
22	6.5	168	23	13	13	124	25	13	34	45	23	55
23	6.4	129	20	13	13	80	23	14	41	42	23	36
24	5.8	104	20	13	12	60	20	29	31	41	21	30
25	5.4	80	20	13	12	49	95	677	24	41	20	27
26	5.5	65	20	13	11	43	1890	111	20	38	20	24
27	5.7	57	20	13	11	39	828	620	18	36	19	22
28	5.5	64	20	13	12	36	353	552	17	33	18	21
29	5.7	110	19	13	---	33	166	116	15	2870	143	19
30	6.2	153	18	15	---	219	118	57	14	4000	96	18
31	6.4	---	18	29	---	1400	---	35	---	1980	57	---
TOTAL	665.8	9920.6	1116	538	624	3468	7651	2798	5623	26454	3592	1937
MEAN	21.48	330.7	36.00	17.35	22.29	111.9	255.0	90.26	187.4	853.4	115.9	64.57
MAX	258	1980	193	40	62	1400	1890	677	2300	4590	1010	988
MIN	5.3	6.0	18	13	11	10	20	13	14	33	18	11
AC-FT	1320	19680	2210	1070	1240	6880	15180	5550	11150	52470	7120	3840

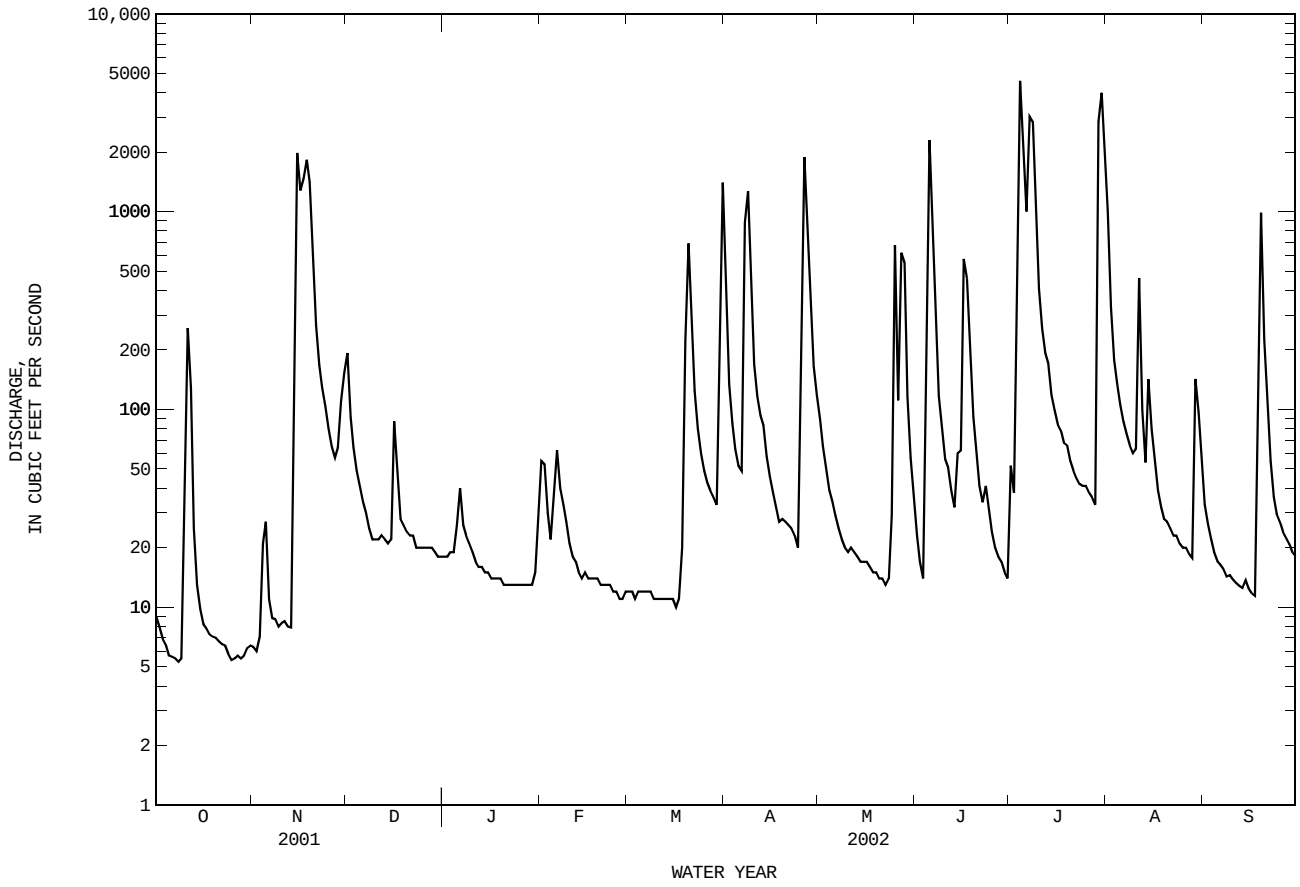
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002h, BY WATER YEAR (WY)

MEAN	202.7	103.8	46.31	51.28	62.98	126.2	154.3	249.5	260.8	157.3	160.9	299.3
MAX	1464	342	222	375	299	486	664	778	979	853	1353	1492
(WY)	1961	2001	1960	1968	1998	2000	1967	1999	1967	2002	1966	1966
MIN	2.89	9.29	13.5	11.5	12.5	8.10	7.36	32.3	8.82	0.23	0.56	0.000
(WY)	1964	1971	1971	1964	1971	1965	1964	1962	2001	2001	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002h	
ANNUAL TOTAL	36189.36		64387.4			
ANNUAL MEAN	99.15		176.4		155.9	
HIGHEST ANNUAL MEAN					389	1966
LOWEST ANNUAL MEAN					71.6	1976
HIGHEST DAILY MEAN	2380	Mar 9	4590	Jul 4	16100	Oct 19 1965
LOWEST DAILY MEAN	0.00	Jul 10	5.3	Oct 8	0.00	Jul 18 1964
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 10	5.7	Oct 24	0.00	Jul 18 1964
MAXIMUM PEAK FLOW			6880	Jul 30	23100	Sep 20 1965
MAXIMUM PEAK STAGE			16.15	Jul 30	17.75	Sep 20 1965
ANNUAL RUNOFF (AC-FT)	71780		127700		113000	
10 PERCENT EXCEEDS	186		339		224	
50 PERCENT EXCEEDS	24		26		30	
90 PERCENT EXCEEDS	0.09		9.9		5.8	

e Estimated
h See PERIOD OF RECORD paragraph.

07311900 Wichita River near Seymour, TX--Continued



07311900 Wichita River near Seymour, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1967 to 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 2002. The standard error of estimate for dissolved solids is 5%, chloride is 16%, sulfate is 12% and for hardness is 12%. 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, 30,800 microsiemens/cm, Feb. 12, 1969; minimum, 160 microsiemens/cm, Sept. 19, 2002.
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, 20,100 microsiemens/cm, Mar. 15, 16; minimum, 160 microsiemens/cm, Sept. 19.
WATER TEMPERATURE: Maximum, 36.5°C, July 23; minimum, 0.0°C, Nov. 29, Mar. 2, 3, 4.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
01...	1115	9.2	10600	7.8	19.2	8.4	98	1700	1600	497	109	1900	20
NOV													
07...	1305	8.5	16000	8.1	21.4	9.3	115	2400	2300	697	163	2750	24
DEC													
10...	1215	22	11400	7.9	8.4	10.7	99	1800	1700	525	125	1850	19
JAN													
23...	1030	14	17600	8.0	10.0	10.1	100	2500	2400	726	177	2930	25
FEB													
27...	1320	12	18300	7.9	9.2	11.4	111	2700	2600	761	199	3320	28
MAR													
12...	1300	11	19100	8.0	16.8	9.9	114	2800	2700	806	202	3240	26
APR													
09...	1055	434	2660	7.7	13.3	9.5	95	580	530	174	36.0	311	6
MAY													
08...	1140	24	12000	7.9	25.5	7.2	97	2100	2000	584	153	1870	18
JUN													
06...	1245	542	1810	7.7	22.7	7.5	88	440	380	133	26.3	188	4
JUL													
25...	1035	35	9680	7.9	27.9	6.6	91	1700	1600	487	123	1580	17
AUG													
26...	1050	21	11600	7.8	27.3	7.1	93	2100	2000	594	155	1940	18
SEP													
06...	1140	17	12900	7.9	28.8	7.3	99	2300	2100	636	163	2170	20

07311900 Wichita River near Seymour, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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, 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)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT													
01...	12.4	85	1450	2880	.4	5.8	6910	<10	<.008	<.05	.17	--	.08
NOV													
07...	12.8	83	2120	4280	.3	2.7	10100	20	<.008	<.05	.21	--	.06
DEC													
10...	9.54	127	1560	3110	.2	5.8	7260	<10	<.008	E.04	.16	--	--
JAN													
23...	12.8	128	2280	4860	.4	3.8	11100	<10	<.008	.09	.17	--	--
FEB													
27...	15.0	133	2390	5190	.4	3.1	11900	<10	<.008	<.05	.19	--	--
MAR													
12...	14.8	118	2520	5450	.4	2.4	12300	30	<.008	<.05	.17	--	--
APR													
09...	5.43	53	540	523	.2	6.8	1630	3310	E.007	.28	<.04	2.8	--
MAY													
08...	13.2	115	1730	3200	.3	6.0	7620	12	<.008	<.05	.16	--	--
JUN													
06...	5.61	56	447	272	.4	8.0	1110	10200	<.008	.24	<.04	7.6	--
JUL													
25...	10.2	110	1420	2500	.3	9.3	6200	<10	<.008	<.05	.18	--	.05
AUG													
26...	10.2	128	1710	3110	.3	9.8	7600	28	<.008	<.05	.24	--	
SEP													
06...	10.6	124	1870	3630	.3	8.9	8560	72	<.008	<.05	.29	--	.02

Date	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOSPHATE, 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)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT													
01...	.25	<.06	<.06	<.02	4	4.4	139	137	<.18	<.20	<1.6	E1.1	6.5
NOV													
07...	.27	<.06	<.06	<.02	5	3.0	104	121	<.25	<.30	<4.8	<4.8	10.9
DEC													
10...	.16	<.06	<.06	<.02	6	2.7	94	104	<.18	<.20	<2.4	<2.4	5.8
JAN													
23...	E.09	<.06	<.06	<.02	4	4.1	42	41	<.25	<.30	<2.4	<2.4	13.0
FEB													
27...	E.07	<.06	<.06	<.02	3n	<.2	34	38	<.04	<.04	E.6	<.8	8.3
MAR													
12...	.16	<.06	<.06	<.02	8	5.2	39	36	<.04	<.04	1.4n	1.1	12.8
APR													
09...	2.5	1.72	<.06	<.02	25	3.0	581	110	.15	E.05n	26.1	<.8	29.2
MAY													
08...	E.06	<.06	<.06	<.02	6	5.0	100	100	<.18	E.10n	<1.6	<1.6	12.1
JUN													
06...	7.3	5.80	<.06	<.02	50	4.7	1040	94	.31	<.04	65.3	<.8	41.5
JUL													
25...	.23	E.03	<.06	E.01	6	6.5	122	136	<.14	<.10	<.8	<.8	6.6
AUG													
26...	.24	<.06	<.06	<.02	5	5.6	105	103	E.03	<.20	E.9n	<1.6	13.3
SEP													
06...	.31	E.04	<.06	<.02	5	6.0	109	120	<.07	<.20	2.5	<1.6	13.2

07311900 Wichita River near Seymour, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	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)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT													
01...	5.0	<10	<100	<5	<.40	44	40.4	<.01	<.01	8	3.05	E1.5	4.5
NOV													
07...	6.4	30	<100	<7	<.60	83	88.1	<.01	<.01	11	.88	E2.2	4.2
DEC													
10...	6.6	<40	<100	<5	E.22n	39	39.9	E.01	<.01	9	6.64	5.2	4.9
JAN													
23...	7.8	<40	<100	<7	<.60	68	75.1	<.01	<.01	18	4.72	7.0	9.4
FEB													
27...	9.9	<10	11	<1	.95	84	101	E.01n	<.01	18	<.06	7.0	<.3
MAR													
12...	7.8	270	27	<1	1.62	83	84.8	<.01	<.01	29	<.06	5.1	6.6
APR													
09...	2.7	19300	<30	22	<.20	1100	1.1	.02	<.01	65	2.43	1.9	.7
MAY													
08...	8.1	<40	<100	<5	<.40	48	36.3	<.01	<.01	11	9.78	3.2	5.4
JUN													
06...	2.5	33400	<10	47	<.08	2960	.4	.05	<.01	145	1.92	2.1	.5
JUL													
25...	5.8	100	<50	<4	<.40	60	48.9	E.01n	E.01n	10	5.20	1.9	3.9
AUG													
26...	11.0	100	<100	<1	<.40	79	56.4	<.01	<.01	23	6.54	1.6	2.4
SEP													
06...	11.9	310	<100	<2	<.50	100	74.1	.03	E.01	30	<.40	3.0	<2.0

Date	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)	DI-ELDRIN TOTAL (UG/L) (39380)
OCT													
01...	<.25	<5	6	6	--	--	--	--	--	--	--	--	--
NOV													
07...	<.35	<7	8	<7	--	--	--	--	--	--	--	--	--
DEC													
10...	<.25	<5	5	5	--	--	--	--	--	--	--	--	--
JAN													
23...	<.35	<7	9	<7	--	--	--	--	--	--	--	--	--
FEB													
27...	<.05	<1	7	8	--	--	--	--	--	--	--	--	--
MAR													
12...	<.05	<1	10	8	--	--	--	--	--	--	--	--	--
APR													
09...	E.08n	<2	101	3	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1	<.02
MAY													
08...	<.25	<5	6	6	--	--	--	--	--	--	--	--	--
JUN													
06...	.13	<1	180	1	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1	<.02
JUL													
25...	<.20	<4	6	5	--	--	--	--	--	--	--	--	--
AUG													
26...	<.05	<5	8	5	--	--	--	--	--	--	--	--	--
SEP													
06...	<.10	<6	10	7	--	--	--	--	--	--	--	--	--

07311900 Wichita River near Seymour, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	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)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)
OCT													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
09...	<.6	<.06	<.2	<.03	<.8	<.03	34.6	<2	<.1	<.03	126	<.04	<.03
MAY													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
06...	<.6	<.06	<.2	<.03	<.8	<.03	38.0	<2	<.1	<.03	73.9	<.04	<.03
JUL													
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
06...	--	--	--	--	--	--	--	--	--	--	--	--	--

Date	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						
01...	--	--	--	--	--	--
NOV						
07...	--	--	--	--	--	--
DEC						
10...	--	--	--	--	--	--
JAN						
23...	--	--	--	--	--	--
FEB						
27...	--	--	--	--	--	--
MAR						
12...	--	--	--	--	--	--
APR						
09...	<.1	<.09	<.1	<.04	<.1	<.1
MAY						
08...	--	--	--	--	--	--
JUN						
06...	<.1	<.09	<.1	<.04	<.1	<.1
JUL						
25...	--	--	--	--	--	--
AUG						
26...	--	--	--	--	--	--
SEP						
06...	--	--	--	--	--	--

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

Value qualifier codes used in this report:
n -- Below the NDV

07311900 Wichita River near Seymour, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2001 TO SEPTEMBER 2002

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.	2001	665.8	5600	3750	6730	1500	2620	940	1690	1100
NOV.	2001	9920.6	2770	1840	49410	680	18280	500	13460	580
DEC.	2001	1116	9310	6240	18810	2500	7560	1500	4450	1700
JAN.	2002	538	15850	10670	15500	4500	6580	2300	3280	2600
FEB.	2002	624	11320	7600	12800	3100	5200	1800	2960	2000
MAR.	2002	3468	4800	3210	30040	1300	11720	800	7510	930
APR.	2002	7651	3800	2530	52300	940	19430	690	14160	790
MAY	2002	2798	4550	3040	22980	1200	8860	780	5860	900
JUNE	2002	5623	3310	2210	33500	820	12380	600	9140	700
JULY	2002	26454	1960	1310	93290	470	33880	370	26120	420
AUG.	2002	3592	4260	2840	27560	1100	10300	760	7390	880
SEPT	2002	1937	3660	2450	12800	950	4950	620	3250	720
TOTAL		64387.4	**	**	375700	**	141800	**	99280	**
WTD.AVG.		176	3240	2160	**	820	**	570	**	660

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10800	9960	10300	15700	14000	14900	---	---	e2990	16600	16300	16500
2	10200	9760	9980	16300	14500	15500	---	---	e4680	16600	16500	16600
3	9920	9760	9840	17000	13100	15300	---	---	e5750	17000	16500	16800
4	9990	9780	9880	17300	4000	12800	---	---	e7340	17000	16300	16700
5	10200	9890	10100	13400	4000	9010	---	---	e8370	16300	13900	15000
6	10400	10100	10300	16300	13400	15600	9530	9010	9260	17300	13800	15800
7	10600	10200	10400	18800	14800	16200	10500	9530	10000	16100	12200	14300
8	10600	10200	10400	19500	16700	19000	11000	10500	10700	15000	12300	14100
9	10900	10200	10500	16700	13400	14600	11400	11000	11100	16600	15000	16200
10	11200	2340	8130	18200	16600	17700	11800	11300	11500	16400	15100	15500
11	4650	1450	2820	18200	16000	17000	12100	11800	12000	16200	15600	16000
12	1760	1070	1410	18700	16600	17900	12400	11900	12100	16400	16100	16200
13	4600	2170	3470	18900	18200	18600	13000	12400	12700	16300	16000	16200
14	6460	4470	5060	18900	514	15200	13500	13000	13200	16300	16200	16300
15	11300	6460	8630	3870	646	1840	13700	13600	13600	16400	16200	16300
16	12200	11300	11600	2070	646	1320	13700	1740	6830	16300	16100	16200
17	12500	10400	11900	4250	993	1760	11000	4790	9000	16400	16200	16300
18	13300	11000	12100	2800	1020	1940	12900	11000	11800	16400	16300	16300
19	14300	12500	13300	5330	1200	2130	14300	12900	13700	16300	16100	16200
20	14300	11800	13300	---	---	e3140	14800	14300	14500	16500	16100	16300
21	14000	12200	13400	---	---	e4730	15000	14700	14900	16800	16500	16600
22	14200	12200	13400	---	---	e5750	15200	14900	15100	16800	16600	16700
23	14300	12600	13400	---	---	e7140	15400	15200	15300	16700	16300	16600
24	16300	13700	14800	---	---	e8470	15600	15400	15500	16700	16600	16600
25	16400	14600	15600	---	---	e9700	15800	15500	15700	16700	16400	16600
26	16500	15000	15700	---	---	e10700	16000	15700	15800	16600	16400	16500
27	15700	14900	15200	---	---	e11700	16000	15800	15900	16700	16500	16600
28	15600	12800	14100	---	---	e12100	16100	15800	16000	16600	16300	16500
29	15600	13400	14400	---	---	e7190	16500	16000	16300	16400	16200	16300
30	15900	13800	15100	2350	1220	2000	16500	16300	16400	16300	13000	15700
31	15700	14200	15000	---	---	---	16500	16400	16400	14500	9940	12700
MONTH	16500	1070	11100	---	---	10400	---	---	12100	17300	9940	16000

07311900 Wichita River near Seymour, TX--Continued

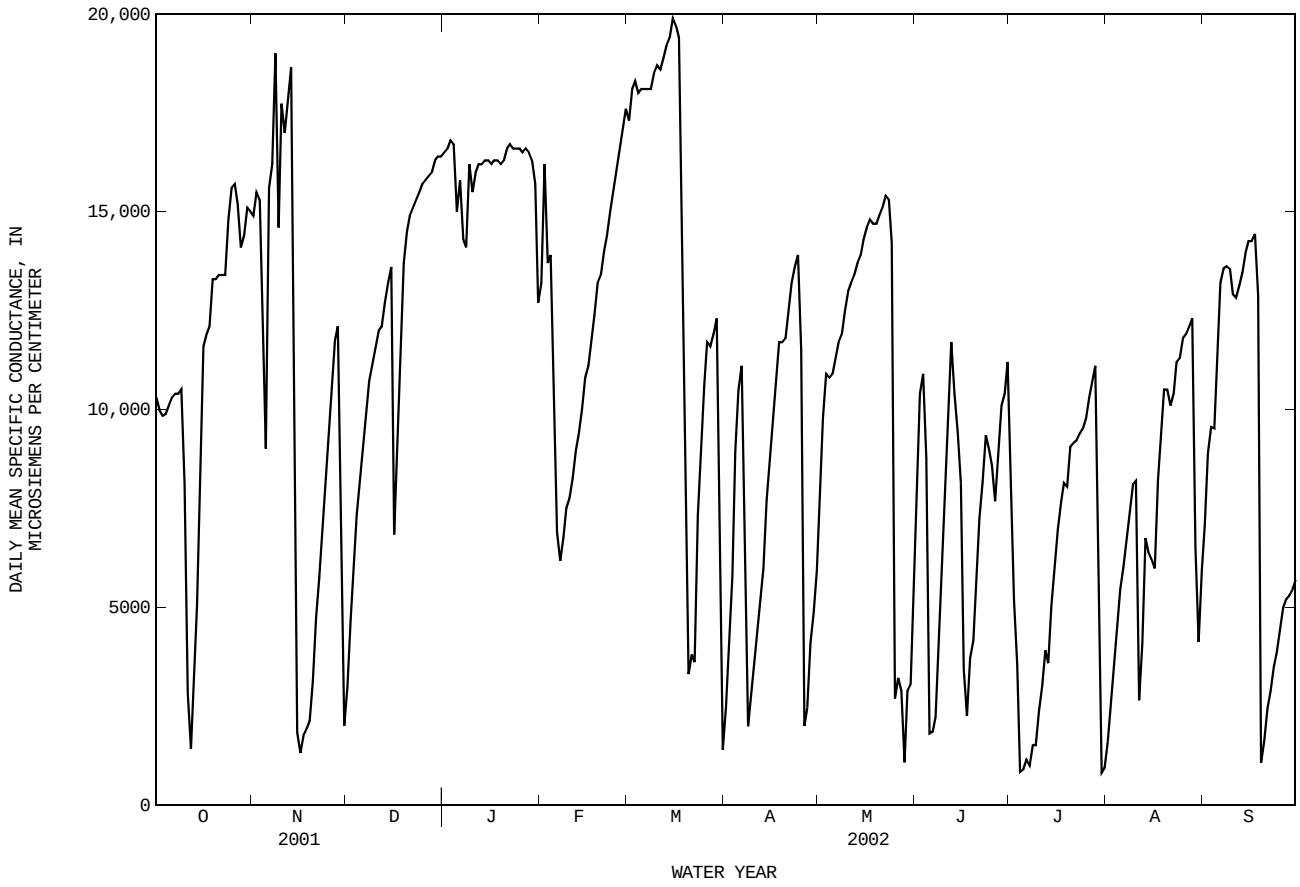
SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16200	10700	13200	17600	17000	17300	3100	1560	2480	9040	7010	8020
2	17400	14000	16200	18600	17600	18100	4760	3100	4050	10700	9040	9790
3	14200	13100	13700	18700	17800	18300	7390	4760	5790	11100	10700	10900
4	14100	13700	13900	18500	17100	18000	9960	7390	8930	11100	10100	10800
5	14000	6840	10600	18400	17500	18100	10900	9960	10500	11200	10700	10900
6	7430	6020	6890	18500	17300	18100	11500	9240	11100	11600	10900	11300
7	6930	5740	6170	18500	17700	18100	11600	1490	6540	11800	11200	11700
8	7180	6400	6760	18400	17700	18100	2760	1290	1990	12100	11800	11900
9	7760	7180	7500	18700	18000	18500	3810	2100	2840	12900	12100	12500
10	7950	7590	7760	18800	18100	18700	4050	3490	3700	13100	12900	13000
11	8680	7800	8270	18900	17800	18600	5100	4050	4530	13300	13100	13200
12	9300	8600	8970	19100	18400	18900	5590	5100	5310	13600	13300	13400
13	9630	9130	9390	19400	18900	19200	6840	5070	5990	13900	13600	13700
14	10500	9510	10000	19700	19300	19400	8310	6840	7710	14200	13800	13900
15	11200	10400	10800	20100	19600	19900	9250	8310	8730	14500	14100	14300
16	11500	10800	11100	20100	18900	19700	10500	9250	9830	14700	14400	14600
17	12000	11300	11800	19700	19300	19400	11400	10500	10900	14900	14700	14800
18	12700	11900	12400	19300	13300	16400	11800	11400	11700	14900	14600	14700
19	13500	12700	13200	13800	3960	8850	12100	10300	11700	14900	14500	14700
20	13700	13000	13400	5370	2410	3310	12200	11100	11800	15100	14700	14900
21	14300	13500	14000	4940	2660	3800	13000	11900	12500	15500	15000	15100
22	14700	14000	14400	4830	3180	3610	13400	13000	13200	15600	15200	15400
23	15200	14600	15000	8500	4830	7320	13700	13400	13600	15600	14900	15300
24	---	---	e15500	9700	8500	8890	14000	13400	13900	15200	---	e14200
25	---	---	e16000	11600	9700	10600	14700	1470	11500	6300	919	2690
26	---	---	e16500	12000	11100	11700	3230	1150	2000	4570	1740	3210
27	---	16600	e17000	12100	11000	11600	2830	1590	2460	5690	474	2890
28	18000	17100	17600	12400	11000	11900	4790	2650	4100	2030	794	1070
29	---	---	---	12800	11200	12300	5180	4780	4860	3490	2030	2880
30	---	---	---	12800	1020	7500	7010	5180	5940	3880	2510	3050
31	---	---	---	2930	905	1400	---	---	---	6030	3880	5250
MONTH	---	---	12100	20100	905	14100	14700	1150	7670	15600	---	10800

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9420	6030	7620	11500	1410	8580	1910	1250	1600	8170	5480	7050
2	11100	9420	10400	7320	4380	5180	3160	1910	2510	10000	8070	8890
3	11300	10500	10900	6480	574	3560	4210	3160	3580	10000	9040	9560
4	10700	498	8760	1520	604	828	5180	4210	4640	10800	8470	9520
5	---	698	e1800	1080	683	893	5880	5170	5450	13000	10800	11800
6	2460	---	e1850	1310	1020	1150	6590	5710	6020	13500	12300	13200
7	2780	1720	2230	1360	421	1000	7320	6520	6740	13700	13400	13600
8	4950	2780	4120	2590	930	1520	8030	7220	7460	13700	13500	13600
9	6950	4950	6030	1850	1340	1510	8760	7780	8110	13700	13400	13600
10	9360	6950	8290	2760	1850	2370	8950	3940	8200	13400	12600	12900
11	11400	9150	9730	3300	2760	3000	9580	1060	2640	13000	12700	12800
12	12200	10800	11700	4530	2470	3910	6480	2420	4070	13300	13000	13100
13	10800	10100	10400	4360	1980	3580	7710	6170	6750	14000	13300	13500
14	12800	6400	9440	5630	4360	5060	8030	2480	6400	14100	13700	14000
15	12800	3940	8130	6640	5630	6020	7110	5400	6210	14400	14100	14300
16	7320	1530	3430	7400	6640	6970	7680	5100	5980	14400	14000	14300
17	2750	1830	2250	7960	7400	7650	9430	7540	8210	14900	14200	14400
18	4440	2560	3720	8380	7960	8140	10100	8680	9400	15000	655	12900
19	4860	3850	4160	8820	5400	8040	11100	9800	10500	2350	160	1060
20	6800	4860	5860	9160	8820	9060	11100	9790	10500	2270	947	1610
21	7820	6800	7260	9240	9060	9150	10900	9290	10100	2570	2270	2430
22	8730	7820	8170	9300	9120	9210	11400	9690	10400	3300	2570	2890
23	10600	8730	9350	9450	9320	9380	11500	10600	11200	3640	3380	3490
24	10600	7380	8990	9610	9360	9510	11900	10800	11300	4200	3640	3850
25	9540	7700	8590	10000	9410	9770	12300	11300	11800	4640	4200	4450
26	8070	7390	7680	10500	10100	10300	12600	11300	11900	5120	4830	4980
27	10100	8070	8890	10900	10500	10700	12800	10500	12100	5290	5120	5210
28	10500	9760	10100	11200	10900	11100	13000	10200	12300	5400	5190	5300
29	11100	9960	10400	11200	771	5850	13200	1620	6510	5520	5360	5440
30	11600	10800	11200	992	740	803	5650	1730	4120	5870	5510	5690
31	---	---	---	1250	830	932	6440	4890	5940	---	---	---
MONTH	---	---	7380	11500	421	5640	13200	1060	7500	15000	160	8980

e Estimated

07311900 Wichita River near Seymour, TX--Continued



07311900 Wichita River near Seymour, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

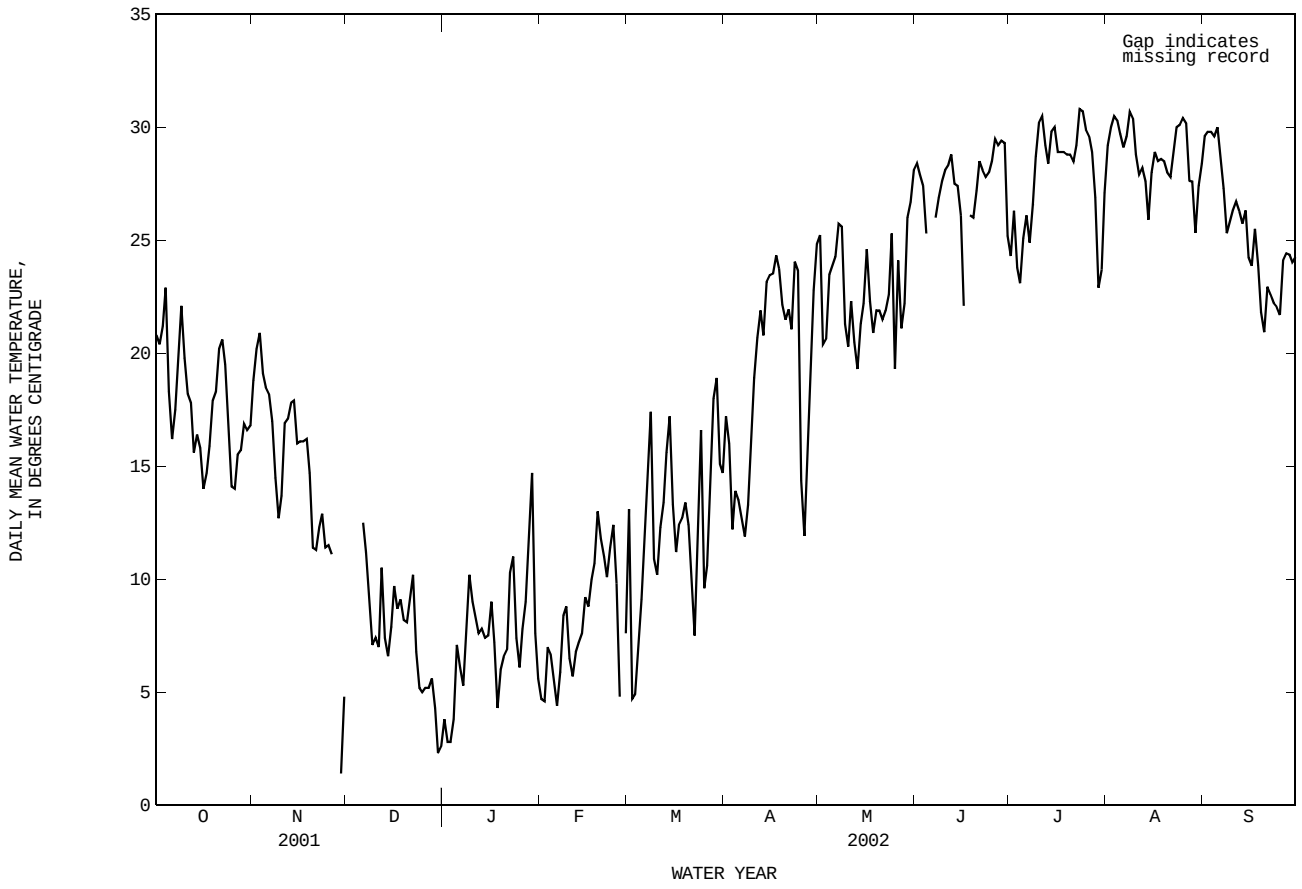
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	27.8	14.9	20.8	24.3	14.9	18.8	---	---	---	5.9	2.3	3.8
2	26.2	15.8	20.4	25.6	16.3	20.2	---	---	---	4.2	0.4	2.8
3	26.6	17.1	21.2	27.3	17.2	20.9	---	---	---	7.5	0.2	2.8
4	28.7	19.0	22.9	20.9	17.2	19.1	---	---	---	6.5	0.8	3.8
5	22.6	14.7	18.3	22.0	16.5	18.5	19.1	---	---	10.5	5.6	7.1
6	22.8	11.2	16.2	23.2	15.1	18.2	14.4	10.5	12.5	9.9	3.2	6.1
7	24.0	12.7	17.5	22.9	12.4	17.0	13.4	9.2	11.2	9.4	1.9	5.3
8	25.9	15.1	19.7	16.4	11.4	14.5	12.4	6.8	9.2	12.7	3.9	7.7
9	26.8	19.4	22.1	17.1	10.4	12.7	11.3	3.7	7.1	14.8	6.4	10.2
10	22.0	17.4	19.8	19.2	9.0	13.7	11.4	4.1	7.4	10.8	7.4	9.0
11	21.3	15.4	18.2	21.1	14.2	16.9	8.2	5.6	7.0	12.9	5.0	8.3
12	20.3	15.5	17.8	20.2	14.6	17.1	14.6	8.2	10.5	12.3	4.3	7.6
13	21.2	11.4	15.6	21.3	15.5	17.8	9.3	5.4	7.4	12.9	4.1	7.8
14	22.7	11.2	16.4	21.4	16.3	17.9	11.1	2.9	6.6	12.4	3.7	7.4
15	20.3	12.5	15.8	16.4	15.8	16.0	9.5	6.4	7.9	12.3	3.6	7.5
16	21.2	8.3	14.0	16.7	15.5	16.1	10.3	8.8	9.7	13.1	7.1	9.0
17	21.3	10.1	14.7	16.7	15.0	16.1	12.4	5.6	8.7	10.5	5.3	7.2
18	22.2	10.8	15.9	17.0	15.5	16.2	13.4	5.8	9.1	5.3	3.7	4.3
19	24.4	12.9	17.9	16.9	12.6	14.7	12.1	5.4	8.2	10.8	2.3	6.0
20	24.7	12.9	18.3	12.8	9.9	11.4	12.7	4.4	8.1	12.3	3.0	6.6
21	26.5	15.6	20.2	13.5	8.7	11.3	13.6	5.4	9.1	12.0	2.7	6.9
22	25.8	16.7	20.6	15.0	9.5	12.3	13.5	7.7	10.2	16.5	5.9	10.3
23	24.3	15.9	19.5	14.8	11.1	12.9	10.6	4.2	6.8	15.6	8.0	11.0
24	21.9	13.4	16.7	14.6	8.8	11.4	8.5	3.0	5.2	11.5	5.0	7.4
25	20.7	9.2	14.1	14.9	8.3	11.5	9.9	1.3	5.0	11.6	1.5	6.1
26	20.2	9.0	14.0	11.9	9.3	11.1	9.8	1.6	5.2	13.6	3.3	7.8
27	21.8	11.0	15.5	---	---	---	7.4	2.5	5.2	13.2	5.2	9.0
28	21.5	10.8	15.7	---	---	---	9.4	2.1	5.6	18.0	7.0	12.0
29	22.9	12.6	16.9	3.5	0.1	1.4	7.2	1.2	4.3	19.5	11.7	14.7
30	22.4	12.4	16.6	8.3	1.5	4.8	3.7	1.4	2.3	11.7	5.2	7.6
31	21.7	13.5	16.8	---	---	---	5.1	0.6	2.6	9.4	3.2	5.6
MONTH	28.7	8.3	17.7	---	---	---	---	---	---	19.5	0.2	7.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.4	1.1	4.7	21.3	8.1	13.1	21.1	13.6	17.2	29.1	21.2	25.2
2	6.2	2.4	4.6	10.2	0.0	4.7	18.5	12.0	16.0	25.1	17.6	20.4
3	9.9	5.1	7.0	12.9	0.2	4.9	16.9	7.9	12.2	26.4	15.8	20.6
4	8.1	5.3	6.7	14.9	0.1	6.9	19.5	9.5	13.9	30.6	18.4	23.5
5	6.6	3.7	5.5	16.8	3.2	9.1	15.6	11.0	13.5	27.8	20.3	23.9
6	6.8	2.5	4.4	19.7	6.5	12.3	13.6	11.6	12.7	28.5	21.1	24.3
7	11.0	2.1	5.9	22.0	9.0	14.9	12.6	11.5	11.9	30.7	21.7	25.7
8	13.1	4.6	8.4	22.3	14.4	17.4	14.7	12.3	13.3	31.9	21.4	25.6
9	12.2	6.3	8.8	16.7	5.3	10.9	20.2	12.6	16.0	25.3	16.9	21.3
10	9.6	4.0	6.5	17.2	4.6	10.2	23.8	14.8	18.9	24.0	17.4	20.3
11	9.9	2.3	5.7	19.1	8.0	12.3	26.0	16.1	20.7	25.0	20.1	22.3
12	10.8	3.7	6.8	21.7	6.8	13.4	26.1	18.5	21.9	22.2	16.0	20.5
13	11.1	4.2	7.2	23.1	9.8	15.6	24.7	18.0	20.8	26.0	13.1	19.3
14	11.8	4.0	7.6	22.7	12.1	17.2	29.5	18.2	23.2	28.4	15.3	21.3
15	12.8	6.2	9.2	19.3	8.0	13.3	29.2	19.3	23.5	28.7	16.8	22.2
16	13.8	4.8	8.8	16.7	7.6	11.2	28.5	20.4	23.5	31.0	19.1	24.6
17	13.8	6.7	10.0	15.2	10.6	12.4	30.8	19.1	24.3	25.6	19.0	22.3
18	14.3	7.7	10.7	14.5	11.0	12.7	27.6	20.9	23.7	27.9	15.3	20.9
19	15.7	11.3	13.0	14.2	12.3	13.4	24.2	21.1	22.2	29.2	16.1	21.9
20	15.8	8.5	11.8	14.2	10.6	12.4	23.0	19.9	21.5	29.1	16.4	21.9
21	12.4	9.5	11.0	12.9	6.1	10.1	27.6	18.0	21.9	28.3	16.2	21.5
22	15.0	6.2	10.1	12.1	3.2	7.5	25.1	16.7	21.1	28.7	17.3	21.9
23	15.7	8.0	11.4	18.5	5.7	11.8	29.9	19.3	24.0	27.6	19.3	22.6
24	16.7	9.1	12.4	23.2	11.9	16.6	28.6	18.4	23.6	30.5	19.6	25.3
25	13.3	6.7	9.8	14.3	6.7	9.6	18.4	11.5	14.4	21.7	15.9	19.3
26	8.1	1.9	4.8	18.6	4.2	10.6	12.6	11.5	11.9	30.0	19.7	24.1
27	13.1	---	---	22.0	8.6	14.4	19.2	12.6	15.8	25.1	18.2	21.1
28	15.0	1.6	7.6	25.0	12.2	18.0	24.1	16.1	19.8	26.4	19.6	22.2
29	---	---	---	24.9	14.8	18.9	27.2	18.8	22.8	31.1	21.5	26.0
30	---	---	---	18.0	13.4	15.1	29.0	21.6	24.8	31.2	23.0	26.7
31	---	---	---	17.1	12.6	14.7	---	---	---	34.1	22.9	28.1
MONTH	16.7	---	---	25.0	0.0	12.4	30.8	7.9	19.0	34.1	13.1	22.8

07311900 Wichita River near Seymour, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	34.9	23.4	28.4	27.6	22.2	24.3	31.2	27.7	29.2	34.3	25.9	29.6
2	34.1	23.2	27.9	31.4	22.8	26.3	33.2	27.3	30.0	34.5	26.0	29.8
3	34.1	21.9	27.4	26.0	23.0	23.8	33.6	27.5	30.5	33.8	26.1	29.8
4	30.5	22.8	25.3	23.7	22.6	23.1	33.6	27.1	30.3	34.8	25.6	29.6
5	---	---	---	27.0	23.7	25.1	32.8	26.8	29.7	34.9	26.4	30.0
6	25.6	---	---	26.5	25.8	26.1	31.3	26.6	29.1	33.2	25.7	28.8
7	30.1	22.6	26.0	25.8	23.2	24.9	33.0	26.3	29.6	32.1	23.9	27.3
8	29.2	24.8	26.9	28.1	25.6	26.6	34.5	27.7	30.7	27.7	23.7	25.3
9	32.1	24.0	27.6	31.1	26.7	28.7	33.8	27.8	30.4	29.0	23.8	25.9
10	32.9	24.2	28.1	32.8	28.0	30.2	32.4	26.2	28.8	29.9	24.1	26.3
11	33.4	24.2	28.3	33.9	27.7	30.5	31.0	25.1	27.9	32.4	22.4	26.7
12	34.5	24.8	28.8	32.7	25.5	29.2	32.3	25.0	28.2	29.7	23.1	26.3
13	31.5	25.0	27.5	32.7	25.1	28.4	31.6	24.9	27.6	29.8	22.6	25.7
14	31.2	24.1	27.4	34.1	26.0	29.8	28.2	24.1	25.9	32.5	21.9	26.3
15	29.9	21.9	26.1	34.0	26.6	30.0	31.9	24.7	28.0	26.6	22.3	24.2
16	24.1	20.3	22.1	32.4	25.8	28.9	33.0	25.8	28.9	30.0	19.2	23.9
17	27.2	---	---	32.9	25.7	28.9	31.5	25.5	28.5	30.3	22.1	25.5
18	29.9	22.9	26.1	33.6	25.3	28.9	33.0	25.3	28.6	30.5	14.9	23.9
19	31.0	22.0	26.0	33.4	25.6	28.8	32.7	25.4	28.5	23.0	18.4	21.8
20	33.0	22.5	27.2	33.7	25.1	28.8	32.0	24.8	28.0	24.5	18.2	20.9
21	34.2	24.1	28.5	33.9	24.3	28.5	31.4	24.8	27.8	27.7	19.2	22.9
22	33.4	24.2	28.1	35.2	24.8	29.2	33.8	24.9	28.9	26.1	19.7	22.6
23	33.3	22.8	27.8	36.5	25.9	30.8	34.1	26.2	30.0	27.4	18.2	22.2
24	34.5	22.9	28.0	36.3	27.0	30.7	34.6	26.2	30.1	27.1	17.9	22.1
25	34.9	23.8	28.5	36.2	25.1	29.9	35.6	26.6	30.4	28.6	16.9	21.7
26	35.7	24.8	29.5	35.4	25.3	29.6	35.9	25.8	30.2	30.3	19.0	24.1
27	34.6	25.3	29.2	34.6	24.4	28.9	32.2	23.2	27.6	30.1	19.6	24.4
28	35.4	24.4	29.4	29.8	24.8	26.9	33.2	23.9	27.6	29.9	20.0	24.4
29	35.2	24.9	29.3	25.9	21.3	22.9	27.4	22.6	25.3	29.6	19.6	24.0
30	27.5	23.6	25.2	26.1	21.9	23.7	31.3	24.7	27.4	29.2	20.0	24.3
31	---	---	---	28.5	25.9	27.1	32.4	24.8	28.4	---	---	---
MONTH	---	---	---	36.5	21.3	27.7	35.9	22.6	28.8	34.9	14.9	25.3



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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 NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Oct. 1, 1972, nonrecording gage at same 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, 234,000 acre-ft, Aug. 2-5, elevation, 1,141.67 ft; minimum contents, 115,000 acre-ft, on several days, elevation, 1,129.22 ft.

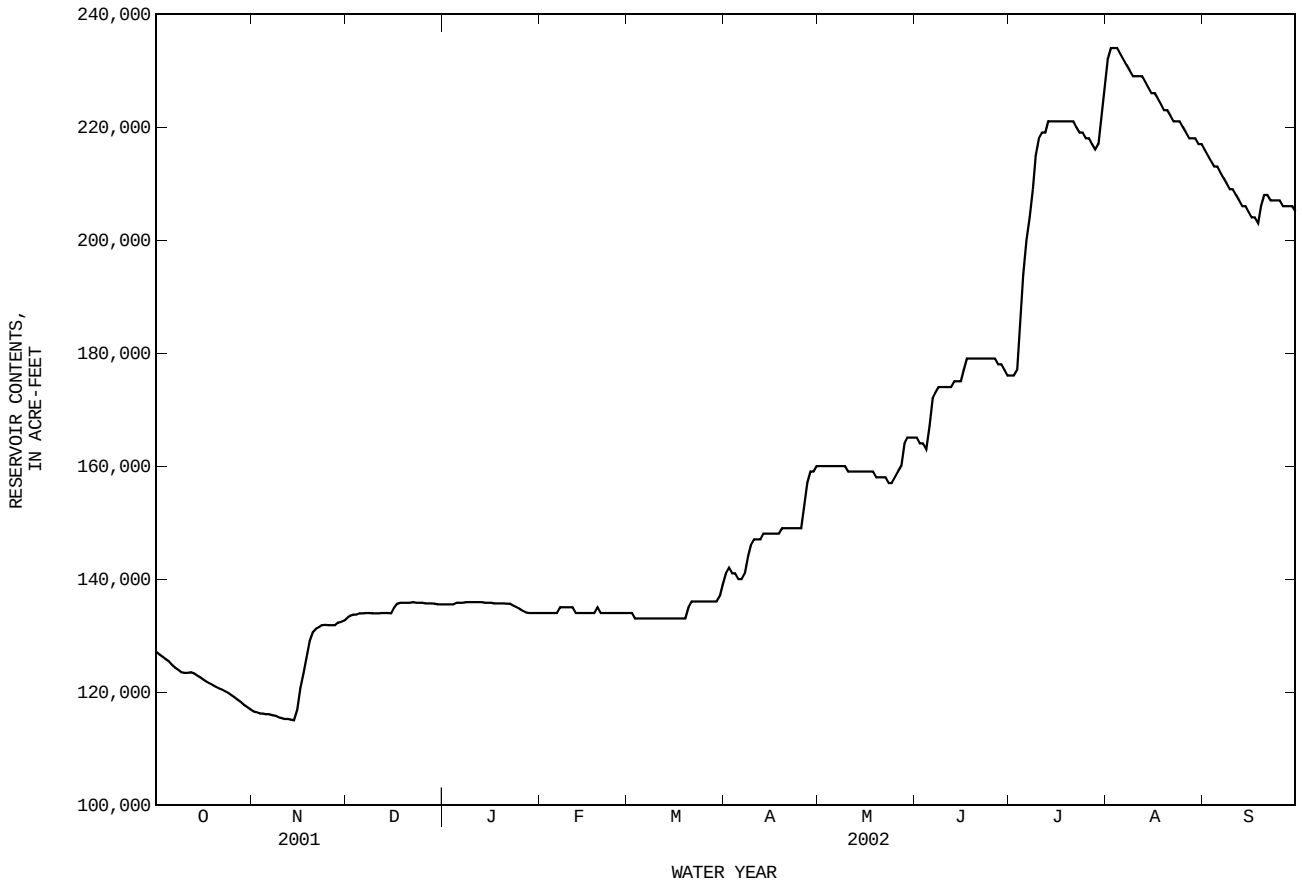
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	127100	116600	133100	135500	134000	134000	141000	160000	165000	176000	232000	216000
2	126600	116400	133500	135500	134000	134000	142000	160000	164000	176000	234000	215000
3	126200	116200	133700	135500	134000	133000	141000	160000	164000	177000	234000	214000
4	125800	116200	133700	135500	134000	133000	141000	160000	163000	185000	234000	213000
5	125400	116100	133900	135800	134000	133000	140000	160000	167000	194000	233000	213000
6	124800	116100	133900	135800	134000	133000	140000	160000	172000	200000	232000	212000
7	124300	115900	134000	135800	135000	133000	141000	160000	173000	204000	231000	211000
8	123900	115800	134000	135900	135000	133000	144000	160000	174000	209000	230000	210000
9	123500	115500	133900	135900	135000	133000	146000	160000	174000	215000	229000	209000
10	123400	115400	133900	135900	135000	133000	147000	159000	174000	218000	229000	209000
11	123400	115200	133900	135900	135000	133000	147000	159000	174000	219000	229000	208000
12	123500	115200	134000	135900	134000	133000	147000	159000	174000	219000	229000	207000
13	123300	115100	134000	135900	134000	133000	148000	159000	175000	221000	228000	206000
14	122900	115000	134000	135800	134000	133000	148000	159000	175000	221000	227000	206000
15	122600	116800	133900	135800	134000	133000	148000	159000	175000	221000	226000	205000
16	122200	120700	134900	135800	134000	133000	148000	159000	177000	221000	226000	204000
17	121800	123400	135600	135700	134000	133000	148000	159000	179000	221000	225000	204000
18	121500	126300	135800	135700	134000	133000	148000	159000	179000	221000	224000	203000
19	121200	129000	135800	135700	135000	133000	149000	158000	179000	221000	223000	206000
20	120900	130600	135800	135700	134000	135000	149000	158000	179000	221000	223000	208000
21	120600	131200	135800	135600	134000	136000	149000	158000	179000	221000	222000	208000
22	120400	131500	135900	135600	134000	136000	149000	158000	179000	220000	221000	207000
23	120100	131800	135800	135300	134000	136000	149000	157000	179000	219000	221000	207000
24	119800	131900	135800	135000	134000	136000	149000	157000	179000	219000	221000	207000
25	119400	131800	135800	134700	134000	136000	149000	158000	179000	218000	220000	207000
26	119000	131800	135700	134400	134000	136000	153000	159000	179000	218000	219000	206000
27	118600	131800	135700	134100	134000	136000	157000	160000	178000	217000	218000	206000
28	118200	132300	135700	134000	134000	136000	159000	164000	178000	216000	218000	206000
29	117700	132400	135600	134000		136000	159000	165000	177000	217000	218000	206000
30	117300	132600	135500	134000		137000	160000	165000	176000	222000	217000	205000
31	116900		135500	134000		139000		165000		227000	217000	
MEAN	122000	123000	135000	135000	134000	134000	148000	160000	175000	212000	225000	208000
MAX	127000	133000	136000	136000	135000	139000	160000	165000	179000	227000	234000	216000
MIN	117000	115000	133000	134000	134000	133000	140000	157000	163000	176000	217000	203000
(+)	1129.46	1131.83	1132.24	1132.00	1131.99	1132.71	1135.28	1135.86	1136.99	1141.23	1140.42	1139.57
(@)	-10600	+15700	+2900	-1500	0	+5000	+21000	+5000	+11000	+51000	-10000	-12000

CAL YR 2001 MAX 206000 MIN 115000 (@) -4800
WTR YR 2002 MAX 234000 MIN 115000 (@) +77500

(+) 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 NGVD of 1929. 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 (station 07312000) 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	186	131	0.42	0.52	0.75	0.38	0.51	0.43	118	167	1.9	252
2	176	71	0.33	0.52	0.70	0.44	0.50	0.51	116	72	2.1	251
3	176	71	0.33	0.48	0.74	0.36	71	0.52	113	43	2.3	251
4	175	68	0.32	0.48	0.66	0.32	224	0.52	111	3.8	2.6	251
5	179	53	0.38	0.59	0.89	0.30	223	0.48	46	1.5	244	252
6	177	41	0.44	0.55	0.91	0.30	158	0.40	0.29	1.3	381	251
7	176	41	0.44	0.55	0.74	0.33	3.9	0.39	0.27	1.4	302	251
8	176	41	0.49	0.51	0.63	0.29	0.48	0.33	0.29	1.3	255	252
9	176	40	0.37	0.49	0.71	0.42	0.35	0.47	0.23	1.1	257	252
10	177	40	0.38	0.58	0.83	0.42	0.32	0.42	0.23	1.1	257	252
11	152	37	0.44	0.56	0.67	0.42	0.31	0.37	0.24	1.2	257	249
12	132	37	0.48	0.58	0.63	0.46	0.38	0.40	0.16	1.0	256	249
13	134	37	0.46	0.55	0.39	0.45	0.44	0.42	0.29	1.0	258	201
14	134	21	0.42	0.63	0.28	0.53	0.41	0.40	0.26	0.99	259	171
15	134	13	0.43	0.60	0.36	0.76	0.39	0.34	0.42	0.98	261	173
16	133	4.9	0.70	0.67	0.30	0.65	0.58	0.33	1.8	1.1	260	172
17	131	0.97	0.53	0.72	0.29	0.58	0.46	0.40	0.29	1.1	259	171
18	131	0.52	0.42	0.73	0.25	0.64	0.47	0.40	0.28	1.1	255	171
19	132	0.66	0.42	0.73	0.27	1.2	0.56	0.37	0.28	1.1	181	149
20	133	0.54	0.35	0.66	0.29	0.83	0.51	0.39	0.32	1.1	134	63
21	133	0.50	0.34	0.73	0.37	0.56	0.57	0.41	0.31	1.1	133	34
22	126	0.50	0.34	75	0.34	0.51	0.55	59	0.29	158	134	36
23	125	0.43	0.36	122	0.33	0.50	0.49	119	0.29	251	133	37
24	128	0.44	e0.37	122	0.28	0.24	0.49	116	0.31	172	133	37
25	127	0.37	e0.40	118	0.40	0.37	5.6	116	0.34	127	136	36
26	150	0.38	e0.42	118	0.40	0.34	16	115	0.34	156	136	26
27	175	0.43	0.43	117	0.34	0.32	0.58	123	136	182	137	27
28	174	0.47	0.42	114	0.34	0.36	0.53	118	239	181	196	29
29	173	0.34	0.49	115	---	0.39	0.52	118	238	69	252	33
30	174	0.51	0.52	78	---	1.6	0.46	118	237	1.9	252	90
31	175	---	0.52	0.90	---	0.78	---	118	---	1.7	253	---
TOTAL	4780	753.96	13.16	992.33	14.09	16.05	712.36	1128.70	1361.53	1604.87	5979.9	4669
MEAN	154.2	25.13	0.425	32.01	0.503	0.518	23.75	36.41	45.38	51.77	192.9	155.6
MAX	186	131	0.70	122	0.91	1.6	224	123	239	251	381	252
MIN	125	0.34	0.32	0.48	0.25	0.24	0.31	0.33	0.16	0.98	1.9	26
AC-FT	9480	1500	26	1970	28	32	1410	2240	2700	3180	11860	9260

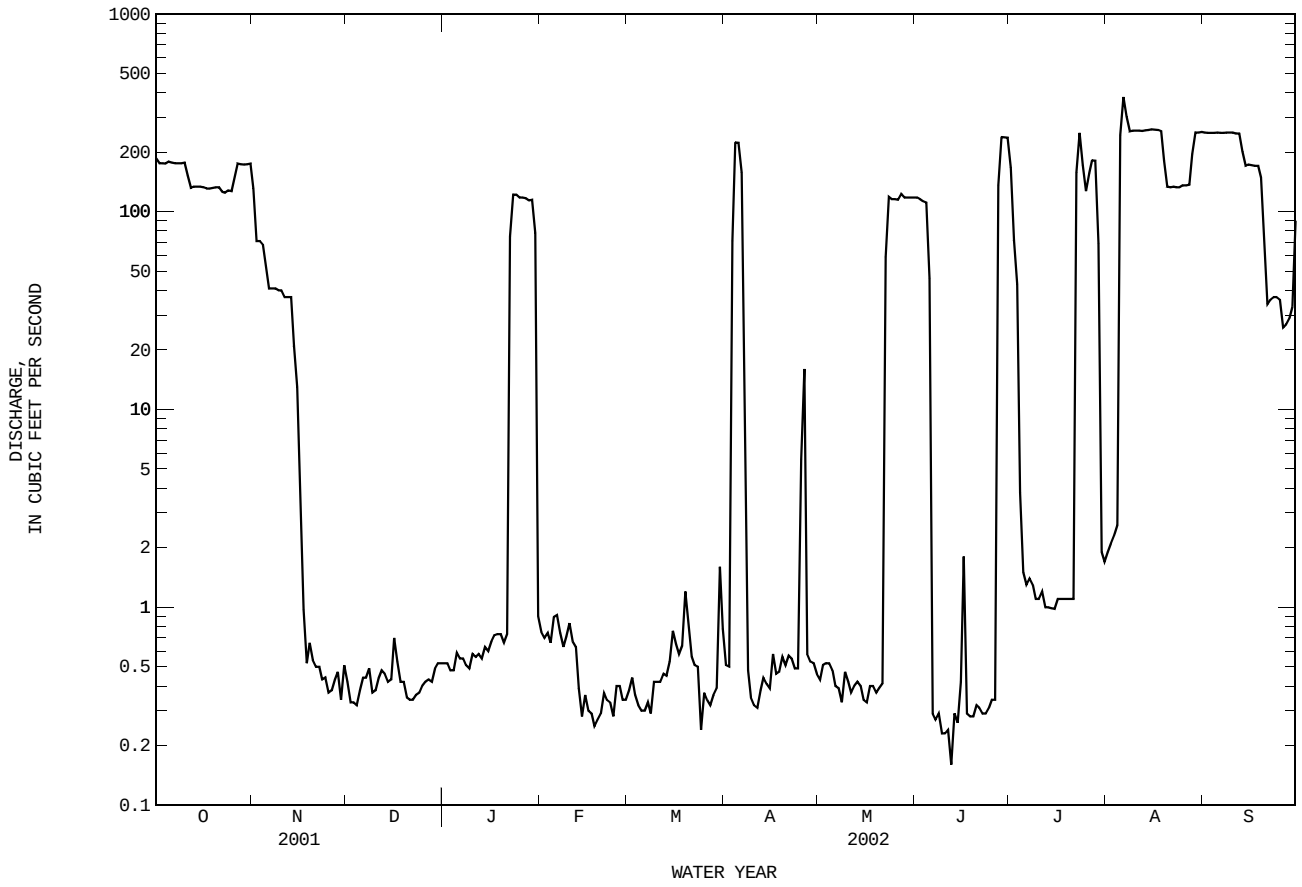
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	133.5	95.62	38.43	59.83	62.63	134.5	155.5	164.2	290.6	307.6	281.3	177.2
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	0.66	0.39	0.24	0.34	0.50	0.50	0.23	0.64	2.59	51.8	30.9	1.66
(WY)	1985	1974	1997	2001	2002	1989	2001	2001	1989	2002	1978	1974

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	33631.18		22025.95			
ANNUAL MEAN	92.14		60.35		158.9	
HIGHEST ANNUAL MEAN					522	1987
LOWEST ANNUAL MEAN					59.9	1981
HIGHEST DAILY MEAN	322	Jul 24	381	Aug 6	3530	Jun 24 1992
LOWEST DAILY MEAN	0.05	Apr 3	0.16	Jun 12	0.05	Apr 3 2001
ANNUAL SEVEN-DAY MINIMUM	0.07	Apr 2	0.24	Jun 8	0.07	Apr 2 2001
MAXIMUM PEAK FLOW			385	Aug 5	4290	Mar 24 1976
MAXIMUM PEAK STAGE			3.33	Aug 5	10.47	Mar 24 1976
ANNUAL RUNOFF (AC-FT)	66710		43690		115100	
10 PERCENT EXCEEDS	238		198		388	
50 PERCENT EXCEEDS	0.88		0.83		13	
90 PERCENT EXCEEDS	0.27		0.33		0.64	

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 since Oct. 1994.

REMARKS.--Records fair. Interruption in the water temperature record caused by malfunction 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 2002. 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, 5,500 microsiemens/cm, Mar. 5; minimum, 1,070 microsiemens/cm, Apr. 26.
WATER TEMPERATURE: Maximum, 34.7°C, July 9; minimum, 0.4°C, Nov. 28.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
01...	1325	175	4850	8.1	22.4	9.1	109	850	770	233	65.7	724	11
NOV													
07...	1045	40	4960	8.3	18.1	9.6	107	950	860	259	73.7	779	11
DEC													
12...	1110	.47	5100	7.5	12.7	8.7	87	940	760	250	77.6	714	10
JAN													
29...	1125	113	4680	8.1	8.8	11.1	101	810	720	223	60.9	650	10
FEB													
13...	1340	.37	5260	7.9	11.0	11.7	111	960	770	253	80.2	725	10
MAR													
14...	1120	.49	5490	7.8	16.5	9.8	108	950	770	240	86.0	750	11
APR													
02...	1110	.53	5190	7.7	16.1	9.3	101	990	790	260	83.3	785	11
MAY													
09...	1030	.46	5160	7.6	17.8	8.9	99	910	750	242	73.9	694	10
JUN													
26...	1020	.42	5150	7.4	24.6	6.5	79	950	770	249	80.0	767	11
JUL													
30...	1305	2.0	4340	7.8	29.0	9.2	121	800	680	221	59.8	643	10
AUG													
15...	1100	259	3730	8.3	27.8	8.0	104	630	550	177	46.7	526	9
SEP													
23...	1200	37	3870	8.2	24.7	9.4	114	700	610	198	49.9	568	9

07312100 Wichita River near Mabelle, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
01...	7.70	86	758	1100	.4	7.0	2950	<10	--	<.008	<.05	<.04	--
NOV													
07...	8.12	88	782	1130	.4	6.1	3090	<10	--	<.008	<.05	E.04	--
DEC													
12...	5.57	187	753	1170	.4	10.8	3100	<10	.04	.014	.05	.36	.57
JAN													
29...	7.48	88	729	1050	.3	6.0	2780	10	--	<.008	.11	E.03	.44
FEB													
13...	5.90	191	748	1200	.4	8.6	3130	<10	--	<.008	E.03	.20	--
MAR													
14...	6.50	187	780	1230	.40	7.80	3210	13	--	<.008	<.05	.06	--
APR													
02...	5.66	200	736	1180	.4	9.2	3180	30	--	E.004	<.05	.10	--
MAY													
09...	6.23	163	733	1170	.4	10.0	3030	21	--	<.008	<.05	.08	--
JUN													
26...	6.09	183	733	1220	.4	12.4	3180	<10	--	<.008	<.05	E.04	--
JUL													
30...	6.56	122	638	1010	.3	8.0	2660	<10	--	E.004	E.03	E.04	--
AUG													
15...	6.77	86	560	852	.3	6.0	2230	<10	--	<.008	.16	.21	.50
SEP													
23...	5.80	94	589	875	.4	6.9	2350	<10	--	<.008	<.05	.05	--

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)	ORTHO-PHOSPHATE, 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													
01...	--	.46	<.06	<.06	<.02	4	3.2	131	129	<.07	<.07	<.8	E.5
NOV													
07...	--	.41	<.06	<.06	<.02	E4	2.6	131	135	<.11	<.10	<4.0	<4.0
DEC													
12...	.16	.52	<.06	<.06	<.02	5	3.0	32	32	<.11	<.10	<.8	<.8
JAN													
29...	--	.33	<.06	<.06	<.02	4	2.9	130	127	<.07	<.07	<.8	<.8
FEB													
13...	.15	.35	<.06	<.06	<.02	3	2.7	24	22	E.02	E.02	<.8	1.0
MAR													
14...	.26	.32	<.06	<.06	<.02	5	3.3	29	26	<.11	<.10	E.6	<.8
APR													
02...	.28	.38	<.06	<.06	<.02	6	4.2	25	24	<.07	<.10	<.8	<.8
MAY													
09...	.28	.36	<.06	<.06	<.02	5	4.7	55	55	<.07	.08	<.8	<.8
JUN													
26...	--	.30	<.06	<.06	<.02	7	5.9	35	35	E.03	E.06	<.8	<.8
JUL													
30...	--	.29	<.06	<.06	<.02	6	5.5	95	100	<.07	<.07	<.8	<.8
AUG													
15...	.14	.34	<.06	<.06	<.02	5	3.5	131	136	<.07	<.07	<.8	<.8
SEP													
23...	.34	.39	<.06	<.06	<.02	4	4.5	128	139	<.11	<.07	<.8	<.8

07312100 Wichita River near Mabelle, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
01...	3.7	2.8	20	<30	<2	<.20	25	1.3	<.01	<.01	4	1.34	.9
NOV													
07...	5.2	2.9	<10	<30	<3	<.20	18	5.3	<.01	<.01	3	.95	<1.1
DEC													
12...	4.2	3.6	150	<30	<3	<.20	247	237	<.01	<.01	5	4.61	1.6
JAN													
29...	5.1	3.0	<10	<30	<2	.42	7	3.4	<.01	<.01	5	<.10	1.6
FEB													
13...	3.1	3.3	140	57	<1	.45	245	266	.02	E.01n	6	<.06	1.7
MAR													
14...	5.0	3.1	290	E27n	<3	.92	127	111	<.01	<.01	10	<.20	<1.1
APR													
02...	3.3	2.9	270	<30	<2	<.20	216	185	--	--	5	4.50	E.5n
MAY													
09...	5.4	3.5	200	<30	<2	<.20	123	77.8	E.01n	E.01n	5	3.49	1.4
JUN													
26...	7.7	4.4	30	<10	<1	<.20	176	146	<.01	<.01	2	3.57	.6
JUL													
30...	5.0	3.1	<40	<30	<2	<.20	59	48.5	<.01	<.01	6	<.10	1.8
AUG													
15...	3.4	3.4	<10	<30	<2	<.20	11	.3	E.01	<.01	4	<.10	1.0
SEP													
23...	4.2	3.7	<10	<30	<3	<.20	54	8.8	.04	.02	9	2.99	1.2

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													
01...	2.7	<.10	<2	4	3	--	--	--	--	--	--	--	--
NOV													
07...	1.6	<.15	<3	6	4	--	--	--	--	--	--	--	--
DEC													
12...	2.8	<.15	<3	4	4	--	--	--	--	--	--	--	--
JAN													
29...	1.8	<.10	<2	5	4	--	--	--	--	--	--	--	--
FEB													
13...	.5n	<.05	<1	8	4	--	--	--	--	--	--	--	--
MAR													
14...	2.8	<.15	<3	4	4	--	--	--	--	--	--	--	--
APR													
02...	1.6	<.10	<3	4	3	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1
MAY													
09...	1.6	<.10	<2	3	4	--	--	--	--	--	--	--	--
JUN													
26...	<1.0	<.05	<3	6	5	<.04	<.1	<1	<.1	<.1	<.1	<.1	<.1
JUL													
30...	.9	<.10	<2	4	2	--	--	--	--	--	--	--	--
AUG													
15...	E.6n	<.10	<1	<2	<2	--	--	--	--	--	--	--	--
SEP													
23...	1.8	<.15	<2	4	4	--	--	--	--	--	--	--	--

07312100 Wichita River near Mabelle, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
01...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
29...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
02...	<.02	<.6	<.06	<.2	<.03	<.8	<.03	17.2	<2	<.1	<.03	28.5	<.04
MAY													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
26...	<.02	<.6	<.06	<.2	<.03	<.8	<.03	54.5	<2	<.1	<.03	76.0	<.04
JUL													
30...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
23...	--	--	--	--	--	--	--	--	--	--	--	--	--

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							
01...	--	--	--	--	--	--	--
NOV							
07...	--	--	--	--	--	--	--
DEC							
12...	--	--	--	--	--	--	--
JAN							
29...	--	--	--	--	--	--	--
FEB							
13...	--	--	--	--	--	--	--
MAR							
14...	--	--	--	--	--	--	--
APR							
02...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
MAY							
09...	--	--	--	--	--	--	--
JUN							
26...	<.03	<.1	<.09	<.1	<.04	<.1	<.1
JUL							
30...	--	--	--	--	--	--	--
AUG							
15...	--	--	--	--	--	--	--
SEP							
23...	--	--	--	--	--	--	--

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

Value qualifier codes used in this report:
n -- Below the NDV

07312100 Wichita River near Mabelle, TX--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 2001 TO SEPTEMBER 2002

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.	2001	4780	4970	3060	39440	1100	14520	790	10150	930
NOV.	2001	753.96	4990	3070	6260	1100	2300	790	1610	940
DEC.	2001	13.16	4990	3070	109	1100	40.2	790	28.0	940
JAN.	2002	992.33	4710	2900	7760	1100	2840	750	2020	890
FEB.	2002	14.09	5040	3100	118	1100	43.5	790	30.2	950
MAR.	2002	16.05	4860	2990	130	1100	47.7	770	33.4	920
APR.	2002	712.36	4790	2950	5670	1100	2080	760	1470	900
MAY	2002	1128.7	4590	2830	8620	1000	3140	740	2260	870
JUNE	2002	1361.53	4470	2750	10120	1000	3670	720	2660	850
JULY	2002	1604.87	3880	2400	10390	860	3710	650	2800	740
AUG.	2002	5979.9	3810	2360	38050	840	13560	640	10290	730
SEPT	2002	4669	3770	2330	29330	830	10440	630	7950	720
TOTAL		22025.95	**	**	156000	**	56400	**	41300	**

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4850	4830	4840	5000	4980	4990	4910	3900	4580	5080	4940	5040
2	4870	4850	4860	5010	4980	5000	5060	4860	4960	5080	4970	5030
3	4880	4860	4870	5000	4910	4990	5050	4930	5000	5080	4980	5050
4	4880	4860	4870	4990	4970	4980	5040	4960	5010	5070	4960	5040
5	4910	4880	4900	4990	4970	4980	5070	4990	5030	5030	4480	4790
6	4920	4900	4910	5000	4970	4980	5100	5020	5080	5060	4920	4990
7	4950	4920	4940	5130	4970	5010	5110	5060	5080	5060	4940	5010
8	4970	4950	4960	5040	5020	5030	5160	5070	5120	5030	4930	4970
9	4970	4960	4970	5040	5020	5030	5170	5090	5130	5090	4960	5010
10	4990	4940	4960	5030	5010	5020	5200	5070	5140	5110	4990	5070
11	4980	4940	4950	5030	5010	5020	5160	4950	5080	5100	5010	5060
12	4940	4930	4940	5010	4990	5010	5100	5000	5050	5130	5020	5060
13	4950	4940	4940	5000	4980	4990	5180	5080	5140	5110	4950	5050
14	4950	4930	4940	5000	4950	4980	5170	5020	5120	5110	4720	4910
15	4970	4940	4950	4990	4660	4910	5160	5060	5110	5130	5030	5080
16	4970	4960	4960	5040	4940	4980	5080	3230	4480	5120	4980	5070
17	4990	4960	4980	5040	2360	e4300	4940	3630	4510	5110	5050	5090
18	5000	4980	4990	4820	4120	4650	5070	4860	4960	5140	5060	5110
19	5010	4990	5000	5090	4820	4990	5090	5000	5040	5100	5030	5080
20	5010	4990	5000	5120	5040	5080	5050	4880	4970	5140	4980	5070
21	5010	4990	5000	5110	5010	5070	5080	4970	5030	5170	5030	5110
22	5010	4990	5000	5110	5010	5080	5080	4930	5000	5180	4680	4860
23	5080	4990	5030	5110	5040	5090	5100	5020	5070	4680	4670	4680
24	5080	5060	5080	5140	5070	5110	5090	5010	5050	4700	4680	4690
25	5090	5060	5070	5140	5060	5110	5080	4990	5050	4700	4680	4690
26	5070	5050	5060	5140	5080	5100	5080	4980	5040	4710	4690	4700
27	5060	5040	5050	5160	4960	5090	5080	4980	5040	4710	4690	4700
28	5060	5030	5040	4990	4700	4850	5060	4970	5020	4720	4700	4710
29	5040	5020	5020	4850	4540	4740	5140	5010	5070	4730	4710	4710
30	5030	5010	5010	4890	2400	3960	5090	5030	5070	4740	3600	4590
31	5020	5000	5000	---	---	---	5080	4980	5040	5080	4460	4920
MONTH	5090	4830	4970	5160	2360	4940	5200	3230	5000	5180	3600	4930

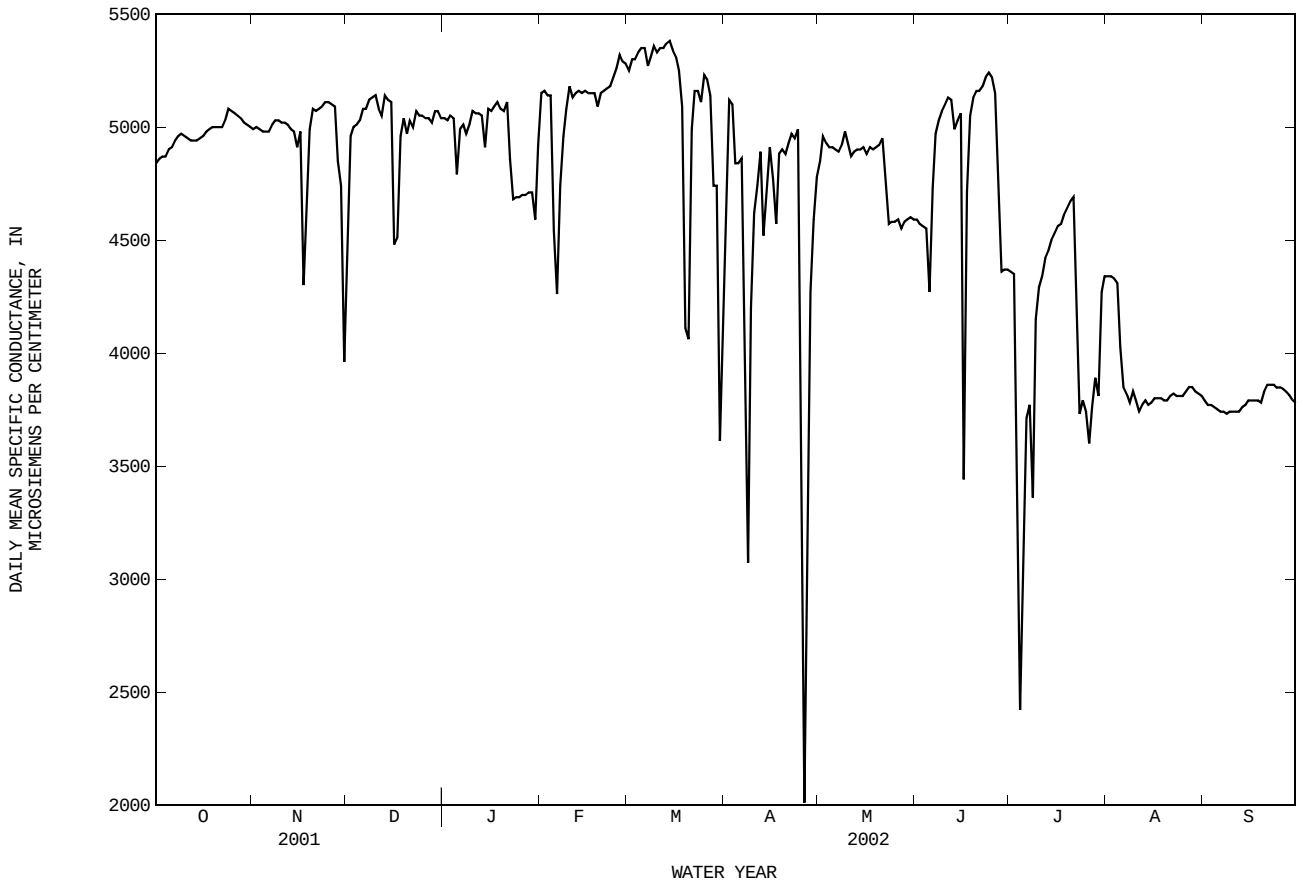
07312100 Wichita River near Mabelle, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5180	5070	5150	5310	5190	5250	5060	4170	4540	4880	4780	4850
2	5200	5130	5160	5330	5250	5300	5230	5000	5120	5030	4880	4960
3	5170	5070	5140	5380	5170	5300	5280	4730	5100	5010	4850	4930
4	5180	5090	5140	5360	5270	5330	4850	4830	4840	4960	4800	4910
5	5100	4060	4540	5500	5220	5350	4850	4830	4840	4990	4850	4910
6	4460	3940	4260	5490	5240	5350	4930	4840	4860	4940	4830	4900
7	4970	4350	4740	5390	4640	5270	4980	1290	3800	4930	4830	4890
8	5100	4740	4960	5390	5220	5310	3940	2040	3070	4960	4860	4920
9	5140	5040	5080	5410	5320	5360	4650	3630	4200	5070	4890	4980
10	5200	5130	5180	5380	5260	5330	4880	4200	4620	5020	4830	4920
11	5210	5050	5130	5400	5270	5350	4940	4500	4740	4930	4830	4870
12	5190	5110	5150	5440	5210	5350	4960	4640	4890	4960	4830	4890
13	5200	5090	5160	5480	5260	5370	4990	2690	4520	4980	4840	4900
14	5210	5090	5150	5490	5250	5380	4860	4500	4700	4970	4770	4900
15	5190	5120	5160	5390	5290	5340	4970	4820	4910	4970	4840	4910
16	5200	5070	5150	5350	5270	5310	4990	3400	4770	4940	4800	4880
17	5180	5090	5150	5280	5200	5250	4820	3980	4570	5000	4840	4910
18	5190	5100	5150	5280	4800	5090	4930	4730	4880	4980	4770	4900
19	5160	5010	5090	5190	2720	4110	4990	4800	4900	4980	4830	4910
20	5200	5100	5150	4680	2830	4060	4920	4820	4880	4960	4840	4920
21	5190	5060	5160	5220	4590	4990	5010	4870	4930	5020	4870	4950
22	5220	5090	5170	5240	5060	5160	5020	4890	4970	5030	4560	4770
23	5230	5110	5180	5220	5070	5160	5000	4890	4950	4590	4540	4570
24	5260	5180	5220	5190	5030	5110	5070	4940	4990	4590	4540	4580
25	5310	5200	5260	5260	5190	5230	5110	1400	3980	4590	4580	4580
26	5350	5280	5320	5280	5110	5210	3210	1070	2010	4600	4580	4590
27	5340	5210	5290	5220	4650	5140	4170	3180	3640	4600	4470	4550
28	5320	5210	5280	5220	4360	4740	4490	4020	4270	4590	4570	4580
29	---	---	---	5220	4500	4740	4740	4380	4590	4600	4560	4590
30	---	---	---	5060	2460	3610	4820	4740	4780	4600	4590	4600
31	---	---	---	4740	3290	4020	---	---	---	4600	4580	4590
MONTH	5350	3940	5100	5500	2460	5060	5280	1070	4530	5070	4470	4810

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4600	4560	4590	4390	4340	4360	4570	4220	4340	3800	3770	3790
2	4590	4550	4570	4370	4340	4350	4480	4270	4340	3780	3760	3770
3	4570	4550	4560	4350	2240	3600	4440	4240	4330	3780	3760	3770
4	4570	4500	4550	2680	2160	2420	4410	4210	4310	3770	3760	3760
5	4550	3750	4270	3410	2450	2930	4370	3860	4030	3760	3740	3750
6	4940	4340	4730	3930	3410	3710	3880	3820	3850	3750	3690	3740
7	5030	4930	4970	4070	2750	3770	3860	3780	3820	3750	3720	3740
8	5060	4990	5030	3600	3050	3360	3840	3730	3780	3740	3720	3730
9	5110	5020	5070	4250	3600	4150	3880	3720	3830	3750	3730	3740
10	5140	5050	5100	4330	4250	4290	3860	3740	3790	3750	3720	3740
11	5180	5070	5130	4390	4220	4340	3800	3710	3740	3740	3730	3740
12	5170	5060	5120	4530	4330	4420	3810	3730	3770	3750	3730	3740
13	5230	4480	4990	4470	4410	4450	3840	3760	3790	3780	3730	3760
14	5160	4960	5030	4540	4440	4500	3810	3730	3770	3790	3750	3770
15	5250	2550	5060	4570	4500	4530	3800	3750	3780	3790	3770	3790
16	4420	1590	3440	4590	4520	4560	3830	3780	3800	3800	3770	3790
17	4970	4280	4710	4600	4550	4570	3820	3790	3800	3810	3770	3790
18	5140	4970	5050	4640	4590	4610	3830	3770	3800	3820	3690	3790
19	5200	5000	5130	4670	4550	4640	3830	3770	3790	3820	3690	3780
20	5210	5090	5160	4690	4660	4670	3820	3760	3790	3860	3800	3830
21	5210	5100	5160	4720	4670	4690	3830	3800	3810	3880	3820	3860
22	5230	5120	5180	4730	3680	4140	3850	3800	3820	3880	3840	3860
23	5250	5150	5220	3910	3570	3730	3830	3800	3810	3900	3840	3860
24	5310	5180	5240	3970	3640	3790	3820	3790	3810	3870	3820	3850
25	5280	5150	5220	3960	3620	3740	3820	3800	3810	3870	3820	3850
26	5290	5020	5150	3700	3540	3600	3850	3820	3830	3860	3810	3840
27	5200	4360	4700	3900	3560	3760	3890	3830	3850	3850	3800	3830
28	4380	4350	4360	3910	3880	3890	3860	3840	3850	3850	3790	3810
29	4380	4350	4370	4040	3600	3810	3850	3820	3830	3820	3770	3790
30	4380	4350	4370	4420	4040	4270	3820	3800	3820	3800	3760	3780
31	---	---	---	4500	4220	4340	3820	3800	3810	---	---	---
MONTH	5310	1590	4840	4730	2160	4060	4570	3710	3880	3900	3690	3790
YEAR	5500	1070	4660									

e Estimated



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.0	21.9	22.4	18.0	17.0	17.4	14.6	7.3	10.4	9.2	6.5	7.7
2	22.9	22.1	22.5	18.3	17.4	17.8	16.9	8.9	12.5	7.8	4.9	6.6
3	22.6	21.7	22.1	18.7	17.6	18.1	19.0	13.1	15.3	11.1	4.1	6.6
4	22.8	21.7	22.2	17.7	17.4	17.5	19.9	15.4	17.2	10.7	4.5	7.4
5	22.2	20.9	21.5	18.6	17.3	17.7	20.1	15.6	17.5	11.7	8.1	9.6
6	21.5	20.6	21.0	19.1	17.6	18.2	15.9	12.2	14.0	12.8	5.8	8.7
7	20.9	20.2	20.6	18.8	17.5	18.0	15.7	11.1	13.0	13.0	5.4	8.7
8	21.0	19.9	20.4	17.8	16.7	17.4	13.6	9.2	11.0	15.5	6.1	9.9
9	21.0	20.1	20.5	17.2	16.4	16.7	15.2	7.2	10.2	16.4	8.0	11.6
10	20.5	20.0	20.3	17.5	16.2	16.8	14.4	6.8	9.9	11.5	9.6	10.4
11	20.4	19.7	20.0	17.8	17.0	17.3	10.5	8.4	9.2	15.8	7.5	10.6
12	20.4	19.5	20.0	17.9	16.9	17.2	17.3	10.4	12.4	14.0	7.0	9.6
13	19.7	19.0	19.3	17.9	16.8	17.3	11.0	8.0	9.3	14.6	6.6	9.7
14	19.8	18.7	19.2	18.8	16.9	17.4	13.9	5.7	9.2	14.3	7.2	9.9
15	19.2	18.3	18.8	17.1	16.6	16.8	11.4	9.0	10.0	13.2	6.4	9.4
16	18.6	17.8	18.3	18.8	---	---	13.0	10.7	11.6	12.9	9.4	10.8
17	18.5	17.5	18.0	17.7	---	---	14.9	7.9	11.0	12.2	7.9	9.3
18	18.3	17.2	17.7	---	15.1	---	15.4	7.8	11.0	7.9	6.3	7.0
19	18.1	17.4	17.8	17.5	11.5	14.2	15.0	7.5	10.5	13.8	5.1	8.4
20	19.0	17.5	18.1	16.3	8.7	11.9	14.4	6.8	10.2	12.5	5.3	8.5
21	18.8	17.9	18.4	17.1	8.9	12.3	14.7	8.1	11.1	12.6	5.6	9.0
22	18.7	17.9	18.3	17.7	10.6	13.7	14.3	9.0	11.4	9.5	6.8	8.0
23	18.7	17.8	18.3	15.9	11.6	13.7	11.6	7.0	9.1	7.7	7.1	7.3
24	18.5	17.6	18.1	16.2	9.7	12.5	10.4	6.2	7.9	7.3	6.9	7.1
25	18.0	17.2	17.6	16.2	9.8	12.7	13.3	5.4	8.4	7.6	6.6	7.1
26	18.2	17.0	17.5	13.3	10.6	12.2	13.4	5.1	8.4	7.9	6.9	7.3
27	17.8	17.1	17.5	10.6	3.7	6.7	11.4	5.9	8.3	7.9	7.0	7.4
28	17.7	16.8	17.3	4.4	0.4	3.0	12.2	5.6	8.6	8.3	7.3	7.8
29	17.8	16.8	17.3	11.8	4.4	7.0	8.5	4.0	6.7	8.9	7.9	8.4
30	17.9	16.8	17.3	12.8	5.2	8.0	7.2	4.9	5.7	8.0	7.3	7.7
31	17.6	16.9	17.2	---	---	---	9.8	4.1	6.7	11.7	5.2	7.9
MONTH	23.0	16.8	19.2	---	---	---	20.1	4.0	10.6	16.4	4.1	8.6

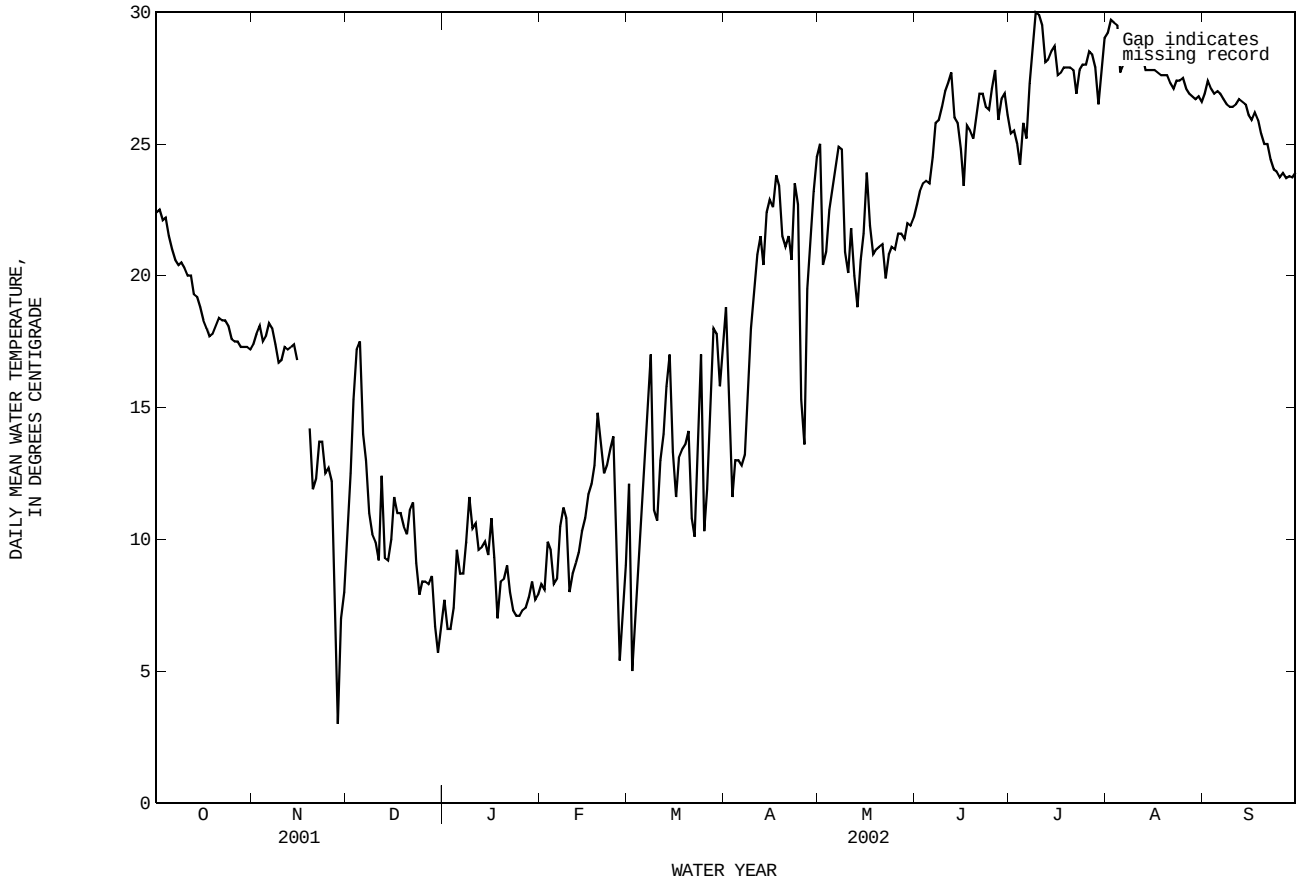
07312100 Wichita River near Mabelle, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	14.9	3.8	8.3	17.8	8.1	12.1	25.2	13.6	18.8	31.1	20.1	25.0
2	10.2	5.9	8.1	8.1	2.1	5.0	18.4	12.5	15.8	25.0	17.3	20.4
3	11.4	8.4	9.9	14.3	2.0	6.9	16.5	8.1	11.6	26.6	16.2	20.9
4	10.8	8.4	9.6	15.1	3.5	8.6	13.3	12.8	13.0	28.3	18.0	22.5
5	9.6	6.8	8.3	17.4	5.6	10.7	13.3	12.6	13.0	27.3	19.6	23.3
6	12.7	5.4	8.5	19.5	8.5	13.3	13.1	12.3	12.8	27.9	21.0	24.1
7	17.4	5.9	10.5	21.6	10.3	15.3	15.0	12.3	13.2	28.8	21.5	24.9
8	16.7	6.9	11.2	20.8	14.5	17.0	18.5	13.3	15.5	29.4	21.2	24.8
9	14.5	8.6	10.8	15.7	7.6	11.1	24.7	13.0	18.0	24.2	17.0	20.9
10	10.4	5.8	8.0	16.3	6.4	10.7	25.4	14.6	19.3	23.7	17.2	20.1
11	14.3	4.0	8.7	18.8	9.8	13.0	26.5	16.4	20.8	24.2	19.7	21.8
12	13.4	5.5	9.1	21.3	8.8	14.0	26.0	17.7	21.5	22.0	16.9	20.0
13	14.0	6.2	9.5	22.5	11.0	15.8	24.4	17.2	20.4	24.9	14.1	18.8
14	15.6	6.2	10.3	22.3	13.0	17.0	28.6	17.5	22.4	26.2	15.8	20.6
15	14.7	7.4	10.8	17.1	9.5	13.3	28.2	18.6	22.9	26.5	17.3	21.6
16	18.7	6.3	11.7	15.6	8.5	11.6	27.3	20.0	22.6	29.7	19.4	23.9
17	17.3	8.4	12.1	15.6	11.7	13.1	29.5	19.2	23.8	24.5	20.0	21.9
18	16.7	9.4	12.8	14.6	12.2	13.4	26.4	20.6	23.4	26.3	16.2	20.8
19	18.6	12.6	14.8	14.3	11.9	13.6	23.0	20.2	21.5	26.3	16.6	21.0
20	19.1	9.2	13.6	19.6	10.7	14.1	22.7	19.4	21.1	26.0	16.8	21.1
21	13.8	11.4	12.5	13.9	7.4	10.8	26.4	17.9	21.5	26.0	17.3	21.2
22	19.5	8.3	12.8	16.9	5.1	10.1	24.5	16.6	20.6	21.3	17.9	19.9
23	19.5	8.9	13.4	20.9	7.6	13.3	29.1	18.9	23.5	21.1	20.5	20.8
24	19.1	10.4	13.9	23.7	12.9	17.0	26.4	19.7	22.7	21.7	20.7	21.1
25	13.3	6.0	10.2	14.4	8.4	10.3	19.7	12.2	15.3	21.3	20.7	21.0
26	9.0	2.1	5.4	19.3	6.3	11.9	15.0	12.2	13.6	22.8	20.9	21.6
27	14.0	2.8	7.3	21.6	9.6	14.7	24.7	14.6	19.5	22.1	21.0	21.6
28	14.4	4.3	9.0	25.5	12.6	18.0	28.0	15.6	21.2	21.7	21.0	21.4
29	---	---	---	22.5	14.5	17.8	29.5	18.1	23.2	22.5	21.5	22.0
30	---	---	---	17.9	13.7	15.8	29.6	21.1	24.5	22.3	21.6	21.9
31	---	---	---	24.0	12.7	17.3	---	---	---	23.1	21.6	22.2
MONTH	19.5	2.1	10.4	25.5	2.0	13.1	29.6	8.1	19.2	31.1	14.1	21.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	23.9	21.9	22.7	25.9	25.0	25.4	33.9	24.8	29.2	27.3	26.5	26.9
2	24.4	22.1	23.2	26.2	25.2	25.5	33.8	25.6	29.7	27.7	27.0	27.4
3	24.0	23.0	23.5	25.6	23.4	25.0	33.7	25.5	29.6	27.4	26.8	27.1
4	24.5	22.9	23.6	26.1	22.8	24.2	33.9	25.2	29.5	27.2	26.8	26.9
5	25.2	22.5	23.5	29.0	22.8	25.8	29.1	25.0	27.7	27.4	26.8	27.0
6	30.7	19.5	24.5	27.8	23.0	25.2	28.2	27.9	28.0	27.1	26.7	26.9
7	31.3	21.3	25.8	32.5	23.2	27.3	28.4	28.0	28.2	27.0	26.6	26.7
8	29.0	23.0	25.9	33.8	24.1	28.8	28.6	27.9	28.3	26.7	26.3	26.5
9	31.2	22.8	26.4	34.7	26.0	30.0	28.5	27.8	28.1	26.6	26.1	26.4
10	31.2	23.5	27.0	34.2	26.2	29.9	28.5	27.8	28.1	26.6	26.3	26.4
11	32.3	23.5	27.3	34.2	25.9	29.5	29.3	28.1	28.6	26.9	26.2	26.5
12	32.8	23.8	27.7	33.3	24.6	28.1	28.8	27.9	28.4	27.2	26.5	26.7
13	29.1	23.8	26.0	33.3	24.0	28.2	28.2	27.5	27.8	26.9	26.4	26.6
14	30.2	22.5	25.8	33.3	24.4	28.5	28.0	27.6	27.8	26.8	26.1	26.5
15	29.1	18.5	24.8	33.6	24.9	28.7	28.3	27.3	27.8	26.3	25.9	26.1
16	28.3	18.3	23.4	31.3	24.1	27.6	28.3	27.4	27.8	26.2	25.6	25.9
17	31.4	21.0	25.7	32.1	24.1	27.7	28.0	27.4	27.7	26.6	25.9	26.2
18	30.9	21.2	25.5	32.5	23.9	27.9	28.0	27.1	27.6	26.4	25.4	25.9
19	30.1	21.1	25.2	32.1	24.5	27.9	28.0	27.1	27.6	25.8	25.0	25.4
20	30.8	21.7	26.1	32.3	24.3	27.9	27.9	27.3	27.6	26.0	24.2	25.0
21	31.3	22.9	26.9	32.4	23.8	27.8	27.7	27.0	27.3	26.4	24.3	25.0
22	31.4	23.4	26.9	28.4	24.0	26.9	27.5	26.8	27.1	25.4	23.7	24.4
23	31.2	22.2	26.4	28.3	27.3	27.8	27.8	27.0	27.4	25.3	23.3	24.0
24	31.4	22.0	26.3	29.0	26.9	28.0	27.9	27.0	27.4	25.1	23.3	23.9
25	33.0	22.8	27.1	28.6	26.8	28.0	27.8	27.1	27.5	25.0	23.0	23.7
26	33.1	23.6	27.8	29.1	27.7	28.5	27.5	26.8	27.1	25.5	23.1	23.9
27	27.1	24.2	25.9	28.8	27.8	28.4	27.2	26.4	26.9	25.3	22.9	23.7
28	27.3	26.4	26.7	28.3	27.5	27.9	27.3	26.6	26.8	25.2	22.9	23.8
29	27.4	26.5	26.9	27.9	23.6	26.5	27.1	26.3	26.7	24.9	23.1	23.7
30	26.7	25.5	26.1	32.4	24.0	27.8	27.3	26.6	26.8	24.4	23.3	23.9
31	---	---	---	33.4	24.9	29.0	26.8	26.4	26.6	---	---	---
MONTH	33.1	18.3	25.7	34.7	22.8	27.6	33.9	24.8	27.8	27.7	22.9	25.6

07312100 Wichita River near Mabelle, TX--Continued



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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 NGVD of 1929 (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 FROM DCP, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	64	8.0	2.4	1.0	0.88	1.8	0.97	98	172	39	211
2	177	17	7.8	2.5	0.93	0.86	1.5	1.1	99	120	38	209
3	173	16	7.6	2.6	1.1	0.87	1.5	3.3	100	64	37	211
4	172	16	7.6	2.5	1.1	0.90	e1.5	4.7	102	2.3	36	209
5	167	16	6.9	2.4	1.1	0.90	e1.5	4.3	74	1.3	88	207
6	168	16	6.6	2.1	1.0	0.90	e1.6	4.2	35	1.2	153	208
7	167	16	6.7	2.0	0.96	0.90	e1.6	4.2	27	1.1	177	209
8	167	16	6.7	1.9	0.91	0.96	1.6	3.6	27	0.93	168	210
9	154	16	6.8	1.7	0.78	1.0	1.6	3.5	27	0.77	159	199
10	135	16	6.5	1.5	0.65	1.0	1.8	26	27	8.1	159	191
11	131	16	6.4	1.3	0.63	1.0	1.6	43	26	62	160	193
12	121	16	6.5	1.3	0.64	1.0	1.7	47	26	76	163	193
13	111	16	6.3	1.3	0.62	1.1	1.6	78	26	73	195	194
14	110	16	6.2	1.2	0.57	1.0	1.5	80	26	72	206	193
15	100	14	6.0	1.1	0.59	1.1	1.5	75	27	82	191	193
16	89	13	6.0	0.90	0.62	1.1	1.5	65	27	93	191	192
17	88	13	5.9	0.91	0.60	1.2	1.5	83	26	92	189	174
18	87	12	6.0	1.0	0.62	1.3	1.3	98	27	106	170	159
19	86	11	5.9	1.1	0.61	1.3	1.2	98	28	118	154	156
20	91	11	5.9	1.1	0.61	1.4	1.2	98	27	119	162	127
21	99	11	5.5	0.99	0.68	1.4	1.2	118	50	127	175	114
22	102	11	5.5	1.2	0.71	1.5	1.2	132	71	159	203	113
23	110	11	5.4	1.2	0.83	1.5	1.2	126	72	171	215	111
24	121	9.8	5.7	1.2	0.81	1.5	1.0	113	92	172	213	110
25	133	9.5	4.9	1.2	0.81	1.6	1.0	112	114	172	214	108
26	133	9.3	4.0	1.2	0.78	1.6	1.1	113	159	172	214	109
27	133	9.1	4.2	1.3	0.80	1.6	1.1	116	176	172	215	125
28	132	9.2	3.8	1.2	0.83	1.6	1.1	90	177	171	212	124
29	133	8.7	3.7	1.2	---	1.5	1.0	80	179	117	210	122
30	131	8.0	3.3	1.4	---	1.8	0.99	90	182	67	210	121
31	133	---	2.5	1.3	---	1.7	---	97	---	41	211	---
TOTAL	4031	443.6	180.8	46.20	21.89	37.97	41.49	2007.87	2154	2805.70	5127	4995
MEAN	130.0	14.79	5.832	1.490	0.782	1.225	1.383	64.77	71.80	90.51	165.4	166.5
MAX	177	64	8.0	2.6	1.1	1.8	1.8	132	182	172	215	211
MIN	86	8.0	2.5	0.90	0.57	0.86	0.99	0.97	26	0.77	36	108
AC-FT	8000	880	359	92	43	75	82	3980	4270	5570	10170	9910

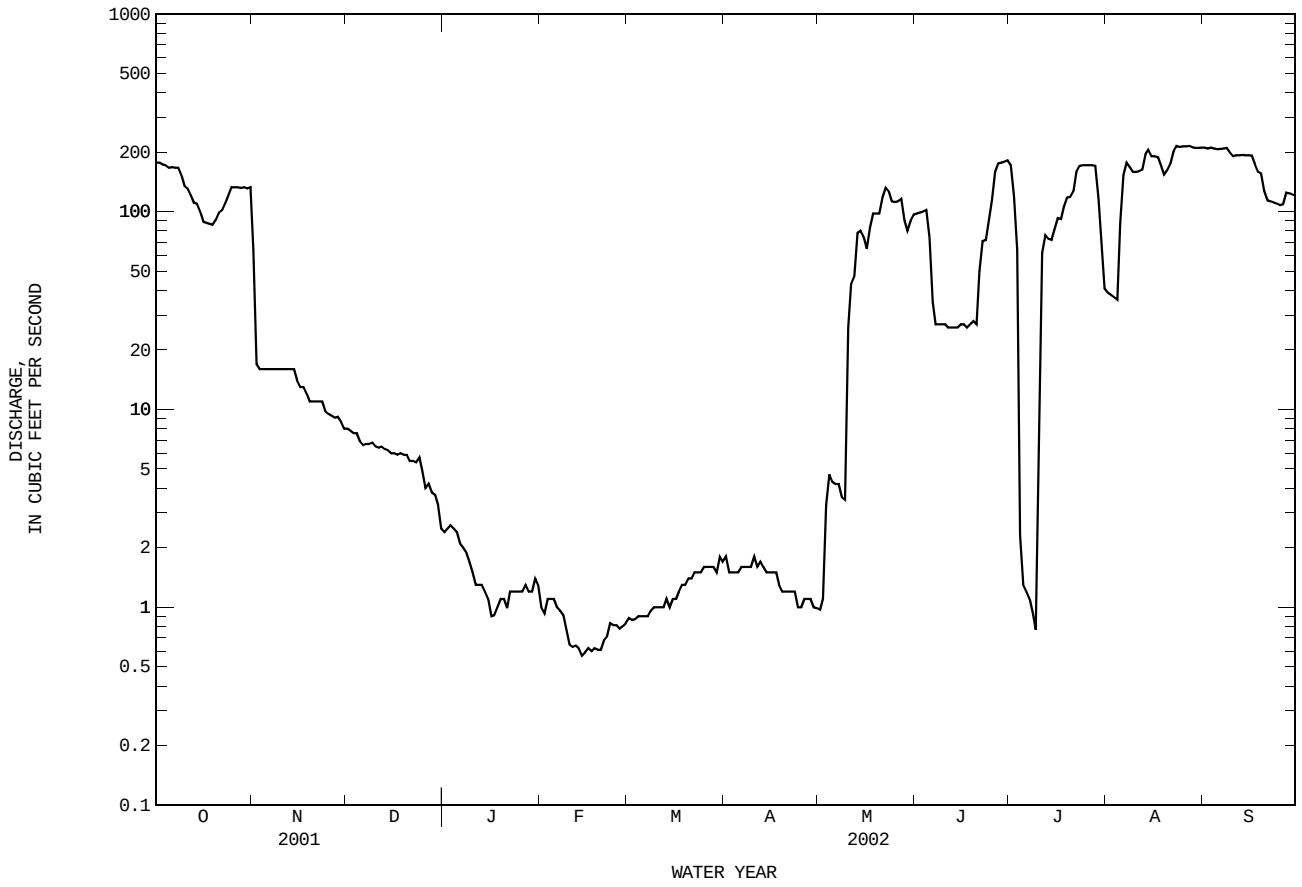
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2002, BY WATER YEAR (WY)

MEAN	78.37	10.65	13.43	19.03	10.85	25.65	57.59	79.23	124.2	196.6	182.4	124.6
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	0.000	0.000	0.000	0.000	0.000	1.38	17.6	20.1	90.5	50.8	3.39
(WY)	1977	1985	1985	1985	1985	1985	2002	1982	1982	2002	1989	1996

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1972 - 2002	
ANNUAL TOTAL	28238.19		21892.52			
ANNUAL MEAN	77.36		59.98		77.36	
HIGHEST ANNUAL MEAN					120	1984
LOWEST ANNUAL MEAN					46.6	1989
HIGHEST DAILY MEAN	274	Jul 24	215	Aug 23	374	Jul 22 1974
LOWEST DAILY MEAN	0.85	Jan 22	0.57	Feb 14	0.00	Oct 20 1973
ANNUAL SEVEN-DAY MINIMUM	0.90	Jan 19	0.60	Feb 14	0.00	Oct 20 1973
MAXIMUM PEAK FLOW			220	Aug 22	374	Jul 22 1974
MAXIMUM PEAK STAGE			6.86	Sep 8	8.31	Jul 22 1974
ANNUAL RUNOFF (AC-FT)	56010		43420		56040	
10 PERCENT EXCEEDS	194		177		199	
50 PERCENT EXCEEDS	28		14		53	
90 PERCENT EXCEEDS	1.4		0.98		0.32	

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, 1.0 mi north of intersection with State Highway 258 at Kadane Corner, and 4.1 mi 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 NGVD of 1929. 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 regulateed. 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) 13 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. The Wichita County Water Improvement District No. 2 divertes water from Lake Diversion for mining, industrial, irrigation, and recreational uses.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	11	5.3	1.3	2.3	1.9	6.5	7.2	3.0	5.7	4.4	1.3
2	e4.7	6.8	3.0	1.3	1.7	1.9	4.6	5.9	2.2	4.5	3.8	1.3
3	e5.2	3.6	1.9	1.3	1.4	1.9	2.3	5.5	2.7	13	1.8	1.2
4	e5.5	2.8	1.8	1.3	1.3	2.0	2.9	5.3	25	36	2.3	1.2
5	e5.9	2.2	7.8	3.3	2.8	1.9	3.3	4.8	336	40	2.6	3.1
6	e6.7	1.9	4.8	2.9	5.1	2.0	3.3	4.3	212	23	3.7	3.9
7	e6.5	1.9	2.6	2.6	3.9	2.0	20	3.8	47	14	4.7	4.7
8	e5.3	1.4	1.5	1.8	2.7	2.2	19	3.9	18	9.6	4.9	4.3
9	4.8	1.2	1.6	1.6	1.9	1.8	9.0	3.7	11	6.9	3.7	4.0
10	4.1	1.2	1.5	1.4	1.4	1.9	5.5	4.1	9.9	5.5	2.9	3.3
11	5.5	5.8	1.2	1.5	1.4	1.8	15	4.2	13	13	4.2	3.7
12	5.5	3.5	2.0	1.8	1.4	1.8	12	4.2	11	77	2.8	3.0
13	5.3	1.1	2.3	1.5	1.3	1.9	24	4.1	16	106	2.4	1.9
14	e4.8	0.99	2.5	1.4	1.4	1.9	18	3.8	11	7.6	e2.4	1.4
15	e4.8	1.0	1.7	1.3	1.4	1.5	11	3.2	8.9	1.1	e2.0	1.3
16	e5.4	1.1	6.0	1.3	1.4	0.99	7.1	3.4	13	0.92	e0.94	1.2
17	e6.0	1.2	6.9	1.2	1.4	0.98	7.5	3.3	15	1.0	e6.7	1.1
18	5.2	1.2	3.8	1.2	1.5	2.5	6.1	3.5	16	1.1	e4.1	1.2
19	4.1	1.1	2.3	e1.2	2.0	11	5.4	3.7	12	0.95	e3.6	12
20	3.8	1.1	1.9	e1.3	1.8	17	5.6	3.6	8.3	0.76	e19	6.0
21	3.0	1.3	1.5	e1.4	1.9	7.3	4.8	3.5	6.8	0.68	e28	3.7
22	2.2	1.6	1.6	1.5	1.6	4.0	4.4	3.7	5.7	0.67	e6.1	1.9
23	1.8	1.7	1.4	1.6	1.7	3.1	4.4	4.0	5.0	0.61	e1.8	1.5
24	3.8	1.5	1.3	1.3	1.7	2.6	4.0	4.4	4.5	0.63	1.4	1.4
25	3.9	1.5	1.3	1.3	1.6	1.7	13	4.6	7.2	0.88	1.3	1.9
26	4.6	1.3	1.2	1.2	1.4	1.5	241	4.1	6.9	0.50	1.3	1.7
27	6.1	1.4	1.3	1.2	1.6	1.5	175	7.1	5.4	0.81	1.3	1.5
28	6.0	2.8	1.3	1.2	1.6	1.5	39	7.4	4.5	1.2	1.3	1.6
29	5.4	4.6	1.2	1.3	---	1.5	16	8.3	3.5	5.6	1.3	1.5
30	5.5	5.4	1.3	1.6	---	9.5	9.7	7.3	3.2	5.9	1.3	1.7
31	8.2	---	1.3	3.1	---	11	---	4.9	---	6.1	1.3	---
TOTAL	154.7	75.19	77.1	49.2	52.6	106.07	699.4	144.8	843.7	391.21	129.34	79.5
MEAN	4.990	2.506	2.487	1.587	1.879	3.422	23.31	4.671	28.12	12.62	4.172	2.650
MAX	8.2	11	7.8	3.3	5.1	17	241	8.3	336	106	28	12
MIN	1.8	0.99	1.2	1.2	1.3	0.98	2.3	3.2	2.2	0.50	0.94	1.1
AC-FT	307	149	153	98	104	210	1390	287	1670	776	257	158

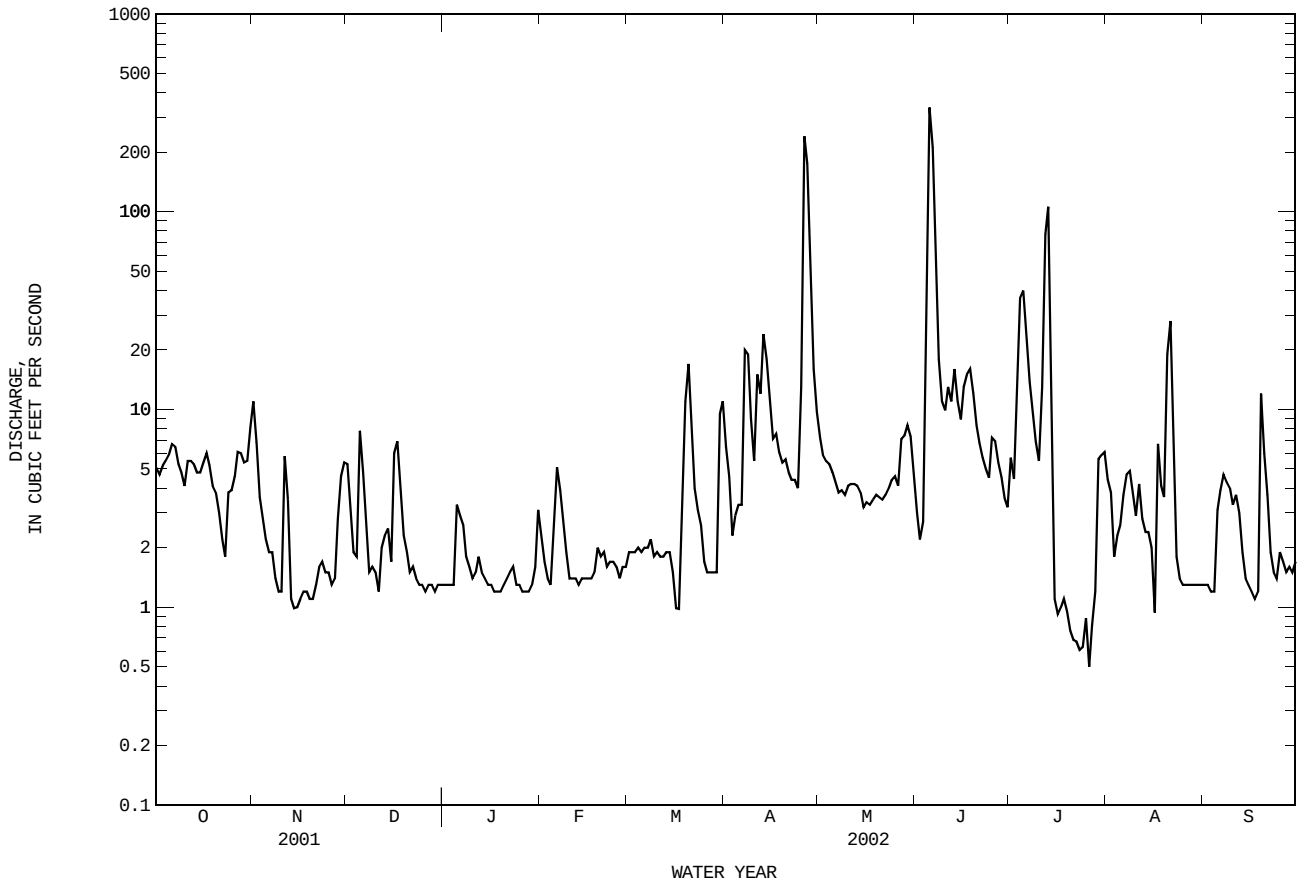
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

MEAN	11.48	37.31	8.251	6.580	49.31	71.73	62.06	113.6	17.78	10.04	9.281	11.46
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	4.99	2.51	2.49	1.59	1.88	3.42	4.59	4.66	4.46	2.22	4.17	2.65
(WY)	2002	2002	2002	2002	2002	2002	2000	2000	2000	2000	2002	2002

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	9655.09		2802.81			
ANNUAL MEAN	26.45		7.679		33.58	
HIGHEST ANNUAL MEAN					69.6	1998
LOWEST ANNUAL MEAN					6.29	2000
HIGHEST DAILY MEAN	710	May 5	336	Jun 5	1960	May 21 1997
LOWEST DAILY MEAN	0.99	Nov 14	0.50	Jul 26	0.50	Jul 26 2002
ANNUAL SEVEN-DAY MINIMUM	1.1	Nov 13	0.68	Jul 20	0.68	Jul 20 2002
MAXIMUM PEAK FLOW			400	Jun 5	2120	Nov 25 2000
MAXIMUM PEAK STAGE			7.95	Jun 5	13.04	Nov 25 2000
ANNUAL RUNOFF (AC-FT)	19150		5560		24330	
10 PERCENT EXCEEDS	50		11		29	
50 PERCENT EXCEEDS	7.3		2.9		7.0	
90 PERCENT EXCEEDS	1.5		1.2		2.1	

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 Sept. 2002 (discontinued).
WATER TEMPERATURE: June 1996 to Sept. 2002 (discontinued).

INSTRUMENTATION.--Water-quality monitor June 1996 to Sept. 2002 (discontinued).

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 9,380 microsiemens/cm, May 8, 2002; minimum, 176 microsiemens/cm, Mar. 23, 2000.
WATER TEMPERATURE: Maximum, 37.2°C, Aug. 9, 1999 and July 23, 2002; minimum, 0.0°C, Jan. 11-14, 1997, Dec. 22, 25, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 9,380 microsiemens/cm, May 8; minimum, 579 microsiemens/cm, June 5.
WATER TEMPERATURE: Maximum, 37.2°C, July 23; minimum, 0.6°C, Nov. 29.

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6230	5560	5820	5990	5290	5580	6380	4920	5840	7490	7300	7390
2	6800	5480	5860	5550	5340	5430	6400	5750	6150	7480	7300	7380
3	6800	5570	5980	5640	5470	5540	6610	5770	6330	7410	7260	7340
4	6280	5600	5810	6380	5640	6100	6800	6560	6650	7510	7200	7380
5	7110	6280	6670	6390	6090	6240	6750	5560	6330	7650	6810	7160
6	6620	6250	6420	6520	6390	6450	5680	5500	5560	7780	5800	7050
7	6550	6270	6400	6620	6500	6570	6060	5680	5870	7570	6850	7340
8	6810	6380	6680	6680	6540	6600	6400	6060	6260	7400	6870	7140
9	6840	6710	6780	6790	6540	6670	6600	6380	6470	7400	7090	7190
10	6760	6550	6680	6760	6550	6660	6850	6600	6720	7210	7040	7130
11	6560	6340	6480	7290	1660	6470	6900	6790	6850	7170	6910	6990
12	6340	6190	6260	6710	1390	4930	7370	6800	7070	6980	6590	6730
13	6520	6270	6400	6770	6580	6690	7350	7020	7120	6630	6540	6580
14	6700	6520	6620	6650	6230	6440	7020	6570	6800	6590	6300	6430
15	6770	6700	6720	6560	6220	6360	6580	6470	6510	6300	6110	6170
16	6790	6400	6660	7450	6560	7050	6600	4720	6200	6310	6160	6240
17	6400	5930	6120	7500	7260	7410	7410	5730	6690	6310	6000	6200
18	5930	5660	5800	7350	7240	7290	7200	6730	7000	---	---	e6030
19	5990	5700	5880	7410	7140	7270	6910	6260	6550	---	---	e6010
20	6100	5990	6050	7400	7250	7340	6950	6760	6850	---	---	e5990
21	6110	6030	6080	7330	7300	7320	7140	6920	6980	---	---	e5940
22	6220	6090	6130	7360	7270	7330	7270	7120	7180	---	---	e6040
23	6410	6220	6330	7430	7280	7340	7250	7160	7200	6160	5620	5870
24	6600	6410	6540	7380	7240	7300	7350	7170	7230	5620	5450	5530
25	6610	6460	6540	7330	7180	7270	7230	7120	7170	5480	5200	5330
26	6610	5640	6270	7390	7270	7330	7280	7150	7200	5330	5030	5190
27	5640	5390	5490	7420	7130	7280	7370	7230	7280	5560	5210	5400
28	5590	5390	5450	7130	6450	6860	7420	7290	7350	5850	5560	5710
29	5850	5400	5530	6490	6120	6380	7670	7420	7520	6210	5770	5950
30	6280	5850	6110	6270	4920	5790	7460	7330	7390	5890	5280	5650
31	6490	5880	6190	---	---	---	7400	7270	7350	5430	4320	5080
MONTH	7110	5390	6220	7500	1390	6640	7670	4720	6760	---	---	6370

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

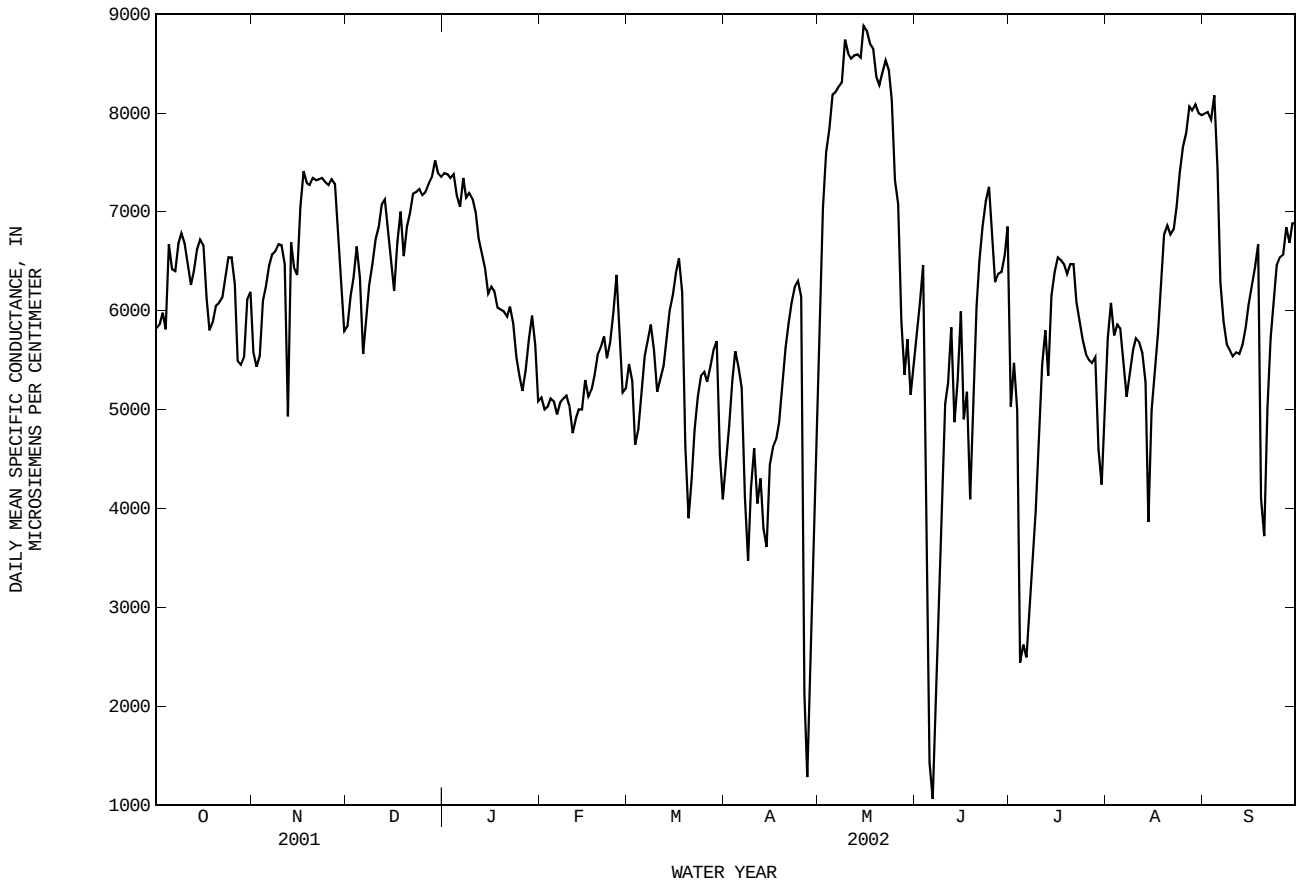
SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5350	4500	5120	5780	5240	5460	4680	4260	4480	---	---	e6010
2	5230	4800	5000	5900	4680	5290	5060	4680	4840	---	---	e7040
3	5170	4960	5030	4860	4420	4640	5520	5060	5300	---	---	e7600
4	5230	4920	5110	5090	4500	4800	5620	5510	5590	---	---	e7840
5	5230	4940	5080	5550	4900	5170	5560	5350	5430	---	---	e8180
6	5060	4730	4950	5960	5170	5540	5350	5140	5220	---	---	e8210
7	5360	4750	5070	6060	5400	5710	5250	2850	4120	---	---	e8260
8	5390	4850	5110	6060	5670	5860	3860	2980	3470	---	---	e8310
9	5340	4980	5140	5840	5210	5600	4450	3860	4200	8810	8610	8740
10	5180	4900	5030	5460	5000	5180	4780	4450	4610	8760	8450	8600
11	4910	4540	4760	5760	5020	5310	4830	3260	4050	8620	8480	8550
12	5010	4800	4910	5820	5120	5440	4430	4140	4300	8670	8510	8580
13	5180	4860	5000	6150	5380	5710	4630	2370	3800	8750	8400	8590
14	5150	4860	5000	6230	5680	6000	4080	3280	3610	8710	8390	8560
15	5610	5080	5300	6400	5990	6160	4590	4080	4440	8990	8710	8880
16	5340	4970	5130	6620	6120	6390	4650	4590	4620	8980	8660	8830
17	5510	4990	5200	6690	6430	6530	4760	4570	4700	8810	8630	8700
18	5650	5130	5340	6480	5600	6190	5020	4760	4870	8830	8480	8650
19	5730	5340	5550	5860	2530	4620	5420	5020	5220	8530	8080	8360
20	5800	5480	5630	4270	2890	3900	5780	5420	5620	8370	8120	8280
21	5950	5590	5740	4630	3820	4310	5970	5780	5880	8560	8220	8410
22	5610	5420	5520	4980	4630	4800	6200	5970	6080	8620	8420	8530
23	5960	5500	5680	5300	4980	5130	6280	6190	6240	8510	8340	8430
24	6250	5610	5980	5440	5290	5340	6360	6240	6300	8350	7700	8130
25	6620	5970	6360	5460	5280	5380	6500	2360	6140	7700	7050	7320
26	5970	5260	5670	5320	5240	5280	2790	1460	2120	7180	6940	7080
27	5390	4950	5170	5570	5260	5430	1460	1210	1280	7200	1690	5890
28	5500	5010	5210	5680	5550	5600	---	---	e2160	6310	3510	5350
29	---	---	---	5770	5560	5690	---	---	e3420	5790	5620	5710
30	---	---	---	5800	2290	4540	---	---	e4850	5620	4900	5150
31	---	---	---	4370	3630	4090	---	---	---	5740	5130	5460
MONTH	6620	4500	5280	6690	2290	5330	---	---	4570	---	---	7750

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5880	5740	5800	6900	1820	5030	5940	5450	5720	8100	7870	7990
2	6420	5880	6080	5890	4620	5470	6280	5870	6080	8090	7850	8010
3	6560	6030	6460	6060	1020	4990	5940	5540	5750	8040	7840	7930
4	6030	656	5000	3610	804	2440	6080	5580	5860	8280	8040	8180
5	2280	579	1430	2880	2200	2620	6000	5530	5820	8300	6530	7440
6	1450	780	1060	2630	2300	2490	5650	5120	5450	6530	6150	6280
7	2500	1440	1920	3240	2560	2970	5220	5060	5130	6190	5700	5890
8	3770	2500	3150	3750	3240	3530	5480	5150	5350	5710	5620	5660
9	4860	3770	4320	4250	3750	3980	5710	5470	5600	5640	5540	5600
10	5110	4860	5060	5240	4250	4760	5780	5660	5720	5610	5500	5540
11	5770	4980	5270	5760	5240	5450	5780	5550	5680	5640	5490	5580
12	5930	5650	5830	5880	5620	5800	5700	5390	5570	5600	5520	5560
13	5650	1410	4870	5630	5160	5340	5390	4970	5280	5740	5580	5650
14	5880	3730	5300	6380	5430	6150	5020	1420	3860	5980	5730	5830
15	6130	5880	5990	6490	6250	6390	5220	4780	4990	6160	5980	6060
16	5930	2760	4900	6660	6420	6540	5520	5220	5370	6320	6160	6240
17	5750	4570	5180	6610	6430	6510	6070	5510	5770	6640	6320	6440
18	4570	3980	4090	6600	6270	6470	6620	6070	6310	6780	6380	6670
19	5690	4260	5030	6460	6280	6370	6930	6620	6770	6380	1100	4100
20	6330	5690	6040	6540	6390	6470	7000	6740	6860	4560	2560	3720
21	6750	6330	6510	6610	6240	6470	6910	6630	6770	5360	4560	5010
22	7030	6750	6860	6320	5640	6090	6910	6760	6820	5960	5360	5720
23	7220	7030	7110	6080	5750	5900	7150	6880	7050	6290	5950	6130
24	7330	7160	7250	5810	5500	5700	7530	7150	7400	6600	6290	6460
25	7230	6230	6740	5660	5280	5560	7750	7530	7660	6710	6300	6540
26	6420	6140	6290	5590	5350	5500	7920	7720	7800	6690	6360	6560
27	6430	6300	6370	5580	5280	5470	8190	7810	8060	6990	6620	6840
28	6470	6230	6390	5690	5430	5530	8120	7900	8020	6740	6610	6690
29	6710	6400	6560	5770	3090	4600	8150	7940	8080	7040	6700	6880
30	6980	6710	6850	4680	3650	4240	8060	7940	8000	7040	6710	6890
31	---	---	---	5450	4680	5090	8070	7870	7980	---	---	---
MONTH	7330	579	5320	6900	804	5160	8190	1420	6340	8300	1100	6270

e Estimated

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



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.2	17.2	21.1	21.6	16.6	19.0	8.7	5.2	7.1	6.6	3.4	4.8
2	24.1	17.0	20.6	22.4	18.1	20.4	11.9	6.8	9.5	5.5	2.6	4.5
3	24.3	17.8	21.0	23.3	19.2	21.2	14.2	10.6	12.6	5.1	1.5	3.0
4	26.6	19.8	22.9	20.9	18.7	20.2	16.7	14.0	15.3	5.9	2.3	4.1
5	24.0	16.5	20.1	21.6	17.6	19.3	18.7	16.0	17.1	8.3	5.7	6.8
6	19.8	13.2	16.4	21.1	17.9	19.2	16.0	12.4	13.7	8.4	4.7	6.3
7	20.4	13.6	17.0	19.6	16.5	18.0	12.7	10.3	11.6	7.9	4.1	5.8
8	22.8	15.9	19.2	18.2	15.4	17.1	11.8	8.5	10.4	10.1	5.2	7.3
9	25.0	20.0	22.0	16.5	13.9	15.0	9.5	6.1	7.8	12.1	7.3	9.5
10	22.9	19.5	21.3	16.7	12.1	14.3	9.0	5.4	7.2	11.1	9.0	9.9
11	22.7	17.4	19.8	19.2	14.6	16.8	7.8	6.5	7.2	10.9	7.0	8.7
12	21.6	17.4	19.5	19.5	17.0	18.0	11.5	7.8	9.4	9.8	6.5	7.9
13	20.1	15.2	17.8	20.7	17.0	18.6	9.7	6.7	8.3	10.2	6.3	8.0
14	21.0	14.6	17.6	20.5	17.9	18.9	8.4	4.6	6.7	10.0	6.3	8.0
15	20.2	15.9	17.9	18.6	17.0	17.6	9.0	7.0	7.9	9.9	5.5	7.6
16	18.9	12.5	15.6	18.0	16.5	17.2	10.6	9.0	9.8	11.6	7.8	9.4
17	18.0	13.2	15.5	17.7	16.7	17.1	10.4	7.4	9.1	9.9	7.1	8.4
18	19.6	13.6	16.5	20.1	16.0	17.8	11.0	6.8	8.9	---	---	---
19	21.4	15.8	18.5	18.4	12.4	15.6	10.2	7.2	8.6	---	---	---
20	22.1	15.8	19.0	13.3	8.9	11.0	9.9	5.9	7.8	---	---	---
21	23.2	18.1	20.6	13.3	7.5	10.4	10.5	6.4	8.5	---	---	---
22	23.6	19.3	21.3	14.8	9.7	12.3	11.7	8.9	10.0	12.9	---	---
23	23.1	19.5	21.1	15.0	12.5	13.5	9.0	6.1	7.5	13.0	10.2	11.3
24	20.6	17.1	18.9	14.4	10.8	12.4	6.6	4.3	5.4	11.0	7.7	9.3
25	17.9	13.8	15.9	13.7	9.3	11.6	6.9	2.8	4.9	9.9	4.9	7.3
26	16.3	12.9	14.6	12.6	10.9	12.0	7.3	3.2	5.1	11.1	4.8	7.8
27	17.1	12.3	14.5	10.9	4.3	7.4	6.4	3.4	5.1	11.8	6.7	9.3
28	18.0	12.7	15.4	4.3	0.7	1.9	7.3	4.0	5.6	14.9	8.0	11.5
29	19.3	14.3	16.7	4.1	0.6	2.3	6.5	3.4	5.0	17.0	12.8	14.3
30	19.1	14.2	16.8	6.9	2.6	4.8	4.9	3.0	3.8	13.0	7.3	9.8
31	18.8	15.3	17.1	---	---	---	5.0	1.5	3.3	9.2	5.6	7.1
MONTH	26.6	12.3	18.5	23.3	0.6	14.7	18.7	1.5	8.4	---	---	---

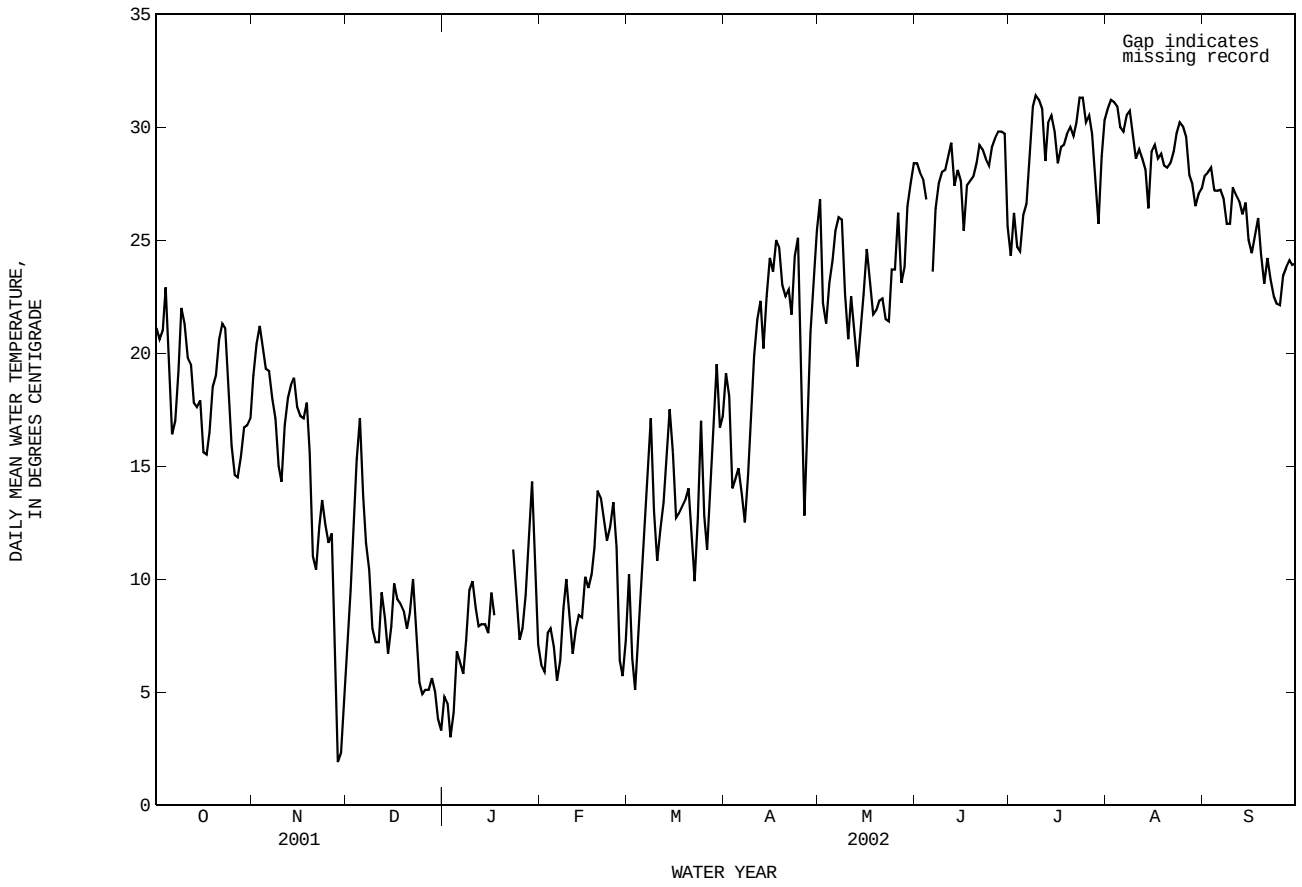
07312130 Wichita River at State Highway 25 near Kamay, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.7	3.8	6.2	14.0	8.3	10.2	23.4	14.6	19.1	32.4	22.0	26.8
2	7.0	4.6	5.9	9.3	4.2	6.5	20.9	14.8	18.1	27.3	19.5	22.2
3	9.3	6.2	7.6	8.7	1.5	5.1	16.9	10.6	14.0	27.0	16.5	21.3
4	8.9	6.6	7.8	11.0	2.9	6.9	16.9	11.9	14.4	28.3	19.1	23.1
5	7.8	5.7	7.0	13.4	5.3	9.2	16.9	11.9	14.9	27.9	20.2	24.1
6	6.6	4.2	5.5	16.9	8.5	12.4	16.0	12.3	13.8	29.4	21.7	25.4
7	9.3	3.9	6.4	19.5	11.2	15.1	13.7	11.4	12.5	29.7	22.4	26.0
8	12.1	5.7	8.7	19.9	15.1	17.1	17.1	12.8	14.6	30.9	22.0	25.9
9	12.4	8.4	10.0	16.6	10.3	13.0	22.6	13.0	17.4	26.3	18.2	22.6
10	10.4	6.5	8.2	14.8	7.2	10.8	24.0	15.9	19.9	23.5	17.8	20.6
11	9.7	3.7	6.7	15.6	9.7	12.2	25.0	17.7	21.5	24.6	20.3	22.5
12	10.8	5.1	7.8	18.3	9.5	13.4	24.9	20.1	22.3	22.9	17.0	20.9
13	11.5	6.1	8.4	20.2	11.2	15.3	22.7	16.6	20.2	26.2	13.7	19.4
14	11.4	5.2	8.3	21.1	14.1	17.5	28.1	18.3	22.5	27.4	15.7	21.2
15	13.2	7.7	10.1	18.7	13.0	15.6	28.7	20.6	24.2	28.1	17.8	22.6
16	12.8	6.4	9.6	15.1	10.8	12.7	26.7	21.3	23.6	30.1	19.6	24.6
17	13.6	7.3	10.2	14.5	11.9	12.9	30.4	20.7	25.0	25.9	20.6	23.2
18	13.5	9.0	11.4	14.0	12.4	13.2	26.9	22.2	24.7	27.8	16.5	21.7
19	16.7	12.3	13.9	13.9	12.2	13.5	24.6	21.9	23.0	27.8	16.7	21.9
20	16.7	11.0	13.6	18.3	10.9	14.0	24.1	20.4	22.5	28.2	17.2	22.3
21	13.9	11.2	12.6	14.7	9.9	12.0	26.0	20.0	22.8	28.1	17.6	22.4
22	15.2	8.8	11.7	13.0	6.6	9.9	24.7	18.2	21.7	26.0	17.8	21.5
23	15.4	9.2	12.3	16.8	8.5	12.7	28.4	20.4	24.3	23.4	19.4	21.4
24	17.0	10.7	13.4	21.5	13.3	17.0	28.9	22.3	25.1	29.3	19.8	23.7
25	14.6	8.3	11.4	16.9	9.8	12.8	22.3	12.3	16.9	29.0	19.2	23.7
26	9.2	3.5	6.4	15.5	7.5	11.3	13.4	12.4	12.8	32.8	21.3	26.2
27	9.5	2.2	5.7	19.1	11.1	14.6	20.6	12.7	16.6	26.7	21.4	23.1
28	11.0	3.7	7.3	21.2	14.1	17.4	25.5	17.3	20.9	28.1	20.2	23.8
29	---	---	---	22.8	16.6	19.5	28.6	19.4	23.4	32.1	21.9	26.5
30	---	---	---	19.9	14.9	16.7	29.3	22.2	25.4	32.1	23.7	27.5
31	---	---	---	21.9	13.3	17.2	---	---	---	34.4	23.5	28.4
MONTH	17.0	2.2	9.1	22.8	1.5	13.2	30.4	10.6	19.9	34.4	13.7	23.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	34.2	23.7	28.4	27.8	22.1	24.3	36.4	26.7	30.8	31.8	24.0	27.8
2	33.7	23.8	28.0	30.4	23.5	26.2	36.5	27.2	31.2	32.5	23.9	28.0
3	33.6	23.0	27.7	26.3	24.1	24.7	36.4	26.8	31.1	33.2	24.1	28.2
4	30.9	24.3	26.8	25.8	23.4	24.5	36.5	26.9	30.9	30.7	23.7	27.2
5	---	---	---	28.9	23.6	26.1	35.2	25.9	30.0	31.2	23.7	27.2
6	26.4	21.5	23.6	28.2	24.8	26.6	34.6	25.8	29.8	30.9	23.7	27.2
7	30.1	23.5	26.4	33.1	24.9	28.7	35.7	26.2	30.5	30.4	23.8	26.8
8	30.7	25.0	27.5	35.8	26.9	30.9	34.9	27.3	30.7	28.2	24.1	25.7
9	32.3	25.3	28.0	36.1	27.6	31.4	34.0	26.2	29.6	28.5	24.0	25.7
10	31.7	24.9	28.1	36.2	27.5	31.2	32.5	25.4	28.6	31.9	24.4	27.3
11	32.9	25.2	28.7	35.3	27.1	30.8	34.0	25.4	29.0	31.9	23.1	27.0
12	33.5	25.8	29.3	30.2	27.4	28.5	33.8	24.7	28.6	29.8	23.6	26.7
13	29.6	26.0	27.4	32.3	28.8	30.2	31.9	25.4	28.1	29.4	23.1	26.1
14	32.5	24.5	28.1	35.6	26.3	30.5	31.1	22.4	26.4	31.4	23.0	26.7
15	31.5	24.5	27.6	34.3	26.7	29.8	34.4	24.8	28.9	27.8	22.7	25.0
16	30.1	21.1	25.4	32.5	25.2	28.4	34.6	25.1	29.2	29.4	20.0	24.4
17	31.5	23.7	27.4	33.8	25.6	29.1	32.1	25.3	28.6	29.8	21.4	25.2
18	31.6	24.2	27.6	33.9	25.7	29.2	34.0	24.9	28.8	30.4	22.6	26.0
19	32.0	24.6	27.8	34.7	26.0	29.7	32.8	24.9	28.3	26.8	21.9	24.4
20	33.2	24.3	28.4	35.4	26.0	30.0	32.8	24.5	28.2	28.1	19.2	23.1
21	34.0	25.6	29.2	35.1	25.3	29.6	33.2	24.8	28.4	29.6	19.9	24.2
22	33.3	25.5	29.0	36.3	25.6	30.2	33.8	24.9	28.9	26.6	19.9	23.2
23	34.0	24.6	28.6	37.2	26.7	31.3	34.8	25.6	29.7	27.0	18.4	22.5
24	34.4	23.8	28.3	37.1	27.3	31.3	35.2	25.9	30.2	26.2	18.1	22.2
25	33.8	25.4	29.1	36.9	26.0	30.2	34.6	26.1	30.0	26.9	17.5	22.1
26	34.1	25.6	29.5	35.9	26.4	30.5	35.2	25.3	29.6	27.8	19.2	23.4
27	34.4	26.2	29.8	35.3	25.5	29.7	32.6	23.6	27.9	27.8	19.9	23.8
28	35.1	25.7	29.8	30.0	25.4	27.8	32.3	24.1	27.5	27.6	20.5	24.1
29	34.6	26.2	29.7	28.4	22.8	25.7	30.1	23.9	26.5	27.5	20.3	23.9
30	27.8	23.7	25.6	33.9	24.7	28.7	32.1	23.4	27.0	26.8	20.8	24.0
31	---	---	---	35.4	26.8	30.3	32.6	22.8	27.3	---	---	---
MONTH	---	---	---	37.2	22.1	28.9	36.5	22.4	29.0	33.2	17.5	25.3

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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. 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 is 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 PERIOD OF RECORD.--Maximum contents, 1,960 acre-ft, Oct. 2, 1998, elevation, 1,103.52 ft; minimum estimated daily contents, 235 acre-ft, Oct. 15, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 920 acre-ft, Apr. 27, elevation, 1,099.42 ft; minimum contents, 505 acre-ft, Sept. 29, 30.

REVISIONS.--The minimum contents for the water years 2000 and 2001 have been revised to 268 acre-ft (estimated daily contents), Sept. 30, 2000, and 235 acre-ft (estimated daily contents), Oct. 15, 2000, superseding figures published in reports for 2000 and 2001.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

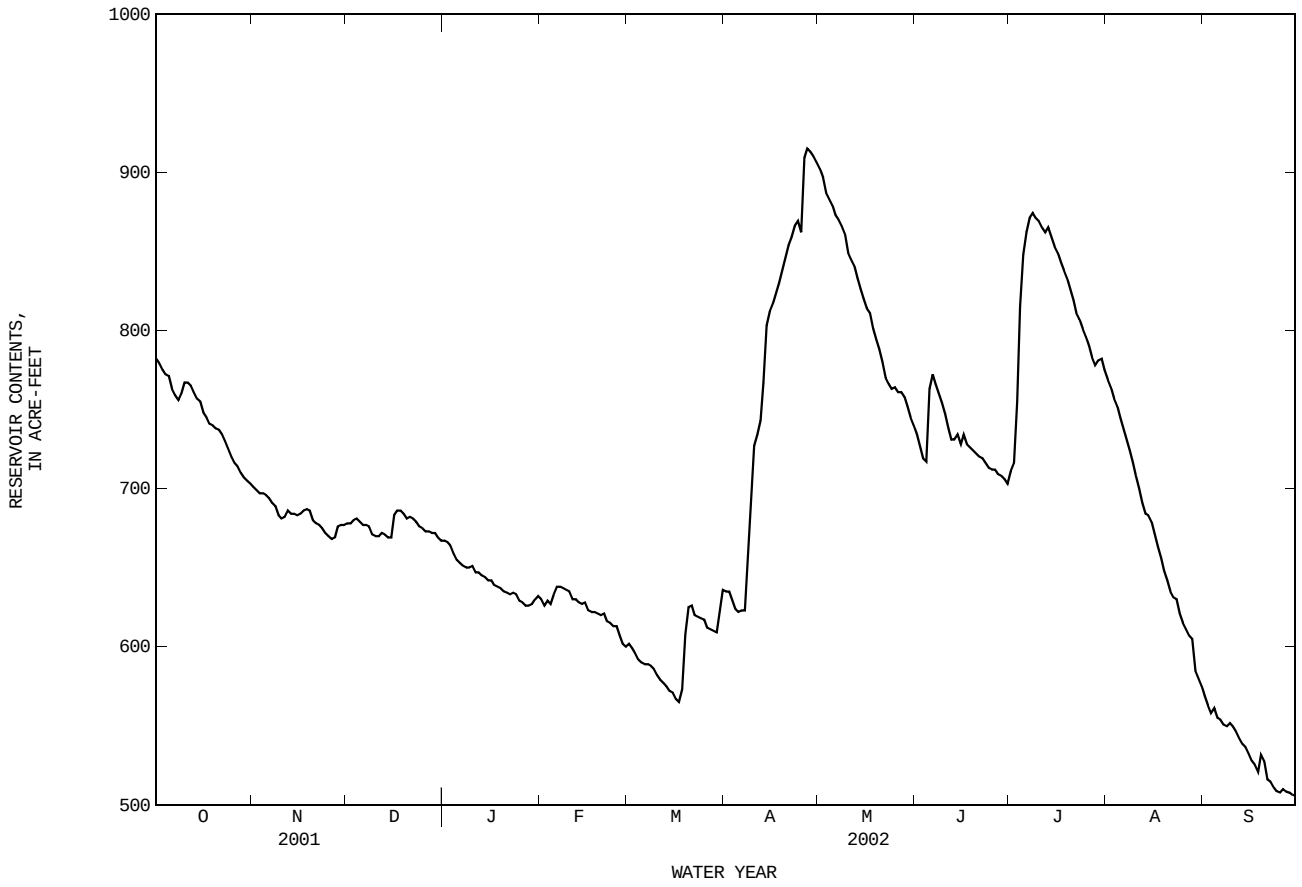
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	782	701	678	667	630	602	635	902	734	711	769	569
2	779	699	678	666	626	599	635	897	727	716	764	563
3	775	697	680	664	629	596	629	887	719	755	757	558
4	772	697	681	659	627	592	624	883	717	815	752	561
5	771	696	679	655	633	590	622	879	763	848	745	555
6	763	694	677	653	638	589	623	873	772	862	738	554
7	759	691	677	651	638	589	e623	870	766	871	731	551
8	756	689	676	650	637	588	e655	866	760	874	724	550
9	760	683	671	650	636	586	e685	861	754	871	716	552
10	767	681	670	651	635	582	727	849	747	869	708	550
11	767	682	670	647	630	579	734	845	739	865	700	547
12	765	686	672	647	630	577	743	841	731	862	691	542
13	761	684	671	645	628	575	767	833	731	865	684	539
14	757	684	669	644	627	572	803	826	734	859	683	537
15	755	683	669	642	628	571	812	820	728	853	679	533
16	748	684	683	642	623	567	817	814	734	849	671	528
17	745	686	686	639	622	565	824	811	728	843	663	525
18	741	687	686	638	622	573	830	801	726	838	656	521
19	740	686	684	637	621	608	838	794	724	833	648	532
20	738	680	681	635	620	625	846	788	722	826	642	528
21	737	678	682	634	621	626	854	780	720	819	635	516
22	734	677	681	633	616	620	859	770	719	811	631	515
23	730	675	679	634	615	619	866	766	716	807	630	511
24	725	672	676	633	613	618	869	763	713	801	621	509
25	720	670	675	629	613	617	862	764	712	796	615	508
26	716	668	673	628	607	612	909	761	712	790	611	510
27	714	669	673	626	602	611	915	761	709	783	607	508
28	710	676	672	626	600	610	913	758	708	778	605	508
29	707	677	672	627	---	609	910	752	706	781	585	506
30	705	677	669	630	---	624	906	745	703	782	580	506
31	703	---	667	632	---	636	---	740	---	775	575	---
MEAN	745	684	676	642	624	598	778	816	729	820	671	533
MAX	782	701	686	667	638	636	915	902	772	874	769	569
MIN	703	668	667	626	600	565	622	740	703	711	575	506
(+)	1098.26	1098.11	1098.05	1097.84	1097.63	1097.86	1099.35	1098.46	1098.25	1098.66	1097.48	1097.04
(@)	-83	-26	-10	-35	-32	+36	+270	-166	-37	+72	-200	-69

CAL YR 2001 MAX 1560 MIN 667 (@) -353
WTR YR 2002 MAX 915 MIN 506 (@) -280

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, 8.0 mi upstream from Wichita River, and 9.0 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 NGVD of 1929 (Texas Department of Transportation reference point). Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Feb. 1960, at least 10% of contributing drainage area has been regulated. There are several diversions above station. No flow at times.

DISCHARGE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	8.1	28	3.0	3.4	2.6	39	4.8	4.1	14	20	5.0
2	5.5	8.1	16	2.8	3.6	2.9	8.6	3.7	3.8	17	66	5.1
3	5.6	7.9	8.2	2.3	3.5	2.8	4.3	3.3	3.6	95	136	4.9
4	5.6	8.1	5.7	2.1	3.2	3.1	2.7	3.6	4.4	519	149	4.9
5	5.7	25	4.5	3.3	3.4	1.8	2.3	4.1	343	679	117	4.7
6	5.4	9.6	3.9	7.5	5.4	1.6	2.4	3.8	131	905	89	4.6
7	5.3	5.9	3.3	5.3	9.6	2.2	224	4.3	53	1110	59	4.4
8	5.3	4.8	2.4	4.2	6.7	2.4	671	2.9	12	896	45	4.5
9	5.7	3.8	1.2	3.3	4.6	2.6	82	2.5	9.5	982	34	6.4
10	6.8	3.5	1.1	3.2	3.1	2.7	18	2.4	12	1500	28	6.8
11	8.8	3.9	1.4	2.9	2.5	2.2	8.7	2.4	14	2240	23	5.5
12	12	13	1.3	2.8	2.2	2.3	5.6	2.6	14	2770	20	4.6
13	8.7	4.6	0.94	2.6	2.2	2.4	199	2.6	48	2030	18	4.4
14	7.5	3.2	0.93	2.5	2.3	2.3	316	2.6	79	963	39	4.5
15	6.2	2.8	0.94	2.6	2.3	2.2	39	2.6	16	582	25	4.2
16	5.2	8.4	11	2.6	2.5	2.1	10	3.3	207	278	15	4.0
17	5.2	14	28	2.5	2.5	2.0	5.6	5.0	119	143	13	3.9
18	5.1	31	10	2.6	2.4	2.2	3.9	5.1	54	92	12	4.0
19	5.3	15	5.4	2.6	2.7	36	3.2	5.5	19	66	11	11
20	5.3	7.3	3.9	2.9	2.8	144	3.1	5.1	14	50	10	19
21	5.3	4.7	3.2	2.7	3.0	33	3.6	4.5	12	39	9.5	7.9
22	5.1	3.7	3.0	2.7	2.7	8.0	2.7	4.2	10	32	8.6	5.4
23	4.9	3.5	2.9	2.6	2.6	4.6	2.8	4.1	9.3	26	8.0	3.3
24	4.5	3.5	2.8	2.7	2.6	3.2	2.7	3.9	8.4	22	7.4	3.2
25	4.4	3.3	3.1	e2.6	2.7	2.6	3.6	4.1	7.6	19	6.7	3.2
26	4.2	3.4	3.2	2.4	2.7	2.4	682	6.8	6.6	17	6.4	3.4
27	4.5	3.3	3.2	2.4	2.4	2.3	221	8.4	5.7	15	6.2	3.4
28	7.0	3.7	3.2	2.5	2.5	2.0	29	29	4.9	13	5.9	3.3
29	7.8	4.1	3.0	2.5	---	2.1	9.0	11	4.2	36	5.6	3.0
30	8.5	9.7	2.9	2.6	---	69	6.1	6.8	3.4	71	5.3	2.7
31	8.2	---	3.0	3.9	---	204	---	5.5	---	21	5.2	---
TOTAL	188.1	230.9	171.61	93.2	92.1	555.6	2610.9	160.5	1232.5	16242	1003.8	155.2
MEAN	6.068	7.697	5.536	3.006	3.289	17.92	87.03	5.177	41.08	523.9	32.38	5.173
MAX	12	31	28	7.5	9.6	204	682	29	343	2770	149	19
MIN	3.5	2.8	0.93	2.1	2.2	1.6	2.3	2.4	3.4	13	5.2	2.7
AC-FT	373	458	340	185	183	1100	5180	318	2440	32220	1990	308

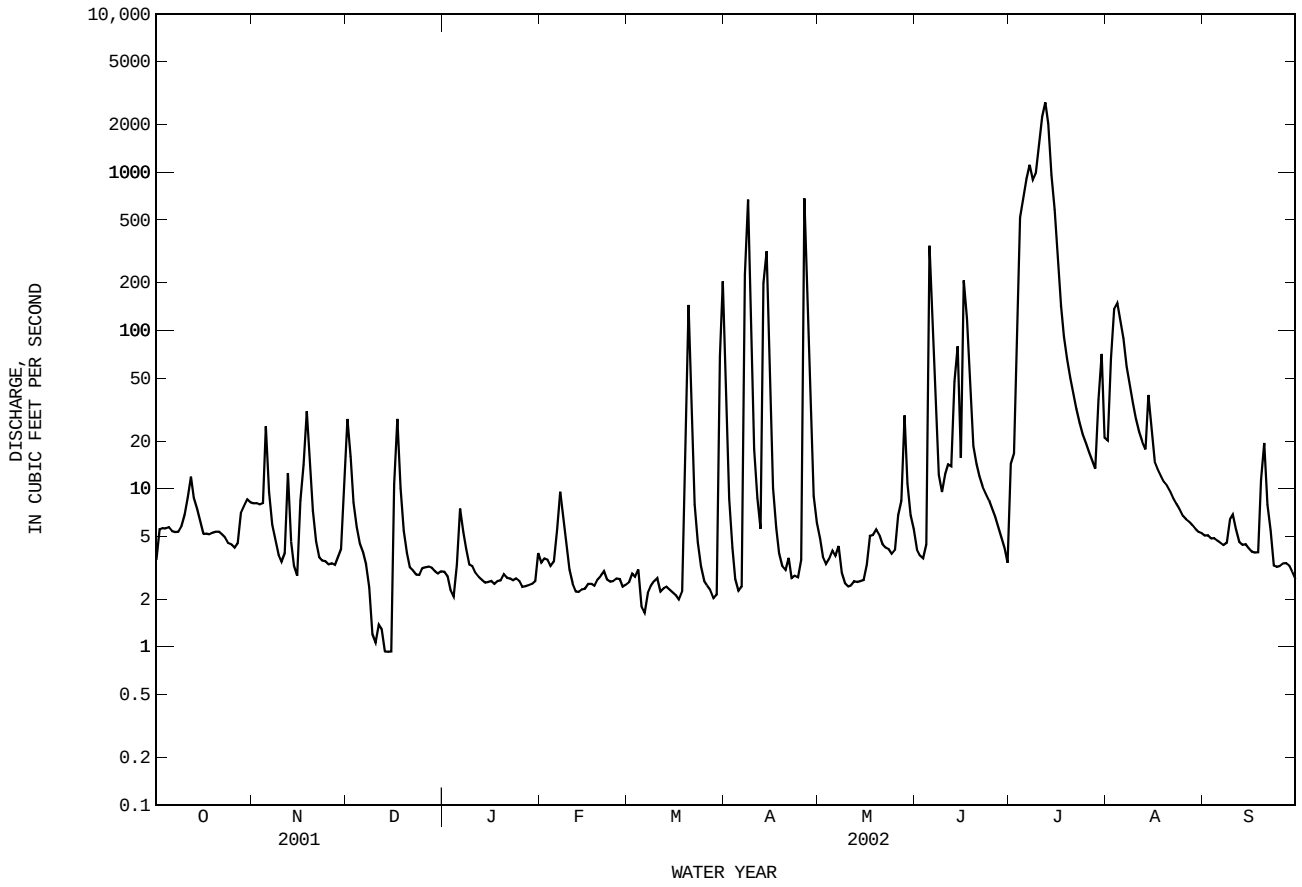
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2002, BY WATER YEAR (WY)

MEAN	105.7	41.51	28.21	21.85	53.18	81.71	59.51	133.8	137.6	68.15	65.89	100.7
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	0.14	0.82	0.71	0.27	0.84	0.65	0.89	2.26	3.37	1.84	0.87	1.06
(WY)	1964	1966	1971	1966	1963	1965	1982	1996	1966	1964	1998	1998

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1960 - 2002	
ANNUAL TOTAL	12731.91		22736.41			
ANNUAL MEAN	34.88		62.29		75.52	
HIGHEST ANNUAL MEAN					300	1995
LOWEST ANNUAL MEAN					11.4	1983
HIGHEST DAILY MEAN	1050	May 5	2770	Jul 12	11000	May 29 1987
LOWEST DAILY MEAN	0.93	Dec 14	0.93	Dec 14	0.00	Jun 23 1960
ANNUAL SEVEN-DAY MINIMUM	1.1	Dec 9	1.1	Dec 9	0.00	May 11 1962
MAXIMUM PEAK FLOW			2840	Jul 12	11700	Mar 17 1961
MAXIMUM PEAK STAGE			26.44	Jul 12	34.94	May 29 1987
ANNUAL RUNOFF (AC-FT)	25250		45100		54710	
10 PERCENT EXCEEDS	61		67		109	
50 PERCENT EXCEEDS	5.4		4.9		5.6	
90 PERCENT EXCEEDS	2.7		2.4		0.71	

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 Sept. 1997.
SEDIMENT DATA: Apr. 1966 to Sept. 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1968 to June 1970 (local observer), June 1996 to Sept. 2002 (discontinued).
WATER TEMPERATURE: Oct. 1968 to June 1970 (local observer), June 1996 to Sept. 2002 (discontinued).

INSTRUMENTATION.--Water-quality monitor June 1996 to Sept. 2002 (discontinued).

REMARKS.--Records good. 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, 211 microsiemens/cm, Apr. 13,2002.
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, 5,340 microsiemens/cm, Sept. 17, 18; minimum, 211 microsiemens/cm, Apr. 13.
WATER TEMPERATURE: Maximum, 34.8°C, July 26; minimum, 0.3°C, Nov. 30.

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2680	2600	2640	2480	2240	2360	2070	1010	1630	2180	2120	2150
2	2620	2570	2590	2240	2080	2140	1840	1010	1490	2140	2100	2110
3	2590	2560	2580	2080	2060	2070	2150	1840	2030	2170	2110	2130
4	2580	2560	2570	2120	2060	2090	2330	2150	2230	2370	2170	2270
5	2720	2580	2650	2120	2030	2070	2800	2330	2530	2380	1500	2280
6	2820	2720	2780	2070	2060	2060	3270	2800	3030	2780	1500	2360
7	2850	2820	2830	2070	2050	2060	3500	3270	3420	2770	2290	2500
8	2850	2770	2810	2090	2060	2080	3510	3470	3490	2290	1990	2140
9	2770	2640	2710	2140	2090	2110	3480	3360	3440	1990	1930	1950
10	2650	2490	2570	2220	2140	2180	3360	3180	3240	2110	1940	2000
11	2640	2200	2410	2260	2020	2200	3210	3000	3120	2260	2110	2200
12	2410	2130	2250	2570	1930	2210	3050	2950	3000	2310	2260	2280
13	2150	2030	2100	2490	2270	2320	2960	2910	2930	2360	2310	2340
14	2170	2130	2160	2530	2350	2440	2920	2830	2880	2420	2360	2380
15	2130	2050	2080	2750	2530	2640	2830	2700	2770	2430	2350	2400
16	2110	2060	2080	2960	2520	2820	2700	1160	2240	2350	2290	2310
17	2060	2020	2030	2520	1640	1870	1840	620	1290	2460	2300	2350
18	2140	2060	2110	2190	1530	1760	1780	620	1300	2630	2460	2550
19	2170	2140	2160	2190	909	1340	1800	1510	1640	2690	2630	2660
20	2180	2160	2170	1650	1450	1600	1640	1520	1570	2700	2660	2680
21	2170	2130	2150	1700	1600	1650	1790	1640	1710	2700	2660	2680
22	2220	2150	2180	1720	1660	1690	2060	1790	1930	2700	2660	2680
23	2250	2210	2230	1780	1690	1710	2220	2060	2140	2660	2520	2600
24	2260	2240	2250	1850	1780	1830	2350	2220	2280	2520	2400	2450
25	2250	2230	2240	1860	1820	1840	2450	2350	2400	---	---	e2390
26	2270	2220	2240	1820	1750	1790	2470	2390	2450	---	---	e2470
27	2370	2270	2310	1750	1710	1730	2390	2150	2280	2660	2520	2600
28	2520	2370	2450	1710	1530	1610	2150	1970	2060	2690	2660	2680
29	2640	2520	2580	1530	1420	1460	1970	1910	1920	2740	2670	2680
30	2660	2630	2640	2900	1400	2150	1980	1920	1940	3000	2740	2850
31	2630	2480	2560	---	---	---	2120	1980	2040	3180	1830	2510
MONTH	2850	2020	2390	2960	909	2000	3510	620	2340	---	---	2410

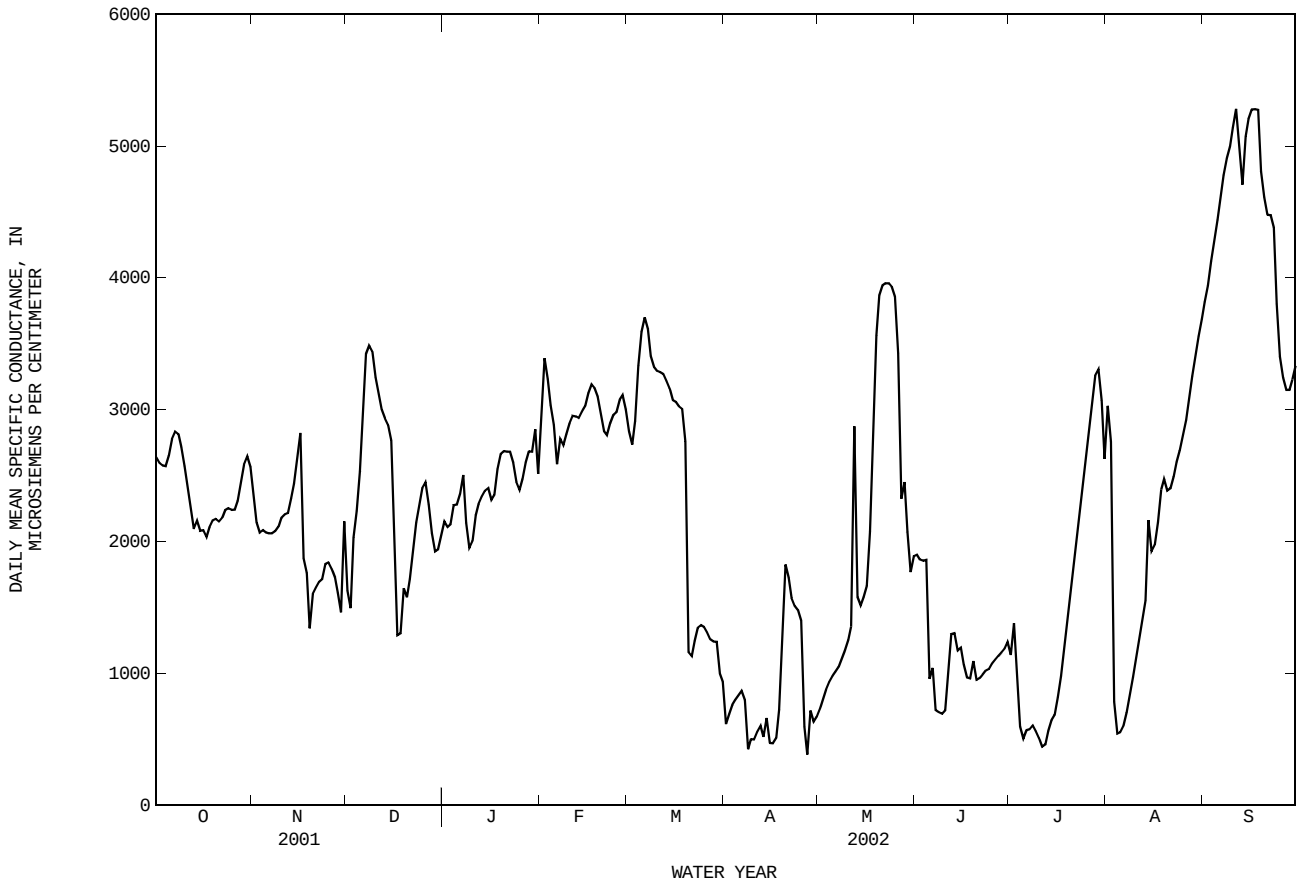
07312200 Beaver Creek near Electra, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3330	2640	2960	2910	2760	2830	919	559	614	758	705	731
2	3440	3320	3390	2770	2710	2730	744	595	688	840	758	801
3	3360	3100	3230	3110	2770	2910	780	743	760	905	840	877
4	3100	2970	3030	3490	3110	3330	827	780	795	957	905	934
5	2970	2790	2880	3680	3490	3590	845	813	830	990	954	977
6	2790	2260	2590	3710	3680	3700	903	844	863	1040	989	1010
7	2860	2380	2780	3700	3520	3610	1180	356	795	1070	1030	1040
8	2800	2690	2730	3520	3330	3400	751	373	422	1150	1070	1110
9	2870	2740	2810	3370	3280	3320	612	382	500	1200	1150	1180
10	2930	2870	2890	3310	3270	3290	537	474	498	1310	1200	1250
11	2980	2930	2950	3300	3260	3280	574	537	556	1400	1310	1350
12	2980	2910	2950	3300	3240	3270	623	574	599	5040	1400	2870
13	2950	2920	2940	3250	3180	3220	819	211	517	1770	1500	1580
14	3000	2950	2980	---	---	e3160	950	523	660	1530	1510	1520
15	3060	3000	3020	3100	3060	3070	570	440	471	1610	1530	1580
16	3180	3060	3120	3070	3040	3060	479	459	468	1720	1610	1660
17	3200	3180	3190	3050	3010	3030	555	478	506	2520	1720	2070
18	3190	3130	3160	3090	2940	3000	965	555	723	3300	2520	2900
19	3130	3040	3100	3030	1740	2760	1660	965	1350	3780	3300	3560
20	3040	2910	2970	1880	545	1160	1900	1660	1820	3920	3780	3870
21	2910	2790	2840	1330	951	1130	1900	1620	1720	3980	3900	3940
22	2850	2780	2810	1310	1200	1240	1620	1530	1570	3990	3930	3960
23	2950	2850	2900	1360	1310	1340	1540	1480	1510	3990	3920	3960
24	2980	2940	2960	1370	1360	1360	1500	1460	1480	3970	3880	3930
25	3010	2970	2980	1360	1330	1350	1460	693	1400	3920	3760	3860
26	3120	3010	3070	1340	1280	1310	1200	430	595	3760	2530	3430
27	3130	3070	3110	1280	1240	1260	495	354	383	2640	2170	2320
28	3070	2910	3000	1250	1230	1240	862	495	715	3130	1860	2450
29	---	---	---	1250	1220	1240	648	621	630	3040	1690	2070
30	---	---	---	1280	527	995	705	647	670	1840	1690	1770
31	---	---	---	1780	472	935	---	---	---	1920	1800	1890
MONTH	3440	2260	2980	---	---	2420	1900	211	837	5040	705	2140

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1920	1880	1900	1370	854	1140	3150	2850	3030	3860	3740	3820
2	1890	1830	1860	1940	918	1380	3450	1520	2760	4000	3860	3940
3	1870	1830	1850	1240	454	944	1520	567	783	4160	4000	4120
4	1980	1210	1860	844	476	595	567	525	540	4350	4160	4280
5	1960	472	955	647	390	504	574	526	551	4500	4340	4440
6	1350	684	1040	669	537	568	---	574	e600	4660	4500	4600
7	1060	524	720	636	530	574	765	---	e700	4860	4660	4780
8	710	697	704	636	571	605	903	765	836	4960	4860	4900
9	707	674	691	573	550	563	1040	903	969	5010	4940	4990
10	772	679	719	570	465	509	1170	1040	1100	5190	5000	5140
11	1330	772	985	465	433	442	1330	1170	1260	5320	5180	5280
12	1380	1180	1300	487	440	459	1480	1330	1410	5280	4600	4970
13	3720	769	1300	670	482	561	1620	1480	1550	4870	4590	4710
14	2010	558	1170	661	617	640	4080	1140	2160	5160	4870	5070
15	1350	929	1200	773	656	682	2840	1690	1920	5260	5160	5210
16	1460	685	1060	890	763	817	2050	1900	1970	5320	5150	5280
17	1200	720	968	1070	890	979	2230	2050	2140	5340	4980	5280
18	1260	565	962	1280	1070	1170	2490	2230	2390	5340	5020	5270
19	1190	1000	1090	1470	1280	1370	2540	2430	2470	5080	4610	4810
20	1000	925	950	1690	1460	1590	2460	2340	2380	5080	4430	4610
21	975	941	961	1940	1690	1820	2450	2350	2400	4520	4420	4480
22	998	975	986	2120	1940	2020	2530	2450	2490	4500	4390	4470
23	1030	998	1020	2290	2120	2210	2640	2530	2600	---	---	e4380
24	1050	1000	1030	2540	2290	2420	2740	2640	2690	---	---	e3800
25	1080	1050	1070	2720	2540	2620	2860	2740	2800	---	---	e3400
26	1120	1080	1100	2960	2720	2840	3000	2860	2920	3320	3170	3240
27	1140	1120	1130	3150	2960	3050	3190	3000	3090	3170	3130	3150
28	1170	1140	1160	3340	3150	3260	3310	3190	3250	3180	3130	3150
29	1190	1170	1190	3510	2810	3300	3480	3310	3400	3290	3180	3230
30	1260	1190	1230	3730	2470	3070	3600	3480	3560	3380	3290	3330
31	---	---	---	2860	2440	2620	3740	3600	3680	---	---	---
MONTH	3720	472	1140	3730	390	1460	---	---	2080	---	---	4400

e Estimated



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.3	17.7	19.4	19.9	16.0	17.7	6.3	3.6	5.0	4.7	2.3	3.5
2	22.0	17.5	19.1	20.9	17.1	18.8	8.5	4.7	6.3	4.4	1.8	3.6
3	22.7	18.7	20.2	21.1	18.2	19.6	10.2	7.1	8.5	2.8	0.5	1.6
4	25.2	20.2	22.0	19.7	18.1	19.1	13.3	10.1	11.7	4.5	0.6	2.4
5	22.4	17.1	20.4	19.5	17.9	18.5	14.9	13.3	14.0	6.7	4.3	5.4
6	18.1	13.7	15.7	19.2	16.8	18.0	13.3	10.7	11.8	6.4	3.6	5.1
7	18.8	13.9	15.7	18.1	15.7	17.0	11.4	9.2	10.3	4.9	2.6	4.0
8	21.2	15.4	17.8	17.3	15.4	16.5	10.0	7.4	9.1	6.0	3.6	4.9
9	22.7	18.8	20.7	15.6	13.2	14.6	7.4	5.0	6.1	8.1	5.3	6.6
10	21.4	19.2	20.7	14.6	11.1	12.9	6.6	3.5	5.1	8.5	7.2	7.7
11	20.3	16.7	18.7	17.0	13.4	15.1	6.8	4.8	5.6	7.3	5.5	6.4
12	20.8	17.3	18.9	18.5	15.9	17.5	9.1	6.8	8.0	6.7	4.6	5.4
13	19.0	15.2	17.1	18.8	16.7	17.7	7.8	6.0	7.0	7.2	4.1	5.5
14	18.2	13.9	16.2	19.6	17.4	18.3	6.1	4.1	5.2	6.8	4.3	5.4
15	18.1	15.0	16.5	18.0	16.8	17.4	7.7	5.0	6.1	7.0	3.5	5.1
16	15.6	12.4	13.9	17.7	16.4	17.0	10.3	7.7	8.7	8.5	5.6	6.8
17	16.1	12.6	13.8	17.3	16.5	17.0	9.1	7.3	8.2	7.9	5.8	6.8
18	17.6	13.6	15.1	17.9	16.1	16.9	9.0	6.6	7.7	5.8	4.3	4.6
19	18.6	15.6	16.6	17.1	12.7	15.2	7.7	6.0	6.7	5.9	3.5	4.5
20	18.7	15.4	16.6	12.7	9.9	11.0	6.7	4.6	5.8	6.8	3.5	4.9
21	20.8	17.2	18.6	10.9	8.6	9.9	7.6	5.2	6.4	6.5	3.3	4.7
22	21.8	18.6	19.8	12.6	9.8	11.0	8.8	6.8	7.8	9.6	4.8	7.1
23	21.8	19.1	20.0	13.8	11.9	12.6	6.8	4.0	5.5	10.3	7.8	8.8
24	19.9	15.8	18.2	12.5	10.3	11.3	5.0	2.9	3.8	8.9	6.2	7.8
25	16.6	12.9	14.6	11.9	8.7	10.3	4.3	1.9	3.1	---	---	---
26	15.7	11.3	13.3	11.9	10.4	11.1	4.3	2.2	3.1	7.7	---	---
27	16.0	11.3	13.4	10.4	4.4	7.5	4.9	2.4	3.7	9.3	5.3	7.1
28	16.7	12.1	14.2	4.4	0.4	1.6	5.6	3.1	4.2	11.3	6.8	8.8
29	18.2	13.8	15.6	2.9	0.5	1.6	4.6	3.1	3.9	13.9	9.8	11.2
30	18.0	14.0	15.8	6.3	0.3	2.7	3.6	2.4	3.0	11.2	6.9	9.0
31	18.3	14.8	16.5	---	---	---	2.9	0.9	2.0	6.9	5.3	5.9
MONTH	25.2	11.3	17.3	21.1	0.3	13.8	14.9	0.9	6.6	---	---	---

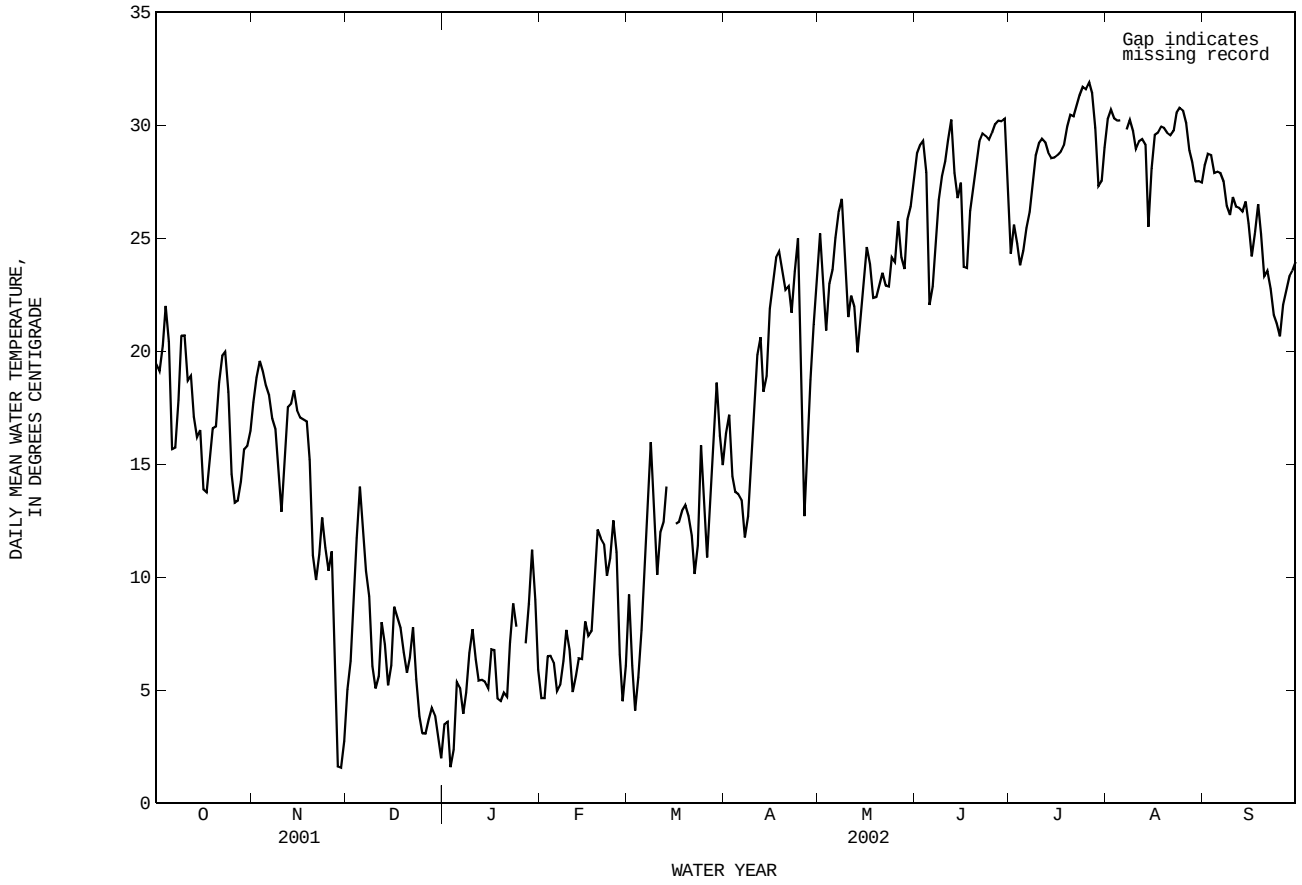
07312200 Beaver Creek near Electra, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.9	3.2	4.6	12.1	6.9	9.2	18.8	14.1	16.4	28.3	21.8	25.2
2	5.6	3.2	4.6	8.9	3.9	6.1	18.8	15.6	17.2	27.3	20.1	23.0
3	7.8	5.5	6.5	7.4	1.8	4.1	16.6	11.8	14.5	23.9	18.2	20.9
4	7.1	5.6	6.5	10.4	2.3	5.6	15.8	11.9	13.8	26.1	20.9	23.0
5	6.8	5.1	6.2	12.8	4.0	7.6	15.8	11.4	13.7	25.8	21.7	23.6
6	5.7	4.0	4.9	15.8	7.2	10.7	14.3	12.1	13.4	27.7	23.1	25.0
7	7.4	3.2	5.2	17.5	10.2	13.3	12.2	10.8	11.7	28.6	24.0	26.1
8	9.0	3.8	6.3	18.4	14.5	16.0	13.6	11.7	12.7	30.2	24.3	26.7
9	8.8	5.9	7.7	16.0	10.1	12.9	17.0	12.8	14.6	27.1	22.1	24.5
10	8.2	5.3	6.8	13.4	7.6	10.1	20.4	14.6	17.1	22.8	20.2	21.5
11	7.5	3.0	4.9	15.0	10.1	12.0	23.5	17.0	19.8	23.9	21.0	22.4
12	8.7	3.6	5.6	16.1	9.7	12.4	22.7	18.7	20.6	23.0	19.0	22.0
13	9.5	4.7	6.4	18.8	11.3	14.0	21.5	14.8	18.2	24.5	16.3	19.9
14	9.1	4.1	6.4	---	---	---	21.3	17.0	18.9	25.9	17.9	21.3
15	11.2	6.4	8.0	18.3	---	---	24.5	20.0	21.9	26.6	20.1	22.8
16	10.4	5.2	7.4	14.0	11.2	12.3	25.2	21.8	23.1	27.8	21.8	24.6
17	9.9	6.1	7.6	13.8	11.5	12.4	27.8	20.9	24.1	26.2	22.3	23.8
18	11.6	8.0	9.7	13.9	12.1	12.9	25.8	22.5	24.4	25.4	19.2	22.4
19	14.9	10.6	12.1	13.5	12.4	13.2	25.0	22.9	23.6	25.5	18.9	22.4
20	14.1	9.9	11.7	14.0	11.7	12.7	23.8	21.6	22.7	26.1	19.5	22.9
21	12.7	10.4	11.4	13.0	9.9	11.8	25.0	21.0	22.9	26.8	20.2	23.5
22	12.8	8.0	10.1	12.7	7.8	10.1	23.8	19.1	21.7	25.0	21.0	22.9
23	13.7	8.8	10.8	14.8	7.5	11.4	26.1	21.0	23.5	24.1	21.7	22.9
24	15.7	10.7	12.5	19.8	12.4	15.8	28.2	22.8	25.0	27.5	22.2	24.2
25	13.5	8.5	11.1	16.6	10.0	12.9	23.3	13.2	18.7	26.2	22.0	23.9
26	8.6	4.5	6.6	14.8	7.6	10.9	13.7	12.0	12.7	29.5	22.8	25.8
27	8.1	2.3	4.5	18.0	10.3	13.6	17.8	12.7	15.0	26.7	22.7	24.1
28	9.7	3.5	6.1	20.3	13.3	16.4	21.7	16.5	18.7	25.4	22.2	23.6
29	---	---	---	22.8	15.9	18.6	24.7	18.4	21.2	29.9	22.8	25.8
30	---	---	---	19.0	13.9	16.3	25.7	20.7	23.0	29.5	23.7	26.4
31	---	---	---	16.1	13.7	15.0	---	---	---	30.6	23.8	27.5
MONTH	15.7	2.3	7.6	---	---	---	28.2	10.8	18.8	30.6	16.3	23.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	32.4	25.4	28.8	25.8	23.2	24.3	33.1	28.4	30.3	29.8	25.8	28.2
2	33.0	26.2	29.1	27.9	23.9	25.6	32.0	29.1	30.7	30.6	26.0	28.7
3	33.3	26.4	29.3	26.3	23.5	24.8	31.5	28.7	30.3	30.0	26.5	28.7
4	30.5	24.2	27.9	24.2	23.4	23.8	31.5	29.2	30.2	29.4	25.9	27.9
5	24.3	21.2	22.0	25.1	23.8	24.4	31.6	28.8	30.2	29.4	25.7	27.9
6	24.4	21.4	22.9	26.2	24.9	25.4	---	28.4	---	29.1	25.8	27.9
7	26.7	23.1	24.7	27.0	25.5	26.2	31.1	28.4	29.8	28.9	25.6	27.5
8	29.1	25.0	26.7	28.7	26.6	27.4	31.8	29.2	30.2	27.6	25.3	26.4
9	30.9	25.7	27.7	29.7	27.8	28.6	31.1	28.3	29.7	27.4	24.5	26.0
10	30.7	26.4	28.4	29.8	28.7	29.2	30.1	27.7	28.9	28.2	25.3	26.8
11	32.4	27.3	29.3	29.6	29.2	29.4	31.6	27.6	29.3	27.8	24.2	26.4
12	33.4	28.2	30.2	29.4	29.0	29.2	31.8	27.6	29.4	27.7	24.6	26.3
13	30.1	24.8	27.9	29.4	28.2	28.8	31.0	26.9	29.1	27.4	24.4	26.2
14	29.2	24.8	26.8	29.3	28.0	28.5	28.3	21.5	25.5	28.1	24.7	26.6
15	30.0	25.7	27.4	29.4	28.1	28.6	31.8	25.5	28.1	27.1	24.3	25.7
16	26.0	22.6	23.7	29.3	28.1	28.7	32.5	27.6	29.6	25.9	22.0	24.2
17	25.4	22.2	23.7	30.2	27.7	28.8	31.9	28.0	29.7	27.4	23.0	25.2
18	28.2	24.7	26.2	30.5	27.6	29.1	33.0	27.7	29.9	28.4	24.5	26.5
19	30.0	25.3	27.2	31.1	28.8	29.9	32.3	27.9	29.9	26.9	23.9	25.2
20	31.2	26.1	28.3	32.2	29.1	30.4	32.1	27.7	29.7	25.6	21.3	23.3
21	32.3	27.1	29.3	32.4	28.7	30.4	32.1	27.4	29.5	26.5	20.9	23.5
22	32.5	27.6	29.6	33.0	29.0	30.8	32.7	27.1	29.7	25.1	21.0	22.8
23	33.1	26.8	29.5	33.6	29.4	31.3	33.8	27.6	30.5	23.4	19.4	21.6
24	33.0	26.4	29.4	34.2	29.8	31.7	33.8	27.8	30.8	23.0	19.5	21.2
25	32.8	27.3	29.6	34.6	29.5	31.6	32.9	28.0	30.6	22.6	18.7	20.6
26	33.8	27.0	30.0	34.8	30.0	31.9	32.4	27.2	30.1	23.8	20.3	22.0
27	33.5	27.5	30.2	34.4	29.4	31.4	31.6	26.2	28.9	24.4	21.0	22.7
28	33.9	27.1	30.2	31.2	28.9	29.9	30.2	25.9	28.4	25.2	21.8	23.3
29	33.5	27.3	30.3	29.5	24.8	27.3	29.3	25.6	27.5	25.7	22.3	23.6
30	30.5	25.8	27.3	29.4	26.0	27.5	29.4	25.2	27.5	26.1	22.8	23.9
31	---	---	---	31.9	26.9	29.0	29.1	24.7	27.4	---	---	---
MONTH	33.9	21.2	27.8	34.8	23.2	28.5	---	21.5	---	30.6	18.7	25.2

07312200 Beaver Creek near Electra, TX--Continued



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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.--Oct. 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. 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 is provided by the city of Iowa Park.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,950 acre-ft, May 6, 7, 2001, elevation, 1,038.78 ft; minimum contents, 728 acre-ft, Oct. 13, 2000, elevation, 1,028.01 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,980 acre-ft, Oct. 1, 2, 5, elevation, 1,035.96 ft; minimum contents, 1,410 acre-ft, Sept. 30, elevation, 1,032.24 ft.

REVISIONS.--The minimum contents for the water year 2001 has been revised to 728 acre-ft, Oct. 13, 2000, elevation, 1,028.01 ft.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

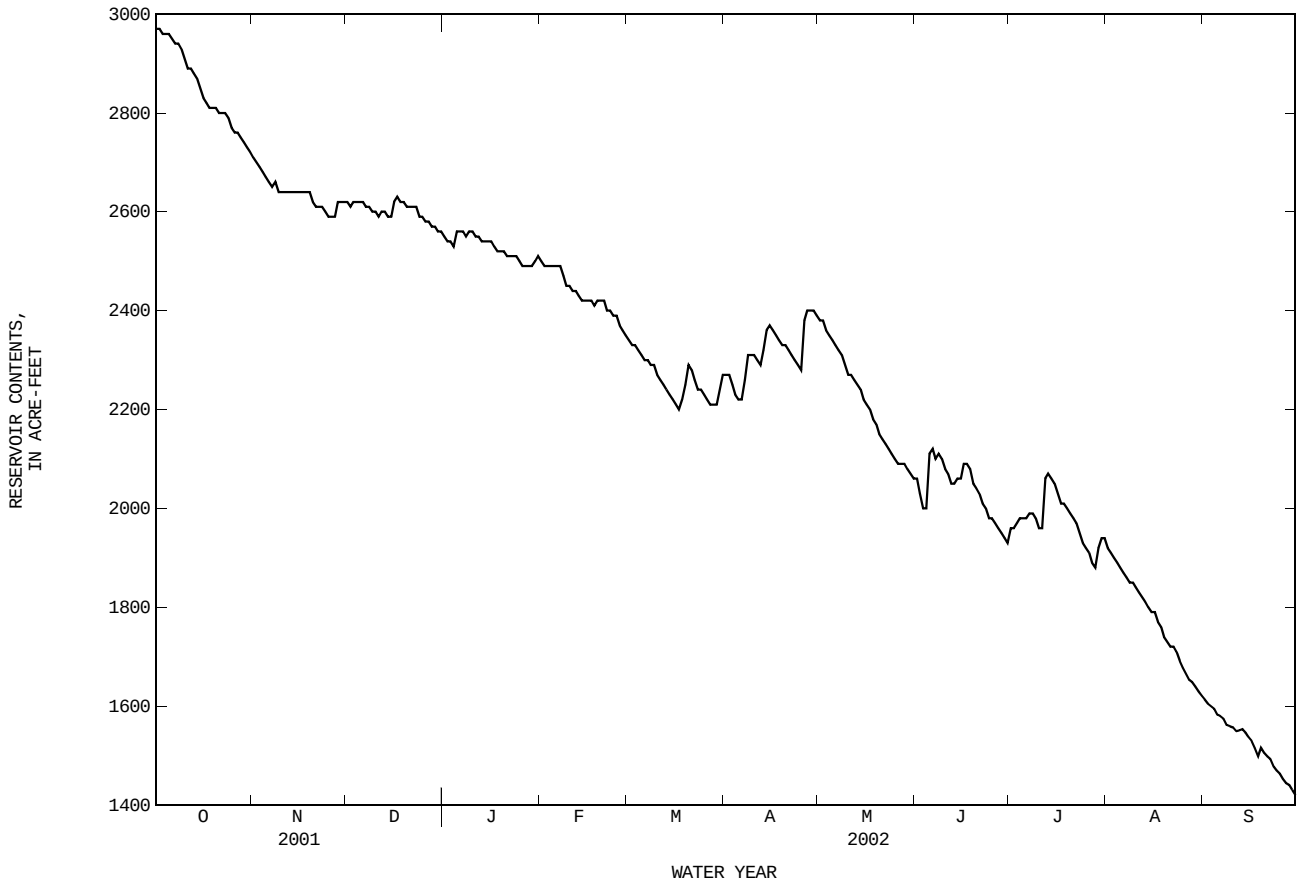
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2970	e2710	2620	2550	2500	2340	2270	2380	2060	1960	1920	1610
2	2970	e2700	2610	2540	2490	2330	2270	2380	2030	1960	1910	1610
3	2960	e2690	2620	2540	2490	2330	2250	2360	2000	1970	1900	1600
4	2960	e2680	2620	2530	2490	2320	2230	2350	2000	1980	1890	1590
5	2960	e2670	2620	2560	e2490	2310	2220	2340	2110	1980	1880	1580
6	2950	e2660	2620	2560	e2490	2300	2220	2330	2120	1980	1870	1580
7	2940	e2650	2610	2560	2490	2300	2260	2320	2100	1990	1860	1570
8	2940	2660	2610	2550	2470	2290	2310	2310	2110	1990	1850	1560
9	e2930	2640	2600	2560	2450	2290	2310	2290	2100	1980	1850	1560
10	e2910	2640	2600	2560	2450	2270	2310	2270	2080	1960	1840	1560
11	2890	2640	2590	2550	2440	2260	2300	2270	2070	1960	1830	1550
12	2890	2640	2600	2550	2440	2250	2290	2260	2050	2060	1820	1550
13	2880	2640	2600	2540	2430	2240	2320	2250	2050	2070	1810	1550
14	2870	2640	2590	2540	2420	2230	2360	2240	2060	2060	1800	1550
15	2850	2640	2590	2540	2420	2220	2370	2220	2060	2050	1790	1540
16	2830	2640	2620	2540	2420	2210	2360	2210	2090	2030	1790	1530
17	2820	2640	2630	2530	2420	2200	2350	2200	2090	2010	1770	1520
18	2810	2640	2620	2520	2410	2220	2340	2180	2080	2010	1760	1500
19	2810	2640	2620	2520	2420	2250	2330	2170	2050	2000	1740	1520
20	2810	2620	2610	2520	2420	2290	2330	2150	2040	1990	1730	1510
21	2800	2610	2610	2510	2420	2280	2320	2140	2030	1980	1720	1500
22	2800	2610	2610	2510	2400	2260	2310	2130	2010	1970	1720	1490
23	2800	2610	2610	2510	2400	2240	2300	2120	2000	1950	1710	1480
24	2790	2600	2590	2510	2390	2240	2290	2110	1980	1930	1690	1470
25	2770	2590	2590	2500	2390	2230	2280	2100	1980	1920	1680	1460
26	2760	2590	2580	2490	2370	2220	2380	2090	1970	1910	1670	1450
27	2760	2590	2580	2490	2360	2210	2400	2090	1960	1890	1650	1440
28	2750	2620	2570	2490	2350	2210	2400	2090	1950	1880	1650	1440
29	2740	2620	2570	2490	---	2210	2400	2080	1940	1920	1640	e1430
30	2730	2620	2560	2500	---	2240	2390	2070	1930	1940	1630	1420
31	2720	---	2560	2510	---	2270	---	2060	---	1940	1620	---
MEAN	2850	2640	2600	2530	2430	2260	2320	2210	2040	1970	1770	1520
MAX	2970	2710	2630	2560	2500	2340	2400	2380	2120	2070	1920	1610
MIN	2720	2590	2560	2490	2350	2200	2220	2060	1930	1880	1620	1420
(+)	1035.44	1035.23	1035.11	1035.00	1034.69	1034.54	1034.78	1034.13	1033.78	1033.81	1032.86	1032.25
(@)	-260	-100	-60	-50	-160	-80	+120	-330	-130	+10	-320	-200

CAL YR 2001 MAX 4930 MIN 2560 (@) -240
WTR YR 2002 MAX 2970 MIN 1420 (@) -1560

e Estimated

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

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, 4.0 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 NGVD of 1929. Feb. 1901 to Jan. 1902 and Oct. 1, 1910, to Dec. 31, 1911, nonrecording gages at site 4.0 mi downstream at different datum. Mar. 30, 1938, to Dec. 1, 1959, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Mar. 1938, at least 10% of contributing drainage area has been regulated. Since completion of Lake Kemp (station 07312000) 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. The Wichita County Water Improvement District No. 2 diverts water from Lake Diversion for mining, industrial, irrigation, and 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

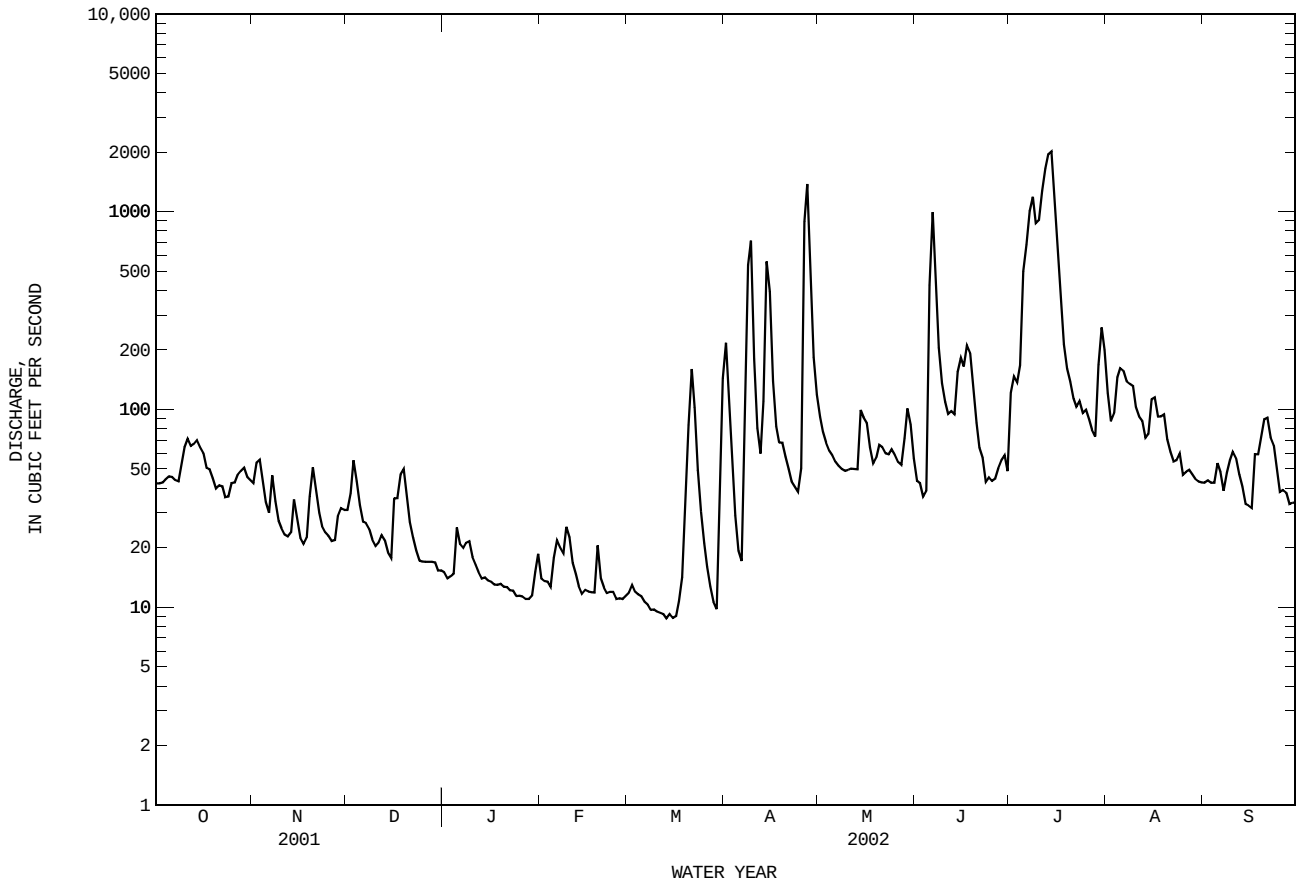
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	42	31	15	14	12	217	92	44	121	121	43
2	42	54	38	14	14	13	101	77	43	147	87	44
3	43	56	55	14	13	12	49	68	36	138	96	43
4	44	43	43	15	13	12	29	62	39	167	145	43
5	46	34	33	25	18	11	19	59	425	501	162	53
6	46	30	27	21	22	11	17	55	996	682	157	48
7	44	46	27	20	20	10	135	52	438	1000	139	39
8	43	34	25	21	19	9.7	537	50	206	1190	135	48
9	52	27	22	22	25	9.8	714	49	136	877	131	55
10	64	25	20	18	22	9.5	180	49	109	909	103	61
11	71	23	21	16	17	9.4	81	50	95	1280	92	57
12	65	23	23	15	15	9.2	60	50	98	1650	88	47
13	67	24	22	14	13	8.8	110	50	95	1950	72	41
14	70	35	19	14	12	9.2	561	99	155	2020	75	33
15	65	28	18	14	12	8.8	394	91	182	1180	112	33
16	60	22	36	13	12	9.0	139	86	165	616	115	32
17	51	21	36	13	12	11	82	64	212	340	92	59
18	50	23	47	13	12	14	68	53	194	213	92	59
19	45	36	50	13	20	30	68	57	133	160	94	71
20	40	51	36	13	14	83	58	66	86	138	71	89
21	41	39	27	13	13	160	50	64	64	114	61	91
22	41	30	23	12	12	102	43	60	57	103	54	72
23	36	26	19	12	12	50	41	59	43	110	55	66
24	36	24	17	11	12	30	38	63	45	96	60	52
25	42	23	17	11	11	21	50	59	43	100	47	38
26	43	22	17	11	11	16	889	54	45	89	48	39
27	47	22	17	11	11	13	1380	53	50	79	50	38
28	49	29	17	11	11	11	498	72	55	73	47	33
29	51	32	17	11	---	9.8	183	101	58	168	45	34
30	46	31	15	15	---	34	119	84	49	260	43	34
31	44	---	15	19	---	144	---	56	---	200	43	---
TOTAL	1526	955	830	460	412	893.2	6910	2004	4396	16671	2732	1495
MEAN	49.23	31.83	26.77	14.84	14.71	28.81	230.3	64.65	146.5	537.8	88.13	49.83
MAX	71	56	55	25	25	160	1380	101	996	2020	162	91
MIN	36	21	15	11	11	8.8	17	49	36	73	43	32
AC-FT	3030	1890	1650	912	817	1770	13710	3970	8720	33070	5420	2970

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	394.0	208.4	114.3	89.93	151.6	199.3	225.9	542.3	499.2	236.0	253.9	308.1
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	49.2	23.5	25.3	14.8	14.7	26.9	36.1	35.4	53.8	46.5	53.3	39.9
(WY)	2002	1998	1979	2002	2002	1975	2000	2000	2001	2000	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002	
ANNUAL TOTAL	50079		39284.2			
ANNUAL MEAN	137.2		107.6		265.8	
HIGHEST ANNUAL MEAN					977	1941
LOWEST ANNUAL MEAN					49.5	2000
HIGHEST DAILY MEAN	2510	May 6	2020	Jul 14	17300	Oct 3 1941
LOWEST DAILY MEAN	15	Dec 30	8.8	Mar 13	7.7	Apr 9 1978
ANNUAL SEVEN-DAY MINIMUM	16	Dec 25	9.1	Mar 10	9.1	Mar 10 2002
MAXIMUM PEAK FLOW			2090	Jul 14	17800	Oct 3 1941
MAXIMUM PEAK STAGE			10.36	Jul 14	24.00	Oct 3 1941
ANNUAL RUNOFF (AC-FT)	99330		77920		192500	
10 PERCENT EXCEEDS	213		163		533	
50 PERCENT EXCEEDS	61		45		80	
90 PERCENT EXCEEDS	27		12		34	

07312500 Wichita River at Wichita Falls, TX--Continued



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 Sept. 1997.
BIOCHEMICAL DATA: Nov. 1981 to Aug. 1989, 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 Sept. 2002 (discontinued).
WATER TEMPERATURE: Oct. 1981 to Sept. 1989, June 1996 to Sept. 2002 (discontinued).

INSTRUMENTATION.--Water-quality monitor Oct. 1981 to Sept. 1989, June 1996 to Sept. 2002 (discontinued).

REMARKS.--Temperature records good. Specific conductance records fair. 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, 7,240 microsiemens/cm, Mar. 17; minimum, 375 microsiemens/cm, July 13.
WATER TEMPERATURE: Maximum, 33.7°C, July 24; minimum, 0.0°C, Nov. 28, Jan. 3.

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6000	5820	5930	5990	5840	5890	6140	5840	5950	6470	6400	6440
2	6110	5940	6020	6080	5960	6020	6330	5930	6130	6500	6460	6480
3	6130	6010	6070	6020	5790	5890	6400	6080	6280	6530	6460	6500
4	6160	5960	6060	5950	5850	5910	6080	4090	5140	6560	6460	6510
5	6080	5800	5960	6160	5920	6020	4090	3740	3860	6510	4820	5880
6	5980	5840	5910	6440	6140	6280	4340	3970	4220	6320	5830	6120
7	6050	5940	5990	6500	6270	6390	4730	4330	4540	6350	5670	6080
8	6090	6000	6060	6350	6220	6290	5070	4720	4910	6540	6340	6450
9	6070	5590	5900	6290	5530	5960	5340	5040	5200	6690	6510	6620
10	5620	5380	5520	5580	5440	5490	5590	5330	5480	6730	6310	6560
11	5490	5290	5400	5590	5470	5520	6010	5560	5720	6840	6350	6670
12	5340	4920	5240	5750	5540	5640	6140	5930	6070	6760	5810	6290
13	5260	4920	5200	5890	5690	5770	6050	5980	6010	5880	5760	5790
14	5450	5220	5350	6280	5840	6090	6050	5980	6010	6190	5870	6010
15	5520	5360	5460	6460	5970	6230	6240	6030	6130	6520	6180	6370
16	5470	5320	5390	6480	6180	6330	6240	4080	5240	6590	6500	6540
17	5390	5180	5320	6390	5770	6180	5580	4800	5220	6840	6560	6710
18	5340	5220	5290	5820	5260	5470	6470	5110	5740	6990	6740	6850
19	5410	5240	5340	5510	5200	5310	6820	5490	6250	6800	6690	6740
20	5560	5380	5470	6670	5450	6060	5490	4140	4400	6830	6660	6750
21	5640	5480	5560	5470	4520	4700	4300	4020	4120	6800	6690	6740
22	5740	5560	5660	4600	4060	4380	4380	4140	4280	6830	6680	6770
23	5880	5670	5800	4300	4040	4130	4700	4380	4560	6760	6640	6690
24	5990	5840	5930	4710	4270	4500	5090	4700	4890	6840	6720	6780
25	5960	5860	5920	5090	4680	4890	5430	5080	5270	6790	6740	6770
26	5980	5800	5900	5470	5070	5260	5760	5420	5600	6770	6680	6740
27	5870	5740	5830	5700	5460	5590	5940	5740	5850	6810	6690	6760
28	5860	5770	5810	5670	5500	5600	6060	5930	6010	6750	6680	6720
29	6060	5820	5920	5760	5340	5650	6360	6040	6190	6720	6560	6660
30	6160	5820	6010	5930	5400	5790	6440	6360	6400	6660	5360	6480
31	5910	5820	5860	---	---	---	6460	6390	6430	6410	4720	5880
MONTH	6160	4920	5710	6670	4040	5640	6820	3740	5420	6990	4720	6500

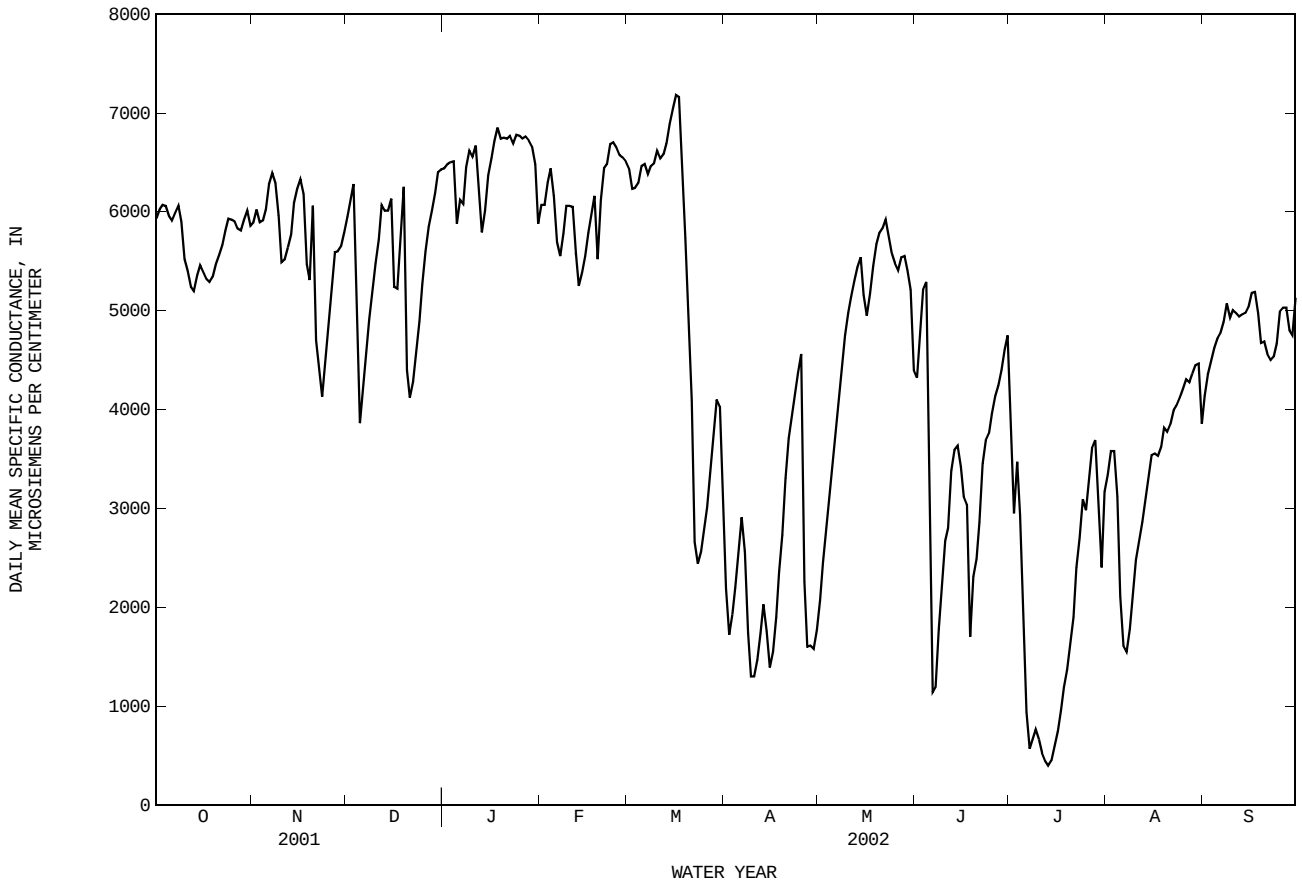
07312500 Wichita River at Wichita Falls, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6220	5740	6070	6490	6350	6440	3080	1580	2190	2270	1910	2070
2	6240	5720	6070	6350	6170	6230	1820	1580	1720	2630	2260	2450
3	6390	6210	6300	6290	6200	6240	2050	1810	1930	2940	2610	2780
4	6490	6360	6440	6400	6210	6290	2400	2020	2200	3320	2940	3120
5	6440	5600	6160	6590	6350	6460	2740	2400	2570	3640	3310	3470
6	5950	5420	5690	6550	6420	6480	3130	2740	2910	3970	3620	3800
7	5710	5410	5550	6450	6310	6380	3220	1780	2560	4300	3960	4130
8	5940	5610	5780	6510	6390	6460	1950	1560	1740	4620	4300	4430
9	6270	5920	6060	6540	6460	6490	1560	1200	1300	4880	4610	4750
10	6280	5850	6060	6720	6490	6620	1390	1210	1300	5090	4860	4980
11	6170	5900	6050	6640	6490	6540	1590	1390	1470	5250	5070	5140
12	5980	5240	5580	6670	6500	6580	1910	1590	1740	5410	5210	5300
13	5320	5200	5250	6880	6530	6690	2140	1880	2030	5520	5380	5440
14	5460	5300	5380	6980	6810	6890	2060	1440	1760	5630	5490	5540
15	5690	5430	5550	7130	6930	7040	1440	1320	1390	5600	4950	5160
16	5920	5680	5790	7230	7100	7180	1700	1430	1550	5060	4860	4950
17	6090	5880	5980	7240	7020	7160	2140	1700	1900	5340	4970	5170
18	6270	6070	6160	7020	5610	6350	2520	2140	2360	5590	5320	5450
19	6310	4090	5520	6420	3140	5730	2970	2520	2730	5760	5560	5670
20	6350	5940	6120	5640	3330	4780	3570	2970	3300	5840	5710	5780
21	6490	6310	6440	5900	3230	4090	3820	3570	3710	5900	5760	5830
22	6570	6410	6480	3230	2410	2660	4010	3810	3910	5980	5880	5920
23	6800	6540	6680	2510	2410	2440	4240	3990	4130	5930	5630	5750
24	6770	6640	6700	2670	2490	2560	4540	4220	4370	5700	5410	5580
25	6770	6510	6650	2920	2670	2790	4720	3110	4560	5570	5350	5480
26	6660	6510	6570	3190	2910	3010	3110	1770	2260	5510	5360	5410
27	6680	6480	6550	3530	3190	3340	1770	1530	1600	5620	5330	5540
28	6600	6430	6510	3930	3520	3690	1620	1580	1610	5670	5290	5550
29	---	---	---	4420	3910	4100	1650	1550	1580	5560	5290	5410
30	---	---	---	4740	2900	4030	1910	1650	1770	5490	4830	5210
31	---	---	---	3190	2610	2970	---	---	---	4840	3990	4400
MONTH	6800	4090	6080	7240	2410	5310	4720	1200	2340	5980	1910	4830

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4410	4160	4320	4690	2640	3840	3390	3220	3340	4300	4020	4140
2	4980	4410	4730	3250	2700	2950	3690	3390	3580	4420	4280	4360
3	5360	4970	5210	3760	3120	3470	3680	3490	3580	4580	4420	4490
4	5540	2550	5290	3270	2590	2930	3490	2830	3120	4680	4550	4620
5	4080	1380	2740	2690	1130	1770	2940	1750	2110	4780	4670	4720
6	1380	959	1140	1130	858	942	1750	1470	1610	4820	4720	4770
7	1290	1040	1190	879	---	e570	1640	1480	1550	5010	4770	4880
8	2140	1290	1780	719	---	e670	2010	1640	1780	5170	4840	5070
9	2420	2130	2220	801	717	762	2300	2010	2130	5000	4860	4930
10	2840	2420	2670	737	606	663	2640	2300	2480	5060	4960	5000
11	3110	2620	2800	606	466	522	2770	2630	2670	5050	4900	4970
12	3680	3110	3380	467	420	442	2980	2760	2860	5000	4900	4940
13	3740	3110	3590	468	375	398	3180	2970	3100	5010	4910	4960
14	3780	3320	3630	561	378	448	3400	3190	3290	5020	4930	4980
15	3620	3250	3420	672	561	599	3690	3390	3540	5100	4970	5040
16	3350	3040	3120	824	672	742	3720	3440	3550	5260	5080	5180
17	3340	1780	3040	1080	824	961	3640	3470	3530	5320	4930	5190
18	1870	1450	1700	1360	1080	1190	3790	3510	3620	5050	4910	4970
19	2530	1870	2310	1500	1320	1370	3870	3770	3820	4930	4380	4670
20	2580	2400	2490	---	1220	e1630	3820	3740	3770	5100	4130	4690
21	3240	2570	2860	---	---	e1900	3930	3800	3850	4710	4290	4560
22	3570	3240	3450	---	---	e2400	4030	3930	3990	4680	4250	4500
23	3820	3560	3690	---	---	e2700	4080	4010	4040	4660	4250	4540
24	3860	3720	3760	3140	---	e3090	4190	4040	4120	4810	4620	4660
25	4060	3840	3960	3060	2780	2980	4300	4160	4210	5050	4810	4990
26	4220	4030	4130	3420	3060	3310	4360	4240	4300	5080	4970	5030
27	4360	4160	4240	3730	3400	3610	4320	4230	4280	5110	4960	5030
28	4460	4300	4400	3760	3640	3690	4420	4290	4360	5090	4140	4800
29	4720	4440	4610	3880	2480	3110	4490	4400	4450	5100	3760	4750
30	4790	4660	4750	2950	2040	2400	4530	4380	4460	5240	4780	5130
31	---	---	---	3420	2920	3170	4480	3570	3860	---	---	---
MONTH	5540	959	3350	---	---	1910	4530	1470	3390	5320	3760	4820

e Estimated



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

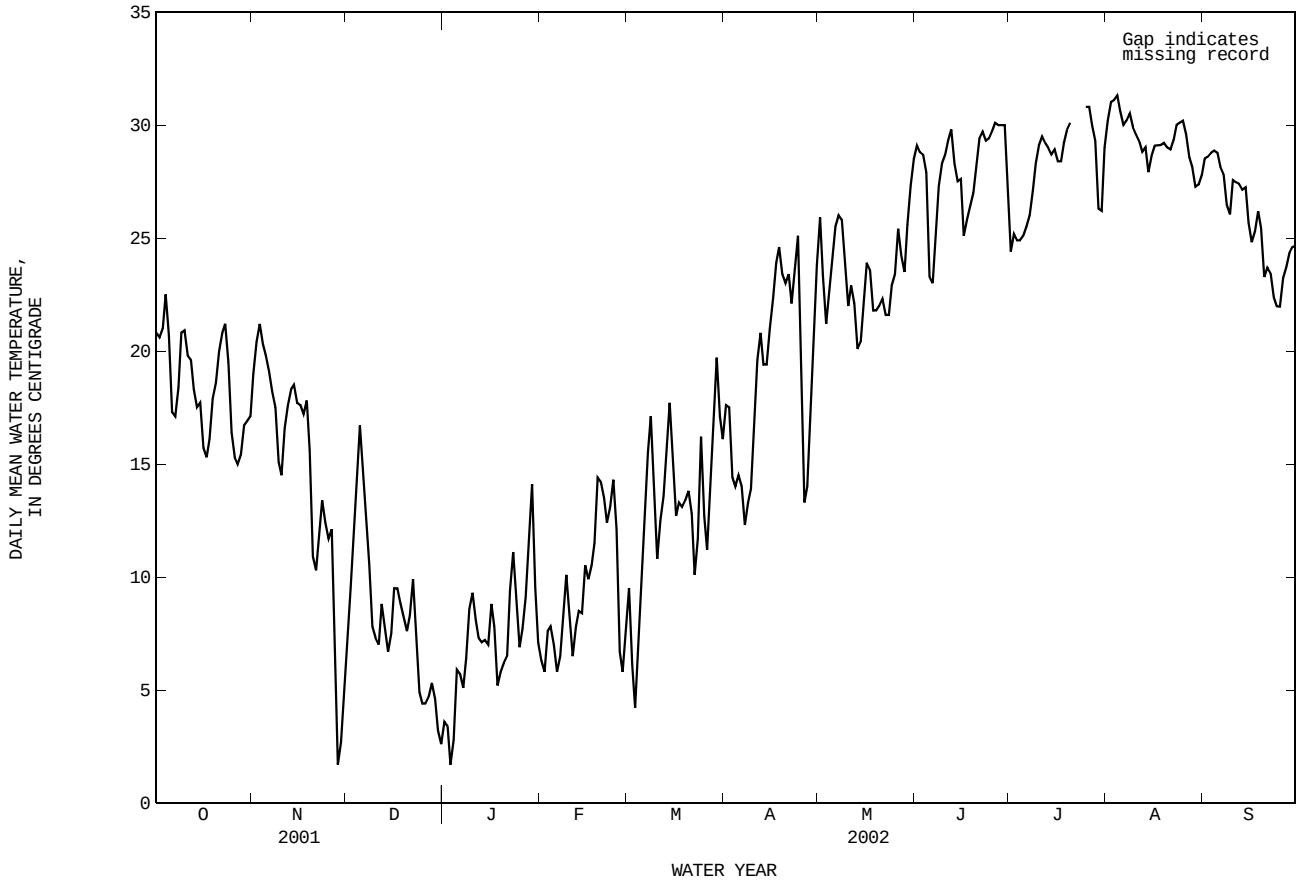
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.3	18.1	20.8	21.4	16.9	19.0	9.7	5.0	7.4	5.4	2.3	3.6
2	23.0	18.1	20.6	22.4	18.5	20.4	11.7	7.3	9.5	4.5	1.5	3.4
3	23.0	18.8	21.0	23.2	19.7	21.2	13.6	10.9	12.1	4.1	0.1	1.7
4	25.1	20.2	22.5	21.4	19.4	20.3	16.2	13.1	14.6	5.0	1.0	2.8
5	23.2	17.9	20.7	21.9	18.2	19.8	18.1	16.1	16.7	7.6	4.5	5.9
6	19.4	15.0	17.3	21.3	17.5	19.1	16.1	12.9	14.2	8.1	3.8	5.7
7	19.6	14.7	17.1	19.9	16.4	18.2	13.6	11.2	12.4	7.2	3.2	5.1
8	21.1	15.8	18.4	19.3	16.2	17.5	12.2	8.9	10.6	8.9	4.3	6.4
9	23.0	19.4	20.8	16.6	14.1	15.1	9.8	5.9	7.8	11.2	6.5	8.6
10	21.9	19.7	20.9	17.0	12.2	14.5	9.5	5.4	7.3	10.2	8.4	9.3
11	21.9	18.2	19.8	18.3	15.2	16.6	7.6	6.4	7.0	10.6	6.3	8.1
12	21.2	17.7	19.6	19.0	16.9	17.6	10.6	7.5	8.8	9.9	5.5	7.3
13	20.0	16.4	18.3	20.2	16.9	18.3	8.9	6.6	7.8	9.9	5.2	7.1
14	19.9	15.5	17.5	19.5	17.6	18.5	9.1	4.7	6.7	9.8	5.4	7.2
15	19.5	16.2	17.7	18.5	17.2	17.7	8.4	6.8	7.5	9.6	4.9	7.0
16	17.9	13.6	15.7	18.5	16.9	17.6	10.4	8.4	9.5	11.8	7.5	8.8
17	17.3	13.3	15.3	17.9	16.8	17.2	11.0	7.8	9.5	9.1	6.3	7.8
18	18.5	13.8	16.1	20.0	16.5	17.8	10.3	6.9	8.8	6.3	4.9	5.2
19	20.2	15.7	17.9	18.3	12.3	15.6	9.6	6.9	8.2	8.7	3.9	5.8
20	21.2	16.0	18.6	12.3	9.2	10.9	9.6	5.5	7.6	9.0	4.1	6.2
21	22.4	17.9	20.0	12.5	8.1	10.3	10.2	6.3	8.3	9.6	4.2	6.5
22	23.0	18.8	20.8	14.2	9.5	11.8	11.8	8.7	9.9	13.1	6.8	9.4
23	23.1	19.4	21.2	14.4	12.6	13.4	9.2	5.8	7.3	12.6	9.8	11.1
24	21.2	17.7	19.5	14.6	10.9	12.4	6.1	3.8	4.9	10.9	7.0	8.8
25	18.3	14.2	16.4	14.0	9.6	11.7	6.9	2.3	4.4	9.9	4.5	6.9
26	17.4	13.2	15.3	12.9	11.2	12.1	6.7	2.6	4.4	11.1	5.0	7.7
27	16.9	12.9	15.0	11.2	3.7	7.5	6.0	3.1	4.7	11.8	6.9	9.1
28	17.7	13.3	15.4	3.7	0.1	1.7	7.2	3.5	5.3	15.1	8.9	11.6
29	18.9	14.6	16.7	5.0	1.0	2.7	6.0	3.0	4.6	16.2	12.7	14.1
30	18.9	14.9	16.9	7.8	2.8	5.0	4.0	2.5	3.2	12.7	7.2	9.5
31	18.8	15.4	17.1	---	---	---	4.7	0.7	2.6	9.5	5.7	7.1
MONTH	25.1	12.9	18.4	23.2	0.1	14.7	18.1	0.7	8.2	16.2	0.1	7.3

07312500 Wichita River at Wichita Falls, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.6	3.8	6.3	11.5	7.9	9.5	19.5	15.7	17.6	29.5	22.9	25.9
2	7.2	4.2	5.8	9.4	3.6	6.1	18.6	15.1	17.5	27.4	20.6	23.3
3	9.7	6.2	7.6	8.9	0.6	4.2	16.9	11.7	14.4	24.4	18.3	21.2
4	8.7	6.6	7.8	11.8	2.4	6.5	16.3	11.9	14.0	26.2	19.8	22.6
5	8.0	5.5	7.0	14.3	5.7	9.2	17.0	11.6	14.5	26.9	21.6	24.1
6	6.9	4.8	5.8	17.4	8.6	12.3	15.2	12.7	14.0	28.2	23.0	25.5
7	10.0	3.8	6.5	20.1	12.3	15.5	12.9	11.5	12.3	28.2	23.8	26.0
8	12.2	5.6	8.6	19.9	15.4	17.1	14.2	12.6	13.3	29.3	23.2	25.8
9	12.4	8.1	10.1	17.3	10.1	13.6	15.6	12.6	13.9	26.3	21.2	23.8
10	10.2	6.2	8.2	15.1	7.3	10.8	19.5	14.7	16.8	23.7	20.1	22.0
11	10.1	3.4	6.5	16.0	10.1	12.5	22.8	17.2	19.6	24.5	21.3	22.9
12	11.5	4.7	7.8	18.5	9.7	13.6	22.8	19.1	20.8	23.5	19.3	22.1
13	12.1	5.9	8.5	21.0	11.8	15.7	21.2	17.2	19.4	24.8	16.3	20.1
14	12.0	5.6	8.4	21.8	14.5	17.7	21.0	17.7	19.4	23.8	17.7	20.4
15	14.2	8.3	10.5	18.2	12.9	15.4	22.8	19.5	21.0	25.7	19.4	22.1
16	13.9	6.6	9.9	15.7	10.3	12.7	23.9	21.3	22.3	27.3	20.9	23.9
17	13.8	7.8	10.5	14.2	12.6	13.3	27.5	21.1	23.9	25.0	21.5	23.6
18	13.2	9.5	11.5	13.8	12.5	13.1	26.1	22.8	24.6	25.8	18.6	21.8
19	17.6	12.5	14.4	13.7	12.6	13.4	24.6	22.5	23.4	25.3	18.8	21.8
20	17.6	11.4	14.2	16.7	11.6	13.8	24.8	21.3	23.0	25.5	19.1	22.0
21	15.4	11.7	13.5	14.3	11.1	12.8	26.0	21.1	23.4	25.7	19.6	22.3
22	16.5	9.2	12.4	12.1	8.2	10.1	24.7	19.2	22.1	24.2	19.7	21.6
23	16.4	10.4	13.1	15.5	8.2	11.7	26.7	20.8	23.6	22.6	20.6	21.6
24	18.2	11.5	14.3	20.6	12.6	16.2	28.8	22.5	25.1	26.4	20.6	22.9
25	14.9	8.3	12.1	17.2	9.9	12.7	23.3	14.3	18.9	26.0	20.8	23.4
26	10.3	4.1	6.7	15.7	7.1	11.2	14.8	12.8	13.3	29.3	22.1	25.4
27	10.6	2.2	5.8	18.6	10.1	13.9	15.7	12.8	14.0	27.0	22.2	24.2
28	12.1	4.0	7.5	21.1	13.1	16.9	19.5	15.5	16.9	26.8	21.1	23.5
29	---	---	---	23.7	16.7	19.7	23.7	18.7	20.8	29.1	22.7	25.6
30	---	---	---	19.6	15.1	17.1	26.3	22.0	23.8	30.5	24.7	27.3
31	---	---	---	18.6	13.7	16.1	---	---	---	32.0	25.2	28.5
MONTH	18.2	2.2	9.3	23.7	0.6	13.0	28.8	11.5	18.9	32.0	16.3	23.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	32.3	26.1	29.1	25.6	23.4	24.4	32.8	28.0	30.2	31.0	26.2	28.5
2	32.0	25.9	28.8	25.9	24.6	25.2	33.6	28.8	31.0	31.3	25.9	28.6
3	32.1	25.8	28.7	25.3	24.5	24.9	33.4	29.0	31.1	30.8	26.5	28.8
4	30.9	24.0	27.9	25.8	24.0	24.9	33.1	29.8	31.3	31.3	26.3	28.9
5	25.5	22.7	23.3	25.9	24.3	25.1	31.9	29.2	30.6	30.5	26.7	28.8
6	24.5	22.0	23.0	26.1	25.0	25.5	31.6	28.5	30.0	29.6	26.2	28.2
7	27.0	23.4	25.0	27.1	25.2	26.0	32.0	28.4	30.2	29.9	25.8	27.8
8	28.9	25.8	27.3	27.9	26.3	27.1	32.0	29.1	30.5	27.4	25.5	26.5
9	30.8	26.4	28.3	29.2	27.5	28.3	31.4	28.6	29.9	27.8	24.8	26.0
10	31.2	26.8	28.7	29.7	28.6	29.1	31.6	27.8	29.6	30.0	25.6	27.6
11	32.4	26.6	29.3	29.7	29.2	29.5	31.3	27.8	29.3	29.8	25.2	27.5
12	32.6	27.2	29.8	29.5	29.0	29.2	31.0	26.6	28.8	28.8	25.4	27.4
13	30.5	26.9	28.3	29.4	28.7	29.0	31.4	27.2	29.0	28.8	25.3	27.1
14	29.9	25.6	27.5	29.0	28.2	28.7	30.2	26.1	27.9	29.9	24.9	27.2
15	29.5	26.0	27.6	29.5	28.2	28.9	31.0	26.8	28.6	27.2	24.5	25.7
16	26.7	23.8	25.1	29.0	27.8	28.4	31.6	27.1	29.1	27.4	22.4	24.8
17	27.7	24.2	25.8	29.5	27.5	28.4	30.8	27.4	29.1	27.7	23.3	25.3
18	28.4	24.4	26.4	30.8	27.9	29.2	31.6	27.1	29.1	28.9	23.9	26.2
19	29.3	25.1	27.0	31.6	28.3	29.8	31.3	27.6	29.2	26.9	23.8	25.5
20	31.4	25.9	28.3	32.0	28.5	30.1	30.9	27.1	29.0	25.6	21.2	23.3
21	32.2	27.1	29.4	---	---	---	31.4	26.7	28.9	26.1	21.6	23.7
22	32.3	27.5	29.7	---	---	---	31.8	27.0	29.3	25.2	21.6	23.4
23	32.5	26.7	29.3	---	---	---	32.8	27.5	30.0	24.8	19.9	22.4
24	32.5	26.3	29.4	---	---	---	32.8	27.7	30.1	24.2	19.6	22.0
25	32.6	27.1	29.7	33.6	28.5	30.8	32.5	27.9	30.2	24.7	19.1	22.0
26	33.4	27.1	30.1	33.2	28.7	30.8	32.1	27.1	29.6	26.0	20.4	23.2
27	32.8	27.2	30.0	32.5	27.9	30.0	30.7	26.0	28.6	26.3	21.1	23.7
28	32.7	27.4	30.0	30.7	27.7	29.3	30.7	26.1	28.1	26.9	21.9	24.3
29	32.4	27.6	30.0	29.1	24.4	26.3	28.8	26.0	27.3	27.1	22.1	24.6
30	29.4	25.1	27.1	28.3	24.6	26.2	30.0	25.0	27.4	26.7	22.4	24.6
31	---	---	---	31.0	27.2	29.0	30.4	25.1	27.8	---	---	---
MONTH	33.4	22.0	28.0	---	---	---	33.6	25.0	29.4	31.3	19.1	25.8


DAILY MEAN WATER TEMPERATURE, IN DEGREES CENTIGRADE
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2001
2002
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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Oct. 1967, at least 10% of contributing drainage area has been regulated.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	86	88	40	e39	36	289	468	101	142	265	98
2	78	94	72	39	39	39	296	310	88	383	162	98
3	77	106	59	39	35	39	159	199	80	294	119	99
4	79	96	74	40	37	42	102	147	77	382	137	96
5	71	78	76	47	42	40	78	115	686	325	211	100
6	70	72	62	121	100	39	66	99	1250	591	234	118
7	77	59	53	62	94	39	210	91	1370	692	198	114
8	76	65	47	48	63	38	905	82	810	1000	186	100
9	76	67	46	45	51	36	780	77	567	1090	198	365
10	88	56	44	46	45	35	679	67	401	828	176	202
11	132	51	43	46	49	35	284	59	257	908	151	156
12	154	50	45	44	46	37	167	54	167	1310	131	136
13	159	51	53	42	42	38	297	51	134	1730	126	124
14	131	49	45	40	39	37	580	48	389	2050	125	113
15	111	53	41	41	38	36	733	72	214	2080	132	99
16	102	61	64	42	38	37	502	111	315	1200	164	97
17	105	53	288	39	36	37	271	103	264	622	175	106
18	93	49	98	41	37	40	161	76	262	435	152	125
19	83	46	63	e40	41	91	127	66	250	319	155	131
20	79	49	75	e38	100	355	132	71	184	243	156	196
21	76	64	65	e37	49	218	99	85	131	205	126	157
22	75	68	53	36	38	212	85	79	104	172	110	156
23	75	59	46	40	38	157	75	82	91	154	109	142
24	72	48	43	37	37	99	73	91	78	142	114	126
25	63	45	40	37	36	71	69	100	72	219	118	115
26	70	42	40	37	36	58	926	96	72	156	109	105
27	79	43	39	37	36	53	1770	117	75	128	118	109
28	83	51	40	37	36	49	1760	234	79	125	113	95
29	88	61	39	39	---	47	983	130	100	169	133	82
30	92	96	38	39	---	57	621	141	94	448	108	80
31	92	---	39	e39	---	320	---	125	---	363	106	---
TOTAL	2781	1868	1918	1355	1317	2467	13279	3646	8762	18905	4617	3840
MEAN	89.71	62.27	61.87	43.71	47.04	79.58	442.6	117.6	292.1	609.8	148.9	128.0
MAX	159	106	288	121	100	355	1770	468	1370	2080	265	365
MIN	63	42	38	36	35	35	66	48	72	125	106	80
AC-FT	5520	3710	3800	2690	2610	4890	26340	7230	17380	37500	9160	7620

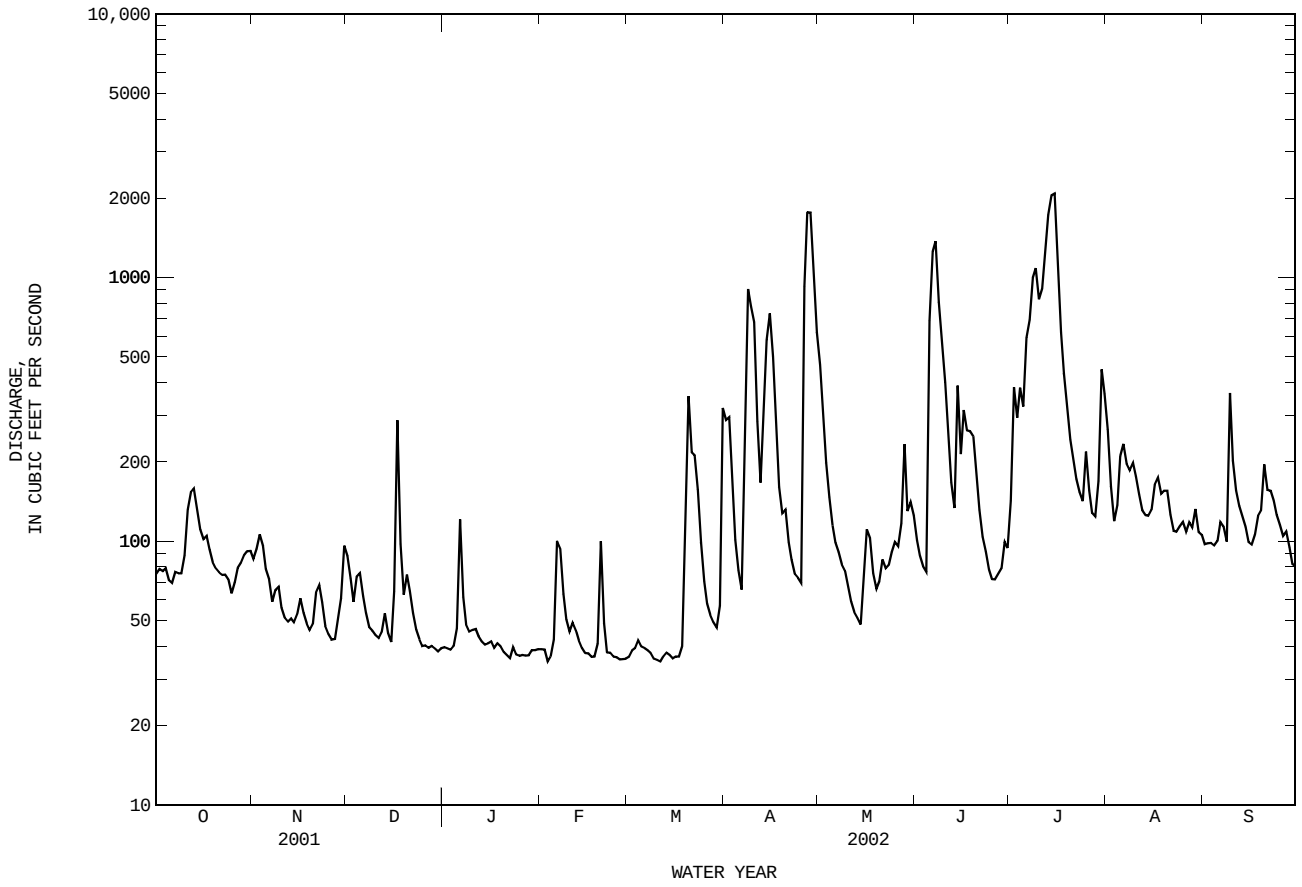
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

MEAN	350.2	309.1	188.7	169.0	273.1	401.4	331.7	539.1	630.9	288.8	299.1	392.2
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	89.7	50.3	51.5	43.7	45.6	70.2	61.2	94.4	96.6	80.1	72.6	68.2
(WY)	2002	1998	1979	2002	1995	1972	1989	2000	2001	2000	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1968 - 2002	
ANNUAL TOTAL	84421		64755			
ANNUAL MEAN	231.3		177.4		347.6	
HIGHEST ANNUAL MEAN					986	1987
LOWEST ANNUAL MEAN					90.2	2000
HIGHEST DAILY MEAN	2840	Feb 17	2080	Jul 15	7740	May 7 1990
LOWEST DAILY MEAN	38	Dec 30	35	Feb 3	21	Dec 19 1997
ANNUAL SEVEN-DAY MINIMUM	39	Dec 25	36	Mar 9	24	Dec 13 1997
MAXIMUM PEAK FLOW			2170	Jul 15	7760	May 7 1990
MAXIMUM PEAK STAGE			10.71	Jul 15	25.80	May 7 1990
ANNUAL RUNOFF (AC-FT)	167400		128400		251800	
10 PERCENT EXCEEDS	509		364		812	
50 PERCENT EXCEEDS	105		88		136	
90 PERCENT EXCEEDS	59		39		61	

e Estimated

07312700 Wichita River near Charlie, TX--Continued



07312700 Wichita River near Charlie, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct. 1967 to Sept. 1981, Oct. 1989 to Sept. 1997.
BIOCHEMICAL DATA: Oct. 1967 to Sept. 1981, Oct. 1989 to Sept. 1997.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct. 1967 to Sept. 1981 (local observer), June 1996 to Sept. 2002 (discontinued).
WATER TEMPERATURE: Oct. 1967 to Sept. 1981 (local observer), June 1996 to Sept. 2002 (discontinued).

INSTRUMENTATION.--Water-quality monitor June 1996 to Sept. 2002 (discontinued).

REMARKS.--Temperature records good. Specific conductance records fair. 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, 118 microsiemens/cm, Nov. 19, 2002.
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, 5,520 microsiemens/cm, Nov. 3; minimum, 118 microsiemens/cm, Nov. 19.
WATER TEMPERATURE: Maximum, 33.5°C, Aug. 3; minimum, 0.0°C, Dec. 31.

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	5120	4730	4940	5180	4820	4990	2880	2510	2720	---	---	e3990
2	5270	4630	4980	5430	5020	5210	2640	2090	2210	---	---	e4050
3	5120	4820	4970	5520	5040	5280	2950	2020	2590	4300	3900	4090
4	5230	4830	5010	5410	4890	5100	3630	2770	3150	4240	3840	4040
5	5120	4760	4910	5290	4870	5030	4470	3520	4080	4370	3710	4010
6	5200	4800	5100	---	---	e4900	5080	4400	4750	4300	3430	3800
7	5290	5130	5190	5000	4460	4780	4780	4000	4510	3550	2510	2900
8	5440	5040	5220	4680	4000	4410	4320	1910	3480	3000	2030	2370
9	5410	4830	5090	4440	4070	4290	3460	834	2470	3650	2510	3000
10	5250	4710	4990	4560	3970	4220	2730	151	1360	4030	3450	3670
11	5070	4560	4800	4690	2350	4470	1880	572	1210	4130	3730	3900
12	4920	3740	4350	4640	640	3250	3070	932	2450	4360	3910	4040
13	4420	3610	3920	4830	2640	4090	3270	2910	3040	4540	4070	4270
14	4550	2990	3760	4360	2390	3740	3130	1040	2430	4650	4140	4370
15	4500	3300	3850	3960	2740	3660	2940	127	1010	4630	4010	4300
16	4800	4200	4490	4020	3700	3860	3410	638	2620	4430	3970	4150
17	4760	4320	4560	4110	3670	3850	3510	1160	2200	4700	3990	4320
18	5000	4490	4740	4630	1730	3520	1340	1090	1240	---	---	e4480
19	5040	4670	4810	4670	118	2570	1830	1290	1460	---	---	e4310
20	5020	4410	4740	3820	974	3010	2810	1830	2350	---	---	e4290
21	5040	4590	4840	4040	3520	3750	2880	2730	2780	---	---	e4170
22	5040	4590	4950	4000	3450	3760	---	---	e2900	---	---	e4210
23	5120	4700	4940	4100	3600	3880	---	---	e3000	4470	3970	4190
24	5120	4790	4930	---	---	e2400	---	---	e3100	4450	4040	4240
25	4840	4420	4630	---	---	e2200	---	---	e3200	4540	4140	4310
26	4530	4380	4460	---	---	e2050	---	---	e3310	4390	4140	4310
27	4910	4330	4590	---	---	e2130	---	---	e3440	4570	4180	4360
28	4890	4500	4680	---	---	e2190	---	---	e3610	4480	4180	4340
29	5000	4700	4880	2400	2170	2280	---	---	e3700	4470	4160	4270
30	4990	4740	4850	2720	2270	2470	---	---	e3800	4630	4190	4380
31	5040	4720	4870	---	---	---	---	---	e3870	4340	---	e3800
MONTH	5440	2990	4740	---	---	3710	---	---	2840	---	---	4030

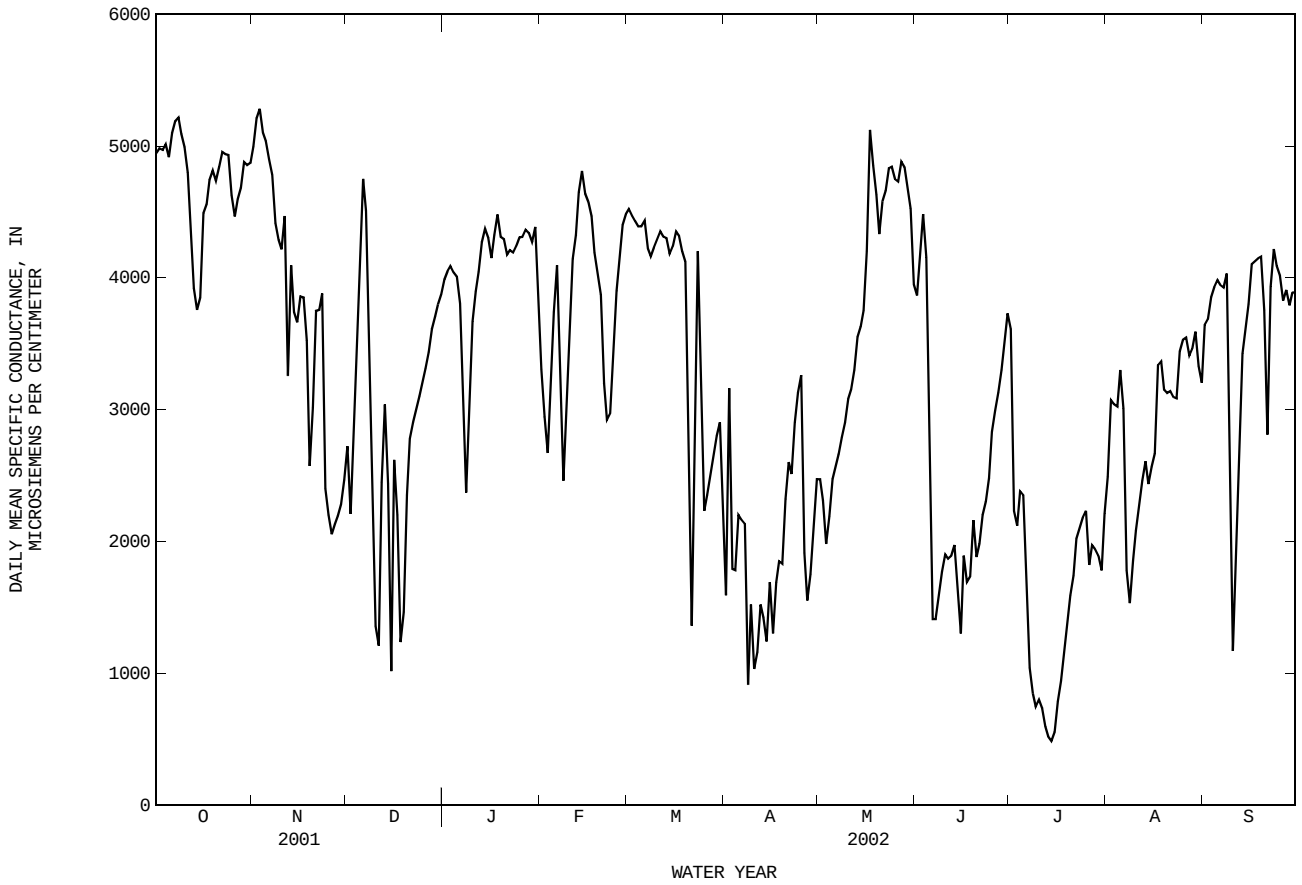
07312700 Wichita River near Charlie, TX--Continued

SPECIFIC CONDUCTANCE FROM DCP, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e3300	4710	4300	4520	2520	831	1590	2510	2410	2470
2	3390	2790	2950	4680	4300	4470	4160	2250	3160	2410	2130	2310
3	3090	2540	2670	4570	4280	4430	2790	1510	1790	2130	1930	1980
4	3550	3090	3260	4570	4290	4390	2160	1520	1780	2420	2000	2190
5	4050	3550	3740	4520	4270	4390	2300	2080	2200	2500	2420	2470
6	4340	3790	4090	4700	4090	4430	2220	2080	2160	2630	2500	2560
7	4140	2810	3430	4410	3960	4220	2340	1610	2130	2700	2610	2660
8	2810	2360	2460	4420	3880	4160	2080	418	913	2830	2700	2790
9	3420	2560	3020	4380	4090	4230	2460	1080	1520	2980	2780	2900
10	4170	3260	3590	4440	4180	4290	1280	918	1030	3160	2950	3080
11	4490	3960	4140	4490	4230	4350	1360	1050	1160	3230	3100	3150
12	4640	4050	4320	4450	4210	4310	1770	1360	1520	3440	3220	3300
13	4990	4430	4650	4520	4070	4300	1870	606	1420	3610	3440	3550
14	5050	4630	4810	4320	4030	4180	1510	931	1240	3680	3580	3630
15	4840	4460	4640	4420	4070	4240	2280	1220	1690	3950	3640	3750
16	4740	4460	4570	4510	4240	4350	1600	1170	1300	5140	3900	4200
17	4650	4250	4460	4420	4220	4320	1790	1600	1690	5300	5000	5120
18	4290	3960	4190	4320	4110	4200	2030	1620	1850	5220	4420	4850
19	4180	3920	4030	4250	3980	4120	2070	1630	1830	4740	4430	4630
20	4220	3360	3870	4000	1190	2730	2500	2070	2320	4430	4280	4330
21	3670	2870	3200	1540	1260	1360	2700	2500	2600	4690	4270	4580
22	3080	2830	2920	4880	1540	2930	2680	2380	2510	4750	4550	4660
23	3140	2750	2970	5360	3420	4200	3000	2670	2900	4990	4640	4830
24	3580	3120	3470	3420	2490	3020	3230	2900	3130	5000	4640	4840
25	4140	3540	3900	2490	2130	2230	3360	2990	3260	4860	4670	4750
26	4340	4000	4170	2420	2170	2350	2990	689	1910	---	---	e4730
27	4640	4100	4400	2640	2400	2510	2090	781	1550	---	---	e4880
28	4710	4270	4480	2800	2630	2660	1890	1520	1750	---	---	e4840
29	---	---	---	2860	2770	2800	2360	1890	2140	---	---	e4690
30	---	---	---	3010	2760	2900	2520	2360	2470	---	---	e4520
31	---	---	---	3180	1020	2400	---	---	---	---	---	e3950
MONTH	---	---	3780	5360	1020	3680	4160	418	1950	---	---	3780

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e3870	3820	3330	3610	2880	2210	2490	3720	3530	3640
2	---	---	e4140	3560	1520	2230	3220	2880	3070	3760	3610	3690
3	---	---	e4480	2300	1610	2120	3110	2970	3040	3940	3710	3850
4	---	---	e4150	2750	2060	2380	3100	2970	3020	4030	3830	3930
5	3970	538	2490	2860	1990	2350	3430	3100	3300	4110	3870	3980
6	2570	529	1410	2780	1050	1840	3430	2430	3010	4010	3870	3950
7	1690	1310	1410	1250	929	1040	2430	1600	1780	4010	3840	3930
8	1690	1440	1580	952	732	844	1610	1400	1530	4120	3760	4030
9	1890	1690	1770	795	696	745	2070	1400	1850	3760	1330	2770
10	1950	1860	1900	840	744	798	2200	2050	2080	1540	998	1170
11	1940	1850	1870	810	673	733	2340	2200	2280	2730	1540	2220
12	1960	1840	1890	673	537	594	2530	2340	2460	3220	2520	2870
13	2020	1920	1970	541	502	520	2710	2530	2610	3670	3220	3420
14	2190	1070	1620	541	464	484	2580	1390	2440	3690	3520	3610
15	1540	1160	1300	700	471	554	2690	2370	2560	4110	3660	3800
16	2220	1540	1890	857	700	786	3120	2280	2670	4180	4010	4100
17	2220	1490	1690	1020	857	941	3420	3120	3340	4240	4020	4120
18	2000	1570	1730	1300	1020	1150	3440	3070	3360	4240	4010	4150
19	2320	1950	2160	1460	1300	1370	3250	3050	3150	4320	3750	4160
20	1950	1850	1880	1740	1460	1590	3250	3040	3130	4270	2450	3750
21	2110	1890	1980	1830	1680	1740	3400	2310	3140	3660	2210	2810
22	2300	2110	2200	2070	1830	2020	3280	2930	3090	4190	3660	3930
23	2390	1950	2300	2170	2050	2100	3480	2850	3080	4390	4040	4220
24	2690	2210	2480	2230	2100	2180	3540	3360	3440	4180	3960	4090
25	2930	2680	2830	2440	1910	2230	3640	3440	3530	4120	3880	4020
26	3070	2890	2990	2370	1400	1820	3590	3500	3550	3900	3640	3830
27	3270	2950	3130	2260	1690	1970	3660	3060	3410	4120	3640	3910
28	3460	3080	3300	2200	1230	1940	3580	3320	3460	3900	3640	3790
29	3790	3180	3530	2010	1620	1890	3670	3540	3590	4040	3720	3890
30	3860	3290	3730	2060	1470	1780	3610	3000	3330	4010	3680	3890
31	---	---	---	2420	1740	2210	3530	2880	3200	---	---	---
MONTH	---	---	2460	3820	464	1570	3670	1390	2900	4390	998	3650

e Estimated



WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

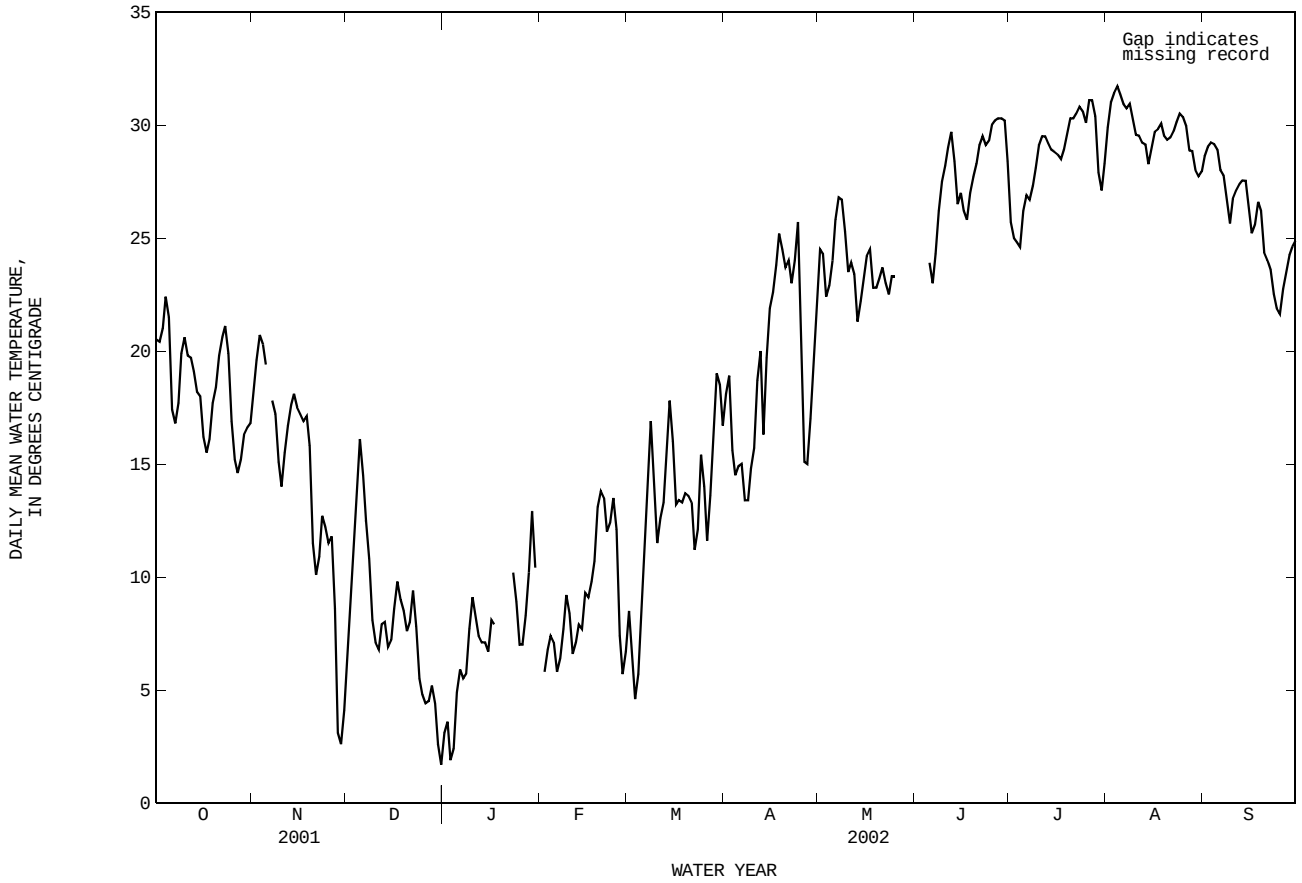
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.6	18.8	20.5	19.4	16.9	18.2	7.8	4.5	6.0	5.0	1.8	3.1
2	21.6	18.7	20.4	20.7	18.4	19.6	10.0	6.9	8.3	4.0	2.7	3.6
3	22.3	19.5	21.0	21.5	19.6	20.7	12.3	10.0	11.0	2.8	1.1	1.9
4	23.9	20.9	22.4	21.2	19.7	20.3	15.5	12.3	13.7	3.7	1.6	2.4
5	23.9	18.9	21.5	20.1	18.6	19.4	16.8	15.5	16.1	5.8	3.6	4.9
6	18.9	16.0	17.4	---	18.0	---	16.1	13.5	14.5	6.8	4.9	5.9
7	17.9	15.2	16.8	18.3	17.1	17.8	13.5	12.0	12.5	6.5	4.8	5.5
8	19.5	16.1	17.7	18.1	16.4	17.2	12.1	9.6	10.8	7.0	4.8	5.7
9	21.1	19.1	19.9	16.4	14.4	15.1	9.6	7.5	8.1	9.0	6.7	7.7
10	21.1	19.9	20.6	14.7	12.9	14.0	7.5	6.3	7.1	9.3	8.9	9.1
11	20.9	18.8	19.8	16.4	14.7	15.5	7.3	6.5	6.8	8.9	7.4	8.2
12	21.0	18.6	19.7	17.0	16.4	16.7	8.8	6.8	7.9	8.0	6.7	7.4
13	20.3	18.1	19.1	18.5	16.8	17.6	8.6	7.5	8.0	7.8	6.2	7.1
14	19.3	17.0	18.2	18.3	17.7	18.1	7.5	6.0	6.9	7.6	6.5	7.1
15	18.8	17.0	18.0	18.1	17.2	17.5	7.6	7.0	7.2	7.4	5.9	6.7
16	17.7	14.9	16.2	17.6	16.8	17.2	9.4	7.6	8.6	8.9	7.3	8.1
17	16.5	14.1	15.5	17.3	16.7	16.9	10.4	9.4	9.8	8.5	7.3	7.9
18	17.8	14.5	16.1	17.8	16.5	17.1	9.6	6.8	9.0	---	5.6	---
19	18.8	16.4	17.7	17.7	13.5	15.8	9.5	7.9	8.5	---	---	---
20	19.8	16.8	18.4	13.5	10.6	11.5	8.3	6.4	7.6	---	---	---
21	20.9	18.4	19.8	10.7	9.1	10.1	9.0	7.0	8.0	---	---	---
22	21.6	19.5	20.6	12.2	9.7	10.9	10.0	8.9	9.4	9.9	---	---
23	21.8	20.1	21.1	13.3	12.2	12.7	9.3	6.8	7.8	10.5	9.8	10.2
24	21.3	18.7	19.9	13.0	11.5	12.2	6.8	5.0	5.5	9.8	8.1	8.9
25	18.7	15.8	16.9	12.1	10.6	11.5	7.2	3.5	4.8	8.1	6.0	7.0
26	16.4	14.1	15.2	12.1	11.1	11.8	7.8	2.7	4.4	7.8	5.9	7.0
27	15.3	13.4	14.6	11.1	5.6	8.6	6.0	3.1	4.5	9.1	7.3	8.3
28	16.2	13.8	15.2	5.6	1.9	3.1	7.2	3.6	5.2	11.8	9.0	10.2
29	17.3	14.9	16.3	3.4	1.8	2.6	5.4	3.0	4.4	13.8	11.8	12.9
30	17.3	15.3	16.6	5.5	2.8	4.1	4.1	1.3	2.6	13.0	8.1	10.4
31	17.5	15.8	16.8	---	---	---	4.6	0.0	1.7	---	---	---
MONTH	23.9	13.4	18.4	---	1.8	---	16.8	0.0	8.0	---	---	---

07312700 Wichita River near Charlie, TX--Continued

WATER TEMPERATURE FROM DCP, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	8.9	7.9	8.5	20.5	15.8	18.1	26.6	22.6	24.5
2	6.6	5.1	5.8	8.3	5.3	6.3	19.6	17.1	18.9	26.2	22.6	24.3
3	7.7	6.0	6.8	5.4	3.0	4.6	17.1	14.1	15.6	24.0	20.8	22.4
4	7.7	6.8	7.4	7.5	3.9	5.7	15.3	13.3	14.5	24.8	21.4	22.9
5	7.8	6.0	7.1	9.9	6.6	8.3	16.4	13.1	14.9	25.8	22.4	24.0
6	6.3	5.2	5.8	13.4	9.5	11.3	16.1	14.2	15.0	27.7	24.1	25.8
7	7.8	4.9	6.4	16.5	13.1	14.7	14.2	12.9	13.4	28.1	25.3	26.8
8	9.5	6.0	7.7	17.7	16.3	16.9	14.4	12.2	13.4	28.0	25.3	26.7
9	10.0	8.2	9.2	17.4	12.4	14.3	15.9	14.0	14.8	27.5	23.7	25.3
10	9.5	7.7	8.4	12.4	10.1	11.5	17.3	14.6	15.7	24.6	21.8	23.5
11	7.7	5.2	6.6	13.6	11.7	12.6	21.2	16.9	18.7	24.4	23.3	23.9
12	8.0	5.7	7.1	14.8	11.8	13.3	20.6	19.5	20.0	24.3	21.7	23.4
13	8.7	6.7	7.9	17.1	13.6	15.3	20.2	11.7	16.3	23.2	19.1	21.3
14	8.6	6.5	7.7	19.2	16.4	17.8	21.7	16.7	19.7	24.0	20.2	22.2
15	10.3	8.3	9.3	18.3	14.4	16.0	22.6	21.3	21.9	24.7	21.6	23.2
16	10.0	7.7	9.1	14.4	12.2	13.2	23.5	22.0	22.6	26.5	22.1	24.2
17	10.6	8.7	9.8	13.7	13.2	13.4	26.0	22.0	23.8	26.1	23.4	24.5
18	11.5	9.9	10.7	13.6	13.2	13.3	26.6	23.9	25.2	24.5	20.8	22.8
19	14.4	11.5	13.1	13.8	13.4	13.7	25.8	24.0	24.5	24.4	20.6	22.8
20	15.0	12.1	13.8	15.1	12.3	13.6	24.7	22.5	23.7	25.0	21.0	23.2
21	14.6	12.9	13.5	14.3	12.0	13.3	25.3	22.7	24.0	25.5	21.6	23.7
22	13.0	10.7	12.0	12.7	9.5	11.2	24.3	21.2	23.0	24.8	21.9	23.0
23	13.3	11.1	12.4	14.7	9.8	12.1	26.0	22.2	24.0	23.3	21.8	22.5
24	14.6	12.2	13.5	18.1	13.2	15.4	27.3	24.0	25.7	25.5	21.7	23.3
25	14.2	9.8	12.1	17.4	11.5	14.0	25.8	18.0	21.1	24.9	21.7	23.3
26	9.8	6.1	7.4	13.6	9.4	11.6	18.0	13.4	15.1	---	---	---
27	6.8	4.2	5.7	16.1	11.3	13.6	16.1	13.4	15.0	---	---	---
28	7.9	5.3	6.7	18.3	14.4	16.4	18.2	15.8	17.0	---	---	---
29	---	---	---	20.7	17.3	19.0	21.3	18.1	19.7	---	---	---
30	---	---	---	20.6	16.9	18.5	23.9	21.0	22.4	---	---	---
31	---	---	---	18.2	15.0	16.7	---	---	---	---	---	---
MONTH	---	---	---	20.7	3.0	13.1	27.3	11.7	19.3	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	27.5	24.8	25.7	32.0	28.3	29.9	30.0	27.0	28.6
2	---	---	---	25.5	24.5	25.0	33.0	29.2	31.0	30.3	27.3	29.0
3	---	---	---	25.3	24.2	24.8	33.5	29.5	31.4	30.3	27.6	29.2
4	---	---	---	25.3	23.8	24.6	33.4	30.0	31.7	30.3	27.5	29.1
5	27.5	22.0	23.9	28.3	24.6	26.2	33.0	29.8	31.4	29.9	27.6	28.9
6	24.2	21.9	23.0	27.3	26.4	26.9	32.4	29.4	30.9	28.9	26.7	28.0
7	25.5	23.3	24.3	27.4	26.0	26.7	32.5	29.0	30.7	28.6	26.5	27.8
8	27.5	25.2	26.2	27.8	26.7	27.3	32.5	29.5	30.9	28.0	26.0	26.8
9	28.9	26.5	27.5	28.8	27.5	28.1	31.2	29.0	30.2	26.4	24.9	25.6
10	29.3	27.4	28.2	30.0	28.3	29.1	31.2	28.0	29.6	28.6	25.4	26.7
11	30.7	27.4	29.0	30.3	28.4	29.5	31.0	28.1	29.5	28.5	25.7	27.1
12	31.6	28.1	29.7	29.6	29.3	29.5	30.8	27.6	29.2	28.6	25.9	27.4
13	30.2	27.1	28.4	29.4	28.9	29.2	30.6	28.0	29.1	28.7	26.3	27.5
14	27.4	25.6	26.5	29.2	28.6	28.9	29.9	26.8	28.3	28.8	26.1	27.5
15	29.0	25.4	27.0	29.1	28.3	28.8	31.2	27.1	29.0	27.9	25.6	26.4
16	27.2	25.3	26.2	29.0	28.4	28.7	31.5	28.1	29.7	26.4	23.7	25.2
17	27.8	24.1	25.8	29.4	27.8	28.5	31.3	28.3	29.8	27.2	23.9	25.6
18	28.8	25.5	27.0	29.9	27.9	28.9	31.8	28.4	30.0	28.2	25.0	26.6
19	29.4	26.2	27.7	31.0	28.2	29.6	30.6	28.5	29.5	27.6	25.1	26.2
20	30.5	26.6	28.3	32.0	28.9	30.3	30.9	27.8	29.3	25.6	22.9	24.4
21	30.8	27.6	29.1	32.1	28.7	30.3	31.0	27.9	29.4	25.7	22.3	24.0
22	31.5	27.8	29.5	32.6	28.7	30.5	31.2	28.1	29.7	24.8	22.5	23.6
23	31.1	27.1	29.1	32.3	29.4	30.8	31.6	28.4	30.1	23.8	21.1	22.5
24	31.2	27.2	29.3	32.3	28.9	30.6	32.2	28.8	30.5	23.0	20.4	21.9
25	31.8	27.9	30.0	32.2	27.9	30.1	31.6	29.0	30.3	23.0	20.0	21.6
26	31.9	28.2	30.2	33.3	29.3	31.1	31.4	28.2	30.0	24.2	21.0	22.7
27	31.8	28.3	30.3	33.0	29.4	31.1	30.9	27.0	28.9	24.8	21.8	23.5
28	32.0	28.4	30.3	31.5	29.2	30.4	30.2	27.3	28.8	25.4	22.6	24.2
29	31.7	28.5	30.2	30.5	26.0	27.9	29.5	27.1	28.0	25.7	23.0	24.6
30	30.5	27.5	28.4	27.6	26.3	27.1	29.2	26.1	27.7	25.7	23.5	24.9
31	---	---	---	30.1	27.0	28.3	29.4	26.1	27.9	---	---	---
MONTH	---	---	---	33.3	23.8	28.5	33.5	26.1	29.8	30.3	20.0	25.9


DAILY MEAN WATER TEMPERATURE, IN DEGREES CENTIGRADE
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WATER YEAR

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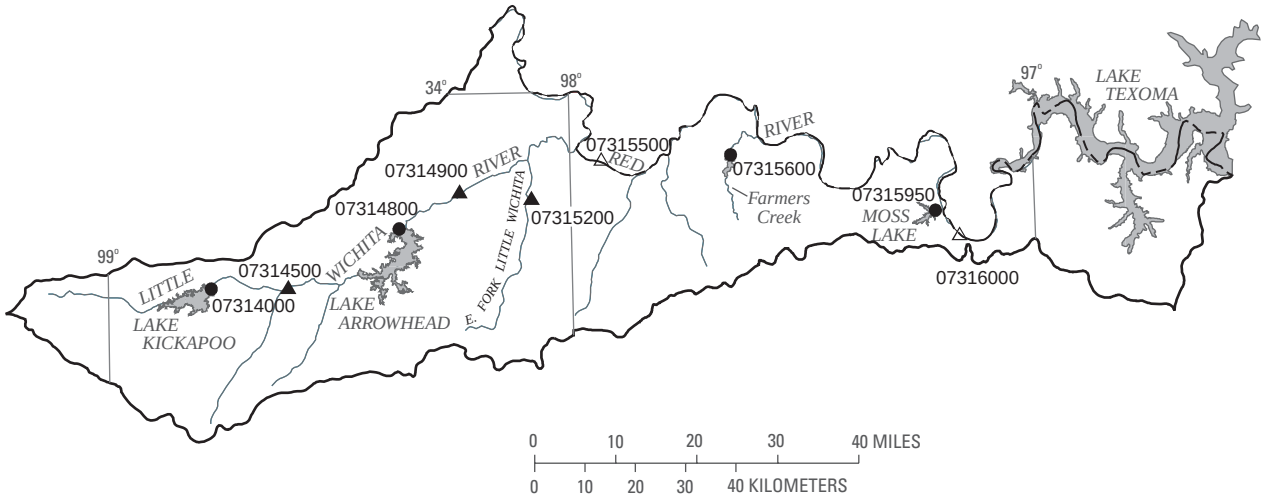


EXPLANATION

07315200	▲	**Surface-water continuous station and number**
07316000	△	**Surface-water continuous/water-quality station and number**
07314800	●	**Reservoir station and number**

Figure 6.--Map showing location of gaging stations in the third section of the Red River Basin

07314000 Lake Kickapoo near Archer City, TX

LOCATION.--Lat 33°39'47", long 98°46'43", Archer County, Hydrologic Unit 11130209, on intake tower near left end of dam on North Fork Little Wichita River, 8.2 mi south of Mankins, and 9.2 mi northwest of Archer City.

DRAINAGE AREA.--275 mi^2

PERIOD OF RECORD.--Feb. 1946 to current year. Prior to Oct. 1965, end of month contents only.
Water-quality records.--Chemical data: Oct. 1969 to Sept. 1984.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by city of Wichita Falls). Oct. 8, 1946 to Mar. 3, 1999, nonrecording gage at same site and datum. 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 was 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, 97,270 acre-ft, July 10, elevation, 1,043.61 ft; minimum contents, 68,570 acre-ft, Mar. 16, elevation, 1,038.44 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

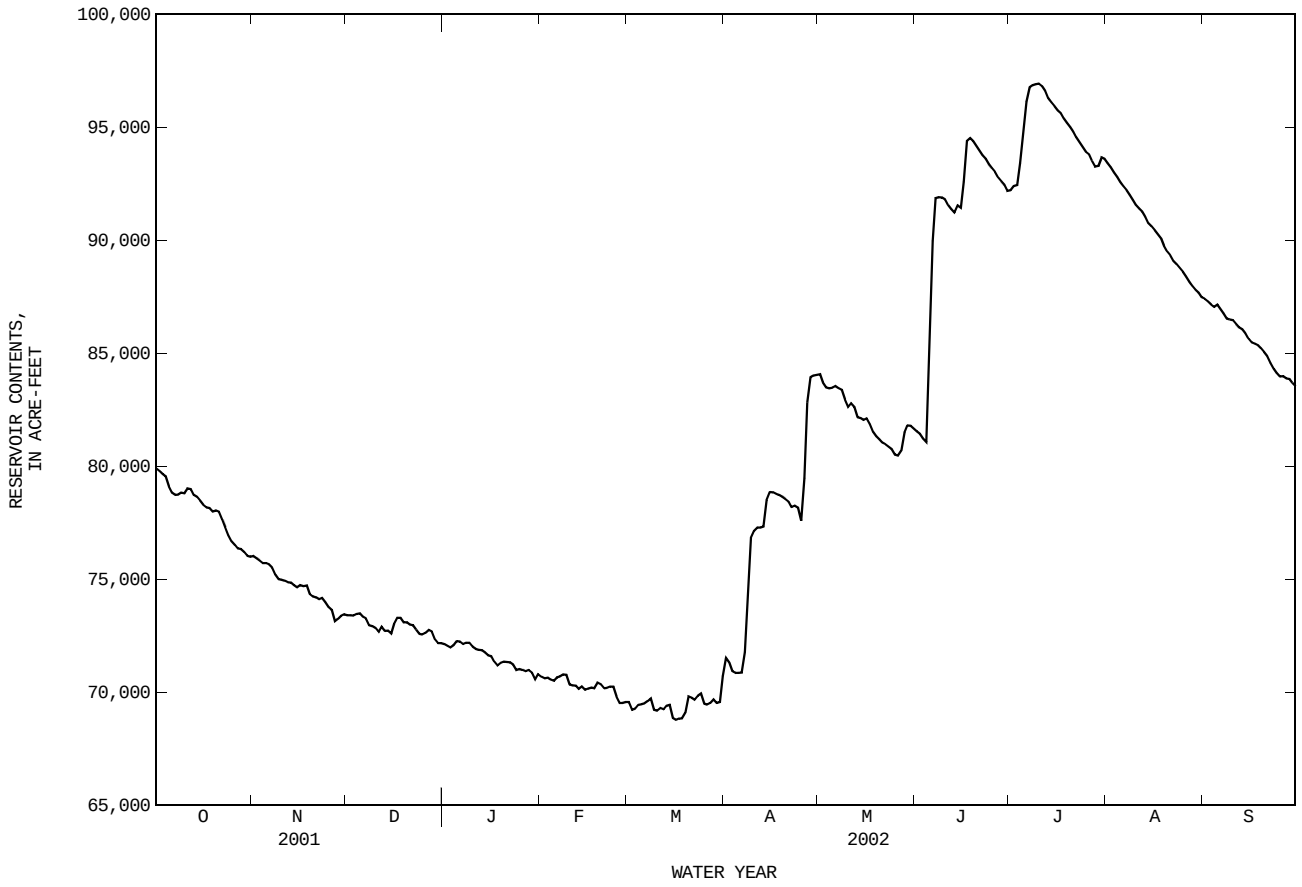
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79890	76010	73400	72120	70670	69550	71510	84060	81530	92210	93390	87410
2	79780	75910	73400	72030	70600	69220	71310	83690	81420	92390	93210	87290
3	79640	75820	73380	71960	70630	69260	70920	83480	81220	92430	92980	87150
4	79540	75700	73450	72060	70550	69430	70840	83440	81060	93390	92790	87030
5	79100	75700	73480	72250	70490	69460	70840	83470	84510	94790	92570	87140
6	78820	75650	73330	72230	70640	69500	70860	83530	89960	96110	92370	86950
7	78720	75500	73260	72120	70690	69600	71760	83440	91850	96750	92200	86750
8	78740	75200	72960	72180	70770	69710	74600	83370	91900	96850	92000	86520
9	78820	74990	72920	72180	70760	69220	76820	82940	91880	96900	91770	86490
10	78790	74970	72830	72010	70330	69180	77130	82610	91800	96920	91560	86460
11	79000	74930	72660	71910	70290	69290	77280	82770	91560	96810	91400	86280
12	78970	74860	72880	71870	70280	69230	77270	82610	91370	96590	91250	86130
13	78720	74840	72700	71850	70130	69390	77320	82170	91210	96290	91010	86040
14	78640	74730	72720	71750	70230	69430	78500	82120	91530	96090	90740	85860
15	78470	74630	72590	71630	70090	68850	78850	82040	91430	95920	90610	85640
16	78280	74720	73010	71580	70150	68760	78830	82100	92570	95730	90430	85470
17	78170	74680	73280	71340	70190	68820	78760	81850	94390	95600	90250	85400
18	78140	74710	73280	71170	70160	68830	78720	81510	94520	95380	90070	85340
19	77990	74350	73080	71280	70400	69080	78640	81320	94370	95180	89740	85210
20	78030	74230	73090	71340	70330	69800	78540	81180	94160	94990	89490	85040
21	77970	74190	72990	71330	70170	69740	78420	81030	93960	94790	89310	84850
22	e77630	74110	72950	71310	70180	69650	78180	80960	93750	94550	89060	84560
23	77290	74160	72760	71220	70240	69820	78240	80850	93590	94330	88940	84300
24	76930	73970	72570	70970	70230	69930	78160	80750	93360	94120	88770	84120
25	76670	73770	72540	71020	69800	69480	77580	80500	93190	93910	88600	83960
26	76510	73640	72620	70970	69510	69450	79460	80460	93010	93790	88380	83970
27	76360	73130	72750	70910	69520	69520	82820	80670	92760	93510	88150	83880
28	76330	73230	72670	70970	69550	69670	83920	81480	92590	93250	87970	83850
29	76200	73360	72320	70860	---	69520	84000	81800	92430	93280	87800	83680
30	76030	73440	72160	70560	---	69550	84030	81780	92180	93650	87670	83530
31	75990	---	72160	70790	---	70700	---	81650	---	93590	87460	---
MEAN	78070	74640	72910	71540	70270	69440	77140	82120	90840	94840	90390	85540
MAX	79890	76010	73480	72250	70770	70700	84030	84060	94520	96920	93390	87410
MIN	75990	73130	72160	70560	69510	68760	70840	80460	81060	92210	87460	83530
(+)	1039.90	1039.42	1039.17	1038.90	1038.64	1038.88	1041.36	1040.94	1042.77	1043.00	1041.96	1041.28
(@)	-3990	-2550	-1280	-1370	-1240	+1150	+13330	-2380	+10530	+1410	-6130	-3930

CAL YR 2001 MAX 102300 MIN 58180 (@) +13880
WTR YR 2002 MAX 96920 MIN 68760 (@) +3550

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, 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 NGVD of 1929. Aug. 17, 1954, to Jan. 6, 1956, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1946, at least 10% of contributing drainage area has been regulated. The city of Wichita Falls diverts water from Lake Kickapoo (station 07314000) for municipal use and wholesale customers. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.33	0.05	0.01	0.04	0.08	0.69	70	3.7	2.5	0.66	13	0.00
2	0.27	0.03	0.02	0.04	0.05	0.73	24	2.7	2.2	6.4	3.9	0.00
3	0.24	0.00	0.02	0.04	0.05	0.64	5.2	1.8	1.3	25	2.1	0.00
4	0.18	0.00	0.03	0.04	0.04	0.58	3.1	1.2	1.0	19	1.2	0.00
5	0.15	0.00	0.04	0.09	0.15	0.52	2.1	0.92	348	83	0.73	0.00
6	0.10	0.00	0.04	0.07	0.23	0.46	1.7	0.71	1060	53	0.56	0.00
7	0.07	0.00	0.04	0.05	0.12	0.42	99	0.56	360	147	0.47	0.00
8	0.06	0.00	0.02	0.04	0.09	0.38	583	0.50	14	74	0.40	0.00
9	0.04	0.00	0.00	0.04	0.53	0.31	438	0.42	5.1	13	0.33	0.00
10	0.05	0.00	0.00	0.03	0.94	0.26	58	0.36	2.9	5.1	0.26	0.00
11	2.6	0.00	0.02	0.02	0.76	0.25	9.7	0.33	1.8	2.7	0.21	0.00
12	33	0.00	0.04	0.02	0.65	0.23	4.7	0.29	1.2	1.8	0.12	0.00
13	5.3	0.00	0.04	0.02	0.50	0.21	96	0.33	1.3	1.1	0.09	0.00
14	2.5	0.00	0.04	0.01	0.40	0.16	299	0.36	2.2	0.78	0.10	0.00
15	0.95	0.00	0.04	0.01	0.30	0.13	76	0.38	e40	0.66	0.08	0.00
16	0.56	0.00	0.09	0.0	0.21	0.13	15	0.37	e100	0.58	0.03	0.00
17	0.48	0.00	0.09	0.00	0.13	0.12	6.1	0.37	261	0.51	0.00	0.00
18	0.43	0.00	3.3	0.0	0.10	0.17	3.4	0.36	56	0.41	0.00	0.00
19	0.41	0.00	1.9	0.01	0.33	0.38	2.4	0.32	11	0.35	0.00	0.03
20	0.37	0.00	0.72	0.01	0.25	14	1.8	0.28	4.7	0.30	0.00	0.00
21	0.28	0.00	0.48	0.0	0.13	71	1.4	0.27	3.2	0.26	0.00	0.00
22	0.23	0.00	0.36	0.0	0.10	12	1.0	0.25	2.4	0.20	0.00	0.00
23	0.17	0.00	0.24	0.0	0.16	3.9	0.75	0.24	1.6	0.10	0.00	0.00
24	0.13	0.00	0.14	0.00	0.77	2.5	0.67	0.22	1.1	0.08	0.00	0.00
25	0.10	0.00	0.10	0.00	0.75	2.0	0.93	0.22	0.87	0.06	0.00	0.00
26	0.09	0.00	0.08	0.00	0.73	1.4	175	0.22	0.77	0.01	0.00	0.00
27	0.08	0.00	0.08	0.00	0.72	1.1	668	2.4	0.72	0.00	0.00	0.00
28	0.07	0.00	0.06	0.00	0.70	1.0	142	59	0.58	0.00	0.00	0.00
29	0.06	0.00	0.05	0.0	---	0.97	15	60	0.54	0.18	0.00	0.00
30	0.06	0.00	0.04	0.06	---	1.2	6.3	9.0	0.45	136	0.00	0.00
31	0.05	---	0.05	0.15	---	5.5	---	3.8	---	72	0.00	---
TOTAL	49.41	0.08	8.18	0.79	9.97	123.34	2809.25	151.88	2288.43	644.24	23.58	0.03
MEAN	1.594	0.003	0.264	0.025	0.356	3.979	93.64	4.899	76.28	20.78	0.761	0.001
MAX	33	0.05	3.3	0.15	0.94	71	668	60	1060	147	13	0.03
MIN	0.04	0.00	0.00	0.00	0.04	0.12	0.67	0.22	0.45	0.00	0.00	0.00
AC-FT	98	0.2	16	1.6	20	245	5570	301	4540	1280	47	0.06

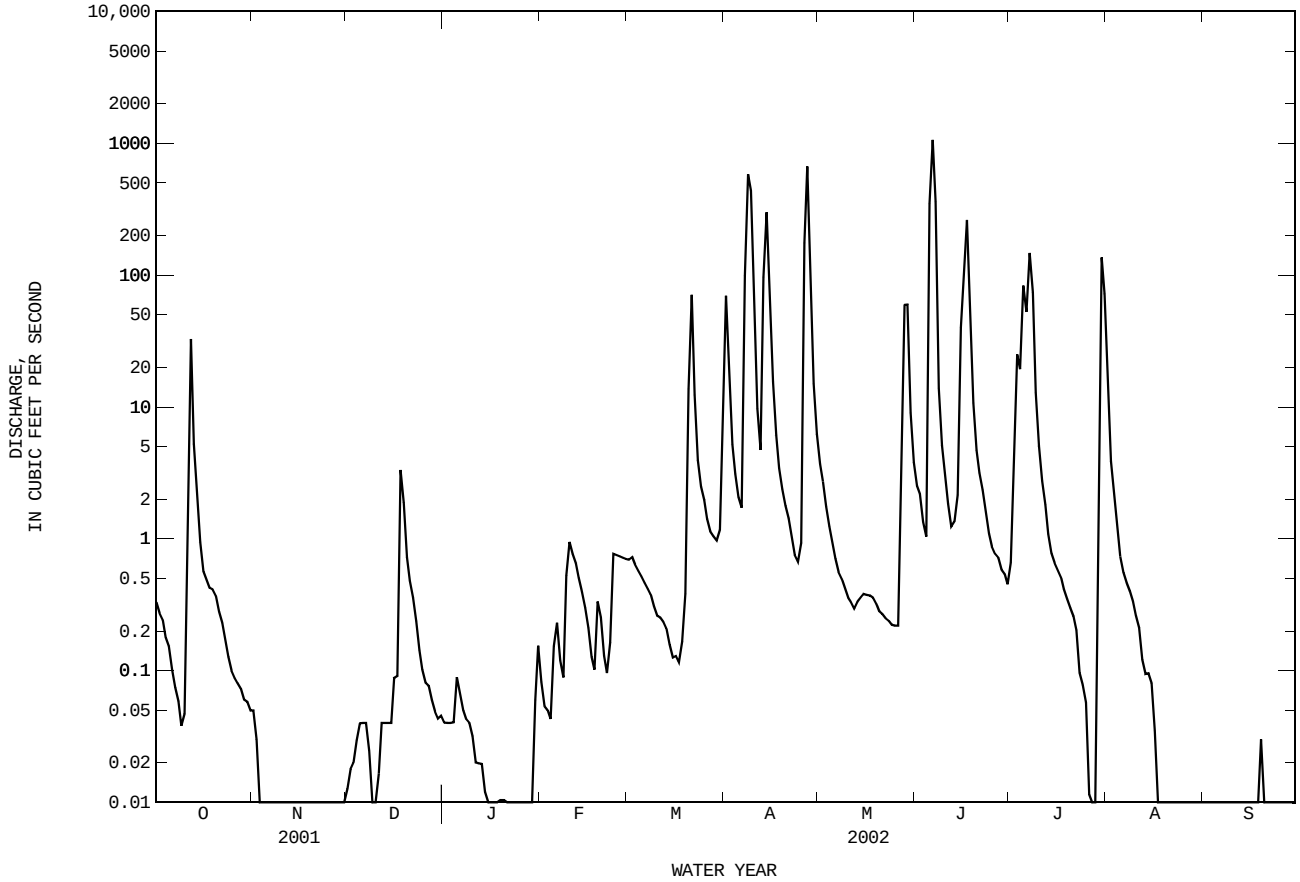
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002hz, BY WATER YEAR (WY)

MEAN	51.04	17.75	20.40	13.89	27.37	46.12	38.98	144.2	109.5	21.96	41.19	60.23
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1953	1946	1946	1953	1947	1950	1971	1984	1953	1974	1967	1954

07314500 Little Wichita River near Archer City, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1946 - 2002hz	
ANNUAL TOTAL	16030.82		6109.18			
ANNUAL MEAN	43.92		16.74		48.97	
HIGHEST ANNUAL MEAN					252	1990
LOWEST ANNUAL MEAN					2.27	1996
HIGHEST DAILY MEAN	2480	Feb 17	1060	Jun 6	9550	Aug 2 1950
LOWEST DAILY MEAN	0.00	Jun 21	0.00	Nov 3	0.00	Oct 31 1945
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 21	0.00	Nov 3	0.00	Oct 31 1945
MAXIMUM PEAK FLOW			1170	Jun 6	20100	May 16 1989
MAXIMUM PEAK STAGE			18.76	Jun 6	27.03	May 16 1989
ANNUAL RUNOFF (AC-FT)	31800		12120		35480	
10 PERCENT EXCEEDS	15		13		54	
50 PERCENT EXCEEDS	0.37		0.22		0.29	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated
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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 15,900 ft long, including an uncontrolled reinforced concrete ogee spillway 1,581 ft wide located near the left end of dam. The dam was completed in Dec. 1966 and storage began in 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.

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, 170,700 acre-ft, June 16, gage height, 919.95 ft; minimum contents, 147,300 acre-ft, Mar. 15, gage height, 917.94 ft.

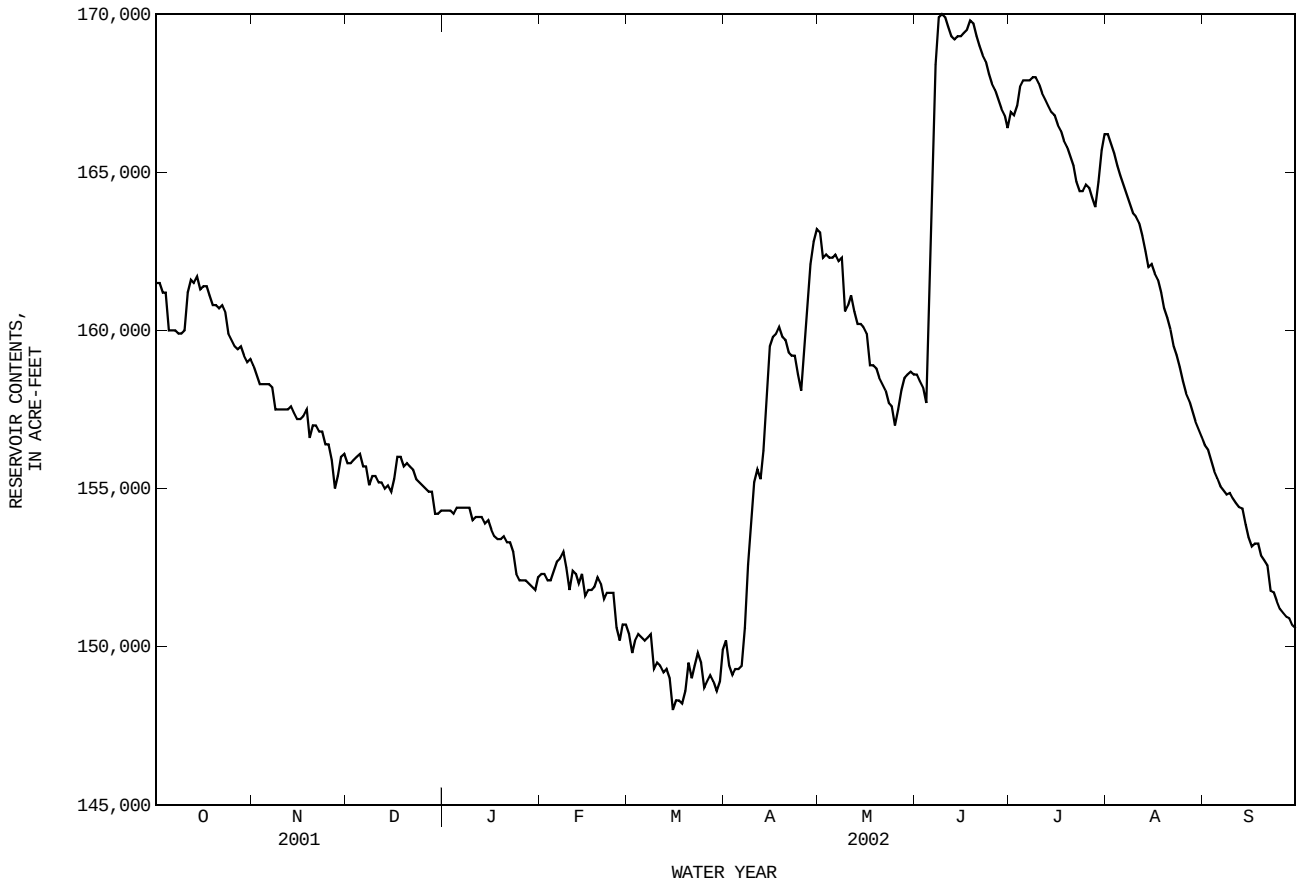
RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	161500	158900	155800	154300	152300	150400	150200	163100	158600	166900	166200	156400
2	161500	158600	155800	154300	152300	149800	149400	162300	158400	166800	165900	156200
3	161200	158300	155900	154300	152100	150200	149100	162400	158200	167100	165600	155900
4	161200	158300	156000	154200	152100	150400	149300	162300	157700	167700	165200	155500
5	160000	158300	156100	154400	152400	150300	149300	162300	162700	167900	164900	155300
6	160000	158300	155700	154400	152700	150200	149400	162400	165500	167900	164600	155100
7	160000	158200	155700	154400	152800	150300	150600	162200	168400	167900	164300	154900
8	159900	157500	155100	154400	153000	150400	152600	162300	169900	168000	164000	154800
9	159900	157500	155400	154400	152500	149300	153900	160600	170000	168000	163700	154900
10	160000	157500	155400	154000	151800	149500	155200	160800	169900	167800	163600	154700
11	161200	157500	155200	154100	152400	149400	155600	161100	169600	167500	163400	154500
12	161600	157500	155200	154100	152300	149200	155300	160600	169300	167300	163000	154400
13	161500	157600	155000	154100	152000	149300	156200	160200	169200	167100	162500	154400
14	161700	157400	155100	153900	152300	149000	158000	160200	169300	166900	162000	153900
15	161300	157200	154900	154000	151600	148000	159500	160100	169300	166800	162100	153400
16	161400	157200	155300	153700	151800	148300	159800	159900	169400	166500	161800	153200
17	161400	157300	156000	153500	151800	148300	159900	158900	169500	166300	161600	153300
18	161100	157500	156000	153400	151900	148200	160100	158900	169800	166000	161200	153300
19	160800	156600	155700	153400	152200	148600	159800	158800	169700	165800	160700	152900
20	160800	157000	155800	153500	152000	149500	159700	158500	169300	165500	160400	152700
21	160700	157000	155700	153300	151500	149000	159300	158300	169000	165200	160000	152600
22	160800	156800	155600	153300	151700	149400	159200	158100	168700	164700	159500	151800
23	160600	156800	155300	153000	151700	149800	159200	157700	168500	164400	159200	151700
24	159900	156400	155200	152300	151700	149500	158600	157600	168100	164400	158800	151500
25	159700	156400	155100	152100	150600	148700	158100	157000	167800	164600	158400	151200
26	159500	155900	155000	152100	150200	148900	159500	157500	167600	164500	158000	151100
27	159400	155000	154900	152100	150700	149100	160700	158100	167300	164200	157800	150900
28	159500	155400	154900	152000	150700	148900	162100	158500	167000	163900	157500	150900
29	159200	156000	154200	151900	---	148600	162800	158600	166800	164700	157100	150700
30	159000	156100	154200	151800	---	148900	163200	158700	166400	165700	156900	150600
31	159100	---	154300	152200	---	149900	---	158600	---	166200	156600	---
MEAN	160500	157200	155300	153400	151900	149300	156500	159900	167000	166300	161500	153400
MAX	161700	158900	156100	154400	153000	150400	163200	163100	170000	168000	166200	156400
MIN	159000	155000	154200	151800	150200	148000	149100	157000	157700	163900	156600	150600
(+)	918.97	918.72	918.57	918.38	918.24	918.16	919.32	918.94	919.59	919.58	918.76	918.23
(@)	-2500	-3000	-1800	-2100	-1500	-800	+13300	-4600	+7800	-200	-9600	-6000

CAL YR 2001 MAX 202900 MIN 113200 (@) +40100
WTR YR 2002 MAX 170700 MIN 148000 (@) -11000

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

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 "station 07315000 Little Wichita River 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 NGVD of 1929. Prior to June 26, 1953, nonrecording gage, and June 27, 1953 to July 11, 1975 water-stage recorder, all at site 2.6 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records poor. Since installation of gage in Jan. 1953, at least 10% of contributing drainage area has been regulated. The city of Wichita Falls returns waste water/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 diverts water from pool below gage for municipal use. Records of diversions are furnished by the cities of Wichita Falls and Henrietta. 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, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

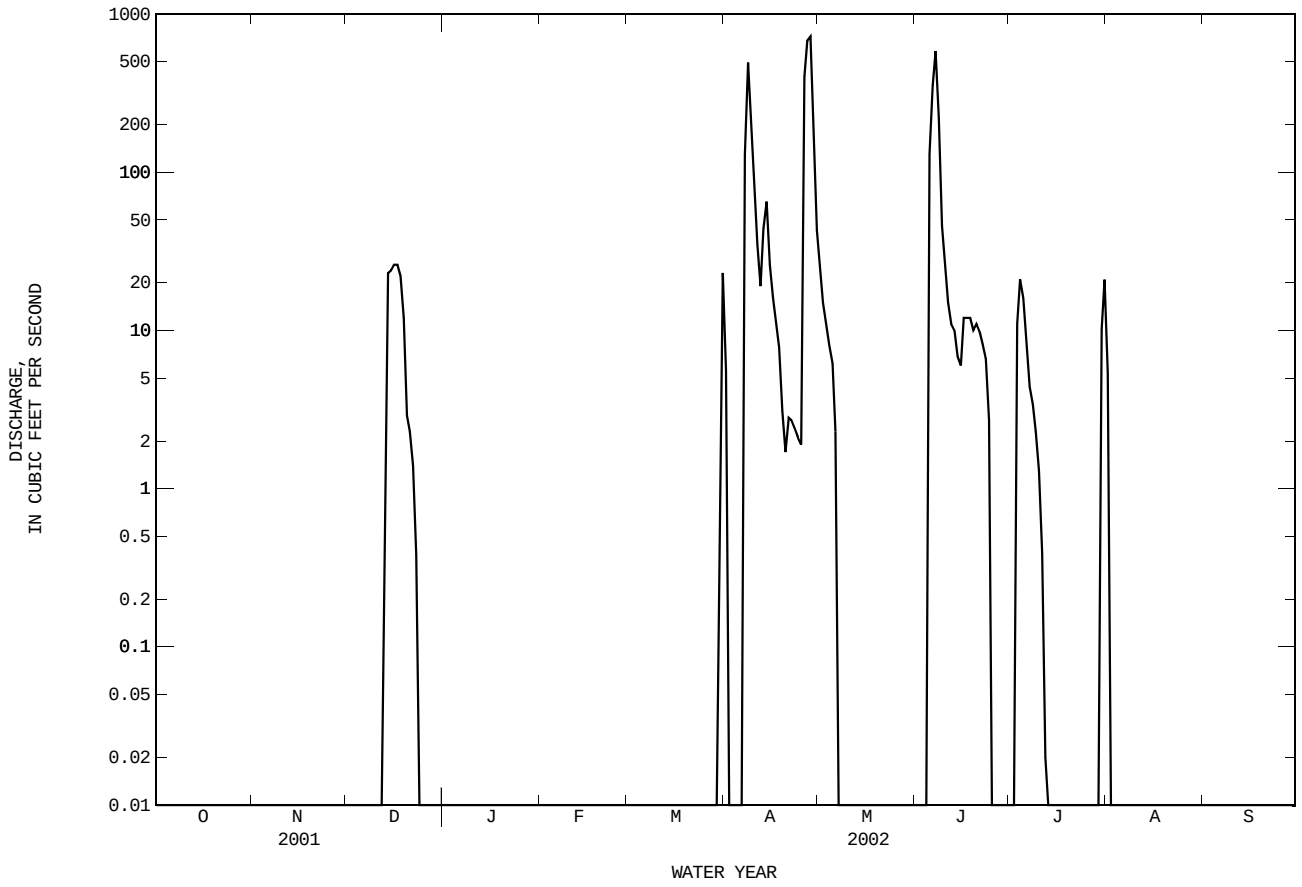
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.0	0.0	0.0	0.0	0.0	0.0	5.6	24	0.0	0.0	5.4	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15	0.0	0.0	0.00	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11	0.0	11	0.00	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	21	0.00	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	130	16	0.00	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	353	7.9	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	129	0.0	581	4.4	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	491	0.0	221	3.4	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	241	0.0	46	2.3	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	83	0.0	25	1.3	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	35	0.0	15	0.39	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	19	0.0	11	0.02	0.0	0.0
13	0.0	0.0	0.68	0.0	0.0	0.0	44	0.0	10	0.0	0.0	0.0
14	0.0	0.0	23	0.0	0.0	0.0	65	0.0	6.8	0.0	0.0	0.0
15	0.0	0.0	24	0.0	0.0	0.0	26	0.0	6.0	0.0	0.0	0.0
16	0.0	0.0	26	0.0	0.0	0.0	16	0.0	12	0.0	0.0	0.0
17	0.0	0.0	26	0.0	0.0	0.0	11	0.0	12	0.0	0.0	0.0
18	0.0	0.0	22	0.0	0.0	0.0	7.8	0.0	12	0.0	0.0	0.0
19	0.0	0.0	12	0.0	0.0	0.0	3.1	0.0	10	0.0	0.0	0.0
20	0.0	0.0	2.9	0.0	0.0	0.0	1.7	0.0	11	0.0	0.0	0.0
21	0.0	0.0	2.3	0.0	0.0	0.0	2.8	0.0	9.9	0.0	0.0	0.0
22	0.0	0.0	1.4	0.0	0.0	0.0	2.7	0.0	8.2	0.0	0.0	0.0
23	0.0	0.0	0.38	0.0	0.0	0.0	2.4	0.0	6.6	0.0	0.0	0.0
24	0.0	0.0	0.01	0.0	0.0	0.0	2.1	0.0	2.7	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	401	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	675	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	717	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	---	0.0	177	0.0	0.0	0.00	0.0	0.0
30	0.0	0.0	0.0	0.0	---	0.23	43	0.0	0.0	10	0.0	0.0
31	0.0	---	0.0	0.0	---	23	---	0.0	---	21	0.0	---
TOTAL	0.0	0.0	140.67	0.0	0.0	23.23	3203.1	66.5	1489.2	98.71	5.40	0.0
MEAN	0.000	0.000	4.538	0.000	0.000	0.749	106.8	2.145	49.64	3.184	0.174	0.000
MAX	0.00	0.00	26	0.00	0.00	23	717	24	581	21	5.4	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AC-FT	0.00	0.00	279	0.00	0.00	46	6350	132	2950	196	11	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2002, BY WATER YEAR (WY)

MEAN	71.47	40.40	32.92	12.74	33.97	64.28	97.10	265.9	183.4	26.72	9.230	75.77
MAX	1050	854	622	131	305	937	2169	3279	1652	549	157	656
(WY)	1954	1958	1963	1992	2001	1990	1990	1957	1992	1992	1966	1955
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1953	1953	1953	1953	1953	1954	1953	1971	1953	1956	1954	1954

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1953 - 2002	
ANNUAL TOTAL	13161.47		5026.81			
ANNUAL MEAN	36.06		13.77		76.22	
HIGHEST ANNUAL MEAN					498	1990
LOWEST ANNUAL MEAN					0.84	2000
HIGHEST DAILY MEAN	2240	Feb 17	717	Apr 28	10500	May 3 1990
LOWEST DAILY MEAN	0.00	Jan 8	0.00	Oct 1	0.00	Oct 1 1952
ANNUAL SEVEN-DAY MINIMUM	0.00	Mar 25	0.00	Oct 1	0.00	Oct 1 1952
MAXIMUM PEAK FLOW			831	Apr 28	14200	May 3 1990
MAXIMUM PEAK STAGE			16.03	Apr 28	24.96	May 3 1990
ANNUAL RUNOFF (AC-FT)	26110		9970		55220	
10 PERCENT EXCEEDS	24		12		61	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

07314900 Little Wichita River above Henrietta, TX--Continued



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 NGVD of 1929. 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.--Flood in Oct. 1941 reached a stage of 28.8 ft, from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

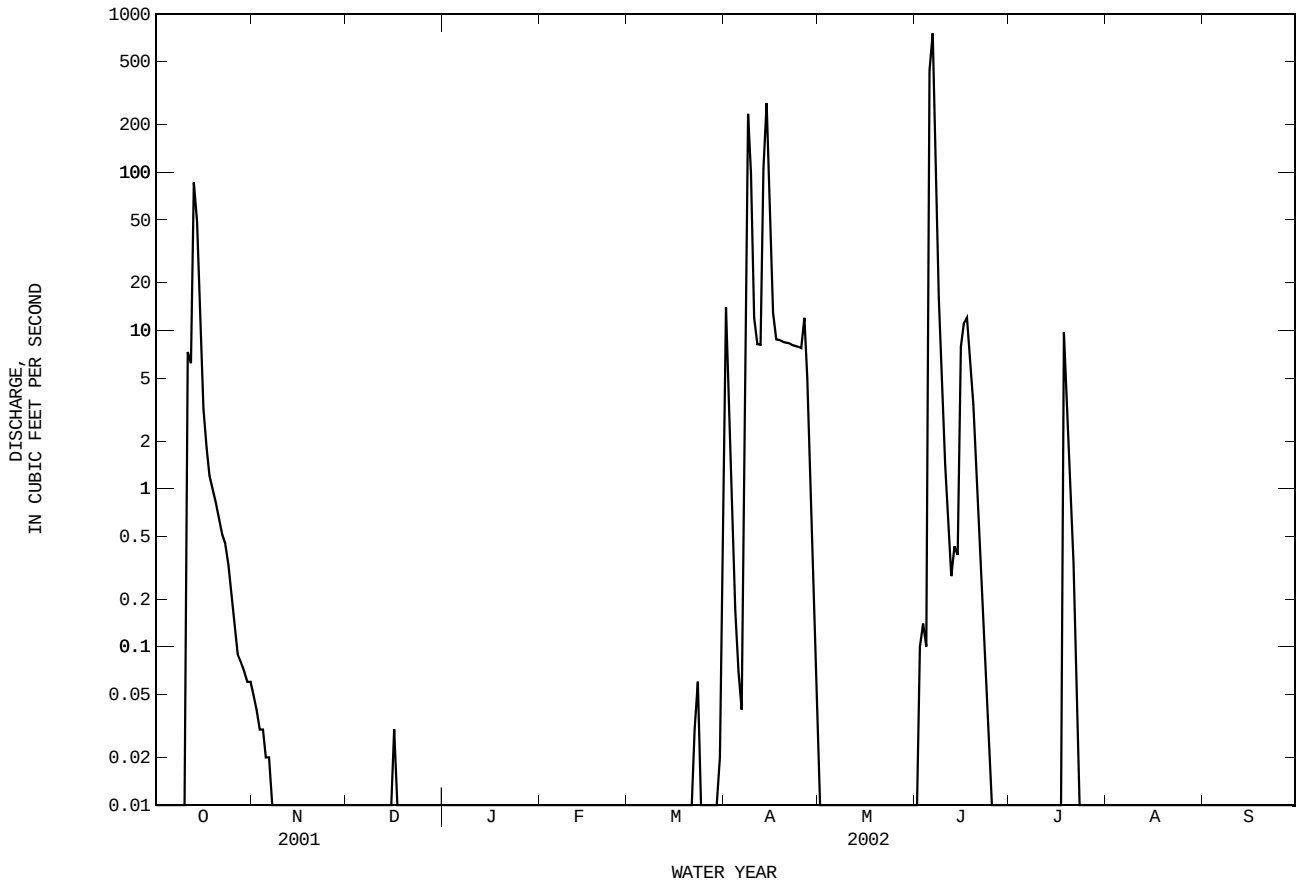
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.0	0.05	0.0	0.0	0.0	0.0	14	0.0	0.0	0.0	0.0	0.0
2	0.0	0.04	0.0	0.0	0.0	0.0	3.4	0.0	0.10	0.0	0.0	0.0
3	0.0	0.03	0.0	0.0	0.0	0.0	0.59	0.0	0.14	0.0	0.0	0.0
4	0.0	0.03	0.0	0.0	0.0	0.0	0.17	0.0	0.10	0.0	0.0	0.0
5	0.0	0.02	0.0	0.0	0.0	0.0	0.07	0.0	440	0.0	0.0	0.0
6	0.0	0.02	0.0	0.0	0.0	0.0	0.04	0.0	755	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	183	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	233	0.0	16	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	99	0.0	4.6	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	12	0.0	1.4	0.0	0.0	0.0
11	7.3	0.0	0.0	0.0	0.0	0.0	8.2	0.0	0.68	0.0	0.0	0.0
12	6.2	0.0	0.0	0.0	0.0	0.0	8.1	0.0	0.28	0.0	0.0	0.0
13	86	0.0	0.0	0.0	0.0	0.0	105	0.0	0.43	0.0	0.0	0.0
14	49	0.0	0.0	0.0	0.0	0.0	273	0.0	0.38	0.0	0.0	0.0
15	9.7	0.0	0.0	0.0	0.0	0.0	70	0.0	7.9	0.0	0.0	0.0
16	3.2	0.0	0.03	0.0	0.0	0.0	13	0.0	11	0.0	0.0	0.0
17	1.8	0.0	0.01	0.0	0.0	0.0	8.8	0.0	12	0.0	0.0	0.0
18	1.2	0.0	0.0	0.0	0.0	0.0	8.7	0.0	6.1	9.7	0.0	0.0
19	0.99	0.0	0.0	0.0	0.0	0.0	8.5	0.0	3.4	3.1	0.0	0.0
20	0.81	0.0	0.0	0.0	0.0	0.0	8.4	0.0	1.4	1.1	0.0	0.0
21	0.64	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.59	0.34	0.0	0.0
22	0.51	0.0	0.0	0.0	0.0	0.03	8.1	0.0	0.20	0.04	0.0	0.0
23	0.45	0.0	0.0	0.0	0.0	0.06	8.0	0.0	0.09	0.0	0.0	0.0
24	0.33	0.0	0.0	0.0	0.0	0.01	7.9	0.0	0.03	0.0	0.0	0.0
25	0.20	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.0	0.0	0.0	0.0
26	0.13	0.0	0.0	0.0	0.0	0.0	12	0.0	0.0	0.0	0.0	0.0
27	0.09	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0
28	0.08	0.0	0.0	0.0	0.0	0.0	0.91	0.0	0.0	0.0	0.0	0.0
29	0.07	0.0	0.0	0.0	---	0.0	0.19	0.0	0.0	0.0	0.0	0.0
30	0.06	0.0	0.0	0.0	---	0.02	0.04	0.0	0.0	0.0	0.0	0.0
31	0.06	---	0.0	0.0	---	0.47	---	0.0	---	0.0	0.0	---
TOTAL	168.82	0.19	0.04	0.0	0.0	0.59	936.51	0.0	1444.82	14.28	0.0	0.0
MEAN	5.446	0.006	0.001	0.000	0.000	0.019	31.22	0.000	48.16	0.461	0.000	0.000
MAX	86	0.05	0.03	0.00	0.00	0.47	273	0.00	755	9.7	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
AC-FT	335	0.4	0.08	0.00	0.00	1.2	1860	0.00	2870	28	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2002, BY WATER YEAR (WY)

MEAN	33.56	13.23	20.06	12.07	33.46	51.40	38.45	99.28	60.50	5.535	4.989	11.34
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	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
(WY)	1979	1972	1966	1966	1966	1967	1971	1971	1971	1964	1969	1979

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1964 - 2002	
ANNUAL TOTAL	15848.53		2565.25			
ANNUAL MEAN	43.42		7.028		32.62	
HIGHEST ANNUAL MEAN					128	1982
LOWEST ANNUAL MEAN					0.44	1996
HIGHEST DAILY MEAN	2480	Feb 28	755	Jun 6	16900	Oct 13 1981
LOWEST DAILY MEAN	0.00	Jun 15	0.00	Oct 1	0.00	Dec 1 1963
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 15	0.00	Oct 1	0.00	Dec 1 1963
MAXIMUM PEAK FLOW			816	Jun 6	32500	Oct 13 1981
MAXIMUM PEAK STAGE			16.37	Jun 6	31.70	Oct 13 1981
ANNUAL RUNOFF (AC-FT)	31440		5090		23630	
10 PERCENT EXCEEDS	19		4.5		17	
50 PERCENT EXCEEDS	0.06		0.00		0.13	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

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 NGVD of 1929. Prior to Jan. 12, 1939, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records fair. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	213	123	408	234	273	320	667	1620	1000	278	857	108
2	195	124	462	238	306	319	913	1270	757	302	677	87
3	184	121	431	235	499	313	930	1050	573	493	522	67
4	179	124	422	244	1150	328	726	899	473	686	520	58
5	174	124	415	274	1020	340	565	788	1090	1410	457	49
6	156	123	401	283	827	340	507	712	6670	1240	488	48
7	151	116	382	300	734	330	647	e690	11900	3080	443	46
8	145	110	351	344	711	320	2900	e670	7020	3640	396	57
9	149	118	326	327	674	288	8600	645	3640	3540	350	e70
10	178	121	315	313	667	264	5910	588	2080	4770	335	e115
11	233	125	301	289	689	256	2920	583	1400	4340	325	e190
12	239	124	309	281	643	249	1620	592	1030	3850	297	314
13	532	120	302	274	587	250	2010	581	876	3620	274	302
14	450	126	304	265	544	241	13500	555	870	3600	261	296
15	369	122	297	259	505	240	13900	541	962	4230	253	294
16	256	125	374	256	471	230	13500	496	972	3360	272	291
17	214	140	436	247	444	230	5840	511	828	2120	304	288
18	186	146	506	245	425	245	2930	480	1050	1440	313	285
19	177	217	470	249	440	287	2140	445	1290	1090	288	282
20	164	2190	362	249	434	400	1710	417	1990	855	258	278
21	153	2070	340	247	423	615	1440	394	1460	690	243	275
22	148	1350	314	242	423	1000	1270	382	989	581	225	270
23	143	953	288	239	401	983	1170	370	749	502	204	262
24	130	754	267	230	379	814	1060	358	598	441	180	228
25	126	645	259	227	363	662	952	370	497	431	162	225
26	123	536	254	227	333	565	1260	395	419	408	149	224
27	113	453	248	232	320	500	2810	457	364	410	161	227
28	111	446	247	246	315	464	4270	678	320	340	144	227
29	113	437	245	247	---	437	3730	702	290	416	125	227
30	114	423	236	246	---	452	2430	846	266	552	114	229
31	121	---	235	268	---	516	---	1050	---	763	116	---
TOTAL	5939	12706	10507	8057	15000	12798	102827	20135	52423	53478	9713	5919
MEAN	191.6	423.5	338.9	259.9	535.7	412.8	3428	649.5	1747	1725	313.3	197.3
MAX	532	2190	506	344	1150	1000	13900	1620	11900	4770	857	314
MIN	111	110	235	227	273	230	507	358	266	278	114	46
AC-FT	11780	25200	20840	15980	29750	25380	204000	39940	104000	106100	19270	11740

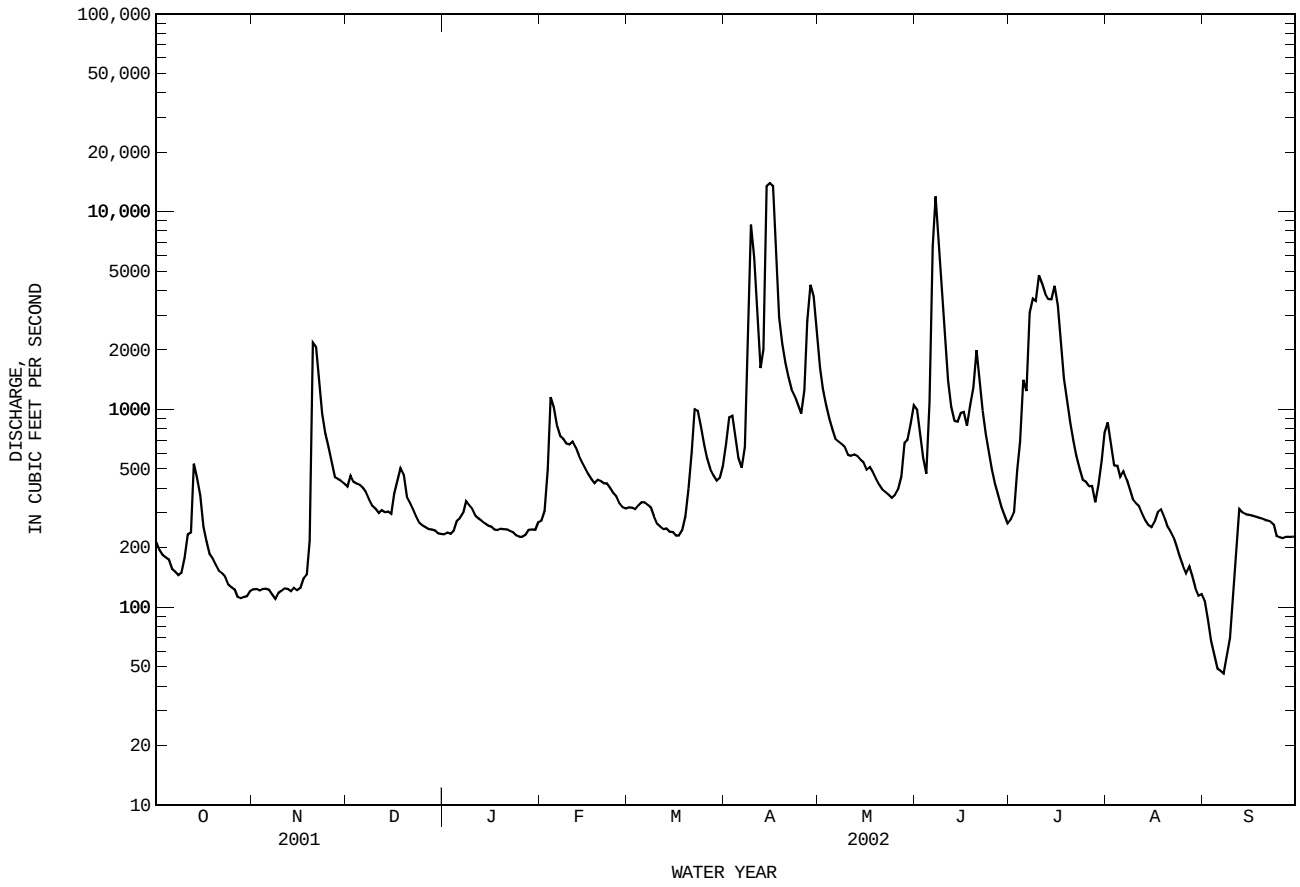
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2002, BY WATER YEAR (WY)

MEAN	2959	1540	1140	960.1	1408	2050	2619	6436	6131	1652	1305	1961
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1938 - 2002	
ANNUAL TOTAL	760913		309502			
ANNUAL MEAN	2085		848.0		2512	
HIGHEST ANNUAL MEAN					8925	1987
LOWEST ANNUAL MEAN					523	1953
HIGHEST DAILY MEAN	18500	May 22	13900	Apr 15	215000	Jun 7 1995
LOWEST DAILY MEAN	110	Nov 8	46	Sep 7	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	117	Oct 26	56	Sep 3	47	Mar 18 1940
MAXIMUM PEAK FLOW			15800	Apr 14	236000	Jun 7 1995
MAXIMUM PEAK STAGE			13.92	Apr 14	33.60	Oct 22 1983
ANNUAL RUNOFF (AC-FT)	1509000		613900		1819000	
10 PERCENT EXCEEDS	6120		1620		5510	
50 PERCENT EXCEEDS	607		363		599	
90 PERCENT EXCEEDS	178		128		177	

e Estimated

07315500 Red River near Terral, OK--Continued



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 2001 TO SEPTEMBER 2002

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)
DEC									
27...	1430	264	7670	8.0	5.8	12.9	110	<1	1k
MAR									
28...	1155	464	7620	7.7	15.3	12.5	133	11k	100
JUN									
04...	0855	485	5600	7.8	25.0	6.9	85	33k	<3
SEP									
05...	1020	49	4790	7.2	26.4	7.6	96	100	79k

Remark codes used in this report:
< -- Less than

Value qualifier codes used in this report:
k -- Counts outside acceptable range

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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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--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	827.50
Top of conservation pool	826.85
Lowest gated outlet (invert)	795.00

COOPERATION.--Capacity curve was 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, 28,230 acre-ft, Apr. 14, elevation, 828.67 ft; minimum contents, 22,390 acre-ft, Mar. 18, elevation, 824.89 ft.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

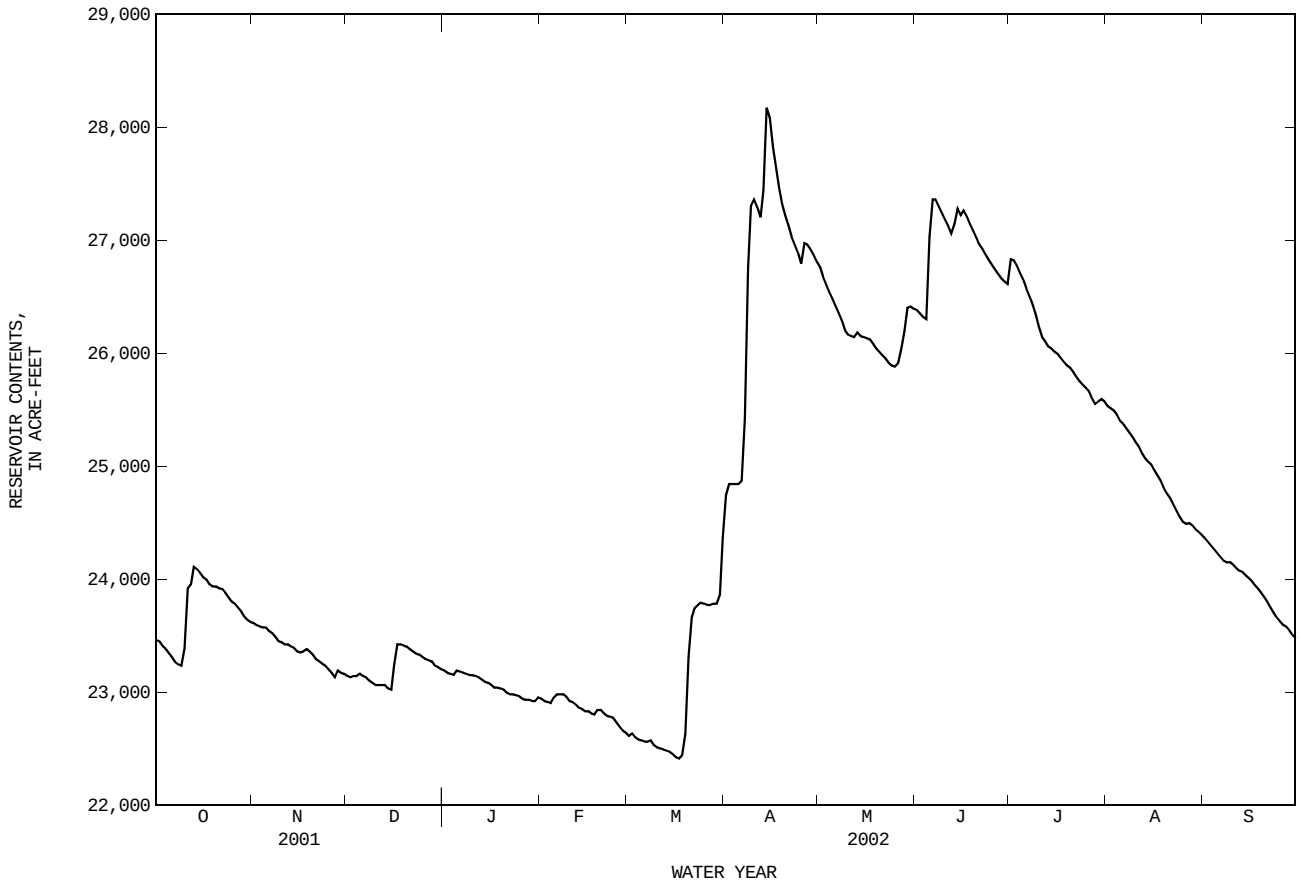
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23460	23610	23140	23190	22940	22610	24740	26760	26380	26830	25530	24360
2	23450	23590	23130	23170	22920	22630	24840	26680	26350	26820	25510	24330
3	23410	23580	23140	23160	22910	22600	24840	26610	26320	26770	25490	24290
4	23380	23570	23140	23150	22900	22580	24840	26540	26300	26710	25450	24260
5	23340	23570	23160	23190	22950	22570	24840	26480	27030	26650	25400	24220
6	23310	23540	23140	23180	22980	22560	24870	26420	27360	26570	25370	24200
7	23270	23520	23130	23170	22980	22560	25420	26360	27360	26500	25330	24160
8	23240	23490	23100	23160	22980	22570	26750	26290	27300	26420	25290	24150
9	23230	23450	23080	23150	22960	22530	27300	26200	27240	26340	25250	24150
10	23390	23440	23060	23150	22920	22510	27360	26160	27180	26230	25210	24130
11	23910	23420	23060	23140	22910	22500	27290	26150	27130	26140	25170	24100
12	23950	23420	23060	23130	22890	22490	27200	26140	27060	26100	25110	24070
13	24110	23400	23060	23110	22860	22480	27440	26180	27140	26060	25060	24060
14	24090	23390	23030	23090	22850	22470	28170	26150	27280	26040	25040	24030
15	24050	23360	23020	23080	22830	22450	28080	26140	27220	26010	25010	24010
16	24010	23350	23240	23060	22830	22420	27820	26130	27260	25990	24960	23980
17	23990	23360	23420	23040	22810	22410	27630	26120	27210	25950	24910	23940
18	23950	23380	23420	23040	22800	22440	27460	26080	27140	25920	24860	23910
19	23930	23360	23410	23030	22840	22630	27310	26040	27080	25890	24800	23880
20	23930	23330	23400	23020	22840	23310	27210	26010	27020	25870	24750	23840
21	23920	23290	23380	22990	22810	23660	27120	25980	26960	25830	24710	23800
22	23910	23270	23360	22980	22790	23740	27030	25950	26920	25790	24660	23750
23	e23880	23250	23340	22980	22780	23770	26960	25910	26870	25750	24600	23700
24	e23840	23230	23330	22970	22770	23790	26890	25890	26820	25720	24550	23660
25	e23800	23200	23310	22960	22730	23780	26790	25880	26780	25690	24510	23620
26	23780	23170	23290	22940	22690	23770	26970	25910	26740	25660	24490	23590
27	23750	23130	23280	22930	22660	23770	26960	26040	26700	25600	24490	23580
28	23720	23190	23270	22930	22640	23780	26920	26200	26660	25550	24470	23540
29	23670	23170	23230	22920	---	23780	26870	26400	26630	25570	24440	23510
30	23640	23160	23220	22920	---	23860	26810	26410	26610	25590	24420	23480
31	23620	---	23200	22950	---	24370	---	26390	---	25570	24390	---
MEAN	23710	23370	23210	23060	22850	23010	26690	26210	26940	26070	24940	23940
MAX	24110	23610	23420	23190	22980	24370	28170	26760	27360	26830	25530	24360
MIN	23230	23130	23020	22920	22640	22410	24740	25880	26300	25550	24390	23480
(+)	825.71	825.41	825.44	825.28	825.07	826.19	827.76	827.49	827.63	826.96	826.20	825.60
(@)	+150	-460	+40	-250	-310	+1730	+2440	-420	+220	-1040	-1180	-910

CAL YR 2001 MAX 29320 MIN 19370 (@) +3850
WTR YR 2002 MAX 28170 MIN 22410 (@) +10

e Estimated

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

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 NGVD of 1929. Prior to Apr. 20, 1979, recording gage at site about 150 ft upstream from 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, 27,170 acre-ft, Apr. 8, elevation, 717.94 ft; minimum contents, 21,860 acre-ft, Dec. 10, 11, elevation, 712.82 ft.

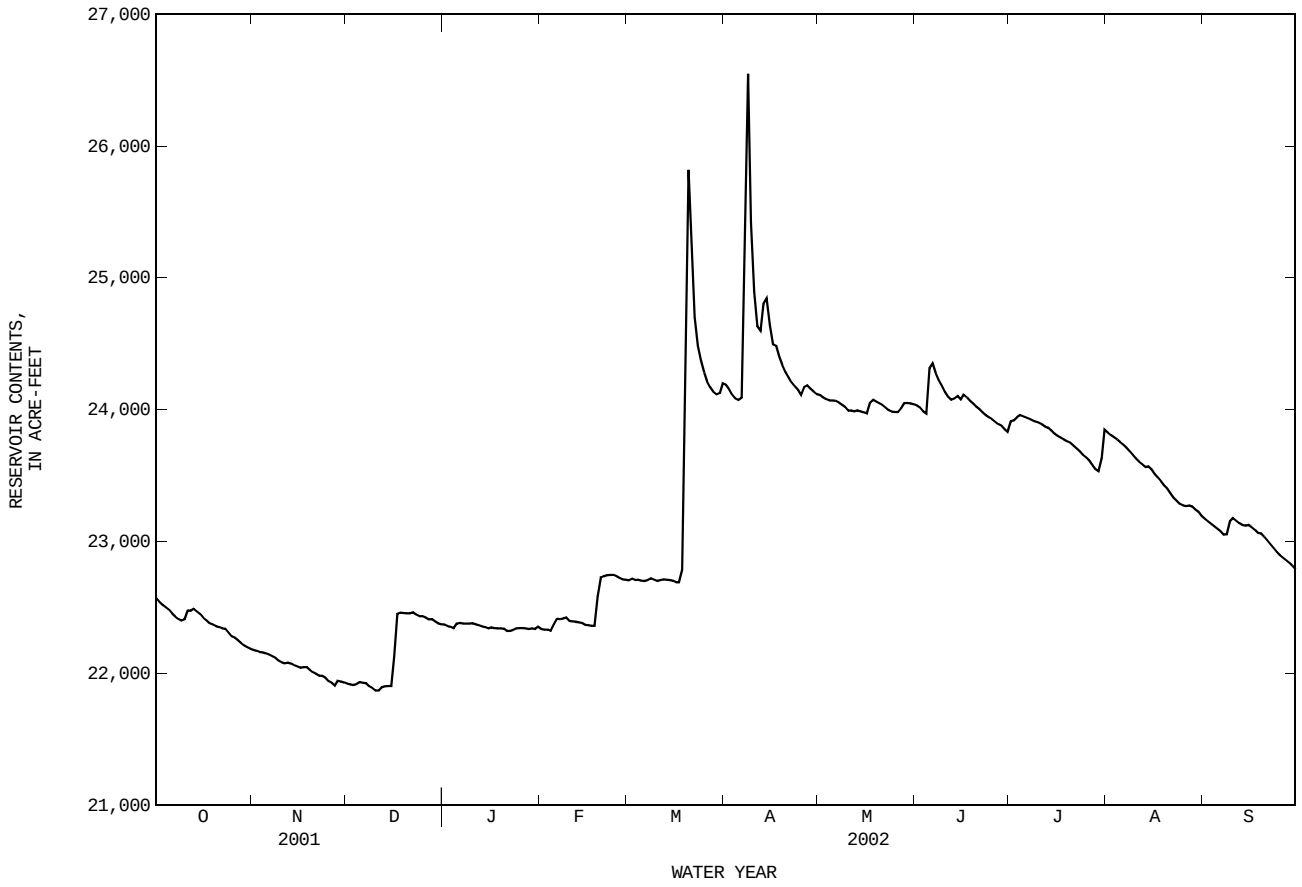
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22570	22180	21920	22370	22340	22700	24190	24110	24030	23910	23820	23170
2	22540	22170	21910	22360	22330	22720	24150	24090	24010	23920	23810	23150
3	22520	22160	21910	22350	22330	22710	24110	24080	23990	23940	23790	23130
4	22500	22160	21920	22340	22320	22710	24080	24070	23970	23960	23770	23120
5	22480	22150	21930	22380	22370	22700	24070	24070	24310	23950	23750	23100
6	22450	22140	21930	22380	22410	22700	24090	24070	24350	23940	23730	23080
7	22430	22130	21920	22380	22410	22710	25520	24050	24280	23930	23710	23050
8	22410	22120	21900	22380	22420	22720	26540	24040	24220	23920	23680	23050
9	22400	22090	21890	22380	22420	22710	25420	24020	24180	23910	23650	23150
10	22410	22080	21870	22380	22400	22700	24900	23990	24130	23900	23630	23180
11	22480	22070	21870	22370	22390	22710	24630	23990	24100	23890	23610	23160
12	22470	22080	21890	22360	22390	22710	24600	23990	24070	23870	23580	23140
13	22490	22070	21900	22350	22390	22710	24800	23990	24080	23860	23560	23120
14	22470	22060	21900	22350	22380	22710	24840	23990	24100	23840	23570	23120
15	22450	22050	21900	22340	22370	22700	24640	23980	24080	23820	23550	23120
16	22420	22040	22120	22350	22360	22690	24490	23970	24110	23800	23510	23110
17	22400	22050	22450	22340	22360	22690	24480	24050	24090	23780	23480	23090
18	22380	22050	22460	22340	22360	22780	24400	24070	24070	23770	23450	23060
19	22370	22030	22460	22340	22580	23720	24340	24060	24040	23760	23430	23060
20	22360	22010	22450	22340	22720	25820	24280	24050	24020	23750	23400	23030
21	22350	21990	22450	22320	22740	25120	24240	24030	24000	23730	23360	23010
22	22340	21980	22460	22320	22740	24700	24210	24020	23980	23710	23330	22980
23	22340	21980	22450	22330	22750	24480	24180	23990	23960	23680	23310	22950
24	22310	21960	22430	22340	22750	24370	24150	23980	23940	23660	23280	22920
25	22280	21940	22430	22340	22740	24280	24110	23980	23930	23640	23270	22900
26	22270	21930	22420	22340	22720	24210	24170	23980	23910	23620	23270	22880
27	22250	21900	22410	22340	22710	24170	24180	24010	23890	23580	23270	22860
28	22230	21940	22410	22340	22710	24130	24160	24050	23880	23550	23260	22840
29	22210	21940	22390	22340	---	24120	24140	24050	23850	23530	23240	22820
30	22200	21930	22380	22330	---	24130	24120	24050	23830	23630	23220	22790
31	22190	---	22370	22350	---	24200	---	24040	---	23850	23190	---
MEAN	22390	22050	22160	22350	22500	23430	24470	24030	24050	23790	23500	23040
MAX	22570	22180	22460	22380	22750	25820	26540	24110	24350	23960	23820	23180
MIN	22190	21900	21870	22320	22320	22690	24070	23970	23830	23530	23190	22790
(+)	713.14	712.89	713.31	713.29	713.64	715.04	714.97	714.89	714.70	714.71	714.10	713.72
(@)	-390	-260	+440	-20	+360	+1490	-80	-80	-210	+20	-660	-400

CAL YR 2001 MAX 27200 MIN 21870 (@) -2070
WTR YR 2002 MAX 26540 MIN 21870 (@) +210

(+) Gage height, 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 1/4 sec.36, T.9 S., R.1 E., Love County, OK, Hydrologic Unit 11130201, on downstream right bank at end of bridge on Interstate 35, 0.2 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi downstream from Fish Creek, 4.5 mi southwest of Thackerville, OK, 7.0 mi north of Gainesville, and at mile 791.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--30,782 mi^2 of which 5,936 mi^2 probably is noncontributing.

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft above NGVD of 1929. 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)
Apr 15	2100	24,100	17.43	No other peak greater than base discharge.			

DISCHARGE VIA SATELLITE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	369	173	636	376	357	372	1830	4420	1120	624	744	e211
2	323	180	605	363	356	372	1680	2820	1220	690	763	e201
3	292	181	570	354	353	384	1290	2050	1240	683	895	e200
4	269	184	588	350	355	367	1260	1720	1030	657	859	e205
5	255	182	597	394	450	363	1280	1520	1580	728	732	e196
6	235	183	569	437	1210	357	1110	1340	6550	984	703	e182
7	226	182	537	439	1380	354	5000	1200	7200	1430	644	e174
8	216	175	515	422	1140	367	15800	1100	13600	1620	638	174
9	208	166	495	428	990	355	15100	1010	10400	3010	622	290
10	212	164	460	460	904	337	16700	927	6070	3520	573	306
11	573	161	449	477	831	315	13600	863	3490	3380	609	272
12	2650	172	447	445	817	316	9150	825	2210	4610	490	248
13	2510	179	436	424	825	308	7830	814	1690	4420	449	211
14	4280	182	442	401	784	298	15200	835	1550	3620	484	280
15	2500	179	427	386	741	295	23500	811	1460	3330	423	308
16	1170	173	936	369	684	278	21500	751	1470	3430	373	304
17	807	175	2640	358	617	269	20300	988	1490	3800	350	244
18	634	185	2560	348	582	442	13400	1530	1430	3010	321	225
19	500	196	1540	347	735	1800	6970	1120	1230	2000	334	e213
20	408	190	1200	344	643	6050	4940	807	1260	1540	343	e197
21	345	192	1010	343	562	5300	3780	701	1380	1270	342	e178
22	305	1800	788	344	529	2970	3010	634	1850	1030	314	e169
23	278	2350	657	345	493	1630	2530	593	1580	869	282	e165
24	248	1710	575	356	508	1660	2170	557	1220	764	267	e164
25	220	1280	524	343	483	1530	1900	536	1010	706	360	e172
26	202	1030	485	320	419	1270	1940	533	870	646	e325	210
27	193	879	454	314	391	1070	3100	544	771	580	300	208
28	186	812	433	310	378	922	3520	605	701	547	e272	202
29	180	745	416	312	---	834	5310	941	630	545	e251	e192
30	170	683	396	313	---	772	5760	1370	585	811	e235	e189
31	164	---	381	327	---	1310	---	1230	---	776	e223	---
TOTAL	21128	15043	22768	11549	18517	33267	230460	35695	77887	55630	14520	6490
MEAN	681.5	501.4	734.5	372.5	661.3	1073	7682	1151	2596	1795	468.4	216.3
MAX	4280	2350	2640	477	1380	6050	23500	4420	13600	4610	895	308
MIN	164	161	381	310	353	269	1110	533	585	545	223	164
AC-FT	41910	29840	45160	22910	36730	65990	457100	70800	154500	110300	28800	12870

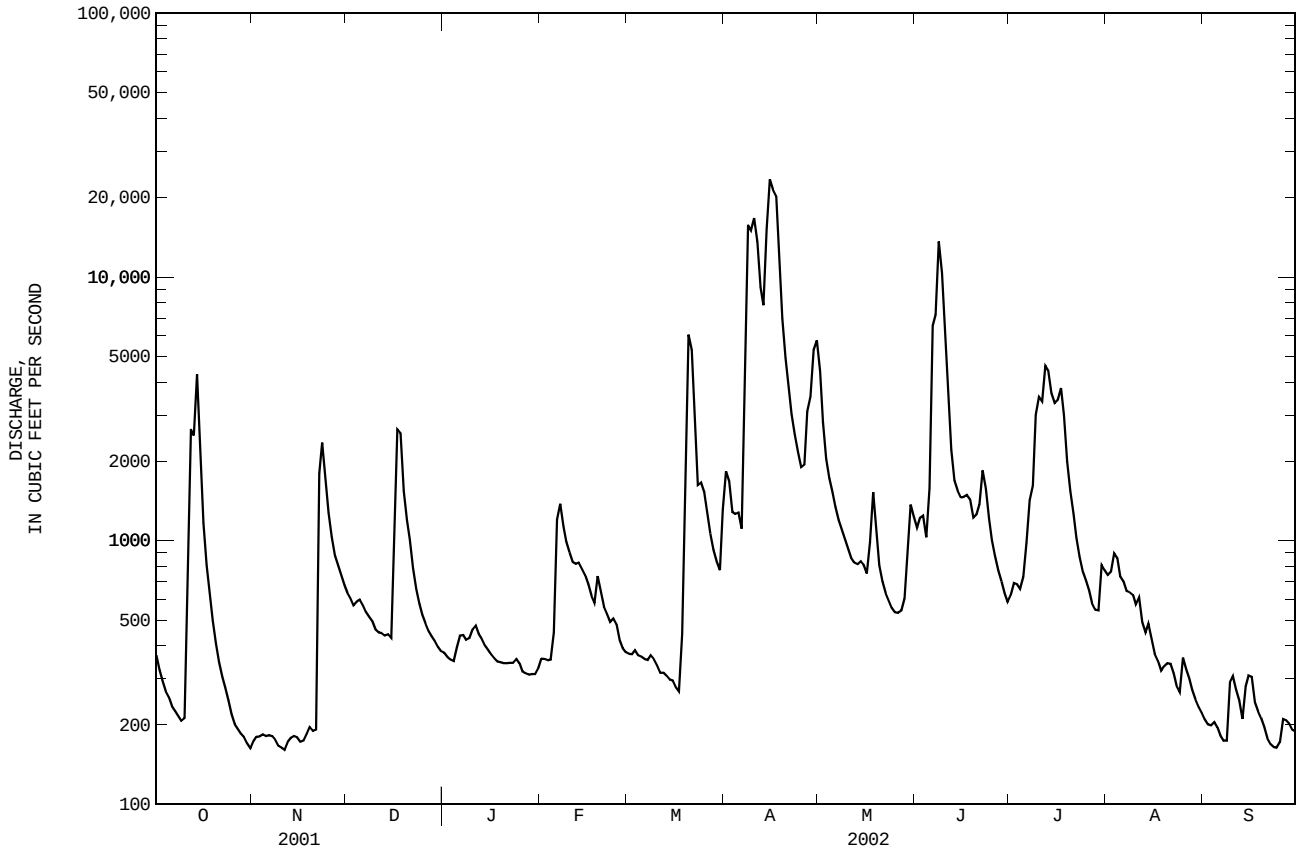
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2002, BY WATER YEAR (WY)

MEAN	3716	2047	1614	1286	1960	2916	3586	7896	8135	2155	1570	2424
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1937 - 2002	
ANNUAL TOTAL	1147201		542954			
ANNUAL MEAN	3143		1488		3277	
HIGHEST ANNUAL MEAN					11890	1987
LOWEST ANNUAL MEAN					651	1953
HIGHEST DAILY MEAN	44700	Feb 17	23500	Apr 15	232000	May 31 1987
LOWEST DAILY MEAN	161	Nov 11	161	Nov 11	48	Jan 18 1940
ANNUAL SEVEN-DAY MINIMUM	171	Nov 7	171	Nov 7	48	Jan 18 1940
MAXIMUM PEAK FLOW			24100	Apr 15	265000	May 31 1987
MAXIMUM PEAK STAGE			17.43	Apr 15	40.08	May 31 1987
ANNUAL RUNOFF (AC-FT)	2275000		1077000		2374000	
10 PERCENT EXCEEDS	8580		3190		7300	
50 PERCENT EXCEEDS	1320		575		858	
90 PERCENT EXCEEDS	226		196		216	



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, 9,510 microsiemens Feb. 18, 2002; minimum, 402 microsiemens Nov. 14, 1994.
WATER TEMPERATURE: Maximum, 36.5°C July 15, 1998; minimum , -0.5°C Jan. 4, 5, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded (more than 20% missing record), 9,510 microsiemens Feb. 18; minimum, 438 microsiemens Apr. 17.
WATER TEMPERATURE: Maximum recorded (more than 20% missing record), 35.1°C Aug. 3; minimum, 0.0°C Jan. 3.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	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										
16...	1546	1028	1028	8.59	750	10.7	8.4	4450	29.5	225
16...	1548	1028	1028	8.59	750	10.7	8.4	4450	28.6	200
16...	1550	1028	1028	8.59	750	10.8	8.4	4470	28.5	175
16...	1552	1028	1028	8.59	750	10.9	8.4	4470	28.4	150
16...	1554	1028	1028	8.59	750	10.9	8.4	4480	28.4	125
16...	1556	1028	1028	8.59	750	10.9	8.4	4480	28.4	100
16...	1558	1028	1028	8.59	750	10.8	8.4	4490	28.3	75.0
16...	1600	1028	1028	8.59	750	10.8	8.4	4480	28.3	50.0
16...	1602	1028	1028	8.59	750	10.5	8.4	4470	28.4	25.0

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													
10...	1540	80020	1028	8.55	212	748	--	--	8.3	5260	20.9	23.1	850
NOV													
27...	1645	80020	1028	9.56	826	751	94	10.8	8.3	6010	2.8	7.6	820
DEC													
27...	1445	80020	1028	8.97	440	747	103	12.2	8.3	4810	16.1	6.3	810
JAN													
15...	1500	80020	1028	8.85	369	751	101	11.4	8.2	5480	16.3	8.5	900
FEB													
20...	1430	80020	1028	9.12	529	749	138	13.4	8.5	7970	21.5	14.7	980
MAR													
12...	1600	80020	1028	8.57	255	737	120	11.2	8.2	5810	20.5	16.0	1100
APR													
09...	1500	80020	1028	15.16	13700	750	97	9.3	8.0	665	21.9	16.5	140
MAY													
08...	1245	80020	1028	9.88	983	736	100	8.1	8.1	3600	26.5	24.0	660
JUN													
13...	1330	80020	1028	10.48	1490	745	66	4.9	7.9	1930	35.8	29.0	370
JUL													
17...	1700	80020	1028	11.93	3760	740	51	3.8	8.1	2590	29.5	28.2	300
AUG													
15...	1730	80020	1028	8.81	398	745	140	10.1	8.5	3490	33.1	30.8	620
SEP													
16...	1515	80020	1028	8.59	290	750	143	10.8	8.4	4470	29.2	28.4	1300

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
10...	720	218	74.0	8.52	12	802	67	129	157	0	1300	.4	7.9
NOV													
27...	700	234	57.3	9.52	14	939	71	119	135	5	1540	.5	7.9
DEC													
27...	630	218	63.5	13.9	10	678	64	176	212	2	1130	.4	8.6
JAN													
15...	730	234	76.8	6.93	11	771	65	168	199	3	1340	.4	3.4
FEB													
20...	870	260	81.3	7.62	17	1210	73	112	130	4	2170	.3	3.8
MAR													
12...	920	265	94.6	7.97	12	912	65	131	155	2	1480	.4	2.2
APR													
09...	58	37.1	10.5	4.57	3	72.9	53	78	95	0	114	.2	6.2
MAY													
08...	510	172	56.5	7.68	9	520	63	152	182	2	855	.3	6.1
JUN													
13...	270	101	27.5	8.64	6	255	60	97	118	0	412	.3	8.1
JUL													
17...	200	80.7	24.4	4.52	3	132	48	104	125	0	208	.3	4.4
AUG													
15...	510	158	55.0	8.59	8	483	62	108	123	4	775	.4	7.2
SEP													
16...	1300	185	214	9.87	8	687	52	84	94	4	1070	.5	6.6

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													
10...	663	1.1	<.04	--	--	--	--	<.05	--	<.008	--	--	<.06
NOV													
27...	723	1.9	.13	.64	2.6	.16	2.85	.66	.043	.013	1.8	.077	E.03
DEC													
27...	563	.76	<.04	--	1.2	--	--	.45	--	E.007	--	.169	.07
JAN													
15...	681	.74	E.02	.15	.90	--	.664	.17	.053	.016	--	--	E.03
FEB													
20...	858	.97	E.04	--	--	--	--	<.05	--	<.008	--	--	<.06
MAR													
12...	766	.84	<.04	--	.91	--	--	.06	--	<.008	--	--	<.06
APR													
09...	62.9	2.8	.10	.11	2.9	.12	.500	.13	.043	.013	2.7	.071	E.05
MAY													
08...	480	.80	<.04	--	--	--	--	<.05	--	<.008	--	.126	E.06
JUN													
13...	240	1.9	<.04	.37	2.3	--	1.66	.38	.030	.009	--	.307	.16
JUL													
17...	178	.43	.07	.22	.67	.09	.956	.24	.072	.022	.35	.138	E.05
AUG													
15...	457	1.5	<.04	--	--	--	--	<.05	--	<.008	--	--	<.06
SEP													
16...	599	1.7	E.03	--	--	--	--	<.05	--	<.008	--	--	<.06

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ORTHO-PHOS-PHATE, 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													
10...	<.02	.14	43	4.29	1800	3150	3	E4	137	145	18	<.4	<3.2
NOV													
27...	.03	.72	254	4.88	8000	3590	3	9	113	309	<16	E.2	<.8
DEC													
27...	.06	.12	26	3.79	3310	2790	E2	3	105	107	<24	<.2	<.8
JAN													
15...	<.02	E.05	16	4.38	3210	3220	E2	3	88.6	97.9	<24	<.2	<.8
FEB													
20...	<.02	.15	32	6.35	6670	4670	E3	E2	104	94.1	<16	<.2	1.1
MAR													
12...	<.02	.08	26	4.91	2480	3610	3	3	99.4	93.5	<8	<.1	<.8
APR													
09...	.02	.68	1130	.48	13200	356	<2	5	62.3	264	<8	.3	<.8
MAY													
08...	.04	.16	78	2.98	5810	2190	3	4	204	222	<24	<.1	<.8
JUN													
13...	.10	.41	308	1.51	4470	1110	4	6	170	230	<8	.3	<.8
JUL													
17...	.04	E.05	<10	.95	7060	695	3	2	106	113	<8	<.1	<.8
AUG													
15...	<.02	.16	21	2.73	2160	2010	5	6	150	149	<24	<.1	<.8
SEP													
16...	<.02	.20	46	3.84	2210	2820	3	4	183	195	<8	.2	<.8

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													
10...	2.1	<10	<4.0	<20	530	E.13	<3	4.1	167	<.01	<.01	<60	<70
NOV													
27...	10.1	<10	14.2	<20	8130	<.20	13	<3.0	525	<.01	.02	<60	<70
DEC													
27...	<.8	<20	2.2	<30	100	E.09	M	31.6	41.2	<.01	<.01	<90	<70
JAN													
15...	<.8	<20	2.4	<30	<40	<.20	<2	30.9	38.0	<.01	<.01	<90	<200
FEB													
20...	<.8	12	3.0	<20	70	.85	<2	35.3	55.7	<.01	.02	<60	<200
MAR													
12...	E.5	E4	E.7	<10	<10	.34	<1	48.4	61.6	<.01	.02	<30	<70
APR													
09...	8.8	E4	20.6	28	10600	.24	17	5.6	763	.02	.04	<30	E40
MAY													
08...	1.2	<20	4.1	<30	980	.17	1	E3.3	200	<.01	E.01	<90	<70
JUN													
13...	4.1	11	10.4	E6	3390	1.48	5	5.9	250	<.01	.02	<30	<70
JUL													
17...	<.8	<6	1.9	E8	50	.11	<1	189	182	<.01	<.01	<30	<70
AUG													
15...	E.4	<20	2.2	<30	350	<.20	1	<5.0	204	E.01	E.01	<90	<70
SEP													
16...	E.5	<20	2.3	<10	370	E.10	M	3.5	164	<.01	E.01	<30	<70

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
10...	<2	<6	<.5	<.3	<48	<20	--	--	--	--	--	--	--
NOV													
27...	3	3	<.4	<.3	<48	50	--	--	--	--	--	--	--
DEC													
27...	<4	<2	<.1	<.3	<72	E10	--	--	--	--	--	--	--
JAN													
15...	3	4	<.2	<.3	<72	<80	--	--	--	--	--	--	--
FEB													
20...	E2	<4	<.2	<.5	<48	<80	--	--	--	--	--	--	--
MAR													
12...	2	3	<.1	<.3	<24	<20	<.04	<.03	83.0	<.1	<1	<.1	<.1
APR													
09...	<2	E1	E.1	<.3	<24	60	--	--	--	--	--	--	--
MAY													
08...	E1	<2	<.1	<.3	<72	E20	--	--	--	--	--	--	--
JUN													
13...	<2	<2	<.4	<.3	33	40	--	--	--	--	--	--	--
JUL													
17...	E1	<2	<.1	<.3	<24	E20	--	--	--	--	--	--	--
AUG													
15...	2	E1	<.1	<.3	<72	40	--	--	--	--	--	--	--
SEP													
16...	<2	E1	<.1	<.3	<24	E20	<.04	<.03	143	<.1	<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													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
12...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.02	<.1	<.04	<.6	<.2	<.06
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.02	<.1	<.04	<.6	<.2	<.06

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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									
10...	--	--	--	--	--	--	--	--	--
NOV									
27...	--	--	--	--	--	--	--	--	--
DEC									
27...	--	--	--	--	--	--	--	--	--
JAN									
15...	--	--	--	--	--	--	--	--	--
FEB									
20...	--	--	--	--	--	--	--	--	--
MAR									
12...	<.8	<.03	47.8	<.03	41.4	<.1	<.04	<.1	<2
APR									
09...	--	--	--	--	--	--	--	--	--
MAY									
08...	--	--	--	--	--	--	--	--	--
JUN									
13...	--	--	--	--	--	--	--	--	--
JUL									
17...	--	--	--	--	--	--	--	--	--
AUG									
15...	--	--	--	--	--	--	--	--	--
SEP									
16...	<.8	<.03	72.0	<.03	119	<.1	<.04	<.1	<2

SPECIFIC CONDUCTANCE VIA SATELLITE, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	e3800	---	---	e3760	6280	6110	6180	5910	5850	5880
2	---	---	e4000	---	---	e3840	6470	6280	6380	5940	5900	5920
3	---	---	e4250	---	---	e3930	6480	6440	6460	5930	5860	5910
4	---	---	e4500	---	---	e4020	6530	6280	6390	5900	5830	5890
5	---	---	e4750	---	---	e4150	6420	6250	6350	5830	5500	5580
6	---	---	e5000	---	---	e4240	6560	6160	6320	5500	5350	5430
7	---	---	e5250	---	---	e4360	6540	6080	6230	5350	5280	5300
8	---	---	e5500	---	---	e4380	6330	6130	6220	5350	5280	5310
9	---	---	e5750	---	---	e4410	6450	6330	6380	5470	5280	5370
10	---	---	e6000	---	---	e4430	6620	6450	6520	5580	5460	5500
11	---	---	e3510	---	---	e4360	6680	6450	6560	5700	5580	5650
12	---	---	e1920	---	---	e4370	7030	6570	6820	5800	5640	5740
13	---	---	e1130	---	---	e4380	7360	7030	7170	5640	5340	5420
14	---	---	e822	---	---	e4420	7570	7270	7420	5600	5450	5540
15	---	---	e1010	---	---	e4520	7580	7350	7500	5580	5470	5520
16	---	---	e1790	4770	4590	4660	7350	2650	6140	5590	5440	5500
17	---	---	e2100	4730	4400	4550	3180	1610	2420	5680	5580	5630
18	---	---	e2340	4400	4170	4290	2500	1870	2170	5730	5670	5710
19	---	---	e2440	4170	4100	4120	3360	2500	2860	5790	5680	5730
20	---	---	e2480	4150	4090	4120	3380	3170	3270	6000	5790	5900
21	---	---	e2530	4170	4140	4160	4400	3300	3830	6010	5920	5970
22	---	---	e2600	6890	4160	5240	4820	4400	4620	5940	5770	5870
23	---	---	e2750	6910	5840	6260	4450	4240	4320	5870	5660	5780
24	---	---	e3010	7680	5930	6780	4610	4450	4540	5720	5450	5570
25	---	---	e3100	7800	7170	7570	4900	4610	4790	5610	5500	5560
26	---	---	e3200	7170	6320	6760	4860	4760	4800	5560	5460	5510
27	---	---	e3280	6320	5800	6070	4950	4770	4830	5600	5500	5560
28	---	---	e3370	5850	5730	5780	5250	4950	5080	5640	5410	5550
29	---	---	e3460	5870	5810	5840	5440	5250	5360	5560	5450	5510
30	---	---	e3550	6110	5850	5980	5720	5440	5590	5620	5470	5580
31	---	---	e3670	---	---	---	5850	5720	5780	5640	5470	5530
MONTH	---	---	3320	7800	4090	4860	7580	1610	5460	6010	5280	5630

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SPECIFIC CONDUCTANCE VIA SATELLITE, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5640	5390	5560	6710	6550	6630	3200	2410	2770	1160	945	1040
2	5430	5340	5390	6560	6020	6200	3730	2360	3150	1360	1130	1290
3	5420	5110	5300	6100	5860	5980	3640	2720	2980	1340	811	1140
4	5140	5080	5110	5970	5670	5800	4900	3010	3950	1290	1160	1210
5	5140	4950	5030	6200	5910	6070	4920	3900	4360	2350	1280	2100
6	6430	5050	5530	6370	6190	6280	3900	3650	3810	2590	2320	2420
7	6870	5220	6270	6370	6210	6300	3650	925	2340	2710	1840	2460
8	5220	5000	5090	6380	6310	6350	968	459	664	3610	2620	3240
9	5210	4440	4900	6310	6140	6220	735	552	664	3560	3140	3370
10	4470	4260	4360	6280	5930	6070	1520	735	1150	3330	3130	3230
11	5270	4470	4880	5940	5720	5850	1020	694	843	3500	3300	3390
12	5480	5240	5340	5930	5710	5800	773	528	677	3610	3400	3470
13	6160	5480	5840	6240	5930	6100	767	548	664	3670	3060	3420
14	6700	6160	6420	6260	6120	6180	752	456	542	3410	3000	3180
15	7210	6680	6970	6310	6200	6240	1080	684	889	4140	2940	3590
16	8300	7210	7810	6320	6210	6270	792	443	586	4100	3810	3950
17	9000	8300	8750	6320	6170	6250	683	438	516	3920	2590	3440
18	9510	9000	9330	6190	3420	5430	1250	683	1130	3320	1720	2460
19	9380	7060	8020	4270	2500	3330	1550	1020	1210	2880	1750	2250
20	8310	7110	7670	2520	1100	1790	1250	784	958	3710	2880	3340
21	7850	7410	7610	1770	1090	1350	1140	529	915	4550	3630	4050
22	7420	7230	7330	2020	1380	1710	1170	865	1070	---	---	e4770
23	7240	7020	7110	1910	1310	1460	1340	1010	1090	---	---	e4580
24	7080	6990	7030	4050	1910	3170	1620	1030	1300	---	---	e4400
25	7020	6640	6740	4050	3490	3740	2060	1320	1680	---	---	e4320
26	6750	6480	6680	3490	3000	3220	2050	996	1790	---	---	e4420
27	6480	6250	6310	3130	2990	3080	2110	996	1680	---	---	e4320
28	6600	6340	6490	3580	3130	3360	1560	1130	1330	---	---	e4180
29	---	---	---	4310	3580	3960	1740	1140	1460	---	---	e3930
30	---	---	---	4580	4310	4520	1630	949	1100	---	---	e2870
31	---	---	---	4600	3150	4140	---	---	---	---	---	e2090
MONTH	9510	4260	6390	6710	1090	4800	4920	438	1580	4550	811	3160

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e2350	---	---	e4540	---	---	e4020	4390	4250	4320
2	---	---	e2980	---	---	e4190	---	---	e4450	4350	4050	4190
3	---	---	e3460	---	---	e3810	---	---	e4480	4120	3820	3950
4	---	---	e2790	---	---	e3500	---	---	e4440	3830	3590	3690
5	---	---	e2100	---	---	e3730	---	---	e3670	3920	3570	3680
6	---	---	e1190	---	---	e4110	---	---	e3530	3960	3770	3850
7	---	---	e850	---	---	e3880	---	---	e3580	3960	3600	3770
8	---	---	e1230	---	---	e2470	---	---	e4540	3620	3110	3380
9	---	---	e848	---	---	e2360	---	---	e5800	3200	1830	2860
10	---	---	e1080	---	---	e2240	---	---	e5490	---	---	e2100
11	---	---	e1300	---	---	e1680	---	---	e4780	---	---	e2940
12	---	---	e1540	---	---	e2340	---	---	e4210	---	---	e2750
13	---	---	e1900	---	---	e2530	---	---	e4170	---	---	e3420
14	2040	1950	1980	---	---	e2970	---	---	e3870	---	---	e4100
15	2100	1870	1950	---	---	e3990	---	---	e3550	---	---	e4370
16	2720	2090	2250	---	---	e3400	3510	3450	3480	---	---	e4440
17	3290	2050	2250	3620	2200	2750	3670	3500	3560	4290	3640	3870
18	3040	2190	2620	2200	1980	2040	3920	3670	3810	3640	2960	3350
19	3560	2880	3000	2030	1910	1970	4100	3890	3970	2980	2400	2650
20	3850	2900	3280	2440	1980	2180	4260	4100	4200	2790	2400	2600
21	3220	2870	3050	3130	2440	2780	4460	4260	4340	3200	2710	2960
22	3860	2640	2980	3730	3130	3490	4520	3920	4310	3510	3120	3310
23	4900	3860	4600	4450	3730	4020	3920	3640	3790	3840	3510	3700
24	---	---	e4570	4730	4450	4650	4380	3850	4100	3990	3840	3950
25	---	---	e4620	4610	4220	4360	4590	4270	4430	---	---	e4050
26	---	---	e4850	4260	4160	4190	4350	4040	4190	---	---	e4100
27	---	---	e5160	4490	4200	4330	4080	3620	3850	---	---	e4010
28	---	---	e5160	4910	4450	4670	3900	3620	3790	---	---	e3950
29	---	---	e4960	5040	4910	4980	3810	3670	3750	---	---	e3610
30	---	---	e4920	5060	2520	4470	4080	3810	3960	---	---	e3060
31	---	---	---	---	---	e3550	4390	4080	4200	---	---	---
MONTH	4900	1870	2860	5060	1910	3420	4590	3450	4140	4390	1830	3570

YEAR	9510	438	4090

e Estimated

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER TEMPERATURE VIA SATELLITE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

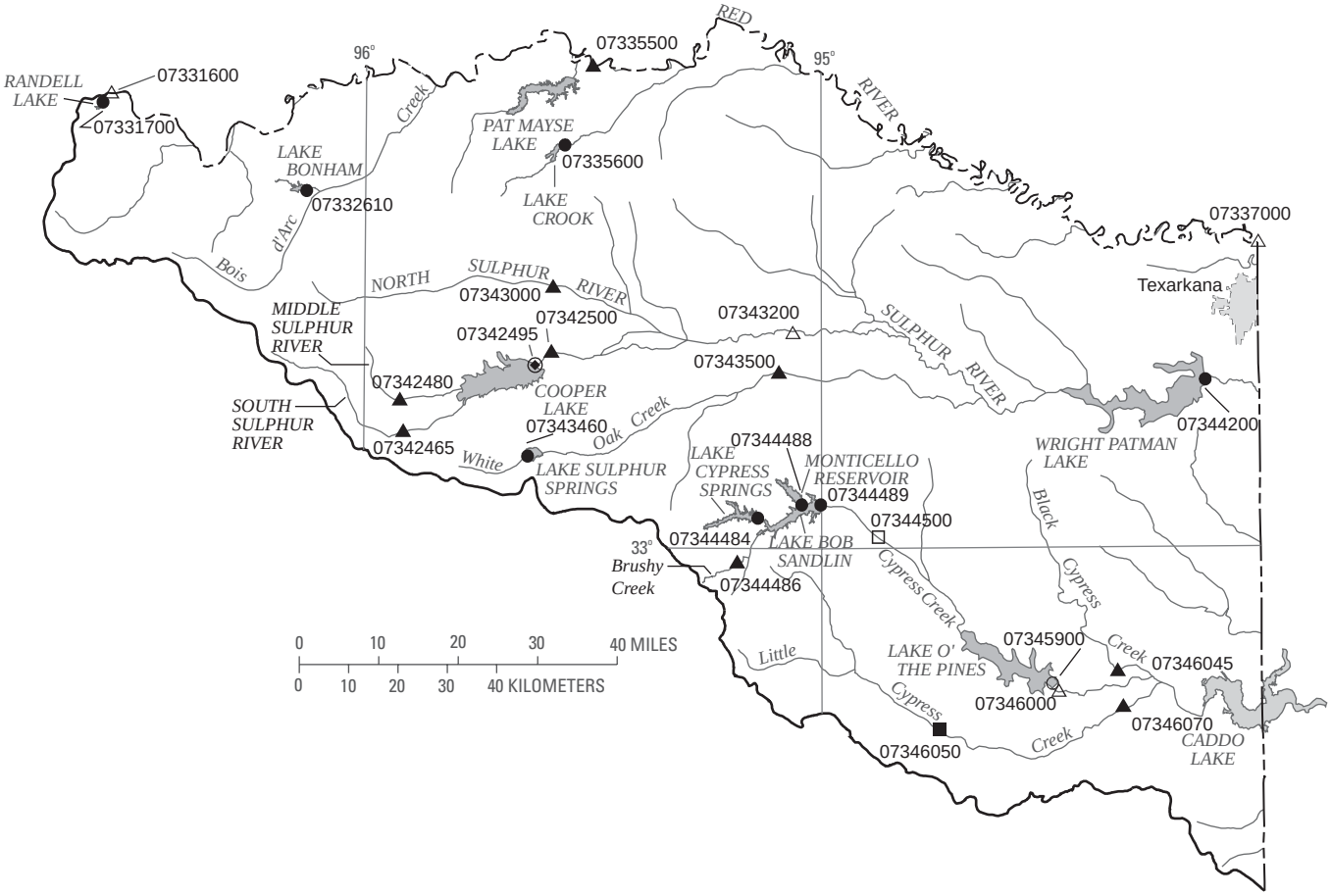
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	5.8	3.3	4.4
2	---	---	---	---	---	---	---	---	---	4.3	1.8	3.3
3	---	---	---	---	---	---	---	---	---	3.3	0.0	1.7
4	---	---	---	---	---	---	---	---	---	3.8	0.6	2.2
5	---	---	---	---	---	---	---	---	---	5.5	3.8	4.6
6	---	---	---	---	---	---	---	---	---	7.0	3.5	5.1
7	---	---	---	---	---	---	---	---	---	7.0	3.5	5.3
8	---	---	---	---	---	---	---	---	---	8.5	4.1	6.2
9	---	---	---	---	---	---	---	---	---	11.1	6.3	8.6
10	---	---	---	---	---	---	---	---	---	10.7	9.3	10.1
11	---	---	---	---	---	---	---	---	---	10.9	7.7	9.2
12	---	---	---	---	---	---	---	---	---	9.9	6.6	8.3
13	---	---	---	---	---	---	---	---	---	10.2	6.1	8.1
14	---	---	---	---	---	---	---	---	---	10.3	7.0	8.6
15	---	---	---	---	---	---	---	---	---	8.9	5.9	7.5
16	---	---	---	---	---	---	---	---	---	11.7	6.8	8.9
17	---	---	---	---	---	---	---	---	---	9.2	6.6	7.8
18	---	---	---	---	---	---	---	---	---	6.6	5.6	5.9
19	---	---	---	---	---	---	---	---	---	8.1	4.8	6.4
20	---	---	---	---	---	---	---	---	---	8.1	4.6	6.4
21	---	---	---	---	---	---	---	---	---	9.1	4.6	6.9
22	---	---	---	---	---	---	---	---	---	11.9	6.7	9.0
23	---	---	---	---	---	---	---	---	---	14.6	11.5	12.6
24	---	---	---	---	---	---	---	---	---	12.0	8.0	9.6
25	---	---	---	---	---	---	---	---	---	10.5	5.9	8.1
26	---	---	---	---	---	---	---	---	---	10.8	6.1	8.4
27	---	---	---	---	---	---	---	---	---	11.4	7.2	9.3
28	---	---	---	---	---	---	---	---	---	14.7	9.0	11.7
29	---	---	---	---	---	---	---	---	---	17.8	13.7	15.6
30	---	---	---	---	---	---	---	---	---	16.5	10.1	13.0
31	---	---	---	---	---	---	5.2	2.3	3.7	10.1	7.2	9.0
MONTH	---	---	---	---	---	---	5.2	2.3	3.7	17.8	0.0	7.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.5	5.1	7.2	9.5	8.0	8.6	20.8	16.3	18.6	27.8	24.1	25.8
2	8.0	5.3	6.9	9.5	2.6	5.3	19.6	17.4	18.8	27.2	23.4	25.1
3	10.5	7.1	8.6	6.5	0.5	3.3	17.5	14.1	16.0	23.4	21.2	22.4
4	10.1	8.0	9.1	9.7	2.6	6.0	17.4	14.1	15.7	23.8	21.0	22.3
5	9.1	6.1	7.8	12.0	5.6	8.6	18.6	14.0	16.4	25.7	21.5	23.5
6	6.7	5.6	6.1	15.5	8.6	11.8	17.7	15.1	16.0	26.2	23.5	24.9
7	8.7	5.2	6.8	18.9	13.2	15.8	15.1	13.3	13.8	27.1	23.8	25.3
8	10.7	6.5	8.5	17.7	15.8	16.7	14.2	13.3	13.7	25.8	23.5	24.7
9	12.0	8.6	10.2	17.7	10.7	13.5	16.9	14.2	15.5	24.7	22.1	23.5
10	10.2	7.8	8.7	14.3	8.9	11.6	18.7	16.9	17.7	24.3	21.5	22.9
11	9.9	5.9	7.8	12.5	10.9	11.8	20.1	18.0	19.1	26.0	21.7	23.7
12	10.9	6.5	8.6	16.2	11.3	13.7	20.7	18.9	20.0	24.7	21.4	23.7
13	11.3	8.2	9.7	17.6	11.5	14.4	20.2	18.3	19.0	23.6	18.4	20.9
14	10.8	7.7	9.3	20.4	13.1	16.6	20.7	18.1	19.2	24.7	19.4	21.9
15	12.8	9.6	10.8	18.3	12.8	15.4	21.9	20.3	21.1	24.3	20.7	22.4
16	13.4	8.6	10.9	15.4	10.4	12.8	22.9	21.7	22.2	25.9	21.0	23.2
17	13.8	9.7	11.7	16.6	12.9	14.5	24.3	22.4	23.2	24.6	21.1	22.7
18	13.4	11.0	12.2	15.1	13.5	14.4	24.7	24.0	24.3	22.7	19.5	21.0
19	16.6	13.4	14.9	14.1	13.3	13.9	24.4	23.6	24.0	23.5	19.2	21.3
20	15.7	12.9	14.3	14.6	12.6	13.6	24.8	23.4	24.1	24.4	20.1	22.2
21	14.0	12.0	13.0	14.2	11.7	13.2	24.9	22.9	23.8	25.3	20.4	22.7
22	14.6	10.0	12.2	12.5	9.1	10.9	24.6	22.1	23.4	24.3	20.8	22.4
23	14.9	10.3	12.5	14.0	9.4	11.6	24.6	21.9	23.1	23.9	20.7	22.2
24	14.9	10.7	12.8	17.9	12.9	15.1	26.8	22.9	24.6	23.7	21.3	22.5
25	13.8	8.4	12.1	17.4	11.5	14.4	25.0	21.1	22.2	26.5	21.3	23.6
26	8.4	3.7	5.7	14.2	9.1	11.7	21.1	16.8	18.4	28.5	22.4	25.1
27	8.7	3.0	5.7	16.1	11.2	13.6	20.6	16.3	18.1	26.5	22.6	24.4
28	10.2	4.5	7.2	19.2	13.6	16.4	23.8	19.2	21.2	24.9	21.5	22.9
29	---	---	---	21.7	17.3	19.4	25.0	21.6	23.2	27.1	22.3	24.5
30	---	---	---	20.4	17.0	18.4	25.7	23.5	24.5	28.4	23.8	25.9
31	---	---	---	20.1	15.5	17.6	---	---	---	30.2	25.2	27.5
MONTH	16.6	3.0	9.7	21.7	0.5	13.1	26.8	13.3	20.0	30.2	18.4	23.5

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

WATER TEMPERATURE VIA SATELLITE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.8	26.6	28.7	27.4	25.0	26.1	33.3	28.1	30.5	32.7	26.8	29.6
2	30.5	27.1	28.8	28.7	25.5	27.0	34.5	29.4	31.9	32.9	27.3	30.0
3	30.1	26.4	28.3	28.5	26.1	27.2	35.1	30.4	32.7	32.6	27.2	29.8
4	30.1	26.5	28.3	30.3	25.7	27.9	34.7	30.9	32.8	33.6	27.2	30.1
5	28.8	24.7	26.0	32.1	27.3	29.6	34.5	30.2	32.4	31.9	27.8	30.0
6	25.8	23.4	24.7	32.1	28.4	30.3	34.6	29.5	31.9	33.1	27.4	29.9
7	27.0	24.0	25.4	33.2	28.3	30.9	35.0	29.5	32.1	30.9	27.1	29.0
8	26.7	25.7	26.2	33.8	30.0	31.9	34.3	29.9	32.0	28.1	26.0	26.6
9	28.1	26.3	27.1	34.1	31.2	32.7	33.9	28.6	31.2	28.8	24.5	26.3
10	28.6	26.8	27.6	34.2	31.1	32.6	31.6	29.0	30.0	31.4	24.9	27.8
11	29.5	26.8	28.1	34.8	31.1	32.9	31.8	27.3	29.3	32.1	26.0	28.7
12	30.7	27.4	29.0	33.5	31.3	32.2	31.7	27.0	29.3	31.4	26.5	28.7
13	29.9	26.8	28.1	32.2	29.7	31.0	32.1	27.4	29.6	30.8	26.4	28.6
14	29.3	25.2	27.1	33.4	30.2	31.6	30.1	26.4	28.1	31.2	25.8	28.4
15	29.3	25.6	27.6	32.0	29.7	31.1	30.8	26.6	28.5	29.3	25.8	27.5
16	28.2	25.3	26.6	30.8	29.4	30.1	31.8	26.0	28.6	29.4	24.7	26.8
17	29.2	25.1	27.2	29.4	27.9	28.6	31.9	26.6	28.9	29.7	24.7	27.0
18	29.3	25.0	27.4	30.4	27.2	28.6	32.3	26.8	29.3	30.0	24.7	27.0
19	30.3	26.3	28.2	31.5	28.6	29.9	32.1	27.2	29.5	28.1	24.3	25.8
20	31.1	27.2	29.1	32.4	28.6	30.4	32.3	27.6	29.7	27.9	21.5	24.5
21	32.1	28.4	30.1	32.4	29.1	30.8	32.2	27.2	29.4	28.1	21.6	24.8
22	32.3	28.6	30.4	33.5	29.3	31.3	33.3	27.5	30.0	26.6	22.4	24.4
23	31.5	27.6	29.6	34.7	30.0	32.2	33.7	28.2	30.8	26.1	20.2	23.0
24	32.1	28.1	30.1	34.5	30.4	32.2	33.8	28.4	30.9	25.7	19.6	22.6
25	32.3	28.2	30.2	34.7	29.2	31.8	31.6	28.7	30.2	27.0	19.9	23.2
26	32.4	28.4	30.4	34.1	29.9	32.0	34.3	27.7	30.6	27.7	21.8	24.5
27	32.8	28.0	30.3	32.7	28.5	30.6	31.5	25.0	27.9	28.4	21.7	24.8
28	33.3	28.6	30.8	32.2	27.7	29.7	32.0	25.7	28.5	28.5	22.9	25.6
29	33.0	29.0	30.6	29.5	26.7	28.1	30.7	26.5	28.5	28.8	23.4	26.0
30	29.6	26.0	27.6	30.1	25.5	27.6	31.7	25.6	28.4	28.4	23.9	26.1
31	---	---	---	31.5	25.1	28.0	32.3	25.8	28.8	---	---	---
MONTH	33.3	23.4	28.3	34.8	25.0	30.2	35.1	25.0	30.1	33.6	19.6	26.9
YEAR	35.1	0.0	21.1									



EXPLANATION

07344486	▲	**Surface-water continuous station and number**
07331600	△	**Surface-water continuous/water-quality station and number**
07344488	●	**Reservoir station and number**
07345900	○	**Reservoir/water-quality station and number**
07344500	□	**Surface-water partial record/stage only/water-quality station and number**
07346050	■	**Surface-water partial record/stage only station and number**
07342495	◈	**Reservoir/precipitation station and number**

Figure 7.--Map showing location of gaging stations in the fourth section of the Red River Basin

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

LOCATION.--Lat 33°49'08", long 96°33'47", Grayson County, Hydrologic Unit 11140101, on right bank 1,800 ft downstream from Denison Dam powerhouse, 0.4 mi upstream from Shawnee Creek (spillway flow return), 4.5 mi north of Denison, and at mile 725.5.

WATER-DISCHARGE RECORDS

DRAINAGE AREA.--39,720 mi^2, of which 5,936 mi^2 is probably noncontributing. At site used prior to October 1961 drainage area was 39,777 mi^2, of which 5,936 mi^2 probably was noncontributing.

PERIOD OF RECORD.--October 1923 to September 1989; December 1996 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1934, published as "near Denison, TX", and October 1934 to September 1961, published as "near Colbert, OK". Gage-height records collected at various sites in this vicinity 1892-93, 1906-28, 1931-49 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 807: 1935 (M). WSP 1211: Drainage area. WSP 1241: 1924-29, 1932-33, 1934 (M), 1935.

GAGE.--Water-stage recorder. Datum of gage is 495.00 ft above National Geodetic Vertical Datum of 1929. Oct. 9, 1923, to Sept. 24, 1934, nonrecording gage, and July 29, 1942, to Sept. 30, 1961, water-stage recorder, at county road bridge 2.5 mi downstream. Prior to Oct. 1, 1931, at datum 11.85 ft higher; Oct. 1, 1931, to Sept 24, 1934, at datum 12.07 ft higher; and July 29, 1942, to Sept. 30, 1961, at datum 2.36 ft higher; Sept. 25, 1934, to July 28, 1942, water-stage recorder at railway bridge 1.9 mi downstream at datum 12.36 ft higher. July 29, 1942 to Sept. 30, 1989, at same site and datum 5.00 ft higher.

REMARKS.--No estimated daily discharge. Records fair 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 VIA SATELLITE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1790	2600	210	7030	4610	2010	3950	11100	279	3510	3530	136
2	2030	1040	53	7200	4850	4960	4980	11100	52	3440	3870	4760
3	2020	208	1050	6990	4540	10100	7300	11200	1300	3620	3870	5050
4	2040	51	1290	7120	5410	10900	6240	4820	1560	4170	3870	5030
5	2040	857	1310	636	7850	6060	7250	6370	1930	3940	4030	5200
6	284	1020	1270	60	5480	1340	5770	7120	1550	3410	3720	1440
7	51	1050	1270	5030	5500	1160	5250	7450	1560	5010	3600	192
8	1790	1020	266	5310	4560	1190	2170	3830	313	4570	4390	115
9	2050	980	52	3840	447	3650	333	3750	55	2630	4780	1300
10	2090	203	2310	3230	53	693	5090	5170	1560	3400	4260	5230
11	2280	51	3280	4530	3230	962	10900	3050	1810	3870	4240	4370
12	2010	863	2480	581	3600	1120	13700	2800	1570	4770	4370	4510
13	557	1020	2230	59	2360	1140	17500	2040	1570	3510	3790	4620
14	68	1040	2250	5050	3600	1180	18900	2880	1560	2440	4890	2630
15	1790	1030	305	5840	3550	1150	18900	2700	308	3100	10300	308
16	2040	1030	315	6180	416	230	20700	2440	61	2850	10400	1960
17	2690	209	261	6280	58	53	22600	2380	1270	3600	4480	3330
18	2050	51	70	6540	2740	3180	24900	318	1550	4040	3940	2650
19	4630	849	8060	3010	2580	3660	26800	57	1540	6350	3920	2360
20	312	1020	10800	2310	2380	2190	26900	57	1550	6290	3620	1820
21	53	1030	10800	5820	2380	184	27000	1300	1530	6060	2660	1300
22	4030	1020	7290	6540	4300	2860	22000	592	306	6840	2380	1390
23	3060	1020	6940	6510	2150	455	13300	1880	54	7100	2390	2100
24	2440	173	7370	6540	2800	5000	12000	2310	3740	7090	343	1330
25	2020	53	6710	6710	3530	8810	13700	422	4100	7090	68	1270
26	3360	846	6950	957	5090	11100	13800	54	2940	7400	2430	1250
27	297	1540	6990	63	4710	11200	13700	54	2510	7220	4140	2000
28	53	1070	2570	873	4130	6150	13700	1920	2490	7300	4470	160
29	1790	1010	6570	1030	---	3550	12300	1500	2510	6410	5480	47
30	2040	1020	7010	1770	---	4210	11100	2190	2500	5080	5120	627
31	3550	---	7020	2360	---	3650	---	1160	---	4070	1420	---
TOTAL	57305	24974	115352	125999	96904	114097	402733	104014	45628	150180	124771	68485
MEAN	1849	832.5	3721	4064	3461	3681	13420	3355	1521	4845	4025	2283
MAX	4630	2600	10800	7200	7850	11200	27000	11200	4100	7400	10400	5230
MIN	51	51	52	59	53	53	333	54	52	2440	68	47
AC-FT	113700	49540	228800	249900	192200	226300	798800	206300	90500	297900	247500	135800

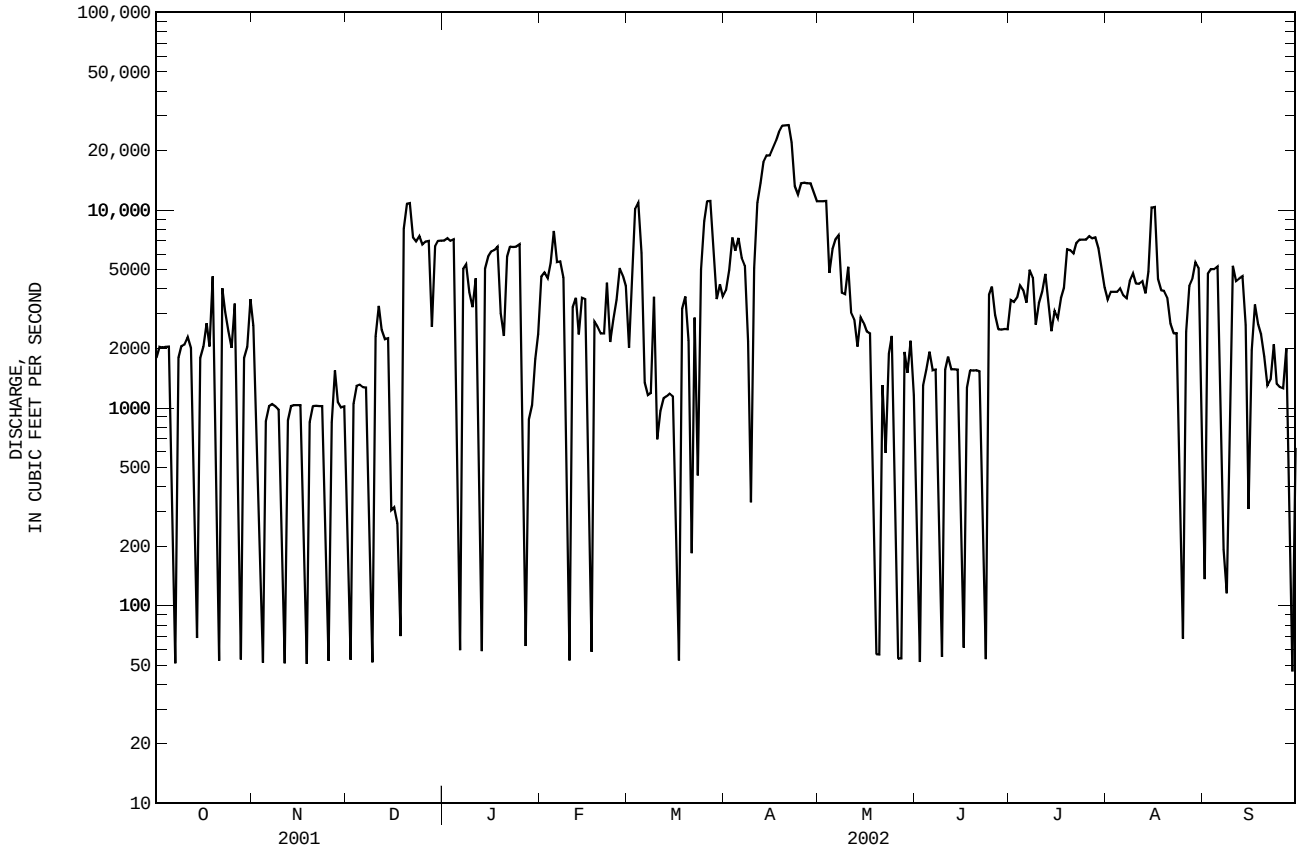
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2002, BY WATER YEAR (WY)

MEAN	4782	3688	3431	3675	3569	4745	5006	7473	11160	5458	3499	2606
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1945 - 2002	
ANNUAL TOTAL	2373951		1430442			
ANNUAL MEAN	6504		3919		[a]4871	
HIGHEST ANNUAL MEAN					16030	1987
LOWEST ANNUAL MEAN					1510	1964
HIGHEST DAILY MEAN	32800	Mar 11	27000	Apr 21	96200	Jun 5 1957
LOWEST DAILY MEAN	46	Jun 17	47	Sep 29	18	Feb 27 2000
ANNUAL SEVEN-DAY MINIMUM	519	Sep 4	737	Nov 20	25	Mar 8 2000
MAXIMUM PEAK FLOW			27500	Apr 22	[b]102000	Jun 5 1957
MAXIMUM PEAK STAGE			16.24	Apr 22	[c]26.26	Jun 5 1957
ANNUAL RUNOFF (AC-FT)	4709000		2837000		3529000	
10 PERCENT EXCEEDS	11500		7380		10600	
50 PERCENT EXCEEDS	4850		2650		2780	
90 PERCENT EXCEEDS	277		210		190	

[a]Prior to regulation, water years 1924-43, 5,684 ft^3/s.
[b]Maximum discharge for period of record, 201,000 ft^3/s May 21, 1935.
[c]Maximum gage height for period of record, 32.00 ft Apr. 25, 1942, site and datum then in use.



07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1944 to August 1989; October 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1944 to September 1989; February 1997 to current year.
WATER TEMPERATURE: October 1945 to September 1989; February 1997 to current year.

INSTRUMENTATION.--Water-quality monitor February 1997 to current year.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,520 microsiemens Aug. 14, 1944; minimum daily, 656 microsiemens Oct. 16, 1945.
WATER TEMPERATURE: Maximum daily, 31.0°C July 17, 1969; minimum daily, 3.0°C Feb. 2-4, 7, 1966.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,140 microsiemens Dec. 15; minimum, 779 microsiemens Aug. 27.
WATER TEMPERATURE: Maximum, 25.8°C Oct. 1, Sept. 11; minimum, 5.0°C Mar. 2.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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 (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											
17...	1440	1028	1028	8.11	5380	743	3.7	7.7	1350	25.5	370
17...	1443	1028	1028	8.11	5380	743	3.6	7.6	1340	25.5	330
17...	1446	1028	1028	8.11	5380	743	3.5	7.6	1330	25.4	290
17...	1449	1028	1028	8.11	5380	743	3.1	7.6	1340	25.1	250
17...	1452	1028	1028	8.11	5380	743	2.9	7.6	1340	24.9	210
17...	1455	1028	1028	8.11	5380	743	2.8	7.6	1340	24.8	170
17...	1458	1028	1028	8.11	5380	743	2.8	7.6	1340	24.8	130
17...	1501	1028	1028	8.11	5380	743	2.8	7.6	1330	24.6	90.0
17...	1504	1028	1028	8.11	5380	743	2.8	7.6	1320	24.6	50.0
17...	1507	1028	1028	8.11	5380	743	2.8	7.6	1330	24.6	10.0

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													
11...	0940	80020	1028	5.44	560	751	85	7.3	8.0	1480	19.0	21.8	350
NOV													
28...	0920	80020	1028	5.06	129	756	87	9.0	8.4	1490	.2	13.0	360
DEC													
27...	1105	80020	1028	10.67	10800	752	88	9.6	8.2	1490	14.2	10.9	380
JAN													
15...	1650	80020	1028	5.59	773	757	99	11.2	7.8	1500	12.1	9.5	360
FEB													
20...	1700	80020	1028	4.99	83	751	149	15.8	8.5	1520	17.2	11.8	340
MAR													
13...	0800	80020	1028	5.15	207	736	105	12.1	8.2	1480	10.1	7.5	370
APR													
09...	2000	80020	1028	5.18	239	750	141	13.6	8.5	1520	24.1	16.0	350
MAY													
08...	1945	80020	1028	10.25	9870	737	87	7.9	7.9	1270	25.1	18.3	310
JUN													
13...	1530	80020	1028	4.98	75	746	104	9.0	7.8	1070	22.4	21.1	370
JUL													
17...	1930	80020	1028	9.08	7370	743	74	6.3	7.9	1280	32.7	21.6	420
AUG													
15...	1500	80020	1028	10.46	10300	754	28	2.3	7.5	1320	33.0	23.6	310
SEP													
17...	1510	80020	1028	8.11	5380	743	39	3.1	7.6	1340	30.6	25.0	300

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
11...	240	86.6	32.2	4.84	4	160	50	111	135	0	241	.3	4.8
NOV													
28...	240	88.5	32.7	5.12	4	170	51	116	134	4	250	.4	3.3
DEC													
27...	260	95.5	33.2	4.60	4	172	50	113	137	0	266	.3	3.6
JAN													
15...	240	86.2	34.0	4.70	4	175	51	115	139	0	254	.3	3.6
FEB													
20...	240	85.3	30.9	4.48	4	163	51	105	124	2	256	.3	3.1
MAR													
13...	260	93.8	33.3	4.62	4	172	50	112	135	1	258	.3	3.9
APR													
09...	230	87.5	31.3	5.00	4	171	51	118	142	1	261	.3	3.5
MAY													
08...	190	80.8	26.6	4.14	4	143	49	122	148	0	221	.2	5.1
JUN													
13...	260	101	27.5	8.64	6	255	60	106	128	0	412	.3	8.1
JUL													
17...	300	122	28.9	8.94	7	353	64	126	154	0	568	.3	12.5
AUG													
15...	190	82.4	24.5	4.65	3	137	49	119	144	0	215	.3	4.7
SEP													
17...	180	74.4	26.6	4.84	4	154	53	115	139	0	231	.3	5.1

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													
11...	238	.39	E.03	--	.57	--	--	.18	--	E.004	--	.055	E.03
NOV													
28...	245	.40	<.04	--	.55	--	--	.15	--	<.008	--	--	<.06
DEC													
27...	250	.42	E.04	.13	.57	--	.584	.14	.039	.012	--	--	<.06
JAN													
15...	241	.43	.05	.17	.61	.06	.744	.18	.049	.015	.38	.138	E.04
FEB													
20...	242	.41	E.03	.15	.57	--	.655	.16	.026	.008	--	--	<.06
MAR													
13...	239	.43	.06	--	.62	.08	--	.19	--	E.005	.37	--	<.06
APR													
09...	240	.46	<.04	--	.58	--	--	.12	--	E.005	--	--	<.06
MAY													
08...	201	.40	<.04	--	.70	--	--	.30	--	E.004	--	--	E.04
JUN													
13...	240	.53	E.04	.45	.98	--	1.97	.46	.033	.010	--	.067	E.04
JUL													
17...	302	2.2	E.03	.49	2.7	--	2.15	.50	.049	.015	--	.282	.12
AUG													
15...	177	.68	.23	--	--	.30	--	<.05	--	<.008	.45	.135	E.06
SEP													
17...	181	.81	.28	--	--	.36	--	<.05	--	<.008	.53	.150	.08

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	ORTHO-PHOS-PHATE, 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													
11...	.02	E.04	<10	1.14	1260	835	2	E2	118	114	<8	<.1	<.8
NOV													
28...	<.02	E.03	14	1.18	302	866	3	2	125	125	<8	<.1	<.8
DEC													
27...	E.01	<.06	<10	1.21	26100	893	E2	E2	129	124	<8	<.1	<.8
JAN													
15...	.04	E.05	<10	1.18	1810	869	E1	E2	126	126	<8	<.1	<.8
FEB													
20...	<.02	<.06	<10	1.15	190	848	2	2	119	108	<8	<.1	<.8
MAR													
13...	<.02	E.04	<10	1.19	488	873	E1	E2	124	117	<8	<.1	<.8
APR													
09...	<.02	<.06	<10	1.18	562	871	<2	E1	120	115	<8	<.1	<.8
MAY													
08...	E.01	E.04	<10	1.03	20200	756	E1	E1	109	110	<8	<.1	<.8
JUN													
13...	.02	E.05	308	1.52	226	1120	4	6	170	230	<8	.3	<.8
JUL													
17...	.09	.84	<10	2.01	29300	1480	6	9	134	369	<24	E.1	<.8
AUG													
15...	.04	.07	<10	.97	20000	717	3	3	107	106	<8	<.1	<.8
SEP													
17...	.05	.12	<10	1.02	10800	746	2	2	120	116	<8	E.1	<.8

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													
11...	<.8	<6	E.9	<10	60	<.08	<1	4.5	22.2	<.01	<.01	<30	<70
NOV													
28...	<.8	<6	E1.0	<10	80	E.07	M	<2.0	26.5	<.01	E.01	<30	<70
DEC													
27...	<.8	<6	E1.0	<10	60	.09	M	E.9	13.1	<.01	<.02	<30	<70
JAN													
15...	<.8	<6	1.3	<10	40	<.08	<1	E1.6	15.3	E.01	.01	<30	<70
FEB													
20...	<.8	<6	E1.2	<10	20	.19	<1	E1.8	7.7	.02	<.01	<30	<70
MAR													
13...	<.8	<6	E.9	<10	30	.14	<1	E2.0	12.6	<.01	E.01	<30	<70
APR													
09...	<.8	<6	1.5	<10	80	E.05	<1	3.8	14.8	<.01	<.01	<30	<70
MAY													
08...	<.8	<6	1.9	<10	110	E.07	<1	3.6	18.1	<.01	<.01	<30	<70
JUN													
13...	4.1	11	10.4	E6	3390	1.48	5	5.9	250	<.01	.02	<30	<70
JUL													
17...	9.6	E10	19.8	<30	9500	.31	12	6.7	705	<.01	.02	<90	E40
AUG													
15...	<.8	<6	E.8	13	40	E.05	<1	306	282	<.01	E.01	<30	E40
SEP													
17...	<.8	<6	4.3	<10	60	.13	M	316	331	E.01	E.01	<30	<70

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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													
11...	E1	<2	<.1	<.3	<24	<20	--	--	--	--	--	--	--
NOV													
28...	<2	E1	<.2	<.3	<24	<20	--	--	--	--	--	--	--
DEC													
27...	E1	<2	<.2	<.3	<24	<20	--	--	--	--	--	--	--
JAN													
15...	E1	E1	<.2	<.3	<24	<20	--	--	--	--	--	--	--
FEB													
20...	E1	E1	<.1	<.3	<24	<20	--	--	--	--	--	--	--
MAR													
13...	<2	<2	<.1	<.3	<24	<20	<.04	<.03	92.4	<.1	<1	<.1	<.1
APR													
09...	<2	E1	<.1	<.3	<24	<20	--	--	--	--	--	--	--
MAY													
08...	<2	<2	<.1	<.3	<24	<20	--	--	--	--	--	--	--
JUN													
13...	<2	<2	<.4	<.3	33	40	--	--	--	--	--	--	--
JUL													
17...	2	<2	<.2	<.3	<72	50	--	--	--	--	--	--	--
AUG													
15...	E2	<2	<.1	<.3	<24	E20	--	--	--	--	--	--	--
SEP													
17...	<2	<2	<.2	<.3	<24	E30	<.04	<.03	118	<.1	<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													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
20...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.02	<.1	<.04	<.6	<.2	<.06
APR													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.02	<.1	<.04	<.6	<.2	<.06

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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									
11...	--	--	--	--	--	--	--	--	--
NOV									
28...	--	--	--	--	--	--	--	--	--
DEC									
27...	--	--	--	--	--	--	--	--	--
JAN									
15...	--	--	--	--	--	--	--	--	--
FEB									
20...	--	--	--	--	--	--	--	--	--
MAR									
13...	<.8	<.03	75.9	<.03	51.5	<.1	<.04	<.1	<2
APR									
09...	--	--	--	--	--	--	--	--	--
MAY									
08...	--	--	--	--	--	--	--	--	--
JUN									
13...	--	--	--	--	--	--	--	--	--
JUL									
17...	--	--	--	--	--	--	--	--	--
AUG									
15...	--	--	--	--	--	--	--	--	--
SEP									
17...	<.8	<.03	72.2	<.03	106	<.1	<.04	<.1	<2

SPECIFIC CONDUCTANCE VIA SATELLITE, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1660	1500	1560	1490	1460	1490	1550	1540	1540	1490	1480	1480
2	1540	1510	1530	1490	1460	1480	1550	1530	1540	1480	1480	1480
3	1540	1500	1520	1500	1460	1480	1540	1510	1530	1500	1480	1490
4	1530	1500	1520	1500	1470	1480	1530	1520	1530	1500	1480	1490
5	1520	1520	1520	1500	1460	1490	1530	1510	1520	1490	1420	1450
6	1640	1500	1540	1510	1470	1500	1520	1510	1510	1480	1460	1470
7	1640	1500	1570	1540	1500	1520	1510	1500	1510	1510	1480	1490
8	1660	1510	1610	1580	1530	1560	1510	1490	1500	1510	1490	1500
9	1650	1510	1530	1580	1520	1550	1510	1500	1500	1500	1490	1500
10	1520	1490	1510	1530	1510	1520	1510	1500	1500	1500	1480	1490
11	1510	1420	1480	1520	1500	1510	1900	1510	1610	1500	1490	1490
12	1620	1470	1530	1520	1500	1510	2000	1590	1680	1500	1460	1480
13	1610	1470	1520	1530	1510	1520	1860	1580	1670	1490	1470	1490
14	1610	1480	1560	1530	1500	1520	1920	1580	1680	1500	1490	1500
15	1610	1500	1570	1530	1500	1520	2140	1650	2000	1500	1490	1500
16	1610	1500	1570	1530	1500	1520	1990	1840	1920	1490	1480	1490
17	1620	1520	1560	1540	1510	1520	1970	1530	1660	1490	1480	1490
18	1610	1500	1560	1530	1520	1520	1840	1520	1680	1490	1480	1490
19	1610	1520	1540	1530	1510	1530	1840	1500	1580	1490	1470	1490
20	1590	1490	1520	1530	1510	1530	1510	1500	1500	1500	1470	1490
21	1530	1490	1510	1540	1510	1530	1510	1500	1500	1500	1490	1500
22	1520	1510	1510	1540	1520	1530	1500	1500	1500	1500	1490	1500
23	1510	1440	1480	1540	1530	1540	1510	1500	1500	1500	1500	1500
24	1460	1420	1450	1550	1530	1540	1500	1490	1500	1500	1490	1500
25	1480	1430	1460	1550	1530	1540	1500	1480	1490	1500	1500	1500
26	1480	1440	1460	1550	1530	1540	1490	1480	1490	1500	1490	1500
27	1480	1450	1470	1550	1540	1550	1490	1470	1480	1510	1490	1500
28	1500	1450	1480	1550	1510	1540	1490	1470	1480	1510	1500	1500
29	1500	1460	1480	1550	1530	1550	1490	1460	1480	1520	1500	1510
30	1500	1450	1480	1550	1540	1550	1490	1480	1480	1520	1500	1510
31	1500	1480	1490	---	---	---	1490	1480	1480	1510	1240	1430
MONTH	1660	1420	1520	1580	1460	1520	2140	1460	1570	1520	1240	1490

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SPECIFIC CONDUCTANCE VIA SATELLITE, in US/CM @ 25C, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1510	1500	1510	1530	1500	1520	1530	1260	1510	1480	1300	1400
2	1510	1500	1510	1520	1510	1520	1530	1510	1520	1330	1240	1280
3	1510	1510	1510	1530	1520	1520	1530	1530	1530	1260	1240	1250
4	1510	1510	1510	1530	1520	1520	1530	1440	1510	1350	1260	1290
5	1520	1500	1510	1540	1520	1520	1510	1490	1500	1370	1280	1300
6	1510	1490	1510	1530	1520	1530	1540	1470	1500	1340	1270	1290
7	1510	1500	1510	1540	1500	1520	1530	1000	1410	1340	1270	1290
8	1510	1500	1510	1540	1500	1520	1520	1460	1480	1400	1260	1320
9	1510	1490	1500	1520	1430	1450	1530	1510	1520	1400	1260	1320
10	1530	1490	1510	1490	1340	1420	1530	1500	1520	1380	1270	1310
11	1530	1500	1520	1350	1300	1320	1520	1510	1510	1390	1280	1330
12	1530	1500	1520	1500	1310	1380	1520	1500	1510	1390	1280	1330
13	1530	1510	1520	1490	1460	1480	1510	1480	1500	1550	1280	1410
14	1530	1520	1530	1500	1450	1480	1500	1500	1500	1380	1280	1320
15	1530	1520	1530	1500	1440	1470	1510	1500	1510	1380	1280	1330
16	1530	1510	1520	1500	1440	1480	1540	1510	1520	1430	1270	1340
17	1530	1520	1530	1500	1440	1480	1520	1490	1500	1510	1280	1380
18	1540	1520	1530	1480	1240	1390	1500	1480	1490	1540	1280	1380
19	1540	1420	1500	1490	1210	1370	1500	1440	1460	1370	1370	1370
20	1540	1520	1520	1410	1270	1370	1450	1430	1440	1380	1360	1370
21	1520	1460	1500	1400	1340	1370	1450	1400	1430	1370	1270	1360
22	1550	1480	1510	1360	1340	1350	---	---	e1450	1370	1300	1330
23	1550	1520	1540	1350	1230	1310	---	---	e1460	1370	1270	1340
24	1520	1500	1510	1440	1190	1260	---	---	e1490	1360	1270	1310
25	1530	1500	1520	1320	1160	1270	1460	1440	1440	1360	1280	1330
26	1530	1520	1520	1170	1160	1160	1480	1450	1470	1500	1340	1370
27	1530	1520	1520	1300	1160	1290	1520	1480	1500	1510	1340	1360
28	1530	1520	1520	1290	1150	1280	1520	1460	1490	1370	1250	1330
29	---	---	---	1400	1140	1270	1470	1450	1460	1340	1260	1300
30	---	---	---	1530	1270	1500	1500	1430	1460	1340	1240	1300
31	---	---	---	1540	1400	1500	---	---	---	1340	1260	1310
MONTH	1550	1420	1520	1540	1140	1410	1540	1000	1490	1550	1240	1330

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1350	1280	1320	1340	1290	1310	1300	1270	1290	1310	1280	1300
2	1360	1340	1350	1330	1280	1310	1300	1280	1290	1310	1290	1300
3	1350	1280	1330	1330	1280	1300	1300	1280	1290	1300	1290	1300
4	1330	1270	1300	1320	1290	1300	1300	1280	1290	1310	1290	1300
5	1470	1280	1370	1330	1280	1300	1300	1280	1280	1310	1290	1300
6	1410	1260	1320	1320	1280	1300	1310	1280	1290	1310	1280	1300
7	1440	1260	1320	1310	1270	1290	1300	1280	1290	1310	1280	1290
8	1490	1400	1450	1320	1280	1290	1300	1280	1290	1290	1030	1230
9	1480	1460	1470	1330	1290	1300	1300	1290	1290	1320	1280	1290
10	1470	1370	1440	1350	1260	1300	1310	1290	1290	1340	1290	1320
11	1450	1330	1400	1320	1280	1300	1300	1290	1290	1350	1300	1320
12	1420	1360	1390	1320	1280	1290	1310	1290	1300	1340	1290	1320
13	---	---	e1100	1310	1280	1290	1310	1290	1300	1380	1330	1370
14	---	---	e1130	1310	1280	1290	1340	1180	1280	1410	1310	1370
15	---	---	e1160	1320	1280	1290	1330	1320	1330	1400	1350	1360
16	---	---	e1190	1330	1280	1290	1340	1320	1330	1410	1340	1370
17	---	---	e1210	1300	1250	1280	1350	1320	1330	1400	1340	1360
18	---	---	e1240	1310	1280	1290	1340	1310	1330	1340	1320	1330
19	---	---	e1270	1310	1290	1300	1330	1310	1320	1350	1300	1330
20	---	---	e1290	1320	1290	1300	1330	1310	1320	1350	1300	1330
21	1350	1300	1330	1320	1300	1300	1330	1300	1310	1350	1300	1320
22	1360	1310	1340	1300	1290	1300	1320	1300	1310	1360	1290	1320
23	1360	1350	1360	1300	1290	1300	1320	1290	1300	1520	1300	1380
24	1360	1290	1330	1300	1290	1290	1310	1280	1290	1540	1410	1470
25	1350	1280	1310	1310	1280	1290	1290	1240	1280	1510	1420	1460
26	1380	1290	1320	1300	1280	1290	1290	1270	1280	1480	1330	1420
27	1350	1290	1320	1300	1280	1290	1290	779	1190	1340	1290	1320
28	1340	1290	1320	1290	1280	1280	1310	1280	1300	1330	1280	1300
29	1340	1290	1320	1300	1280	1280	1310	1300	1310	1300	1280	1290
30	1340	1290	1310	1310	1280	1290	1310	1300	1300	1330	1280	1300
31	---	---	---	1300	1280	1290	1320	1300	1310	---	---	---
MONTH	1490	1260	1310	1350	1250	1290	1350	779	1300	1540	1030	1330
YEAR	2140	779	1420									

e Estimated

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER TEMPERATURE VIA SATELLITE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	25.8	21.1	22.9	20.4	18.8	19.2	15.8	12.9	14.2	10.1	9.5	9.8
2	25.0	21.7	23.3	21.4	19.1	19.7	15.8	12.5	14.1	9.5	9.0	9.4
3	25.1	22.0	23.3	21.6	18.6	19.8	14.6	13.7	14.0	9.5	8.3	9.0
4	25.5	22.5	23.5	20.5	18.7	19.5	15.6	13.9	14.5	9.0	8.2	8.8
5	23.4	22.3	23.0	21.3	18.1	19.2	15.4	13.8	14.4	9.0	8.1	8.6
6	24.0	20.5	22.1	21.0	17.7	19.1	15.4	13.6	14.2	10.5	7.3	8.4
7	24.1	19.9	21.6	20.5	17.7	18.9	15.9	13.7	14.5	9.6	7.0	8.3
8	22.9	20.0	21.4	21.0	18.0	19.2	14.2	12.2	13.1	9.8	7.9	8.6
9	22.5	21.3	22.0	19.0	17.6	18.2	14.5	11.9	12.9	10.1	8.4	8.8
10	23.0	21.9	22.3	20.2	17.3	18.6	14.4	11.5	13.3	9.5	8.5	8.8
11	22.2	20.9	21.7	20.1	17.3	18.6	13.4	12.4	13.1	10.4	8.2	8.8
12	23.9	20.6	21.7	19.3	18.1	18.6	13.6	12.8	13.2	10.5	7.6	8.8
13	21.7	20.1	21.1	19.6	18.2	18.7	13.1	12.2	12.8	10.3	7.1	8.6
14	23.9	19.4	21.1	19.8	18.0	18.6	13.6	11.6	12.7	10.1	7.7	8.6
15	23.2	19.5	20.9	19.7	17.6	18.5	12.5	11.7	12.0	9.6	7.8	8.8
16	22.4	19.0	20.7	19.0	18.0	18.4	12.6	11.7	12.2	11.0	9.0	9.5
17	21.3	19.0	20.4	19.6	18.0	18.6	13.9	11.5	12.5	9.4	9.0	9.2
18	22.3	18.9	20.4	19.4	17.5	18.4	13.7	10.5	12.0	9.2	8.8	9.0
19	21.0	19.7	20.6	18.2	17.1	17.7	12.5	10.6	12.1	10.8	8.3	9.0
20	23.0	19.9	21.2	18.6	15.6	17.1	12.4	12.3	12.3	10.3	7.9	8.7
21	23.1	19.4	21.0	18.4	15.4	16.9	12.3	12.2	12.2	10.1	8.2	8.9
22	20.8	19.8	20.5	18.6	15.6	17.1	12.7	12.0	12.2	9.6	8.5	8.8
23	21.9	20.4	20.7	18.6	16.7	17.5	12.0	11.2	11.8	10.4	8.8	9.1
24	22.4	20.1	20.6	17.4	15.1	16.1	11.7	10.7	11.4	9.7	8.8	9.1
25	22.0	18.2	19.8	18.1	15.1	16.3	11.7	10.7	11.3	10.9	8.6	9.2
26	21.4	18.4	20.0	18.1	15.7	16.7	11.4	10.2	11.0	10.9	8.0	9.2
27	21.3	18.0	19.5	16.1	14.4	15.1	11.6	10.2	11.0	10.7	7.9	9.3
28	21.0	17.6	19.0	15.5	12.7	14.0	11.6	10.4	11.0	11.6	8.8	9.6
29	20.2	17.6	18.8	14.5	12.5	13.4	11.1	9.5	10.7	11.1	9.1	9.9
30	21.2	17.6	19.0	15.4	12.7	14.0	10.7	10.0	10.4	9.3	8.9	9.1
31	19.4	17.8	18.9	---	---	---	10.7	9.7	10.2	9.6	8.4	9.0
MONTH	25.8	17.6	21.1	21.6	12.5	17.7	15.9	9.5	12.5	11.6	7.0	9.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.6	8.0	9.1	8.0	7.4	7.6	14.1	10.8	11.6	17.7	16.8	17.3
2	9.4	8.2	8.9	7.7	5.0	6.5	13.0	10.8	11.4	19.8	17.7	18.7
3	10.0	8.8	9.2	7.0	5.6	6.7	11.5	9.9	11.1	19.6	18.7	19.2
4	10.0	8.7	9.2	7.1	6.7	6.8	13.0	11.0	11.6	19.2	16.2	17.8
5	9.0	8.6	8.9	8.8	6.4	7.2	12.0	10.7	11.6	18.2	15.9	17.5
6	9.1	8.6	8.8	9.7	6.5	7.5	11.8	11.5	11.6	18.0	17.0	17.7
7	10.0	8.6	9.0	9.7	6.8	7.7	11.5	11.2	11.3	18.3	16.8	17.8
8	10.7	8.3	9.0	8.9	7.2	7.8	14.2	11.3	12.1	18.5	17.3	18.0
9	11.6	8.3	9.4	8.2	5.6	7.2	16.0	11.4	13.6	20.3	16.7	18.6
10	9.5	7.6	8.4	10.0	6.3	7.9	15.0	12.9	13.5	20.0	17.2	18.8
11	11.1	6.9	8.8	7.7	6.9	7.2	13.6	13.2	13.3	19.2	17.0	18.3
12	11.2	8.0	9.2	10.3	6.8	8.2	13.6	13.2	13.4	19.6	17.1	18.2
13	11.2	7.9	9.1	12.2	8.1	9.4	14.7	13.6	14.1	20.6	15.4	18.3
14	10.4	7.9	8.9	12.6	8.9	9.9	14.2	13.8	14.0	20.7	16.6	18.7
15	10.6	8.5	9.1	10.9	9.3	9.8	14.0	13.4	13.7	20.0	16.9	18.7
16	12.5	7.8	9.6	11.6	8.3	9.8	13.7	13.2	13.4	20.0	17.4	18.9
17	11.8	7.9	9.5	12.0	9.5	10.5	14.2	13.4	13.8	20.9	17.1	18.9
18	10.0	8.2	9.1	10.7	9.4	10.1	14.6	14.0	14.4	20.8	17.0	18.9
19	12.1	9.0	10.1	10.6	9.4	9.9	15.2	14.2	14.9	20.3	15.5	17.9
20	11.9	8.5	9.7	11.9	9.8	10.5	15.6	15.1	15.3	20.4	15.8	18.0
21	10.2	8.1	8.7	13.8	8.8	10.7	16.6	15.1	15.7	20.3	16.0	18.3
22	11.0	7.7	8.7	12.8	8.0	9.8	---	---	---	21.1	17.7	19.2
23	10.8	7.4	8.7	13.3	9.2	11.0	---	---	---	19.8	17.1	18.5
24	10.9	7.8	8.8	11.4	10.1	10.5	---	---	---	20.2	17.9	19.0
25	10.2	8.1	8.6	10.5	10.2	10.4	18.0	17.2	17.7	21.2	17.9	19.4
26	8.3	6.9	7.7	10.5	10.0	10.2	17.5	16.0	16.6	21.6	17.1	18.9
27	9.7	6.7	7.9	10.3	10.0	10.2	16.8	15.6	16.0	19.0	17.4	18.2
28	9.4	6.7	7.8	11.3	9.8	10.3	17.6	15.6	17.0	20.9	17.0	18.5
29	---	---	---	14.4	10.4	11.4	17.7	17.2	17.5	21.6	18.2	19.6
30	---	---	---	11.1	10.2	10.5	17.8	16.5	17.3	21.5	18.2	19.9
31	---	---	---	14.0	10.2	11.4	---	---	---	21.9	18.2	20.0
MONTH	12.5	6.7	8.9	14.4	5.0	9.2	18.0	9.9	14.0	21.9	15.4	18.6

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

WATER TEMPERATURE VIA SATELLITE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.5	17.9	19.6	22.4	19.7	20.9	23.2	20.3	21.5	24.6	20.6	22.4
2	22.1	17.2	19.3	22.3	19.6	20.7	23.5	20.8	21.8	25.0	20.2	23.0
3	22.3	17.8	19.4	22.3	19.7	20.8	23.5	20.6	21.7	25.2	21.2	23.8
4	21.5	18.7	19.7	22.2	20.1	21.0	23.2	20.8	21.7	25.2	21.5	23.9
5	21.0	18.4	19.7	22.0	20.2	21.1	23.6	20.7	21.8	25.3	21.4	23.8
6	22.3	18.6	20.0	22.7	19.6	21.1	23.9	20.4	22.1	25.5	21.8	23.5
7	22.3	18.8	20.1	22.7	20.3	21.7	24.1	20.4	22.0	24.2	20.7	22.5
8	21.0	18.8	20.0	22.7	20.1	21.6	23.6	21.2	22.3	22.1	20.8	21.3
9	22.1	18.5	20.2	22.1	20.1	21.1	23.9	21.0	22.3	23.6	20.5	21.9
10	22.3	19.1	20.1	22.8	20.0	21.2	23.4	21.0	22.0	25.5	20.6	23.5
11	22.6	19.4	20.3	22.8	19.8	21.2	23.4	21.1	22.2	25.8	21.9	24.2
12	22.6	19.4	20.4	22.7	20.4	21.4	23.7	20.9	22.2	25.5	21.4	23.8
13	---	---	---	21.8	20.5	21.2	23.7	21.3	22.3	24.5	19.8	22.1
14	---	---	---	22.7	20.5	21.2	24.9	20.8	22.7	23.2	20.0	21.8
15	---	---	---	22.6	19.9	20.8	24.7	23.5	24.0	21.8	19.0	20.3
16	---	---	---	22.5	20.3	21.2	24.1	23.7	23.9	22.2	18.2	20.1
17	---	---	---	22.8	20.4	21.5	24.1	21.7	23.0	25.5	18.6	21.9
18	---	---	---	22.0	19.5	20.6	24.2	21.1	22.6	23.9	21.5	22.9
19	---	---	---	21.7	19.6	20.9	24.5	21.1	22.7	24.6	21.1	23.0
20	---	---	---	21.5	19.5	20.7	24.0	20.8	22.3	24.1	20.1	22.4
21	22.8	19.2	20.5	21.4	19.4	20.6	22.7	20.9	21.9	24.5	20.0	22.5
22	22.8	19.1	20.7	21.9	19.7	21.0	23.4	20.9	22.2	24.3	20.1	22.5
23	23.5	18.4	20.5	22.2	20.2	21.6	23.6	21.1	22.2	24.5	19.3	21.5
24	22.3	18.7	20.5	23.1	20.1	21.8	23.5	21.0	22.2	20.1	16.7	18.3
25	22.9	19.7	21.2	23.1	20.5	22.0	22.7	20.2	21.3	20.0	16.2	18.1
26	23.7	19.6	21.1	22.5	19.9	21.7	24.9	20.2	22.1	24.3	17.1	19.7
27	22.9	19.4	21.0	22.4	20.4	21.7	25.6	21.3	23.3	24.7	20.8	23.0
28	23.0	19.6	21.2	22.7	20.7	21.7	24.8	14.2	21.2	24.7	20.9	22.7
29	22.6	19.6	20.9	23.8	21.1	22.5	25.1	13.9	22.4	24.2	20.6	22.3
30	22.1	19.7	20.7	23.6	20.4	22.1	25.0	21.0	23.4	24.4	20.7	22.5
31	---	---	---	23.0	20.8	21.9	24.3	21.4	23.0	---	---	---
MONTH	---	---	---	23.8	19.4	21.3	25.6	13.9	22.3	25.8	16.2	22.2

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 NGVD of 1929. 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 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 6,360 acre-ft, Apr. 7, 2002, elevation 623.77 ft; minimum contents, 2,250 acre-ft, Sept. 3, 4, 5, 1999, elevation, 608.04 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,360 acre-ft, Apr. 7, elevation, 623.77 ft; minimum contents, 2,250 acre-ft, Dec. 3, 5, 7, 8, elevation, 608.08 ft.

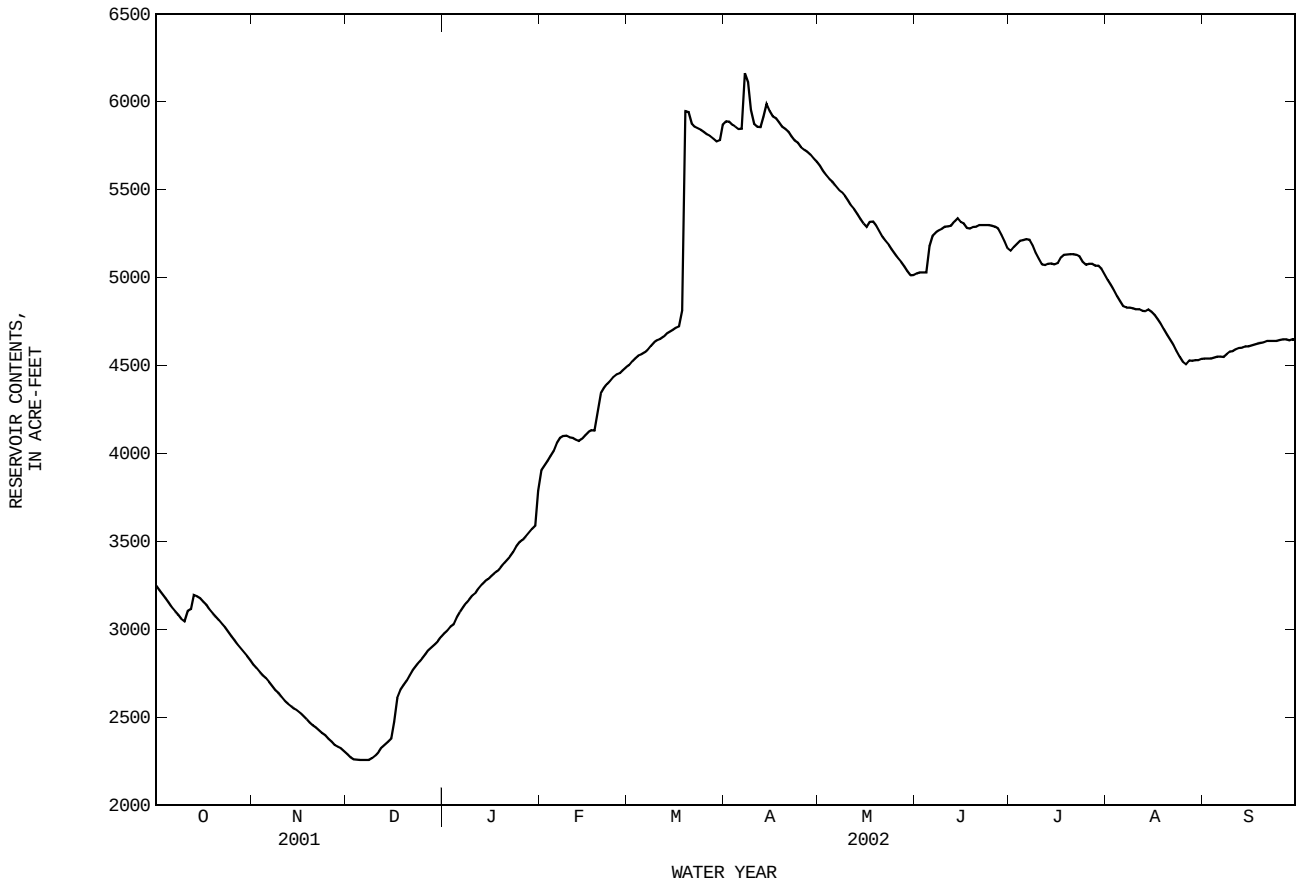
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3250	2800	2290	2980	3900	4500	5890	5640	5020	5150	4990	4540
2	3220	2780	2270	2990	3930	4520	5890	5610	5030	5180	4960	4540
3	3200	2760	e2260	3010	3960	4540	5870	5580	5030	5190	4930	4540
4	3180	2740	e2260	3030	3980	4560	5860	5560	5030	5210	4890	4540
5	3150	2720	e2260	3070	4010	4560	5850	5540	5180	5210	4870	4550
6	3120	2700	e2260	3100	4060	4570	5850	5520	5240	5220	4840	4550
7	3100	2680	e2260	3120	4090	4590	6160	5500	5260	5220	4830	4550
8	3080	2650	2260	3150	4100	4610	6110	5490	5270	5180	4830	4570
9	3060	2640	2270	3170	4100	4630	5950	5460	5280	5140	4830	4580
10	3040	2610	2280	3190	4090	4640	5870	5440	5290	5110	4820	4580
11	3100	2590	2300	3210	4090	4650	5860	5410	5290	5070	4820	4590
12	3110	2580	2330	3230	4080	4660	5860	5390	5300	5070	4810	4600
13	3190	2560	2340	3250	4070	4680	5920	5360	5320	5080	4810	4600
14	3190	2550	2360	3270	4080	4690	5990	5330	5340	5080	4820	4610
15	3180	2540	2380	3290	4100	4700	5950	5310	5320	5080	4810	4610
16	3160	2520	2470	3300	4120	4710	5920	5290	5310	5080	4790	4620
17	3140	2510	2610	3320	4130	4720	5910	5320	5280	5120	4760	4620
18	3110	2490	2650	3330	4130	4810	5880	5320	5280	5130	4740	4630
19	3090	2470	2680	3350	4230	5950	5860	5300	5290	5130	4710	4630
20	3070	2450	2710	3370	4340	5940	5850	5270	5290	5130	4670	4630
21	3050	2440	2740	3390	4370	5880	5830	5230	5300	5130	4650	4640
22	3030	2420	2770	3410	4390	5860	5800	5210	5300	5130	4620	4640
23	3010	2410	2790	3440	4410	5850	5780	5190	5300	5120	4580	4640
24	2980	2400	2810	3470	4440	5840	5770	5160	5300	5090	4550	4640
25	2960	2380	2830	3490	4450	5830	5740	5140	5300	5070	4520	4640
26	2940	2360	2860	3510	4460	5810	5730	5110	5290	5080	4510	4650
27	2910	2340	2880	3530	4470	5810	5720	5090	5280	5080	4530	4650
28	2890	2330	2900	3550	4490	5790	5700	5060	5240	5070	4530	4640
29	2870	2320	2910	3570	---	5780	5680	5040	5210	5070	4530	4650
30	2850	2310	2930	3590	---	5780	5660	5010	5170	5050	4530	4650
31	2820	---	2960	3790	---	5870	---	5010	---	5020	4540	---
MEAN	3070	2540	2540	3310	4180	5140	5860	5320	5240	5120	4730	4600
MAX	3250	2800	2960	3790	4490	5950	6160	5640	5340	5220	4990	4650
MIN	2820	2310	2260	2980	3900	4500	5660	5010	5020	5020	4510	4540
(+)	610.92	608.37	611.49	614.95	617.87	622.42	621.83	620.04	620.47	620.06	618.07	618.53
(@)	-450	-510	+650	+830	+700	+1380	-210	-650	+160	-150	-480	+110

CAL YR 2001 MAX 4150 MIN 2260 (@) -810
WTR YR 2002 MAX 6160 MIN 2260 (@) +1380

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

07331700 Randell Lake near Denison, TX--Continued



07332610 Lake Bonham near Bonham, TX

LOCATION.--Lat 33°39'06", long 96°07'48", Fannin County, Hydrologic Unit 11140101, on south shore of lake near raw water intake structure, 42 mi west of Paris, TX, and approximately 98 miles from Fort Worth, TX.

DRAINAGE AREA.--29.0 mi^2.

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

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

REMARKS.--Records good except those for estimated daily contents, which are poor. Record is considered poor from May 22, 2002 to July 10 2002. The lake is formed by a rolled earthfill dam. The dam was completed and storage began Apr. 28, 1970. A spillway has been cut through natural ground. The dam was built by the city of Bonham Water Authority to impound water for municipal use. There was no known diversion from the lake during the current water year. Conservation pool storage is 13,000 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	580.0
Crest of Spillway	565.0
Emergency Spillway	571.0

COOPERATION.--The capacity table was furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 16,950 acre-ft, Feb. 16, 2001, elevation, 568.50 ft; minimum contents, 9,920 acre-ft, Oct. 9, 2000, elevation, 562.02 ft.

EXTREMES FOR WATER YEAR 2001.--Maximum contents, 16,950 acre-ft, Feb. 16, elevation, 568.50 ft; minimum contents, 9,920 acre-ft, Oct. 9, elevation, 562.02 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,840 acre-ft, Apr. 8, elevation, 568.44 ft; minimum contents, 10,680 acre-ft, Oct. 9, 10, elevation, 562.87 ft.

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

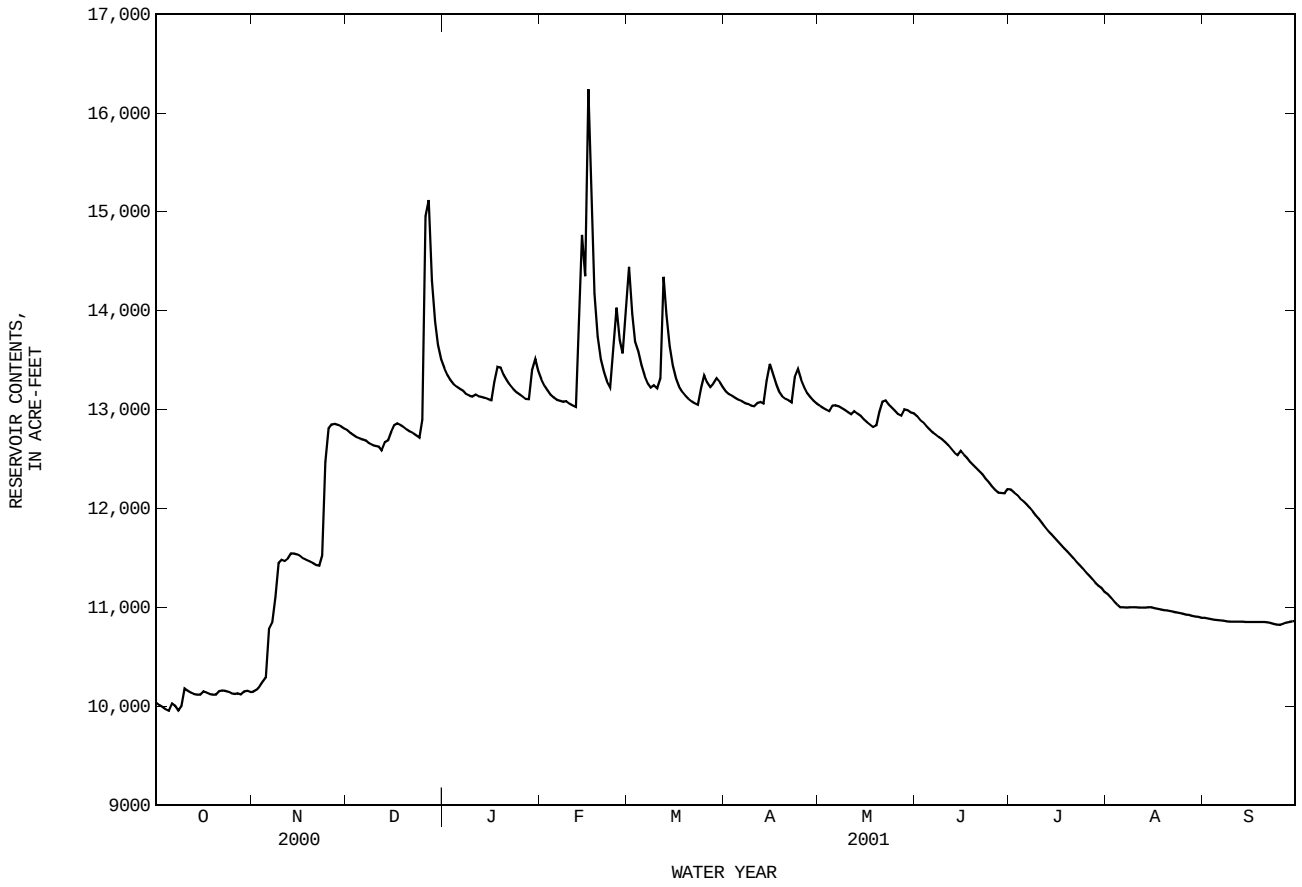
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10030	10140	12790	13420	13300	14440	13180	13040	12930	12190	e11130	e10890
2	10010	10170	12760	13350	13240	13970	13150	13020	12900	12160	e11100	e10890
3	9990	10200	12740	13300	13190	13680	13140	13000	12870	12140	e11060	e10880
4	9970	10250	12720	13260	13150	13590	13120	12980	12830	12100	e11030	e10870
5	9950	10290	12710	13230	13120	13450	13100	13040	12800	12070	e11000	e10870
6	10020	10780	12700	13210	13100	13340	13080	13040	12770	12040	e11000	e10870
7	10000	10840	12690	13190	13090	13260	13070	13030	12750	12010	e11000	e10860
8	9950	11100	12660	13160	13080	13220	13050	13010	12720	11970	e11000	e10860
9	9990	11450	12640	13140	13090	13240	13040	13000	12700	11930	e11000	e10860
10	10180	11480	12630	13130	13060	13210	13030	12970	12670	11890	e11000	e10850
11	10160	11470	12620	13150	13040	13310	13070	12950	12640	11850	e11000	e10850
12	10140	11490	12590	13130	13020	14340	13080	12990	12600	11810	e11000	e10850
13	10120	11540	12670	13130	13890	13960	13060	12960	12560	11770	e11000	e10850
14	10120	11540	12690	13120	14770	13640	13290	12940	12540	11740	e11000	e10850
15	10110	11530	12770	13100	14350	13440	13460	12900	12580	11700	e11000	e10850
16	10150	11520	12840	13100	16240	13310	13360	12870	12540	11670	e10990	e10850
17	10140	11490	12860	13280	15060	13230	13250	12850	12510	11630	e10980	e10850
18	10120	11480	12840	13430	14170	13180	13180	12820	12470	11600	e10980	e10850
19	10120	11460	12820	13420	13740	13140	13130	12840	12440	11570	e10970	e10850
20	10110	11450	12800	13350	13500	13110	13110	12970	12400	11530	e10970	e10850
21	10150	11430	12780	13290	13380	13080	13090	13080	12380	11500	e10960	e10850
22	10160	11420	12760	13250	13290	13060	13070	13090	12340	11460	e10950	e10840
23	10150	11520	12740	13210	13230	13050	13330	13050	12300	11430	e10950	e10830
24	10140	12470	12710	13180	13670	13220	13410	13020	12260	11390	e10940	e10820
25	10130	12810	12900	13150	14030	13350	13300	12990	12220	11350	e10930	e10820
26	10120	12850	14960	13130	13700	13280	13220	12950	12190	11320	e10930	e10830
27	10130	12860	15120	13110	13570	13230	13170	12940	12160	11290	e10920	e10850
28	10120	12840	14310	13100	13960	13260	13120	13000	12160	11250	e10910	e10850
29	10150	12830	13890	13400	---	13310	13090	13000	12150	11220	e10910	e10860
30	10150	12810	13650	13510	---	13280	13060	12970	12190	11190	e10900	e10870
31	10140	---	13510	13390	---	13230	---	12960	---	11160	e10890	---
MEAN	10090	11520	13030	13240	13640	13400	13160	12980	12520	11680	10980	10850
MAX	10180	12860	15120	13510	16240	14440	13460	13090	12930	12190	11130	10890
MIN	9950	10140	12590	13100	13020	13050	13030	12820	12150	11160	10890	10820
(+)	562.27	564.84	565.51	565.39	565.96	565.23	565.06	564.97	564.33	563.36	unknown	unknown
(@)	+110	+2650	+710	-120	+570	-730	-170	-100	-770	-1030	-270	-20

CAL YR 2000 MAX 15120 MIN 9950 (@) +700
WTR YR 2001 MAX 16240 MIN 9950 (@) +1560

e Estimated

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

07332610 Lake Bonham near Bonham, TX--Continued



07332610 Lake Bonham near Bonham, TX--Continued

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

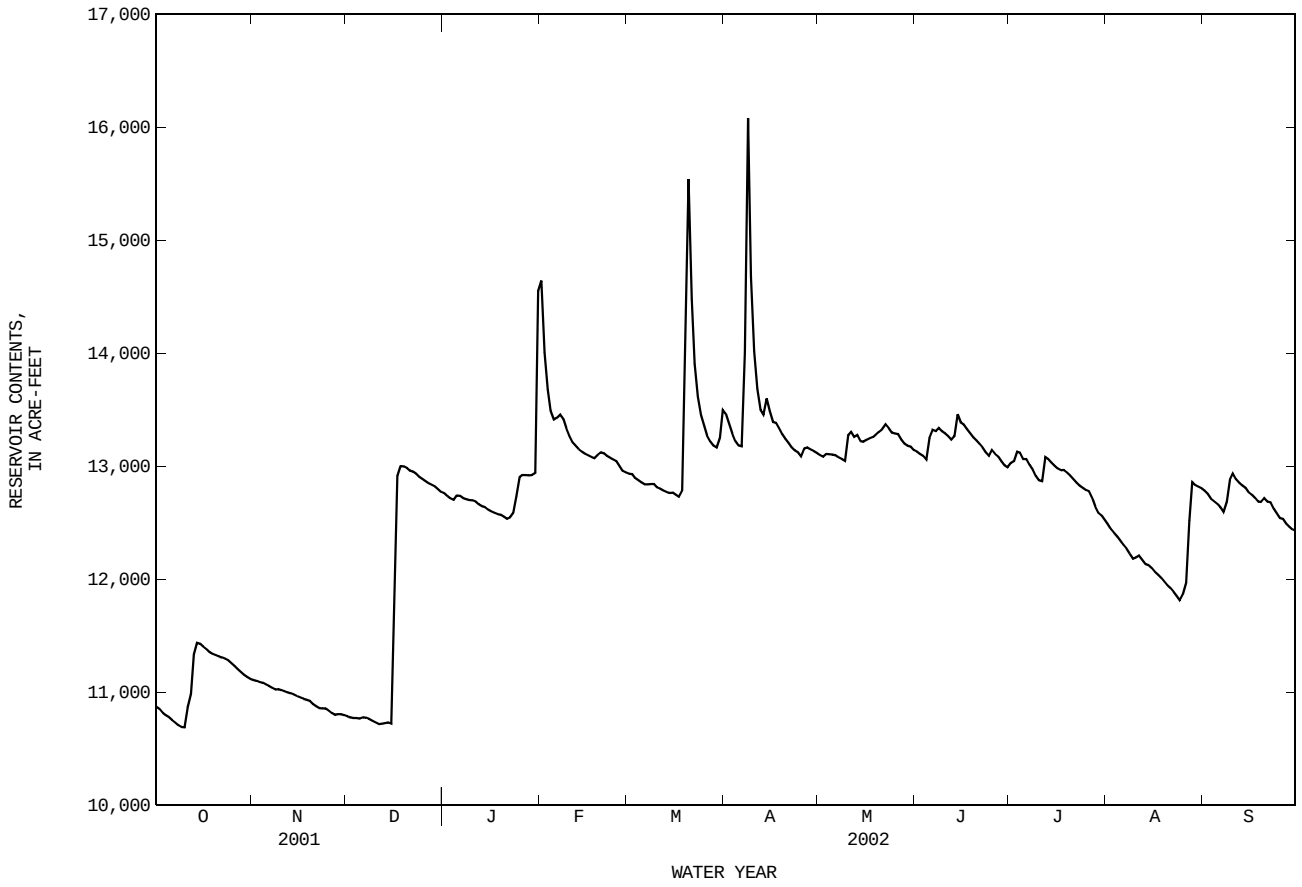
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10870	11110	10780	12760	14640	12930	13460	13100	13130	13030	12490	12780
2	10850	11100	10770	12730	14000	12930	13370	13080	13110	13040	12440	12750
3	10820	11090	10770	12710	13680	12890	13290	13110	13090	13130	12410	12710
4	10790	11080	10770	12700	13490	12870	13220	13110	13050	13120	12380	12690
5	10780	11070	10760	12740	13410	12850	13180	13100	13250	13060	12340	12670
6	10750	11050	10780	12740	13430	12840	13180	13090	13320	13060	12300	12640
7	10730	11040	10770	12720	13460	12840	14000	13080	13310	13010	12270	12590
8	10700	11020	10760	12710	13410	12840	16080	13060	13340	12970	12220	12680
9	10690	11020	10740	12700	13340	12840	14670	13040	13310	12910	12180	12880
10	10690	11020	10730	12700	13270	12810	14020	13270	13290	12880	12190	12930
11	10870	11010	10720	12680	13210	12800	13680	13300	13270	12860	12210	12880
12	10980	11000	10720	12660	13180	12780	13500	13260	13230	13080	12170	12850
13	11330	10990	10730	12650	13150	12770	13450	13270	13270	13060	12130	12830
14	11440	10980	10730	12640	13130	12760	13600	13220	13460	13030	12120	12810
15	11430	10960	10720	12610	13110	12760	13480	e13220	13380	13000	12100	12770
16	11400	10950	11500	12600	13090	12740	13390	e13230	13370	12980	12060	12750
17	11380	10940	12910	12580	13080	12730	13380	e13250	13330	12960	12040	12720
18	11350	10930	13000	12570	13070	12780	13340	e13260	13290	12960	12010	12680
19	11340	10920	13000	12570	13100	14010	13280	e13280	13250	12940	11980	12680
20	11330	10890	12980	12550	13120	15540	13240	e13300	13230	12910	11950	12720
21	11310	10870	12960	12530	13110	14480	13200	e13330	13200	12880	11920	12680
22	11300	10860	12950	12540	13090	13910	13170	13370	13160	12860	11890	12680
23	11290	10850	12930	12580	13070	13610	13140	13330	13120	12830	11850	12620
24	11280	10850	12900	12730	13050	13450	13120	13300	13090	12810	11810	12580
25	11250	10840	12880	12900	13040	13350	13090	13290	13140	12790	11870	12540
26	11230	10820	12870	12920	13000	13270	13150	13280	13110	12770	11960	12530
27	11200	10800	12850	12920	12960	13220	13160	13240	13080	12720	12520	12490
28	11180	10800	12830	12920	12940	13180	13150	13200	13040	12640	12860	12460
29	11150	10800	12820	12920	---	13160	13130	13180	13010	12590	12830	12440
30	11130	10790	12800	12940	---	13250	13120	13170	12990	12560	12820	12430
31	11120	---	12770	14550	---	13490	---	13140	---	12530	12800	---
MEAN	11100	10950	11810	12770	13270	13180	13470	13210	13210	12900	12230	12680
MAX	11440	11110	13000	14550	14640	15540	16080	13370	13460	13130	12860	12930
MIN	10690	10790	10720	12530	12940	12730	13090	13040	12990	12530	11810	12430
(+)	563.32	562.99	564.81	566.55	564.95	565.49	565.12	565.14	564.99	564.61	564.83	564.52
(@)	+250	-330	+1980	+1780	-1610	+550	-370	+20	-150	-460	+270	-370

CAL YR 2001 MAX 16240 MIN 10690 (@) -740
WTR YR 2002 MAX 16080 MIN 10690 (@) +1560

e Estimated

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

07332610 Lake Bonham near Bonham, 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 NGVD of 1929. 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 VIA SATELLITE, in CFS, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1630	2010	1680	8490	39200	5990	20800	17000	3380	2830	5250	5660
2	e1500	2800	1570	8390	29700	5230	17900	16000	3670	2850	4640	3880
3	e1300	2920	1520	8520	18800	3920	13100	15100	3010	3820	3840	1900
4	1870	2370	1250	8190	11900	6650	12700	14000	2620	6310	3840	2800
5	2130	1760	1030	8270	9920	11500	14900	8350	3080	7050	3680	5300
6	2130	e1420	1330	7980	10700	11200	11800	e9200	5560	6180	3560	5380
7	2140	1210	1610	4460	15100	7030	16400	e9700	5520	5460	3710	5370
8	2080	1330	1680	3160	14400	3740	56400	e6060	7660	4630	3670	3900
9	e1500	1550	1630	5200	11900	2900	e62400	e5940	6770	5450	3610	2980
10	e1300	1630	1620	6260	9070	2780	47700	e6800	4680	5400	3950	2300
11	2150	1600	1260	5360	6030	4410	41500	e4310	3410	4160	4810	3110
12	7510	1640	1150	4650	4480	3110	42800	e4050	3020	3930	4290	5030
13	15600	1320	2610	4990	5000	2000	43200	e3880	3360	4340	4270	5430
14	19800	1090	2580	3530	5750	2330	46800	e4950	3550	5190	4880	5060
15	16500	1200	2400	2180	4870	2480	48400	4930	6550	4310	5980	5200
16	9140	1430	11300	4150	5310	2260	42400	5900	8120	3610	10500	4030
17	6080	1450	34300	6230	5200	2090	39400	6460	7230	3460	15200	2950
18	5000	1440	32700	6650	3800	2100	43600	8490	4080	4060	10900	2220
19	4590	1440	25900	6730	3410	20800	44500	8820	2770	4080	6210	3010
20	3990	1180	19100	6580	10200	59000	44200	6530	2800	4660	5140	3350
21	4670	977	22800	4460	14800	63200	41800	4530	2750	6150	4890	2740
22	3460	1090	25000	3630	9990	45000	39100	3750	2510	6440	4560	2460
23	2150	1350	21000	5990	7500	35600	35500	3380	2450	6190	3740	2200
24	2660	1400	14400	9420	7400	33500	25200	3720	2320	6900	3240	e2140
25	3470	1400	11200	11800	5700	29100	18500	3230	1780	6960	3030	e1820
26	3260	1410	10700	10900	5440	26700	21100	3920	2030	7070	2500	2100
27	2720	1180	9900	8970	5400	26600	22100	3750	4060	7080	1900	e1670
28	3070	1000	9680	4820	6410	22400	21100	3150	3700	7150	2600	e1600
29	2440	1160	9270	2960	---	17500	21100	3830	3050	6990	5980	e1570
30	1500	1900	6150	2440	---	14900	20500	3310	2750	6940	5430	e1200
31	e1300	---	7660	15100	---	18000	---	3890	---	6440	5990	---
TOTAL	138640	45657	295980	200460	287380	494020	976900	206930	118240	166090	155790	98360
MEAN	4472	1522	9548	6466	10260	15940	32560	6675	3941	5358	5025	3279
MAX	19800	2920	34300	15100	39200	63200	62400	17000	8120	7150	15200	5660
MIN	1300	977	1030	2180	3410	2000	11800	3150	1780	2830	1900	1200
AC-FT	275000	90560	587100	397600	570000	979900	1938000	410400	234500	329400	309000	195100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2002, BY WATER YEAR (WY)

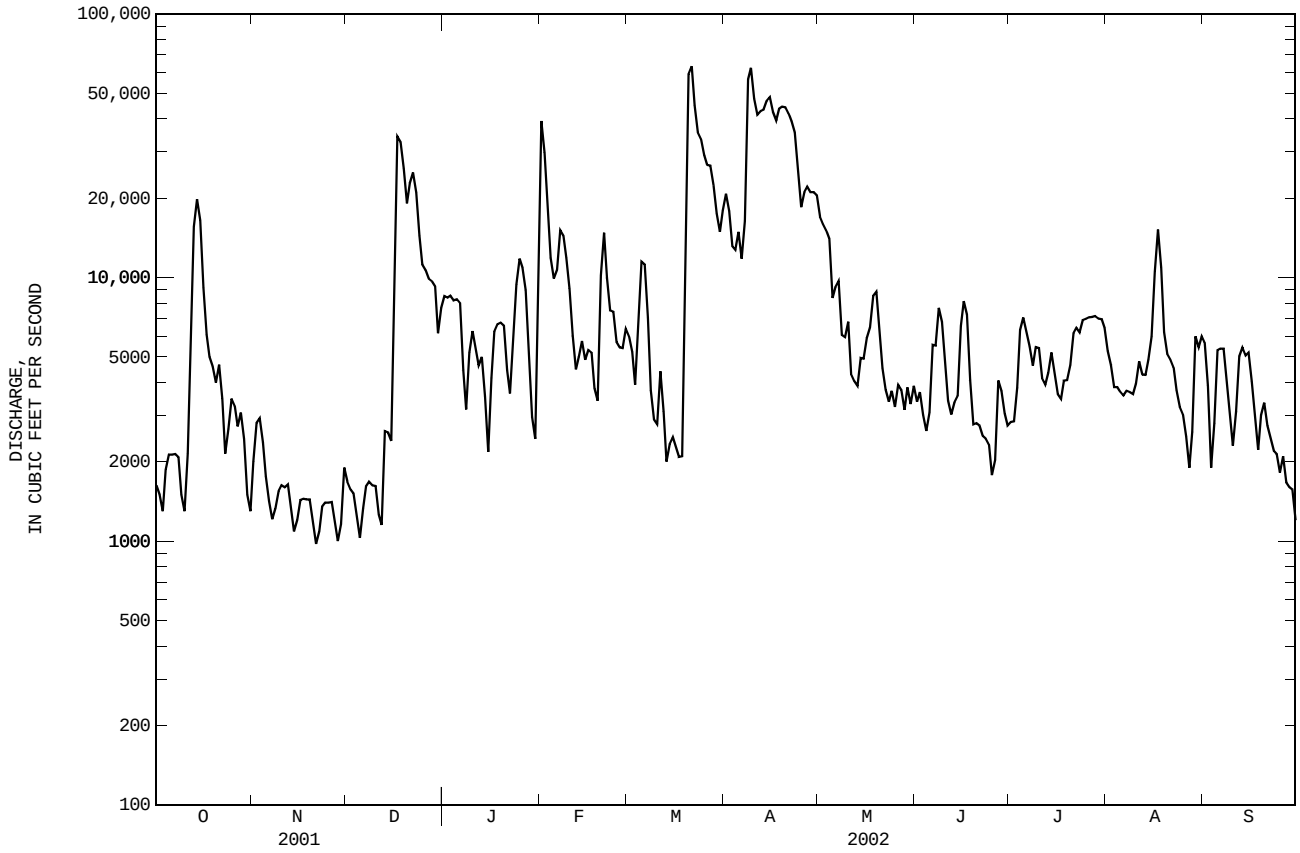
MEAN	6742	7419	7507	7062	8782	11270	12040	16680	17640	7742	4877	4741
MAX	40240	37170	32340	39930	32130	39430	55500	103900	83820	27700	34840	19010
(WY)	1982	1975	1992	1992	2001	2001	1990	1990	1957	1989	1950	1950
MIN	263	242	894	1126	1138	1118	1344	2837	2074	1586	1108	859
(WY)	1957	1957	1957	1964	1959	1967	1956	1980	1956	1956	1972	1988

e Estimated

07335500 RED RIVER AT ARTHUR CITY, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1945 - 2002	
ANNUAL TOTAL	4379767		3184447			
ANNUAL MEAN	12000		8725		[a]9368	
HIGHEST ANNUAL MEAN					23290	1990
LOWEST ANNUAL MEAN					2754	1964
HIGHEST DAILY MEAN	74100	Feb 17	63200	Mar 21	269000	May 4 1990
LOWEST DAILY MEAN	977	Nov 21	977	Nov 21	134	[b]Dec 11 1956
ANNUAL SEVEN-DAY MINIMUM	1260	Nov 20	1260	Nov 20	134	Dec 11 1956
MAXIMUM PEAK FLOW			70800	Mar 21	[c]275000	May 4 1990
MAXIMUM PEAK STAGE			18.88	Mar 21	[d]34.21	May 4 1990
INSTANTANEOUS LOW FLOW			977	Nov 21		
ANNUAL RUNOFF (AC-FT)	8687000		6316000		6787000	
10 PERCENT EXCEEDS	33300		21100		24200	
50 PERCENT EXCEEDS	6770		4670		4320	
90 PERCENT EXCEEDS	1480		1590		1380	

[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.



07335600 Lake Crook near Paris, TX

LOCATION.--Lat 33°43'42", long 95°34'00", Lamar County, Hydrologic Unit 11140101, 3 mi from city of Paris, 1 mi from Lamar County Road #31700. Gage is located on intake structure.

DRAINAGE AREA.--52 mi^2.

PERIOD OF RECORD.--Mar. 24, 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily contents, which are poor. Lake Crook dam is an earthfill 3,100 ft long with a maximum height of 38 ft and a crown width of 20 ft. A concrete overflow type spillway 300 ft long is located near the center of the dam. Lake Crook is about 2.7 miles in length with an average width of 0.6 mi, and the shoreline is approximately 12 miles in length. The lake is owned by the City of Paris. Conservation pool storage is 9,964 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	488.0
Top of conservation pool	477.0
Crest of spillway	476.0
Stream bed	450.0

COOPERATION.--Capacity table 1-C was provided by the Texas Water Development Board and was put into use Mar. 24, 1999.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 11,820 acre-ft, Dec. 26, 2000, elevation, 478.30 ft; minimum contents, 5,940 acre-ft, Dec. 8, 1999, elevation, 473.49 ft.

EXTREMES FOR WATER YEAR 2001.--Maximum contents, 11,820 acre-ft, Dec. 26, elevation, 478.30 ft; minimum contents, 6,640 acre-ft, Oct. 15, elevation, 474.22 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 9,320 acre-ft, on several days, elevation, 476.55 ft; minimum contents, 7,110 acre-ft, Sept. 30, elevation, 474.65 ft.

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

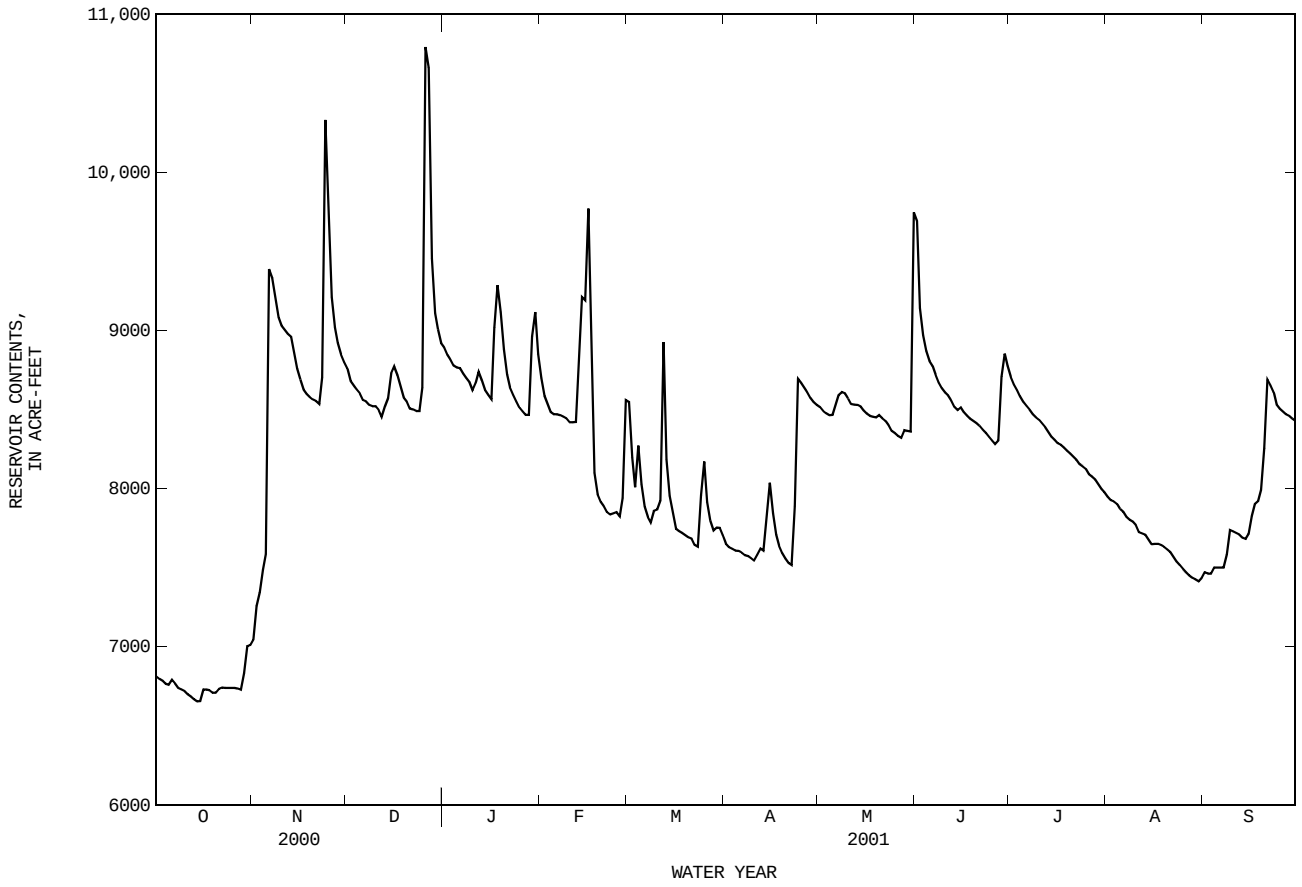
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6810	7040	8760	8890	8700	8550	7650	8510	9690	8710	e7950	7470
2	6800	7260	8680	8850	8590	8200	7630	8490	9140	8660	e7930	7460
3	6790	7340	8650	8820	8530	8010	7620	8480	8970	8620	e7920	7460
4	6770	7490	8630	8780	8480	8270	7610	8460	8870	8580	e7900	7500
5	6760	7590	8600	8770	8470	8030	7610	8470	8810	8550	e7870	7500
6	6790	9390	8560	8760	8470	7890	7600	8530	8770	8520	e7850	7500
7	6770	9330	8550	8730	8460	7820	7580	8590	8720	8500	e7820	7500
8	6740	e9210	8530	8700	8450	7790	7570	8610	8670	8470	e7800	7580
9	6730	e9080	8520	8680	8440	7860	7560	8600	8630	8450	e7790	7740
10	6720	9030	8520	8620	8420	7870	7550	8570	8610	8430	7770	7730
11	6700	e9000	8500	8670	8420	7920	7580	8540	8590	8410	7720	7720
12	6690	e8980	8450	8740	8420	8920	7620	8530	8560	8390	7710	7710
13	6670	8960	8520	8680	8750	8180	7610	8530	8520	8360	7710	7690
14	6650	8860	8570	8620	9210	7950	7830	8520	8500	8330	7680	7680
15	6660	8760	8730	8590	9190	7850	8040	8500	8510	8310	7650	7710
16	6730	8690	8770	8570	9770	7750	7850	8470	8480	8290	7650	7830
17	6730	8630	8720	9020	8690	7730	7710	8460	8460	8280	7650	7900
18	6730	8600	8650	9280	8100	7720	7640	8450	8440	8260	7640	7920
19	6710	8580	8580	9120	7960	7700	7590	8450	8430	8240	7630	7990
20	6710	8560	8550	8880	7920	7690	7560	8460	8410	8220	7620	8250
21	6730	8550	8510	8720	7890	7680	7530	8440	8400	8200	7600	8690
22	6740	8530	8500	8640	7850	7640	7520	8430	8370	8180	7570	8650
23	6740	8700	8490	8590	7840	7630	7890	8400	8350	8160	7540	8610
24	6740	10330	8490	8550	7840	7960	8690	8370	8330	8140	7520	8530
25	6740	9810	8640	8510	7850	8170	8670	8350	8300	8120	7490	8500
26	6740	9210	10790	8490	7820	7910	8640	8330	8280	8090	7470	8490
27	6740	9020	10660	8470	7940	7800	8610	8320	8300	8080	7450	8470
28	6730	8920	9450	8470	8560	7740	8570	8370	8710	8060	7440	8460
29	6830	8850	9110	8960	---	7750	8550	8370	8850	e8030	7430	8440
30	7000	8800	9010	9120	---	7750	8530	8360	8780	e8000	7410	8430
31	7010	---	8920	8850	---	7710	---	9750	---	e7980	7440	---
MEAN	6750	8700	8790	8750	8390	7920	7870	8510	8620	8310	7670	7970
MAX	7010	10330	10790	9280	9770	8920	8690	9750	9690	8710	7950	8690
MIN	6650	7040	8450	8470	7820	7630	7520	8320	8280	7980	7410	7460
(+)	474.56	476.20	476.28	476.23	476.04	475.21	476.02	476.84	476.18	475.48	474.94	475.93
(@)	-140	+1790	+120	-70	-290	-850	+820	+1220	-970	-800	-540	+990

CAL YR 2000 MAX 10790 MIN 6640 (@) +2280
WTR YR 2001 MAX 10790 MIN 6650 (@) +1280

e Estimated

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

07335600 Lake Crook near Paris, TX--Continued



07335600 Lake Crook near Paris, TX--Continued

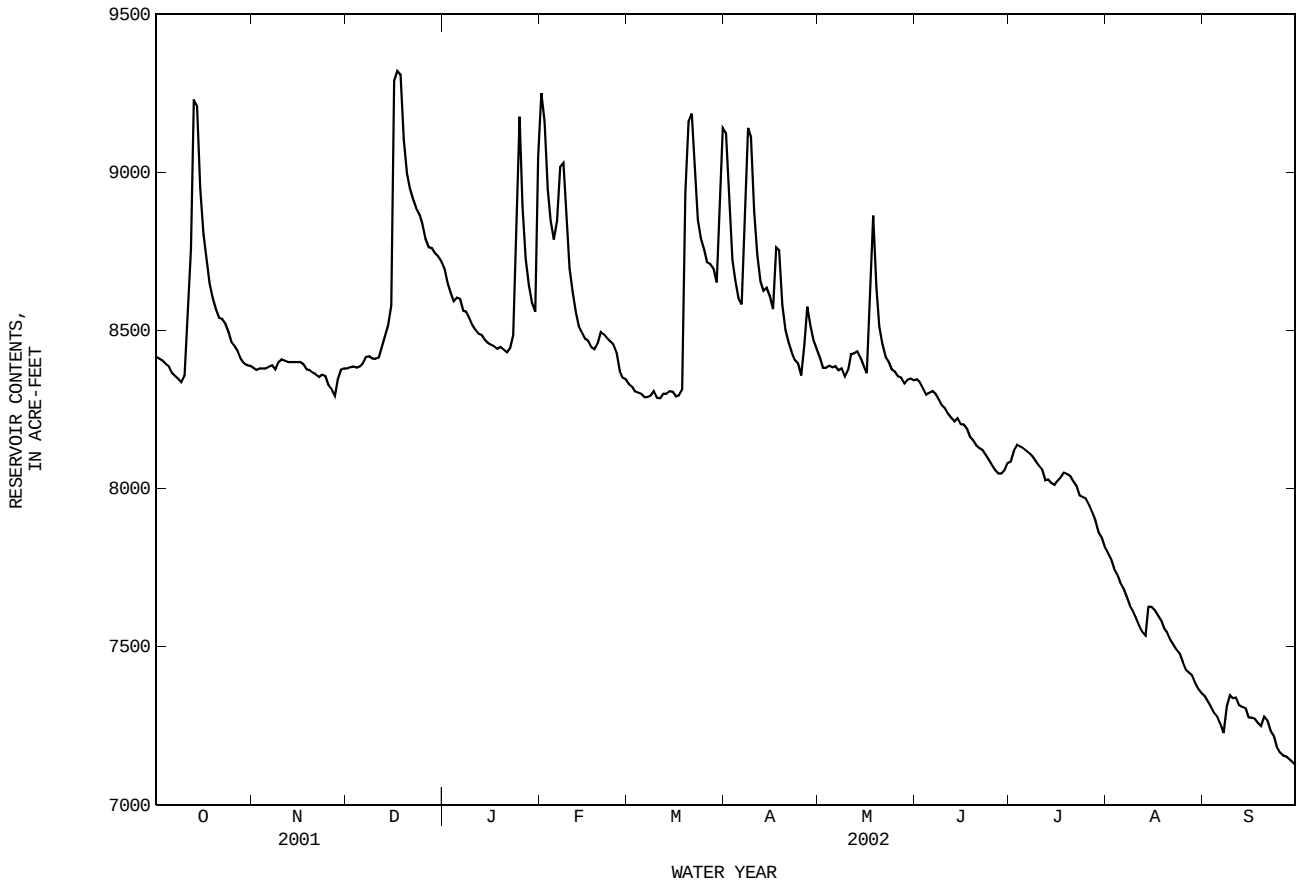
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8420	8380	8380	8700	9250	8330	9120	8410	8350	8090	7800	7340
2	8410	8370	8380	8650	9160	8320	8900	8380	8340	8120	7780	7330
3	8400	8380	8390	8620	8950	8310	8720	8380	8320	8140	7750	7310
4	8390	8380	8380	8590	8850	8300	8660	8390	8300	8130	7730	7290
5	8390	8380	8390	8600	8790	8300	8600	8380	8300	8130	7700	7280
6	8370	8390	8400	8600	8850	8290	8580	8390	8310	8120	7690	7260
7	8360	8390	8420	8560	9020	8290	8820	8370	8300	8110	7660	7230
8	8350	8380	8420	8560	9030	8290	9140	8380	8280	8100	7630	7310
9	8340	8400	8410	8540	8880	8310	9110	8350	8260	8090	7610	7350
10	8360	8410	8410	8520	8700	8290	8880	8380	8250	8070	7590	7340
11	8570	8400	8410	8500	8620	8290	8740	8430	8240	8060	7570	7340
12	8760	8400	8450	8490	8560	8300	8650	8430	8220	8030	7550	7310
13	9230	8400	8480	8480	8510	8300	8630	8430	8210	8030	7540	7310
14	9210	8400	8520	8470	8490	8310	8630	8410	8220	8020	7630	7300
15	8950	8400	8580	8460	8470	8310	8610	8390	8200	8010	7630	7280
16	8810	8400	9290	8450	8470	8290	8570	8360	8200	8030	7620	7280
17	8730	8390	9320	8450	8450	8290	8760	8570	8190	8040	7600	7270
18	8650	8380	9310	8440	8440	8310	8750	8860	8160	8050	7580	7260
19	8600	8380	9100	8450	8460	8940	8580	8640	8150	8050	7560	7250
20	8570	8370	9000	8440	8500	9160	8500	8510	8140	8040	7550	7280
21	8540	8360	8950	8430	8490	9190	8460	8460	8130	8020	7520	7270
22	8540	8350	8910	8440	8480	9010	8430	8420	8120	8010	7510	7230
23	8520	8360	8890	8480	8470	8850	8410	8400	8110	7980	7490	7220
24	8500	8350	8870	8870	8460	8790	8400	8380	8090	7970	7480	7180
25	8460	8330	8840	9180	8430	8750	8360	8370	8080	7970	7450	7170
26	8450	8310	8790	8890	8370	8710	8460	8350	8060	7950	7430	7160
27	8440	8290	8760	8730	8350	8710	8580	8350	8050	7930	7420	7150
28	8410	8350	8760	8640	8340	8700	8510	8330	8050	7900	7410	7140
29	8400	8380	8740	8590	---	8650	8470	8340	8060	7860	7390	7140
30	8390	8380	8740	8560	---	8890	8440	8350	8080	7850	7370	7130
31	8390	---	8720	9050	---	9140	---	8340	---	7820	7350	---
MEAN	8550	8370	8690	8590	8640	8550	8650	8420	8190	8020	7570	7260
MAX	9230	8410	9320	9180	9250	9190	9140	8860	8350	8140	7800	7350
MIN	8340	8290	8380	8430	8340	8290	8360	8330	8050	7820	7350	7130
(+)	475.89	475.88	476.15	476.37	475.84	476.43	475.94	475.84	475.58	475.32	474.86	474.66
(@)	-40	-10	+340	+330	-710	+800	-700	-100	-260	-260	-470	-220

CAL YR 2001 MAX 9770 MIN 7410 (@) -200
WTR YR 2002 MAX 9320 MIN 7130 (@) -1300

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

07335600 Lake Crook near Paris, TX--Continued



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 NGVD of 1929. 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 2001 TO SEPTEMBER 2002

DAILY MEAN VALUES

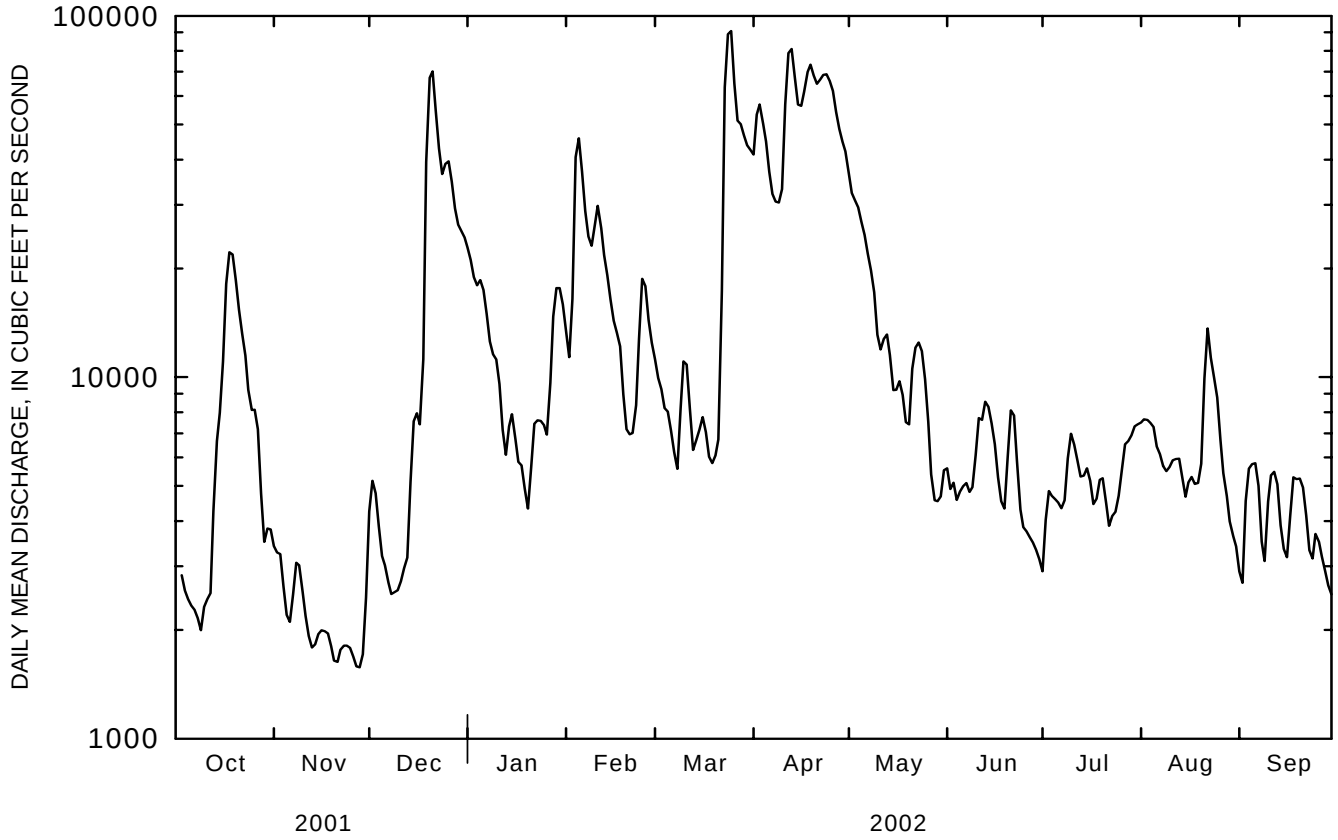
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2840	3240	4770	18900	16500	9270	56800	30900	5100	4840	7610	4550
2	2570	2640	3860	18000	40600	8220	50300	29500	4580	4690	7480	5580
3	2430	2200	3210	18600	45800	8020	44900	26900	4820	4590	7290	5750
4	2340	2100	3020	17400	37100	7120	37100	24800	4990	4500	6440	5780
5	2270	2500	2700	15000	28800	6190	32100	21900	5100	4340	6120	5000
6	2160	3070	2510	12600	24500	5580	30600	19800	4820	4560	5680	3510
7	1990	3020	2540	11600	23100	8180	30400	17200	4960	5970	5490	3100
8	2310	2540	2570	11200	26400	11100	33100	13100	6080	6980	5640	4530
9	2430	2190	2720	9580	29800	10800	56900	11900	7710	6500	5900	5350
10	2530	1920	2960	7160	25800	8190	78900	12800	7620	5890	5930	5480
11	4260	1790	3170	6090	21800	6290	81000	13100	8560	5310	5950	5060
12	6660	1820	5130	7310	19200	6690	67500	11500	8290	5340	5260	3890
13	7970	1940	7550	7910	16400	7160	56800	9200	7450	5600	4670	3340
14	11000	2000	7940	6720	14300	7750	56300	9230	6520	5170	5120	3180
15	18100	1980	7390	5820	13300	7050	61600	9760	5280	4450	5300	4140
16	22200	1950	11200	5710	12200	6020	69900	8930	4540	4610	5060	5290
17	21800	1800	39400	4910	8970	5780	73200	7500	4330	5200	5100	5230
18	18600	1640	67400	4330	7180	6070	68300	7400	5970	5260	5760	5240
19	15400	1630	70200	5620	6960	6730	64900	10500	8100	4470	9930	4960
20	13200	1760	54400	7430	7010	17300	66600	12100	7830	3880	13600	4140
21	11500	1810	43000	7600	8370	63500	68600	12500	5890	4130	11300	3320
22	9230	1810	36500	7570	12700	88900	68900	11800	4300	4240	9990	3150
23	8110	1780	38900	7370	18700	90700	66000	9870	3850	4700	8790	3680
24	8140	1690	39600	6930	17900	65000	62100	7520	3750	5540	6710	3500
25	7190	1580	34700	9640	14400	51300	54100	5380	3610	6520	5420	3190
26	4770	1580	29300	14700	12400	50100	48600	4560	3490	6660	4690	2910
27	3500	1710	26400	17600	11200	46700	44800	4540	3320	6900	3990	2650
28	3820	2450	25300	17600	9950	43800	42200	4680	3140	7310	3630	2510
29	3790	4250	24400	15900	---	42600	36500	5520	2900	7400	3400	2600
30	3410	5170	22900	13400	---	41300	32300	5590	4030	7490	2900	2540
31	3270	---	21100	11400	---	53300	---	4900	---	7650	2700	---
TOTAL	229790	67560	646740	331600	531340	796710	1641300	384880	160930	170690	192850	123150
MEAN	7413	2252	20860	10700	18980	25700	54710	12420	5364	5506	6221	4105
MAX	22200	5170	70200	18900	45800	90700	81000	30900	8560	7650	13600	5780
MIN	1990	1580	2510	4330	6960	5580	30400	4540	2900	3880	2700	2510
AC-FT	455800	134000	1283000	657700	1054000	1580000	3256000	763400	319200	338600	382500	244300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2002, BY WATER YEAR (WY)

MEAN	8060	10760	12170	11340	14340	17630	17240	23740	21710	9712	5791	5895
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1944 - 2002	
ANNUAL TOTAL	6418330		5277540			
ANNUAL MEAN	17580		14460		a13210	
HIGHEST ANNUAL MEAN					30420	1990
LOWEST ANNUAL MEAN					4383	1964
HIGHEST DAILY MEAN	96400	Feb 19	90700	Mar 23	268000	May 10 1990
LOWEST DAILY MEAN	1580	Nov 25	1580	Nov 25	384	Nov 28 1956
ANNUAL SEVEN-DAY MINIMUM	1710	Nov 21	1710	Nov 21	397	Oct 19 1956
MAXIMUM PEAK FLOW			96800	Mar 23	b270000	May 10 1990
MAXIMUM PEAK STAGE			17.59	Mar 23	c32.30	May 10 1990
INSTANTANEOUS LOW FLOW			1540	Nov 25-26	378	Nov 28 1956
ANNUAL RUNOFF (AC-FT)	12730000		10470000		9570000	
10 PERCENT EXCEEDS	46800		42800		35300	
50 PERCENT EXCEEDS	8630		6730		6010	
90 PERCENT EXCEEDS	2540		2560		2290	

a. Prior to regulation, water years 1937-43, 11,970 ft^3/s
b. Maximum discharge for period of recorld 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


100000
10000
1000
DAILY MEAN DISCHARGE, IN CUBIC FEET PER SECOND
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
2001
2002

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947-1956, April 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Time	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SAMPLE LOCATION, CROSS SECTION (FT FM R BK) (72103)	SAMPLING DEPTH (FEET) (00003)	STREAM WIDTH (FT) (00004)	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)
OCT													
24...	1345	81213	80513	7940	--	--	--	757	8.1	93	8.3	452	21.7
JAN													
16...	1415	81213	80513	5380	--	--	--	771	10.9	94	8.2	1130	9.4
16...	1417	80513	80513	--	1030	1.00	400	771	--	--	--	--	9.4
16...	1418	80513	80513	--	990.0	1.00	400	771	--	--	--	--	9.4
16...	1419	80513	80513	--	950.0	1.00	400	771	--	--	--	--	9.4
16...	1420	80513	80513	--	910.0	1.00	400	771	--	--	--	--	9.4
16...	1421	80513	80513	--	870.0	1.00	400	771	--	--	--	--	9.4
16...	1422	80513	80513	--	830.0	1.00	400	771	--	--	--	--	9.4
16...	1423	80513	80513	--	790.0	1.00	400	771	--	--	--	--	9.4
16...	1424	80513	80513	--	750.0	1.00	400	771	--	--	--	--	9.4
16...	1425	80513	80513	--	710.0	1.00	400	771	--	--	--	--	9.5
16...	1426	80513	80513	--	670.0	1.00	400	771	--	--	--	--	9.5
MAR													
05...	1330	81213	80513	6330	--	--	--	768	9.8	81	8.1	990	7.2
APR													
24...	1300	81213	80513	58300	--	--	--	775	8.4	91	7.8	838	19.7
JUN													
26...	1620	81213	80513	3240	--	--	--	771	6.9	90	8.4	559	29.6
AUG													
22...	1300	80513	80513	--	--	1.00	410	762	7.0	--	--	--	30.2
22...	1302	80513	80513	--	--	1.00	410	762	7.6	--	--	--	30.3
22...	1305	80513	80513	--	--	1.00	410	762	7.6	--	--	--	30.3
22...	1306	80513	80513	--	--	1.00	410	762	7.6	--	--	--	30.2
22...	1309	80513	80513	--	--	1.00	410	762	7.5	--	--	--	30.2
22...	1310	80513	80513	--	--	1.00	410	762	7.5	--	--	--	30.2
22...	1311	80513	80513	--	--	1.00	410	762	7.6	--	--	--	30.3
22...	1312	80513	80513	--	--	1.00	410	762	7.8	--	--	--	30.3
22...	1313	80513	80513	--	--	1.00	410	762	7.8	--	--	--	30.3
22...	1314	80513	80513	--	--	1.00	410	762	7.9	--	--	--	30.3
22...	1315	81213	80513	9990	--	--	--	762	7.5	100	7.9	990	30.2

Date	HARDNESS TOTAL (MG/L AS CACO3) (00900)	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)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)
OCT													
24...	120	34.0	7.90	3.40	2	39.0	41	54.0	62.0	260	.04	.90	.05
JAN													
16...	280	72.0	24.0	4.80	3	110	46	160	170	663	.14	.70	.18
MAR													
05...	230	62.0	19.0	3.70	3	98.0	47	140	140	588	.05	.70	.06
APR													
24...	190	51.0	15.0	3.10	3	86.0	49	100	98.0	405	.03	.70	.04
JUN													
26...	180	51.0	12.0	4.60	1	42.0	33	43.0	60.0	326	.04	1.0	.05
AUG													
22...	220	59.0	18.0	4.60	3	98.0	48	150	140	581	.01	1.0	.01

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	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)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SEDI-MENT, SUS-PENDED (MG/L) (80154)
OCT													
24...	.08	<.010	.86	.98	.061	<.02	.02	.13	340	E250	210	85	232
JAN													
16...	.20	<.010	.56	.90	.031	<.02	.01	.07	E23	E20	E11	95	163
MAR													
05...	.14	<.010	.65	.84	.153	<.02	.05	.12	E28	40	42	95	180
APR													
24...	.17	<.010	.67	.87	.031	<.02	.01	.22	E42	96	E12	64	865
JUN													
26...	<.02	<.010	.96	--	--	<.02	<.01	.08	E10	E6	54	73	73
AUG													
22...	.14	<.010	.99	1.1	--	<.02	<.01	.20	300	400	370	92	347

Date	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)
OCT		
24...	4970	--
JAN		
16...	2370	--
MAR		
05...	3080	--
APR		
24...	136000	--
JUN		
26...	639	--
AUG		
22...	--	670
22...	--	711
22...	--	752
22...	--	793
22...	--	834
22...	--	875
22...	--	916
22...	--	957
22...	--	998
22...	--	1040
22...	9360	--

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

RED RIVER BASIN

07337000 Red River at Index, AR--Continued

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.0	20.2	21.5	18.2	16.6	17.4	9.7	8.1	8.9	7.1	6.6	6.9
2	26.1	18.1	21.2	22.5	17.5	19.1	10.7	9.1	9.8	6.6	5.8	6.2
3	27.1	18.5	21.6	24.9	16.9	20.1	11.5	10.1	10.7	5.8	5.0	5.4
4	26.2	19.5	21.9	23.6	16.7	19.0	13.8	11.4	12.7	5.1	4.4	4.8
5	24.0	16.3	20.6	26.0	15.5	19.0	17.3	13.0	15.4	4.9	4.7	4.8
6	18.8	12.4	15.5	19.8	18.1	19.0	18.0	16.3	17.1	5.6	4.5	5.0
7	23.4	11.9	16.4	19.8	18.1	19.0	19.3	16.3	17.8	5.8	4.8	5.3
8	24.8	13.6	17.9	22.5	15.6	18.7	17.9	11.5	14.0	6.2	4.8	5.5
9	22.0	16.6	19.7	20.1	15.5	17.2	13.4	9.9	11.3	7.7	5.6	6.5
10	22.6	20.3	21.3	20.9	15.0	17.2	13.2	10.5	12.1	8.8	7.6	8.0
11	20.8	19.5	19.9	25.9	13.1	17.6	12.4	11.3	11.6	9.9	8.8	9.3
12	20.7	19.4	20.0	22.7	13.6	17.0	11.5	10.9	11.1	9.6	8.7	9.2
13	20.7	19.8	20.2	21.1	14.5	17.3	11.4	11.1	11.2	9.5	8.4	9.1
14	19.9	18.7	19.4	22.5	14.3	17.7	11.3	10.7	11.0	9.8	8.8	9.3
15	19.9	18.8	19.4	23.9	13.6	17.4	10.8	10.2	10.4	9.6	8.6	9.2
16	19.2	18.3	18.6	21.6	14.7	17.4	10.7	10.3	10.4	9.6	8.9	9.2
17	18.3	17.4	17.7	21.5	14.2	16.9	11.2	10.7	11.0	9.8	9.3	9.6
18	17.7	16.8	17.3	24.1	12.5	17.6	11.3	10.9	11.1	9.3	8.2	8.5
19	18.1	16.7	17.4	18.3	11.4	15.8	11.2	10.7	10.9	8.4	7.8	8.0
20	18.9	17.6	18.2	20.0	8.5	11.8	10.7	10.1	10.4	7.9	7.2	7.6
21	19.6	18.2	18.8	20.4	7.1	11.1	10.2	9.7	10.0	8.3	7.0	7.7
22	20.5	18.8	19.6	16.5	9.5	13.1	10.2	9.8	10.0	8.5	7.5	7.9
23	21.2	20.0	20.6	21.3	15.3	18.3	10.1	9.6	9.8	10.3	8.5	9.2
24	21.9	20.8	21.3	22.6	12.8	16.2	9.6	9.2	9.4	10.5	9.9	10.3
25	21.3	19.8	20.5	23.2	9.0	14.9	9.2	8.7	9.0	9.9	9.0	9.5
26	20.3	18.5	19.3	20.0	11.4	15.8	8.8	8.1	8.4	9.5	8.5	9.0
27	19.0	17.5	18.1	15.2	6.5	11.4	8.2	7.5	7.9	9.4	8.4	8.9
28	17.8	16.3	16.9	9.8	5.4	7.5	8.4	7.7	8.0	9.9	8.8	9.3
29	17.3	15.7	16.4	9.4	7.7	8.7	8.4	7.9	8.2	10.7	9.7	10.2
30	17.1	15.6	16.3	8.7	7.3	8.0	8.1	7.4	7.8	12.7	10.6	11.5
31	17.3	15.5	16.5	---	---	---	7.5	7.0	7.2	13.0	11.6	12.6
MONTH	27.1	11.9	19.0	26.0	5.4	15.9	19.3	7.0	10.8	13.0	4.4	8.2

07337000 Red River at Index, AR--Continued

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.6	9.9	10.7	8.6	7.9	8.1	15.5	14.2	14.8	22.7	20.8	21.6
2	9.9	8.1	8.7	8.4	7.0	8.0	16.7	15.5	16.1	22.9	22.5	22.7
3	8.1	7.8	7.9	7.0	5.5	6.2	16.9	16.2	16.6	22.5	20.7	21.4
4	8.3	7.8	8.0	6.8	4.9	5.9	16.4	15.7	16.0	20.7	19.9	20.2
5	8.1	6.9	7.6	7.8	5.7	6.7	16.0	15.1	15.5	20.4	19.4	19.8
6	6.9	6.6	6.7	9.3	7.2	8.0	15.4	14.7	15.0	22.4	20.3	21.2
7	7.1	6.4	6.8	12.0	9.3	10.6	---	---	---	23.5	21.8	22.5
8	7.6	6.8	7.2	12.2	11.1	11.5	15.0	14.5	14.8	24.5	22.6	23.5
9	7.7	7.2	7.5	13.1	12.2	12.6	14.8	14.2	14.6	24.9	23.6	24.2
10	7.5	7.1	7.3	12.5	11.2	11.9	15.3	14.0	14.5	24.4	22.9	23.5
11	7.7	6.7	7.2	12.0	10.4	11.1	16.6	15.3	15.8	24.1	22.2	23.0
12	8.1	6.9	7.5	11.1	10.0	10.5	17.5	16.6	17.0	24.7	23.0	23.7
13	8.7	7.5	8.1	12.6	10.2	11.3	18.0	17.3	17.6	24.5	22.6	23.5
14	8.9	7.8	8.3	14.7	12.0	13.1	18.3	17.5	17.9	23.9	22.2	23.2
15	8.7	8.1	8.4	15.7	14.4	15.0	18.4	17.8	18.1	24.0	22.3	23.2
16	9.2	7.6	8.4	15.5	13.5	14.3	18.2	17.8	17.9	24.0	22.5	23.3
17	9.7	8.2	9.0	13.5	13.1	13.2	18.3	17.6	18.0	24.1	22.5	23.4
18	9.8	9.0	9.5	13.5	12.9	13.2	19.1	18.0	18.5	22.5	21.2	21.8
19	11.0	9.8	10.5	14.2	13.5	13.8	19.5	18.8	19.1	22.4	20.4	21.5
20	12.2	10.3	11.2	14.6	14.0	14.3	19.4	18.9	19.2	22.9	20.8	21.8
21	11.8	11.1	11.4	14.3	13.7	14.0	19.5	19.2	19.4	23.3	21.3	22.3
22	12.2	10.6	11.4	13.9	13.1	13.4	19.4	18.9	19.2	23.6	21.5	22.5
23	12.0	11.0	11.5	13.1	12.5	12.9	19.3	18.5	18.9	23.9	21.8	22.9
24	12.5	11.2	11.8	13.0	12.7	12.8	19.7	19.0	19.3	24.0	22.7	23.4
25	12.7	11.9	12.2	13.6	13.0	13.2	19.4	18.7	19.0	25.4	23.2	24.1
26	11.9	9.5	10.7	13.1	12.1	12.5	18.9	17.3	18.1	26.4	24.0	25.0
27	9.6	8.5	9.1	12.5	11.5	12.0	17.6	17.0	17.3	26.8	24.4	25.5
28	9.1	7.6	8.4	13.6	12.2	12.8	18.8	17.5	18.0	26.3	24.7	25.5
29	---	---	---	14.5	13.5	14.0	19.4	18.3	18.8	25.9	24.7	25.1
30	---	---	---	14.6	14.1	14.4	21.0	19.2	20.0	25.5	24.5	24.9
31	---	---	---	14.4	13.7	14.1	---	---	---	27.2	24.5	25.7
MONTH	12.7	6.4	9.0	15.7	4.9	11.8	---	---	---	27.2	19.4	23.1

07337000 Red River at Index, AR--Continued

WATER TEMPERATURE, in (DEGREES C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	28.8	25.8	27.1	28.8	27.5	28.1	31.6	29.8	30.7	30.5	28.4	29.3
2	29.7	27.2	28.3	29.5	27.7	28.4	31.7	30.1	30.9	30.8	28.9	29.7
3	30.1	27.8	28.9	29.6	27.6	28.5	31.8	30.1	31.0	30.8	29.0	29.9
4	30.3	28.3	29.3	30.6	28.0	29.2	32.4	30.4	31.4	30.8	29.2	30.0
5	30.1	28.4	29.2	32.0	29.0	30.3	32.1	30.4	31.2	30.5	29.2	29.8
6	29.9	28.0	29.0	32.4	30.0	31.1	32.1	30.3	31.1	30.3	28.7	29.4
7	29.9	27.7	28.8	32.7	30.8	31.6	31.7	30.3	31.0	28.7	26.2	27.9
8	29.5	28.0	28.7	32.7	30.7	31.8	31.0	29.5	30.3	28.0	26.9	27.4
9	28.8	27.8	28.2	33.1	31.1	32.0	30.9	29.0	29.9	27.5	26.7	27.1
10	28.7	27.0	27.8	33.1	31.5	32.3	30.8	29.2	30.0	28.5	26.3	27.2
11	29.1	27.5	28.3	32.7	31.5	32.2	30.3	29.0	29.6	29.3	27.2	28.1
12	30.2	28.0	29.0	32.9	30.7	31.6	30.5	28.5	29.4	29.1	27.5	28.3
13	30.5	29.0	29.7	32.6	30.7	31.6	30.3	28.7	29.4	29.3	27.0	28.1
14	29.5	28.4	28.9	31.5	30.3	30.9	29.4	28.0	28.6	28.9	26.9	28.0
15	29.1	27.2	28.1	30.5	29.2	29.9	28.6	27.6	28.0	29.2	27.3	28.3
16	28.4	26.8	27.4	30.0	28.1	28.9	27.8	27.0	27.3	28.7	27.2	27.7
17	28.9	25.9	27.3	28.9	27.4	28.0	29.0	26.5	27.6	27.9	26.8	27.3
18	29.0	26.7	27.9	30.4	27.7	28.8	30.3	28.2	29.0	27.9	26.5	27.0
19	29.4	27.4	28.4	31.4	29.0	30.1	30.4	28.7	29.6	27.2	25.6	26.5
20	29.5	28.0	28.9	32.2	29.9	31.0	30.3	28.8	29.6	26.7	25.1	25.7
21	30.1	28.3	29.1	32.9	30.5	31.6	30.6	28.9	29.7	26.8	24.6	25.6
22	30.4	28.3	29.3	33.1	30.9	32.0	31.1	29.3	30.1	26.9	24.9	25.9
23	30.7	28.6	29.6	32.7	31.1	32.0	31.1	29.5	30.4	25.9	23.5	24.5
24	30.6	28.7	29.5	32.2	31.1	31.6	31.4	29.8	30.7	24.0	22.3	23.2
25	30.2	28.1	29.0	31.8	30.3	31.1	31.2	29.5	30.2	23.9	21.8	22.8
26	29.9	27.9	28.9	32.2	30.1	31.1	31.2	29.1	30.0	23.1	21.7	22.5
27	29.6	27.9	28.6	31.5	30.3	31.0	30.6	29.0	29.4	26.6	20.5	23.2
28	29.8	27.9	28.8	31.2	29.9	30.6	29.8	27.7	28.7	29.2	20.4	24.3
29	28.5	26.3	27.3	30.9	29.5	30.2	29.2	27.7	28.4	29.8	21.8	24.8
30	29.0	27.5	28.1	31.2	29.5	30.4	28.2	26.4	27.5	30.9	22.1	25.6
31	---	---	---	31.2	29.7	30.5	30.1	25.0	27.5	---	---	---
MONTH	30.7	25.8	28.6	33.1	27.4	30.6	32.4	25.0	29.6	30.9	20.4	26.8

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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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. No flow at times.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.02	0.20	1.3	5.9	3850	5.1	377	10	2.7	6.1	0.46	1.2
2	0.0	0.14	1.5	5.6	306	5.8	130	7.6	2.8	34	0.38	0.90
3	0.0	0.12	1.2	6.4	110	5.7	64	81	2.7	60	0.35	0.73
4	0.0	0.12	0.95	5.6	62	4.8	39	419	2.5	108	0.35	0.68
5	0.0	0.10	0.82	5.7	116	4.4	27	89	2.0	27	0.33	0.77
6	0.05	0.09	0.90	5.6	668	4.2	20	61	1.5	11	0.31	0.52
7	0.05	0.08	0.87	5.1	784	4.3	48	44	1.5	6.5	0.28	0.41
8	0.0	0.15	0.72	5.0	378	5.2	2490	22	1.4	4.0	0.22	0.83
9	0.41	6.8	0.60	9.8	170	6.6	1840	14	1.6	2.7	0.94	0.93
10	0.40	100	0.62	9.3	88	5.1	169	32	1.8	2.3	2.0	0.77
11	38	29	0.83	7.6	47	4.7	79	298	1.8	1.8	1.9	0.62
12	6.6	6.2	1.2	7.4	31	5.4	46	70	1.5	1.5	9.3	0.49
13	694	2.4	1.1	6.2	21	4.9	33	83	1.5	2.3	5.3	0.64
14	256	5.2	3.0	5.4	16	5.0	201	26	5.1	1.9	5.8	0.75
15	38	3.6	24	4.9	13	6.1	141	14	5.0	1.4	3.7	0.73
16	8.1	1.4	9880	4.6	11	5.6	241	10	4.3	1.7	2.1	0.80
17	2.6	0.88	8870	5.0	11	5.6	4140	498	3.6	2.8	1.7	0.69
18	1.2	0.63	1140	5.4	11	13	2070	604	2.6	2.5	1.5	0.56
19	0.84	0.63	142	5.3	11	656	184	104	2.1	2.2	1.2	0.79
20	0.64	0.57	67	5.0	11	7880	79	39	1.7	1.6	1.0	1.3
21	0.50	0.47	40	5.2	10	1770	45	19	1.8	1.3	0.87	2.5
22	0.43	0.33	27	5.3	9.6	166	29	12	1.6	1.1	0.71	4.8
23	0.41	0.31	19	6.1	9.7	78	21	8.7	1.4	1.2	0.62	2.1
24	e0.30	0.53	14	265	8.4	48	17	7.3	1.1	1.2	0.75	1.4
25	0.24	0.49	12	904	7.4	35	56	6.0	0.94	0.98	0.69	1.1
26	0.16	0.44	9.8	152	6.4	26	54	4.6	0.88	0.86	0.55	0.89
27	0.09	0.41	9.1	67	5.5	21	49	4.1	0.93	0.75	0.77	0.76
28	0.12	4.0	8.5	39	5.2	19	31	3.6	1.1	0.62	0.82	0.63
29	0.18	11	7.2	26	---	16	19	3.6	1.4	0.54	0.75	0.59
30	0.15	3.1	7.4	20	---	833	13	3.4	1.6	0.51	0.66	0.69
31	0.24	---	6.7	2080	---	2320	---	2.8	---	0.48	1.1	---
TOTAL	1049.73	179.39	20299.31	3690.4	6777.2	13969.5	12752	2600.7	62.45	290.84	47.41	30.57
MEAN	33.86	5.980	654.8	119.0	242.0	450.6	425.1	83.89	2.082	9.382	1.529	1.019
MAX	694	100	9880	2080	3850	7880	4140	604	5.1	108	9.3	4.8
MIN	0.00	0.08	0.60	4.6	5.2	4.2	13	2.8	0.88	0.48	0.22	0.41
AC-FT	2080	356	40260	7320	13440	27710	25290	5160	124	577	94	61

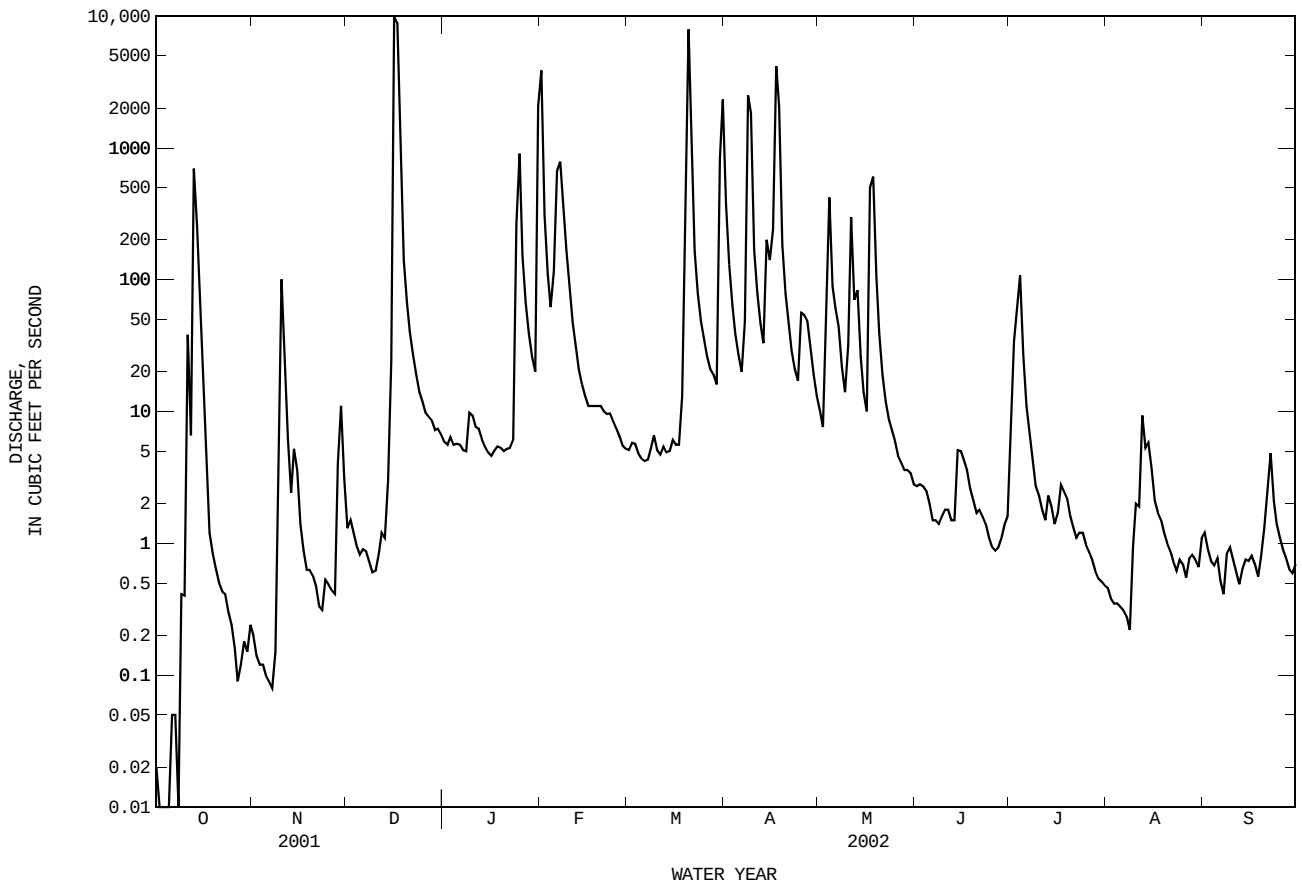
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)

MEAN	133.3	185.5	359.9	143.9	245.1	240.8	168.3	192.5	87.46	46.82	4.617	15.52
MAX	451	646	804	513	693	581	425	734	433	333	32.0	91.5
(WY)	1994	1997	1992	1998	2001	2001	2002	1992	1992	1994	1992	1994
MIN	0.008	0.093	0.33	5.83	0.12	8.01	10.4	2.53	0.50	0.000	0.005	0.002
(WY)	1993	1996	1996	2000	1996	1996	1996	1998	2001	1998	1993	1993

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002	
ANNUAL TOTAL	72181.52		61749.50			
ANNUAL MEAN	197.8		169.2		151.7	
HIGHEST ANNUAL MEAN					297	1992
LOWEST ANNUAL MEAN					7.81	1996
HIGHEST DAILY MEAN	9880	Dec 16	9880	Dec 16	9880	Dec 16 2001
LOWEST DAILY MEAN	0.00	Oct 2	0.00	Oct 2	0.00	Oct 2 1991
ANNUAL SEVEN-DAY MINIMUM	0.01	Oct 2	0.01	Oct 2	0.00	Oct 7 1991
MAXIMUM PEAK FLOW			12900	Dec 16	14900	Dec 4 1998
MAXIMUM PEAK STAGE			28.41	Dec 16	29.44	Dec 4 1998
ANNUAL RUNOFF (AC-FT)	143200		122500		109900	
10 PERCENT EXCEEDS	226		134		221	
50 PERCENT EXCEEDS	3.1		4.7		2.7	
90 PERCENT EXCEEDS	0.24		0.41		0.00	

e Estimated

07342465 South Sulphur River at Commerce, TX--Continued



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.

PERIOD OF RECORD.--Oct. 1991 to current year.
Water-quality records.--Chemical data: Oct. 1987 to Sept. 2001; Biochemical data: Oct. 1987 to Sept. 2001.

GAGE.--Water-stage recorder and crest-stage gage. Datum is 476.15 ft above NGVD of 1929. No flow at times. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation or diversions.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.0	0.0	2.4	0.06	947	0.08	66	2.3	e0.0	0.10	e0.0	e0.0
2	0.0	0.0	1.3	0.03	42	0.11	22	1.8	e0.0	0.25	e0.0	e0.0
3	0.0	0.0	0.74	0.0	18	0.07	11	40	e0.0	0.20	e0.0	e0.0
4	0.0	0.0	0.45	0.0	10	0.14	6.5	81	e0.0	e0.10	e0.0	e0.0
5	0.0	0.0	0.38	0.21	31	0.18	4.5	18	e0.0	e0.0	e0.0	e0.0
6	0.0	0.0	0.85	0.08	159	0.12	3.8	18	e0.0	e0.0	e0.0	e0.0
7	0.0	0.0	0.70	0.16	172	0.08	21	10	e0.0	e0.0	e0.0	e0.0
8	0.0	0.0	0.30	0.20	95	0.03	687	4.7	e0.0	e0.0	e0.0	e0.0
9	0.0	5.4	0.02	0.15	36	0.19	212	2.9	e0.0	0.0	e0.0	e0.0
10	0.0	14	0.0	0.15	16	0.06	24	2.4	e0.0	e0.0	0.02	e0.0
11	8.7	7.1	0.0	0.08	8.1	0.19	13	9.7	e0.0	e0.0	1.0	e0.0
12	3.1	2.8	0.30	0.03	5.1	0.13	8.3	7.5	e0.0	e0.0	e0.0	e0.0
13	167	1.2	2.6	0.01	4.0	0.03	6.6	4.2	e0.0	e0.0	e0.0	e0.0
14	58	0.04	9.3	0.0	3.2	0.0	37	2.5	e0.0	e0.0	e0.0	e0.0
15	14	0.0	37	0.0	2.3	0.01	23	1.8	e0.0	e0.0	e0.0	e0.0
16	5.6	0.0	3630	0.0	1.8	0.0	28	1.2	e0.0	e0.0	e0.0	e0.0
17	3.1	0.0	2060	0.0	1.3	0.01	1320	112	e0.0	e0.0	e0.0	e0.0
18	1.8	0.0	91	0.0	1.0	2.0	251	135	e0.0	e0.0	e0.0	e0.0
19	0.64	0.0	22	0.0	1.2	227	27	17	e0.0	e0.0	e0.0	e0.0
20	0.11	0.0	9.1	0.0	0.99	2280	14	5.7	e0.0	e0.0	0.0	6.0
21	0.0	0.0	5.2	0.0	0.90	247	8.8	3.0	e0.0	e0.0	e0.0	8.8
22	0.0	0.0	3.6	0.07	0.78	31	6.6	2.0	e0.0	e0.0	e0.0	0.80
23	0.0	0.0	2.4	0.30	1.0	15	5.0	1.4	e0.0	e0.0	e0.0	e0.0
24	0.0	0.0	1.8	66	1.1	9.9	3.9	0.98	e0.0	e0.0	e0.0	e0.0
25	0.0	0.0	1.3	144	0.46	7.5	3.5	0.83	e0.0	e0.0	e0.0	e0.0
26	0.0	0.0	0.93	24	0.22	5.9	4.7	0.61	e0.0	e0.0	e0.0	e0.0
27	0.0	0.0	0.74	9.8	0.15	4.6	10	0.40	e0.0	e0.0	e0.0	e0.0
28	0.0	7.9	0.52	5.4	0.08	4.0	8.3	e0.15	e0.0	e0.0	e0.0	e0.0
29	0.0	4.0	0.39	4.0	---	3.6	4.5	e0.0	e0.0	e0.0	e0.0	e0.0
30	0.0	4.3	0.22	3.1	---	214	3.2	e0.0	e0.0	e0.0	e0.0	e0.0
31	0.0	---	0.14	665	---	751	---	e0.0	---	e0.0	e0.0	---
TOTAL	262.05	46.74	5885.68	922.83	1559.68	3803.93	2844.2	487.07	0.0	0.65	1.02	15.60
MEAN	8.453	1.558	189.9	29.77	55.70	122.7	94.81	15.71	0.000	0.021	0.033	0.520
MAX	167	14	3630	665	947	2280	1320	135	0.00	0.25	1.0	8.8
MIN	0.00	0.00	0.00	0.00	0.08	0.00	3.2	0.00	0.00	0.00	0.00	0.00
AC-FT	520	93	11670	1830	3090	7550	5640	966	0.00	1.3	2.0	31

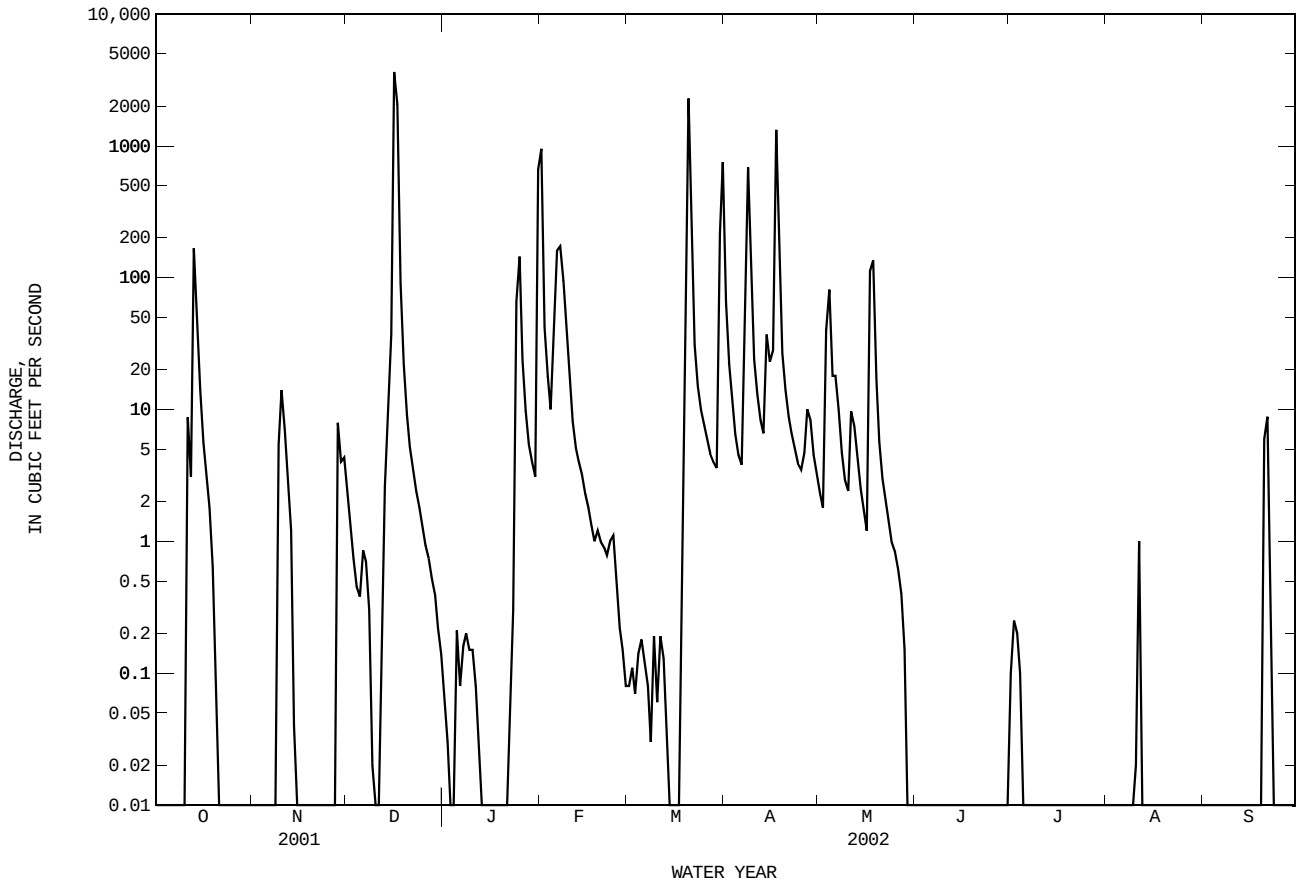
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002, BY WATER YEAR (WY)

MEAN	36.56	61.17	116.5	49.29	85.35	75.44	62.58	59.82	35.66	18.94	3.222	2.911
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	0.000	0.033	0.000	0.98	0.10	5.41	2.02	0.83	0.000	0.000	0.000	0.000
(WY)	2000	2000	1996	2000	1996	1996	1992	1998	2002	1993	1993	1993

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002	
ANNUAL TOTAL	22425.28		15829.45			
ANNUAL MEAN	61.44		43.37		50.47	
HIGHEST ANNUAL MEAN					99.8	1992
LOWEST ANNUAL MEAN					2.37	1996
HIGHEST DAILY MEAN	3630	Dec 16	3630	Dec 16	3630	Dec 16 2001
LOWEST DAILY MEAN	0.00	Jul 8	0.00	Oct 1	0.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 8	0.00	Oct 1	0.00	Oct 1 1991
MAXIMUM PEAK FLOW			7240	Dec 16	7240	Dec 16 2001
MAXIMUM PEAK STAGE			a16.78	Dec 16	a16.78	Dec 16 2001
ANNUAL RUNOFF (AC-FT)	44480		31400		36560	
10 PERCENT EXCEEDS	45		23		59	
50 PERCENT EXCEEDS	2.6		0.06		0.52	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated
a From floodmark.

07342480 Middle Sulphur River at Commerce, TX--Continued



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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except for estimated daily contents, which are fair. 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, 461,400 acre-ft, Dec. 18, 2001, elevation, 447.03 ft; minimum contents after initial filling, 191,100 acre-ft, May 11, 1992, elevation, 432.66 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 461,400 acre-ft, Dec. 18, elevation, 447.03 ft; minimum contents, 269,200 acre-ft, Sept. 30, elevation, 437.65 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

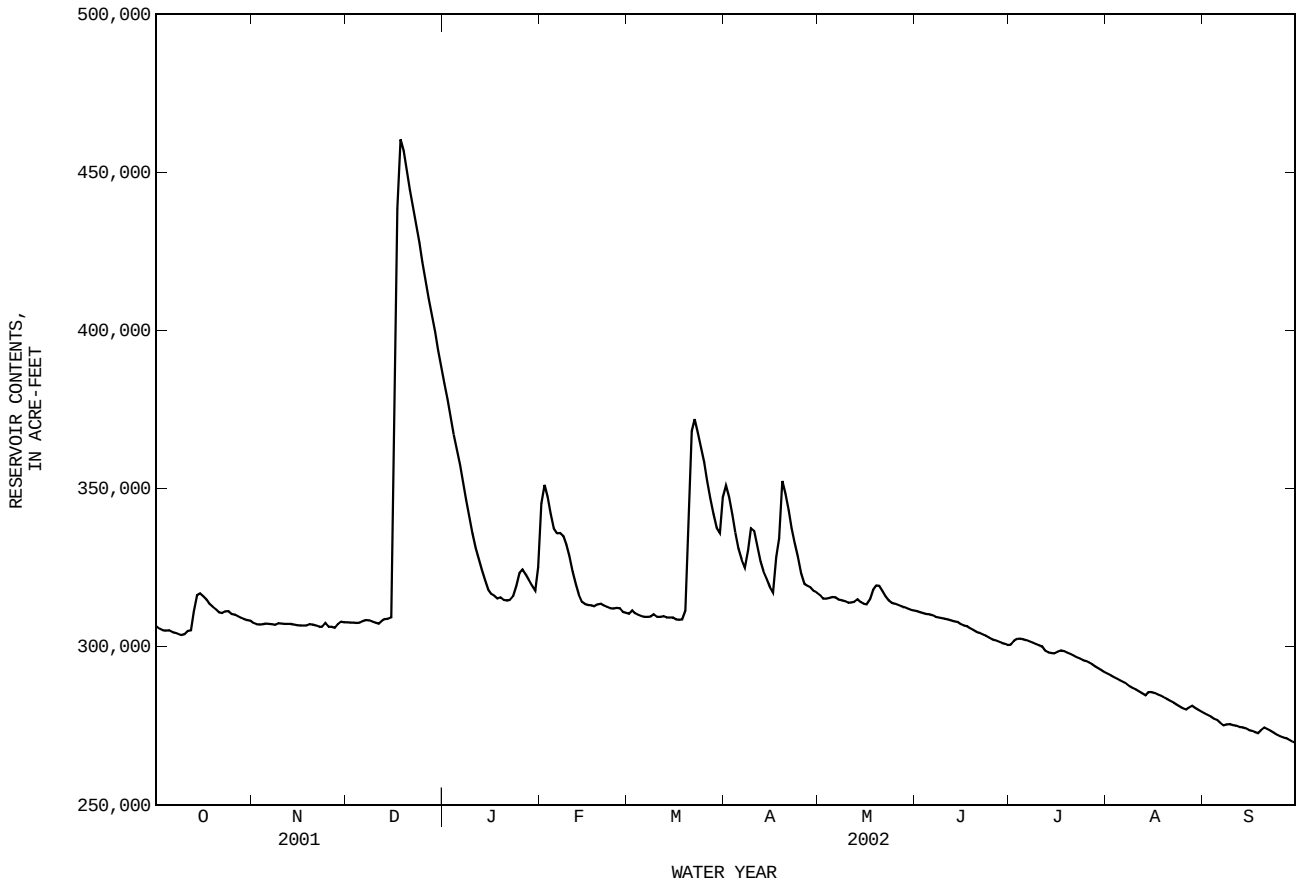
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	306600	307600	307700	383300	345300	310400	351000	316300	311300	300600	291500	278900
2	305700	307100	307600	378200	351100	311400	347200	315200	311000	301800	290900	278400
3	305200	307000	307600	372700	347200	310500	341700	315200	310700	302500	290300	277900
4	305100	307100	307500	367100	342100	310000	336100	315500	310400	302500	289800	277200
5	305200	307300	307600	362500	337400	309700	331000	315800	310300	302400	289300	276700
6	304700	307200	308100	357500	335800	309500	327600	315600	310000	302100	288800	276000
7	304400	307100	308400	351800	335900	309500	325000	314900	309500	301700	288300	275200
8	304000	306900	308300	346300	335000	309500	330500	314700	309300	301300	287500	275400
9	303700	307400	307900	340900	332300	310300	337400	314400	309000	300900	286900	275500
10	304000	307300	307600	335700	328400	309500	336600	314000	308800	300500	286500	275300
11	305000	307200	307300	331100	323600	309400	331800	314000	308600	e300200	285900	275100
12	305200	307200	308200	327800	319700	309600	326900	314200	308400	e298700	285200	274700
13	311200	307200	308800	324300	316500	309200	323900	315100	308100	e298200	284700	274500
14	316200	307100	308900	321100	314200	309200	321600	314100	307900	e298000	285600	274200
15	316900	306900	309200	318100	313500	309300	319000	313600	307100	e297900	285700	273700
16	315900	e306700	353800	316700	313200	308600	e317100	313400	306700	298400	285400	273500
17	314900	306700	438600	316100	313100	308500	e328400	315000	306500	298800	284900	273100
18	313600	306700	460300	315300	312800	308600	e334200	318000	305800	298600	284400	272700
19	312700	307200	456600	315600	313400	311400	e352400	319400	305300	298100	284000	273600
20	311900	307100	450200	314800	313600	339000	348300	319300	304700	297700	283400	274500
21	310900	306700	444500	314600	313000	368100	343200	317700	304400	297200	282800	273900
22	310700	306300	439300	314900	312600	371900	337400	315900	303900	296800	282300	273500
23	311200	306300	433700	316000	312200	367700	332600	314600	303500	296300	281800	272800
24	311300	307500	427700	319300	312000	362800	328300	313900	302900	295800	281100	272200
25	310400	306300	421700	323400	312300	358300	323200	313600	302300	295500	280500	271700
26	310100	306300	416100	324400	312200	352500	319900	313200	302000	295000	280100	271400
27	e309700	306000	410000	322900	311000	346800	319300	312800	301700	294500	280800	271100
28	e309200	307200	404800	321200	310800	341900	318800	312500	301300	293800	281400	270500
29	e308700	307900	399600	319300	---	337600	317600	312100	300900	293200	280700	270000
30	e308400	307800	394000	317800	---	336000	317200	311700	300500	292500	280000	269600
31	e308200	---	388800	325200	---	347200	---	311500	---	292000	279400	---
MAX	316900	307900	460300	383300	351100	371900	352400	319400	311300	302500	291500	278900
MIN	303700	306000	307300	314600	310800	308500	317100	311500	300500	292000	279400	269600
(+)	439.88	439.85	443.79	440.72	440.03	441.78	440.33	440.06	439.44	438.95	438.23	437.67
(@)	+1100	-400	+81000	-63600	-14400	+36400	-30000	-5700	-11000	-8500	-12600	-9800

CAL YR 2001 MAX 460300 MIN 292600 (@) -1800
WTR YR 2002 MAX 460300 MIN 269600 (@) -37500

e Estimated

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

07342495 Jim L. Chapman Lake near Cooper, TX--Continued



07342495 Jim L. Chapman Lake near Cooper, TX--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--Oct. 2001 to Sept. 2002 (discontinued).

GAGE.--Tipping-bucket rain gage (no wind shields used) with satellite telemetry.

REMARKS.--Records fair.

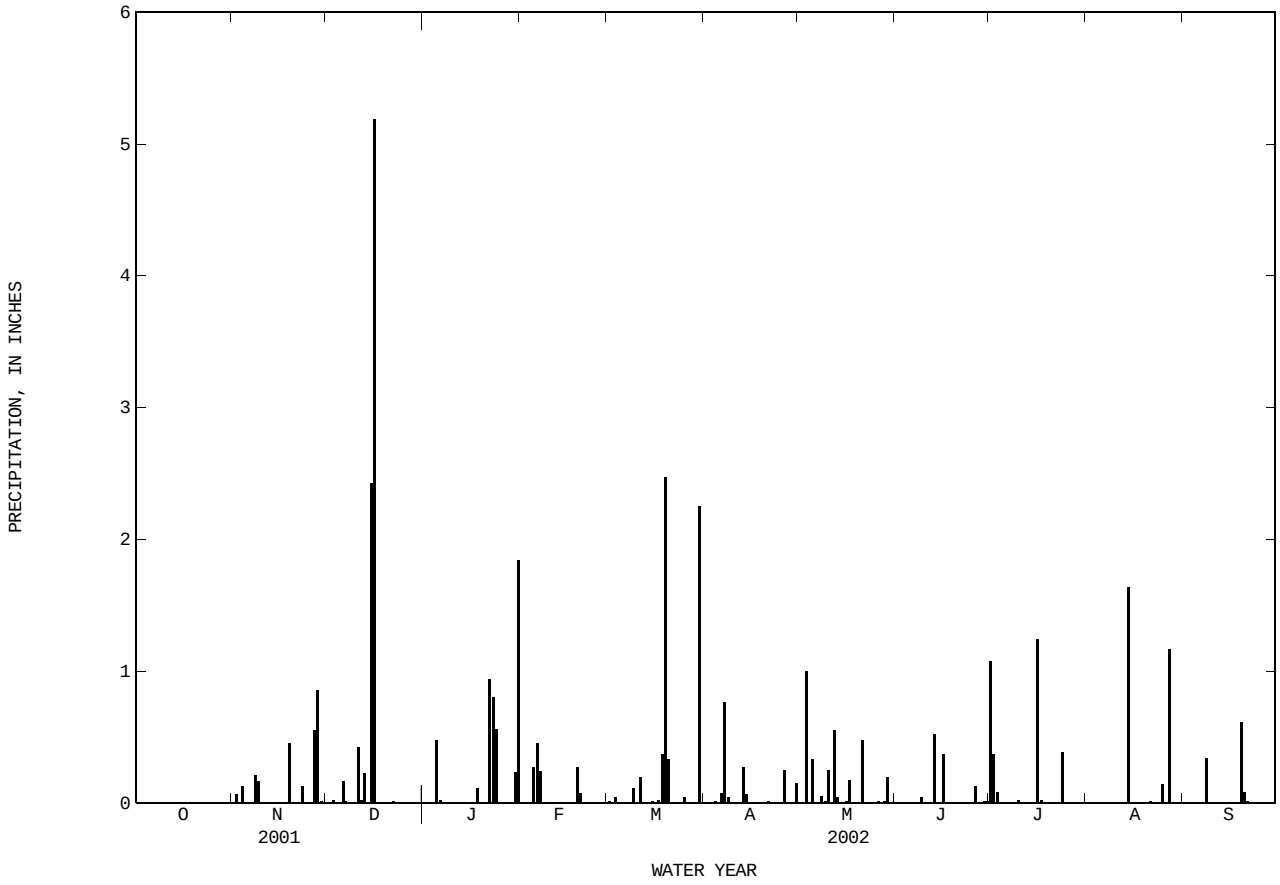
EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 5.18 inches, Dec. 16.

PRECIPITATION ACCUM, in INCHES, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	1.07	0.00	0.00
2	e0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.37	0.00	0.00
3	e0.00	0.00	0.02	0.00	0.00	0.04	0.00	1.00	0.00	0.08	0.00	0.00
4	---	0.12	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
5	---	0.00	0.00	0.47	0.27	0.00	0.00	0.33	0.00	0.00	0.00	0.00
6	---	0.00	0.16	0.02	0.45	0.00	0.07	0.00	0.00	0.00	0.00	0.00
7	e0.00	0.00	0.01	0.00	0.24	0.00	0.76	0.00	0.00	0.00	0.00	0.00
8	e0.00	0.21	0.00	0.00	0.00	0.00	0.04	0.05	0.00	0.00	0.00	0.34
9	e0.00	0.16	0.00	0.00	0.00	0.11	0.00	0.01	0.04	0.00	0.00	0.00
10	---	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.02	0.00	0.00
11	---	0.00	0.42	0.00	0.00	0.19	0.00	0.00	0.00	---	0.00	0.00
12	---	0.00	0.02	0.00	0.00	0.00	0.00	0.55	0.00	---	0.00	0.00
13	---	0.00	0.22	0.00	0.00	0.00	0.27	0.04	0.52	---	0.00	0.00
14	---	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	---	1.63	0.00
15	e0.00	0.00	2.42	0.00	0.00	0.01	0.00	0.00	0.00	---	0.00	0.00
16	e0.00	0.00	5.18	0.00	0.00	0.00	---	0.01	0.37	1.24	0.00	0.00
17	e0.00	0.00	0.00	0.00	0.00	0.02	---	0.17	0.00	0.02	0.00	0.00
18	e0.00	0.00	0.00	0.11	0.00	0.37	---	0.00	0.00	0.00	0.00	0.00
19	e0.00	0.45	0.00	0.00	0.27	2.47	---	0.00	0.00	0.00	0.00	0.61
20	e0.00	0.00	0.00	0.00	0.07	0.33	0.00	0.00	0.00	0.00	0.00	0.08
21	e0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.47	0.00	0.00	0.01	0.01
22	e0.00	0.00	0.01	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	e0.00	0.12	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	e0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.38	0.00	0.00
25	e0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.14	0.00
26	e0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.01	0.12	0.00	0.00	0.00
27	e0.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16	0.00
28	e0.00	0.85	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
29	e0.00	0.01	0.00	0.00	---	0.00	0.00	0.19	0.01	0.00	0.00	0.00
30	e0.00	0.00	0.00	0.23	---	2.25	0.15	0.00	0.01	0.00	0.00	0.00
31	0.00	---	0.00	1.84	---	0.00	---	0.00	---	0.00	0.00	---
TOTAL	---	2.53	8.46	4.97	1.30	5.84	---	3.09	1.07	---	2.94	1.04

e Estimated

07342495 Jim L. Chapman Lake near Cooper, TX--Continued



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.

PERIOD OF RECORD.--June 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.
Water-quality records.--Chemical data: Oct. 1958 to Sept. 1966, Oct. 1967 to Sept. 2001. Biochemical daata: Dec. 1979 to Sept. 2001. Specific conductance data: Oct. 1958 to Sept. 1966; Oct. 1967 to Sept. 1989. Water temperature data: Oct. 1958 to Sept. 1966, Oct. 1967 to Sept. 1989.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 371.91 ft above NGVD of 1929. 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.--Records good except those for estimated daily discharges, which are poor. 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	23	30	2800	2410	e91	3140	436	5.4	5.9	9.7	9.6
2	9.3	24	26	2790	2920	92	3340	437	5.4	6.1	9.8	8.7
3	9.8	24	24	2790	2830	94	3300	448	5.4	5.7	9.7	9.3
4	9.2	23	23	2770	2780	79	3260	447	5.4	5.6	9.6	11
5	10	21	22	2770	2780	9.7	2670	440	5.6	5.5	9.6	11
6	11	21	22	2750	3000	9.2	1780	442	5.7	5.4	9.6	11
7	10	20	22	2750	3090	8.0	1780	361	5.5	5.4	11	11
8	9.9	21	25	2730	2880	6.8	2810	111	5.5	5.3	9.4	12
9	9.8	25	24	2720	2430	6.7	2820	105	5.5	5.3	8.9	12
10	9.9	23	23	2580	2370	7.1	3280	105	5.5	15	9.1	10
11	11	22	23	2040	2190	7.3	3190	102	5.4	32	8.9	9.6
12	10	22	24	1560	1790	6.8	2650	103	5.4	31	8.9	9.7
13	409	23	31	1560	1390	6.5	1720	110	5.5	31	8.9	10
14	273	22	59	1510	858	6.5	1750	105	5.6	30	6.8	11
15	564	22	53	1050	244	6.7	1700	51	5.5	31	e5.1	12
16	560	22	5540	455	e219	6.8	1390	44	5.5	32	e5.0	12
17	559	22	6300	252	e84	7.0	2440	134	5.5	30	e4.6	12
18	559	22	5880	195	e34	7.7	1860	232	5.4	19	e4.7	12
19	565	24	4940	126	e20	320	2770	219	5.4	5.0	e13	13
20	562	23	3490	124	e19	2110	2740	384	5.4	4.9	e14	13
21	324	24	3000	122	e206	630	2710	609	5.5	4.9	e14	12
22	33	24	2920	130	e165	1680	2540	612	5.4	4.9	e14	11
23	30	24	2900	132	e21	3020	2290	431	5.4	4.5	e14	11
24	29	24	2880	329	e20	3050	2220	174	5.5	4.9	e14	11
25	28	24	2870	434	e19	3080	1750	105	5.5	4.7	e14	11
26	27	24	2860	1050	e19	3110	1090	103	5.5	15	e14	12
27	24	25	2860	1030	e26	3140	451	102	5.5	10	e19	12
28	23	39	2850	1030	e89	3000	443	102	5.4	11	12	12
29	23	72	2830	1030	---	2720	439	102	5.6	11	10	12
30	23	37	2820	1020	---	3460	442	57	5.8	11	10	12
31	23	---	2810	2140	---	3910	---	5.5	---	10	10	---
TOTAL	4756.6	766	58181	44769	34903	33688.8	64765	7218.5	164.6	403.0	321.3	335.9
MEAN	153.4	25.53	1877	1444	1247	1087	2159	232.9	5.487	13.00	10.36	11.20
MAX	565	72	6300	2800	3090	3910	3340	612	5.8	32	19	13
MIN	8.7	20	22	122	19	6.5	439	5.5	5.4	4.5	4.6	8.7
AC-FT	9430	1520	115400	88800	69230	66820	128500	14320	326	799	637	666

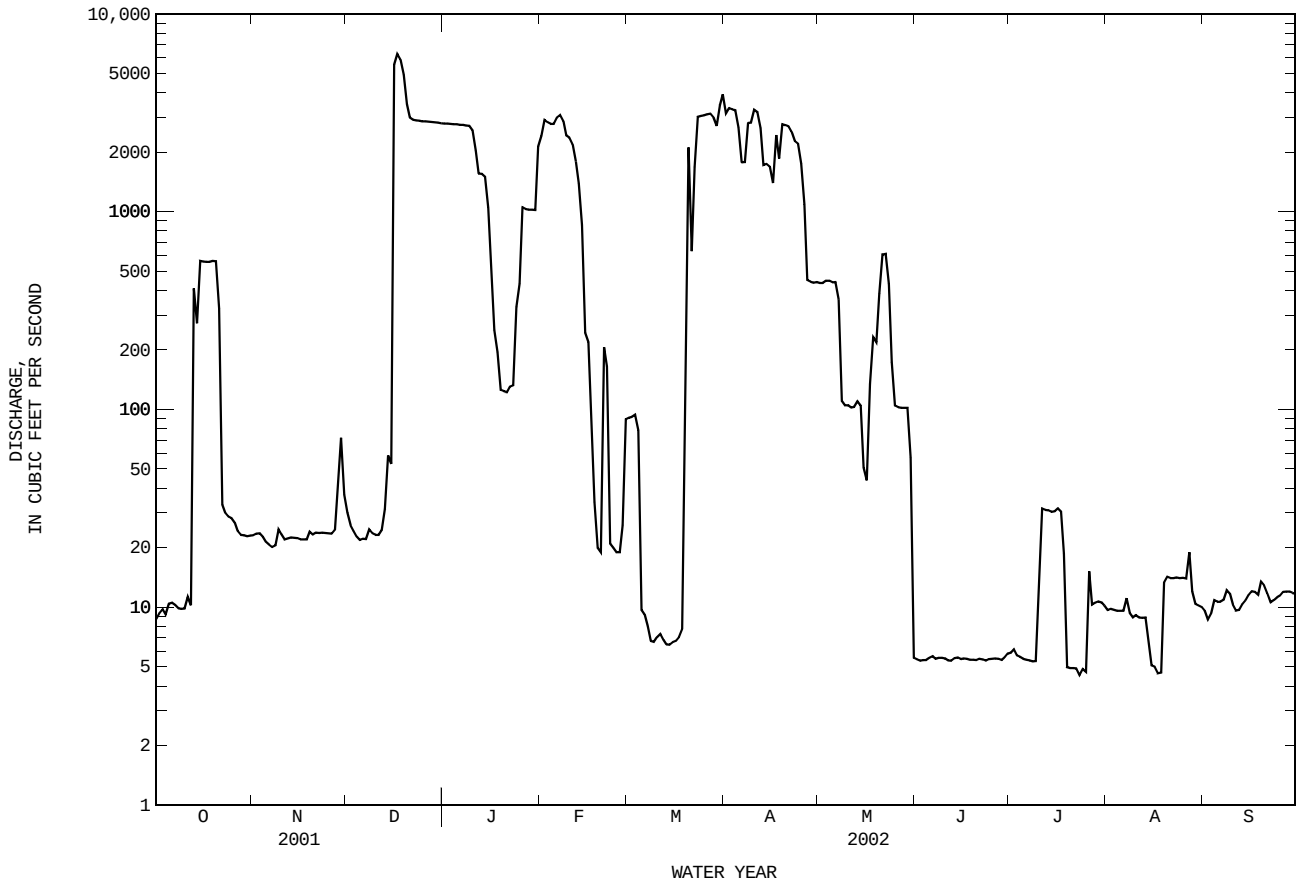
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002z, BY WATER YEAR (WY)

MEAN	119.5	497.7	1062	787.0	785.6	1243	832.3	454.1	300.1	173.1	132.9	17.63
MAX	551	1280	2167	2281	1748	3118	2183	1902	939	839	1205	99.5
(WY)	1994	1995	1999	1998	1999	2001	2002	1995	1995	1992	1992	1994
MIN	1.58	2.11	3.39	3.68	0.71	4.17	5.16	15.7	4.00	2.32	0.74	0.47
(WY)	2000	2000	1996	1996	1996	1996	1996	1996	2002	1996	1999	1999

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002z	
ANNUAL TOTAL	319460.10		250272.7			
ANNUAL MEAN	875.2		685.7		533.2	
HIGHEST ANNUAL MEAN					901	2001
LOWEST ANNUAL MEAN					5.52	1996
HIGHEST DAILY MEAN	6300	Dec 17	6300	Dec 17	6300	Dec 17 2001
LOWEST DAILY MEAN	3.9	Jul 10	4.5	Jul 23	0.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	4.1	Jul 7	4.8	Jul 19	0.00	Oct 1 1991
MAXIMUM PEAK FLOW			8020	Dec 16	8020	Dec 16 2001
MAXIMUM PEAK STAGE			20.07	Dec 16	20.07	Dec 16 2001
ANNUAL RUNOFF (AC-FT)	633600		496400		386300	
10 PERCENT EXCEEDS	2860		2810		1840	
50 PERCENT EXCEEDS	30		24		19	
90 PERCENT EXCEEDS	5.3		5.5		1.7	

e Estimated
z Period of regulated streamflow.

07342500 South Sulphur River near Cooper, TX--Continued



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 NGVD of 1929. 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 fair except those for estimated daily discharges and those below 10 ft^3/s, which are 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	8.7	30	e54	e2700	32	1040	24	11	19	0.00	3.6
2	8.8	8.7	26	e55	e609	e2180	307	23	9.3	93	0.00	1.5
3	9.6	8.7	23	e54	350	409	84	1970	7.4	393	0.00	0.00
4	8.2	9.7	19	e52	167	52	60	550	6.8	43	0.00	0.00
5	7.5	13	18	e53	e84	e157	53	70	5.3	22	0.00	0.00
6	12	13	34	e80	e1470	30	52	64	5.8	14	0.00	0.00
7	16	13	45	e110	e3200	28	1850	42	5.4	8.6	0.00	0.00
8	13	10	33	e89	e1530	28	9390	33	4.6	6.9	0.00	414
9	12	33	e30	e69	e759	30	1130	27	5.3	4.0	0.00	570
10	8.6	34	e25	e54	e1030	549	295	528	4.6	2.7	0.00	37
11	1300	24	e23	55	808	33	77	302	4.4	1.9	0.00	17
12	505	21	50	e52	e562	33	63	46	2.3	1.9	0.00	8.1
13	5830	20	66	e49	e647	32	74	52	4.0	0.87	0.00	4.8
14	1390	16	364	51	611	27	1150	40	4.7	0.10	2.3	1.7
15	151	13	525	464	64	27	208	27	4.2	9.8	27	0.99
16	49	12	40300	48	1030	28	296	22	8.5	639	11	0.00
17	36	13	7880	50	600	28	5720	2530	7.4	37	4.4	0.00
18	29	11	1250	e1060	44	55	816	744	5.5	23	1.3	0.00
19	22	34	625	e49	46	15700	134	58	4.2	15	0.05	0.06
20	19	29	e331	e50	53	15900	61	37	3.6	8.5	0.00	6.8
21	16	e18	e173	50	47	1800	49	27	2.4	5.1	0.00	8.4
22	16	16	e89	51	41	e573	44	23	2.5	3.0	0.00	6.4
23	13	13	e61	52	639	e358	38	19	3.6	1.0	0.00	2.0
24	12	18	e57	4740	36	257	35	16	3.3	6.8	0.00	0.62
25	11	18	e57	e1170	35	188	30	16	1.8	13	0.00	0.00
26	9.0	14	e56	e671	e685	e134	44	15	2.6	8.2	0.23	0.00
27	10	15	e56	98	e517	224	51	12	2.5	4.1	2160	0.00
28	8.7	e1470	e54	68	239	70	38	12	1.8	1.3	394	0.00
29	8.7	e987	e55	63	---	67	31	12	4.5	0.10	31	0.00
30	8.4	43	e56	60	---	8360	26	14	8.5	0.00	14	9.7
31	8.7	---	e55	e14200	---	5210	---	13	---	0.00	7.5	---
TOTAL	9556.9	2956.8	52466	23821	18603	52599	23246	7368	147.8	1385.87	2652.78	1092.67
MEAN	308.3	98.56	1692	768.4	664.4	1697	774.9	237.7	4.927	44.71	85.57	36.42
MAX	5830	1470	40300	14200	3200	15900	9390	2530	11	639	2160	570
MIN	7.5	8.7	18	48	35	27	26	12	1.8	0.00	0.00	0.00
AC-FT	18960	5860	104100	47250	36900	104300	46110	14610	293	2750	5260	2170

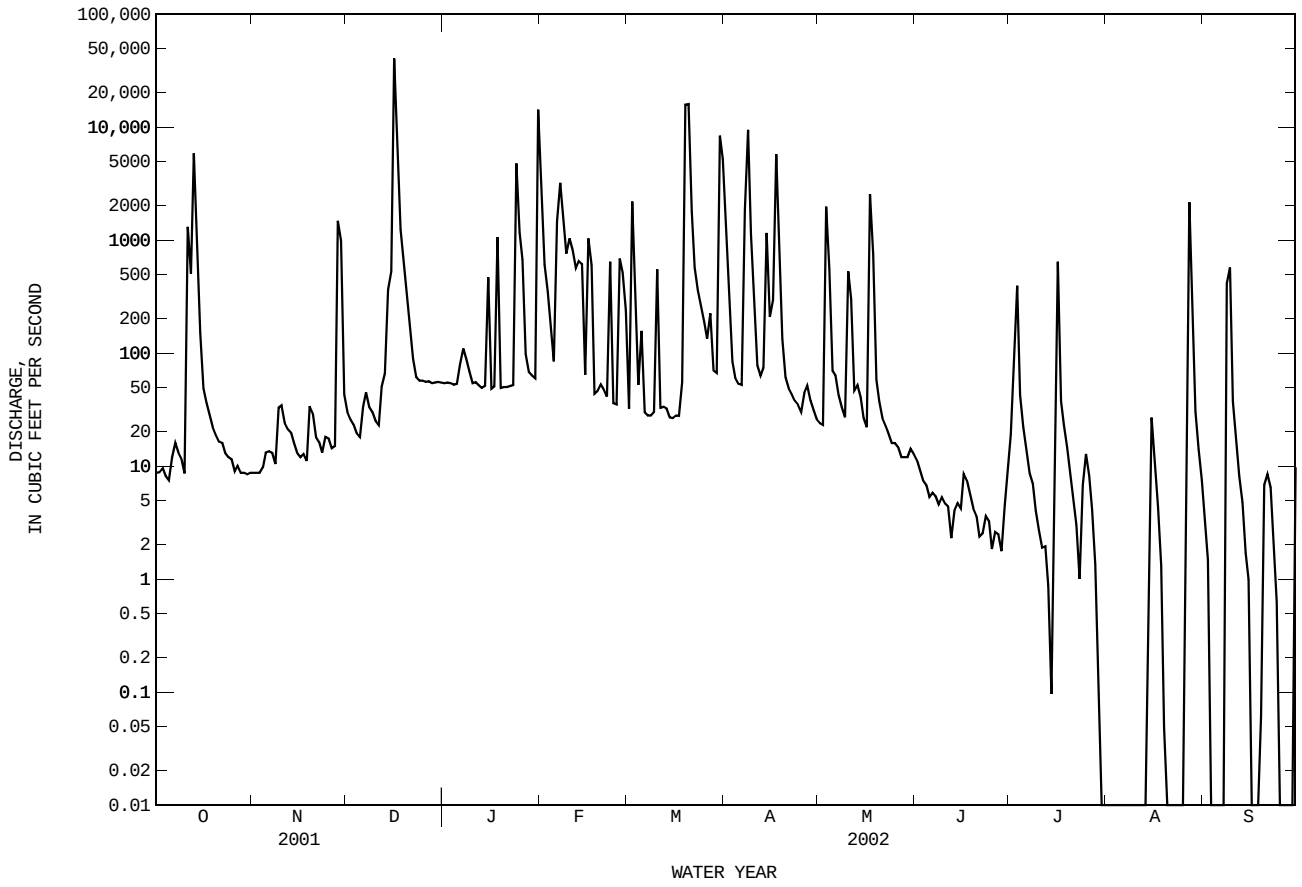
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2002, BY WATER YEAR (WY)

MEAN	217.2	266.8	336.9	234.7	393.3	378.5	391.3	457.9	299.0	94.03	24.13	109.1
MAX	1784	1406	1692	1172	2099	1697	3017	2461	1792	872	165	584
(WY)	1972	1958	2002	1950	2001	2002	1966	1982	1989	1976	2001	1973
MIN	0.000	0.000	0.000	0.16	0.81	4.43	2.97	2.43	0.28	0.000	0.000	0.000
(WY)	1953	1956	1956	1964	1976	1954	1972	1972	1988	1954	1952	1952

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1950 - 2002	
ANNUAL TOTAL	196932.87		195895.82			
ANNUAL MEAN	539.5		536.7		266.0	
HIGHEST ANNUAL MEAN					548	2001
LOWEST ANNUAL MEAN					34.7	1996
HIGHEST DAILY MEAN	40300	Dec 16	40300	Dec 16	40900	Oct 19 1971
LOWEST DAILY MEAN	0.09	Aug 10	0.00	Jul 30	0.00	Oct 1 1949
ANNUAL SEVEN-DAY MINIMUM	0.13	Aug 6	0.00	Jul 30	0.00	Aug 2 1951
MAXIMUM PEAK FLOW			60400	Dec 16	90600	Oct 19 1971
MAXIMUM PEAK STAGE			32.56	Dec 16	36.16	Oct 19 1971
ANNUAL RUNOFF (AC-FT)	390600		388600		192700	
10 PERCENT EXCEEDS	801		750		314	
50 PERCENT EXCEEDS	34		28		12	
90 PERCENT EXCEEDS	0.79		0.08		0.00	

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 NGVD of 1929. Prior to May 21, 1997, at site 2.3 mi upstream at datum 15.34 ft higher. Satellite telemeter at station.

REMARKS.--Records fair except for estimated daily discharges, which are poor. 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	57	885	3080	8120	163	17500	412	80	20	19	28
2	46	48	491	3150	17600	163	12000	389	44	23	19	22
3	43	46	319	3160	11200	160	7820	400	33	121	18	18
4	42	45	229	3150	7450	171	5320	1520	28	175	18	16
5	41	46	169	3170	5290	183	4160	1620	24	115	18	14
6	39	47	135	3200	4680	166	3500	957	22	53	18	13
7	38	48	145	3230	5850	149	2470	681	21	34	18	13
8	40	49	210	3200	7360	149	5600	489	20	27	18	13
9	41	50	186	3180	7380	146	12100	279	19	22	18	33
10	39	56	152	3160	5600	143	10500	197	19	19	18	210
11	46	81	131	3110	4110	151	6690	258	18	18	18	120
12	343	87	219	2750	3350	205	4740	327	18	17	18	51
13	1710	78	534	1950	2590	202	3890	229	18	18	18	28
14	5620	68	559	1630	1820	178	2930	285	17	25	21	21
15	5450	60	699	1560	1210	153	2690	251	17	27	25	17
16	2470	56	5960	1340	610	141	2250	188	16	30	30	15
17	1150	54	43900	734	334	150	2980	154	17	155	33	14
18	657	52	64100	407	253	165	8210	2140	18	115	30	13
19	484	51	28800	346	311	303	9570	2310	18	58	26	14
20	420	53	15900	298	789	8590	6530	910	19	41	23	15
21	390	83	11500	310	767	28900	4740	483	19	31	20	16
22	339	87	9420	302	627	18700	3930	526	17	25	21	17
23	189	71	7990	689	480	9160	3360	499	16	20	21	e16
24	106	62	6170	1380	320	6080	2850	410	16	19	19	e15
25	75	58	4840	5040	236	5050	2530	235	16	17	19	14
26	61	61	4190	6530	203	4350	2110	150	16	15	18	13
27	57	61	3800	3890	176	3780	1580	123	19	16	18	12
28	59	175	3520	2480	159	3380	817	117	26	19	342	11
29	55	1200	3310	1700	---	3110	513	113	24	20	398	11
30	71	1600	3180	1370	---	3430	440	113	21	21	122	11
31	73	---	3090	1410	---	10100	---	110	---	20	50	---
TOTAL	20254	4590	224733	70906	98875	107871	154320	16875	676	1336	1472	824
MEAN	653.4	153.0	7249	2287	3531	3480	5144	544.4	22.53	43.10	47.48	27.47
MAX	5620	1600	64100	6530	17600	28900	17500	2310	80	175	398	210
MIN	38	45	131	298	159	141	440	110	16	15	18	11
AC-FT	40170	9100	445800	140600	196100	214000	306100	33470	1340	2650	2920	1630

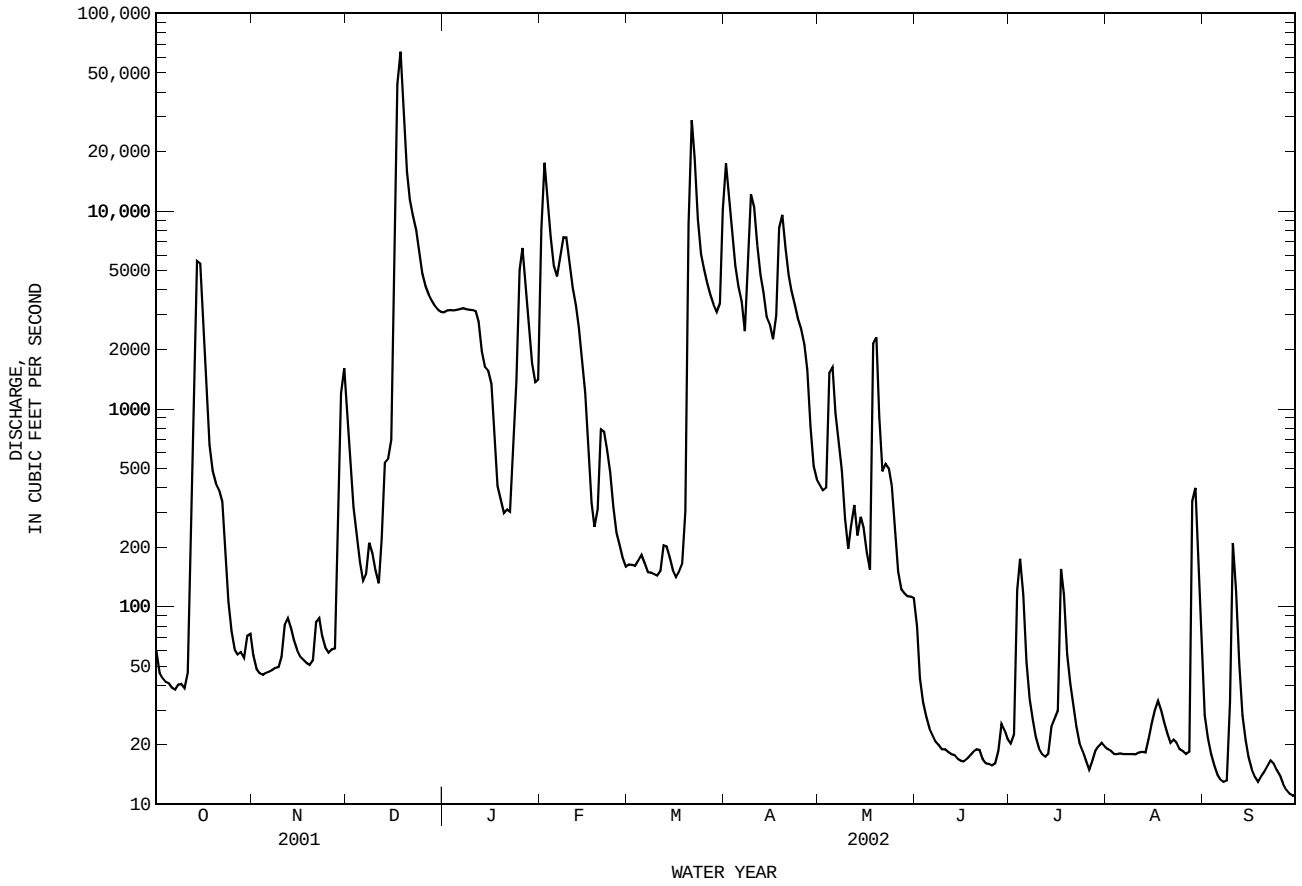
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2002z, BY WATER YEAR (WY)

MEAN	589.3	1831	3215	1698	2352	2754	1841	1438	808.5	521.6	252.2	190.7
MAX	2208	5798	7249	4052	6470	7354	5144	6191	2279	3164	1832	1086
(WY)	1994	1997	2002	1998	1997	2001	2002	1995	2000	1992	1992	2001
MIN	0.80	9.52	24.0	21.9	12.7	50.3	83.1	88.6	13.3	4.39	0.42	0.65
(WY)	2000	2000	1996	2000	1996	1996	1996	1998	1998	1993	1999	1999

07343200 Sulphur River near Talco, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1992 - 2002z	
ANNUAL TOTAL	906336		702732			
ANNUAL MEAN	2483		1925		1454	
HIGHEST ANNUAL MEAN					2642	2001
LOWEST ANNUAL MEAN					161	1996
HIGHEST DAILY MEAN	64100	Dec 18	64100	Dec 18	64100	Dec 18 2001
LOWEST DAILY MEAN	11	Aug 7	11	Sep 28	0.09	Sep 7 1999
ANNUAL SEVEN-DAY MINIMUM	11	Aug 6	12	Sep 24	0.11	Sep 1 1999
MAXIMUM PEAK FLOW			79800	Dec 18	79800	Dec 18 2001
MAXIMUM PEAK STAGE			30.99	Dec 18	30.99	Dec 18 2001
ANNUAL RUNOFF (AC-FT)	1798000		1394000		1053000	
10 PERCENT EXCEEDS	6170		5370		3890	
50 PERCENT EXCEEDS	457		155		230	
90 PERCENT EXCEEDS	16		18		9.1	

e Estimated
z Period of regulated streamflow.



07343200 Sulphur River near Talco, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jan. 1965 to Sept. 1995, Jan. 1968 to Sept. 1995, Oct. 1996 to Jan. 2002. (discontinued).
BIOCHEMICAL DATA: Jan. 1968 to Sept. 1995, Oct. 1996 to Jan 2002. (discontinued).
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 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	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)
OCT													
25...	0930	76	269	7.8	20.0	7.0	78	<2.0	110	2	38.2	3.23	10.4
JAN													
08...	1224	3250	183	8.0	6.0	12.3	98	--i	74	36	25.5	2.42	7.98

Date	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	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, 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)
OCT													
25...	.4	17	3.50	1	129	106	21.9	7.02	.2	3.46	--i	153	--i
JAN													
08...	.4	18	3.07	<1	E81	37	13.7	4.82	.1	1.53	112	82	56

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, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)
OCT													
25...	<.008	<.05	<.04	.34	<.06	E.01	--i	--i	--i	2	53.7	<.5	<8
JAN													
08...	<.008	.11	E.02	.29	.025	E.02	6.0	1	.13	<2	36	<.06	<.04

Date	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)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	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)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)
OCT													
25...	<10	<13	<6	35	E.08	E3	4.8	--i	<50	<30	<2	<9	350
JAN													
08...	<.8	.12	1.2	<10	<.08	--i	3.0	<.01	.7	.76	<2	<1	--i

Date	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
OCT			
25...	<8	<24	--i
JAN			
08...	--i	2	.52

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

Null value qualifier codes used in this report:
i -- Required sample type not received

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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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily contents, which are 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, 27,590 acre-ft, Dec. 17, elevation, 463.28 ft; minimum contents, 14,000 acre-ft, Nov. 1, 8, 9, elevation, 456.75 ft.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

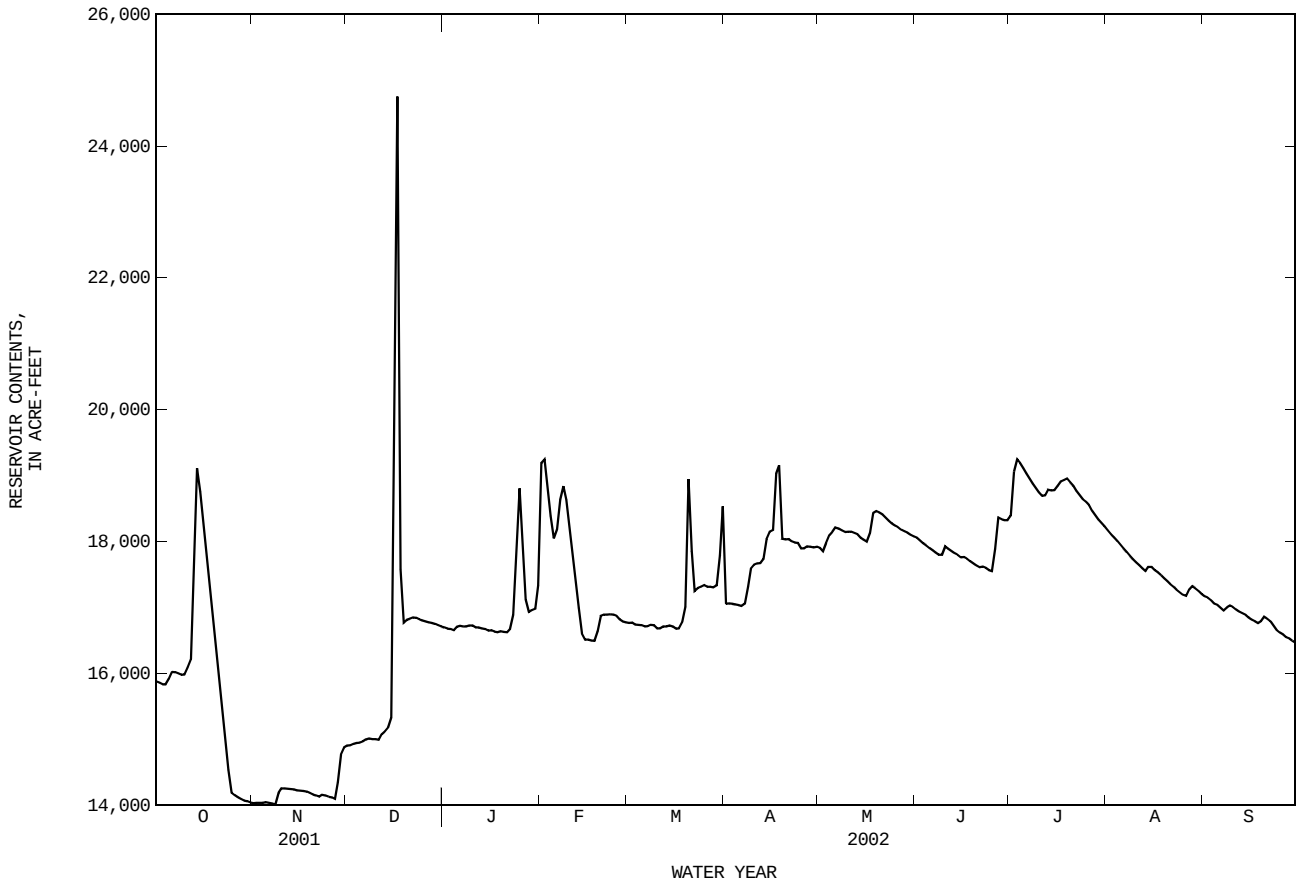
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15870	14030	14900	16700	19190	16760	17060	17900	18050	18390	18170	17170
2	15850	14030	14910	16680	19250	16770	17060	17850	18010	19060	18110	17140
3	15830	14030	14920	16670	18820	16740	17050	17970	17970	19240	18060	17110
4	15830	14030	14940	16650	18380	16730	17040	18090	17940	19190	18000	17050
5	15910	14040	14950	16700	18050	16730	17030	18150	17900	19110	17950	17040
6	16020	14030	14960	16720	18180	16710	17020	18210	17870	19030	17890	17000
7	16010	14020	14990	16710	18630	16720	17050	18190	17830	18950	17840	16950
8	15990	14010	15010	16710	18830	16730	17310	18160	17800	18880	17780	16990
9	15980	14180	15000	16720	18630	16730	17590	18140	17800	18810	17730	17030
10	15980	14250	15000	16720	18220	16680	17650	18140	17920	18740	17690	17000
11	16090	14250	14990	16700	17800	16680	17670	18150	17890	18690	17640	16970
12	16210	14250	15070	16690	17400	16710	17670	18130	17850	18700	17590	16930
13	17520	14240	15110	16680	16990	16710	17730	18110	17820	18780	17550	16910
14	19110	14240	15170	16670	16600	16720	18030	18050	17800	18770	17610	16890
15	18750	14220	15330	16650	16510	16710	18140	18020	17760	18780	17610	16850
16	18210	14220	21570	16650	16510	16670	18170	18000	17760	18840	17560	16810
17	17700	14210	24750	16630	16490	16680	19030	18120	17740	e18910	17530	16790
18	17210	14200	17570	16620	16490	16770	19150	18430	17700	e18930	17490	16750
19	16740	14180	16770	16630	16630	17000	18040	18460	17670	18950	17440	16780
20	16270	14160	16810	16630	16870	18940	18030	18440	17630	18890	17400	16850
21	15820	14150	16820	16620	16890	17860	18030	18410	17610	18840	17350	16830
22	15390	14120	16840	16670	16890	17250	18000	18360	17620	18770	17310	16790
23	14990	14160	16840	16880	16890	17290	17980	18310	17600	18700	17270	16720
24	14530	14140	16820	17740	16890	17310	17980	18270	17570	18640	17230	16660
25	14190	14120	16800	18800	16870	17340	17890	18240	17550	18600	17190	16620
26	14150	14120	16780	18050	16810	17310	17890	18210	17890	18550	17170	16590
27	14120	14090	16770	17110	16790	17310	17920	18180	18360	18470	17270	16540
28	14090	14340	16760	16930	16770	17300	17920	18150	18340	18400	17320	16520
29	14070	14770	16750	16950	---	17330	17910	18130	18320	18330	17280	16490
30	14060	14870	16730	16970	---	17790	17920	18100	18320	18280	17250	16460
31	14040	---	16710	17330	---	18530	---	18070	---	18230	17200	---
MEAN	15890	14190	16370	16890	17470	17080	17770	18170	17860	18760	17560	16840
MAX	19110	14870	24750	18800	19250	18940	19150	18460	18360	19240	18170	17170
MIN	14040	14010	14900	16620	16490	16670	17020	17850	17550	18230	17170	16460
(+)	456.78	457.31	458.38	458.72	458.42	459.34	459.04	459.12	459.24	459.19	458.65	458.25
(@)	-1850	+830	+1840	+620	-560	+1760	-610	+150	+250	-90	-1030	-740

CAL YR 2001 MAX 25260 MIN 13680 (@) -1890
WTR YR 2002 MAX 24750 MIN 14010 (@) +570

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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records poor. 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 1950-72).--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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	20	1330	70	691	62	5830	60	43	46	16	29
2	11	17	1000	59	931	54	7370	55	30	76	14	19
3	8.9	16	564	50	992	53	5160	75	27	145	13	13
4	7.6	15	241	47	1100	51	3270	165	25	328	11	9.2
5	8.8	15	132	48	1210	47	2110	200	23	310	8.5	7.3
6	14	15	94	54	934	43	963	298	22	184	7.0	6.1
7	37	13	74	64	1060	40	288	268	21	105	6.1	5.0
8	50	10	62	84	1450	40	1060	194	20	70	5.7	4.7
9	75	10	75	101	1670	40	1820	124	19	53	5.4	5.0
10	48	11	76	84	1740	40	2400	81	17	43	4.9	5.0
11	134	12	77	67	1680	38	2130	93	16	37	4.2	5.0
12	784	14	203	59	1380	73	1650	107	16	33	3.9	5.0
13	1660	36	615	51	808	161	660	85	59	29	4.0	4.7
14	3400	41	786	45	465	228	691	81	48	27	7.2	4.8
15	5380	27	722	41	362	196	1050	64	29	65	8.2	7.0
16	3430	22	5080	38	323	121	599	50	22	44	11	7.6
17	2740	18	22900	37	243	84	867	147	18	48	28	6.8
18	2230	14	25800	34	127	79	1840	757	18	85	22	5.8
19	1470	13	14800	32	87	288	3450	980	19	61	26	5.5
20	681	11	9200	32	334	2350	3120	863	16	63	22	5.2
21	394	10	6040	30	929	9860	3440	453	18	49	17	5.4
22	319	9.3	3850	30	1100	11200	2340	162	17	34	12	5.5
23	293	8.9	2310	33	1130	6530	1520	84	15	27	8.9	4.7
24	283	9.4	1020	297	788	4020	469	62	12	22	7.5	4.1
25	274	11	339	1060	273	2640	163	52	12	20	6.8	3.7
26	266	16	200	1450	143	1630	104	47	11	24	6.6	4.4
27	259	16	152	1590	98	538	85	43	69	76	6.0	5.3
28	190	206	127	1640	74	235	76	38	217	75	5.4	5.2
29	85	1120	108	1720	---	168	68	34	83	43	5.1	4.7
30	39	1350	93	1390	---	353	64	93	56	26	28	4.0
31	24	---	81	780	---	2160	---	135	---	19	32	---
TOTAL	24610.3	3106.6	98151	11117	22122	43422	54657	5950	1018	2267	363.4	207.7
MEAN	793.9	103.6	3166	358.6	790.1	1401	1822	191.9	33.93	73.13	11.72	6.923
MAX	5380	1350	25800	1720	1740	11200	7370	980	217	328	32	29
MIN	7.6	8.9	62	30	74	38	64	34	11	19	3.9	3.7
AC-FT	48810	6160	194700	22050	43880	86130	108400	11800	2020	4500	721	412

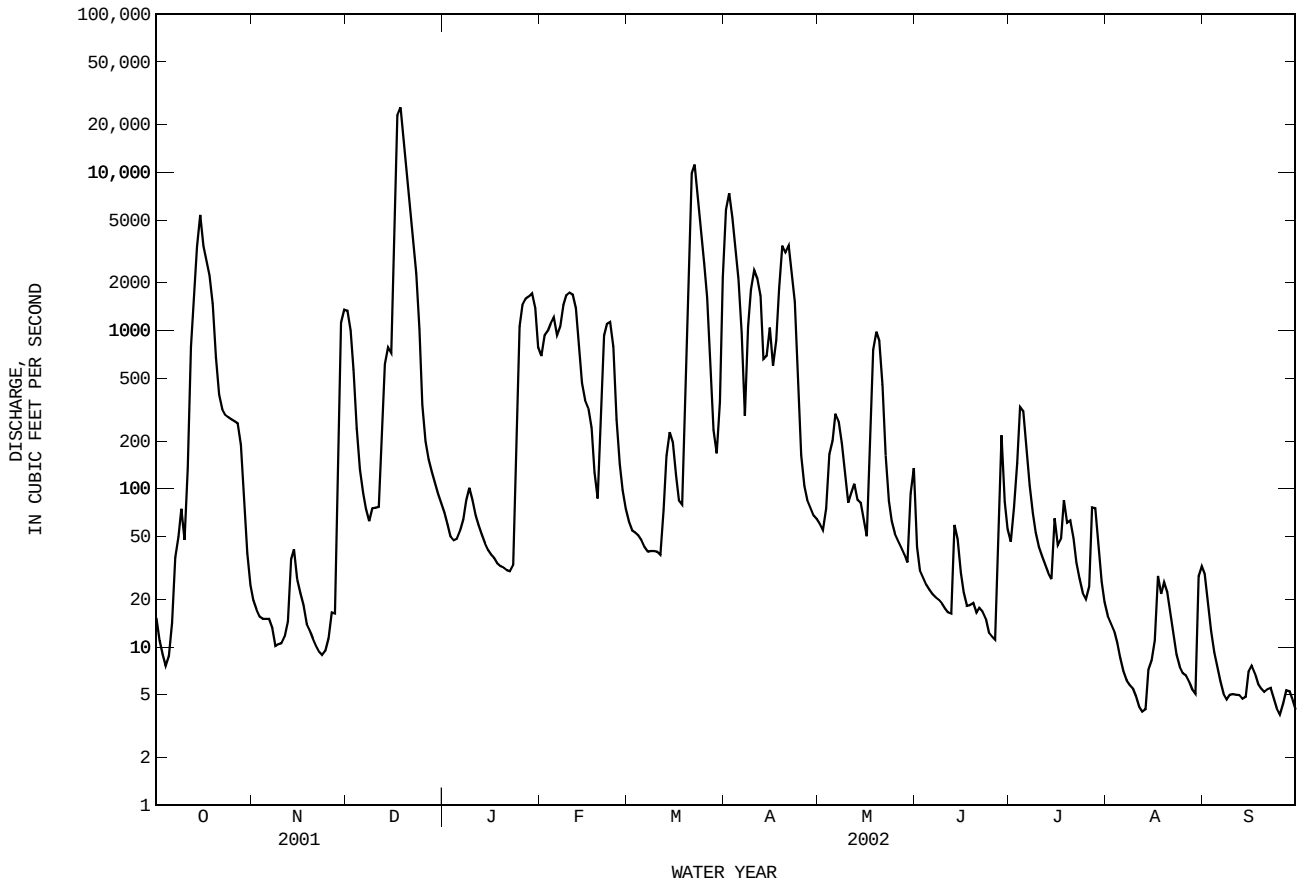
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2002z, BY WATER YEAR (WY)

MEAN	261.0	731.5	998.3	630.6	882.7	975.5	735.7	656.8	502.7	298.8	74.12	70.02
MAX	1744	2984	3166	3222	3381	3491	2329	3166	2620	3743	898	867
(WY)	1982	1975	2002	1980	1997	1990	1973	1990	1981	1992	1992	1974
MIN	0.000	0.34	3.22	2.27	5.90	12.2	29.0	7.35	0.83	0.39	0.000	0.000
(WY)	1979	1976	1990	1976	1996	1996	1981	1988	1988	1978	1978	1978

07343500 White Oak Creek near Talco, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1973 - 2002z	
ANNUAL TOTAL	308896.6		266992.0			
ANNUAL MEAN	846.3		731.5		566.4	
HIGHEST ANNUAL MEAN					1160	1992
LOWEST ANNUAL MEAN					55.8	1996
HIGHEST DAILY MEAN	25800	Dec 18	25800	Dec 18	31700	Jan 24 1980
LOWEST DAILY MEAN	1.7	Aug 8	3.7	Sep 25	0.00	Aug 30 1973
ANNUAL SEVEN-DAY MINIMUM	1.8	Aug 5	4.5	Sep 24	0.00	Jul 24 1978
MAXIMUM PEAK FLOW			32200	Dec 18	34600	Jan 24 1980
MAXIMUM PEAK STAGE			19.76	Dec 18	19.86	Jan 24 1980
ANNUAL RUNOFF (AC-FT)	612700		529600		410300	
10 PERCENT EXCEEDS	2310		1670		1630	
50 PERCENT EXCEEDS	108		62		57	
90 PERCENT EXCEEDS	4.9		7.0		1.8	

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 Sept. 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 NGVD of 1929. 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 fair. 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. 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 use 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, 850,400 acre-ft, Dec. 28, elevation, 239.78 ft; minimum contents, 153,700 acre-ft, Nov. 22, 28, elevation, 222.03 ft.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

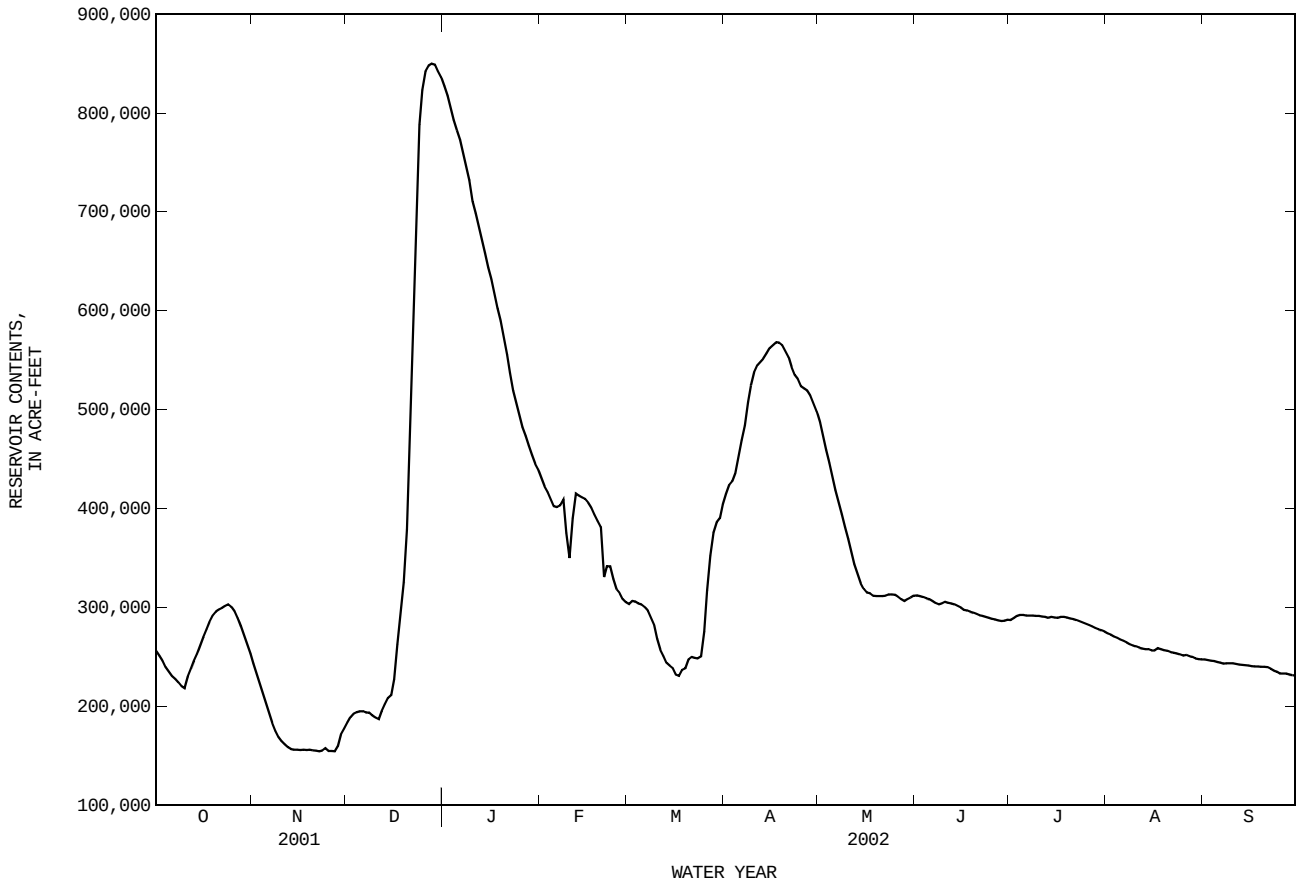
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255800	242900	183600	827200	431100	303100	414700	487100	311800	287200	273500	247100
2	250800	233000	189000	817200	422400	306400	423800	473300	311300	289000	272100	246600
3	245500	222900	192000	805600	416600	305700	427500	458800	310300	291400	270200	e246000
4	239400	212600	193800	792800	409700	303900	435500	446100	309000	292300	268800	e245500
5	235000	203100	194900	782300	402300	302900	451400	431200	308000	292000	267300	e244600
6	230200	193200	194600	772600	401200	300300	469100	418200	306000	291700	265900	244000
7	227600	183200	193500	759000	403000	296900	484000	405800	304300	291600	264200	243100
8	224000	174800	193500	746000	408800	290100	507500	393900	303100	291500	262600	243400
9	220200	168400	190700	731600	375200	282900	524200	380800	304000	291400	261200	243400
10	217900	164500	188300	710500	349800	268000	537500	369000	305500	291100	260500	243200
11	229700	161300	186700	698300	389900	256800	544700	356600	304500	290500	259300	e242800
12	237800	158600	194700	685300	415100	250400	548100	343400	303800	290200	258200	e242100
13	245700	156400	202000	671400	413000	243800	551500	333700	302900	289500	257400	e241700
14	252700	156000	208400	658000	411100	241000	556700	324200	301200	290100	257400	e241300
15	261200	155800	211300	643400	409400	238300	562200	318900	299600	289600	256300	e240900
16	269800	155700	227300	631500	405600	231600	565200	314800	297200	289400	256400	e240400
17	277700	155700	262300	617600	400500	230500	567900	314300	296800	290300	258500	e240000
18	285200	155600	291300	602200	393700	236500	567700	311600	295600	290200	257700	e240000
19	291400	155800	325300	589400	387500	238100	565100	311300	294300	289600	256700	e239800
20	295500	155300	378500	572300	381300	247200	559000	311300	293200	288800	255800	e239700
21	297700	154900	487700	555600	330500	249800	552700	311200	292000	287900	254800	239500
22	299300	154100	610900	537100	341500	248900	543000	311500	291400	287100	254000	237800
23	301200	154800	718300	518800	341400	248100	535000	312900	290400	285800	253200	236000
24	302900	157400	787800	505400	328300	250100	530800	313000	289300	284500	252500	234800
25	300200	154600	823300	492600	318300	275400	523400	312500	288300	283100	251200	232900
26	295900	154700	842000	482000	314300	317200	521100	310800	287600	282000	251600	232900
27	289200	154400	847800	473100	308300	352300	519000	308100	286800	280600	250600	233000
28	280900	159200	849800	463000	305000	375500	514000	306100	286100	279000	249600	232000
29	271700	171500	848700	453800		385800	505800	308100	286500	277800	248300	231300
30	262500	177400	842300	445000		390000	497700	309500	287300	276500	247600	230600
31	252900		836300	439400		403900		311500		275200	247200	
TOTAL	8147500	5157800	12896600	19480000	10614800	8871400	15505800	10919500	8948100	8906900	8000600	7196400
MEAN	262800	171900	416000	628400	379100	286200	516900	352200	298300	287300	258100	239900
MAX	302900	242900	849800	827200	431100	403900	567900	487100	311800	292300	273500	247100
MIN	217900	154100	183600	439400	305000	230500	414700	306100	286100	275200	247200	230600
(+)	225.72	223.00	239.53	231.25	227.40	230.30	232.69	227.60	226.85	226.46	225.53	224.97
(@)	-5700	-75500	+658900	-396900	-134400	+98900	+93800	-186200	-24200	-12100	-28000	-16600

CAL YR 2001 MAX 1683000 MIN 154100 (@) +383900
WTR YR 2002 MAX 849800 MIN 154100 (@) -28000

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, Jun. 1998 to current year.
Water-quality records.--Chemical data: Oct. 1974 to Sept. 1984.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. 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 Jul. 7, 1970, and the dam was completed Feb. 15, 1971. The spillway is an excavated channel through natural ground 1,000 ft wide located to the left of left end of dam. The service spillway is a rectangular 23x23 ft drop inlet located near the right end of dam. the low-flow outlet works consist of an 18 in diameter concrete pipe that has duplicate valve controls and discharges into the service spillway conduit. 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, 80,750 acre-ft, Dec. 17, elevation, 382.10 ft; minimum contents, 63,940 acre-ft, Sept. 30, elevation, 376.91 ft.

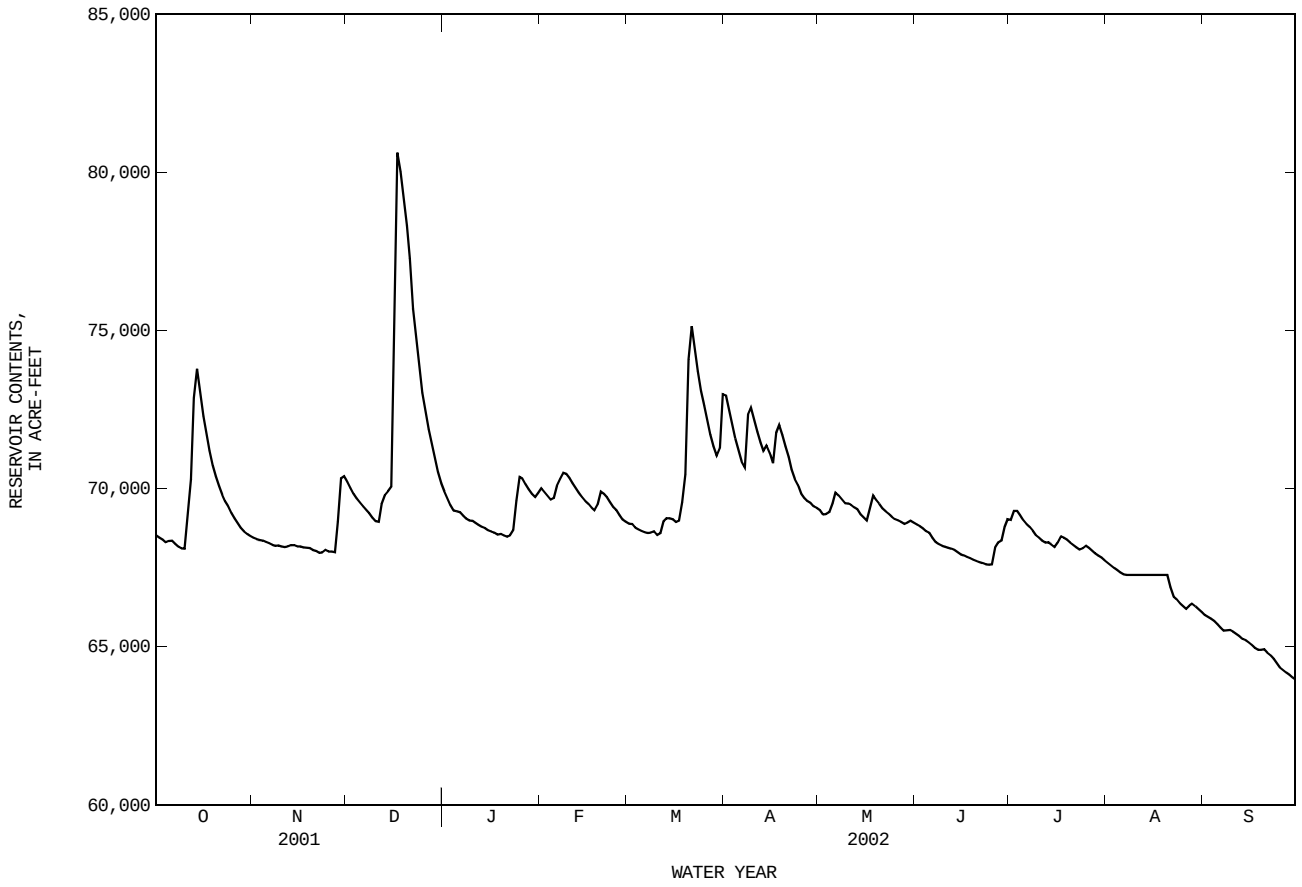
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68510	68440	70220	69910	70000	68890	72940	69310	68860	69010	67650	66000
2	68440	68410	70010	69680	69890	68880	72490	69180	68810	69290	67570	65940
3	68380	68370	69850	69470	69760	68770	72020	69190	68730	69290	67490	65890
4	68300	68350	69690	69310	69650	68710	71580	69260	68650	69160	67420	65810
5	68350	68320	69560	69280	69700	68650	71200	69520	68600	69000	67350	65710
6	68350	68270	69440	69260	70090	68610	70850	69870	68440	68880	67300	65620
7	68250	68220	69330	69150	70310	68600	70670	69780	68310	68790	67270	65510
8	68170	68190	69220	69050	70500	68610	72340	69660	68250	68670	67270	65530
9	68120	68210	69080	68990	70470	68650	72550	69540	68190	68540	67270	65530
10	68100	68170	68970	68980	70340	68530	72170	69530	68160	68460	67270	65480
11	69200	68150	68950	68910	70160	68580	71800	69480	68130	68360	67270	65410
12	70300	68170	69520	68850	70010	68970	71440	69410	68100	68300	67270	65340
13	72870	68210	69790	68790	69870	69060	71180	69350	68060	68300	67270	65250
14	73780	68210	69910	68740	69730	69060	71360	69190	67990	68230	67270	65200
15	73020	68170	70050	68670	69610	69030	71120	69090	67920	68150	67270	65150
16	72290	68170	75180	68640	69520	68940	70800	68990	67890	68290	67270	65070
17	71710	68140	80610	68600	69400	68980	71770	69390	67840	68480	67270	64970
18	71200	68130	80020	68550	69320	69570	72010	69780	67790	68440	67270	64900
19	70740	68120	79150	68560	69500	70450	71690	69630	67740	68380	67270	64900
20	70380	68060	78310	68510	69900	74090	71330	69520	67700	68290	67270	64930
21	70070	68030	77270	68480	69840	75130	70990	69380	67680	68210	66870	64820
22	69800	67970	75690	68520	69730	74430	70600	69290	67650	68140	66590	64730
23	69600	67980	74730	68670	69570	73710	70310	69200	67600	68070	66500	64620
24	69440	68060	73810	69620	69410	73080	70120	69110	67590	68110	66380	64490
25	69230	68010	73030	70370	69310	72630	69840	69030	67610	68190	66290	64340
26	69050	68010	72440	70310	69150	72170	69700	69000	68130	68120	66200	64270
27	68910	67990	71880	70140	69030	71700	69610	68940	68300	68040	66300	64180
28	68760	68950	71410	69970	68950	71330	69550	68880	68350	67950	66370	64120
29	68650	70320	70950	69830	---	71030	69440	68920	68800	67880	66280	64030
30	68570	70390	70520	69730	---	71280	69390	68980	69030	67820	66190	63970
31	68490	---	70180	69850	---	72980	---	68920	---	67740	66100	---
MEAN	69650	68340	72220	69210	69740	70420	71100	69300	68160	68410	66990	65060
MAX	73780	70390	80610	70370	70500	75130	72940	69870	69030	69290	67650	66000
MIN	68100	67970	68950	68480	68950	68530	69390	68880	67590	67740	66100	63970
(+)	378.23	378.76	378.70	378.62	378.36	379.50	378.49	378.36	378.39	378.01	377.55	376.92
(@)	-100	+1900	-210	-330	-900	+4030	-3590	-470	+110	-1290	-1640	-2130

CAL YR 2001 MAX 80610 MIN 65590 (@) -4890
WTR YR 2002 MAX 80610 MIN 63970 (@) -4620

(+) 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records poor. No known regulation or diversions. No flow at times.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.12	43	22	17	66	20	66	12	10	30	e0.76	e0.75
2	0.37	32	16	16	22	22	37	10	7.2	52	e0.62	e0.49
3	3.7	12	15	15	18	19	29	40	7.4	26	e0.71	e0.36
4	6.0	11	15	16	16	20	25	31	6.8	20	e0.87	e0.29
5	9.7	19	12	25	39	22	24	88	6.2	16	e0.98	e0.24
6	14	25	13	28	91	22	24	69	5.5	13	e0.84	e0.20
7	6.5	29	36	19	73	22	32	17	5.7	9.9	e0.76	0.17
8	5.4	33	21	18	57	21	363	14	4.5	16	e0.66	e0.17
9	5.1	34	13	18	37	21	105	11	4.0	14	e0.60	e0.19
10	5.7	35	10	18	25	21	35	56	4.8	8.6	e0.81	e0.31
11	65	25	16	18	19	24	24	27	4.9	5.7	e0.99	e0.49
12	91	15	249	19	18	57	20	12	4.1	4.1	e1.1	e0.47
13	436	20	87	19	18	31	19	13	1.5	4.4	e1.0	e0.42
14	141	16	79	20	16	26	19	8.8	0.75	5.9	e48	e0.40
15	26	17	56	20	17	23	17	4.8	0.74	17	e25	e0.42
16	17	18	962	22	18	21	15	2.8	2.3	22	e10	e0.45
17	17	18	510	23	18	37	76	67	4.9	35	e2.1	e0.45
18	17	16	113	24	20	319	23	99	1.8	22	e1.0	e10
19	18	9.4	52	26	75	203	16	28	0.86	16	e1.2	e72
20	20	14	33	26	117	553	14	21	0.57	11	e1.4	e160
21	22	e15	27	27	31	171	13	17	0.48	7.1	e1.2	e65
22	22	e15	26	27	22	62	15	13	0.44	4.2	e1.0	e18
23	23	e15	26	36	19	43	15	11	0.41	2.1	e1.1	e7.0
24	22	e22	20	65	19	39	14	9.3	0.38	0.91	e1.1	e4.1
25	27	e30	19	49	18	36	13	8.9	0.93	7.0	e0.88	e3.4
26	33	e73	18	22	15	33	35	8.1	24	4.2	e0.70	e2.8
27	36	e22	18	17	14	30	24	7.6	23	1.2	e2.0	e2.2
28	40	e22	18	15	18	29	17	7.8	13	e2.3	e10	e1.8
29	40	e22	16	16	---	29	15	9.1	25	e1.6	e7.0	e1.5
30	42	e15	15	15	---	88	14	14	34	e1.2	e3.1	e1.4
31	42	---	15	55	---	242	---	12	---	e0.91	e1.5	---
TOTAL	1253.59	692.4	2548	751	936	2306	1158	749.2	206.16	381.32	128.98	355.47
MEAN	40.44	23.08	82.19	24.23	33.43	74.39	38.60	24.17	6.872	12.30	4.161	11.85
MAX	436	73	962	65	117	553	363	99	34	52	48	160
MIN	0.12	9.4	10	15	14	19	13	2.8	0.38	0.91	0.60	0.17
AC-FT	2490	1370	5050	1490	1860	4570	2300	1490	409	756	256	705

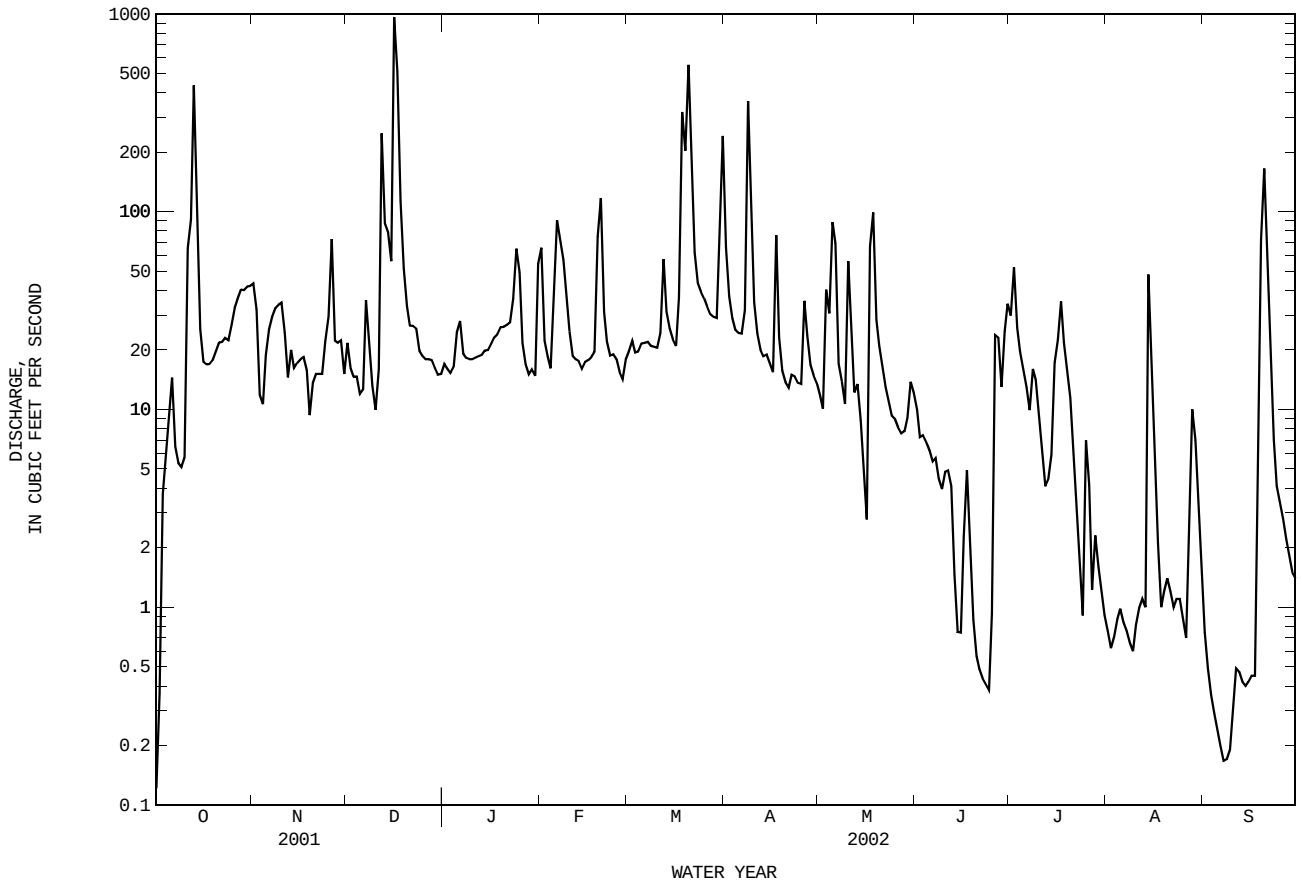
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2002, BY WATER YEAR (WY)

MEAN	14.21	21.95	33.36	22.93	29.74	31.35	21.24	25.03	16.63	9.277	3.474	5.253
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	0.68	2.51	2.99	2.96	5.31	8.15	3.64	1.64	0.26	0.007	0.003	0.14
(WY)	1979	1990	1979	2000	1996	1986	1978	1988	1984	1978	1985	1984

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1978 - 2002	
ANNUAL TOTAL	14841.09		11466.12			
ANNUAL MEAN	40.66		31.41		19.91	
HIGHEST ANNUAL MEAN					36.1	2001
LOWEST ANNUAL MEAN					5.21	1996
HIGHEST DAILY MEAN	968	Feb 16	962	Dec 16	2800	Nov 5 1994
LOWEST DAILY MEAN	0.12	Oct 1	0.12	Oct 1	0.00	Jun 28 1978
ANNUAL SEVEN-DAY MINIMUM	0.45	Aug 1	0.22	Sep 4	0.00	Jun 28 1978
MAXIMUM PEAK FLOW			2080	Dec 16	7520	Dec 2 1982
MAXIMUM PEAK STAGE			13.44	Dec 16	14.39	Dec 2 1982
ANNUAL RUNOFF (AC-FT)	29440		22740		14420	
10 PERCENT EXCEEDS	80		57		32	
50 PERCENT EXCEEDS	17		17		7.5	
90 PERCENT EXCEEDS	1.2		0.87		0.49	

e Estimated

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.--Jul. 1998 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Satellite telemeter at station

REMARKS.--No estimated daily contents. Records good. 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, and Jan. 22, 2002, elevation, 338.57 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 37,700 acre-ft, Dec. 17, elevation, 341.44 ft; minimum contents, 31,910 acre-ft, Jan. 22, elevation, 338.57 ft.

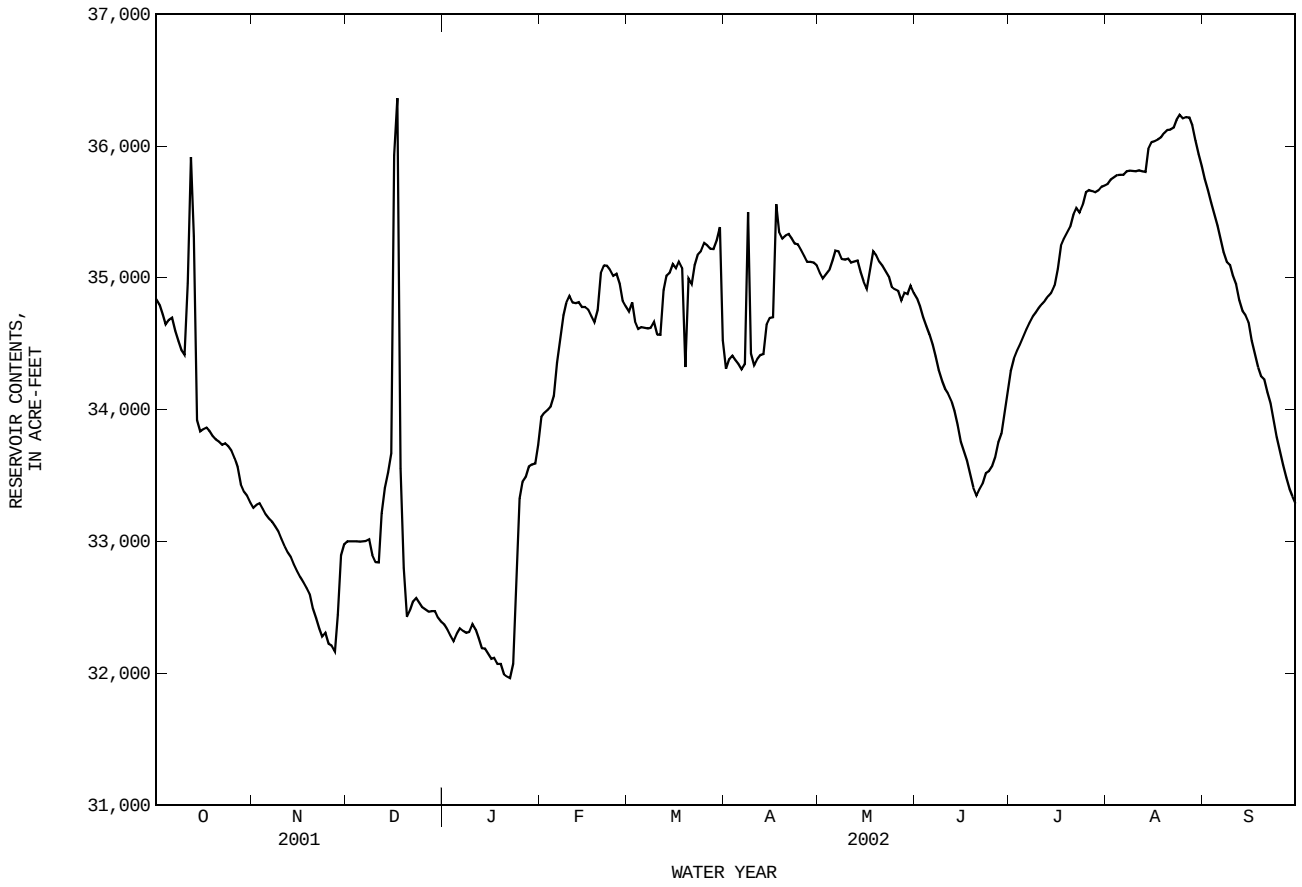
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34840	33260	33000	32370	33940	34740	34310	35040	34840	34290	35710	35750
2	34790	33280	33000	32330	33980	34810	34380	34990	34790	34390	35750	35660
3	34720	33290	33000	32290	34000	34670	34410	35030	34700	34450	35760	35570
4	34640	33250	33000	32240	34020	34610	34380	35060	34630	34490	35780	35490
5	34680	33200	33000	32300	34100	34620	34340	35130	34570	34550	35780	35390
6	34700	33170	33000	32340	34360	34620	34300	35200	34490	34610	35780	35300
7	34600	33150	33000	32320	34530	34620	34340	35200	34400	34660	35810	35190
8	34520	33110	33010	32310	34710	34620	35500	35140	34300	34700	35810	35120
9	34450	33070	32900	32310	34810	34660	34420	35140	34220	34730	35810	35100
10	34420	33020	32840	32370	34860	34570	34330	35140	34160	34770	35810	35020
11	34960	32960	32840	32330	34810	34570	34380	35120	34120	34800	35810	34950
12	35910	32910	33210	32270	34810	34910	34410	35120	34070	34830	35810	34830
13	35310	32880	33400	32190	34810	35020	34420	35130	33990	34860	35800	34750
14	33920	32820	33520	32190	34780	35040	34640	35040	33880	34890	35980	34710
15	33830	32770	33670	32150	34780	35100	34700	34970	33750	34940	36030	34660
16	33850	32730	35930	32110	34760	35070	34700	34920	33680	35070	36040	34520
17	33860	32690	36360	32120	34710	35120	35560	35050	33610	35240	36050	34420
18	33840	32640	33550	32070	34660	35070	35350	35200	33510	35300	36070	34320
19	33800	32600	32800	32070	34750	34320	35300	35170	33410	35340	36100	34250
20	33770	32490	32430	31990	35030	35000	35320	35120	33350	35390	36120	34230
21	33760	32420	32470	31970	35090	34950	35330	35090	33390	35480	36120	34130
22	33730	32340	32540	31960	35090	35090	35300	35050	33440	35530	36140	34040
23	33740	32280	32570	32070	35060	35180	35260	35010	33520	35490	36200	33920
24	33720	32310	32530	32690	35010	35200	35250	34930	33530	35550	36230	33790
25	33690	32220	32500	33330	35030	35260	35210	34910	33570	35650	36210	33690
26	33630	32210	32480	33450	34950	35250	35160	34900	33640	35660	36220	33580
27	33560	32170	32460	33490	34830	35220	35120	34830	33750	35660	36220	33480
28	33430	32440	32470	33570	34780	35220	35120	34880	33820	35650	36160	33400
29	33380	32890	32470	33580	---	35280	35110	34870	33980	35660	36040	33340
30	33340	32980	32420	33590	---	35380	35090	34940	34120	35690	35930	33290
31	33290	---	32390	33730	---	34530	---	34890	---	35700	35840	---
MEAN	34150	32780	33060	32520	34680	34910	34850	35040	33970	35100	35970	34530
MAX	35910	33290	36360	33730	35090	35380	35560	35200	34840	35700	36230	35750
MIN	33290	32170	32390	31960	33940	34320	34300	34830	33350	34290	35710	33290
(+)	339.28	339.12	338.82	339.50	340.02	339.89	340.17	340.07	339.70	340.46	340.53	339.27
(@)	-1620	-310	-590	+1340	+1050	-250	+560	-200	-770	+1580	+140	-2550

CAL YR 2001 MAX 36980 MIN 32170 (@) -2040
WTR YR 2002 MAX 36360 MIN 31960 (@) -1620

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

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 NGVD of 1929. Prior to Apr. 12, 1978, a nonrecording gage was located 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 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, 213,600 acre-ft, Dec. 17, elevation, 338.47 ft; minimum contents, 192,500 acre-ft, Sept. 30, elevation, 336.14 ft.

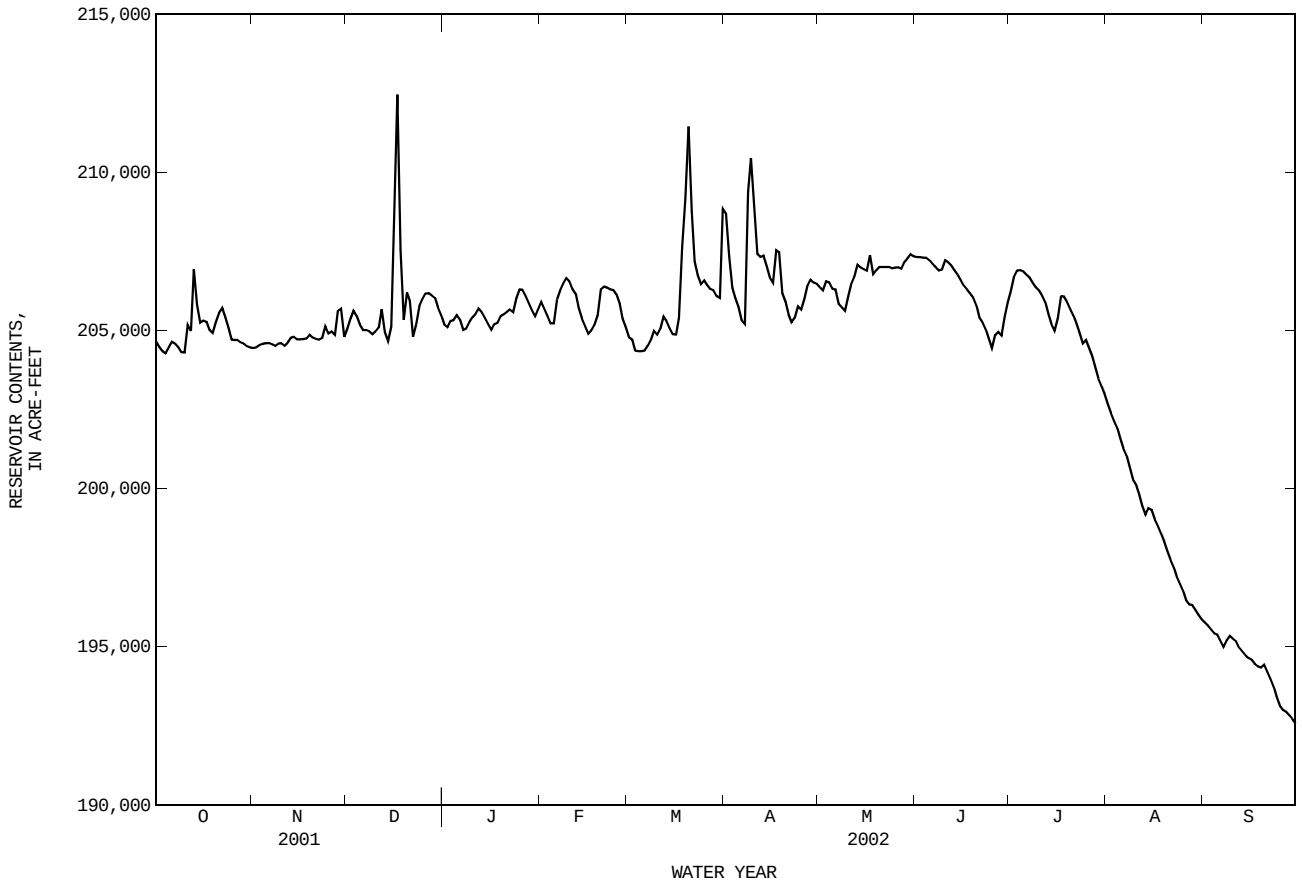
RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204600	204400	205100	205200	205900	204800	208700	206400	207300	206200	202700	195800
2	204500	204500	205400	205100	205700	204700	207300	206300	207300	206700	202400	195700
3	204300	204500	205600	205300	205400	204400	206300	206600	207300	206900	202100	195500
4	204300	204600	205500	205300	205200	204300	206000	206500	207300	206900	201900	195400
5	204500	204600	205200	205500	205200	204300	205700	206300	207200	206900	201600	195400
6	204600	204600	205000	205300	206000	204400	205300	206300	207100	206800	201300	195200
7	204600	204600	205000	205000	206300	204500	205200	205800	207000	206700	201000	195000
8	204500	204500	205000	205100	206500	204700	209400	205700	206900	206500	200700	195200
9	204300	204600	204900	205300	206600	205000	210400	205600	206900	206400	200300	195300
10	204300	204600	205000	205400	206600	204900	208900	206100	207200	206300	200100	195300
11	205200	204500	205100	205500	206300	205000	207400	206400	207200	206100	199800	195200
12	205000	204600	205700	205700	206100	205400	207300	206700	207100	205900	199400	195000
13	206900	204800	204900	205600	205700	205300	207400	207100	206900	205500	199200	194800
14	205800	204800	204700	205400	205400	205100	207000	207000	206800	205200	199400	194700
15	205200	204700	205100	205200	205100	204900	206700	206900	206600	205000	199300	194600
16	205300	204700	208800	205000	204900	204900	206500	206900	206400	205400	199000	194600
17	205300	204700	212500	205200	205000	205400	207500	207400	206300	206100	198800	194500
18	205000	204800	207500	205200	205200	207600	207500	206800	206200	206100	198600	194400
19	204900	204900	205300	205400	205500	209200	206200	206900	206000	205900	198300	194300
20	205300	204800	206200	205500	206300	211400	205900	207000	205800	205700	198000	194400
21	205500	204700	205900	205600	206400	208800	205500	207000	205400	205500	197800	194200
22	205700	204700	204800	205700	206400	207200	205300	207000	205300	205200	197500	194000
23	205400	204800	205200	205600	206300	206700	205400	207000	205000	204900	197200	193700
24	205100	205100	205800	206000	206300	206500	205800	207000	204700	204600	197000	193400
25	204700	204900	206000	206300	206100	206600	205700	207000	204400	204700	196800	193100
26	204700	205000	206200	206300	205800	206400	206000	207000	204800	204400	196500	193000
27	204700	204900	206200	206100	205400	206300	206400	206900	205000	204200	196300	192900
28	204600	205600	206100	205900	205100	206300	206600	207200	204800	203800	196300	192800
29	204600	205700	206000	205600	---	206100	206500	207300	205400	203500	196200	192700
30	204500	204800	205700	205400	---	206000	206500	207400	205900	203200	196000	192600
31	204500	---	205500	205700	---	208800	---	207300	---	203000	195900	---
MEAN	204900	204800	205800	205500	205800	206000	206700	206700	206200	205500	198900	194400
MAX	206900	205700	212500	206300	206600	211400	210400	207400	207300	206900	202700	195800
MIN	204300	204400	204700	205000	204900	204300	205200	205600	204400	203000	195900	192600
(+)	337.48	337.51	337.59	337.60	337.54	337.95	337.70	337.79	337.63	337.31	336.52	336.15
(@)	-200	+300	+700	+200	-600	+3700	-2300	+800	-1400	-2900	-7100	-3300

CAL YR 2001 MAX 212500 MIN 191100 (@) +5000
WTR YR 2002 MAX 212500 MIN 192600 (@) -12100

(+) 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 NGVD of 1929. 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 Jul. 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, Jul. 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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 14	1600	5,560	15.22	Mar 31	2330	3,480	13.99
Dec 17	0745	*13,200	*18.66	Apr 9	1645	3,430	13.96
Mar 20	2245	8,380	16.69				

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 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	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)
OCT													
24...	1500	330	173	7.2	22.0	7.0	81	--	42	15	9.85	4.33	13.3
MAR													
13...	1130	570	226	7.0	10.0	8.8	78	>2.0	57	32	13.4	5.65	18.0
JUN													
06...	0945	14	731	7.0	25.0	5.1	63	--	150	80	45.1	9.69	77.1
SEP													
11...	0915	13	1030	--e	25.0	5.2	63	--	210	130	71.5	7.18	104

Date	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	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, 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)
OCT													
24...	.9	37	5.53	<1	34	28	24.3	14.6	.1	5.86	108	99	22
MAR													
13...	1	38	5.02	<1	E30	25	37.7	24.6	.1	5.83	154	129	22
JUN													
06...	3	49	18.8	<1	89	73	107	70.9	.2	10.6	452	431	17
SEP													
11...	3	48	26.4	<1	94	77	176	85.0	.2	8.57	673	626	14

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)	ORTHO-PHOS-PHATE, 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)
OCT													
24...	--	E.006	.84	E.03	--	.42	.18	.16	.497	7.4	--	--	E1
MAR													
13...	.72	.027	.74	<.04	--	.64	.159	.11	.343	16.9	12	.14	<2
JUN													
06...	9.32	.025	9.35	.05	.84	.89	2.11	1.92	5.88	8.1	4	.20	E1
SEP													
11...	19.6	.065	19.7	E.02	--	1.0	4.55	4.43	13.6	9.6	3	.30	E2

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)
OCT													
24...	--	--	--	--	--	--	E7	--	14.8	--	--	--	<2
MAR													
13...	50	<.06	E.03	<.8	.46	1.8	124	E.07	107	E.01n	.5	2.35	<2
JUN													
06...	68	<.06	.07	<.8	1.08	2.9	E9	E.07	100	E.01n	5.8	4.71	<2
SEP													
11...	42	<.06	.05	<.8	.92	2.9	<10	E.07	29.5	<.01	12.8	6.04	<2

07344500 Big Cypress Creek near Pittsburg, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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)
OCT			
24...	--	--	--
MAR			
13...	<1	4	.06
JUN			
06...	<1	5	.18
SEP			
11...	<1	6	.10

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

Value qualifier codes used in this report:
  n -- Below the NDV

Null value qualifier codes used in this report:
  e -- Required equipment not functional/avail

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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 Sept. 2000 (U.S. Army Corps of Engineers furnished contents), Oct. 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. 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, 414,700 acre-ft, Apr. 11, elevation, 236.45 ft; minimum contents, 238,900 acre-ft, Sept. 18, elevation, 228.34 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

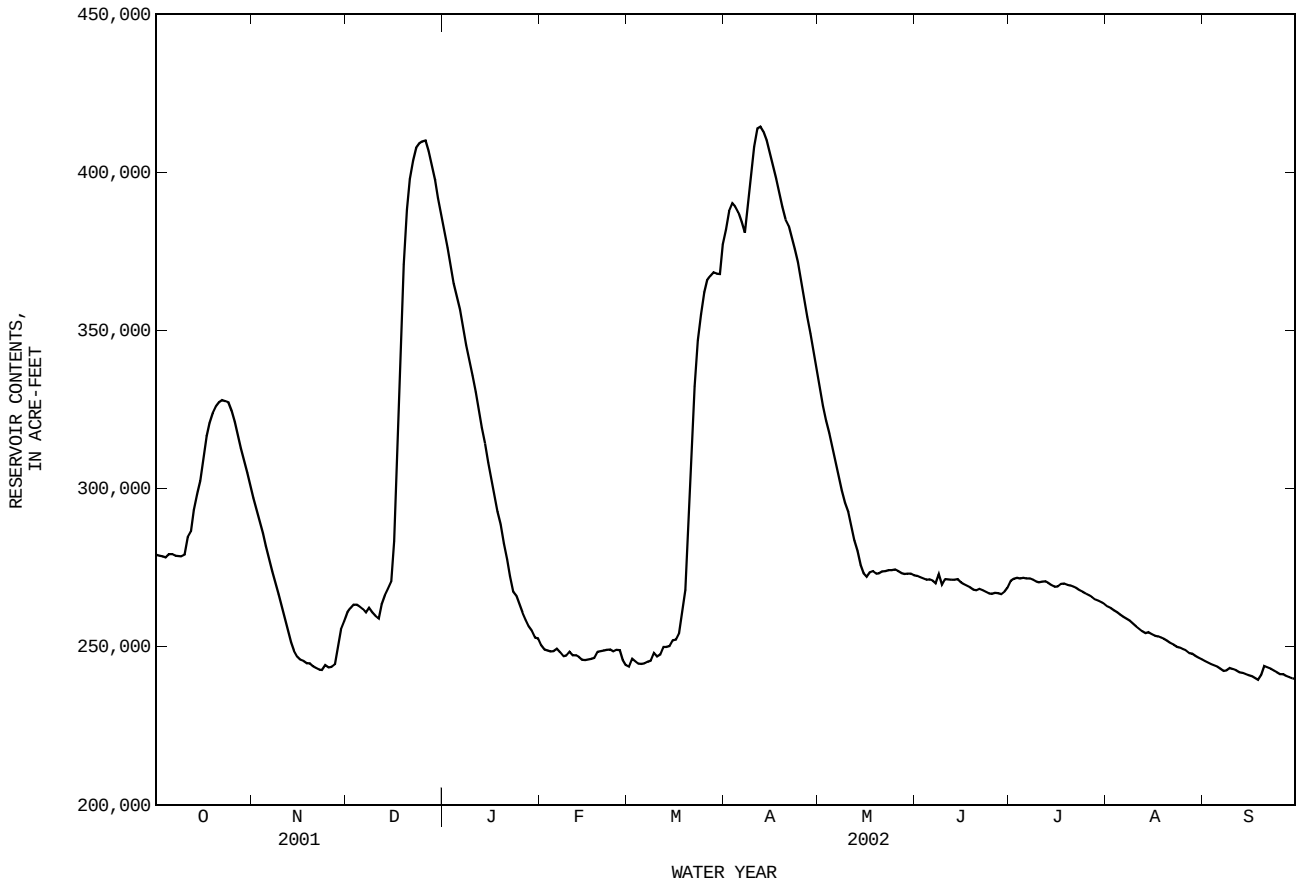
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	279100	297000	260900	381200	250400	243600	381900	331300	272400	270800	262700	245500
2	278800	293400	262300	376100	249200	246200	387800	326100	272000	271500	262200	245000
3	278600	289700	263300	370600	248800	245500	390200	321400	271600	271800	261400	244500
4	278300	285800	263400	364800	248500	244700	389100	317500	271200	271600	260900	244100
5	279300	281900	262700	360700	248600	244600	387200	312500	271300	271800	260200	243700
6	279300	277900	261900	356500	249400	244800	384300	308200	270900	271500	259500	243000
7	278800	273900	260800	350800	248300	245300	380900	303800	270100	271600	258900	242400
8	278700	270000	262300	345300	247000	245600	390400	299300	272900	271200	258300	242600
9	278500	266600	260900	340400	247200	248100	398700	295500	269500	270700	257300	243300
10	279100	262800	259800	335800	248400	246900	408100	292600	271400	270400	256600	242900
11	284700	258800	259000	330600	247400	247500	413800	288300	271300	270600	255800	242600
12	286500	255100	263400	325400	247300	249900	414300	283700	271200	270600	255000	242000
13	293300	251300	266200	319300	246800	249900	412800	280300	271100	270200	254300	241700
14	298100	248700	268400	314300	245900	250200	410100	275700	271400	269400	254600	241300
15	302400	246900	270600	308200	245800	252100	406000	273200	270400	269000	254000	241100
16	309500	245900	283300	302900	246000	252300	401800	272100	269800	269100	253500	240700
17	316500	245400	305600	298200	246200	254100	397800	273500	269300	269900	253300	240200
18	320700	244800	337600	292600	246500	261200	393500	273900	268700	269900	252900	239600
19	323800	244800	370900	288600	e248400	268000	389000	273100	268100	269600	252500	240900
20	325900	243900	388300	282600	e248600	285600	385100	273200	267800	269400	251800	243900
21	327300	243300	397900	277700	e248800	307600	383100	273800	268300	269000	251100	243400
22	328000	242700	403600	272300	e249000	332300	379500	273900	267900	268600	250600	243100
23	327600	242600	407700	267500	249100	346900	375700	274200	267400	267900	250100	242400
24	327200	244200	409100	266100	248500	355100	371400	274200	266800	267300	249700	242000
25	324600	243500	409800	263400	249000	361900	365800	274400	266700	266800	249300	241400
26	321100	243600	410000	260800	249000	365800	360000	274000	267100	266300	248800	241300
27	317200	244500	406600	258500	245900	367200	354200	273300	267000	265700	248100	240700
28	312700	249400	401900	256500	244200	368300	349000	273000	266700	264900	247800	240300
29	308800	255500	397500	255000	---	367900	343100	273100	267500	264500	247100	240000
30	304900	258100	391800	252900	---	367800	337200	273100	268700	264000	246500	239900
31	300800	---	386600	252700	---	377200	---	272600	---	263500	246000	---
MEAN	301600	258400	324300	307400	247800	288500	384700	286600	269600	269000	253900	242200
MAX	328000	297000	410000	381200	250400	377200	414300	331300	272900	271800	262700	245500
MIN	278300	242600	259000	252700	244200	243600	337200	272100	266700	263500	246000	239600
(+)	231.52	229.39	235.32	229.12	228.65	234.93	233.20	230.14	229.94	229.67	228.75	228.40
(@)	+21400	-42700	+128500	-133900	-8500	+133000	-40000	-64600	-3900	-5200	-17500	-6100

CAL YR 2001 MAX 656900 MIN 242600 (@) +36000
WTR YR 2002 MAX 414300 MIN 239600 (@) -39500

e Estimated

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

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 2001 TO SEPTEMBER 2002

324518094300801 -- Lake O' the Pines Site AC

Date	Time	RESER-VOIR STORAGE (AC-FT) (00054)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	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)	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)
MAR													
13...	0931	250000	1.01	1.00	109	7.3	11.5	11.4	106	3k	2k	--	--
MAR													
13-13	0931	--	--	--	--	--	--	--	--	--	--	--	--
13...	0936	--	--	10.0	109	7.1	11.0	10.9	100	--	--	--	--
13...	0942	--	--	20.0	109	7.1	11.0	11.1	102	--	--	--	--
13...	0947	--	--	30.0	109	7.1	10.5	10.9	99	--	--	--	--
13...	0953	--	--	40.0	109	7.1	10.5	11.3	102	--	--	--	--
13...	0958	--	--	48.0	110	7.0	11.5	10.9	101	--	--	--	--
JUN													
05...	0836	272000	1.25	1.00	113	8.4	27.5	8.1	104	1k	<1	28	10
JUN													
05-05	0836	--	--	--	--	--	--	--	--	--	--	--	--
05...	0841	--	--	10.0	113	6.5	24.5	3.3	40	--	--	--	--
05...	0846	--	--	20.0	113	6.2	23.0	.7	8	--	--	--	--
05...	0851	--	--	30.0	121	6.4	22.0	.0	0	--	--	--	--
05...	0856	--	--	40.0	133	6.7	21.5	.0	0	--	--	--	--
05...	0901	--	--	47.0	159	7.1	20.5	.0	0	--	--	36	--
SEP													
11...	0938	242000	.93	1.00	120	7.0	28.0	5.5	71	<1	<1	29	--
SEP													
11-11	0938	--	--	--	--	--	--	--	--	--	--	--	--
11...	0944	--	--	10.0	120	6.7	28.0	5.0	65	--	--	--	--
11...	0949	--	--	20.0	120	6.3	27.0	3.0	38	--	--	--	--
11...	0955	--	--	30.0	186	6.7	<.5	.2	--	--	--	--	--
11...	1001	--	--	45.0	199	6.6	23.5	.3	4	--	--	40	--

324518094300801 -- Lake O' the Pines Site AC

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)	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)
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	<.008	E.04
MAR													
13-13	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	<.008	E.04
JUN													
05...	6.50	2.90	8.23	.7	35	3.66	17.9	9.53	.1	3.4	63	<.008	<.05
JUN													
05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
05...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	8.56	3.44	8.51	.6	31	3.91	14.7	9.67	.1	9.1	93	<.008	<.05
SEP													
11...	5.88	3.36	9.04	.7	37	3.55	13.7	9.33	.1	7.7	--	<.008	<.05
SEP													
11-11	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
11...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	10.1	3.71	8.50	.6	29	3.93	1.6	9.26	.1	13.8	113	.035	<.05

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

324518094300801 -- Lake O' the Pines Site AC

Date	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)	ORTHO-PHOS-PHATE, 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)	XYLENE WATER UNFLTRD REC (UG/L) (81551)	METHYL TERT-BUTYL ETHER WAT UNF REC (UG/L) (78032)
MAR													
13...	<.04	--	.31	.012	<.02	--	--	--	--	--	--	--	--
MAR													
13-13	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	<.04	--	.31	.016	<.02	--	--	--	--	--	--	--	--
JUN													
05...	<.04	--	.32	.005	<.02	--	17	3.4	<.2	<.2	<.2	<.2	.7
JUN													
05-05	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	<.04	--	.33	.005	<.02	--	42	34.0	--	--	--	--	--
05...	E.02	--	.33	.006	<.02	--	306	321	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	.75	.39	1.1	.089	.07	.227	4830	5300	--	--	--	--	--
SEP													
11...	<.04	--	.30	.006	<.02	--	16	42.9	<.2	<.2	.4	<.2	<.2
SEP													
11-11	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	<.04	--	.30	.006	<.02	--	36	119	--	--	--	--	--
11...	.08	.33	.41	.011	<.02	--	343	653	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	2.38	.59	3.0	.44	.45	1.39	7810	7150	--	--	--	--	--

324518094300801 -- Lake O' the Pines Site AC

Date	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)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13-13	<.006	<.006	<.004	<.005	.018	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05-05	<.006	<.006	<.004	<.005	.149	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11-11	<.006	<.006	<.004	<.005	.121	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--

324518094300801 -- Lake O' the Pines Site AC

Date	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)	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)
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13-13	<.003	E.003	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	E.006n
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05-05	<.003	E.009	<.005	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	.032
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11-11	<.003	E.015	.006	<.005	<.02	<.002	<.009	<.005	<.003	<.004	<.035	<.027	.016
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--

324518094300801 -- Lake O' the Pines Site AC

Date	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)	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)
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13-13	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011	<.02
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
05-05	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011	<.02
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
11-11	<.006	<.002	<.007	<.003	<.010	<.006	<.004	<.022	<.011	<.01	<.010	<.011	<.02
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

324518094300801 -- Lake O' the Pines Site AC

Date	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)
MAR								
13...	--	--	--	--	--	--	--	--
MAR								
13-13	<.004	<.005	E.02	<.034	<.02	<.005	<.002	<.009
13...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
JUN								
05...	--	--	--	--	--	--	--	--
JUN								
05-05	<.004	.006	E.01n	<.034	<.02	<.005	<.002	<.009
05...	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--
SEP								
11...	--	--	--	--	--	--	--	--
SEP								
11-11	<.004	<.007	.02	<.034	<.02	<.005	<.002	<.009
11...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--

324509094303901 -- Lake O' the Pines Site AR

Date	Time	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
MAR							
13...	1011	1.00	111	7.4	11.0	11.3	103
13...	1015	10.0	112	7.2	11.0	11.0	101
13...	1019	25.0	112	7.2	11.0	11.0	101
JUN							
05...	0912	1.00	113	7.9	26.5	7.6	96
05...	0915	10.0	112	7.3	26.0	7.0	87
05...	0918	20.0	113	6.3	23.5	.8	10
05...	0921	25.0	114	6.3	23.0	.5	6
SEP							
11...	1009	1.00	120	7.0	28.5	5.6	73
11...	1011	10.0	120	6.7	28.0	4.8	60
11...	1013	20.0	121	6.5	27.5	3.7	47

324613094323001 -- Lake O' the Pines Site BC

Date	Time	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	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)	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)
MAR													
13...	1041	1.01	1.00	118	7.7	11.5	11.5	106	<.008	E.03	<.04	--	.33
13...	1046	--	10.0	121	7.4	11.0	11.2	102	--	--	--	--	--
13...	1052	--	20.0	121	7.3	11.0	11.2	102	--	--	--	--	--
13...	1057	--	30.0	122	7.3	11.0	11.1	102	--	--	--	--	--
13...	1102	--	44.0	123	7.3	11.0	11.0	101	<.008	E.03	<.04	--	.32
JUN													
05...	0938	1.34	1.00	113	8.2	27.5	7.8	100	<.008	<.05	E.02	--	.35
05...	0942	--	10.0	113	7.4	26.5	7.2	91	<.008	<.05	<.04	--	.34
05...	0946	--	20.0	113	6.3	23.0	.2	2	<.008	<.05	<.04	--	.32
05...	0950	--	30.0	118	6.4	22.5	.0	0	--	--	--	--	--
05...	0955	--	45.0	136	6.8	21.5	.0	0	<.008	<.05	.41	.39	.80
SEP													
11...	1032	.99	1.00	119	7.0	28.5	5.7	74	<.008	<.05	<.04	--	.33
11...	1036	--	10.0	120	6.5	28.0	3.7	48	<.008	<.05	.08	.34	.42
11...	1040	--	20.0	122	6.4	27.5	2.6	33	<.008	<.05	.14	.34	.48
11...	1043	--	42.0	181	6.8	25.0	.3	4	--	--	--	--	--
11...	1046	--	45.0	195	6.7	24.0	.3	4	<.008	<.05	2.28	.65	2.9

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

324613094323001 -- Lake O' the Pines Site BC

Date	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR					
13...	.012	<.02	--	156	E2.2b
13...	--	--	--	--	--
13...	--	--	--	--	--
13...	--	--	--	--	--
13...	.012	<.02	--	156	26.4
JUN					
05...	.007	<.02	--	32	3.7
05...	.006	<.02	--	35	14.9
05...	.006	<.02	--	79	235
05...	--	--	--	--	--
05...	.041	.03	.089	2170	3450
SEP					
11...	.006	<.02	--	11	53.5
11...	.009	<.02	--	35	148
11...	.013	E.01	--	518	932
11...	--	--	--	--	--
11...	.43	.46	1.40	6870	6050

324738094325101 -- Lake O' the Pines Site CC

Date	Time	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
MAR							
13...	1125	1.00	96	7.4	12.5	11.0	104
13...	1130	10.0	103	7.1	10.5	11.6	105
13...	1135	22.0	116	7.1	10.0	11.1	99
JUN							
05...	1005	1.00	107	7.7	29.0	7.4	97
05...	1007	10.0	112	7.5	28.0	6.9	89
05...	1010	20.0	117	6.4	24.0	.2	2
SEP							
11...	1059	1.00	118	6.6	29.0	6.4	84
11...	1101	10.0	120	6.4	28.0	2.9	37
11...	1103	20.0	122	6.5	28.0	2.9	37

324806094350001 -- Lake O' the Pines Site DC

Date	Time	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
MAR							
13...	1206	1.00	103	7.4	12.5	11.3	107
13...	1211	10.0	116	7.2	11.0	10.9	100
13...	1217	24.0	116	7.2	11.0	10.9	100
JUN							
05...	1031	1.00	106	7.8	29.0	7.2	95
05...	1034	10.0	112	8.1	29.0	7.1	93
05...	1037	25.0	106	6.4	25.5	.2	2
SEP							
11...	1125	1.00	116	8.2	29.5	7.0	93
11...	1128	10.0	119	6.5	28.0	4.0	52
11...	1131	22.0	120	6.6	28.0	4.0	52

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

324726094363801 -- Lake O' the Pines Site EC

Date	Time	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	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)	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)
MAR													
13...	1244	1.07	1.00	124	8.3	12.5	12.2	116	<1	1	31	13	7.26
13...	1249	--	10.0	123	7.5	11.0	11.4	104	--	--	--	--	--
13...	1255	--	20.0	122	7.5	11.0	11.7	107	--	--	--	--	--
13...	1300	--	34.0	124	7.4	11.0	11.1	102	--	--	--	--	--
JUN													
05...	1101	1.16	1.00	116	8.4	28.5	7.6	99	<1	<1	29	13	6.37
05...	1106	--	10.0	116	7.5	27.5	7.0	90	--	--	--	--	--
05...	1112	--	20.0	127	6.5	24.5	.0	0	--	--	--	--	--
05...	1118	--	33.0	138	6.8	23.5	.0	0	--	--	34	6	7.78
SEP													
11...	1149	1.13	1.00	118	8.6	29.0	7.8	103	<1	<1	25	10	4.44
11...	1154	--	10.0	119	6.6	28.5	4.5	59	--	--	--	--	--
11...	1158	--	20.0	120	6.5	28.0	3.8	49	--	--	--	--	--
11...	1203	--	34.0	123	6.5	28.0	2.9	37	--	--	27	8	4.98

324726094363801 -- Lake O' the Pines Site EC

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)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	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)
MAR													
13...	3.12	9.57	.7	37	3.73	E22	22.4	10.6	E.1n	6.9	74	<.008	<.05
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	31	--	--	--	--	--	<.008	E.03
JUN													
05...	3.15	8.94	.7	36	3.91	20	18.1	9.19	.1	3.7	63	<.008	<.05
05...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
05...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
05...	3.43	8.77	.7	33	3.97	E34	16.0	9.90	.1	6.3	78	E.004	<.05
SEP													
11...	3.37	9.57	.8	41	3.60	19	14.7	10.3	.1	8.7	64	<.008	<.05
11...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
11...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
11...	3.53	9.55	.8	40	3.81	23	14.3	9.82	.1	9.1	67	<.008	<.05

324726094363801 -- Lake O' the Pines Site EC

Date	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)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR								
13...	<.04	--	.32	.010	<.02	--	122	E1.9b
13...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
13...	<.04	--	.32	.013	<.02	--	--	--
JUN								
05...	<.04	--	.36	.008	<.02	--	33	3.7
05...	<.04	--	.35	.008	<.02	--	39	40.2
05...	.10	.39	.49	.014	<.02	--	432	1350
05...	.42	.41	.83	.062	.05	.150	1790	2360
SEP								
11...	<.04	--	.38	.011	<.02	--	E5	E1.7b
11...	.06	.36	.42	.006	<.02	--	<10	23.4
11...	.10	.34	.44	.007	<.02	--	14	98.8
11...	.21	.36	.56	.009	<.02	--	43	320

07345900 Lake O' the Pines near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

325100094420301 -- Lake O' the Pines Site FC

Date	Time	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	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)	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)
MAR													
13...	1353	.73	1.00	172	8.5	12.5	12.0	114	<1	5k	--	--	--
13...	1359	--	10.0	172	7.7	11.5	11.7	108	--	--	--	--	--
13...	1405	--	21.0	172	7.4	11.5	11.1	103	1k	<1	--	--	--
JUN													
05...	1154	.76	1.00	150	6.9	29.0	5.5	72	--	--	36	16	7.96
05...	1202	--	10.0	146	6.6	29.0	4.2	55	--	--	--	--	--
05...	1209	--	23.0	174	6.5	27.5	.0	0	--	--	44	14	10.6
SEP													
11...	1238	.61	1.00	141	8.1	30.0	7.7	103	<1	3k	28	6	5.05
11...	1244	--	10.0	153	6.4	27.5	1.2	15	--	--	--	--	--
11...	1250	--	20.0	165	6.5	27.5	.3	4	--	--	36	5	7.60

325100094420301 -- Lake O' the Pines Site FC

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)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	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)
MAR													
13...	--	--	--	--	--	E73	--	--	--	--	--	E.004	.10
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	E20	--	--	--	--	--	E.006	.12
JUN													
05...	3.87	11.9	.9	38	4.41	E24	23.8	12.6	.1	7.4	84	E.004	<.05
05...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
05...	4.18	13.2	.9	37	4.68	36	25.4	15.3	.1	8.3	101	E.004	<.05
SEP													
11...	3.73	12.6	1	45	3.92	E27	16.6	12.4	.1	13.4	81	<.008	<.05
11...	--	--	--	--	--	--	--	--	--	--	--	<.008	<.05
11...	4.10	13.6	1	42	4.33	E41	17.2	13.6	.1	14.6	95	E.004	<.05

325100094420301 -- Lake O' the Pines Site FC

Date	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)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR								
13...	<.04	--	.33	.013	<.02	--	--	--
13...	--	--	--	--	--	--	--	--
13...	<.04	--	.32	.016	<.02	--	--	--
JUN								
05...	<.04	--	.47	.025	E.01	--	42	7.7
05...	E.03	--	.47	.029	.02	.058	60	35.8
05...	.16	.49	.65	.033	.02	.055	67	786
SEP								
11...	<.04	--	.46	.026	E.01	--	19	5.6
11...	.16	.44	.59	.029	E.01	--	33	80.6
11...	.20	.47	.66	.030	E.02	--	41	321

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

!

Value qualifier codes used in this report:
b -- Value was extrapolated below
k -- Counts outside acceptable range
n -- Below the NDV

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07346000 Big Cypress Creek near Jefferson, TX

LOCATION.--Lat 32°44'58", long 94°29'55", Marion County, Hydrologic Unit 11140306, on left bank 950 ft downstream from Ferrell's Bridge Dam, 7.6 mi upstream from French Creek, and 8.5 mi west of Jefferson.

DRAINAGE AREA.--850 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug. 1924 to Dec. 1959, published as "Cypress Creek near Jefferson", Oct. 1979 to current year. Records of stage and discharge for the period Oct. 1959 to 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 NGVD of 1929 (U.S. Army Corps of Engineers benchmark). Prior to Nov. 2, 1933, staff gage. 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 and datum. Satellite telemeter at station.

REMARKS.--Records good. Seven major reservoirs impact runoff from 100 percent of drainage area for this station. Since Aug. 1957, flow completely regulated by Lake O' the Pines (07345900). 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.01	2110	592	3100	1830	733	3180	3340	98	107	86	78
2	0.01	2110	805	3080	1440	440	3190	3330	98	97	98	79
3	0.00	2100	999	3060	1360	413	3190	3350	96	84	81	78
4	0.00	2090	1400	3080	1340	407	3200	3340	99	83	81	73
5	0.00	2090	1440	3090	1660	303	3190	3340	99	79	80	77
6	0.00	2080	1440	3080	2110	36	3200	3330	98	79	80	77
7	0.00	2080	1440	3060	2140	22	3210	3320	99	80	81	77
8	0.00	2070	1450	3060	1900	22	3040	3320	100	81	81	79
9	0.00	2070	1450	3050	1530	20	2220	3310	101	81	81	77
10	0.00	2060	1440	3040	1460	19	1950	3320	104	86	81	73
11	0.00	2050	1440	3030	1440	e40	2730	3300	103	83	81	70
12	0.00	2040	1550	3030	1430	225	3380	3290	103	86	80	69
13	0.00	1920	1540	3030	1430	421	3440	2870	104	83	80	74
14	0.00	1530	1750	3020	1430	421	3440	2030	104	78	70	73
15	0.00	1240	2120	3000	1130	562	3440	1340	104	78	70	70
16	0.00	728	2120	3000	519	767	3450	711	105	88	71	71
17	0.00	399	1710	2990	433	794	3450	432	97	91	71	73
18	0.00	360	1050	2990	263	1080	3440	415	62	99	71	72
19	0.00	291	585	2980	161	1260	3430	408	62	85	71	74
20	0.00	218	462	2970	603	1540	3420	331	68	83	72	78
21	0.00	141	430	2960	1070	1320	3420	247	72	82	72	70
22	0.00	23	424	2950	1660	868	3420	197	67	83	76	69
23	0.00	22	592	2690	1820	377	3410	112	67	83	79	80
24	932	24	1020	2270	1480	156	3390	108	78	84	78	73
25	1610	26	1470	2220	1430	147	3380	107	93	84	79	73
26	1960	17	1840	2190	1420	294	3380	105	94	84	84	74
27	2100	4.2	2610	2180	1410	625	3380	104	96	84	92	63
28	2130	95	3050	2170	1270	1150	3370	102	97	83	79	37
29	2130	188	3100	2170	---	1860	3350	101	99	83	79	38
30	2130	224	3110	2160	---	2690	3340	101	100	82	79	41
31	2130	---	3100	2160	---	3160	---	99	---	81	78	---
TOTAL	15122.02	32400.2	47529	86860	37169	22172	97030	49810	2767	2624	2442	2110
MEAN	487.8	1080	1533	2802	1327	715.2	3234	1607	92.23	84.65	78.77	70.33
MAX	2130	2110	3110	3100	2140	3160	3450	3350	105	107	98	80
MIN	0.00	4.2	424	2160	161	19	1950	99	62	78	70	37
AC-FT	29990	64270	94270	172300	73720	43980	192500	98800	5490	5200	4840	4190

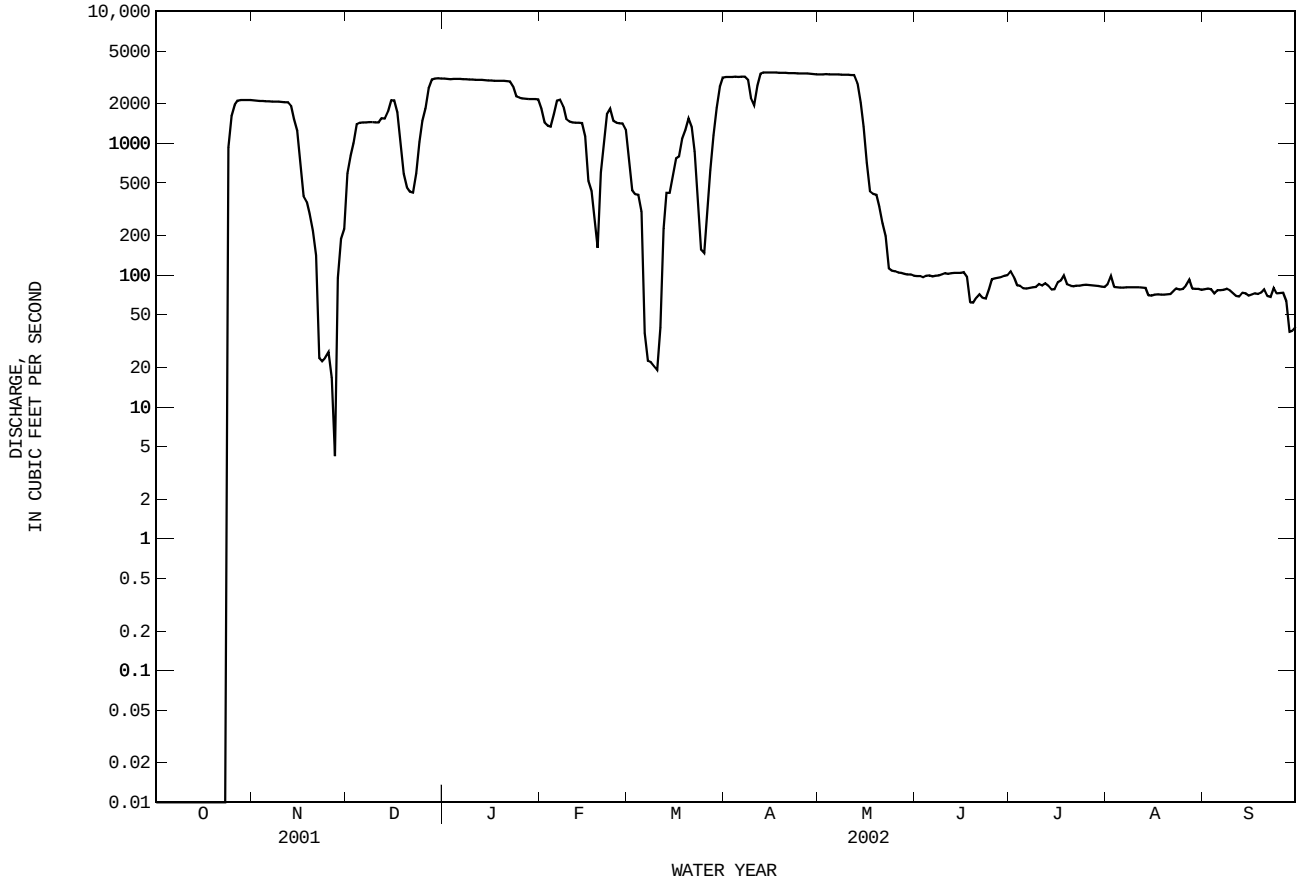
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2002hz, BY WATER YEAR (WY)

MEAN	206.5	442.5	706.0	920.1	1299	1287	1179	912.5	838.0	380.3	169.2	97.14
MAX	728	2690	1946	2685	2688	2983	3234	2979	3209	3057	2349	482
(WY)	1995	1958	1958	1993	1993	2001	2002	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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1958 - 2002hz	
ANNUAL TOTAL	508839.22		398035.22			
ANNUAL MEAN	1394		1091		693.9	
HIGHEST ANNUAL MEAN					1859	1958
LOWEST ANNUAL MEAN					47.9	1996
HIGHEST DAILY MEAN	3200	Mar 12	3450	Apr 16	4500	May 20 1958
LOWEST DAILY MEAN	0.00	Jun 29	0.00	Oct 3	0.00	Jul 26 1987
ANNUAL SEVEN-DAY MINIMUM	0.00	Jun 29	0.00	Oct 3	0.00	Jun 29 2001
MAXIMUM PEAK FLOW			3480	Apr 14	3480	Apr 14 2002
MAXIMUM PEAK STAGE			19.45	Dec 30	19.98	Mar 12 2001
ANNUAL RUNOFF (AC-FT)	1009000		789500		502700	
10 PERCENT EXCEEDS	3000		3190		2540	
50 PERCENT EXCEEDS	1540		360		181	
90 PERCENT EXCEEDS	0.00		39		23	

e Estimated.
h See PERIOD OF RECORD paragraph.
z Period of regulated streamflow.



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 2001 TO SEPTEMBER 2002

Date	Time	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	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)
MAR													
13...	1345	371	112	6.9	11.0	10.8	98	7.7	27	--	6.32	2.75	8.27
JUN													
05...	1245	100	122	6.8	23.5	6.9	83	<2.0	30	--	7.10	3.06	8.23
SEP													
11...	1310	78	124	--e	28.0	7.1	90	--i	28	8	5.94	3.29	8.81

Date	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	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, 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)
MAR													
13...	.7	36	3.89	<1	E16	E13	19.4	9.49	E.1	7.52	82	--	<10
JUN													
05...	.7	34	3.57	--i	--i	--i	18.7	9.09	.1	4.96	76	--	<10
SEP													
11...	.7	36	4.11	<1	25	20	13.7	9.40	E.1n	7.71	86	65	<10

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)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	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)
MAR													
13...	<.008	E.04	<.04	--	.36	.011	<.02	18.1r	11	.13	<2	43	<.06
JUN													
05...	<.008	E.03	.05	.37	.42	.010	<.02	8.7	19	.07	<2	51	.06
SEP													
11...	E.004	E.03	.08	.38	.46	.007	<.02	8.1	2	.12	E1	28	<.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)
MAR													
13...	<.04	<.8	.04	1.0	135	<.08	2.5	E.01	.5	1.12	E1	<1	3
JUN													
05...	.08	<.8	.94	2.5	60	.16	387	<.01	.8	3.55	<2	<1	12
SEP													
11...	<.04	<.8	.04	.9	<10	.24	30.6	E.01n	1.3	.96	E1	<1	4

07346000 Big Cypress Creek near Jefferson, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
MAR	
13...	.03
JUN	
05...	.03
SEP	
11...	.02

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

Value qualifier codes used in this report:
  n -- Below the NDV
  r -- Value verified by rerun, same method

Null value qualifier codes used in this report:
  e -- Required equipment not functional/avail
  i -- Required sample type not received

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), Oct. 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 NGVD of 1929 (U.S. Army Corps of Engineers benchmark). 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.--Maximum stage since 1938, 22.42 ft Apr. 29, 1958, from records by U.S. Army Corps of Engineers.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	136	750	628	655	564	1560	283	169	117	35	0.00
2	75	133	981	587	618	495	1950	270	217	139	30	0.00
3	70	129	1170	547	573	443	2420	272	285	179	26	0.00
4	62	125	1270	513	539	407	2370	299	323	182	22	0.00
5	57	122	1230	516	552	388	1780	315	308	176	18	0.00
6	57	120	1070	575	682	378	1300	357	254	174	15	0.00
7	67	118	906	594	748	372	1010	518	202	166	13	0.00
8	75	116	808	578	764	365	1330	630	172	155	11	0.00
9	111	114	732	580	799	365	1480	603	177	143	7.9	0.01
10	e340	114	663	605	841	362	1530	541	188	130	6.0	0.00
11	e365	113	620	613	847	363	1850	496	186	113	4.1	0.00
12	e380	112	1050	604	834	421	2020	463	169	99	3.4	0.00
13	e390	113	1150	584	809	465	1730	426	153	160	3.0	0.00
14	e420	114	1190	551	770	543	1340	397	143	168	2.6	0.00
15	e501	114	1520	510	714	662	1050	372	135	133	3.1	0.00
16	e640	113	2560	473	650	769	845	337	127	121	3.6	0.00
17	e690	115	4760	443	584	829	709	320	119	135	3.7	0.00
18	e793	119	5750	423	524	1280	672	332	113	140	2.5	0.00
19	e810	123	5750	424	520	1340	591	326	106	122	1.9	1.1
20	e790	123	4920	438	663	1600	520	309	99	107	2.1	13
21	e595	122	3620	433	678	2450	470	319	92	97	2.5	10
22	e505	120	2430	416	666	4170	433	327	85	88	1.3	3.0
23	e479	119	1730	413	734	4640	405	318	78	78	0.29	1.1
24	e433	126	1400	454	789	3640	398	299	72	69	0.12	2.0
25	318	136	1210	505	795	2370	389	273	70	70	0.07	0.72
26	244	138	1060	516	777	1600	367	241	71	72	0.03	0.02
27	202	144	956	554	725	1190	343	212	74	63	0.02	0.00
28	178	352	869	631	649	944	328	191	68	56	0.00	0.00
29	161	732	796	686	---	782	312	178	67	55	0.00	0.00
30	150	759	731	692	---	742	297	168	76	49	0.00	0.00
31	141	---	674	677	---	1360	---	163	---	41	0.00	---
TOTAL	10180	5134	54326	16763	19499	36299	31799	10555	4398	3597	218.23	30.95
MEAN	328.4	171.1	1752	540.7	696.4	1171	1060	340.5	146.6	116.0	7.040	1.032
MAX	810	759	5750	692	847	4640	2420	630	323	182	35	13
MIN	57	112	620	413	520	362	297	163	67	41	0.00	0.00
AC-FT	20190	10180	107800	33250	38680	72000	63070	20940	8720	7130	433	61

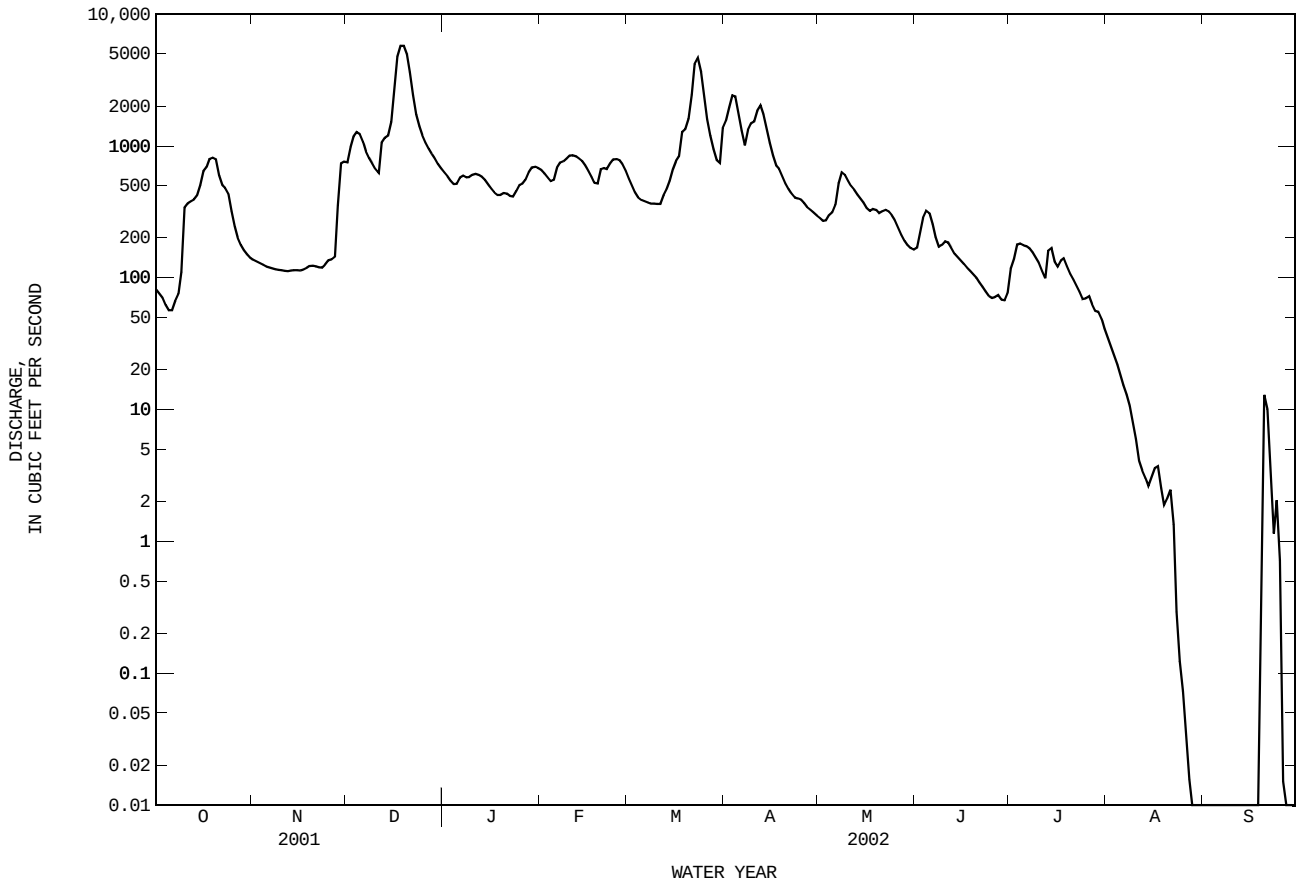
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2002h, BY WATER YEAR (WY)

MEAN	96.35	265.7	578.5	539.8	671.2	742.4	595.9	477.5	284.7	92.37	39.52	58.81
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	0.009	13.6	62.1	88.6	69.6	108	109	50.8	1.86	0.000	0.060	0.000
(WY)	1979	1984	1990	2000	1996	1996	1971	1984	1998	1998	1969	1969

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1969 - 2002h	
ANNUAL TOTAL	276280.7		192799.18			
ANNUAL MEAN	756.9		528.2		368.7	
HIGHEST ANNUAL MEAN					701	2001
LOWEST ANNUAL MEAN					78.3	1971
HIGHEST DAILY MEAN	9730	Feb 18	5750	Dec 18	10700	Dec 28 1987
LOWEST DAILY MEAN	2.3	Aug 11	0.00	Aug 28	0.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	3.4	Aug 7	0.00	Aug 28	0.00	Aug 10 1969
MAXIMUM PEAK FLOW			5970	Dec 19	11600	Dec 28 1987
MAXIMUM PEAK STAGE			17.31	Dec 19	19.34	Dec 28 1987
ANNUAL RUNOFF (AC-FT)	548000		382400		267100	
10 PERCENT EXCEEDS	1790		1200		896	
50 PERCENT EXCEEDS	390		320		169	
90 PERCENT EXCEEDS	24		1.7		1.7	

e Estimated
h See PERIOD OF RECORD paragraph.

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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair. 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.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 18	2345	*6,170	*13.29	Mar 31	1945	2,420	11.17
Mar 21	0315	6,040	13.24	Apr 10	2115	2,970	11.61

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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 NGVD of 1929. 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 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

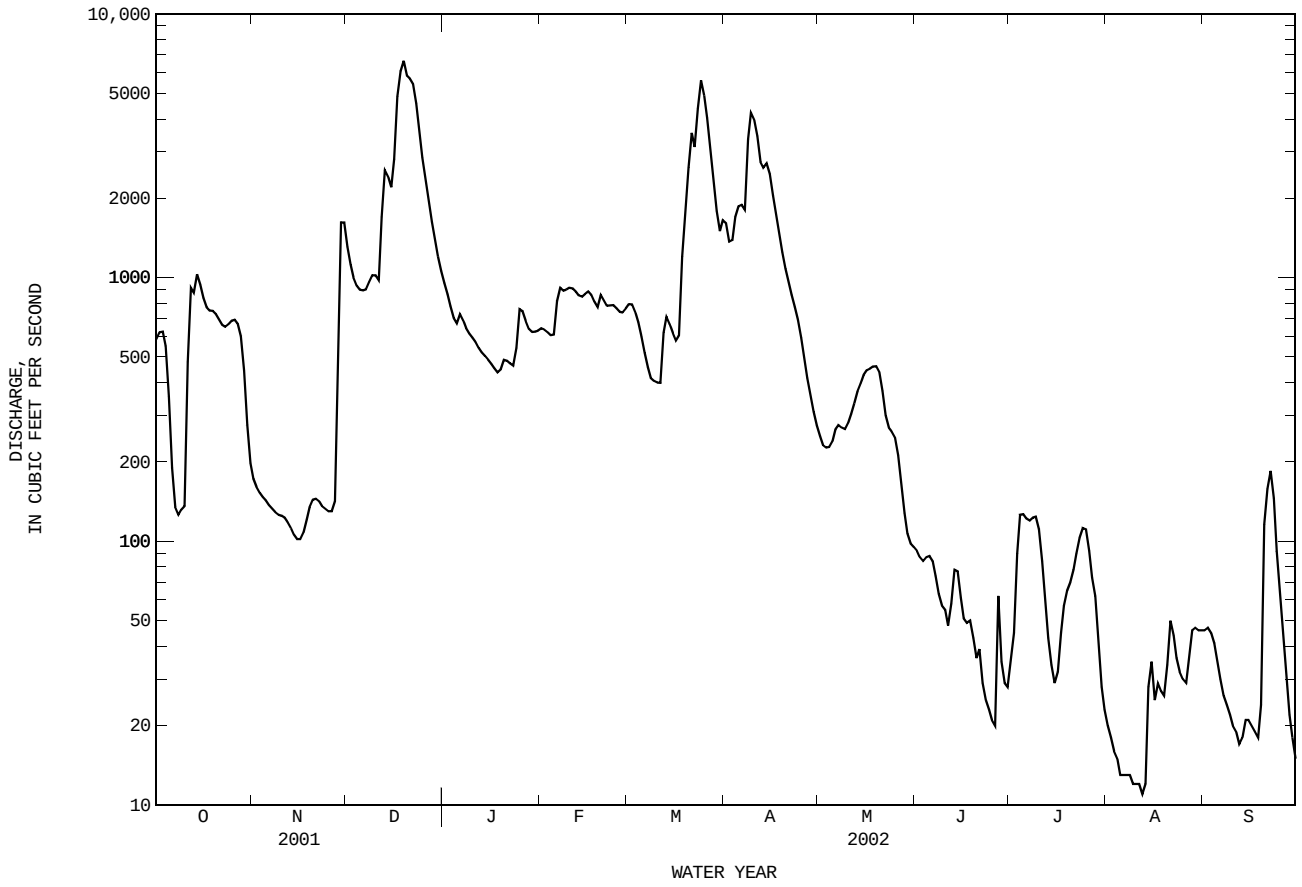
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	583	173	1310	953	642	794	1610	250	92	36	20	46
2	621	161	1120	864	634	791	1370	232	87	45	18	47
3	624	153	1000	779	620	744	1390	227	84	90	16	45
4	551	147	933	703	605	676	1700	228	87	126	15	41
5	354	143	901	672	609	597	1860	240	88	127	13	35
6	190	137	895	728	815	518	1890	265	84	122	13	30
7	135	133	903	689	915	456	1810	276	74	120	13	26
8	126	129	963	644	893	416	3350	270	63	123	13	24
9	132	126	1020	614	901	406	4240	266	57	124	12	22
10	136	125	1020	592	916	400	3980	281	55	111	12	20
11	479	123	980	569	910	399	3440	303	48	84	12	19
12	917	118	1700	543	885	619	2750	334	58	58	11	17
13	879	112	2560	521	856	711	2610	370	78	43	12	18
14	1030	106	2420	504	846	668	2710	397	77	34	28	21
15	942	102	2200	488	869	618	2470	427	61	29	35	21
16	837	102	2820	470	885	577	2050	445	51	32	25	20
17	772	108	4870	454	859	602	1740	451	49	45	29	19
18	751	121	6060	438	811	1200	1480	460	50	57	27	18
19	749	135	6650	449	774	1710	1250	462	43	65	26	24
20	728	144	5850	488	860	2620	1080	440	36	70	34	116
21	694	145	5700	484	819	3540	957	372	39	78	50	158
22	661	142	5440	473	782	3130	861	300	29	90	44	185
23	650	136	4580	464	785	4380	775	270	25	103	36	146
24	665	133	3610	541	787	5610	691	261	23	112	32	92
25	687	130	2860	759	765	4900	592	248	21	111	30	63
26	693	130	2360	746	743	4040	496	212	20	92	29	43
27	670	142	1960	687	739	3040	416	163	62	73	37	30
28	599	590	1630	640	764	2320	357	128	35	62	46	22
29	445	1620	1380	622	---	1790	309	107	29	41	47	18
30	277	1620	1200	625	---	1500	274	98	28	28	46	15
31	198	---	1060	630	---	1650	---	95	---	23	46	---
TOTAL	17775	7386	77955	18833	22289	51422	50508	8878	1633	2354	827	1401
MEAN	573.4	246.2	2515	607.5	796.0	1659	1684	286.4	54.43	75.94	26.68	46.70
MAX	1030	1620	6650	953	916	5610	4240	462	92	127	50	185
MIN	126	102	895	438	605	399	274	95	20	23	11	15
AC-FT	35260	14650	154600	37360	44210	102000	100200	17610	3240	4670	1640	2780
CFSM	0.85	0.36	3.73	0.90	1.18	2.46	2.49	0.42	0.08	0.11	0.04	0.07
IN.	0.98	0.41	4.30	1.04	1.23	2.83	2.78	0.49	0.09	0.13	0.05	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2002, BY WATER YEAR (WY)

MEAN	129.6	308.6	690.2	772.9	959.8	1040	1007	967.7	446.2	137.7	44.92	100.4
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	0.000	0.017	0.53	8.33	73.1	75.7	117	61.6	4.67	0.24	0.000	0.000
(WY)	1953	1957	1957	1957	1996	1996	1972	1971	1971	1964	1956	1952

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1946 - 2002	
ANNUAL TOTAL	437697.4		261261			
ANNUAL MEAN	1199		715.8		545.3	
HIGHEST ANNUAL MEAN					1260	1958
LOWEST ANNUAL MEAN					67.3	1964
HIGHEST DAILY MEAN	10000	Feb 20	6650	Dec 19	32700	Apr 26 1966
LOWEST DAILY MEAN	5.1	Aug 15	11	Aug 12	0.00	Sep 20 1948
ANNUAL SEVEN-DAY MINIMUM	5.7	Aug 11	12	Aug 7	0.00	Sep 20 1948
MAXIMUM PEAK FLOW			6840	Dec 19	35500	Apr 26 1966
MAXIMUM PEAK STAGE			14.40	Dec 19	22.28	Apr 26 1966
ANNUAL RUNOFF (AC-FT)	868200		518200		395000	
ANNUAL RUNOFF (CFSM)	1.78		1.06		0.81	
ANNUAL RUNOFF (INCHES)	24.12		14.40		10.98	
10 PERCENT EXCEEDS	3540		1800		1380	
50 PERCENT EXCEEDS	590		370		184	
90 PERCENT EXCEEDS	23		27		1.2	

07346070 Little Cypress Creek near Jefferson, TX--Continued



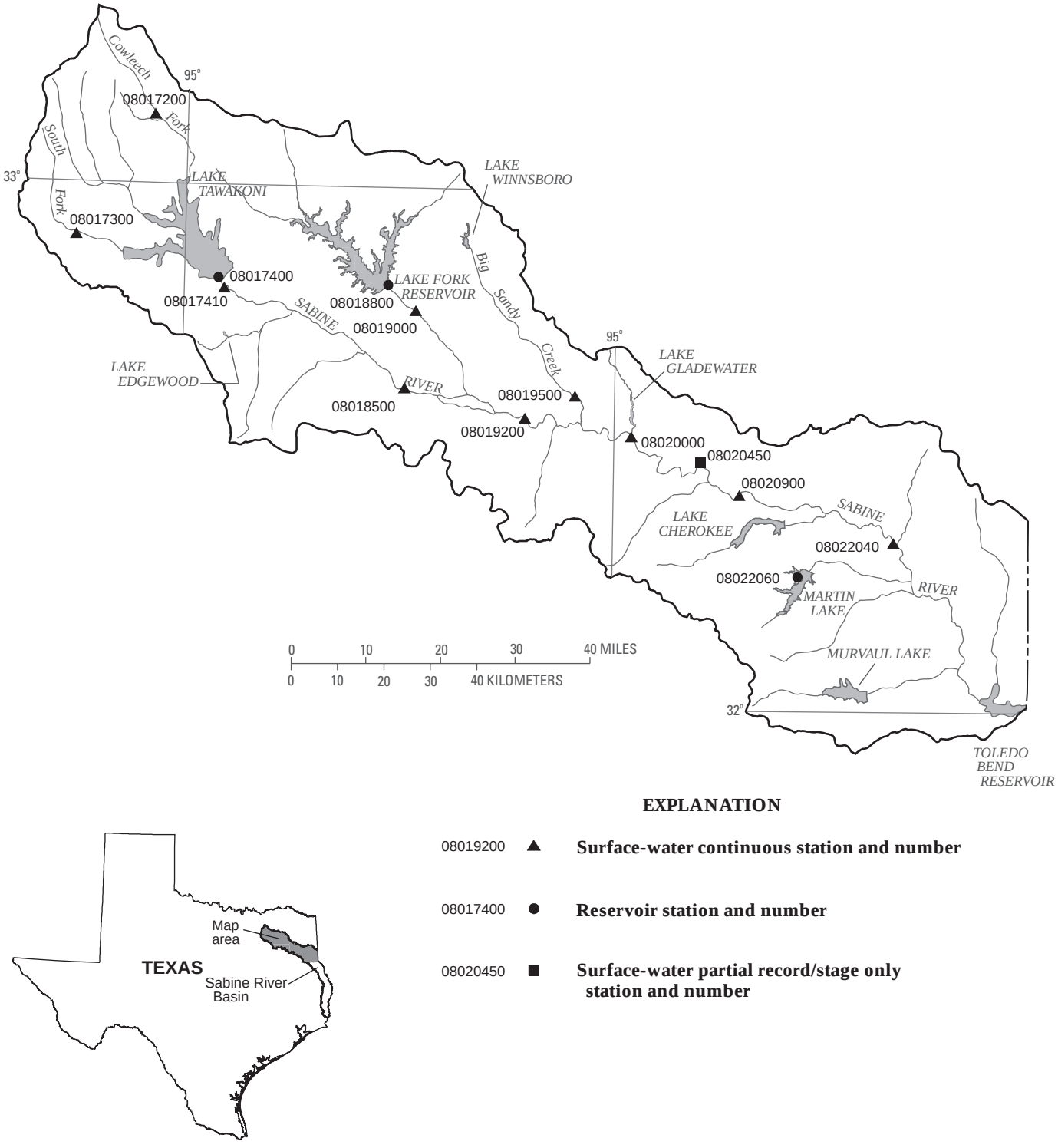


Figure 8.--Map showing location of gaging stations in the first section of the Sabine River Basin

08017200 Cowleech Fork Sabine River at Greenville, TX

LOCATION.--Lat 33°07'58", long 96°04'36", Hunt County, Hydrologic Unit 12010001, on left bank 103 ft downstream from centerline of downstream bridge on Interstate Highway 30, 0.3 mi downstream from Horse Creek, 0.9 mi downstream from Louisiana and Arkansas Railroad Co. bridge, 1.8 mi east of Greenville, and at mile 558.3.

DRAINAGE AREA.--77.7 mi^2.

PERIOD OF RECORD.--Feb. 1959 to current year. Prior to Oct. 1963, published as "Sabine River at Greenville".

REVISED RECORDS.--WSP 1732: Drainage area. WSP 2122: 1960, 1963-65.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 485.07 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. 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 Jul. 3, 1913, reached a stage of 20 ft, from information by local resident.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

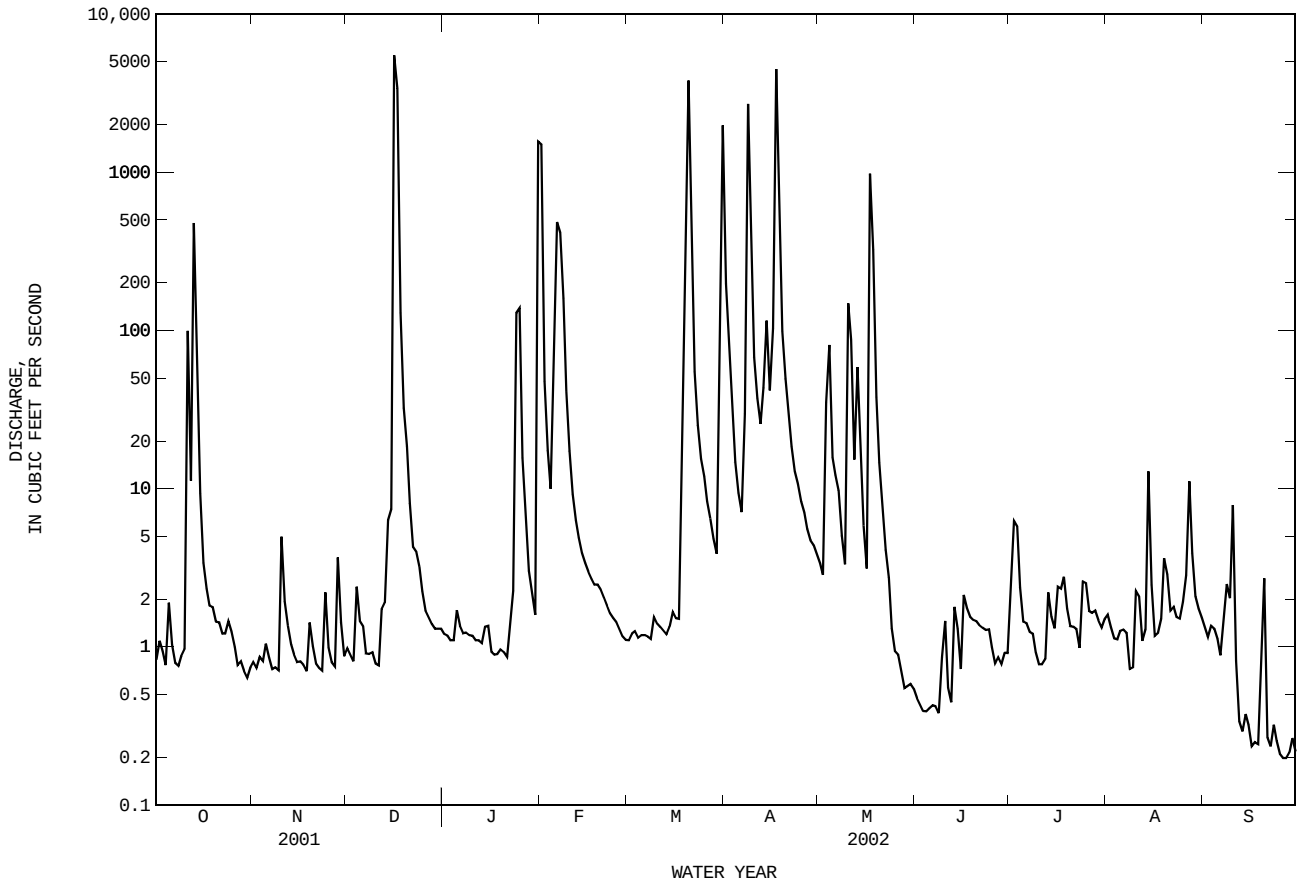
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.83	0.80	0.98	1.2	1500	1.1	196	3.4	0.47	2.6	1.6	1.3
2	1.1	0.74	0.88	1.2	48	1.2	61	2.8	0.43	6.2	1.3	1.2
3	0.93	0.86	0.81	1.1	17	1.3	27	35	0.39	5.8	1.1	1.4
4	0.76	0.81	2.4	1.1	10	1.1	15	81	0.39	2.4	1.1	1.3
5	1.9	1.0	1.5	1.7	82	1.2	9.4	16	0.41	1.4	1.3	1.1
6	1.0	0.85	1.4	1.4	483	1.2	7.1	12	0.43	1.4	1.3	0.89
7	0.79	0.72	0.91	1.2	413	1.2	30	9.7	0.42	1.2	1.2	1.5
8	0.76	0.74	0.90	1.2	160	1.1	2700	5.0	0.38	1.2	0.72	2.5
9	0.88	0.71	0.92	1.2	41	1.5	318	3.3	0.86	0.92	0.74	2.0
10	0.96	5.0	0.78	1.2	17	1.4	68	148	1.5	0.78	2.3	7.8
11	99	1.9	0.76	1.1	9.2	1.3	37	87	0.55	0.78	2.1	0.81
12	11	1.4	1.7	1.1	6.3	1.3	26	15	0.44	0.84	1.1	0.34
13	476	1.0	1.9	1.1	4.9	1.2	44	59	1.8	2.2	1.3	0.29
14	61	0.90	6.3	1.3	3.9	1.3	115	15	1.3	1.5	13	0.37
15	9.3	0.80	7.4	1.4	3.4	1.7	42	5.8	0.72	1.3	2.4	0.32
16	3.4	0.81	5470	0.93	3.0	1.5	103	3.1	2.1	2.4	1.2	0.23
17	2.3	0.77	3390	0.89	2.7	1.5	4470	979	1.8	2.3	1.2	0.25
18	1.8	0.70	129	0.90	2.5	10	1140	324	1.5	2.8	1.5	0.24
19	1.8	1.4	32	0.96	2.5	566	98	38	1.5	1.7	3.6	0.77
20	1.4	1.0	18	0.92	2.3	3790	50	15	1.5	1.4	2.9	2.7
21	1.4	0.78	8.1	0.86	2.0	405	29	8.1	1.4	1.3	1.7	0.27
22	1.2	0.73	4.3	1.3	1.8	55	18	4.1	1.3	1.3	1.8	0.23
23	1.2	0.71	4.0	2.3	1.6	25	13	2.7	1.3	0.98	1.5	0.32
24	1.4	2.2	3.2	129	1.5	15	11	1.3	1.3	2.6	1.5	0.25
25	1.2	0.99	2.2	138	1.4	12	8.3	0.94	0.99	2.5	1.9	0.21
26	1.00	0.80	1.7	16	1.3	8.3	7.0	0.89	0.78	1.7	2.8	0.20
27	0.77	0.75	1.5	6.1	1.2	6.5	5.5	0.70	0.86	1.6	11	0.20
28	0.81	3.7	1.4	3.0	1.1	4.8	4.7	0.55	0.78	1.7	3.9	0.22
29	0.70	1.4	1.3	2.2	---	3.9	4.4	0.56	0.92	1.5	2.1	0.26
30	0.64	0.87	1.3	1.6	---	383	3.8	0.58	0.91	1.3	1.7	0.22
31	0.74	---	1.3	1570	---	1970	---	0.54	---	1.5	1.5	---
TOTAL	687.97	35.84	9098.84	1893.46	2823.6	7276.6	9661.2	1878.06	29.43	59.10	74.36	29.69
MEAN	22.19	1.195	293.5	61.08	100.8	234.7	322.0	60.58	0.981	1.906	2.399	0.990
MAX	476	5.0	5470	1570	1500	3790	4470	979	2.1	6.2	13	7.8
MIN	0.64	0.70	0.76	0.86	1.1	1.1	3.8	0.54	0.38	0.78	0.72	0.20
AC-FT	1360	71	18050	3760	5600	14430	19160	3730	58	117	147	59
CFSM	0.29	0.02	3.78	0.79	1.30	3.02	4.14	0.78	0.01	0.02	0.03	0.01
IN.	0.33	0.02	4.36	0.91	1.35	3.48	4.63	0.90	0.01	0.03	0.04	0.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2002, BY WATER YEAR (WY)

MEAN	53.59	62.16	110.3	64.16	95.04	103.0	101.6	130.3	63.49	20.92	5.324	26.73
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	0.001	0.025	0.11	0.24	0.22	0.48	0.85	0.33	0.032	0.001	0.000	0.000
(WY)	1996	1996	1990	1986	1996	1996	1971	1988	1988	1998	1985	1999

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1959 - 2002	
ANNUAL TOTAL	46563.91		33548.15			
ANNUAL MEAN	127.6		91.91		70.34	
HIGHEST ANNUAL MEAN					147	2001
LOWEST ANNUAL MEAN					2.85	1996
HIGHEST DAILY MEAN	6070	Feb 16	5470	Dec 16	9730	May 13 1982
LOWEST DAILY MEAN	0.01	Aug 9	0.20	Sep 26	0.00	Aug 4 1964
ANNUAL SEVEN-DAY MINIMUM	0.13	Aug 7	0.22	Sep 24	0.00	Aug 4 1972
MAXIMUM PEAK FLOW			8780	Dec 16	15300	May 13 1982
MAXIMUM PEAK STAGE			17.53	Dec 16	18.47	May 13 1982
ANNUAL RUNOFF (AC-FT)	92360		66540		50960	
ANNUAL RUNOFF (CFSM)	1.64		1.18		0.91	
ANNUAL RUNOFF (INCHES)	22.29		16.06		12.30	
10 PERCENT EXCEEDS	108		52		59	
50 PERCENT EXCEEDS	1.7		1.5		1.4	
90 PERCENT EXCEEDS	0.30		0.71		0.02	

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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.24	0.37	3.3	0.57	1240	0.19	327	0.86	2.5	3.5	0.19	e3.0
2	0.20	0.36	1.0	0.50	87	0.24	61	1.1	2.1	5.8	0.15	e2.1
3	0.20	0.32	0.64	0.54	28	0.25	16	1.4	1.8	13	0.21	e0.51
4	0.37	0.31	0.62	0.58	5.7	0.33	4.0	4.2	1.8	16	0.43	0.40
5	43	0.28	0.52	0.67	235	0.31	1.6	645	1.9	4.3	0.46	0.35
6	79	0.40	0.44	1.3	727	0.28	1.1	269	1.8	2.3	0.38	0.27
7	21	0.49	3.9	1.3	572	0.27	3.0	54	1.4	1.6	0.28	0.22
8	7.2	0.51	0.91	1.1	140	0.40	868	14	1.4	0.81	0.22	0.20
9	3.4	0.51	0.47	1.0	29	0.57	291	5.1	1.3	0.65	0.19	0.19
10	2.0	0.42	0.36	1.1	7.3	0.72	52	188	1.6	0.69	0.37	0.44
11	613	0.66	0.41	1.3	1.9	0.66	13	90	1.3	0.65	0.60	1.1
12	423	6.9	1.1	1.3	1.2	0.74	4.2	17	1.1	2.9	0.67	0.91
13	1120	3.7	4.9	1.2	0.70	0.83	1.6	264	1.5	20	0.52	0.69
14	424	0.52	27	1.2	0.47	0.72	2.5	70	1.8	12	31	0.61
15	47	0.42	16	1.2	0.31	0.73	3.7	18	1.7	6.5	25	0.61
16	12	0.44	13100	1.3	0.23	0.57	1.4	8.0	1.5	1.8	6.7	0.61
17	1.5	0.41	3880	1.4	0.20	0.46	447	578	1.2	16	3.7	0.59
18	0.53	0.54	262	1.2	0.17	4.7	157	636	1.0	29	2.8	0.59
19	0.85	0.70	62	1.3	0.22	154	17	83	0.93	8.1	2.2	0.74
20	0.45	0.69	26	1.4	0.58	2990	4.5	32	1.1	1.6	4.0	101
21	0.33	0.69	15	1.2	0.23	404	1.7	15	1.6	0.85	4.0	20
22	0.32	0.59	8.8	1.5	0.14	65	1.1	9.5	1.4	0.53	2.9	3.7
23	0.31	0.62	5.6	2.8	0.12	28	0.64	7.3	1.2	0.35	3.6	1.4
24	0.45	0.71	3.0	157	0.14	15	0.51	5.5	1.0	0.25	2.0	0.99
25	0.33	1.3	1.7	80	0.19	7.7	0.52	3.7	0.84	0.41	1.6	0.73
26	0.18	0.90	1.1	14	0.20	4.8	1.2	30	1.0	1.1	1.3	0.42
27	0.14	0.70	1.0	3.1	0.18	3.3	1.6	31	1.8	0.62	1.8	0.23
28	0.30	8.9	0.98	0.99	0.18	2.5	0.93	9.5	2.4	0.41	14	0.14
29	0.38	23	0.98	0.46	---	2.8	0.63	8.2	2.0	0.28	5.6	0.10
30	0.43	12	0.67	0.39	---	2160	0.60	6.3	1.8	0.26	e3	0.08
31	0.42	---	0.58	1480	---	2330	---	2.9	---	0.25	e4	---
TOTAL	2802.53	68.36	17430.98	1762.90	3078.36	8180.07	2286.03	3107.56	45.77	152.51	123.87	142.92
MEAN	90.40	2.279	562.3	56.87	109.9	263.9	76.20	100.2	1.526	4.920	3.996	4.764
MAX	1120	23	13100	1480	1240	2990	868	645	2.5	29	31	101
MIN	0.14	0.28	0.36	0.39	0.12	0.19	0.51	0.86	0.84	0.25	0.15	0.08
AC-FT	5560	136	34570	3500	6110	16230	4530	6160	91	303	246	283

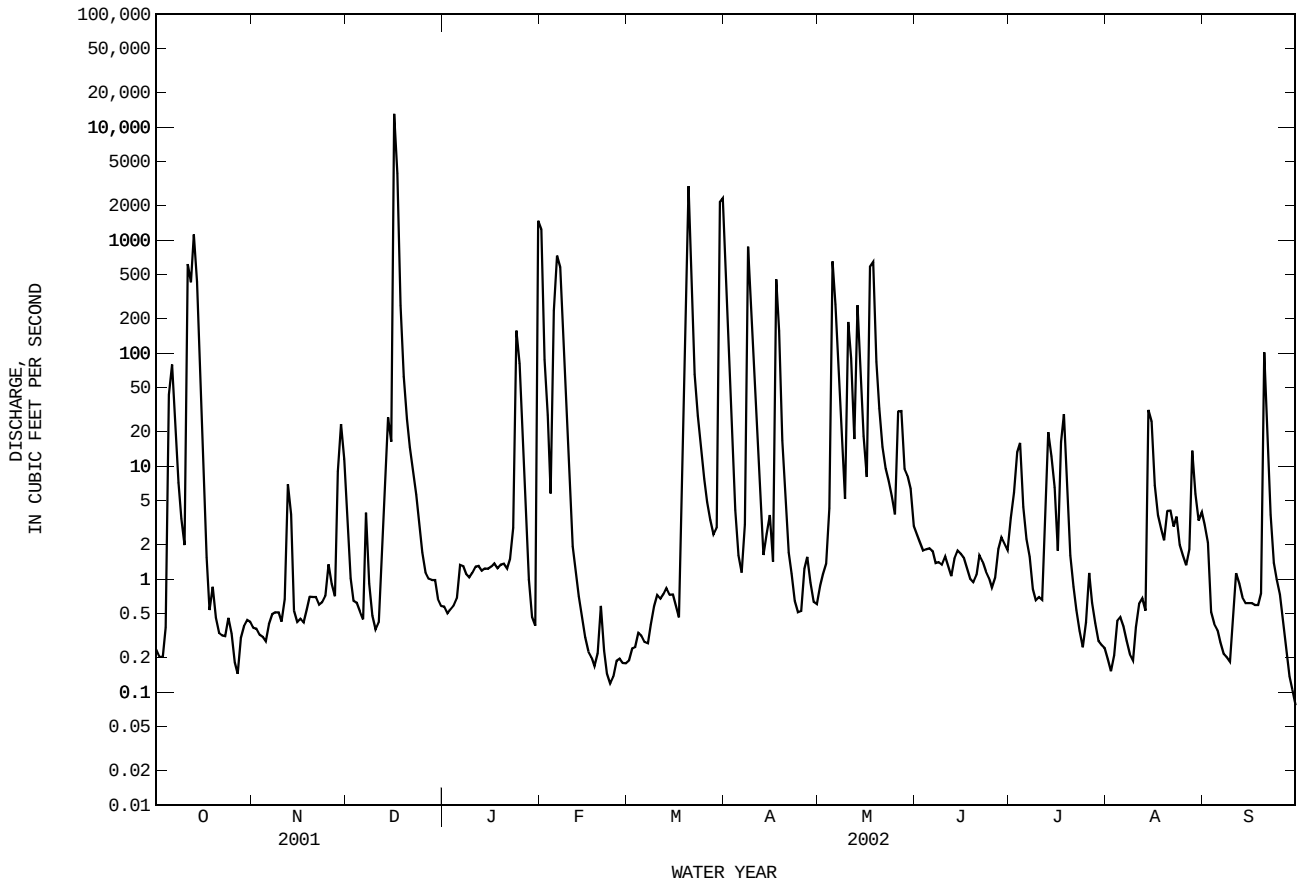
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2002, BY WATER YEAR (WY)

MEAN	94.66	69.14	123.4	63.34	121.6	111.9	118.4	145.6	91.48	26.51	5.296	24.50
MAX	656	655	562	277	556	572	693	674	1128	490	96.8	353
(WY)	1982	1995	2002	1974	1983	1977	1966	1979	1981	1981	1974	1974
MIN	0.000	0.000	0.000	0.000	0.000	0.11	0.062	0.038	0.000	0.000	0.000	0.000
(WY)	1964	1964	1964	1976	1976	1972	1971	1988	1977	1964	1965	1963

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1959 - 2002	
ANNUAL TOTAL	49381.59		39181.86			
ANNUAL MEAN	135.3		107.3		83.01	
HIGHEST ANNUAL MEAN					187	1995
LOWEST ANNUAL MEAN					3.29	1996
HIGHEST DAILY MEAN	13100	Dec 16	13100	Dec 16	13300	Jun 16 1981
LOWEST DAILY MEAN	0.00	Jul 31	0.08	Sep 30	0.00	Mar 3 1959
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 31	0.16	Feb 22	0.00	Apr 5 1959
MAXIMUM PEAK FLOW			19700	Dec 16	23000	Jun 16 1981
MAXIMUM PEAK STAGE			18.57	Dec 16	18.77	Apr 5 1986
ANNUAL RUNOFF (AC-FT)	97950		77720		60140	
10 PERCENT EXCEEDS	137		74		62	
50 PERCENT EXCEEDS	1.9		1.3		0.51	
90 PERCENT EXCEEDS	0.18		0.27		0.00	

e Estimated

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 NGVD of 1929. 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 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 Apr. 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, 1,029,000 acre-ft, Dec. 18, elevation, 441.14 ft; minimum contents, 792,100 acre-ft, Oct. 9, 10, elevation, 434.90 ft.

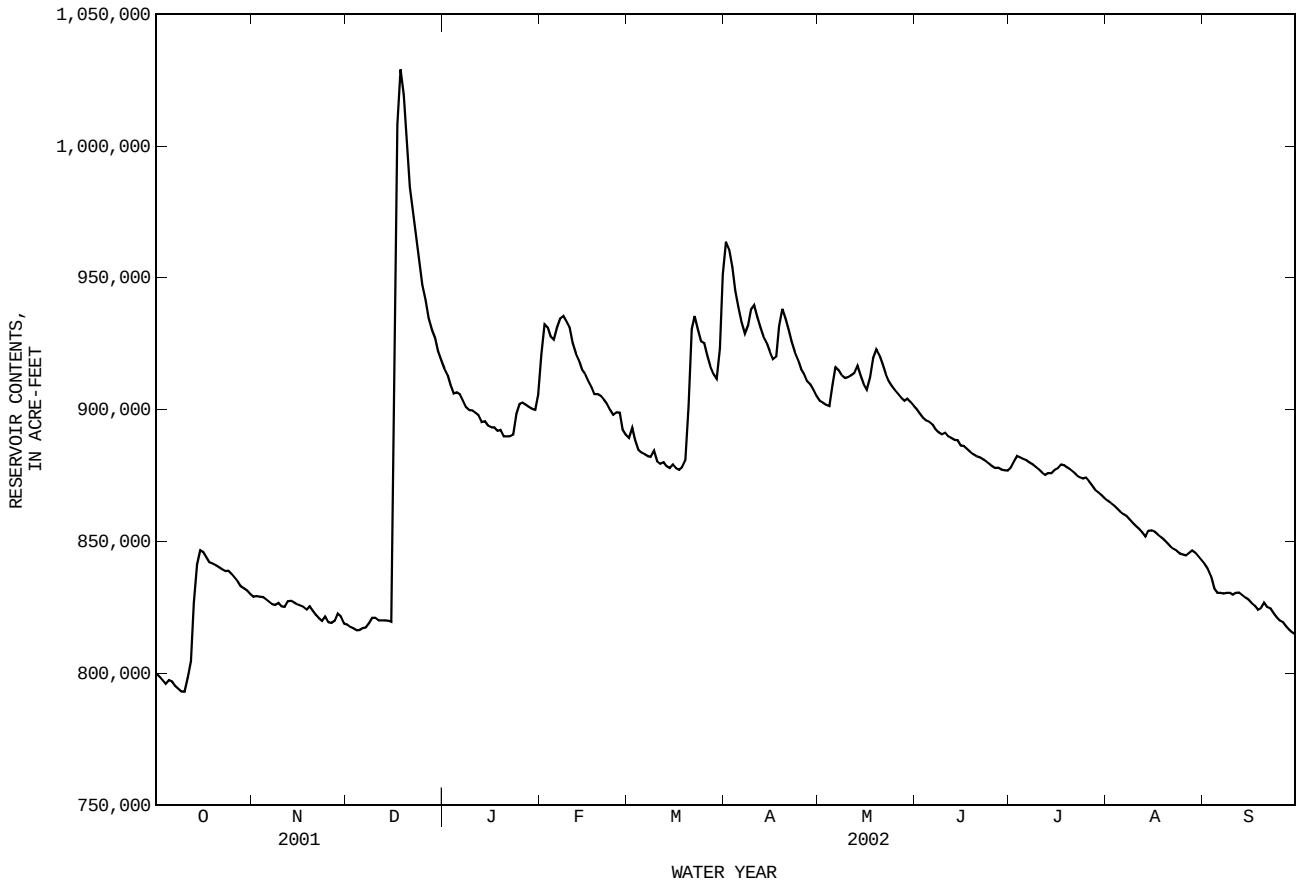
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	799800	829000	818400	915600	920900	889200	963700	903200	900100	878000	865400	e841300
2	798600	829200	817400	913100	932300	893000	960700	902500	898400	880300	864600	839600
3	797200	829000	817000	909400	931100	888300	953900	901800	896900	882300	863600	836800
4	796000	828800	816200	906000	927700	884700	945000	901300	895800	881800	862400	832200
5	797300	828200	816400	906500	926500	883600	938600	909500	895200	881200	861300	e830500
6	796800	827200	817100	905800	931100	883000	933000	916000	894300	880700	860300	e830500
7	795200	826300	817300	903200	934500	882300	928800	914900	892600	879900	859600	e830200
8	794000	825800	818900	900900	935500	882100	932000	913000	891300	879200	858200	e830500
9	793100	826500	e821000	899800	933700	884400	937800	911900	890600	878200	856900	e830500
10	793000	825300	e821000	899600	931300	880300	939500	912300	891100	877300	855800	e829800
11	798300	825100	e820000	898700	925200	879400	935000	912900	889900	876000	854800	e830500
12	804700	827300	e820000	897800	921300	880000	930900	913700	889200	875200	853400	830600
13	826700	827500	e820000	895300	918800	878600	927700	916500	888500	875900	851800	829700
14	841200	826800	e819900	895500	915200	877800	925400	912800	888300	875800	854000	828700
15	846600	826100	819400	893800	913500	879200	922000	909700	886400	877100	854200	827900
16	845900	825600	882100	893200	910800	877700	919100	907500	886200	877700	853600	826600
17	843800	825100	1008000	893300	908600	877100	920100	912100	885100	879100	852500	825500
18	841900	824200	1029000	891900	905800	878200	931800	919600	884000	878800	851500	824000
19	841500	825400	1019000	892200	905800	880800	938100	922900	883100	878100	850600	824600
20	840900	823600	999600	889800	905200	901100	934500	920800	882300	877300	849400	826600
21	840200	822000	984500	889900	903700	930400	930200	917400	881900	876300	848000	825000
22	839400	820700	973600	889900	902200	935300	925800	913700	881200	875300	847000	824500
23	838700	819800	964200	890500	900000	930400	921900	910700	880500	874300	846500	822700
24	838800	821500	955300	898400	898000	925900	919000	909000	879500	873800	845400	821200
25	837600	819300	947200	902100	898900	925100	915400	907400	878500	874100	845000	819900
26	836100	819100	941600	902500	898800	920700	913300	905900	877900	872800	844600	819300
27	834800	819900	934500	901800	892400	916400	910800	904400	877900	871200	845700	817700
28	832900	822600	930300	901000	890400	913400	909500	903300	877200	869500	846400	816300
29	832200	821500	927100	900300	---	911700	907400	904000	876900	868600	e845600	815400
30	831300	818800	922100	899900	---	923200	905000	902800	876900	867500	e844200	814700
31	829900	---	918700	905600	---	951200	---	901300	---	866400	e842800	---
MEAN	822100	824600	890900	899500	915000	898200	929200	910200	886600	876100	852700	826800
MAX	846600	829200	1029000	915600	935500	951200	963700	922900	900100	882300	865400	841300
MIN	793000	818800	816200	889800	890400	877100	905000	901300	876900	866400	842800	814700
(+)	435.95	435.64	438.28	437.95	437.56	439.09	437.93	437.84	437.20	436.93	e436.28	435.53
(@)	+29200	-11100	+99900	-13100	-15200	+60800	-46200	-3700	-24400	-10500	-23600	-28100

CAL YR 2001 MAX 1029000 MIN 784000 (@) -48700
WTR YR 2002 MAX 1029000 MIN 793000 (@) +14000

(+) 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	14	22	1040	1330	85	4040	459	342	11	11	e14
2	2.1	14	13	969	1870	524	3820	470	297	16	13	e15
3	2.1	14	13	789	1840	419	3300	463	249	199	13	e14.8
4	2.4	14	15	581	1620	52	2730	422	213	44	13	13
5	4.0	14	15	592	1560	15	2310	809	224	23	13	13
6	2.5	14	17	654	1900	11	1970	1140	217	19	13	13
7	2.4	13	18	545	2090	11	1720	1050	152	15	13	13
8	2.5	13	30	398	2130	11	1910	944	111	13	13	13
9	2.6	15	25	360	2010	329	2220	889	90	13	13	14
10	2.8	14	21	355	1950	85	2310	1040	97	12	13	13
11	4.9	13	21	391	1530	15	2050	1050	82	14	13	13
12	12	229	24	351	1290	72	1790	982	67	22	13	13
13	667	243	28	250	1170	13	1580	1350	102	26	13	13
14	404	56	53	264	1020	8.5	1460	1050	166	16	14	12
15	84	27	69	192	940	76	1320	814	68	13	13	13
16	51	20	1930	169	793	66	1190	656	108	14	13	13
17	17	17	8210	201	663	12	1210	851	30	16	13	13
18	13	15	9780	175	566	10	1760	1250	14	14	13	14
19	13	62	8040	269	551	29	2210	1320	10	13	12	14
20	13	65	6400	113	560	772	2010	1230	7.5	13	12	17
21	13	21	5350	92	490	1730	1750	1080	9.8	12	13	14
22	13	14	4640	81	468	2080	1500	927	10	12	12	15
23	13	9.8	4010	99	365	1790	1300	770	9.8	13	13	14
24	18	8.9	3460	507	314	1520	1160	667	8.7	30	13	14
25	14	8.3	2930	509	407	1480	1050	597	8.5	20	21	14
26	13	8.5	2560	430	814	1300	922	551	9.1	13	15	16
27	13	15	2100	405	285	1050	787	484	8.8	7.4	e13	15
28	13	211	1820	379	115	902	701	446	8.2	6.7	e14	15
29	14	217	1650	359	---	794	615	460	8.3	8.2	e13	14
30	14	47	1350	352	---	1350	525	436	8.2	8.9	e13	15
31	14	---	1180	643	---	3130	---	386	---	9.0	e13	---
TOTAL	1456.2	1446.5	65794	12514	30641	19741.5	53220	25043	2735.9	666.2	410	416.8
MEAN	46.97	48.22	2122	403.7	1094	636.8	1774	807.8	91.20	21.49	13.23	13.89
MAX	667	243	9780	1040	2130	3130	4040	1350	342	199	21	17
MIN	1.9	8.3	13	81	115	8.5	525	386	7.5	6.7	11	12
AC-FT	2890	2870	130500	24820	60780	39160	105600	49670	5430	1320	813	827

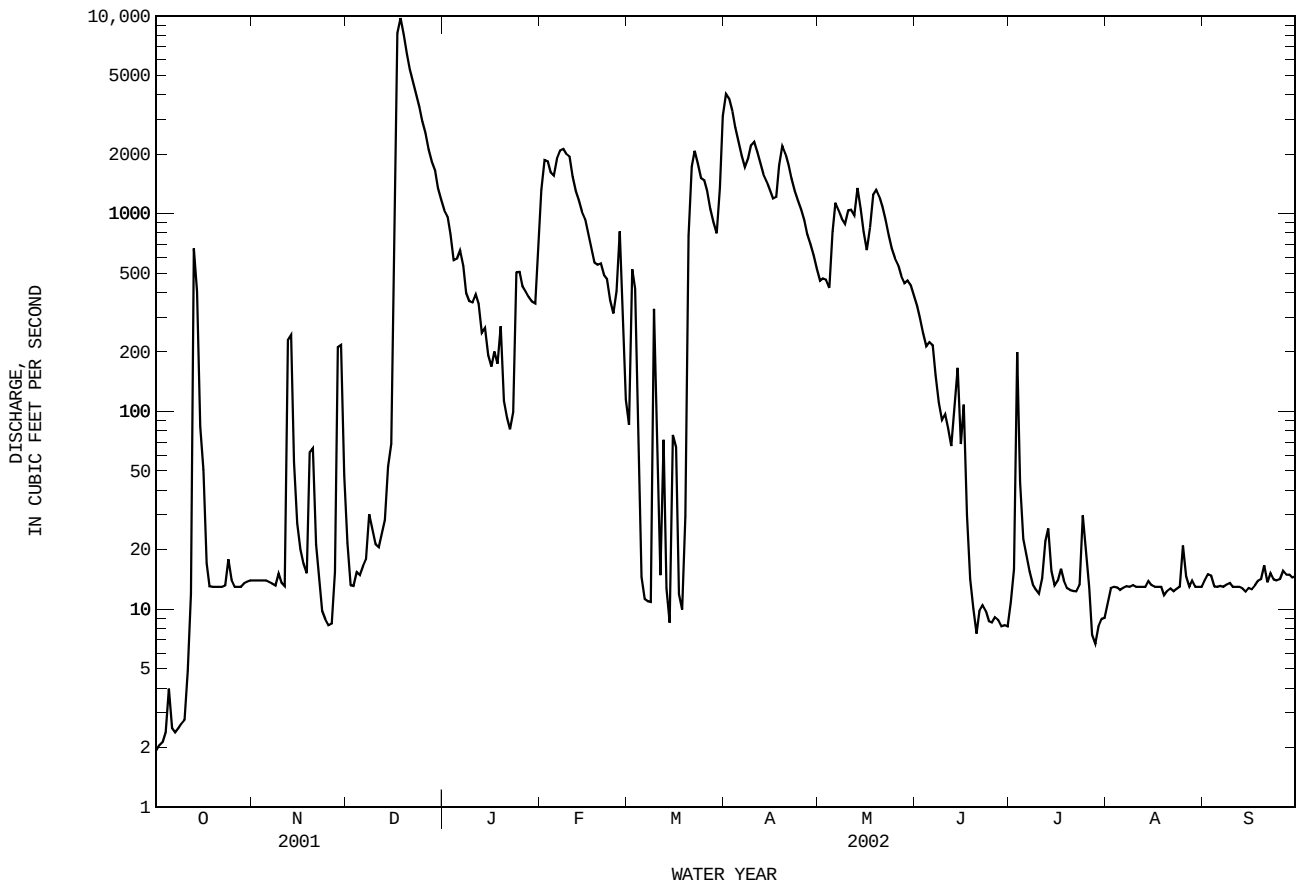
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2002, BY WATER YEAR (WY)

MEAN	179.9	355.6	621.2	372.3	598.5	764.8	723.5	870.8	550.1	162.8	31.76	45.58
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	0.21	0.76	0.16	3.14	1.87	2.84	1.31	5.35	0.81	0.56	0.12	0.25
(WY)	1991	1979	1991	1996	1976	1976	1971	1996	1972	1972	1986	1987

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1971 - 2002	
ANNUAL TOTAL	300574.3		214085.1			
ANNUAL MEAN	823.5		586.5		438.8	
HIGHEST ANNUAL MEAN					1064	1992
LOWEST ANNUAL MEAN					3.66	1996
HIGHEST DAILY MEAN	9780	Dec 18	9780	Dec 18	20000	May 4 1990
LOWEST DAILY MEAN	1.3	Jul 28	1.9	Oct 1	0.00	Oct 1 1971
ANNUAL SEVEN-DAY MINIMUM	1.4	Jul 24	2.5	Oct 1	0.00	Oct 6 1971
MAXIMUM PEAK FLOW			10200	Dec 18	20600	May 4 1990
MAXIMUM PEAK STAGE			16.90	Dec 18	19.11	May 4 1990
ANNUAL RUNOFF (AC-FT)	596200		424600		317900	
10 PERCENT EXCEEDS	2960		1770		1360	
50 PERCENT EXCEEDS	31		62		20	
90 PERCENT EXCEEDS	3.2		11		0.31	

e Estimated

08017410 Sabine River near Wills Point, TX--Continued



08018500 Sabine River near Mineola, TX

LOCATION.--Lat 32°36'49", long 95°29'08", Wood County, Hydrologic Unit 12010001, on left bank at downstream side of highway embankment 3 ft downstream from left end of bridge on U.S. Highway 69, 3.5 mi south of Mineola, 4.5 mi upstream from Missouri Pacific Railway Lines bridge, 16.2 mi upstream from Lake Fork Creek, and at mile 461.1.

DRAINAGE AREA.--1,357 mi^2.

PERIOD OF RECORD.--Jun. 1939 to Sept. 1959, Oct. 1967 to current year. Gage-height records collected at this site since Jul 1946 are contained in reports published by the National Weather Service.
Water-quality records.--Chemical data: 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 NGVD of 1929. 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 Jun. 8, 1943; no flow at times. Maximum stage since at least 1890, that of Jun. 8, 1943.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	30	1660	2410	834	725	2590	979	702	57	13	33
2	52	29	1370	2160	1100	383	3180	838	623	152	12	25
3	48	28	731	1920	1320	308	3720	788	531	430	10	19
4	47	29	305	1680	1460	624	4090	905	444	493	9.9	17
5	31	29	208	1480	1630	671	4170	977	365	558	10	16
6	23	29	172	1310	2070	346	4090	1010	306	307	12	15
7	21	30	228	1130	2430	188	3880	1190	305	142	14	14
8	21	30	352	1040	2650	154	3770	1420	297	85	15	16
9	22	38	297	963	2840	146	3560	1550	229	60	15	22
10	24	50	217	815	2920	156	3370	1660	186	46	14	23
11	47	91	191	681	2790	409	3070	1750	381	36	13	19
12	132	141	693	626	2570	348	2790	1900	344	31	13	18
13	593	688	1020	620	2410	283	2630	2310	230	37	14	17
14	1460	1180	896	579	2260	309	2570	2710	153	33	18	17
15	2000	1280	766	487	2060	235	2500	2770	149	42	28	15
16	2530	861	1980	436	1820	180	2380	2600	220	69	32	15
17	2980	317	5030	373	1600	225	2220	2500	164	177	33	16
18	2520	146	7130	330	1410	964	2040	2330	141	218	26	15
19	1480	100	7440	351	1330	1800	1860	2140	111	154	20	15
20	565	81	6510	346	1540	2810	1740	2020	63	105	18	16
21	162	156	5900	404	1610	4100	1600	1940	43	68	18	15
22	94	255	5340	317	1630	4740	1670	1820	33	46	16	15
23	74	153	4830	268	1450	4620	1770	1680	30	35	15	18
24	60	104	4450	291	1180	3980	1850	1530	27	29	13	19
25	50	79	4200	502	874	3380	1840	1370	24	26	12	18
26	42	69	4000	912	666	2880	1760	1200	25	22	13	14
27	37	66	3800	1140	683	2520	1610	1020	25	21	20	14
28	35	307	3550	1040	869	2290	1440	889	28	29	34	14
29	35	1250	3300	846	---	2070	1290	793	45	24	35	13
30	33	1570	3010	718	---	1880	1140	735	44	20	42	13
31	30	---	2650	677	---	2160	---	724	---	17	37	---
TOTAL	15304	9216	82226	26852	48006	45884	76190	48048	6268	3569	594.9	516
MEAN	493.7	307.2	2652	866.2	1714	1480	2540	1550	208.9	115.1	19.19	17.20
MAX	2980	1570	7440	2410	2920	4740	4170	2770	702	558	42	33
MIN	21	28	172	268	666	146	1140	724	24	17	9.9	13
AC-FT	30360	18280	163100	53260	95220	91010	151100	95300	12430	7080	1180	1020

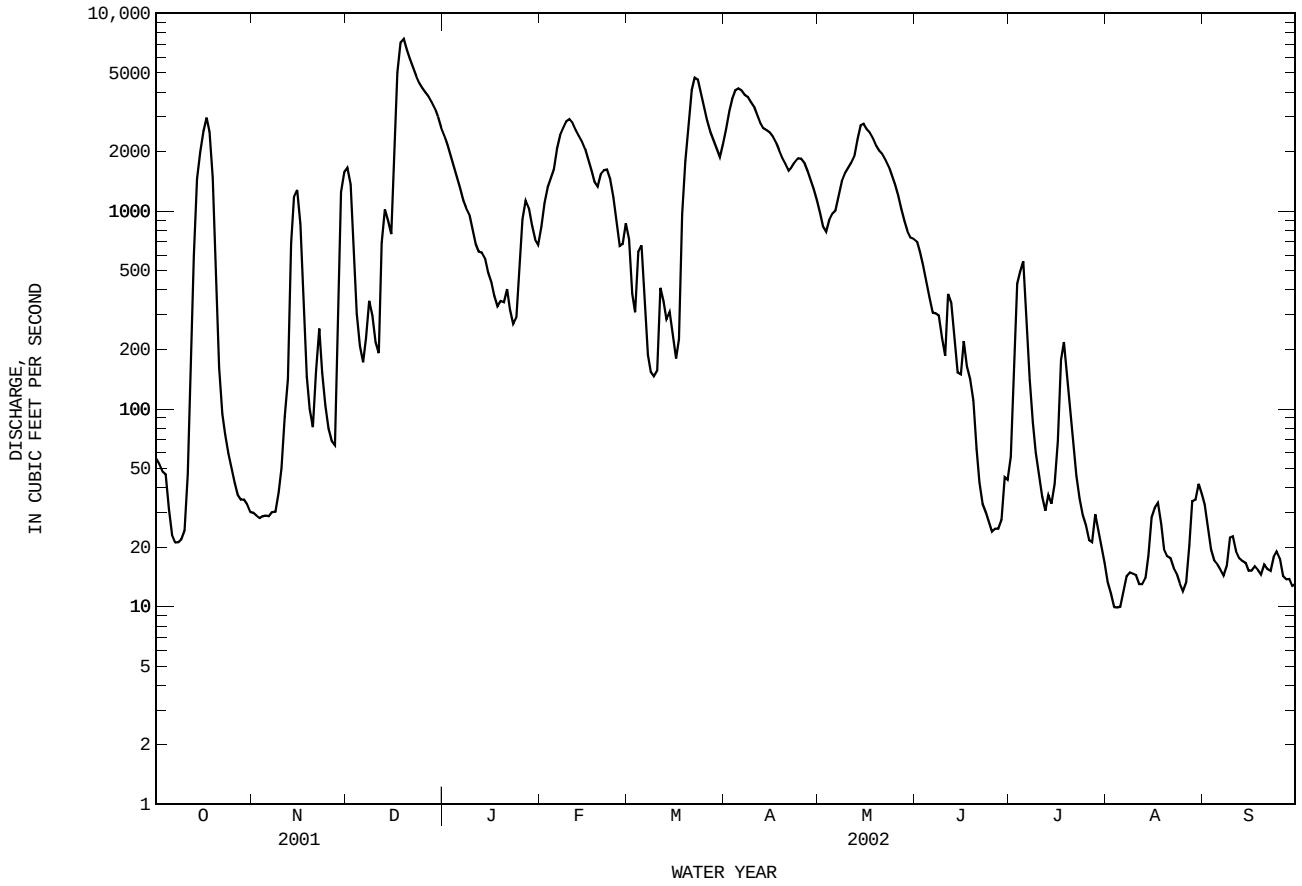
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2002hz, BY WATER YEAR (WY)

MEAN	287.6	766.7	1276	973.7	1421	1743	1378	1906	1011	250.9	56.15	63.67
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	0.071	0.048
(WY)	1988	1990	1990	2000	1996	1996	1971	1988	1971	1969	1987	1987

08018500 Sabine River near Mineola, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1967 - 2002hz	
ANNUAL TOTAL	636127		362673.9			
ANNUAL MEAN	1743		993.6		925.4	
HIGHEST ANNUAL MEAN					1904	1968
LOWEST ANNUAL MEAN					29.8	1996
HIGHEST DAILY MEAN	18500	Feb 18	7440	Dec 19	36200	Dec 11 1971
LOWEST DAILY MEAN	15	Aug 5	9.9	Aug 4	0.00	Aug 13 1970
ANNUAL SEVEN-DAY MINIMUM	16	Jul 31	12	Aug 1	0.00	Sep 15 1971
MAXIMUM PEAK FLOW			7870	Dec 19	37700	Dec 11 1971
MAXIMUM PEAK STAGE			19.09	Dec 19	21.53	Dec 11 1971
ANNUAL RUNOFF (AC-FT)	1262000		719400		670400	
10 PERCENT EXCEEDS	5500		2780		2850	
50 PERCENT EXCEEDS	239		346		137	
90 PERCENT EXCEEDS	21		17		8.7	

h See PERIOD OF RECORD paragraph.
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 NGVD of 1929. 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 Jun. 29, 1979, and closure of the dam was completed in Jan. 1980. The lake was built for water conservation and is owned by the Sabine River Authority. No known diversions were made from the lake this year. Flow is affected at times by discharge from the flood-detention pools of 21 floodwater-retarding structures with a combined detention capacity of 20,270 acre-ft. These structures control runoff from 60 mi^2 above the lake. Conservation pool storage is 675,820 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, 735,100 acre-ft, Dec. 17, elevation, 405.07 ft; minimum contents, 626,300 acre-ft, Sept. 30, elevation, 401.16 ft.

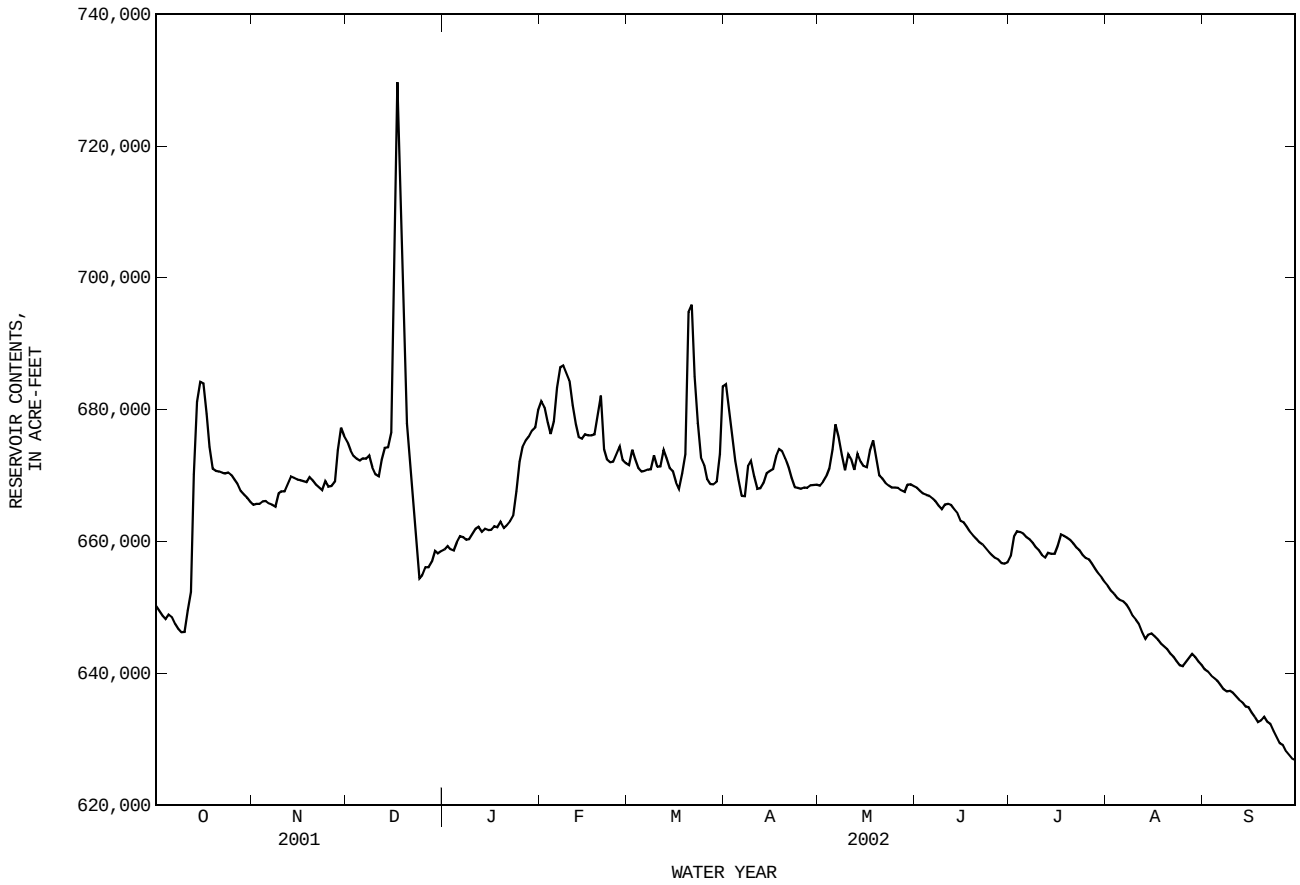
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	650100	665600	675100	658700	681300	671500	683800	668400	668100	657800	653200	640600
2	649400	665700	673800	659300	680400	673900	679900	669000	667700	660700	652500	640200
3	648700	665700	672900	658800	678000	672500	675800	669800	667200	661500	652000	639600
4	648200	666100	672500	658600	676300	671100	672200	671100	667000	661400	651400	639300
5	648900	666100	672300	659800	678200	670600	669400	674000	666900	661100	651100	638800
6	648500	665700	672600	660800	683300	670700	666900	677700	666500	660600	650900	638200
7	647500	665500	672500	660600	686400	670900	666800	675800	666100	660300	650400	637600
8	646700	665300	673000	660200	686700	670900	671400	673100	665400	659800	649600	637200
9	646200	667200	671200	660400	685600	673000	672200	670800	664800	659100	648700	637300
10	646300	667600	670100	661100	684400	671300	669900	673200	665600	658700	648100	637000
11	649500	667600	669900	661900	680600	671400	668000	672500	665700	657900	647400	636500
12	652300	668700	672300	662200	677700	673800	668000	670800	665500	657500	646200	636000
13	670100	669800	674200	661400	675800	672600	668800	673300	664800	658300	645200	635600
14	681200	669600	674300	661900	675600	671100	670300	672100	664200	658100	645800	634900
15	684200	669400	676500	661700	676200	670700	670600	671400	663100	658100	646000	634800
16	683900	669300	709200	661800	676100	668900	670900	671200	662900	659400	645600	634000
17	679300	669100	729700	662300	676100	668000	672900	673800	662200	661000	645100	633300
18	674300	669000	707700	662100	676200	670300	674000	675300	661400	660800	644400	632600
19	671000	669700	690000	662900	679300	673200	673600	672500	660800	660500	644100	632800
20	670700	669200	677900	662000	682100	694800	672500	670000	660300	660200	643600	633400
21	670600	668600	672400	662500	673900	695900	671200	669500	659900	659700	643000	632600
22	670400	668200	666500	663000	672500	685000	669600	668800	659500	659100	642500	632300
23	670300	667800	660000	663900	672000	678000	668200	668400	658900	658700	641800	631200
24	670400	669100	654400	667600	672100	672700	668100	668200	658300	657900	641200	630300
25	670100	668300	654800	672100	673300	671600	668000	668200	657900	657400	641100	629400
26	669300	668400	656000	674300	674400	669500	668200	668100	657500	657200	641700	629100
27	668700	669000	656100	675300	672300	668700	668100	667700	657200	656600	642300	628100
28	667600	673800	656900	675900	671800	668700	668500	667500	656700	655800	642900	627500
29	667100	677200	658500	676800	---	669000	668500	668600	656600	655100	642400	627000
30	666600	676000	658200	677300	---	673200	668600	668700	656800	654500	641800	626800
31	666000	---	658500	679900	---	683400	---	668400	---	653800	641200	---
MEAN	663000	668600	672900	664700	677800	673800	670800	670900	662500	658700	645900	634100
MAX	684200	677200	729700	679900	686700	695900	683800	677700	668100	661500	653200	640600
MIN	646200	665300	654400	658600	671800	668000	666800	667500	656600	653800	641100	626800
(+)	402.64	403.01	402.36	403.15	402.85	403.27	402.73	402.73	402.30	402.19	401.72	401.18
(@)	+14000	+10000	-17500	+21400	-8100	+11600	-14800	-200	-11600	-3000	-12600	-14400

CAL YR 2001 MAX 729700 MIN 637400 (@) -22000
WTR YR 2002 MAX 729700 MIN 626800 (@) -25200

(+) 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 NGVD of 1929. 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 good. 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	56	1430	36	912	37	4430	27	15	48	51	47
2	75	26	1360	35	1770	37	4130	24	13	103	51	47
3	80	15	1270	33	2010	40	3850	34	13	142	51	47
4	74	14	939	32	2000	34	2640	76	12	94	50	47
5	74	13	638	35	1160	31	2070	195	11	70	51	48
6	75	14	578	44	623	30	1940	1300	12	58	51	48
7	74	14	666	42	602	30	1000	1980	34	52	50	48
8	75	14	687	37	1480	31	655	2080	57	48	50	48
9	75	18	625	36	2040	34	1740	2060	59	45	50	48
10	75	18	540	36	2090	35	2140	1760	58	43	49	48
11	83	18	153	35	2060	30	2050	1900	58	42	49	48
12	103	26	357	33	2040	138	1070	2220	57	42	49	47
13	505	49	430	32	1980	781	213	1380	58	50	49	46
14	815	27	330	30	1040	1050	146	469	58	45	50	46
15	747	22	257	29	167	1100	120	132	57	44	51	46
16	630	20	4720	28	59	1110	75	65	59	62	49	46
17	1600	18	26300	28	50	1070	250	211	58	143	48	47
18	3060	17	22200	28	45	1030	958	1380	57	83	49	46
19	3350	18	14900	29	91	2610	1150	2000	43	65	50	47
20	1760	19	9720	30	291	4260	1140	2020	38	58	50	47
21	505	19	5560	29	211	10200	1120	1120	38	54	48	47
22	107	17	5970	28	101	9130	1110	152	38	53	48	47
23	67	17	6060	38	73	5190	1060	33	38	52	48	47
24	65	18	5450	62	61	4240	360	25	39	51	49	47
25	63	22	1850	146	52	2500	53	21	41	51	48	46
26	62	19	449	97	48	2050	38	19	42	51	48	48
27	59	18	93	67	45	1060	37	18	41	51	49	47
28	59	304	53	54	38	207	35	17	39	52	50	46
29	58	835	47	47	---	81	32	17	41	52	48	47
30	58	1320	42	43	---	411	31	18	64	52	48	47
31	58	---	38	61	---	3350	---	17	---	51	48	---
TOTAL	14564	3025	113712	1340	23139	51937	35643	22770	1248	1907	1530	1411
MEAN	469.8	100.8	3668	43.23	826.4	1675	1188	734.5	41.60	61.52	49.35	47.03
MAX	3350	1320	26300	146	2090	10200	4430	2220	64	143	51	48
MIN	58	13	38	28	38	30	31	17	11	42	48	46
AC-FT	28890	6000	225500	2660	45900	103000	70700	45160	2480	3780	3030	2800

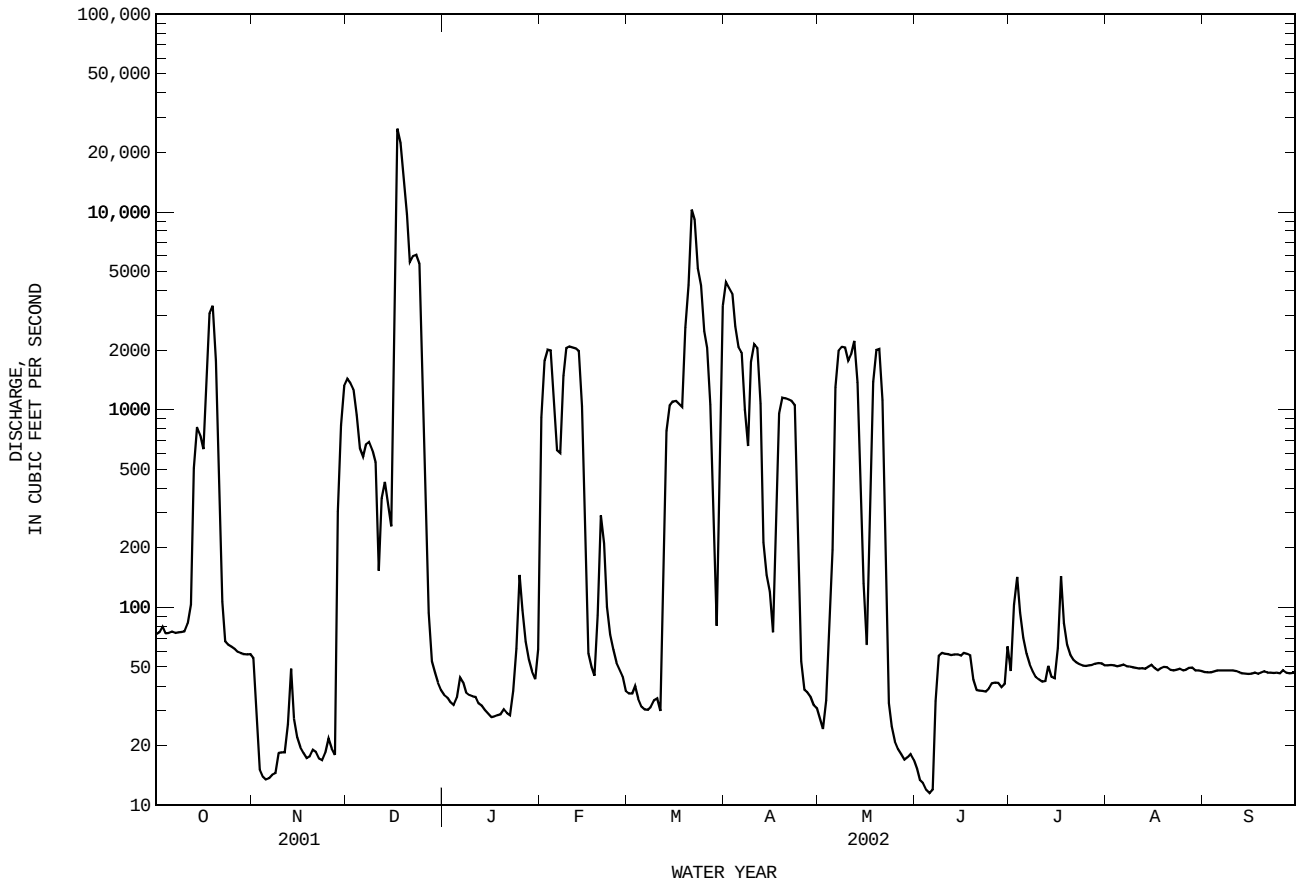
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2002z, BY WATER YEAR (WY)

MEAN	136.7	325.5	790.2	507.0	930.6	945.0	542.9	624.3	398.0	242.5	88.31	42.25
MAX	1068	1552	3668	1786	3198	3811	1991	2807	2771	1795	940	167
(WY)	1999	1989	2002	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	0.13	0.76
(WY)	1983	1981	1982	1981	1981	1996	1981	1998	1984	1985	1980	1982

08019000 Lake Fork Creek near Quitman, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1980 - 2002z	
ANNUAL TOTAL	402946		272226			
ANNUAL MEAN	1104		745.8		462.5	
HIGHEST ANNUAL MEAN					1006	1992
LOWEST ANNUAL MEAN					43.2	1984
HIGHEST DAILY MEAN	26300	Dec 17	26300	Dec 17	26300	Dec 17 2001
LOWEST DAILY MEAN	13	Nov 5	11	Jun 5	0.00	Aug 23 1980
ANNUAL SEVEN-DAY MINIMUM	15	Nov 3	13	May 31	0.00	Aug 23 1980
MAXIMUM PEAK FLOW			27300	Dec 17	27300	Dec 17 2001
MAXIMUM PEAK STAGE			22.35	Dec 17	22.35	Dec 17 2001
ANNUAL RUNOFF (AC-FT)	799200		540000		335000	
10 PERCENT EXCEEDS	3780		2000		1300	
50 PERCENT EXCEEDS	81		52		49	
90 PERCENT EXCEEDS	20		25		5.9	

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.--Sept. 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 267.97 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	171	1970	e925	836	873	4780	1310	712	289	107	114
2	158	167	2180	e1090	1090	773	4410	1070	671	322	104	111
3	148	167	2310	e2560	1490	511	4620	896	601	517	99	107
4	143	143	2120	e3770	1840	420	5400	905	522	762	95	101
5	143	116	1640	e3250	2180	606	6270	1040	452	745	93	97
6	143	106	882	2440	2720	658	6990	1080	387	698	92	95
7	153	101	551	1930	3160	457	7320	1270	336	495	91	94
8	145	100	600	1500	3380	325	8080	1610	321	328	92	93
9	137	107	712	1240	3450	297	8690	1950	340	252	95	95
10	134	119	671	1100	3550	294	8380	2280	331	195	97	100
11	156	132	e895	963	3760	293	7630	2650	300	166	99	104
12	197	168	e1030	813	4010	461	6920	2940	404	149	97	101
13	409	265	e1460	731	4250	525	6360	3130	412	153	94	96
14	1030	590	e1830	698	4360	605	5870	3290	328	147	95	94
15	1560	981	e1910	656	4340	844	5260	3500	266	166	99	93
16	1820	1160	e2150	578	4170	936	4470	3700	249	201	102	92
17	2070	869	e3000	523	3790	1060	3840	3750	289	361	109	91
18	2310	429	5110	477	3090	1850	3370	3660	275	438	109	90
19	2580	314	17300	444	2410	2640	3000	3510	246	459	107	95
20	2760	254	28500	436	2220	3670	2810	3410	232	353	102	105
21	2530	189	27900	440	2230	4860	2690	3350	191	264	98	111
22	1950	188	24100	455	2210	6000	2590	3320	152	209	96	104
23	1480	250	20100	431	2130	8290	2520	3280	137	173	95	98
24	779	229	16700	426	1980	10700	2520	3010	129	149	93	94
25	359	230	14900	507	1670	11600	2550	2390	126	134	92	92
26	254	177	13300	670	1200	10700	2480	1830	124	123	94	93
27	216	185	11600	981	835	9710	2270	1440	138	115	98	104
28	191	e155	e7220	1150	759	8550	2060	1130	139	109	106	142
29	179	e170	e6530	1120	---	7430	1840	928	192	107	115	141
30	174	164	e5900	951	---	6340	1570	812	271	110	118	133
31	176	---	e2520	811	---	5490	---	747	---	107	115	---
TOTAL	24657	8396	227591	34066	73110	107768	137560	69188	9273	8796	3098	3080
MEAN	795.4	279.9	7342	1099	2611	3476	4585	2232	309.1	283.7	99.94	102.7
MAX	2760	1160	28500	3770	4360	11600	8690	3750	712	762	118	142
MIN	134	100	551	426	759	293	1570	747	124	107	91	90
AC-FT	48910	16650	451400	67570	145000	213800	272900	137200	18390	17450	6140	6110

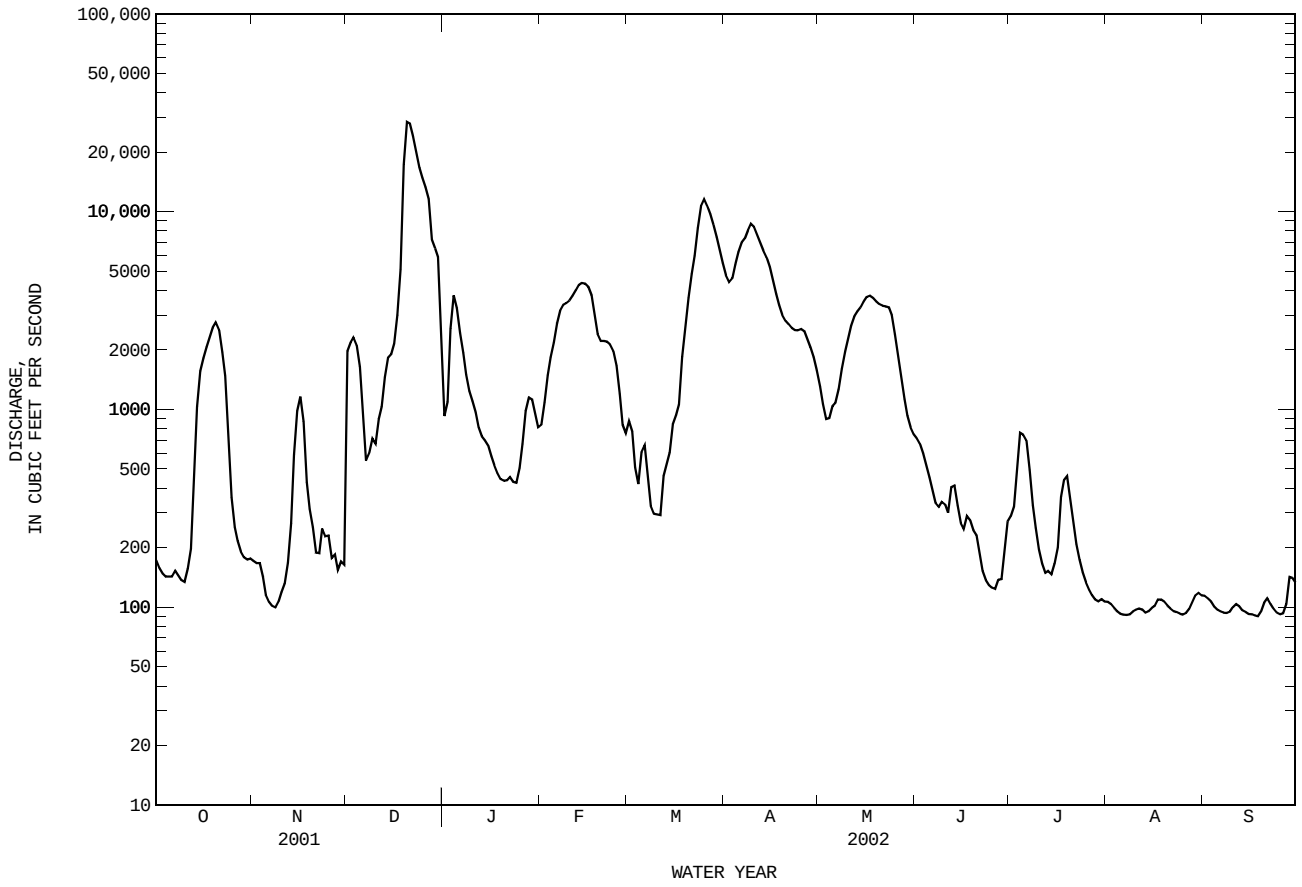
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2002, BY WATER YEAR (WY)

MEAN	576.8	800.6	3375	3106	3419	4306	1852	1002	1593	370.1	100.6	198.0
MAX	1735	2569	7342	6742	8451	12670	4585	2232	4797	1139	184	482
(WY)	1999	1999	2002	2001	2001	2001	2002	2002	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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1997 - 2002	
ANNUAL TOTAL	1206054		706583			
ANNUAL MEAN	3304		1936		1719	
HIGHEST ANNUAL MEAN					2828	2001
LOWEST ANNUAL MEAN					673	2000
HIGHEST DAILY MEAN	28500	Dec 20	28500	Dec 20	28500	Dec 20 2001
LOWEST DAILY MEAN	78	May 23	90	Sep 18	4.8	Oct 5 1997
ANNUAL SEVEN-DAY MINIMUM	102	May 22	93	Sep 13	4.9	Sep 30 1997
MAXIMUM PEAK FLOW			31800	Dec 20	31800	Dec 20 2001
MAXIMUM PEAK STAGE			34.80	Dec 20	34.80	Dec 20 2001
ANNUAL RUNOFF (AC-FT)	2392000		1402000		1245000	
10 PERCENT EXCEEDS	12400		4810		5040	
50 PERCENT EXCEEDS	481		590		308	
90 PERCENT EXCEEDS	112		100		90	

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(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 278.38 ft above NGVD of 1929. 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.--Records fair. Since water year 1963, 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	53	218	e161	198	158	657	141	102	140	30	40
2	49	52	248	e148	183	154	902	132	97	238	31	37
3	45	51	350	147	192	141	1210	132	90	262	39	34
4	47	51	420	e130	239	134	924	154	82	246	43	33
5	52	51	353	146	273	130	655	168	78	220	39	31
6	62	50	273	e147	e356	131	473	222	74	207	33	30
7	59	48	210	149	340	130	371	252	68	190	28	30
8	49	49	214	149	377	126	835	246	64	164	27	31
9	46	50	201	159	483	133	1210	261	63	129	25	40
10	46	58	192	163	e531	132	1540	332	67	102	26	46
11	63	58	212	154	e445	134	1420	384	65	88	24	42
12	104	62	362	144	354	172	1020	300	53	71	23	41
13	192	105	416	137	294	169	696	290	45	63	24	39
14	264	117	439	131	240	171	492	407	44	74	28	40
15	249	120	e757	126	202	e176	371	443	43	82	40	42
16	295	112	1060	122	180	193	298	344	43	74	37	42
17	490	105	1430	120	166	207	260	319	45	116	33	42
18	665	94	3500	118	156	458	244	288	41	150	30	44
19	499	83	4920	123	185	826	232	223	38	190	28	49
20	346	74	2580	127	302	1650	220	215	36	164	28	62
21	240	68	1490	126	216	2710	231	257	36	135	27	52
22	170	65	1090	e113	238	3260	227	285	40	101	26	44
23	129	64	855	137	470	2340	204	242	39	75	25	42
24	108	72	663	152	511	1400	182	180	36	61	24	38
25	97	80	512	e171	336	988	164	143	37	53	25	36
26	83	78	414	e113	236	750	152	123	41	47	26	35
27	73	74	338	185	189	583	151	110	50	42	32	33
28	68	178	e278	216	170	445	146	100	60	39	51	33
29	63	384	245	225	---	353	137	97	63	36	48	31
30	60	258	212	209	---	331	140	102	106	33	40	32
31	55	---	187	e189	---	728	---	104	---	32	39	---
TOTAL	4822	2764	24639	4637	8062	19413	15764	6996	1746	3624	979	1171
MEAN	155.5	92.13	794.8	149.6	287.9	626.2	525.5	225.7	58.20	116.9	31.58	39.03
MAX	665	384	4920	225	531	3260	1540	443	106	262	51	62
MIN	45	48	187	113	156	126	137	97	36	32	23	30
AC-FT	9560	5480	48870	9200	15990	38510	31270	13880	3460	7190	1940	2320

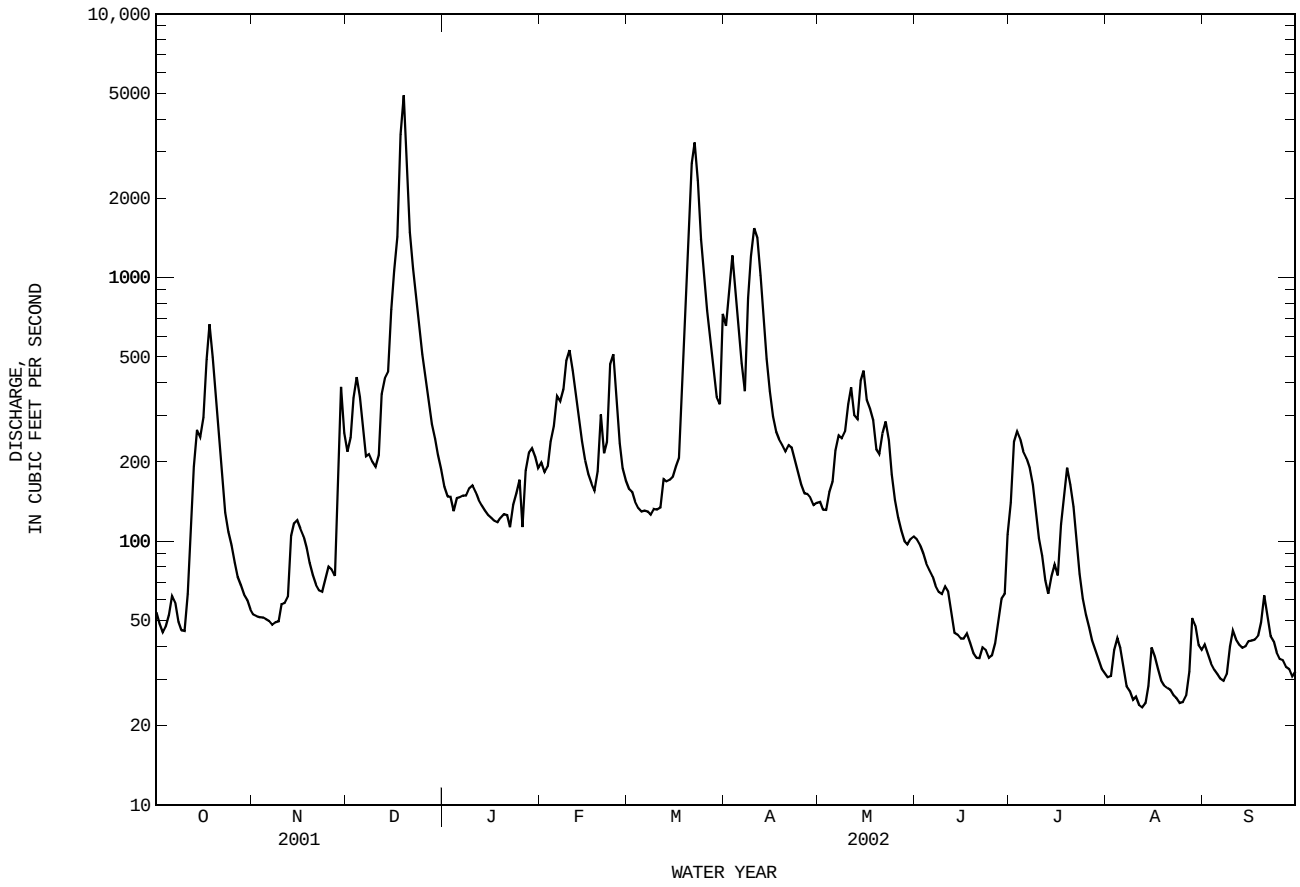
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2002z, BY WATER YEAR (WY)

MEAN	62.95	145.4	260.6	235.4	298.4	337.3	299.6	267.3	146.2	83.68	30.20	53.16
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1963 - 2002z	
ANNUAL TOTAL	134846		94617			
ANNUAL MEAN	369.4		259.2		184.4	
HIGHEST ANNUAL MEAN					358	1975
LOWEST ANNUAL MEAN					43.7	1964
HIGHEST DAILY MEAN	5310	Feb 18	4920	Dec 19	6240	May 19 1989
LOWEST DAILY MEAN	11	Aug 5	23	Aug 12	3.5	Jul 24 1984
ANNUAL SEVEN-DAY MINIMUM	12	Jul 31	25	Aug 7	4.0	Aug 16 1984
MAXIMUM PEAK FLOW			5730	Dec 19	6680	May 19 1989
MAXIMUM PEAK STAGE			17.68	Dec 19	18.30	May 19 1989
ANNUAL RUNOFF (AC-FT)	267500		187700		133600	
10 PERCENT EXCEEDS	995		495		423	
50 PERCENT EXCEEDS	132		133		79	
90 PERCENT EXCEEDS	29		36		16	

e Estimated
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 NGVD of 1929. Prior to Oct. 13, 1933, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated. 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	335	296	2760	e9980	1530	1260	8520	1890	967	549	148	47
2	299	293	2770	e8650	1540	1330	7570	1590	905	678	144	47
3	272	289	2880	7560	1710	1190	6880	1380	839	843	140	44
4	257	282	3000	6710	2060	927	6480	1270	734	1040	143	41
5	267	260	2860	6030	2530	838	6290	1270	643	1120	143	39
6	335	232	2340	5330	3370	986	6230	1350	578	1060	136	39
7	327	216	1750	4490	3860	1010	6280	1430	521	971	123	38
8	301	203	1460	3540	4110	839	7240	1640	469	777	116	40
9	270	204	1480	2620	4230	710	8020	1930	454	586	111	44
10	254	217	1480	1970	4310	664	8740	2310	483	453	108	53
11	312	246	1380	1640	4380	641	9350	2740	480	347	114	69
12	406	271	2320	1430	4490	752	9390	3080	451	283	161	73
13	777	385	2940	1230	4610	989	8910	3320	515	235	119	73
14	1290	579	3110	1110	4740	1010	8140	3500	518	225	97	71
15	1680	950	3180	1050	4830	1090	7470	3680	446	253	89	67
16	1920	1280	4120	994	4880	1290	6900	3860	387	336	91	69
17	2140	1390	5560	928	4850	1440	6450	4020	358	538	85	70
18	2440	1130	6100	876	4690	2740	5980	4200	392	713	84	74
19	2730	736	6500	871	4310	3750	5380	4210	378	747	77	123
20	2950	509	8700	887	4040	4830	4720	4100	344	719	67	187
21	3050	402	21800	890	3730	5650	4120	3970	328	588	56	232
22	2850	337	31200	858	3410	6150	3680	3880	282	455	48	216
23	2330	326	32100	857	3190	6600	3370	3820	237	365	40	158
24	1730	427	29700	946	3100	7280	3170	3750	206	299	33	131
25	1050	431	26400	1220	2900	8600	3060	3510	184	253	31	119
26	614	395	23100	1240	2470	10500	3000	2980	193	224	27	115
27	442	360	20100	1310	1850	11800	2910	2300	201	195	26	118
28	366	864	17500	1530	1380	11700	2720	1740	239	176	32	129
29	332	2400	15200	1690	---	10900	2470	1380	264	162	60	172
30	311	2690	13300	1660	---	9910	2190	1180	389	155	57	189
31	300	---	11500	1520	---	9370	---	1060	---	152	50	---
TOTAL	32937	18600	308590	81617	97100	126746	175630	82340	13385	15497	2756	2887
MEAN	1062	620.0	9955	2633	3468	4089	5854	2656	446.2	499.9	88.90	96.23
MAX	3050	2690	32100	9980	4880	11800	9390	4210	967	1120	161	232
MIN	254	203	1380	857	1380	641	2190	1060	184	152	26	38
AC-FT	65330	36890	612100	161900	192600	251400	348400	163300	26550	30740	5470	5730

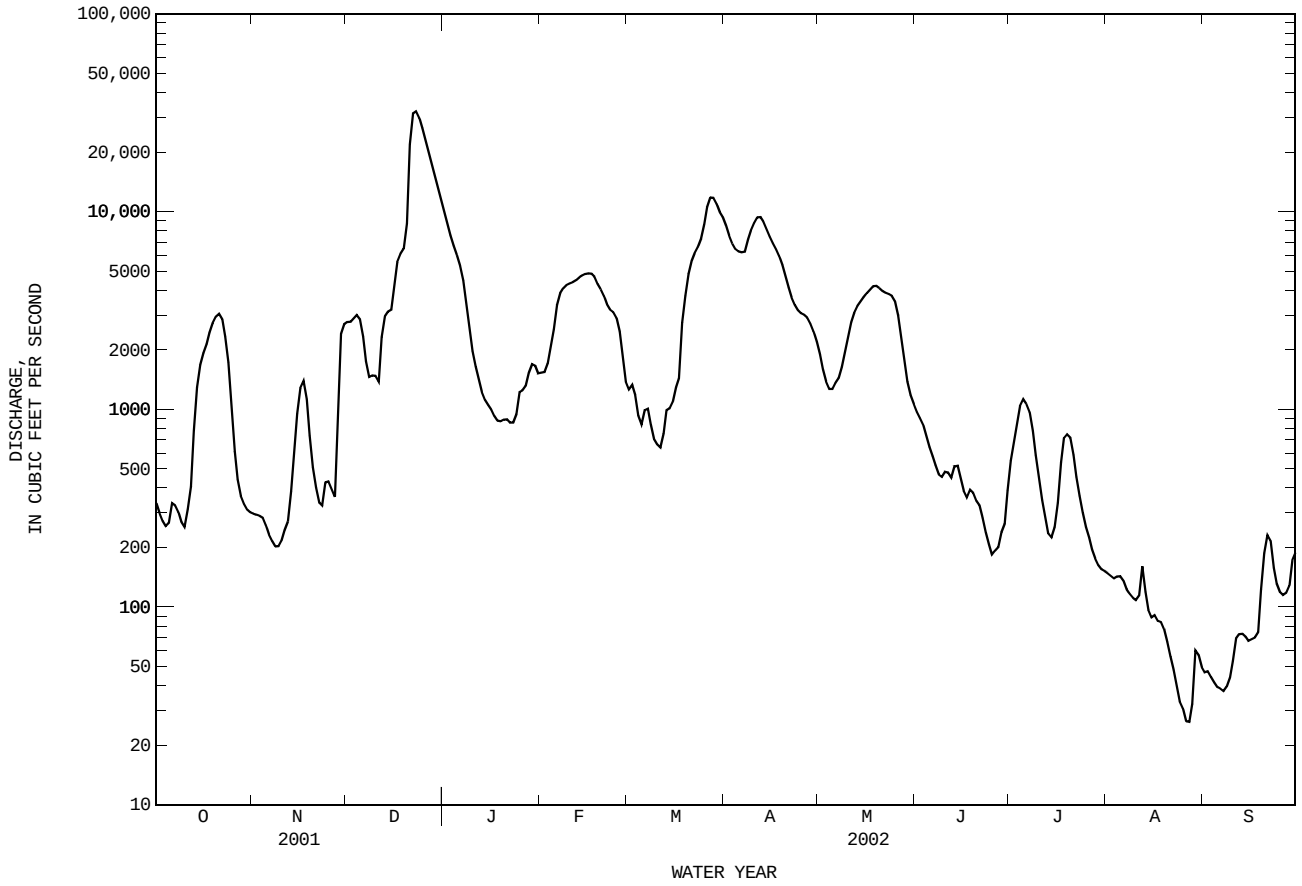
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002z, BY WATER YEAR (WY)

MEAN	494.9	1277	2693	2306	2830	3643	2859	3795	1853	684.3	198.7	290.8
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

08020000 Sabine River near Gladewater, TX--Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002z	
ANNUAL TOTAL	1535693		958085			
ANNUAL MEAN	4207		2625		1907	
HIGHEST ANNUAL MEAN					3831	1992
LOWEST ANNUAL MEAN					209	1996
HIGHEST DAILY MEAN	32100	Dec 23	32100	Dec 23	51000	May 22 1989
LOWEST DAILY MEAN	111	Aug 5	26	Aug 27	7.4	Jul 20 1971
ANNUAL SEVEN-DAY MINIMUM	114	Jul 31	34	Aug 22	9.5	Jul 16 1971
MAXIMUM PEAK FLOW			32800	Dec 22	52300	May 22 1989
MAXIMUM PEAK STAGE			37.25	Dec 22	38.98	Apr 30 1966
ANNUAL RUNOFF (AC-FT)	3046000		1900000		1382000	
10 PERCENT EXCEEDS	15300		6640		5550	
50 PERCENT EXCEEDS	969		1010		551	
90 PERCENT EXCEEDS	203		104		63	

e Estimated
z Period of regulated streamflow.



08020450 Sabine River above Longview, TX
(Low-flow partial-record station)

LOCATION.--Lat 32°28′47", long 94°48′15", Gregg County, Hydrologic Unit 12010002, on left bank at city of Longview pumping station at the end of Swinging Bridge Road, 1.4 mi southwest of the intersection of Swinging Bridge Road and Farm Road 2206 in Longview, 2.5 mi downstream from Hawkins Creek, 2.6 mi upstream from U.S. Highway 259, and at mile 357.4.

DRAINAGE AREA.--2,943 mi^2.

PERIOD OF RECORD.--Aug. 1983 to current year (discharges below 500 ft^3/s).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 230.00 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--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.

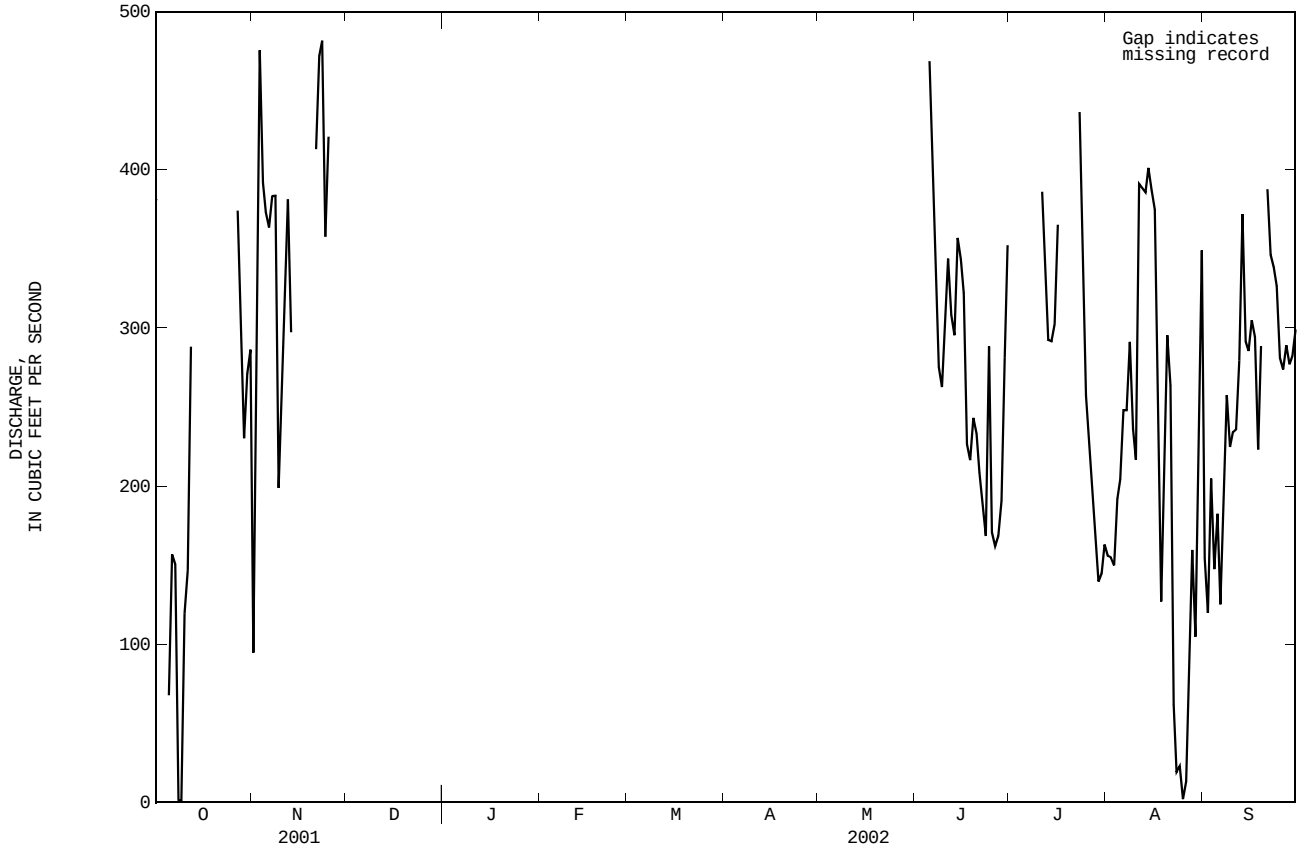
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 34.92 ft, Mar. 31, 2002; minimum daily discharge, 0.50 ft^3/s, Sept. 4, 1985.

DISCHARGE FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	95	---	---	---	---	---	---	---	---	e156	154
2	---	296	---	---	---	---	---	---	---	---	e155	120
3	---	476	---	---	---	---	---	---	---	---	e150	205
4	---	392	---	---	---	---	---	---	---	---	e190	147
5	68	373	---	---	---	---	---	---	469	---	e204	183
6	157	364	---	---	---	---	---	---	418	---	248	125
7	151	384	---	---	---	---	---	---	352	---	248	196
8	1.7	384	---	---	---	---	---	---	275	---	291	258
9	0.74	199	---	---	---	---	---	---	263	---	236	225
10	120	247	---	---	---	---	---	---	304	---	217	234
11	147	308	---	---	---	---	---	---	344	386	391	236
12	288	381	---	---	---	---	---	---	308	334	389	279
13	---	297	---	---	---	---	---	---	295	292	386	372
14	---	---	---	---	---	---	---	---	357	292	401	291
15	---	---	---	---	---	---	---	---	343	302	387	285
16	---	---	---	---	---	---	---	---	322	365	375	305
17	---	---	---	---	---	---	---	---	227	---	277	294
18	---	---	---	---	---	---	---	---	216	---	127	223
19	---	---	---	---	---	---	---	---	243	---	203	289
20	---	---	---	---	---	---	---	---	233	---	295	---
21	---	413	---	---	---	---	---	---	209	---	264	388
22	---	472	---	---	---	---	---	---	190	---	62	346
23	---	482	---	---	---	---	---	---	169	437	19	338
24	---	358	---	---	---	---	---	---	288	337	23	327
25	---	421	---	---	---	---	---	---	171	257	2.3	281
26	---	---	---	---	---	---	---	---	162	224	13	274
27	374	---	---	---	---	---	---	---	168	195	81	289
28	301	---	---	---	---	---	---	---	191	168	160	277
29	230	---	---	---	---	---	---	---	281	140	105	282
30	271	---	---	---	---	---	---	---	352	140	240	299
31	286	---	---	---	---	---	---	---	---	160	349	---
TOTAL	---	---	---	---	---	---	---	---	---	---	6644.3	---
MEAN	---	---	---	---	---	---	---	---	---	---	214.3	---
MAX	---	---	---	---	---	---	---	---	---	---	401	---
MIN	---	---	---	---	---	---	---	---	---	---	2.3	---
AC-FT	---	---	---	---	---	---	---	---	---	---	13180	---

e Estimated

08020450 Sabine River above Longview, TX--Continued
(Low-flow partial-record station)



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 NGVD of 1929. 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 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	293	368	3140	e14900	1810	1710	11500	2430	1230	532	187	221
2	390	354	2910	e13900	1780	1610	11500	2090	1130	792	180	206
3	353	351	2810	13000	1780	1610	11000	1780	1050	1010	172	200
4	315	348	2850	12000	1940	1450	10400	1640	974	1060	168	198
5	295	344	2900	11000	2400	1210	9840	1510	897	1140	177	192
6	321	320	2720	10100	3840	1140	9250	1490	798	1180	174	e190
7	356	303	2230	9180	4570	1250	8740	1560	688	1120	156	e189
8	345	286	1860	7990	4810	1260	10100	1620	614	1020	136	e187
9	326	268	1700	6460	4850	1130	12200	1830	560	813	121	e186
10	305	268	1620	4330	4910	1020	12700	2140	638	625	124	e185
11	502	276	1570	2580	4960	951	12200	2510	639	495	119	e184
12	507	297	3280	1990	5010	1110	11600	2880	584	402	124	183
13	1130	336	3990	1730	5090	1180	11100	3350	538	349	172	184
14	1650	425	4210	1540	5190	1300	10800	3590	579	315	179	178
15	1740	598	4160	1420	5310	1300	10500	3760	573	301	158	170
16	1850	972	5860	1350	5420	1380	10300	3910	507	426	155	163
17	2010	1260	7930	1290	5520	1650	9910	4200	450	597	160	164
18	2210	1340	9480	1220	5580	4020	9470	4600	413	724	145	154
19	2480	1120	9680	1250	5630	5600	8900	4680	421	793	145	284
20	2760	789	9310	1300	5950	6540	8230	4690	421	781	149	1610
21	2960	563	8920	1250	5770	7510	7440	4600	431	738	141	819
22	3050	458	9050	1200	5170	7860	6470	4440	391	615	131	374
23	2860	401	11200	1160	4440	7960	5480	4310	348	482	121	314
24	2370	413	16800	1280	3880	7930	4540	4200	307	394	116	258
25	1750	473	22200	1660	3580	7990	3870	4080	309	330	106	220
26	1120	488	23800	1730	3260	8190	3510	3840	295	294	107	198
27	720	466	22700	1610	2730	8600	3370	3250	310	261	154	189
28	519	1330	20900	1630	2100	9230	3240	2450	305	240	193	181
29	439	2610	18900	1780	---	9920	3020	1910	339	222	190	176
30	400	3270	17100	1900	---	10500	2740	1640	437	208	225	197
31	382	---	15900	1870	---	11100	---	1410	---	194	239	---
TOTAL	36708	21095	271680	135600	117280	135211	253920	92390	17176	18453	4824	8154
MEAN	1184	703.2	8764	4374	4189	4362	8464	2980	572.5	595.3	155.6	271.8
MAX	3050	3270	23800	14900	5950	11100	12700	4690	1230	1180	239	1610
MIN	293	268	1570	1160	1780	951	2740	1410	295	194	106	154
AC-FT	72810	41840	538900	269000	232600	268200	503700	183300	34070	36600	9570	16170

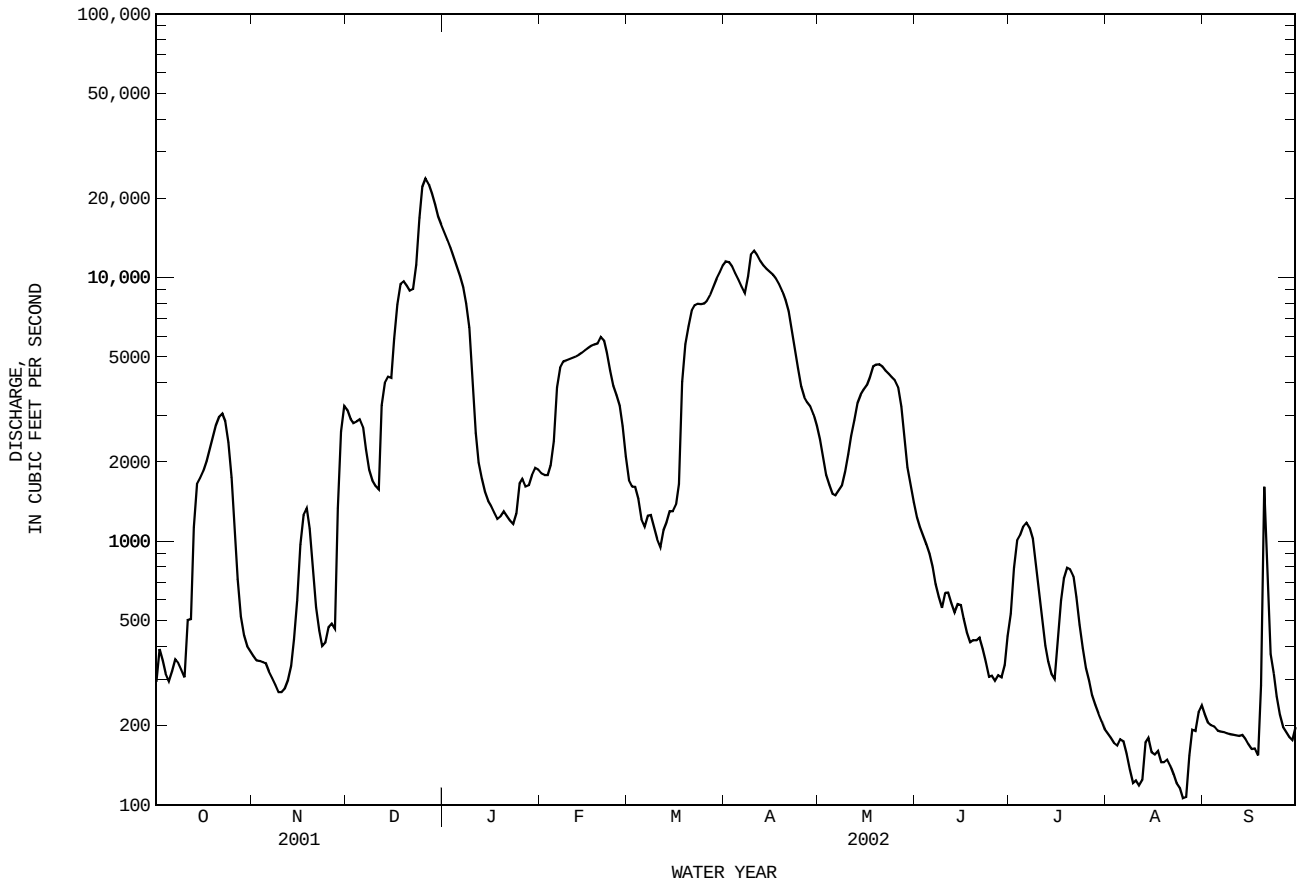
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2002, BY WATER YEAR (WY)

MEAN	763.0	1077	3350	4296	4446	6243	3615	2019	1586	884.4	210.2	439.1
MAX	2905	3519	8764	9753	9979	18530	8464	5846	3986	3423	491	1016
(WY)	1999	1999	2002	2001	2001	2001	2002	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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1996 - 2002	
ANNUAL TOTAL	1738983		1112491			
ANNUAL MEAN	4764		3048		2404	
HIGHEST ANNUAL MEAN					4274	2001
LOWEST ANNUAL MEAN					294	1996
HIGHEST DAILY MEAN	25700	Mar 7	23800	Dec 26	25700	Mar 7 2001
LOWEST DAILY MEAN	79	Aug 16	106	Aug 25	23	Aug 1 1998
ANNUAL SEVEN-DAY MINIMUM	86	Aug 10	124	Aug 20	26	Jul 28 1998
MAXIMUM PEAK FLOW			24100	Dec 26	25900	Mar 7 2001
MAXIMUM PEAK STAGE			34.15	Dec 26	34.48	Mar 7 2001
ANNUAL RUNOFF (AC-FT)	3449000		2207000		1741000	
10 PERCENT EXCEEDS	15900		9370		8040	
50 PERCENT EXCEEDS	1400		1300		635	
90 PERCENT EXCEEDS	215		185		115	

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 NGVD of 1929. 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 good except those for estimated daily discharges, which are fair. 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	661	544	5760	33700	4640	2450	11700	3240	1630	597	226	216
2	554	520	5110	32200	4630	2170	12300	2880	1470	771	199	195
3	495	498	4490	30700	4400	2140	12100	2510	1370	1180	187	160
4	428	500	4080	29200	4400	2040	12000	2190	1270	1430	171	150
5	372	495	3890	27700	4770	1800	11600	2010	1150	1450	162	151
6	354	480	3650	25700	6840	1670	11000	1880	1080	1490	167	160
7	391	434	3200	22300	8610	1620	10300	1900	952	1460	179	155
8	417	420	2700	16800	8950	1670	12100	1940	827	1350	159	146
9	404	389	2500	12700	8570	1630	16100	2040	762	1180	157	159
10	415	357	2310	10200	8320	1520	14700	2320	732	947	156	184
11	817	362	2170	7510	8160	1390	14500	2680	829	782	150	157
12	2440	366	4120	5750	8020	1790	14100	3040	814	648	131	153
13	3130	392	8130	5030	7950	2400	13500	3450	726	546	132	164
14	4740	460	9340	4580	7980	2240	13000	3870	676	470	175	162
15	4800	590	8780	4230	8090	2030	e12400	4060	703	429	212	143
16	3300	822	8500	4020	8200	1940	11900	4200	737	494	216	139
17	2880	1270	10900	3890	8180	1980	11400	4370	619	734	211	140
18	2920	1510	13300	3780	8210	3730	11000	4760	520	900	219	147
19	2950	1510	13600	3710	8330	7290	10400	e4940	458	969	173	133
20	3120	1260	13200	3950	9320	9090	9790	5000	528	996	170	596
21	3320	976	12400	3940	9760	10900	9020	4960	561	964	179	1590
22	3450	773	11400	3760	9140	11100	8120	4810	561	894	173	903
23	3470	637	10700	3660	8290	10400	7030	4680	494	755	146	494
24	3130	571	11100	3700	7450	9860	5930	4610	439	605	129	361
25	2560	600	16800	4610	6770	9520	5070	4440	384	515	125	281
26	1880	680	22000	5010	6440	9190	4490	4300	389	472	138	239
27	1300	701	26600	4710	5930	9020	4210	4040	421	350	117	204
28	950	995	e31800	4450	3780	9070	4010	3380	422	296	141	231
29	750	3930	e35800	4500	---	9380	3830	2630	376	262	222	193
30	628	5760	e36400	4690	---	9880	3570	2160	436	254	211	162
31	565	---	35500	4630	---	10800	---	1900	---	292	183	---
TOTAL	57591	28802	380230	335310	204130	161710	301170	105190	22336	24482	5316	8268
MEAN	1858	960.1	12270	10820	7290	5216	10040	3393	744.5	789.7	171.5	275.6
MAX	4800	5760	36400	33700	9760	11100	16100	5000	1630	1490	226	1590
MIN	354	357	2170	3660	3780	1390	3570	1880	376	254	117	133
AC-FT	114200	57130	754200	665100	404900	320800	597400	208600	44300	48560	10540	16400

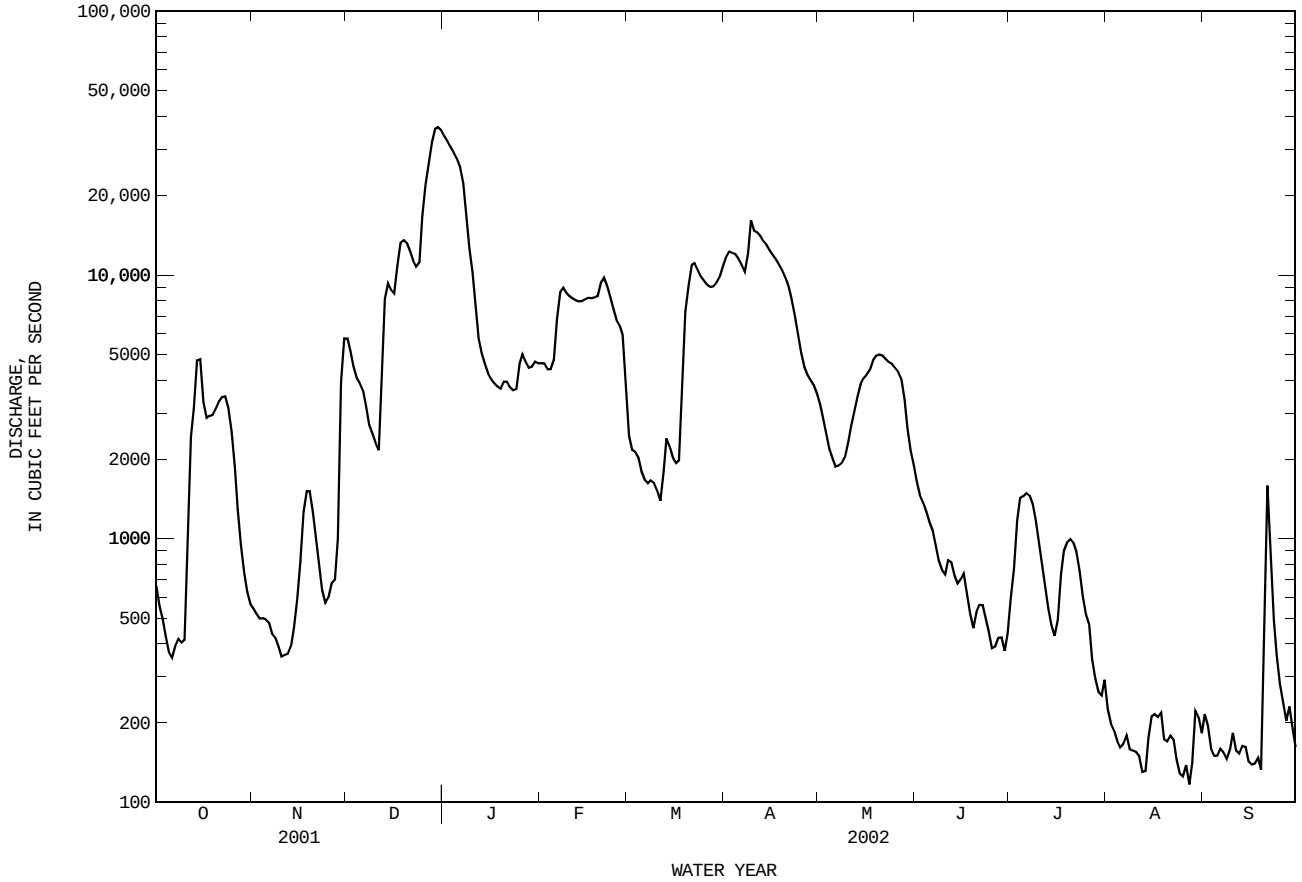
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002z, BY WATER YEAR (WY)

MEAN	685.2	1652	3465	3642	4247	4911	4124	4580	2760	1009	313.0	452.4
MAX	4325	8221	12270	10960	11930	21620	11330	21010	11580	4552	1725	3434
(WY)	1974	1975	2002	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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002z	
ANNUAL TOTAL	2144498		1634535			
ANNUAL MEAN	5875		4478		2646	
HIGHEST ANNUAL MEAN					5103	2001
LOWEST ANNUAL MEAN					311	1964
HIGHEST DAILY MEAN	36400	Dec 30	36400	Dec 30	48100	May 2 1966
LOWEST DAILY MEAN	115	Aug 14	117	Aug 27	2.4	Aug 11 1964
ANNUAL SEVEN-DAY MINIMUM	124	Aug 10	138	Aug 22	3.8	Aug 7 1964
MAXIMUM PEAK FLOW			36700	Dec 30	49400	May 2 1966
MAXIMUM PEAK STAGE			32.03	Dec 30	g38.87	Mar 30 1989
ANNUAL RUNOFF (AC-FT)	4254000		3242000		1917000	
10 PERCENT EXCEEDS	18700		11200		7830	
50 PERCENT EXCEEDS	2340		2030		910	
90 PERCENT EXCEEDS	356		177		96	

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 NGVD of 1929. Prior to May 15, 1976, non-recording gage near left end of dam 1.9 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily contents, which are poor. 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, 78,820 acre-ft, Apr. 9, elevation, 306.77 ft; minimum contents, 61,600 acre-ft, Sept. 30, elevation, 302.99 ft.

RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

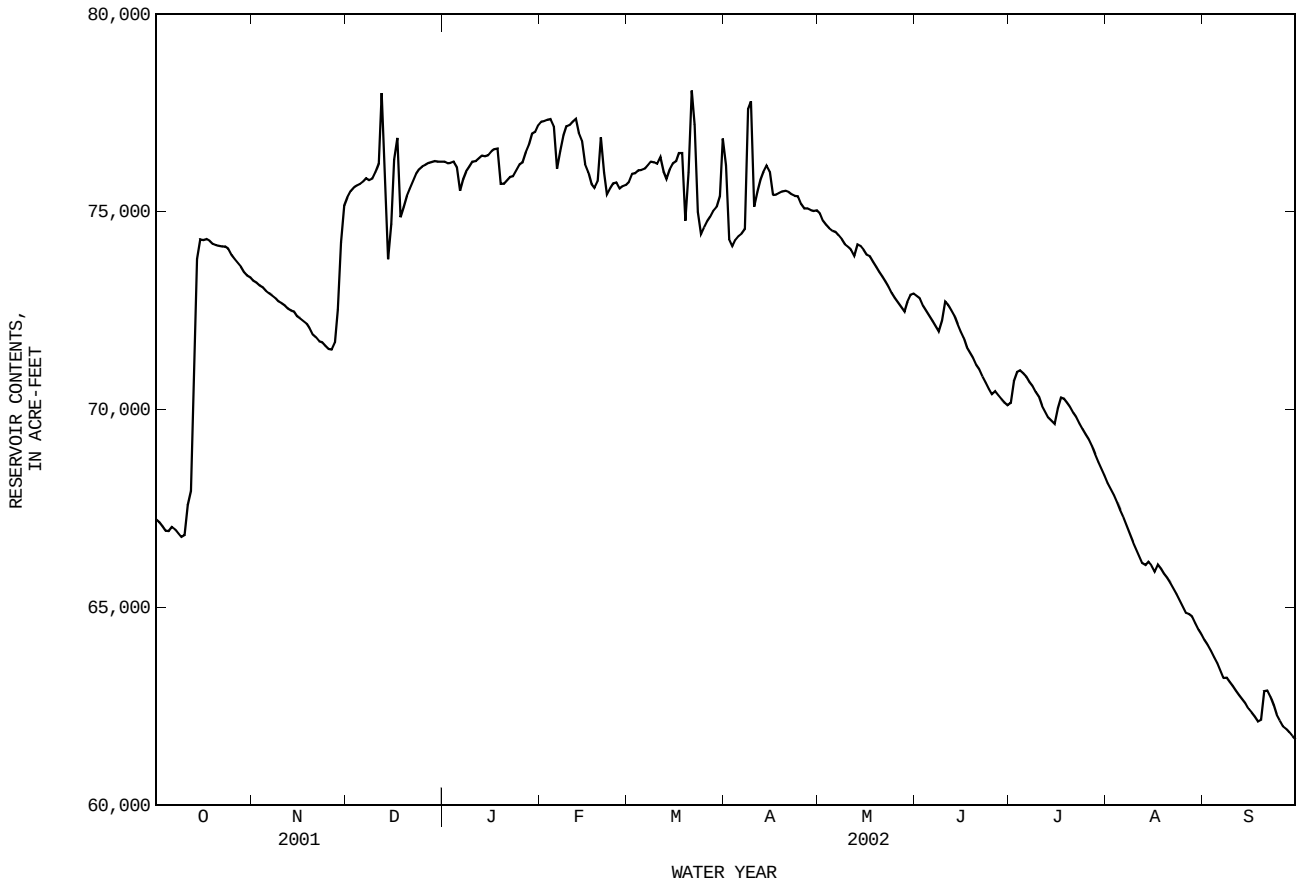
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67220	73250	75370	76270	77280	75760	76180	74950	72870	70170	68140	64160
2	67140	73200	75520	76220	77290	75960	74310	74780	72810	70730	67980	64040
3	67040	73140	75600	76230	77330	75980	74130	74670	72630	70940	67830	63900
4	66930	73090	75660	76270	77340	76050	74280	74580	72490	70990	67640	63740
5	66920	73010	75700	76130	77170	76050	74380	74520	72370	70920	67460	63580
6	67030	72940	75770	75530	76090	76090	74450	74500	72240	70830	67280	63410
7	66970	72880	75840	75830	76540	76170	74560	74410	72110	70690	67080	63210
8	66860	72820	75800	76020	76930	76270	77600	74310	71970	70580	66870	63220
9	66770	72730	75840	76140	77150	76250	77790	74180	72240	70450	66650	63110
10	66820	72690	76010	76260	77190	76210	75120	74120	72730	70320	66480	63010
11	67580	72630	76220	76280	77280	76380	75500	74040	72650	70090	66290	62890
12	67940	72550	78000	76350	e77350	76020	75810	73890	72520	69930	66110	62780
13	71030	72510	75700	76420	e77000	75830	76010	74170	72370	69800	66060	62670
14	73810	72480	73800	76410	e76800	76070	76170	74130	72160	69720	66150	62560
15	74300	72360	74690	76430	e76200	76220	76010	74040	71970	69640	66050	62440
16	74290	72300	76320	76530	e76000	76280	75420	73910	71810	70020	65900	62340
17	74310	72230	76860	76580	e75700	76480	75440	73870	71570	70300	66070	62230
18	74260	72170	74860	76600	e75600	76490	75470	73730	71440	70270	65970	62110
19	74190	72060	75110	75700	e75770	74770	75520	73610	71300	70170	65850	62150
20	74150	71900	75400	75710	76880	75990	75530	73480	71120	70060	65740	62880
21	74140	71830	75580	75800	75990	78060	75500	73360	71010	69920	65610	62890
22	74120	71730	75760	75880	75430	77190	75440	73230	70840	69810	65470	62740
23	74120	71700	75960	e75900	75590	75000	75400	73090	70680	69650	65340	62520
24	74060	71610	76080	e76050	75710	74430	75390	72940	70520	69500	65180	62290
25	73910	71530	76150	e76190	75740	74610	75200	72820	70390	69360	65020	62140
26	73800	71520	76180	e76240	75590	74750	75090	72700	70460	69230	64850	61980
27	73710	71690	76230	e76490	75640	74870	75090	72590	70360	69080	64820	61930
28	73610	72530	76260	e76690	75680	75030	75050	72480	70260	68870	64760	61840
29	73470	74230	76280	e76970	---	75120	75020	72720	70170	68680	64600	61750
30	73390	75160	76270	77020	---	75390	75030	72900	70110	68500	64430	61650
31	73330	---	76270	77180	---	76850	---	72930	---	68330	64300	---
MEAN	71200	72550	75840	76270	76440	75890	75400	73730	71610	69920	66060	62740
MAX	74310	75160	78000	77180	77350	78060	77790	74950	72870	70990	68140	64160
MIN	66770	71520	73800	75530	75430	74430	74130	72480	70110	68330	64300	61650
(+)	305.62	306.01	306.24	306.43	306.12	306.36	305.98	305.53	304.92	304.52	303.62	303.00
(@)	+6000	+1830	+1110	+910	-1500	+1170	-1820	-2100	-2820	-1780	-4030	-2650

CAL YR 2001 MAX 78000 MIN 66600 (@) +780
WTR YR 2002 MAX 78060 MIN 61650 (@) -5680

e Estimated

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

08022060 Martin Lake near Tatum, TX--Continued



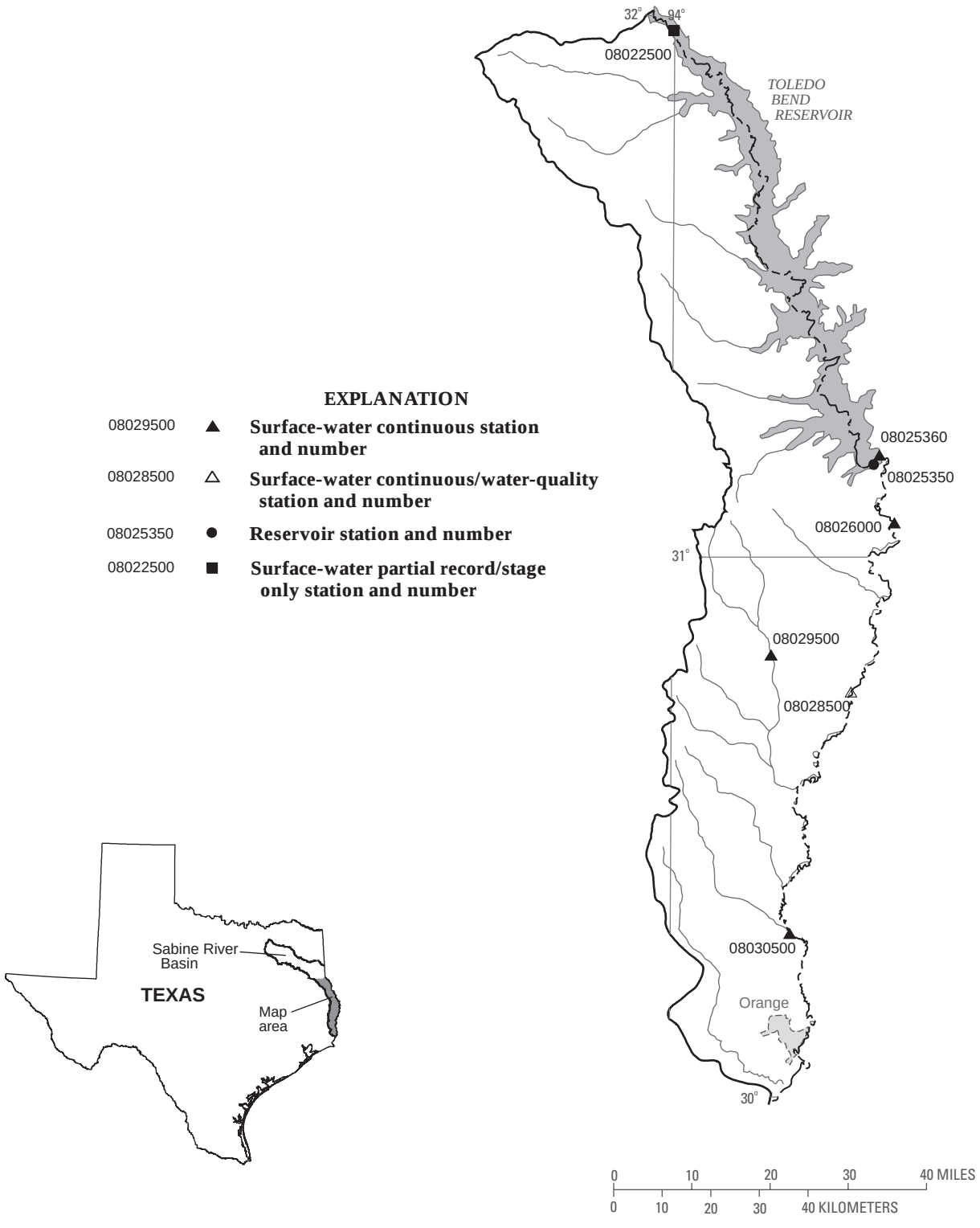


Figure 9.--Map showing location of gaging stations in the second section of the Sabine River Basin

08022500 Sabine River at Logansport, LA

LOCATION.--Lat 31°58'20", long 94°00'22", De Soto Parish, Louisiana-Shelby County, Texas State line at Logansport, Hydrologic Unit 12010004, on left bank just upstream from bridge on U.S. Highway 84, 3.0 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: 1903-06 (monthly and annual means). WSP 1732: 1929(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 147.72 ft above NGVD of 1929. July 1, 1903, to Sept. 30, 1956, nonrecording gages located in the vicinity of present 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 1961, 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 (1,632,000 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.

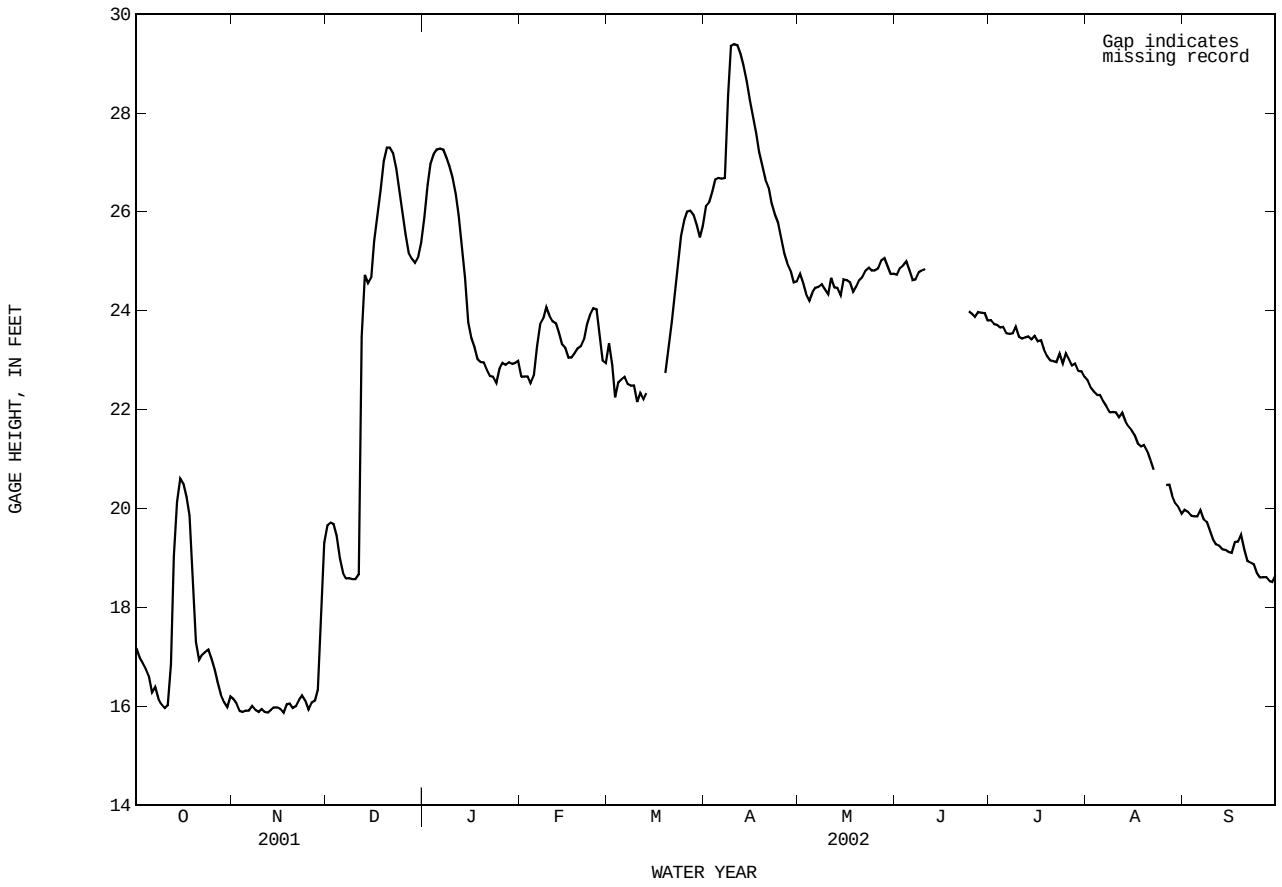
EXTREMES FOR CURRENT YEAR.--Maximum gage height, 29.39 ft, Apr. 10; minimum gage height, 15.45 ft, Oct. 11.

GAGE HEIGHT from DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.17	16.15	19.66	25.89	22.66	23.34	26.11	24.74	24.73	23.81	22.59	19.97
2	16.98	16.06	19.71	26.54	22.67	22.90	26.19	24.57	24.86	23.73	22.44	19.93
3	16.87	15.90	19.68	26.97	22.67	22.25	26.41	24.34	24.91	23.71	22.36	19.85
4	16.76	15.88	19.44	27.16	22.53	22.55	26.65	24.20	24.99	23.66	22.29	19.84
5	16.61	15.91	18.99	27.26	22.69	22.61	26.68	24.37	24.81	23.67	22.29	19.84
6	16.27	15.91	18.69	27.28	23.28	22.66	26.67	24.46	24.62	23.54	22.16	19.96
7	16.38	16.00	18.58	27.26	23.73	22.51	26.68	24.48	24.63	23.53	22.06	19.78
8	16.15	15.92	18.59	27.11	23.85	22.48	28.35	24.53	24.77	23.54	21.94	19.73
9	16.04	15.88	18.57	26.92	24.07	22.49	29.35	24.43	24.81	23.67	21.95	19.54
10	15.96	15.94	18.57	26.69	23.90	22.15	29.39	24.33	24.84	23.47	21.94	19.38
11	16.02	15.88	18.66	26.36	23.78	22.34	29.37	24.66	---	23.43	21.84	19.27
12	16.85	15.87	23.47	25.93	23.74	22.21	29.19	24.47	---	23.46	21.93	19.24
13	19.02	15.93	24.72	25.33	23.56	22.33	28.96	24.46	---	23.48	21.76	19.17
14	20.13	15.97	24.55	24.66	23.32	---	28.65	24.31	---	23.42	21.66	19.16
15	20.60	15.97	24.67	23.76	23.25	---	28.26	24.63	---	23.49	21.58	19.12
16	20.50	15.94	25.41	23.44	23.05	---	27.92	24.62	---	23.38	21.48	19.10
17	20.22	15.86	25.94	23.27	23.05	---	27.58	24.57	---	23.40	21.31	19.32
18	19.86	16.04	26.43	23.02	23.13	---	27.21	24.38	---	23.22	21.25	19.33
19	18.52	16.05	27.02	22.96	23.23	22.74	26.93	24.49	---	23.08	21.28	19.46
20	17.30	15.96	27.30	22.95	23.28	23.24	26.65	24.62	---	22.99	21.16	19.17
21	16.93	16.00	27.30	22.80	23.42	23.76	26.49	24.68	---	22.98	20.97	18.93
22	17.04	16.13	27.19	22.68	23.72	24.36	26.17	24.81	---	22.96	20.78	18.90
23	17.09	16.21	26.88	22.66	23.92	24.92	25.95	24.87	---	23.13	---	18.87
24	17.14	16.11	26.44	22.54	24.05	25.51	25.78	24.81	23.98	22.93	---	18.70
25	16.95	15.93	26.01	22.83	24.03	25.83	25.48	24.81	23.94	23.14	---	18.60
26	16.73	16.07	25.55	22.94	23.49	26.00	25.15	24.85	23.87	23.01	20.47	18.61
27	16.48	16.11	25.17	22.90	22.99	26.02	24.96	25.01	23.97	22.89	20.48	18.61
28	16.23	16.33	25.05	22.95	22.94	25.94	24.82	25.06	23.96	22.93	20.25	18.53
29	16.08	17.76	24.97	22.92	---	25.73	24.57	24.91	23.95	22.78	20.10	18.51
30	15.98	19.30	25.07	22.94	---	25.48	24.59	24.74	23.80	22.77	20.02	18.65
31	16.19	---	25.38	22.98	---	25.71	---	24.75	---	22.66	19.89	---
MAX	20.60	19.30	27.30	27.28	24.07	---	29.39	25.06	---	23.81	---	19.97
MIN	15.96	15.86	18.57	22.54	22.53	---	24.57	24.20	---	22.66	---	18.51

CAL YR 2001 MAX 33.89 MIN 15.86
WTR YR 2002 MAX 29.39 MIN 15.86

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 NGVD of 1929 (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. 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, 3,008,000 acre-ft, Oct. 12,13, 2001, elevation, 162.81 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,629,000 acre-ft, Apr. 13, elevation, 172.83 ft; minimum contents, 3,008,000 acre-ft, Oct. 12, 13, elevation, 162.81 ft.

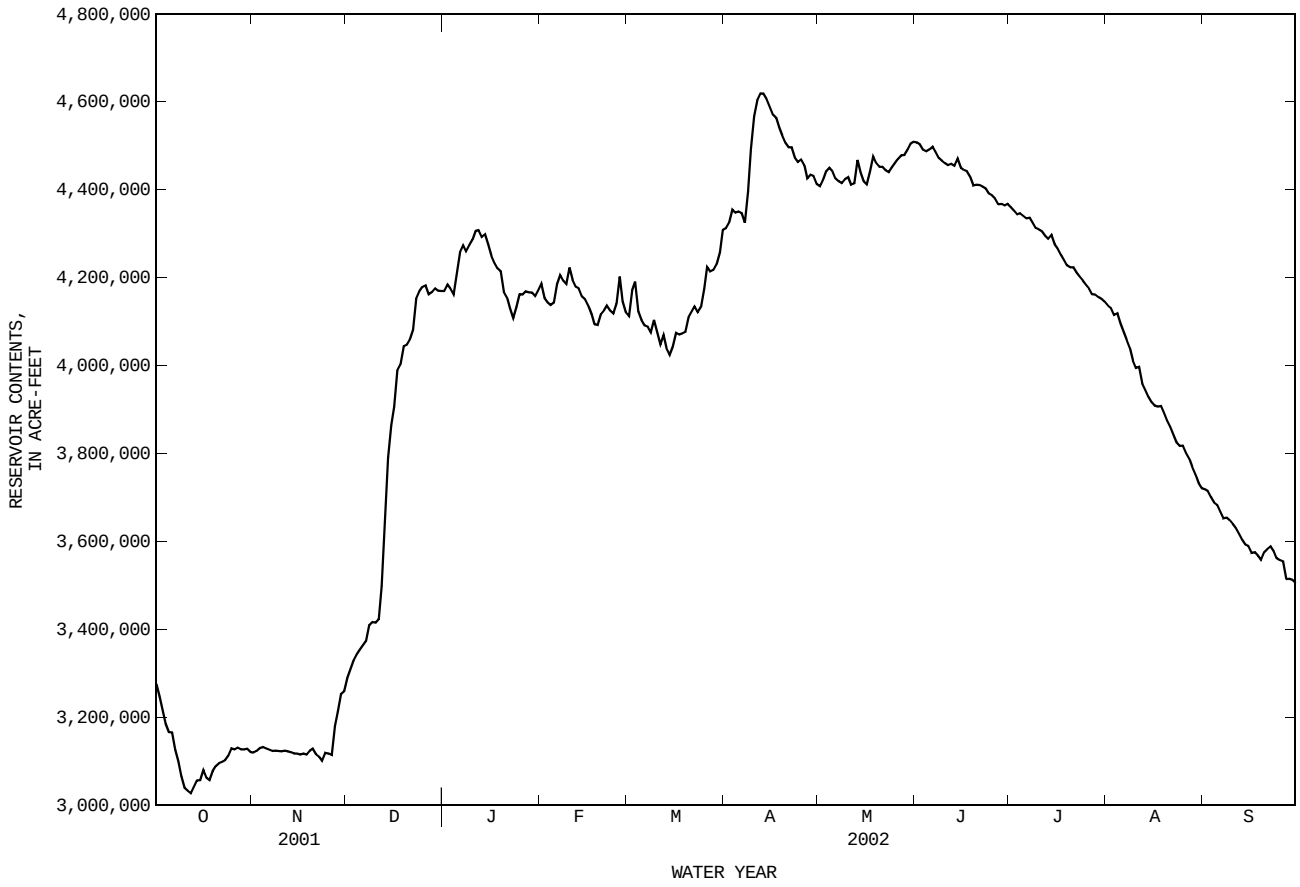
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3275000	3119000	3289000	4169000	4186000	4112000	4313000	4408000	4508000	4361000	4137000	3718000
2	3246000	3123000	3310000	4184000	4153000	4172000	4326000	4421000	4503000	4353000	4131000	3715000
3	3215000	3129000	3328000	4175000	4144000	4191000	4354000	4442000	4491000	4344000	4115000	3701000
4	3185000	3132000	3342000	4163000	4138000	4123000	4348000	4450000	4488000	4347000	4118000	3688000
5	3166000	3129000	3353000	4213000	4143000	4103000	4350000	4442000	4492000	4341000	4098000	3682000
6	3165000	3126000	3363000	4258000	4185000	4091000	4347000	4426000	4498000	4335000	4079000	3668000
7	3125000	3123000	3372000	4274000	4206000	4088000	4325000	4420000	4487000	4336000	4059000	3652000
8	3098000	3123000	3409000	4260000	4193000	4076000	4396000	4415000	4473000	4325000	4040000	3654000
9	3065000	3123000	3416000	4274000	4186000	4103000	4494000	4424000	4466000	4313000	4011000	3647000
10	3039000	3122000	3415000	4286000	4223000	4075000	4568000	4428000	4461000	4310000	3995000	3639000
11	3032000	3123000	3423000	4307000	4194000	4048000	4604000	4412000	4456000	4305000	3997000	3630000
12	3027000	3122000	3498000	4308000	4179000	4069000	4619000	4414000	4459000	4295000	3959000	3616000
13	3040000	3120000	3658000	4292000	4175000	4040000	4619000	4467000	4454000	4288000	3944000	3603000
14	3056000	3117000	3790000	4299000	4157000	4024000	4607000	4439000	4470000	4297000	3929000	3592000
15	3056000	3117000	3865000	4275000	4151000	4043000	4589000	4420000	4450000	4276000	3917000	3589000
16	3080000	3115000	3906000	4250000	4136000	4074000	4571000	4412000	4445000	4266000	3909000	3574000
17	3062000	3117000	3989000	4234000	4118000	4070000	4564000	4441000	4442000	4252000	3906000	3575000
18	3056000	3115000	4003000	4221000	4094000	4073000	4542000	4476000	4430000	4241000	3908000	3567000
19	3077000	3123000	4043000	4215000	4092000	4076000	4523000	4461000	4410000	4228000	3893000	3558000
20	3088000	3128000	4048000	4168000	4116000	4110000	4507000	4452000	4412000	4224000	3875000	3575000
21	3095000	3116000	4059000	4154000	4126000	4123000	4497000	4452000	4411000	4224000	3860000	3583000
22	3098000	3110000	4080000	4130000	4136000	4135000	4497000	4444000	4407000	4212000	3842000	3589000
23	3102000	3101000	4152000	4108000	4125000	4121000	4473000	4440000	4403000	4203000	3825000	3577000
24	3112000	3119000	4169000	4133000	4119000	4133000	4463000	4450000	4391000	4194000	3817000	3562000
25	3128000	3117000	4179000	4163000	4141000	4175000	4469000	4460000	4388000	4184000	3818000	3557000
26	3126000	3114000	4182000	4162000	4203000	4224000	4456000	4470000	4380000	4175000	3801000	3554000
27	3130000	3180000	4162000	4169000	4145000	4214000	4426000	4479000	4367000	4162000	3788000	3514000
28	3126000	3213000	4167000	4167000	4121000	4217000	4434000	4479000	4368000	4162000	3770000	3514000
29	3126000	3252000	4176000	4166000	---	4231000	4431000	4490000	4364000	4156000	3753000	3512000
30	3128000	3259000	4171000	4158000	---	4257000	4413000	4505000	4368000	4151000	3732000	3505000
31	3121000	---	4170000	4170000	---	4308000	---	4509000	---	4146000	3721000	---
MEAN	3111000	3134000	3790000	4210000	4153000	4126000	4471000	4447000	4438000	4258000	3927000	3604000
MAX	3275000	3259000	4182000	4308000	4223000	4308000	4619000	4509000	4508000	4361000	4137000	3718000
MIN	3027000	3101000	3289000	4108000	4092000	4024000	4313000	4408000	4364000	4146000	3721000	3505000
(+)	163.62	164.57	170.27	170.27	169.99	171.06	171.65	172.18	171.40	171.13	167.58	166.21
(@)	-182000	+138000	+911000	0	-49000	+187000	+105000	+96000	-141000	-222000	-425000	-216000

CAL YR 2001 MAX 4757000 MIN 3027000 (@) +84000
WTR YR 2002 MAX 4619000 MIN 3027000 (@) +202000

(+) 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 NGVD of 1929 (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 relations 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 Oct. 1971, at least 10% of contributing drainage area has been regulated.

DISCHARGE TURB 1+2, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

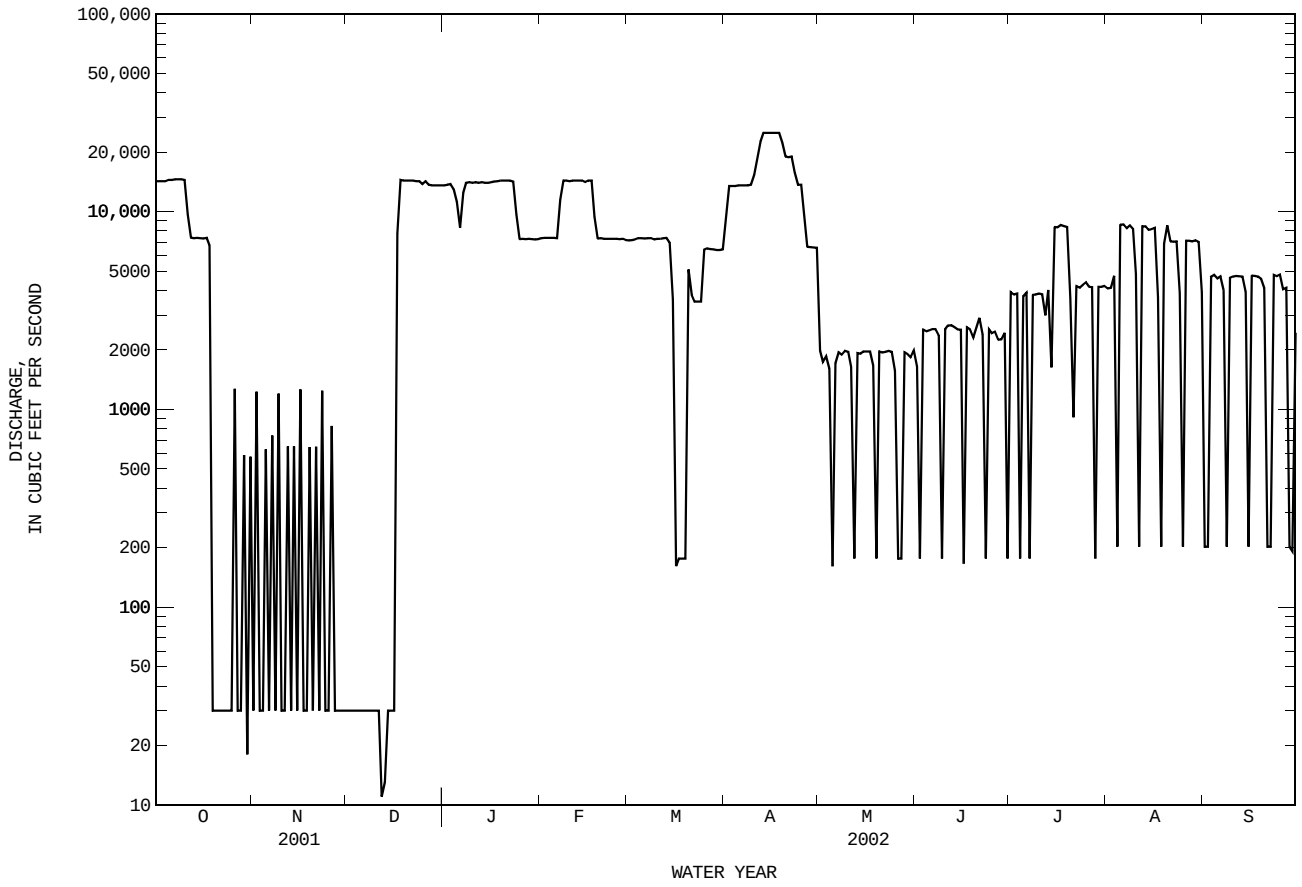
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14300	30	30	13600	7340	7170	9510	1980	1650	3930	4100	202
2	14300	1230	30	13700	7370	7190	13500	1740	176	3820	4130	202
3	14300	30	30	13800	7370	7240	13500	1850	2540	3850	4730	4680
4	14300	30	30	13000	7380	7360	13500	1610	2480	176	202	4800
5	14500	628	30	11200	7390	7340	13600	161	2510	3740	8600	4600
6	14500	30	30	8310	7350	7330	13600	1710	2550	3910	8640	4690
7	14600	738	30	12500	11500	7340	13600	1940	2560	176	8260	4000
8	14600	30	30	14000	14400	7340	13600	1900	2380	3800	8540	202
9	14600	1200	30	14100	14400	7240	13700	1980	176	3820	8180	4630
10	14500	30	30	14000	14300	7300	15300	1960	2540	3860	4820	4690
11	9700	30	30	14100	14400	7310	18700	1640	2660	3820	202	4740
12	7400	650	11	14000	14400	7340	22700	176	2670	3000	8440	4720
13	7360	30	13	14100	14400	7370	25100	1930	2610	4010	8440	4710
14	7380	650	30	14000	14400	6980	25100	1920	2540	1630	8110	3930
15	7350	30	30	14000	14100	3590	25100	1970	2540	8380	8160	202
16	7330	1260	30	14100	14400	161	25100	1970	166	8350	8270	4750
17	7380	30	7740	14200	14400	176	25100	1970	2600	8580	3690	4740
18	6750	30	14500	14300	9430	176	25100	1670	2540	8460	202	4690
19	30	645	14400	14400	7330	176	22300	176	2320	8390	6900	4590
20	30	30	14400	14400	7340	5100	19000	1970	2610	3650	8520	4100
21	30	647	14400	14400	7310	3800	18900	1940	2910	912	7070	202
22	30	30	14400	14400	7290	3520	19000	1960	2390	4200	7060	202
23	30	1240	14300	14200	7310	3510	15700	1980	176	4120	7080	4790
24	30	30	14300	9690	7310	3510	13700	1960	2540	4260	3870	4720
25	30	30	13800	7270	7290	6430	13700	1570	2430	4390	202	4810
26	1270	825	14300	7310	7270	6520	9430	176	2480	4170	7130	4040
27	30	30	13700	7270	7290	6480	6640	176	2260	4160	7140	4120
28	30	30	13600	7290	7190	6450	6620	1940	2270	176	7080	202
29	587	30	13600	7270	---	6400	6590	1900	2440	4170	7150	192
30	18	30	13600	7240	---	6410	6580	1840	176	4170	7040	2440
31	576	---	13600	7270	---	6460	---	1990	---	4210	3920	---
TOTAL	207871	10283	205084	373420	281660	170719	483570	49655	62890	128290	185878	99586
MEAN	6706	342.8	6616	12050	10060	5507	16120	1602	2096	4138	5996	3320
MAX	14600	1260	14500	14400	14400	7370	25100	1990	2910	8580	8640	4810
MIN	18	30	11	7240	7190	161	6580	161	166	176	202	192
AC-FT	412300	20400	406800	740700	558700	338600	959200	98490	124700	254500	368700	197500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2002, BY WATER YEAR (WY)

MEAN	1346	2157	5493	9448	10230	11300	8478	7337	5560	4605	3759	3263
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1972 - 2002	
ANNUAL TOTAL	3808779		2258906			
ANNUAL MEAN	10440		6189		6064	
HIGHEST ANNUAL MEAN					10370	1995
LOWEST ANNUAL MEAN					517	1996
HIGHEST DAILY MEAN	85600	Mar 4	25100	Apr 13	117000	Jan 31 1999
LOWEST DAILY MEAN	11	Dec 12	11	Dec 12	11	Dec 12 2001
ANNUAL SEVEN-DAY MINIMUM	25	Dec 7	25	Dec 7	25	Dec 7 2001
ANNUAL RUNOFF (AC-FT)	7555000		4481000		4393000	
10 PERCENT EXCEEDS	19300		14400		14900	
50 PERCENT EXCEEDS	5350		4690		3880	
90 PERCENT EXCEEDS	30		30		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 NGVD of 1929. 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 good except those for estimated daily discharges, which are 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) 5,180 ft^3/s (3,749,000 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12900	524	5100	14100	7220	7680	8610	3280	1390	1500	2950	1650
2	12900	500	1800	14000	7260	9250	13400	1870	862	3080	2900	206
3	12800	911	675	14000	7240	8580	13900	1770	1120	3060	3360	2100
4	12800	178	478	13400	7200	7810	13700	1600	1990	1650	1670	3960
5	12800	250	384	11300	7290	7570	13600	1000	1970	1410	3510	4010
6	12800	514	325	10700	8870	7500	13400	899	2000	2990	7010	4020
7	12800	286	291	10500	10900	7480	13300	1750	2020	1660	7030	3830
8	12800	590	299	13300	14600	7450	16000	1710	1970	1450	7050	1680
9	12700	463	334	13700	14100	7440	18300	1700	1040	2960	6900	2170
10	12800	885	360	13700	13900	7380	16500	1700	1110	3010	5750	4030
11	11300	150	311	13600	13800	7400	19300	1490	2010	3010	1900	4110
12	8170	229	761	13600	13700	7420	21100	933	2060	2440	3480	4150
13	10400	506	5250	13500	13700	7420	25400	844	2020	2940	6890	4180
14	11000	236	9620	13500	13700	7450	26100	1590	1940	2500	6970	3920
15	9380	501	5490	13500	13700	e5500	26200	1610	1920	3790	7040	1730
16	8210	436	3140	13500	13700	e1630	26200	1650	990	7120	7140	2290
17	7810	869	5260	13500	13700	e1060	26200	1620	1060	7170	5120	4330
18	7680	131	15000	13700	11600	e930	26100	1470	1920	7120	1420	4320
19	2450	206	15200	13700	7730	e818	25300	930	1730	7120	2690	4390
20	476	480	14600	13800	8750	e3510	20600	842	1900	5050	6880	4730
21	359	214	14400	13800	8310	e4550	19600	1600	2000	1550	6210	2090
22	311	482	14400	13700	7740	3600	19400	1610	2100	1650	6000	386
23	285	434	15900	13700	7500	3640	17900	1590	859	2980	5990	2420
24	264	896	16300	11900	7420	3640	14100	1580	1040	2990	5090	4440
25	245	123	15800	8040	7370	3680	13600	1390	1910	3040	1480	4520
26	566	251	14700	7900	7290	8340	11900	863	1930	3150	2720	4340
27	976	1840	14300	7520	7260	7890	7220	244	1910	3040	6030	3950
28	224	4210	14200	7380	7270	7450	6830	783	1890	1610	6150	2010
29	308	8130	14200	7330	---	7350	6790	1520	1880	1470	6180	366
30	570	7530	14100	7310	---	7310	6790	1530	932	2940	6260	1260
31	245	---	14100	7290	---	7620	---	1580	---	2980	5340	---
TOTAL	209329	32955	247078	370470	282820	186348	507340	44548	49473	98430	155110	91588
MEAN	6753	1098	7970	11950	10100	6011	16910	1437	1649	3175	5004	3053
MAX	12900	8130	16300	14100	14600	9250	26200	3280	2100	7170	7140	4730
MIN	224	123	291	7290	7200	818	6790	244	859	1410	1420	206
AC-FT	415200	65370	490100	734800	561000	369600	1006000	88360	98130	195200	307700	181700

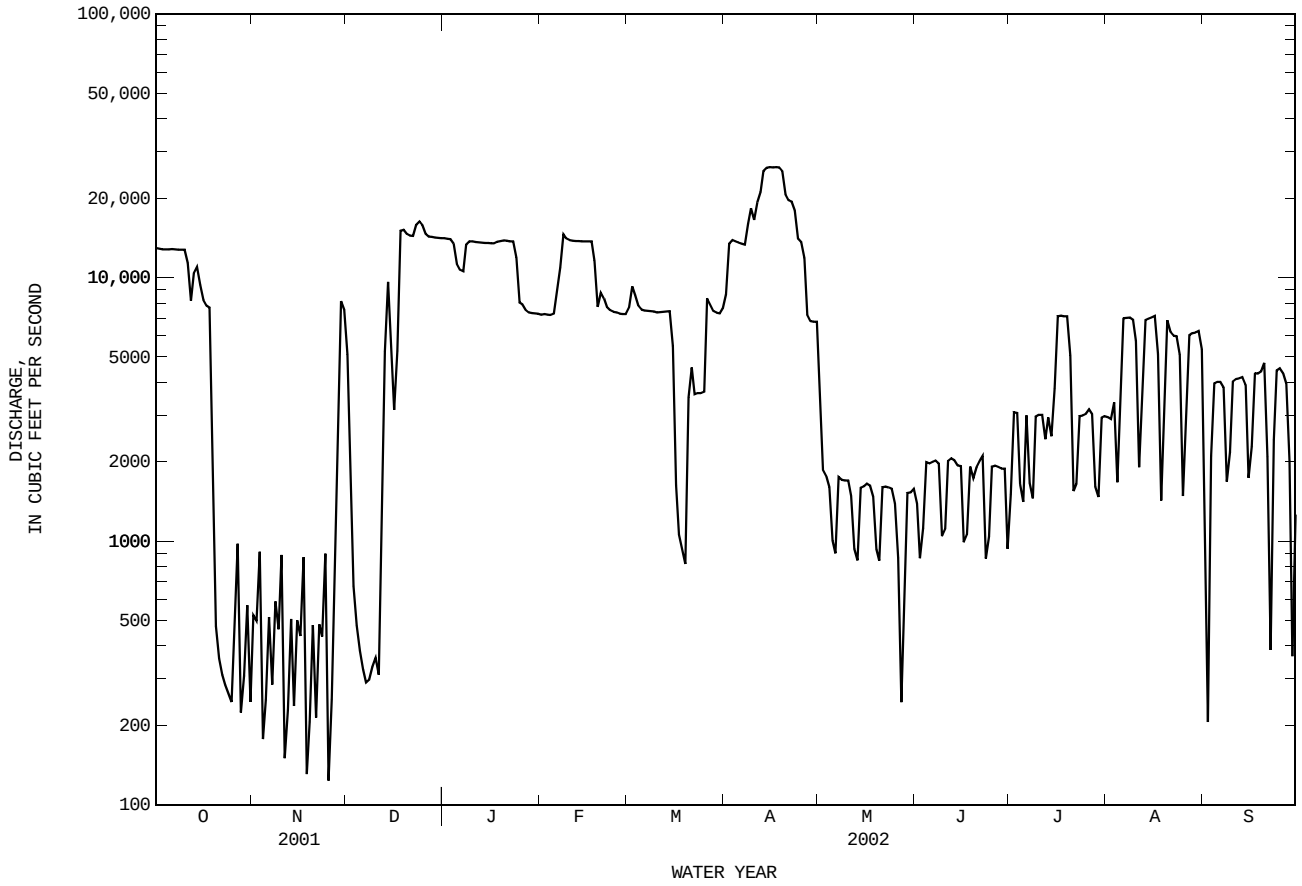
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002z, BY WATER YEAR (WY)

MEAN	1259	1977	5619	8532	9396	10470	8404	7781	5296	3992	3014	2876
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002z	
ANNUAL TOTAL	3980128		2275489			
ANNUAL MEAN	10900		6234		5702	
HIGHEST ANNUAL MEAN					11190	1995
LOWEST ANNUAL MEAN					548	1967
HIGHEST DAILY MEAN	84400	Mar 6	26200	Apr 15-17	117000	Feb 1 1999
LOWEST DAILY MEAN	123	Nov 25	123	Nov 25	38	Sep 14 1967
ANNUAL SEVEN-DAY MINIMUM	329	Dec 5	329	Dec 5	41	Sep 9 1967
MAXIMUM PEAK FLOW			26400	Apr 15-17	124000	Feb 1 1999
MAXIMUM PEAK STAGE			31.37	Apr 16-17	48.05	Feb 1 1999
ANNUAL RUNOFF (AC-FT)	7895000		4513000		4131000	
10 PERCENT EXCEEDS	20500		13900		15300	
50 PERCENT EXCEEDS	5350		4210		2740	
90 PERCENT EXCEEDS	483		481		271	

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 NGVD of 1929. 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 good. Since water year 1961, at least 10% of contributing drainage area has been regulated.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--37 years (water years 1924-60) 7,155 ft^3/s (5,184,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1924-60).--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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13100	771	e17500	16400	9120	8980	9680	7930	2450	1800	4450	5940
2	13100	987	e13000	16200	9060	11700	12100	4210	2230	2710	4400	2400
3	13200	920	10100	16200	9010	13200	15400	3030	1570	4390	4350	990
4	13100	1310	7210	16100	8930	12100	15500	2870	1900	4480	4710	3040
5	13100	730	4020	15300	8920	10700	15200	2630	2860	2410	2450	4920
6	13200	638	2710	14200	10200	9870	15000	1890	2850	2630	5540	4970
7	13200	918	2230	12800	12700	9520	14900	1970	2960	4080	8670	4970
8	13200	686	1970	14200	15600	9320	16600	2700	2970	2480	8800	4670
9	13100	969	1940	15800	17200	9170	24300	2680	2970	4100	8910	2280
10	13100	804	1940	16100	16600	9010	24200	2670	1890	4320	8690	3160
11	13100	1220	1760	16000	16300	8900	23100	2650	2070	4320	6840	4850
12	11300	652	1920	15900	16000	8860	24600	2410	3100	4200	2770	4940
13	14000	559	6850	15800	15800	8820	25900	1720	3110	e3900	5600	4940
14	22300	860	31000	15700	15600	8810	27900	1780	3020	e4100	8620	4950
15	18200	612	26200	15600	15500	7970	28500	2490	2900	e4400	9010	4500
16	16100	840	22900	15500	15400	5740	28600	2530	2890	6150	9310	2170
17	14700	720	19000	15500	15300	3030	28500	2570	1750	8940	9420	3130
18	11300	1160	21200	15500	15200	2230	28400	2590	1870	9090	6330	5060
19	8630	601	23300	15700	11800	1900	28300	2400	2830	9030	2550	5330
20	3500	489	21700	16000	11300	1720	26800	1710	2680	8940	4800	6950
21	1760	782	19400	16000	12900	4670	23300	1730	2860	5950	8530	7570
22	1420	554	18300	15900	12200	5800	21900	2440	3090	2550	7970	3810
23	1240	795	20100	15800	11300	4900	21500	2460	3030	3100	7790	1610
24	1120	706	23000	15800	10400	4840	19000	2450	1660	4360	7740	3500
25	1010	1190	22400	12900	9750	4780	16500	2430	1890	4560	5900	5160
26	926	631	20400	10700	9380	6960	15800	2210	2930	4620	2390	5200
27	1140	2610	18300	10100	9080	11800	12500	1560	3050	4650	4660	4820
28	1480	e7080	17500	9640	8930	11100	9350	958	3120	4620	7480	4480
29	880	e11600	17300	9410	---	10200	8800	1530	3060	2470	7630	2310
30	801	e18200	17000	9280	---	9500	8650	2350	2980	2880	7690	985
31	1070	---	16700	9200	---	9340	---	2400	---	4370	7670	---
TOTAL	277377	60594	448850	445230	349480	245440	590780	77948	78540	140600	201670	123605
MEAN	8948	2020	14480	14360	12480	7917	19690	2514	2618	4535	6505	4120
MAX	22300	18200	31000	16400	17200	13200	28600	7930	3120	9090	9420	7570
MIN	801	489	1760	9200	8920	1720	8650	958	1570	1800	2390	985
AC-FT	550200	120200	890300	883100	693200	486800	1172000	154600	155800	278900	400000	245200

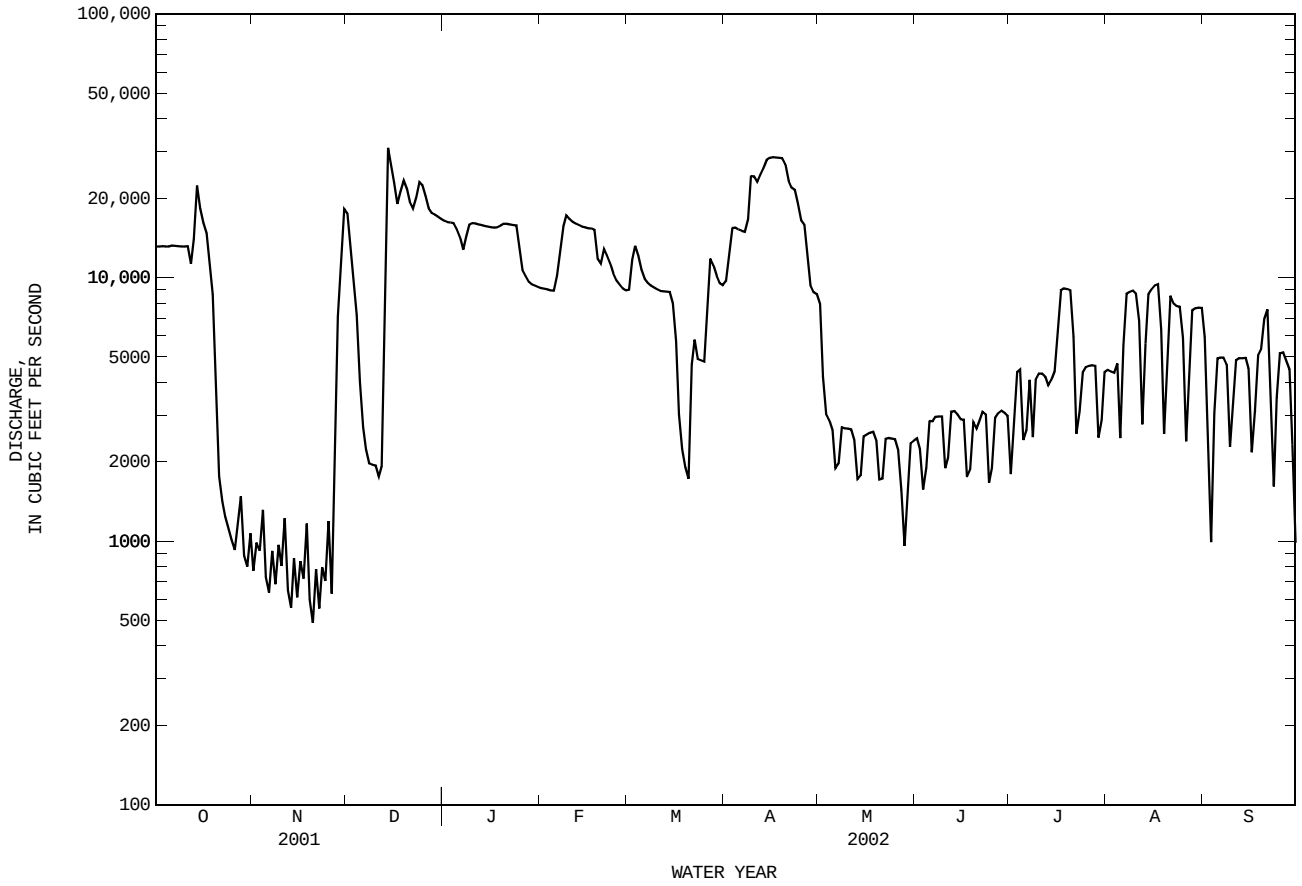
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002z, BY WATER YEAR (WY)

MEAN	1804	2755	7046	10190	11320	12110	10020	8860	6250	4845	3561	3463
MAX	8948	13250	21420	30930	31390	46850	27370	31210	26340	31490	7288	12310
(WY)	2002	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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002z	
ANNUAL TOTAL	4689795		3040114			
ANNUAL MEAN	12850		8329		6832	
HIGHEST ANNUAL MEAN					12670	1975
LOWEST ANNUAL MEAN					1172	1967
HIGHEST DAILY MEAN	76000	Mar 7	31000	Dec 14	98000	Jul 4 1989
LOWEST DAILY MEAN	489	Nov 20	489	Nov 20	134	Nov 9 1966
ANNUAL SEVEN-DAY MINIMUM	727	Nov 18	727	Nov 18	142	Nov 3 1966
MAXIMUM PEAK FLOW			35000	Dec 14	98200	Jul 4 1989
MAXIMUM PEAK STAGE			32.00	Dec 14	37.90	Jul 4 1989
ANNUAL RUNOFF (AC-FT)	9302000		6030000		4949000	
10 PERCENT EXCEEDS	25300		17200		17000	
50 PERCENT EXCEEDS	8210		5940		3700	
90 PERCENT EXCEEDS	1280		1280		710	

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, 33 microsiemens/cm, Dec. 14, 2001.
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 2001 TO SEPTEMBER 2002

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)
OCT							
04...	1625	13200	117	24.5	50	12.8	9.67
18...	1535	10600	114	20.5	70	13.6	8.86
27...	1755	1410	188	12.5	120	30.5	9.20
NOV							
03...	1630	862	200	20.0	80	31.6	10.9
10...	1745	819	182	20.0	60	26.8	9.88
17...	1705	649	134	19.5	30	24.2	7.50
23...	1700	763	146	19.0	40	18.3	9.69
DEC							
01...	1704	20000	42	14.0	120	5.4	3.15
08...	1705	1940	134	16.0	120	13.9	9.71
14...	1700	34800	33	16.5	120	3.4	2.58
20...	1715	21100	100	10.0	50	9.6	8.69
MAR							
02...	1720	12500	129	13.0	80	16.0	10.2
09...	1015	9180	136	14.5	50	16.0	11.5
14...	1530	8830	140	15.0	50	16.5	12.4
23...	0930	5370	136	17.0	60	16.2	11.6
29...	1802	9910	130	18.5	60	16.0	10.9
APR							
06...	1735	15100	139	17.0	40	17.1	12.2
12...	1740	24700	125	19.0	60	15.1	11.0
20...	1840	25600	133	19.5	60	16.1	12.2
24...	1600	18200	130	20.5	70	16.4	11.7
JUN							
01...	1650	2780	146	27.0	70	20.7	12.1
08...	1415	3270	146	28.0	50	21.4	12.2
15...	1800	3370	139	28.0	50	18.5	12.2
20...	0935	2230	142	26.0	50	19.6	12.0
AUG							
01...	0725	3950	151	27.0	50	21.2	13.2
22...	1040	8460	142	28.0	45	16.8	13.2

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08029500 Big Cow Creek near Newton, TX

LOCATION.--Lat 30°49'08", long 93°47'08", 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 NGVD of 1929. Prior to Dec. 19, 1957, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 27.5 ft in Apr. 1922, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

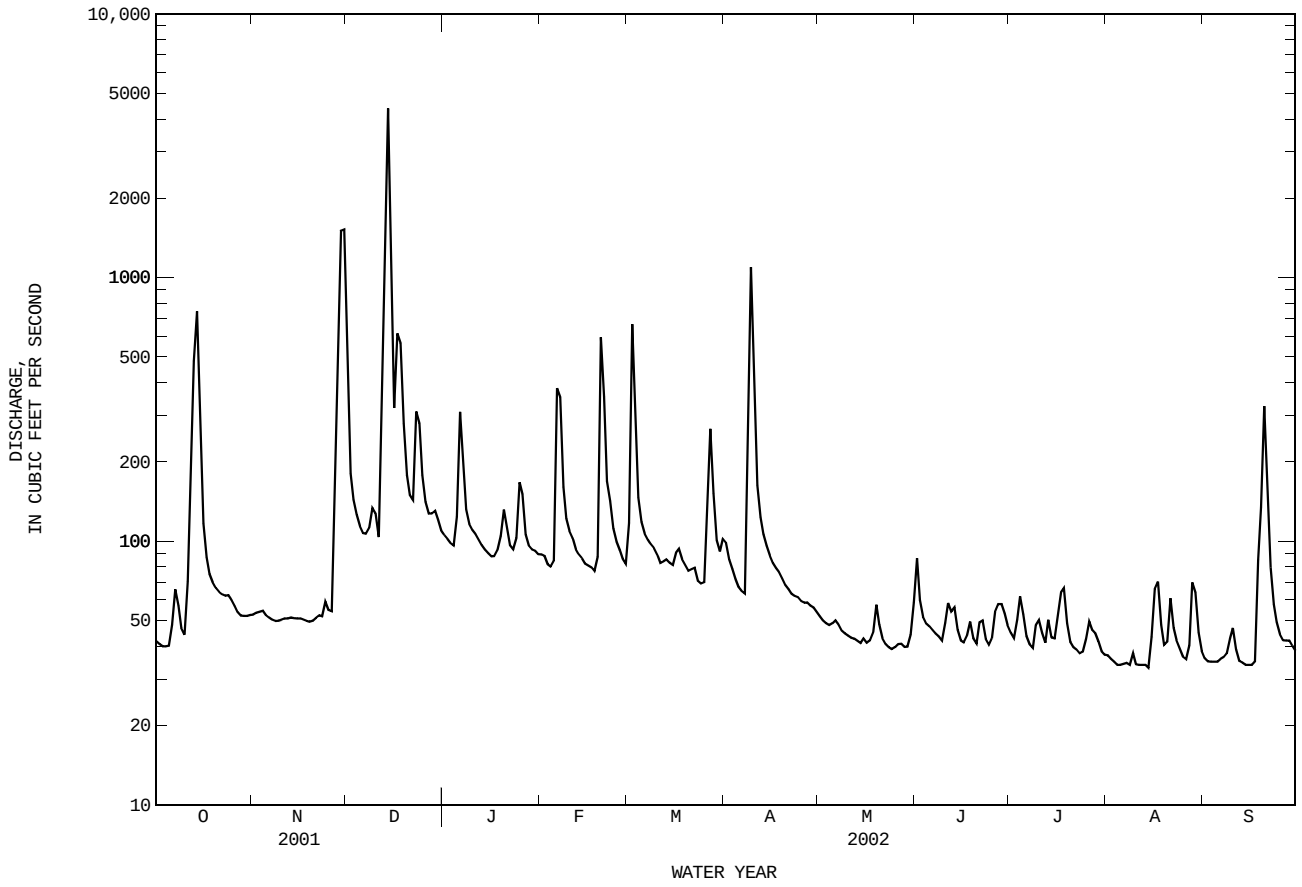
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	53	423	105	89	117	99	52	86	45	37	36
2	41	54	181	102	88	665	85	50	60	43	36	35
3	40	54	144	99	82	309	78	49	52	50	35	35
4	40	54	126	97	80	147	72	48	49	62	34	35
5	40	53	114	124	84	118	67	49	48	53	34	35
6	48	51	108	309	381	107	65	50	46	44	34	36
7	66	50	107	205	352	101	63	48	45	41	35	36
8	57	50	112	132	161	98	376	46	44	39	34	38
9	47	50	134	116	122	94	1090	45	42	48	38	43
10	44	50	127	110	109	89	493	44	49	50	34	47
11	70	51	104	106	103	83	163	43	58	45	34	39
12	181	51	287	102	93	84	123	43	54	41	34	35
13	482	51	1250	97	89	85	106	42	56	50	34	35
14	745	51	4380	93	86	83	96	41	46	43	33	34
15	288	51	1150	90	82	81	88	43	42	43	43	34
16	117	51	320	88	81	91	83	41	41	53	66	34
17	87	50	614	88	79	93	79	42	44	64	70	35
18	75	50	564	93	77	86	76	45	50	66	48	85
19	70	50	279	104	87	81	72	58	43	49	41	134
20	66	50	178	132	593	77	68	48	41	42	42	325
21	64	51	150	111	353	78	66	43	49	40	61	163
22	63	52	143	97	169	79	63	41	50	39	47	80
23	62	52	311	93	142	71	62	40	43	38	42	58
24	63	59	280	103	112	69	61	39	41	38	39	49
25	60	55	178	167	100	70	59	40	43	42	37	44
26	57	54	141	151	93	151	58	41	54	50	36	42
27	54	170	127	106	86	267	59	41	58	46	40	42
28	52	669	128	96	82	151	57	40	58	45	70	42
29	52	1510	130	93	---	101	56	40	53	42	64	40
30	52	1520	121	92	---	91	54	44	48	38	45	38
31	53	---	110	89	---	102	---	59	---	37	38	---
TOTAL	3278	5217	12521	3590	4055	3919	4037	1395	1493	1426	1315	1764
MEAN	105.7	173.9	403.9	115.8	144.8	126.4	134.6	45.00	49.77	46.00	42.42	58.80
MAX	745	1520	4380	309	593	665	1090	59	86	66	70	325
MIN	40	50	104	88	77	69	54	39	41	37	33	34
AC-FT	6500	10350	24840	7120	8040	7770	8010	2770	2960	2830	2610	3500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2002, BY WATER YEAR (WY)

MEAN	68.76	112.9	169.8	191.9	207.8	175.9	165.2	148.0	112.9	70.36	55.00	71.55
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1952 - 2002	
ANNUAL TOTAL	59435		44010			
ANNUAL MEAN	162.8		120.6		128.9	
HIGHEST ANNUAL MEAN					266	1999
LOWEST ANNUAL MEAN					46.1	1965
HIGHEST DAILY MEAN	4380	Dec 14	4380	Dec 14	9720	Feb 12 1984
LOWEST DAILY MEAN	28	May 27	33	Aug 14	10	Jul 7 1971
ANNUAL SEVEN-DAY MINIMUM	29	May 23	34	Aug 8	11	Jul 17 1971
MAXIMUM PEAK FLOW			6310	Dec 14	20200	Apr 29 1953
MAXIMUM PEAK STAGE			16.94	Dec 14	19.45	Apr 29 1953
ANNUAL RUNOFF (AC-FT)	117900		87290		93350	
10 PERCENT EXCEEDS	331		168		225	
50 PERCENT EXCEEDS	70		59		64	
90 PERCENT EXCEEDS	38		39		28	

08029500 Big Cow Creek near Newton, TX--Continued



08030500 Sabine River near Ruliff, TX

LOCATION.--Lat 30°18'13", long 93°44'37", Calcasieu Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, on downstream side of bridge on State Highway 12, 2.4 mi north of Ruliff, 4.2 mi upstream from the Kansas City Southern Railway Co. bridge, 4.5 mi downstream from Cypress Creek and at mile 40.2.

DRAINAGE AREA.--9,329 mi^2.

PERIOD OF RECORD.--Oct. 1924 to current year.
Water-quality records.--Chemical data: 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 NGVD of 1929. 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.--No estimated daily discharges. Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--36 years (water years 1925-60) 8,780 ft^3/s (6,359,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925-60).--Maximum discharge, 121,000 ft^3/s, May 22, 1953, gage height, 29.98 ft, current datum; minimum, 270 ft^3/s, several days in Sept. and Oct. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13000	1450	30600	16400	10200	10500	10100	10600	2210	3070	3520	6980
2	12800	1430	34400	16100	9870	10300	10000	9540	2310	2750	4150	6970
3	12800	1360	30500	15700	9680	10200	9940	8330	2340	2100	4350	5990
4	12700	1360	25200	15400	9520	10700	10200	6420	2100	3160	4370	3350
5	12800	1520	20500	15700	9510	11800	11100	4570	1600	3960	4400	2250
6	13500	1470	16500	15800	9650	12400	12200	3550	2200	3810	4070	3590
7	13300	1210	11900	15700	9830	12300	12900	2980	2660	2650	3420	4510
8	13100	1190	8040	15400	10300	11700	15300	2290	2790	3210	5100	4820
9	13000	1220	5630	14900	11300	11000	16700	2580	2840	3470	6280	4890
10	13100	1200	4290	14400	12400	10400	17700	2860	2930	2520	7000	4220
11	13500	1220	3760	14300	13400	10000	19000	2870	2740	3160	7390	2960
12	14100	1320	3470	14700	14400	9820	21200	2840	1970	3860	7550	3660
13	17600	1310	4060	14800	14800	9560	22000	2770	2420	4260	6860	4360
14	23000	1080	6970	15000	14800	9400	21100	2460	2880	4280	5230	4630
15	26500	1060	11200	15000	14700	9310	20500	1830	2960	4200	7210	4710
16	29500	1110	20000	14900	14500	9220	20900	2170	2920	4520	9690	4690
17	29300	1060	37100	14900	14300	8770	21600	2510	2860	4710	10600	3980
18	25500	1080	34800	14900	14300	7330	21900	2680	2600	5990	10400	2800
19	21600	1200	28400	14900	14300	5110	22100	2710	1770	7000	9780	3840
20	18400	1220	24300	14800	14700	3460	21900	2590	2270	7660	7950	6040
21	15100	985	22400	14900	14200	2790	21800	2310	2670	7960	5860	7670
22	10700	950	21600	14900	13700	3250	21100	1730	2700	7900	6520	8760
23	6360	1020	20500	15200	13300	5010	19900	2040	2850	6740	7650	8850
24	3740	995	19400	15400	13300	5620	18700	2330	3000	4450	8010	6820
25	2660	1030	19400	15300	13100	5560	17700	2400	2650	4030	7860	4590
26	2160	1160	20400	15100	12500	5460	16900	2410	1790	4400	7540	4680
27	1850	2990	21300	14700	11600	5650	16000	2340	2410	4610	6370	5140
28	1680	14100	21300	13600	10800	6860	15000	2060	2900	4720	4470	5240
29	1970	22300	19700	12500	---	8350	13800	1440	3070	4730	5290	4950
30	1810	25000	18000	11400	---	9580	12200	1250	3110	4250	6270	4170
31	1480	---	17100	10600	---	10200	---	1810	---	2990	6760	---
TOTAL	398610	95600	582720	457300	348960	261610	511440	101270	76520	137120	201920	150110
MEAN	12860	3187	18800	14750	12460	8439	17050	3267	2551	4423	6514	5004
MAX	29500	25000	37100	16400	14800	12400	22100	10600	3110	7960	10600	8850
MIN	1480	950	3470	10600	9510	2790	9940	1250	1600	2100	3420	2250
AC-FT	790600	189600	1156000	907100	692200	518900	1014000	200900	151800	272000	400500	297700

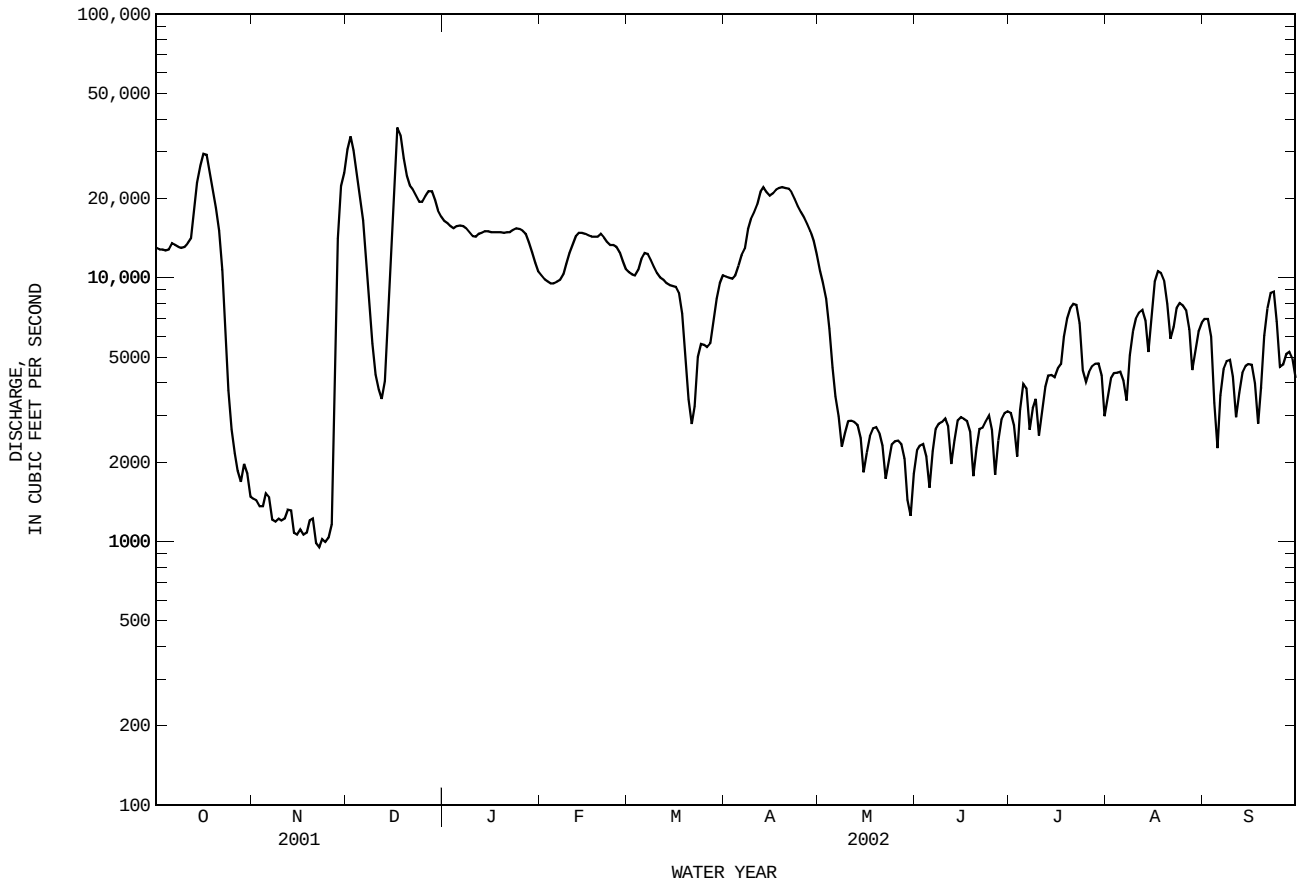
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2002z, BY WATER YEAR (WY)

MEAN	2601	3521	8587	12150	13010	13810	11630	9911	7641	5773	4086	4177
MAX	12860	14910	22070	35570	33170	48230	33240	32980	26240	42320	7982	12530
(WY)	2002	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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1961 - 2002z	
ANNUAL TOTAL	5065720		3323180			
ANNUAL MEAN	13880		9105		8052	
HIGHEST ANNUAL MEAN					14210	1975
LOWEST ANNUAL MEAN					1959	1967
HIGHEST DAILY MEAN	82600	Mar 11	37100	Dec 17	108000	Jul 6 1989
LOWEST DAILY MEAN	950	Nov 22	950	Nov 22	278	Oct 28 1967
ANNUAL SEVEN-DAY MINIMUM	1050	Nov 20	1050	Nov 20	282	Oct 9 1967
MAXIMUM PEAK FLOW			39300	Dec 17	109000	Jul 6 1989
MAXIMUM PEAK STAGE			25.44	Dec 17	29.15	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	10050000		6592000		5833000	
10 PERCENT EXCEEDS	27900		19800		18700	
50 PERCENT EXCEEDS	11100		7000		4770	
90 PERCENT EXCEEDS	2550		1820		1170	

z Period of regulated streamflow.



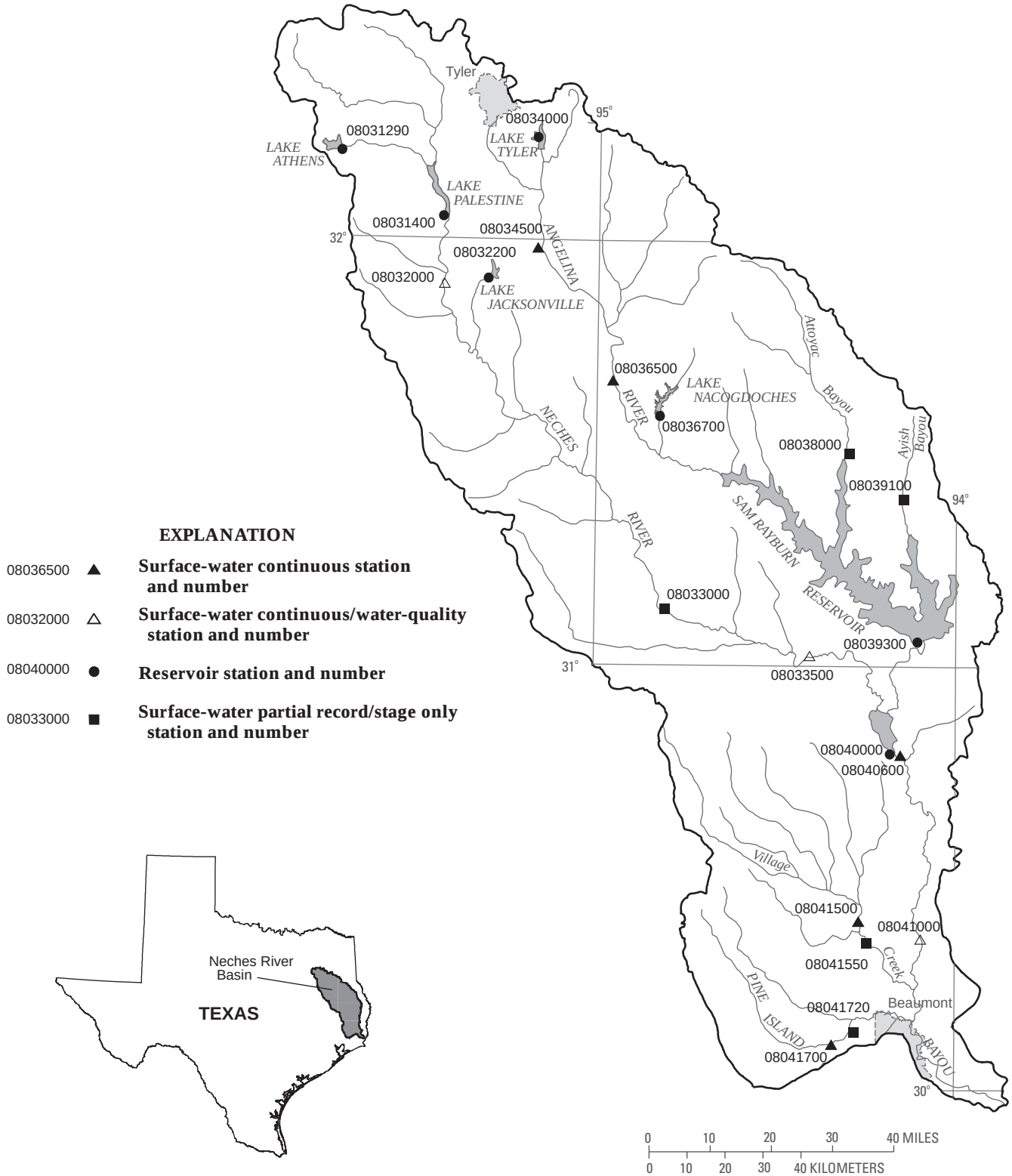


Figure 10.--Map showing location of gaging stations in the Neches River Basin

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 NGVD of 1929. Datum of gage is mean NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. 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, 29,610 acre-ft, Mar. 20, elevation, 440.81 ft; minimum contents, 27,920 acre-ft, Sept. 30, elevation, 439.13 ft.

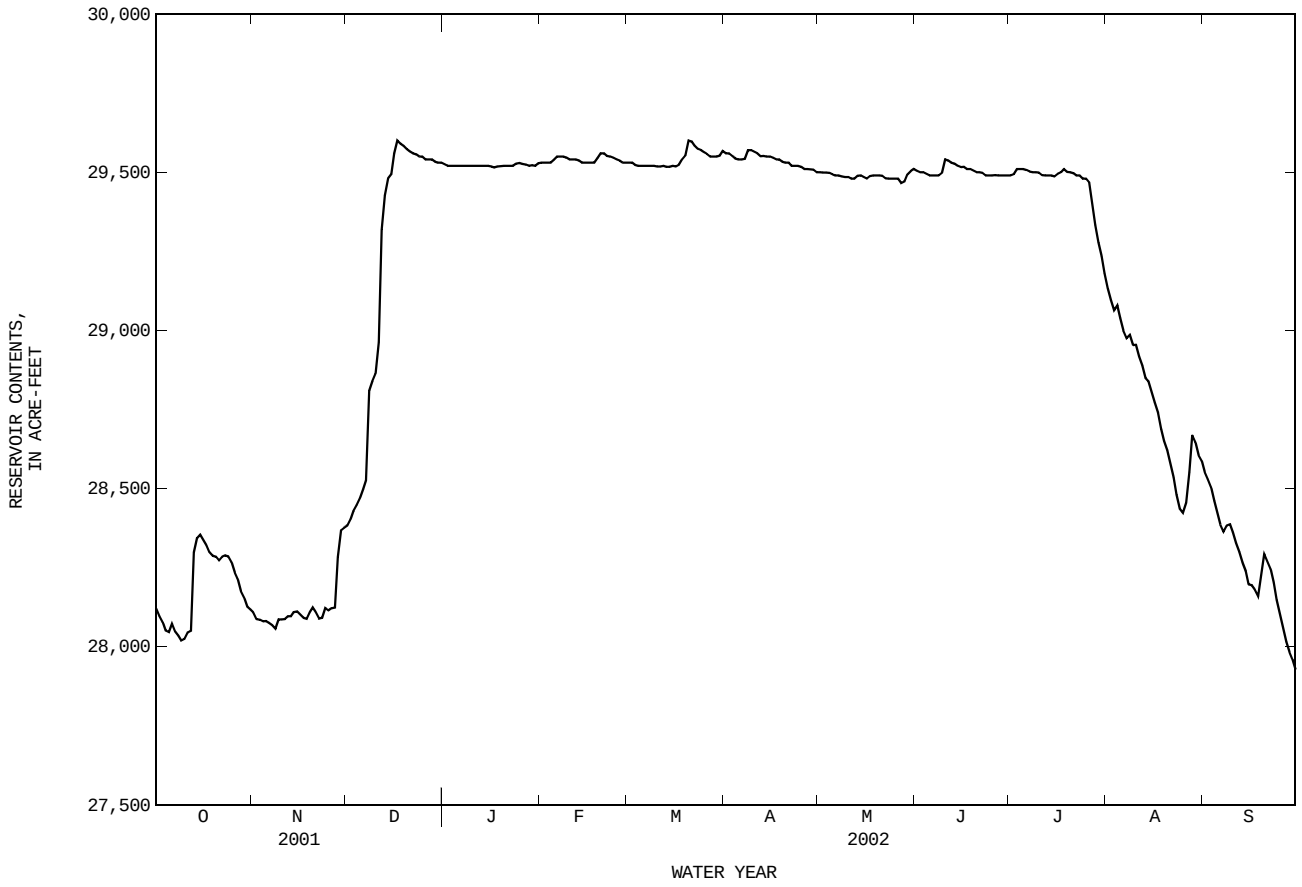
RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28120	28110	28380	29530	29530	29530	29560	29500	29500	29490	29130	28550
2	28100	28090	28400	29520	29530	29530	29560	29500	29500	29490	29100	28530
3	28080	28090	28430	29520	29530	29520	29550	29500	29500	29510	29060	28500
4	28050	28080	28450	29520	29530	29520	29540	29500	29500	29510	29080	28460
5	28050	28080	28470	29520	29540	29520	29540	29490	29490	29510	29040	28420
6	28070	28080	28500	29520	29550	29520	29540	29490	29490	29510	29000	28390
7	28050	28070	28530	29520	29550	29520	29540	29490	29490	29500	28980	28360
8	28040	28060	28810	29520	29550	29520	29570	29490	29490	29500	28990	28380
9	28020	28090	28840	29520	29550	29520	29570	29490	29500	29500	28950	28390
10	28020	28090	28860	29520	29540	29520	29570	29480	29540	29500	28950	28360
11	28040	28090	28960	29520	29540	29520	29560	29480	29540	29490	28920	28330
12	28050	28100	29320	29520	29540	29520	29550	29480	29530	29490	28890	28300
13	28300	28100	29430	29520	29540	29520	29550	29490	29530	29490	28850	28270
14	28340	28110	29480	29520	29530	29520	29550	29490	29520	29490	28840	28240
15	28350	28110	29490	29520	29530	29520	29550	29480	29520	29490	28810	28200
16	28340	28100	29560	29520	29530	29520	29550	29480	29520	29500	28770	28190
17	28320	28090	29600	29510	29530	29520	29540	29490	29510	29500	28740	28180
18	28300	28090	29590	29520	29530	29540	29540	29490	29510	29510	28690	28160
19	28290	28110	29580	29520	29540	29550	29530	29490	29510	29500	28650	28230
20	28280	28120	29570	29520	29560	29600	29530	29490	29500	29500	28620	28290
21	28270	28110	29570	29520	29560	29600	29530	29490	29500	29500	28580	28270
22	28280	28090	29560	29520	29550	29580	29520	29480	29500	29490	28530	28250
23	28290	28090	29560	29520	29550	29570	29520	29480	29490	29490	28480	28200
24	28290	28120	29550	29530	29550	29570	29520	29480	29490	29480	28440	28150
25	28270	28110	29550	29530	29540	29560	29520	29480	29490	29480	28420	28110
26	28240	28120	29540	29530	29540	29560	29510	29480	29490	29470	28450	28060
27	28220	28120	29540	29520	29530	29550	29510	29470	29490	29400	28550	28020
28	28180	28280	29540	29520	29530	29550	29510	29470	29490	29330	28670	27980
29	28160	28370	29530	29520	---	29550	29510	29490	29490	29280	28650	27960
30	28130	28380	29530	29520	---	29550	29500	29500	29490	29230	28610	27930
31	28120	---	29530	29530	---	29570	---	29510	---	29180	28590	---
MEAN	28180	28120	29200	29520	29540	29540	29540	29490	29500	29460	28780	28260
MAX	28350	28380	29600	29530	29560	29600	29570	29510	29540	29510	29130	28550
MIN	28020	28060	28380	29510	29530	29520	29500	29470	29490	29180	28420	27930
(+)	439.24	439.39	440.34	440.34	440.34	440.56	440.18	440.20	440.08	439.84	439.50	439.14
(@)	-60	+260	+1150	0	0	+40	-70	+10	-20	-310	-590	-660

CAL YR 2001 MAX 29620 MIN 27550 (@) -60
WTR YR 2002 MAX 29600 MIN 27930 (@) -250

(+) 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, 5.0 mi east of Frankston, 21 mi upstream from Neches River near Neches (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 NGVD of 1929. Prior to Sept. 20, 1962, nonrecording gage read once daily. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. 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 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 U.S. 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, 462,500 acre-ft, Dec. 19, elevation, 346.91 ft; minimum contents, 373,000 acre-ft, Sept. 30, elevation, 343.43 ft.

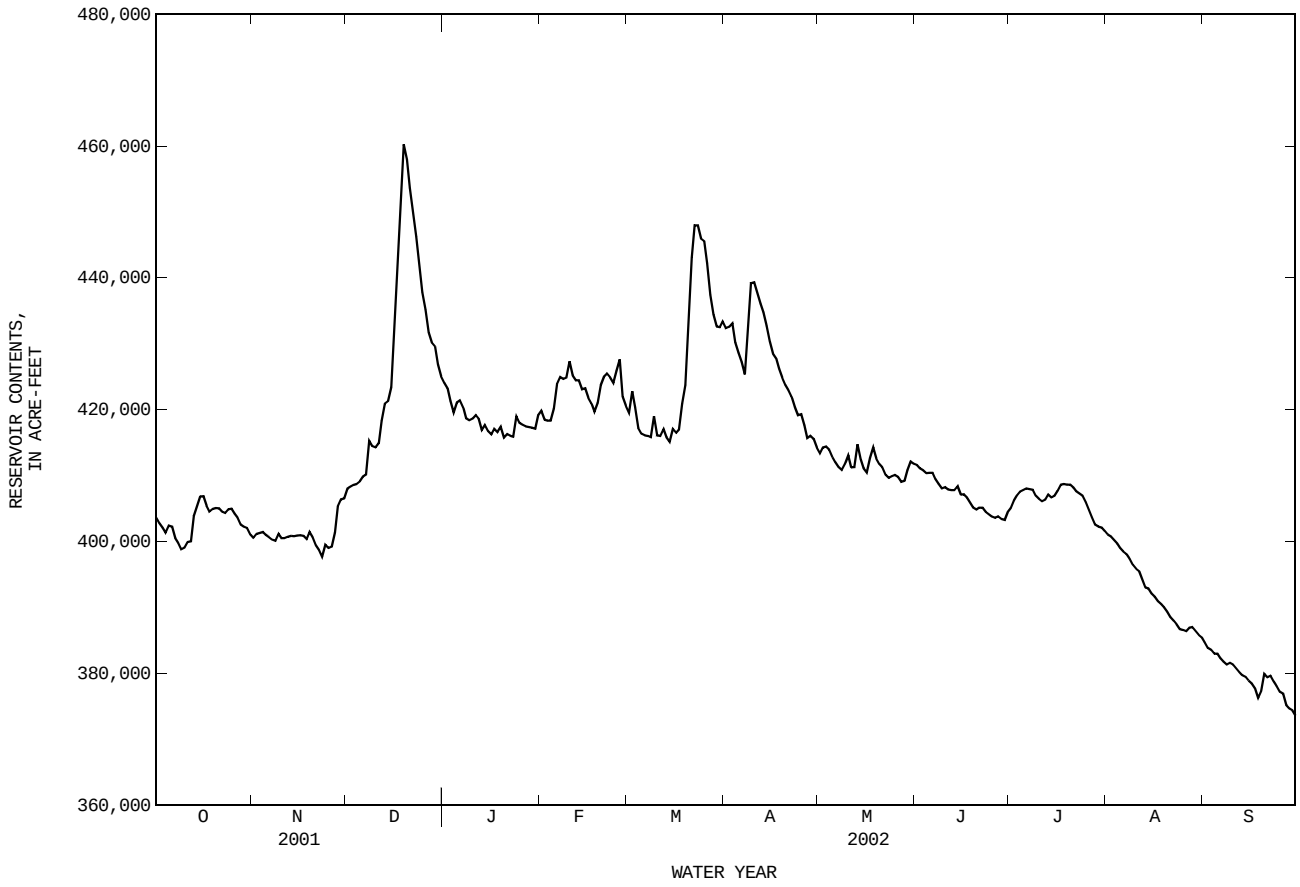
RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	403600	400500	408000	424100	419800	419500	432400	413300	411600	405000	401000	384700
2	402700	401100	408300	423200	418500	422800	432600	414300	411100	406200	400700	383800
3	402000	401300	408500	421300	418300	420300	433100	414400	410800	407000	400200	383600
4	401300	401400	408700	419500	418300	417200	430200	413900	410300	407500	399600	383000
5	402400	401000	409100	421000	420100	416300	428600	412800	410400	407800	399000	383000
6	402200	400600	409800	421400	423800	416100	427200	412000	410400	408000	398400	382300
7	400500	400200	410100	420300	424900	416000	425300	411300	409400	407900	398100	381700
8	399700	400100	415300	418700	424600	415800	433300	410800	408700	407800	397300	381300
9	398800	401100	414400	418400	424800	419000	439200	411800	408000	406900	396400	381500
10	399000	400500	414200	418600	427300	416100	439300	413000	408200	406500	395900	381300
11	399900	400500	414800	419200	425200	416000	437600	411200	407900	406100	395500	380700
12	400000	400700	418300	418600	424400	417000	436000	411300	407800	406300	394200	380200
13	403800	400800	420900	416800	424400	415800	434700	414700	407800	407100	393000	379700
14	405300	400800	421300	417600	423000	415100	432700	412400	408300	406600	392900	379400
15	406800	400900	423300	416700	423200	417000	430300	411100	407100	406900	392100	378900
16	406800	400900	431900	416200	421800	416400	428500	410400	407200	407700	391600	378500
17	405400	400800	442500	417000	420900	416900	427700	412600	406700	408600	390900	377700
18	404500	400400	451700	416600	419700	420900	426200	414200	405900	408700	390500	376200
19	404900	401400	460200	417300	421000	423700	424800	412600	405100	408600	390000	377200
20	405000	400600	457900	415800	423700	433700	423700	411700	404800	408600	389300	379900
21	405000	399400	453600	416300	425000	443000	422900	411200	405100	408200	388500	379400
22	404500	398700	449700	416000	425400	448000	421900	410100	405100	407600	387900	379600
23	404300	397700	446300	415900	424800	447900	420400	409600	404500	407300	387400	378800
24	404900	399500	441700	419000	424100	446000	419200	409800	404100	406900	386700	378000
25	404900	399000	437800	417900	425900	445500	419300	410000	403800	405900	386600	377200
26	404200	399200	435200	417700	427600	442200	417600	409800	403500	404700	386300	376900
27	403600	401300	431600	417400	422000	437400	415700	409000	403800	403700	386900	375200
28	402500	405300	430100	417300	420600	434400	416000	409200	403400	402500	387000	374600
29	402200	406400	429600	417200	---	432600	415600	410800	403300	402200	386400	374400
30	402000	406500	426800	417100	---	432500	414200	412100	404400	402100	385800	373500
31	401000	---	425000	419100	---	433400	---	411800	---	401600	385500	---
MEAN	403000	401000	427600	418400	423000	426300	426900	411700	407000	406400	392300	379400
MAX	406800	406500	460200	424100	427600	448000	439300	414700	411600	408700	401000	384700
MIN	398800	397700	408000	415800	418300	415100	414200	409000	403300	401600	385500	373500
(+)	344.57	344.79	345.51	345.28	345.34	345.83	345.09	345.00	344.70	344.59	343.95	343.45
(@)	-3200	+5500	+18500	-5900	+1500	+12800	-19200	-2400	-7400	-2800	-16100	-12000

CAL YR 2001 MAX 477500 MIN 388500 (@) -35000
WTR YR 2002 MAX 460200 MIN 373500 (@) -30700

(+) 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 NGVD of 1929. Prior to Oct. 27, 1945, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of the contributing drainage area has been regulated. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	191	710	1480	767	907	1960	468	300	248	122	127
2	167	195	530	1310	823	801	1890	419	267	253	119	125
3	162	196	408	1160	768	864	1810	443	238	263	119	125
4	160	198	356	1040	731	858	1770	457	218	254	119	123
5	161	202	333	942	749	682	1700	424	203	250	118	121
6	268	195	321	988	1020	586	1570	374	216	218	119	120
7	261	190	321	1000	1250	558	1440	324	216	198	119	119
8	190	188	412	964	1350	552	1620	296	189	185	118	120
9	173	194	659	874	1340	564	1980	276	180	175	116	130
10	172	223	629	802	1260	702	2400	300	241	165	122	132
11	184	227	553	776	1240	611	2590	328	252	160	117	126
12	223	221	793	780	1220	592	2470	278	212	159	114	123
13	460	222	1030	751	1150	630	2280	308	189	167	113	122
14	842	232	1060	684	1100	575	2120	445	194	172	113	121
15	659	234	1100	672	1040	539	1970	333	211	168	114	118
16	514	228	1270	639	990	589	1800	264	186	181	115	118
17	430	215	1820	613	948	593	1620	251	207	262	115	120
18	316	222	3390	630	887	876	1470	421	180	272	114	120
19	278	215	4140	633	832	1060	1340	472	170	227	113	125
20	258	229	5000	696	897	1210	1210	357	163	200	112	168
21	238	229	5550	643	971	1630	1110	300	162	180	111	160
22	225	208	5210	619	1030	2080	1020	265	162	166	113	133
23	219	207	4580	607	1070	2730	945	231	160	158	114	126
24	217	221	4170	642	1060	3240	870	212	157	152	115	123
25	220	238	3700	820	1040	3300	770	209	156	145	115	121
26	213	226	3140	806	1030	3130	735	211	165	140	119	122
27	197	225	2670	739	1100	3000	655	207	209	137	128	122
28	193	385	2290	700	1050	2690	580	199	198	135	173	121
29	191	869	2020	676	---	2300	556	212	183	132	152	121
30	190	880	1820	666	---	2050	527	275	240	129	136	119
31	190	---	1660	671	---	2000	---	315	---	126	130	---
TOTAL	8346	7905	61645	25023	28713	42499	44778	9874	6024	5777	3737	3771
MEAN	269.2	263.5	1989	807.2	1025	1371	1493	318.5	200.8	186.4	120.5	125.7
MAX	842	880	5550	1480	1350	3300	2590	472	300	272	173	168
MIN	160	188	321	607	731	539	527	199	156	126	111	118
AC-FT	16550	15680	122300	49630	56950	84300	88820	19590	11950	11460	7410	7480

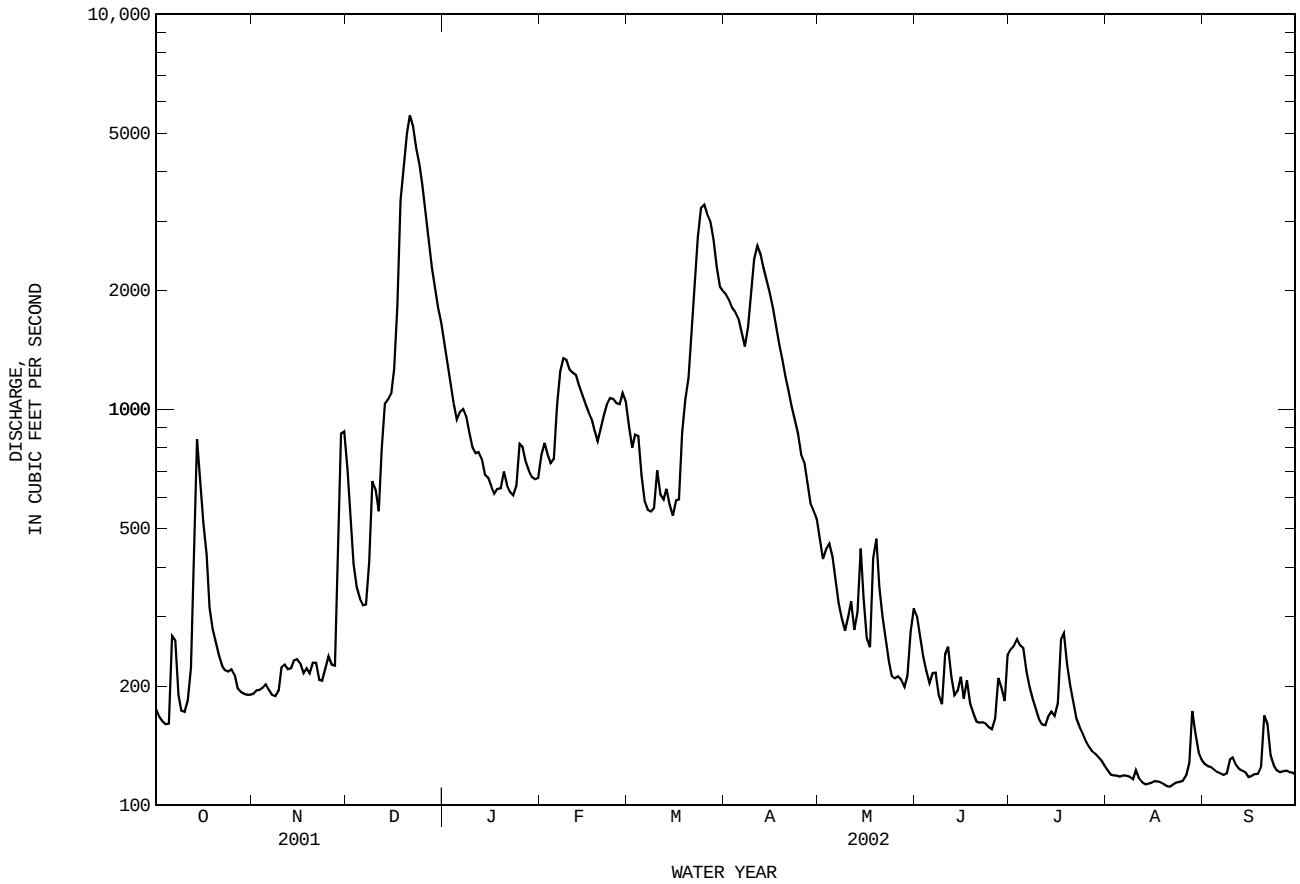
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002z, BY WATER YEAR (WY)

MEAN	217.7	415.2	812.1	937.3	1113	1333	1200	1220	771.4	221.8	118.4	192.3
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1962 - 2002z	
ANNUAL TOTAL	496155		248092			
ANNUAL MEAN	1359		679.7		710.5	
HIGHEST ANNUAL MEAN					1358	1995
LOWEST ANNUAL MEAN					106	1972
HIGHEST DAILY MEAN	9780	Mar 5	5550	Dec 21	26200	May 13 1968
LOWEST DAILY MEAN	86	Aug 25	111	Aug 21	3.3	Nov 1 1963
ANNUAL SEVEN-DAY MINIMUM	88	Aug 22	113	Aug 17	3.4	Oct 29 1963
MAXIMUM PEAK FLOW			5690	Dec 21	26900	May 13 1968
MAXIMUM PEAK STAGE			15.77	Dec 21	19.46	May 13 1968
ANNUAL RUNOFF (AC-FT)	984100		492100		514700	
10 PERCENT EXCEEDS	4150		1730		1760	
50 PERCENT EXCEEDS	552		275		259	
90 PERCENT EXCEEDS	111		121		59	

z Period of regulated streamflow.



08032000 Neches River near Neches, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Dec. 1969 to current year.
BIOCHEMICAL DATA: Oct. 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Dec. 1969 to 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 2001 TO SEPTEMBER 2002

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)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
FEB													
07...	0836	1230	142	7.4	8.0	770	10.9	91	31	15	7.24	3.22	10.8
MAR													
27...	1406	3010	148	6.9	14.0	768	6.7	64	33	16	8.14	3.09	11.8
MAY													
14...	1320	457	163	6.9	22.6	765	8.1	93	37	15	8.98	3.48	13.3
JUN													
17...	1422	211	170	7.3	26.5	760	6.6	82	40	18	9.64	3.89	13.0
JUL													
17...	1135	268	175	6.9	25.5	760	6.3	77	39	10	9.22	3.95	12.5
AUG													
30...	1405	136	183	7.4	27.5	763	7.9	100	43	16	10.5	4.05	14.2

Date	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)	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)
FEB													
07...	.8	3.45	16	15.3	16.4	E.1	12.8	79	<.008	.14	E.03	--	.35
MAR													
27...	.9	3.77	17	20.2	15.7	.1	6.3	79	<.008	<.05	<.04	--	.37
MAY													
14...	1	3.91	22	20.7	17.6	E.1	6.2	88	<.008	.09	<.04	--	.32
JUN													
17...	.9	3.82	22	18.0	18.9	.1	6.6	87	<.008	E.04	<.04	--	.32
JUL													
17...	.9	3.65	29	14.4	20.0	E.1	10.9	93	E.007	.16	.04	.34	.38
AUG													
30...	.9	4.43	27	17.4	20.8	.1	9.3	97	<.008	.06	<.04	--	.39

Date	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)
FEB		
07...	<.06	<.02
MAR		
27...	<.06	<.02
MAY		
14...	<.06	<.02
JUN		
17...	<.06	<.02
JUL		
17...	<.06	<.02
AUG		
30...	<.06	<.02

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

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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 5.0 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 NAVD of 1988 and 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.--No estimated daily contents. Records good. 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. Conservation pool storage is 30,500 acre-ft. Data regarding the dam 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, 32,090 acre-ft, Dec. 17, elevation, 422.92 ft; minimum contents, 29,190 acre-ft, Sept. 18, 19, elevation, 420.85 ft.

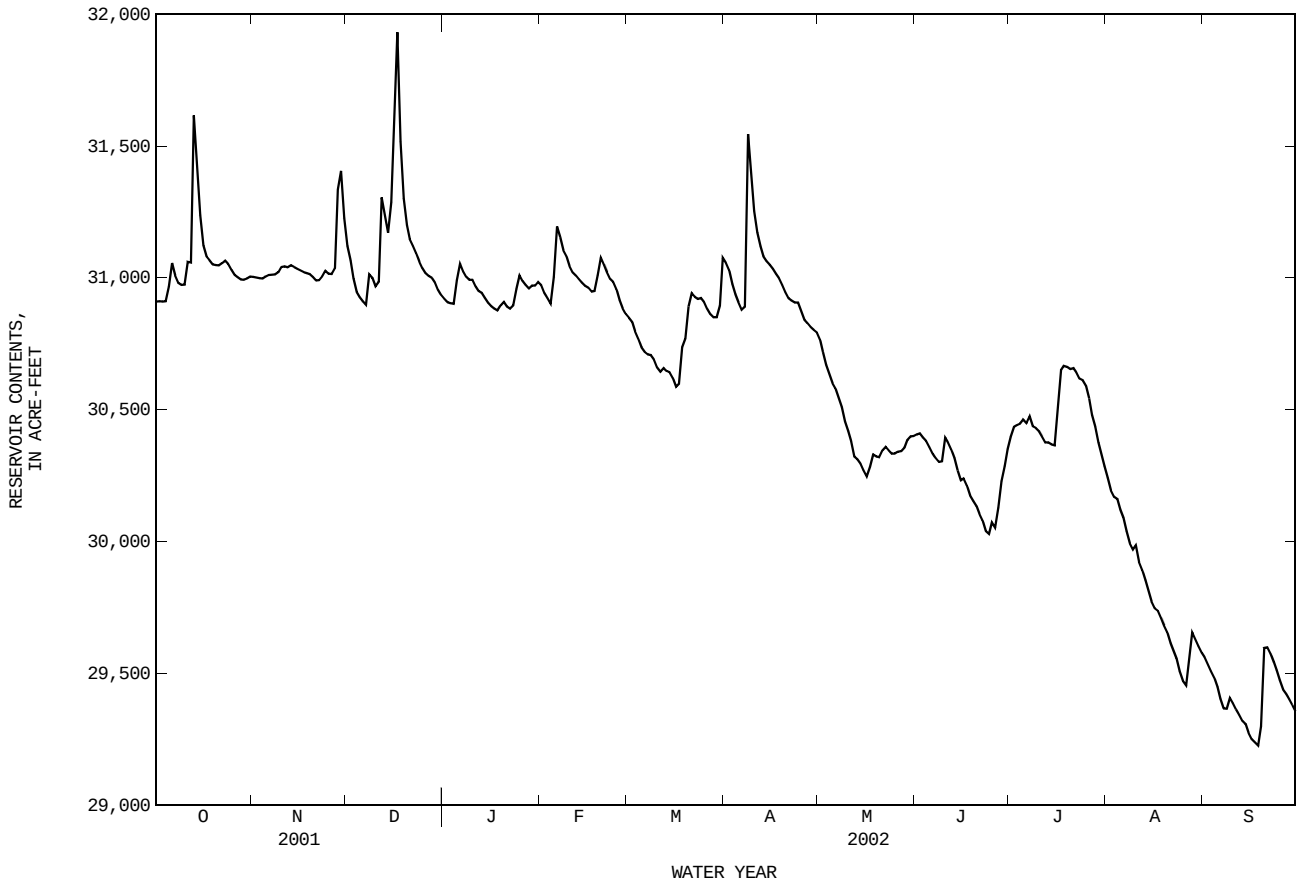
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30910	31000	31120	30920	30970	30850	31060	30770	30410	30400	30240	29560
2	30910	31000	31070	30910	30940	30830	31030	30720	30410	30430	30190	29530
3	30910	31000	31000	30900	30920	30800	30980	30670	30390	30440	30170	29510
4	30910	31000	30950	30900	30900	30770	30940	30630	30380	30450	30160	29480
5	30970	31000	30930	30990	31000	30740	30910	30600	30360	30460	30120	29450
6	31060	31010	30910	31050	31190	30720	30880	30580	30330	30450	30090	29400
7	31010	31010	30900	31020	31150	30710	30890	30540	30320	30470	30040	29370
8	30980	31010	31010	31000	31100	30710	31540	30510	30300	30440	29990	29370
9	30970	31020	31000	30990	31080	30690	31410	30450	30300	30430	29970	29410
10	30970	31040	30970	30990	31040	30660	31250	30420	30390	30420	29980	29390
11	31060	31040	30980	30970	31020	30640	31170	30380	30380	30400	29920	29360
12	31060	31040	31300	30950	31010	30660	31120	30320	30350	30380	29890	29340
13	31610	31050	31240	30940	30990	30650	31080	30310	30320	30380	29850	29320
14	31430	31040	31170	30920	30980	30640	31060	30290	30270	30370	29810	29310
15	31240	31030	31290	30900	30970	30620	31050	30270	30230	30360	29770	29270
16	31120	31030	31640	30890	30960	30590	31030	30250	30240	30510	29750	29250
17	31080	31020	31930	30880	30950	30600	31010	30280	30210	30650	29740	29240
18	31070	31020	31520	30880	30950	30740	31000	30330	30170	30660	29710	29230
19	31050	31010	31300	30890	31010	30770	30970	30320	30150	30660	29680	29300
20	31050	31000	31200	30910	31080	30890	30940	30320	30130	30650	29660	29600
21	31050	30990	31150	30890	31050	30940	30920	30340	30100	30660	29620	29600
22	31060	30990	31120	30880	31020	30930	30910	30360	30080	30640	29580	29570
23	31060	31000	31090	30890	31000	30920	30910	30340	30040	30620	29560	29540
24	31050	31030	31060	30960	30980	30920	30910	30330	30030	30610	29510	29510
25	31030	31010	31040	31010	30960	30910	30870	30330	30070	30590	29470	29470
26	31010	31010	31020	30990	30910	30880	30840	30340	30050	30540	29450	29440
27	31000	31040	31010	30970	30880	30860	30830	30340	30130	30480	29550	29420
28	30990	31330	31000	30960	30860	30850	30810	30360	30230	30430	29650	29400
29	30990	31400	30980	30970	---	30850	30800	30380	30290	30370	29630	29380
30	31000	31230	30950	30970	---	30890	30790	30400	30350	30330	29600	29360
31	31000	---	30930	30980	---	31080	---	30400	---	30280	29580	---
MEAN	31050	31050	31120	30940	31000	30780	31000	30420	30250	30480	29800	29410
MAX	31610	31400	31930	31050	31190	31080	31540	30770	30410	30660	30240	29600
MIN	30910	30990	30900	30880	30860	30590	30790	30250	30030	30280	29450	29230
(+)	422.14	422.30	422.09	422.13	422.04	422.20	421.99	421.71	421.68	421.63	421.13	420.97
(@)	+80	+230	-300	+50	-120	+220	-290	-390	-50	-70	-700	-220

CAL YR 2001 MAX 32450 MIN 29960 (@) -170
WTR YR 2002 MAX 31930 MIN 29230 (@) -1560

(+) 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 NGVD of 1929. 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.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 13	1800	*12,300	*14.77	Apr. 9	1400	11,900	14.77
Dec. 18	0300	11,300	14.63				

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08033500 Neches River near Rockland, TX
(Hydrologic index station)

LOCATION.--Lat 31°01'30", long 94°23'58", 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 NGVD of 1929. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1570	686	3520	5810	2260	2870	4210	2420	546	456	256	228
2	1170	642	2780	5760	2240	3750	5570	2070	631	429	238	250
3	909	606	2600	5780	2220	3440	6030	1780	723	457	230	268
4	734	584	2550	5780	2180	2950	6090	1550	747	548	223	271
5	612	566	2550	5840	2190	2720	5850	1360	702	597	213	266
6	654	554	2610	6180	3710	2510	5190	1190	639	592	207	245
7	568	543	2660	6100	4730	2330	4560	1040	583	588	200	225
8	698	536	2790	5900	4850	2210	5750	921	540	593	193	204
9	902	529	3070	5750	4390	2130	7790	859	524	588	190	192
10	1040	520	3080	5650	4330	2060	8940	822	484	571	200	183
11	1220	514	2900	5530	4250	2020	10100	796	485	532	188	178
12	1520	509	9940	5370	4070	1920	11000	761	473	484	188	173
13	3940	503	13900	5110	3860	1830	11200	712	453	424	190	170
14	6210	498	13500	4680	3580	1730	10800	665	447	397	185	169
15	5520	497	13400	4190	3210	1640	10100	623	461	438	193	170
16	4160	510	13700	3740	2930	1580	9090	593	529	491	188	173
17	3960	529	15100	3340	2770	1560	7890	583	589	801	184	196
18	4100	545	15100	3000	2670	1550	6730	576	591	841	189	291
19	4000	556	14400	2680	2610	1520	5710	561	537	733	189	334
20	3660	550	13800	2480	2650	1540	5070	562	474	634	193	349
21	3260	541	13000	2290	2740	2030	4700	622	445	602	198	368
22	2920	536	12000	2090	2800	2280	4420	771	424	611	211	307
23	2680	530	11200	1980	2820	2160	4200	857	399	588	204	258
24	2570	518	10100	2210	2860	2140	4000	840	371	542	201	233
25	2480	508	9360	3480	2860	2180	3840	774	355	528	193	279
26	2230	505	8810	4060	2770	3890	3690	700	345	456	199	343
27	1700	776	8260	4070	2660	4150	3520	630	349	403	220	331
28	1170	1160	7670	3910	2590	3920	3290	578	492	394	223	290
29	939	3040	7060	3720	---	3910	3040	535	514	348	215	251
30	816	3830	6500	3130	---	3910	2750	537	484	305	204	220
31	740	---	6060	2470	---	3730	---	513	---	277	211	---
TOTAL	68652	22921	253970	132080	87800	78160	185120	27801	15336	16248	6316	7415
MEAN	2215	764.0	8193	4261	3136	2521	6171	896.8	511.2	524.1	203.7	247.2
MAX	6210	3830	15100	6180	4850	4150	11200	2420	747	841	256	368
MIN	568	497	2550	1980	2180	1520	2750	513	345	277	184	169
AC-FT	136200	45460	503700	262000	174200	155000	367200	55140	30420	32230	12530	14710

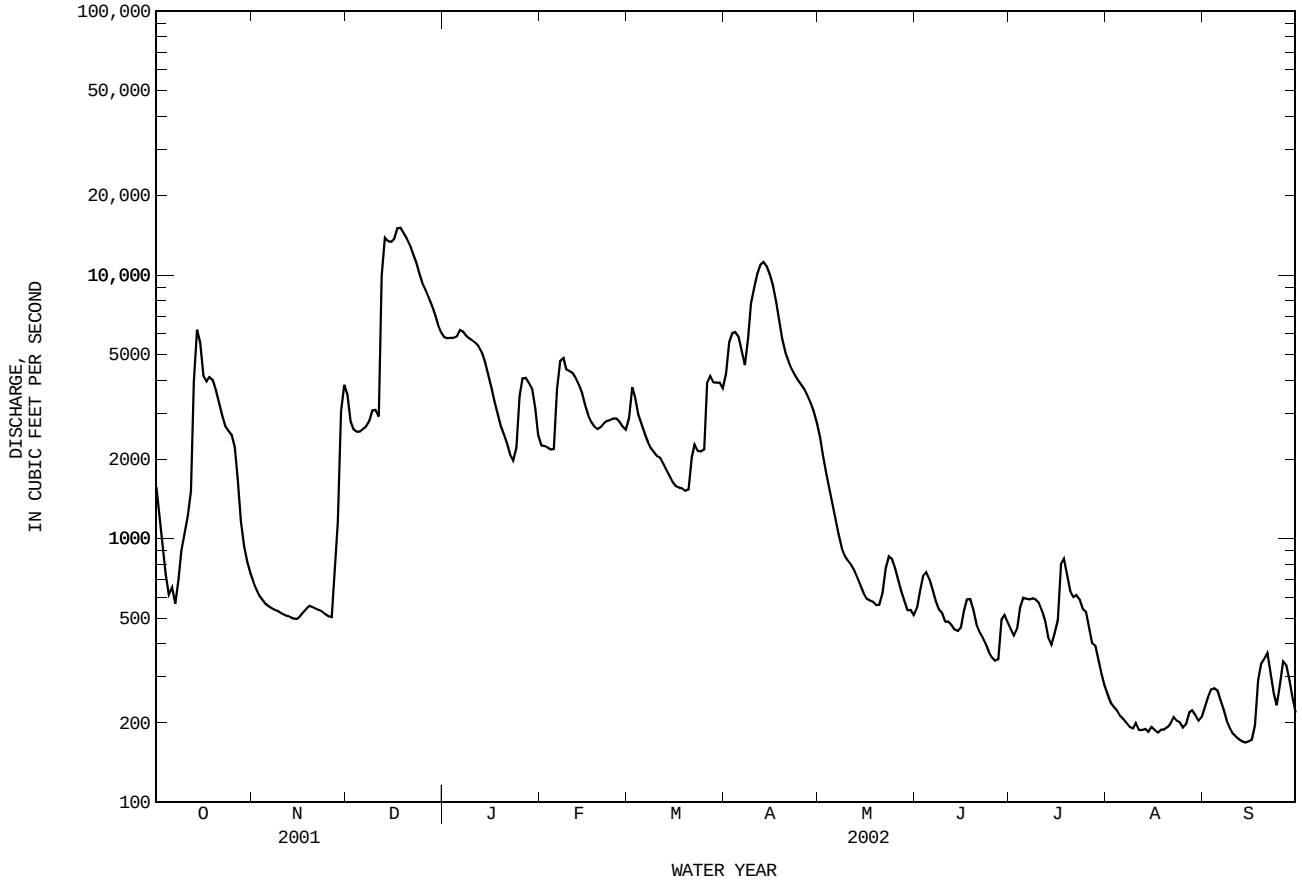
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2002, BY WATER YEAR (WY)

MEAN	823.1	1297	2679	3813	3988	4260	3738	3652	2728	1108	378.0	479.6
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1962 - 2002	
ANNUAL TOTAL	1827979		901819			
ANNUAL MEAN	5008		2471		2404	
HIGHEST ANNUAL MEAN					5328	1995
LOWEST ANNUAL MEAN					352	1971
HIGHEST DAILY MEAN	26400	Jun 13	15100	Dec 17	41600	Jul 2 1989
LOWEST DAILY MEAN	110	Aug 26	169	Sep 14	18	Aug 30 1970
ANNUAL SEVEN-DAY MINIMUM	123	Aug 21	174	Sep 10	23	Jul 21 1971
MAXIMUM PEAK FLOW			15400	Dec 17	42300	Oct 20 1994
MAXIMUM PEAK STAGE			23.61	Dec 17	33.29	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	3626000		1789000		1741000	
10 PERCENT EXCEEDS	13600		5870		6290	
50 PERCENT EXCEEDS	2230		939		932	
90 PERCENT EXCEEDS	388		220		113	

e Estimated
z Period of regulated streamflow.



08033500 Neches River near Rockland, TX--Continued
(Hydrologic index station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Apr. 1941 to Sept. 1942, Sept. 1945 to Sept. 1947, Dec. 1967 to current year.
BIOCHEMICAL DATA: Dec. 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Apr. 1941 to Sept. 1942, Sept. 1945 to Sept. 1947.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

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)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
FEB													
06...	1455	3990	182	7.0	10.5	770	10.5	93	39	24	9.92	3.36	17.6
MAR													
27...	1015	4170	206	6.8	16.0	772	6.8	68	41	23	10.2	3.68	20.0
MAY													
14...	0943	667	196	7.0	25.6	770	6.8	82	41	10	9.72	4.14	17.9
JUN													
17...	1050	592	205	6.8	27.5	762	7.9	100	38	12	8.82	3.92	21.0
JUL													
17...	1509	853	196	7.1	28.0	764	6.8	87	37	2	8.79	3.56	20.6
SEP													
09...	1240	192	209	7.2	27.5	765	6.6	83	35	2	7.81	3.66	24.4

Date	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, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
FEB													
06...	1	47	3.10	15	28.0	21.7	E.1	15.8	136	110	--	<.008	.12
MAR													
27...	1	50	2.75	18	33.1	24.4	E.1	10.1	--	115	--	<.008	.06
MAY													
14...	1	46	3.39	31	20.7	24.2	E.1	15.0	--	115	--	<.008	.33
JUN													
17...	1	52	3.36	26	19.9	24.7	.1	12.1	--	110	--	<.008	.12
JUL													
17...	1	52	3.39	35	19.9	23.5	.1	13.3	--	115	--	E.005	.27
SEP													
09...	2	57	4.27	33	19.0	26.0	.1	11.1	127	117	28	<.008	.14

Date	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)	ORTHO-PHOS-PHATE, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
FEB													
06...	<.04	.38	.19	.17	.515	29	.06	<2	50	.09	.07	<.8	.86
MAR													
27...	<.04	.43	<.06	<.02	--	--	--	--	--	--	--	--	--
MAY													
14...	<.04	.27	<.06	<.02	--	--	--	--	--	--	--	--	--
JUN													
17...	<.04	.28	<.06	E.01	--	--	--	--	--	--	--	--	--
JUL													
17...	<.04	.33	<.06	.02	.061	--	--	--	--	--	--	--	--
SEP													
09...	<.04	.30	E.04	.03	.080	<1	.07	<2	44	<.06	<.04	<.8	.11

08033500 Neches River near Rockland, TX--Continued
(Hydrologic index station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB											
06...	1.7	243	.36	119	.01	E.1	2.37	<2	<1	5	.14
MAR											
27...	--	--	--	--	--	--	--	--	--	--	--
MAY											
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
17...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	--	--	--	--	--	--	--	--	--	--	--
SEP											
09...	1.5	17	.11	9.6	<.01	.8	1.82	<2	<1	2	.05

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

08034000 Lake Tyler near Whitehouse, TX

LOCATION.--Lat 32°14'30", long 95°10'33", Smith County, Hydrologic Unit 12020004, at city of Tyler pumphouse, 2.0 mi north of Whitehouse Dam on Prairie Creek, 3.0 mi northwest of Mud Creek, and 3.2 mi northeast of Whitehouse.

DRAINAGE AREA.--107 mi^2. Prior to May 29, 1968, 45.3 mi^2.

PERIOD OF RECORD.--Mar. 1949 to Sept. 1983, Apr. 1999 to current year.
Water-quality records.--Chemical data: Oct. 1969 to Sept. 1984.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is NGVD of 1929. Prior to May 3, 1949, nonrecording gage at dam. May 3, 1949, to July 11, 1951, nonrecording gage at pumphouse. July 12, 1951, to Feb. 1, 1968, water-stage recorder at intake tower in lake 660 ft south of pumphouse. All gages at same datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily contents and contents above 76,250 acre-ft, which are poor. Originally Lake Tyler was formed by Whitehouse Dam. Deliberate impoundment began Jan. 8, 1949, and the dam was completed May 13, 1949. The construction of Mud Creek Dam began Feb. 11, 1966, and deliberate impoundment began Nov. 22, 1966; final completion of dam was in Jan. 1967. Whitehouse Dam is a rolled earthfill dam with an uncontrolled concrete spillway 200 ft wide near left end of dam. Mud Creek Dam is a rolled earthfill dam with an uncontrolled concrete spillway 300 ft wide near center of dam. On May 29, 1968, the lakes were joined through an interconnecting canal. An 18-inch conduit through the embankment of Mud Creek Dam serves as a low-flow outlet. Water is used for municipal supply for the cities of Tyler, Troop, and Whitehouse. The dam is owned and operated by the city of Tyler. Conservation pool storage is 80,200 acre-ft. Data regarding the dam and lake are given in the following table:

	Elevation (feet)
Top of dam	390.0
Design flood	386.0
Crest of spillway	375.4
Bottom of interconnecting canal between lakes	355.0
Lowest gated outlet (invert at Mud Creek Dam)	350.0

COOPERATION.--Capacity Table No. 1, furnished by the Texas Water Development Board, was replaced by Capacity Table No. 2, also furnished by the Texas Water Development Board, from a survey conducted June 1997. Table No. 2 was put into effect Oct. 1, 2000.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 87,340 acre-ft, Feb. 3, 1975 (elevation, 376.71 ft); maximum elevation, 378.3 ft Apr. 24, 1966, prior to adjoining of lakes; minimum contents since joining of lakes, 53,100 acre-ft Nov. 1, 2000, (elevation, 369.00 ft).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 83,600 acre-ft, Apr. 8, elevation, 376.10 ft; minimum contents, 76,000 acre-ft, Nov. 23, 25, 26, 27, elevation, 374.50 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

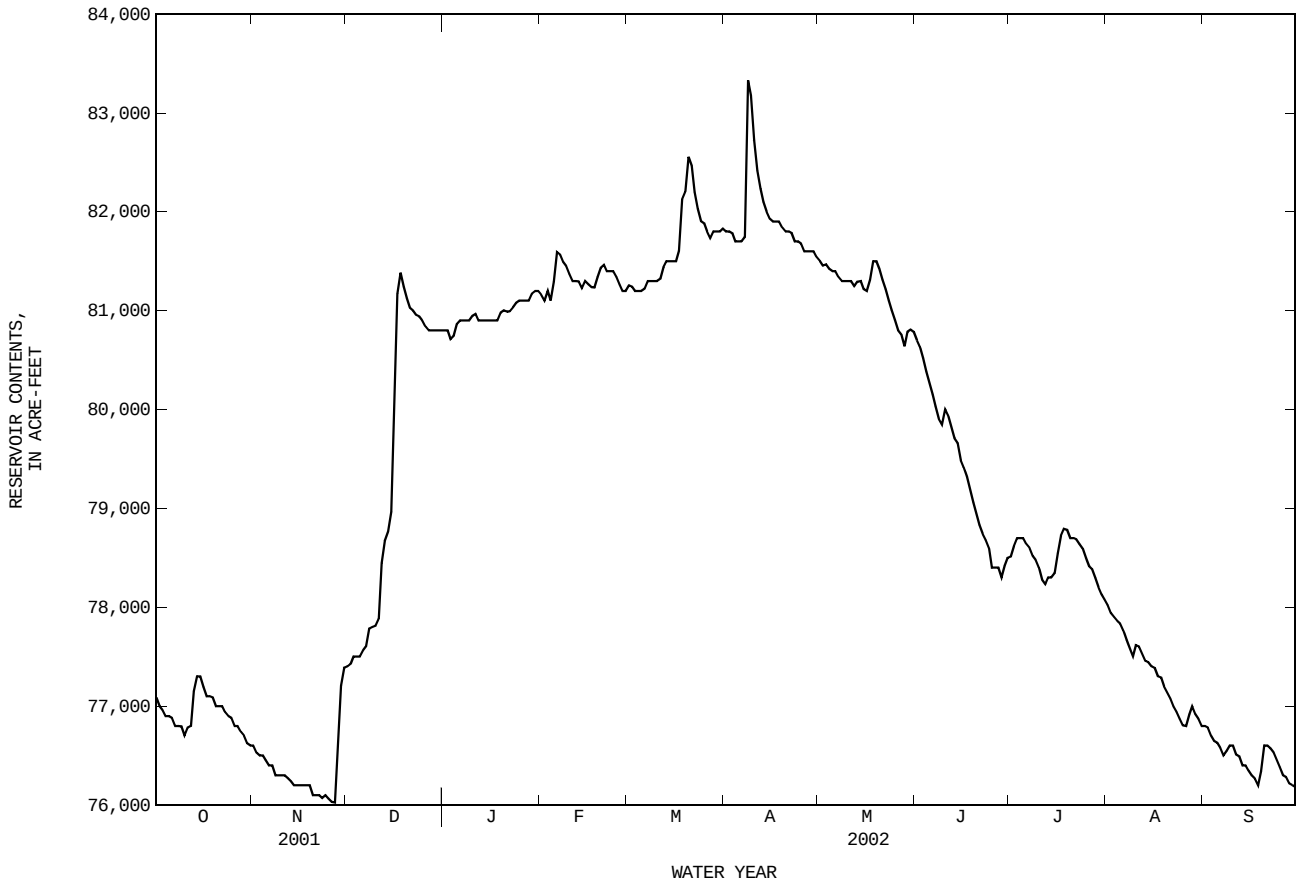
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77100	76600	77400	80800	81200	81300	81800	81500	80700	78500	78000	76800
2	77000	76500	77400	80800	81100	81200	81800	81500	80600	78600	77900	76800
3	77000	76500	77500	80700	81200	81200	81800	81500	80500	78700	77900	76700
4	76900	76500	77500	80700	81100	81200	81700	81400	80400	78700	77900	76600
5	76900	76500	77500	80900	81300	81200	81700	81400	80300	78700	77800	76600
6	76900	76400	77600	80900	81600	81200	81700	81400	80100	78600	77800	76600
7	76800	76400	77600	80900	81600	81300	81700	81300	80000	78600	77700	76500
8	76800	76300	77800	80900	81500	81300	83300	81300	79900	78500	77600	76500
9	76800	76300	77800	80900	81500	81300	83200	81300	79800	78500	77500	76600
10	76700	76300	77800	80900	81400	81300	82700	81300	80000	78400	77600	76600
11	76800	76300	77900	81000	81300	81300	82400	81300	79900	78300	77600	76500
12	76800	76300	78400	80900	81300	81400	82200	81200	79800	78200	77500	76500
13	77200	76200	78700	80900	81300	81500	82100	81300	79700	78300	77500	76400
14	77300	76200	78800	80900	81200	81500	82000	81300	79700	78300	77400	76400
15	77300	76200	79000	80900	81300	81500	81900	81200	79500	78300	77400	76300
16	77200	76200	79800	80900	81300	81500	81900	81200	79400	78500	77400	76300
17	77100	76200	81200	80900	81200	81600	81900	81300	79300	78700	77300	76300
18	77100	76200	81400	80900	81200	82100	81900	81500	79200	78800	77300	76200
19	77100	76200	81200	81000	81300	82200	81800	81500	79100	78800	77200	76300
20	77000	76100	81100	81000	81400	82600	81800	81400	78900	78700	77100	76600
21	77000	76100	81000	81000	81500	82500	81800	81300	78800	78700	77100	76600
22	77000	76100	81000	81000	81400	82200	81800	81200	78700	78700	77000	76600
23	76900	76100	81000	81000	81400	82000	81700	81100	78700	78600	76900	76500
24	76900	76100	80900	81100	81400	81900	81700	81000	e78600	78600	76900	76500
25	76900	76100	80900	81100	81300	81900	81700	80900	e78400	78500	76800	76400
26	76800	76000	80800	81100	81300	81800	81600	80800	e78400	78400	76800	76300
27	76800	76000	80800	81100	81200	81700	81600	80800	e78400	78400	76900	76300
28	76700	76600	80800	81100	81200	81800	81600	80600	78300	78300	77000	76200
29	76700	77200	80800	81200	---	81800	81600	80800	78400	78200	76900	76200
30	76600	77400	80800	81200	---	81800	81500	80800	78500	78100	76900	76200
31	76600	---	80800	81200	---	81800	---	80800	---	78100	76800	---
MEAN	76900	76300	79500	81000	81300	81600	81900	81200	79400	78500	77300	76500
MAX	77300	77400	81400	81200	81600	82600	83300	81500	80700	78800	78000	76800
MIN	76600	76000	77400	80700	81100	81200	81500	80600	78300	78100	76800	76200
(+)	374.62	374.79	375.52	375.60	375.61	375.73	375.67	375.52	375.04	374.95	374.68	374.53
(@)	-500	+800	+3400	+400	0	+600	-300	-700	-2300	-400	-1300	-600

CAL YR 2001 MAX 84900 MIN 74800 (@) +6300
WTR YR 2002 MAX 83300 MIN 76000 (@) -900

e Estimated

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

08034000 Lake Tyler near Whitehouse, TX--Continued



08034500 Mud Creek near Jacksonville, TX

LOCATION.--Lat 31°58'35", long 95°09'38", Cherokee County, Hydrologic Unit 12020004, on right bank on downstream side of bridge on U.S. Highway 79, 0.6 mi downstream from Caney Creek, 3.9 mi downstream from another Caney Creek, 4.0 mi downstream from Missouri Pacific Railroad Co. bridge, 6.9 mi east of Jacksonville, and 25.9 mi upstream from mouth.

DRAINAGE AREA.--376 mi^2.

PERIOD OF RECORD.--May 1939 to Sept. 1979, Oct. 2001 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 271.64 ft above NGVD of 1929. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation by Lake Tyler (station 08034000, capacity 80,900 acre-ft). Several diversions above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since May 1884, 20 ft, in May 1908 and Dec. 1913; flood in May 1884 was higher (stage unknown), from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e113	57	425	202	230	183	448	87	170	190	25	27
2	e113	60	440	190	245	180	434	78	94	191	26	25
3	e115	61	410	187	269	181	445	71	62	130	25	23
4	e118	68	215	180	232	193	345	72	52	114	24	22
5	e121	68	169	195	245	185	260	85	48	85	25	22
6	e122	65	153	272	599	164	218	86	48	63	28	22
7	e120	61	143	286	716	161	201	73	44	50	26	23
8	e117	60	183	288	744	166	1040	66	41	42	24	24
9	e120	62	275	277	938	165	2310	62	37	37	23	25
10	e126	64	287	243	937	165	3660	58	75	34	22	41
11	e135	72	282	228	663	190	2740	64	181	32	24	56
12	e148	88	456	218	440	199	1820	123	205	30	36	35
13	e180	81	494	213	318	225	1260	124	93	29	33	26
14	e300	105	460	203	264	249	934	90	55	33	24	23
15	e450	140	541	194	245	223	708	121	45	63	24	22
16	e410	105	1630	191	228	198	511	92	39	63	24	22
17	e300	90	2330	190	223	197	353	66	41	160	27	23
18	150	79	2500	184	214	296	264	99	54	175	26	23
19	117	79	2290	198	235	487	232	156	44	176	25	27
20	100	75	1290	224	431	826	207	161	36	122	24	139
21	88	77	749	232	379	1460	185	92	35	55	23	141
22	85	81	534	215	389	1830	169	65	48	43	22	111
23	78	82	452	203	369	2000	160	56	59	37	22	53
24	77	86	393	261	283	1490	153	52	42	33	22	30
25	66	93	348	360	240	1070	130	50	35	31	21	24
26	57	108	311	349	218	803	120	48	34	30	22	22
27	55	108	262	346	211	593	118	47	65	28	39	21
28	51	168	237	288	212	450	102	46	94	27	66	19
29	51	331	221	243	---	339	98	61	108	27	82	19
30	52	400	211	229	---	288	93	169	124	26	69	19
31	54	---	208	229	---	535	---	172	---	26	37	---
TOTAL	4189	3074	18899	7318	10717	15691	19718	2692	2108	2182	940	1109
MEAN	135.1	102.5	609.6	236.1	382.8	506.2	657.3	86.84	70.27	70.39	30.32	36.97
MAX	450	400	2500	360	938	2000	3660	172	205	191	82	141
MIN	51	57	143	180	211	161	93	46	34	26	21	19
AC-FT	8310	6100	37490	14520	21260	31120	39110	5340	4180	4330	1860	2200

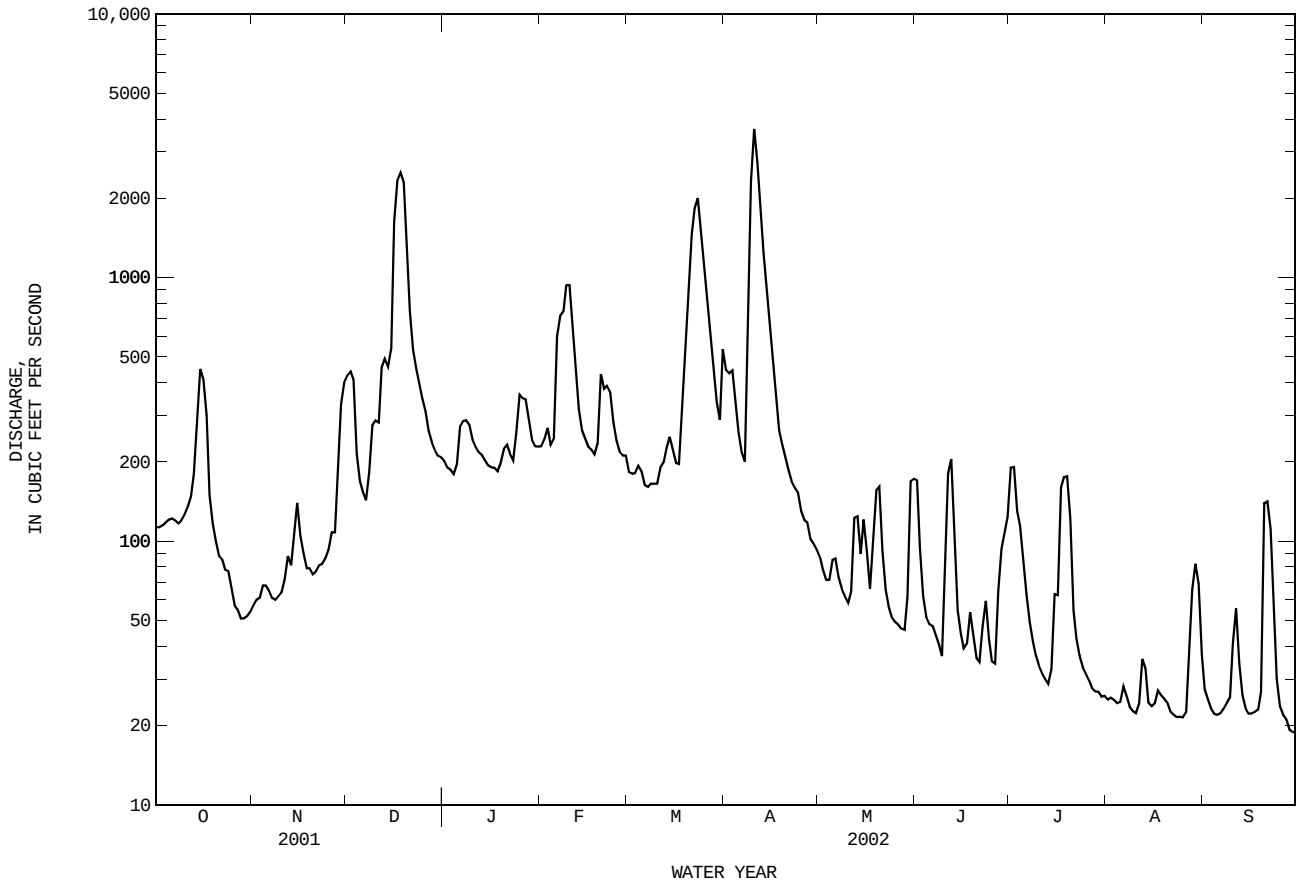
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002h, BY WATER YEAR (WY)

MEAN	84.19	212.1	278.6	345.1	410.9	424.1	463.9	473.9	217.6	82.88	26.85	58.40
MAX	846	1584	1505	1294	1183	1387	2089	2326	1250	971	188	388
(WY)	1946	1941	1961	1961	1975	1945	1966	1944	1973	1945	1940	1973
MIN	0.000	0.21	4.77	13.3	49.0	45.0	29.0	14.8	4.89	0.15	0.000	0.000
(WY)	1940	1940	1957	1957	1967	1967	1972	1972	1971	1954	1939	1939

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 1939 - 2002h	
ANNUAL TOTAL	88637			
ANNUAL MEAN	242.8		256.2	
HIGHEST ANNUAL MEAN			606	1946
LOWEST ANNUAL MEAN			33.0	1964
HIGHEST DAILY MEAN	3660	Apr 10	22700	Apr 25 1966
LOWEST DAILY MEAN	19	Sep 28	0.00	Jul 19 1939
ANNUAL SEVEN-DAY MINIMUM	22	Sep 24	0.00	Jul 19 1939
MAXIMUM PEAK FLOW	3890	Apr 10	27,500	Apr 25 1966
MAXIMUM PEAK STAGE	9.12	Apr 10	15.20	Apr 25 1966
ANNUAL RUNOFF (AC-FT)	175800		185600	
10 PERCENT EXCEEDS	454		618	
50 PERCENT EXCEEDS	120		74	
90 PERCENT EXCEEDS	25		4.0	

e Estimated
h See PERIOD OF RECORD paragraph.

08034500 Mud Creek near Jacksonville, TX--Continued



08036500 Angelina River near Alto, TX

LOCATION.--Lat 31°40'10", long 94°57'24", Nacogdoches-Cherokee County line, Hydrologic Unit 12020004, on left bank of rectified channel on downstream side of bridge on State Highway 21, 0.4 mi upstream from Allen Creek, 1.5 mi upstream from Bingham Creek, 7.5 mi east of Alto, and 149.3 mi upstream from mouth.

DRAINAGE AREA.--1,276 mi^2.

PERIOD OF RECORD.--May to Aug. 1940 (discharge measurements only), Sept. 1940 to Mar. 1949 (fragmentary for 1941-42, 1944-49), Feb. 1959 to current year.
Water-quality records.--Chemical data: Nov. 1961 to Sept. 1963.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 204.30 ft above NGVD of 1929. May 9, 1940, to Mar. 31, 1949, nonrecording gage on bridge at natural channel 1,400 ft to right at same datum. Feb. 18 to Sept. 15, 1959, 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 water year 1959, at least 10% of contributing drainage area has been regulated. No known diversions.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, that of Mar. 31, 1989. A flood in May 1908 reached a stage of about 22 ft, from information by local residents. Flood in 1932 reached a stage of 21.5 ft, from floodmarks and from information by local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	264	250	2080	1240	989	1020	2020	425	676	382	93	143
2	214	248	2430	1070	988	959	2080	394	673	364	85	124
3	190	251	2640	904	985	904	2430	366	568	399	81	100
4	175	277	2580	814	941	875	2800	345	433	459	83	75
5	173	264	2340	839	902	866	2850	367	335	476	73	59
6	423	250	2030	1060	1140	820	2610	412	264	407	67	49
7	551	244	1740	1170	1250	726	2210	342	230	325	65	44
8	624	238	1500	1290	1370	667	2400	315	221	262	61	45
9	725	235	1260	1410	1550	653	2380	301	236	214	58	50
10	661	232	1040	1480	1760	677	2280	280	246	185	58	49
11	431	235	982	1450	1910	701	2860	262	259	167	60	56
12	334	e265	2190	1370	1990	754	4070	251	287	151	57	85
13	767	297	2350	1250	1980	743	5350	245	362	166	54	88
14	1140	318	2600	1120	1880	739	5510	257	355	277	55	87
15	1290	329	3460	980	1700	789	4560	297	342	226	57	79
16	1500	298	5000	845	1460	808	3830	349	290	340	68	66
17	1710	263	6920	774	1220	804	3130	359	228	461	76	56
18	1880	263	8920	756	1010	817	2580	498	212	565	92	50
19	1910	260	10500	820	934	827	2060	527	203	649	104	48
20	1720	249	10400	880	1160	923	1600	590	177	593	112	52
21	1420	233	8560	901	1270	1120	1250	548	194	481	102	74
22	1070	225	7650	937	1390	1310	969	410	192	382	81	158
23	668	227	6390	962	1530	1530	782	353	183	343	68	274
24	439	229	5180	951	1640	1810	720	299	166	260	59	274
25	400	227	4010	935	1630	2140	706	248	156	223	51	224
26	399	234	3300	923	1490	2460	670	224	158	168	47	168
27	387	274	2790	935	1320	2590	628	209	e175	145	52	116
28	370	507	2350	958	1140	2500	570	299	e260	128	71	84
29	327	1500	1960	943	---	2240	495	398	e410	122	78	67
30	278	1820	1660	928	---	1940	456	524	423	113	98	58
31	258	---	1420	966	---	2240	---	614	---	102	144	---
TOTAL	22698	10742	118232	31861	38529	37952	66856	11308	8914	9535	2310	2902
MEAN	732.2	358.1	3814	1028	1376	1224	2229	364.8	297.1	307.6	74.52	96.73
MAX	1910	1820	10500	1480	1990	2590	5510	614	676	649	144	274
MIN	173	225	982	756	902	653	456	209	156	102	47	44
AC-FT	45020	21310	234500	63200	76420	75280	132600	22430	17680	18910	4580	5760

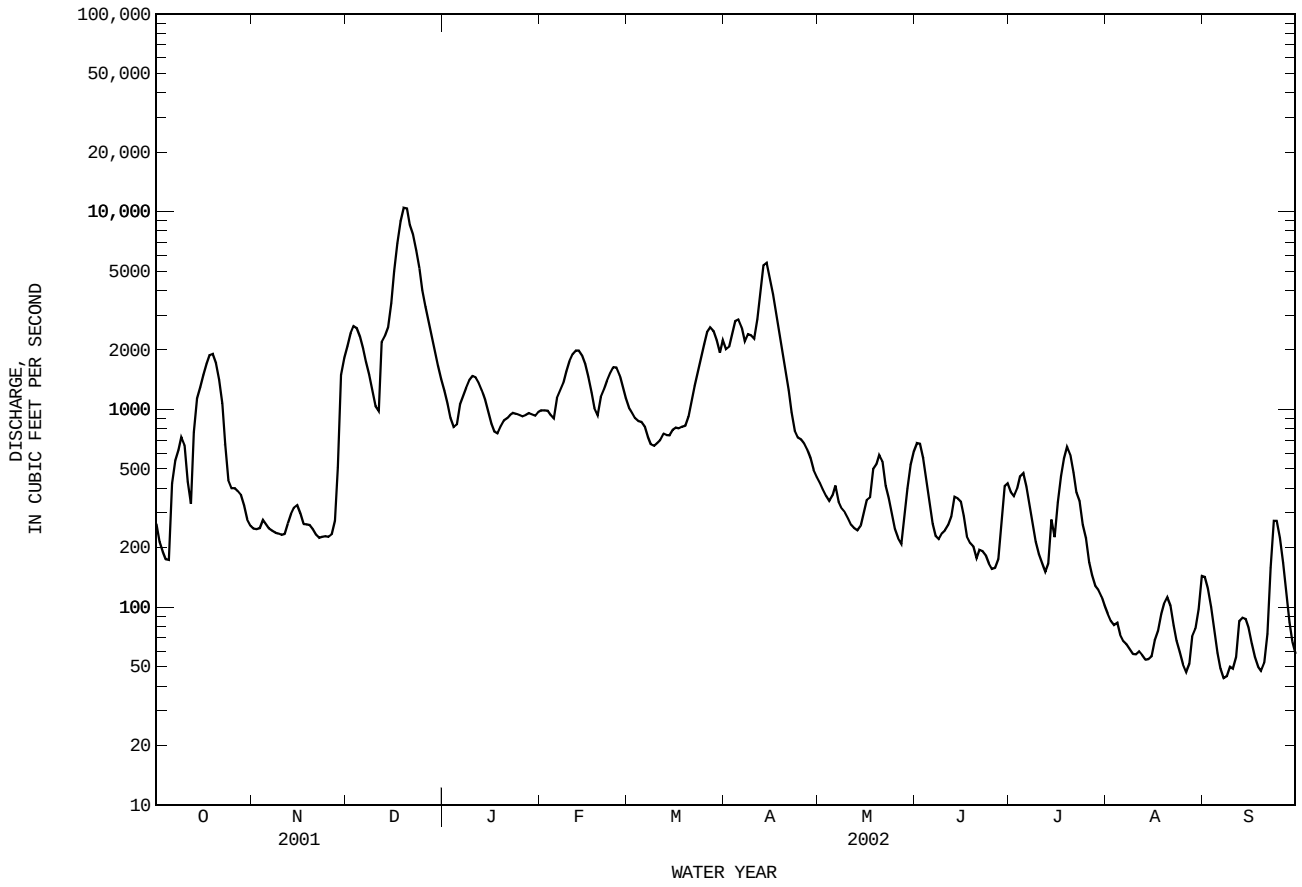
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2002, BY WATER YEAR (WY)

MEAN	296.5	521.9	1259	1474	1667	1722	1491	1317	864.0	279.9	148.3	192.1
MAX	2350	2081	4836	4874	4642	6650	4301	4484	4316	1718	1129	950
(WY)	1974	1986	1961	1991	1983	2001	1969	1966	1993	1976	1997	1973
MIN	5.56	18.0	67.8	150	158	183	172	119	34.2	7.91	19.5	16.0
(WY)	1968	1968	1965	1981	1967	1967	1972	1972	1971	1998	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1959 - 2002	
ANNUAL TOTAL	752701		361839			
ANNUAL MEAN	2062		991.3		930.0	
HIGHEST ANNUAL MEAN					1917	1991
LOWEST ANNUAL MEAN					154	1964
HIGHEST DAILY MEAN	15700	Mar 5	10500	Dec 19	41600	Mar 31 1989
LOWEST DAILY MEAN	49	Aug 17	44	Sep 7	0.00	Jul 30 1998
ANNUAL SEVEN-DAY MINIMUM	54	Aug 14	50	Sep 5	0.15	Jul 28 1998
MAXIMUM PEAK FLOW			10800	Dec 19	42500	Mar 31 1989
MAXIMUM PEAK STAGE			18.93	Dec 19	23.20	Mar 31 1989
ANNUAL RUNOFF (AC-FT)	1493000		717700		673800	
10 PERCENT EXCEEDS	6330		2340		2370	
50 PERCENT EXCEEDS	910		461		345	
90 PERCENT EXCEEDS	132		79		49	

e Estimated

08036500 Angelina River near Alto, TX--Continued



08036700 Lake Nacogdoches near Nacogdoches, TX

LOCATION.--Lat 31°35'19", long 94°49'31", Nacogdoches County, Hydrologic Unit 12020004, at upstream side of dam on Bayou Loco near service outlet tower and 10 mi west of Nacogdoches.

DRAINAGE AREA.--87.9 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam. Deliberate impoundment began July 14, 1976. The dam is owned by the city of Nacogdoches. The water is used for industrial and municipal supply by the city of Nacogdoches. The spillway is an uncontrolled 500-foot-wide cut through natural ground located near the right end of dam. There is an uncontrolled drop inlet with a 20.5-foot-diameter top opening that is connected to an 8 x 7-foot conduit that extends through the dam. A separate multi-gated inlet tower is connected to a valve by a 30-inch conduit through the dam. The valve box directs water to a purification plant. Conservation pool storage is 39,521 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	303.0
Top of design flood	298.5
Crest of spillway	286.0
Crest of drop inlet (top of conservation pool)	279.0
Lowest gated outlet (invert of 30 in. conduit)	238.2

COOPERATION.--The capacity table, furnished by the Texas Water Development Board, dated June 16, 1994, is from a Mar. 1994 survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 58,730 acre-ft, Jan. 30, 1999, elevation, 286.67 ft; minimum contents after initial filling, 20,540 acre-ft, Nov. 26, 1977, elevation, 266.62 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 42,690 acre-ft, Apr. 9, elevation, 280.43 ft; minimum contents, 34,930 acre-ft, Sept. 30, elevation, 276.79 ft.

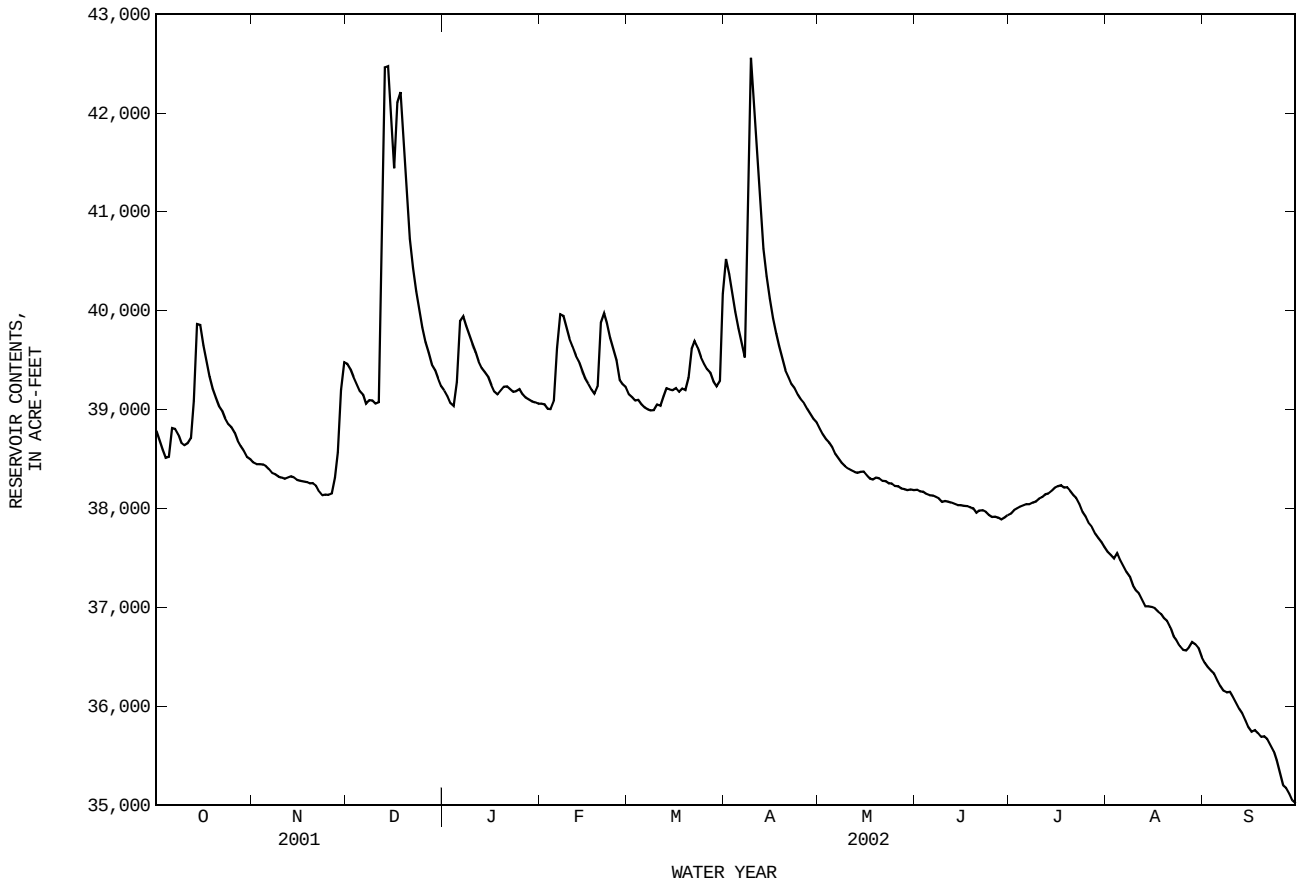
RESERVOIR STORAGE FROM DCP, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38780	38460	39460	39190	39060	39150	40520	38800	38190	37940	37560	36440
2	38690	38450	39410	39130	39050	39120	40370	38750	38170	37980	37530	36390
3	38590	38450	39330	39070	39010	39090	40160	38700	38170	38000	37490	36360
4	38510	38450	39260	39040	39000	39100	39990	38660	38150	38020	37550	36330
5	38520	38430	39180	39280	39080	39050	39820	38610	38130	38030	37480	36260
6	38810	38400	39150	39890	39620	39020	39670	38550	38130	38040	37420	36200
7	38800	38360	39060	39940	39960	39000	39520	38510	38120	38040	37360	36150
8	38740	38340	39100	39850	39950	38990	40820	38460	38100	38060	37310	36140
9	38670	38320	39090	39750	39840	38990	42550	38430	38060	38070	37220	36140
10	38640	38310	39060	39660	39720	39050	42070	38400	38070	38100	37170	36090
11	38660	38300	39070	39580	39630	39040	41470	38390	38070	38110	37140	36040
12	38710	38310	40540	39490	39550	39130	41020	38370	38060	38140	37070	35970
13	39090	38320	42460	39420	39490	39210	40630	38360	38040	38150	37010	35930
14	39860	38310	42470	39380	39400	39200	40350	38370	38030	38180	37010	35850
15	39850	38290	41950	39330	39320	39190	40120	38370	38030	38210	37000	35780
16	39650	38280	41440	39250	39260	39210	39920	38330	38030	38220	36990	35740
17	39480	38270	42110	39180	39200	39180	39770	38300	38020	38230	36960	35760
18	39330	38270	42210	39150	39160	39210	39640	38290	38010	38210	36930	35720
19	39210	38250	41600	39190	39230	39190	39520	38310	38000	38210	36890	35690
20	39120	38260	41120	39230	39880	39320	39400	38300	37960	38180	36860	35690
21	39030	38230	40720	39230	39970	39620	39330	38280	37980	38130	36800	35670
22	38980	38170	40430	39210	39870	39690	39250	38280	37980	38100	36710	35610
23	38910	38130	40200	39180	39720	39630	39210	38250	37970	38040	36670	35540
24	38850	38140	40010	39190	39610	39530	39150	38250	37930	37960	36610	35450
25	38820	38140	39830	39200	39500	39460	39100	38230	37910	37910	36570	35330
26	38760	38150	39680	39160	39300	39410	39060	38220	37920	37840	36560	35200
27	38690	38310	39570	39120	39260	39370	39010	38200	37910	37810	36600	35170
28	38630	38570	39450	39100	39230	39280	38960	38190	37890	37750	36650	35110
29	38580	39200	39400	39080	---	39230	38900	38180	37910	37700	36630	35050
30	38520	39480	39320	39070	---	39290	38870	38190	37930	37660	36590	35020
31	38500	---	39240	39060	---	40170	---	38180	---	37610	36490	---
MEAN	38900	38380	40160	39310	39460	39260	39940	38380	38030	38020	36990	35790
MAX	39860	39480	42470	39940	39970	40170	42550	38800	38190	38230	37560	36440
MIN	38500	38130	39060	39040	39000	38990	38870	38180	37890	37610	36490	35020
(+)	278.52	278.98	278.87	278.78	278.86	279.30	278.69	278.37	278.25	278.10	277.56	276.84
(@)	-350	+980	-240	-180	+170	+940	-1300	-690	-250	-320	-1120	-1470

CAL YR 2001 MAX 54150 MIN 36180 (@) -2120
WTR YR 2002 MAX 42550 MIN 35020 (@) -3830

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

08036700 Lake Nacogdoches near Nacogdoches, TX--Continued



08038000 Attoyac Bayou near Chireno, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°30'15", long 94°18'15", Nacogdoches-San Augustine County Line, Hydrologic Unit 12020005, near right bank on downstream side of bridge on State Highway 21, 2.2 mi upstream from Amaladeros Creek, 2.8 mi east of Chireno, 5.4 mi downstream from Arenoso Creek and 41 mi upstream from mouth.

DRAINAGE AREA.--503 mi^2.

PERIOD OF RECORD.--Jan. 1924 to Sept. 1925, July 1939 to Nov. 1954, and Oct. 1955 to Sept. 30, 1985 (monthly discharge only for some periods, published in WSP 1312 and 1732), Oct. 1985 to Sept. 1989 (annual maximum), Oct. 1989 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical data: Oct. 1962 to Mar. 1963, Jan. 1994 to Aug. 1999. Biochemical data: Jan. 1994 to Aug. 1999.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 169.58 ft above NGVD of 1929. Jan. 24, 1924, to Aug. 29, 1925, and Sept. 6, 1957, to Oct. 27, 1958, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-detention pools of twelve floodwater-retarding structures. These structures control runoff from 46.7 mi^2 above this station.

AVERAGE DISCHARGE.--45 years (water years 1940-54, 1956-1985), 479 ft^3/s, 12.93 in/yr, 347,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft^3/s Nov. 24, 1940 (gage height, 25.97 ft), maximum gage height, 26.01 ft on Jan. 30, 1999 (discharge, 31,700 ft^3/s); minimum, 0.8 ft^3/s Aug. 26-27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1865, 29.9 ft June 29, 1902, from information by local residents. Flood in July 1933 reached a stage of 25.2 ft from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 14	0500	6,780	18.86	Apr. 10	0200	*9,300	*19.83
Dec. 20	0100	3,810	17.29				

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08039100 Ayish Bayou near San Augine, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°23'46", Long 94°09'03", San Augustine County, Hydrologic Unit 12020005, near center of span on downstream side of bridge on State Highway 103, 3.0 mi upstream from Turkey Creek and 9.5 mi south of San Augine.

DRAINAGE AREA.--89.0 mi^2.

PERIOD OF RECORD.--Feb. 1959 to Sept. 1985, Oct. 1985 to Sept. 1989 (annual maximum), Oct. 1989 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1922: 1959(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.22 ft above NGVD of 1929. Prior to June 2, 1959, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversions.

AVERAGE DISCHARGE.--26 years (water years 1960-85), 83.7 ft^3s, 12.77 in/yr, 60,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft^3s, Sept. 14, 1978, gage height, 18.02 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since Oct. 1957, 15,900 ft^3s, on Sept. 21 or 22, 1958, gage height, 17.5 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 12	2200	*5,740	*14.32	Apr. 9	0000	2,580	12.72

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08039300 Sam Rayburn Reservoir near Jasper, TX

LOCATION.--Lat 31°03'38", long 94°06'21", Jasper County, Hydrologic Unit 12020005, in the powerhouse-intake structure of Sam Rayburn Dam on the Angelina River, 10 mi northwest of Jasper and 25.2 mi upstream from mouth.

DRAINAGE AREA.--3,449 mi^2.

PERIOD OF RECORD.--Jan. 1965 to Sept. 2000 (U.S. Army Corps of Engineers furnished contents), Oct. 2000 to current year.
Water-quality records.--Chemical data: Oct. 1964 to Sept. 1984, Sept. 1993 to Sept. 1999. Biochemical data: Nov. 1967 to Sept. 1984, Sept. 1993 to Sept. 1999.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by U.S. Army Corps of Engineers). Prior to Apr. 20, 1965, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam 19,430 ft long, including spillway and dikes. The dam was completed and deliberate impoundment began Mar. 29, 1965. The spillway is an uncontrolled broad-crested weir 2,200 ft wide, on right bank 7,000 ft to right of outlet works and is designed to discharge 125,300 ft^3/s at maximum flood design. The flood-control outlet works consists of two 10.0 x 20.0-foot rectangular concrete-lined conduits controlled by two 10.0 x 20.0-foot tractor-type service gates and one 10.0 x 20.0-foot tractor-type emergency gate. Water for turbines is admitted through four 18.0 x 26.0-foot penstocks and controlled by two wheeled-leaf-type headgates. The dam is owned by the U.S. Army Corps of Engineers. The reservoir is operated for flood control and power generation. The area-capacity tables are based on topographic maps prepared by the U.S. Army Corps of Engineers and detailed sedimentation ranges established in 1961 and dated Feb. 1965. For statement regarding regulation by Natural Resource Conservation Service flood-water-retarding structures, see station 08038000. Conservation pool storage is 2,898,500 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	190.0
Design flood	183.0
Crest of spillway	176.0
Top of flood-control pool	173.0
Top of conservation pool (power pool)	l64.4
Top of power head and sediment pool	149.0
Lowest gated outlet (invert)	105.0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,283,000 acre-ft, Mar. 9, 1992, elevation, 174.95 ft; minimum since conservation storage was reached in 1968, 1,585,000 acre-ft, Aug. 10, 1996, elevation, 150.74 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,223,000 acre-ft, Dec. 28, elevation, 167.14 ft; minimum contents, 2,259,000 acre-ft, Sept. 30, elevation, 158.39 ft.

RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

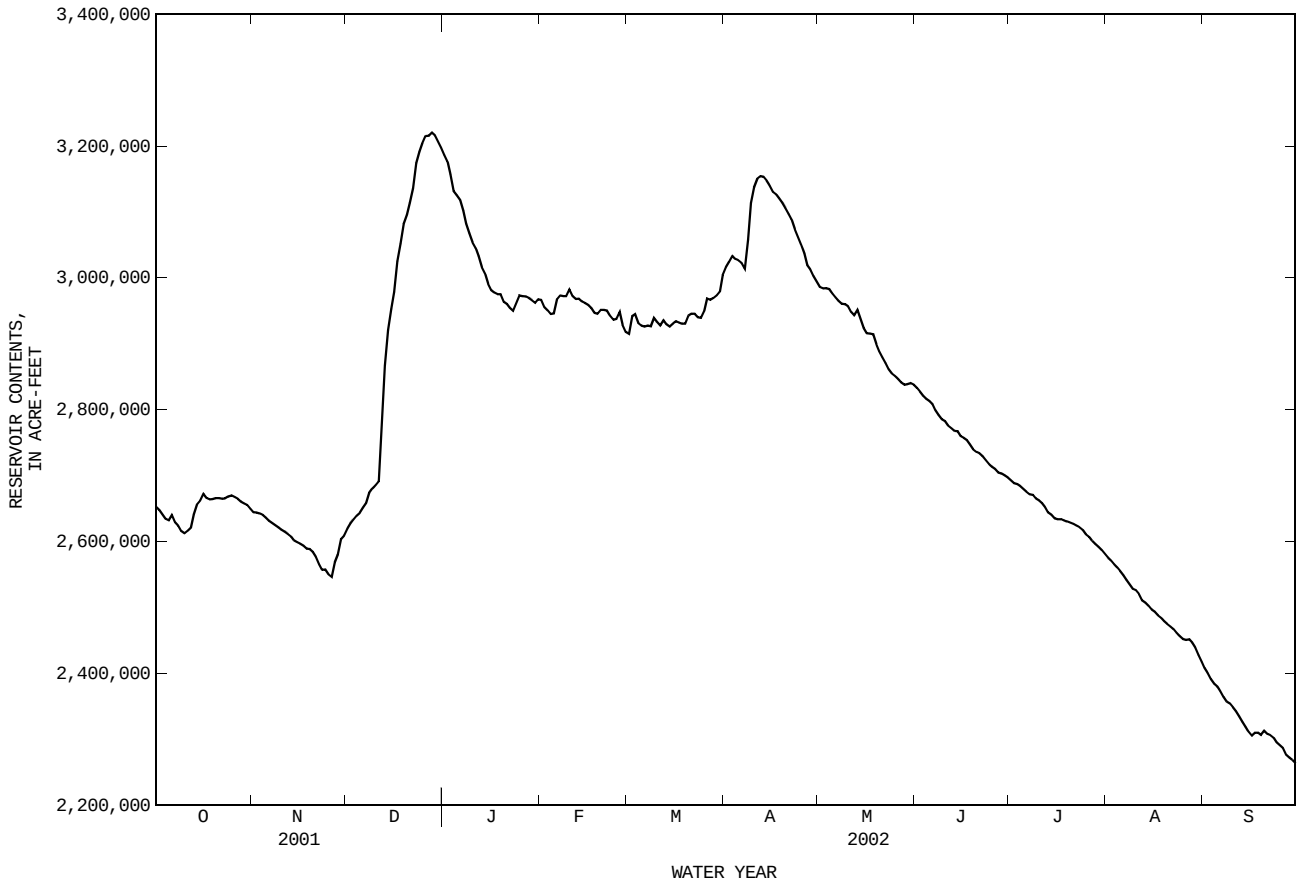
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2652000	2644000	2619000	3186000	2966000	2915000	3016000	2986000	2833000	2693000	2576000	2408000
2	2647000	2644000	2627000	3176000	2955000	2942000	3024000	2984000	2827000	2689000	2571000	2400000
3	2640000	2642000	2633000	3156000	2950000	2944000	3033000	2984000	2821000	2687000	2565000	2391000
4	2634000	2640000	2639000	3131000	2945000	2931000	3029000	2982000	2816000	2684000	2560000	2384000
5	2632000	2636000	2643000	3125000	2946000	2927000	3026000	2976000	2813000	2680000	2555000	2379000
6	2640000	2631000	2651000	3118000	2967000	2926000	3022000	2970000	2808000	2675000	2548000	2373000
7	2629000	2628000	2657000	3102000	2973000	2927000	3014000	2965000	2799000	2671000	2541000	2364000
8	2623000	2624000	2673000	3082000	2972000	2926000	3058000	2961000	2791000	2670000	2534000	2357000
9	2615000	2621000	2680000	3067000	2972000	2939000	3113000	2960000	2785000	2665000	2528000	2354000
10	2612000	2618000	2685000	3054000	2982000	2932000	3138000	2957000	2782000	2662000	2526000	2349000
11	2616000	2614000	2691000	3045000	2972000	2927000	3150000	2948000	2776000	2658000	2520000	2342000
12	2621000	2611000	2766000	3033000	2968000	2935000	3154000	2943000	2772000	2651000	2510000	2335000
13	2641000	2607000	2867000	3016000	2968000	2929000	3153000	2951000	2768000	2644000	2507000	2326000
14	2656000	2602000	2921000	3007000	e2964000	2926000	3148000	2936000	2767000	2641000	2502000	2318000
15	2662000	2599000	2953000	2991000	2961000	2930000	3139000	2924000	2759000	2635000	2497000	2311000
16	2672000	2596000	2978000	2981000	2958000	2934000	3131000	2916000	2757000	2634000	2493000	2305000
17	2665000	2593000	3025000	2978000	2953000	2932000	3126000	2915000	2753000	2633000	2488000	2309000
18	2664000	2589000	3052000	2975000	2947000	2930000	3120000	2914000	2747000	2632000	2484000	2309000
19	2664000	2588000	3082000	2975000	2946000	2930000	3114000	2899000	2739000	2630000	2479000	2306000
20	2665000	2584000	3095000	2963000	2951000	2942000	3105000	2889000	2736000	2628000	2475000	2313000
21	2665000	2576000	3114000	2960000	2951000	2946000	3097000	2879000	2733000	2626000	2471000	2308000
22	2665000	2565000	3135000	2954000	2950000	2945000	3089000	2870000	2729000	2624000	2466000	2306000
23	2665000	2557000	3173000	2950000	2942000	2940000	3074000	2861000	2723000	2621000	2461000	2302000
24	2668000	2557000	3191000	2961000	2936000	2939000	3062000	2855000	2717000	2618000	2456000	2295000
25	2670000	2550000	3204000	2973000	2937000	2949000	3050000	2851000	2713000	2611000	2452000	2291000
26	2667000	2546000	3215000	2972000	2948000	2968000	3037000	2846000	2710000	2607000	2450000	2286000
27	2665000	2569000	3215000	2971000	2928000	2966000	3019000	2841000	2705000	2601000	2452000	2276000
28	2660000	2580000	3220000	2969000	2917000	2969000	3012000	2838000	2703000	2596000	2447000	2272000
29	2657000	2603000	3216000	2966000	---	2973000	3002000	2838000	2700000	2592000	2439000	2268000
30	2655000	2609000	3207000	2962000	---	2979000	2994000	2840000	2697000	2587000	2427000	2263000
31	2649000	---	3198000	2967000	---	3004000	---	2838000	---	2582000	2417000	---
MEAN	2650000	2601000	2936000	3025000	2954000	2942000	3075000	2913000	2759000	2640000	2497000	2327000
MAX	2672000	2644000	3220000	3186000	2982000	3004000	3154000	2986000	2833000	2693000	2576000	2408000
MIN	2612000	2546000	2619000	2950000	2917000	2915000	2994000	2838000	2697000	2582000	2417000	2263000
(+)	162.16	161.79	166.93	165.00	164.57	165.31	165.23	163.87	162.60	161.54	159.97	158.43
(@)	-11000	-40000	+589000	-231000	-50000	+87000	-10000	-156000	-141000	-115000	-165000	-154000

CAL YR 2001 MAX 4029000 MIN 2436000 (@) +780000
WTR YR 2002 MAX 3220000 MIN 2263000 (@) -397000

e Estimated

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

08039300 Sam Rayburn Reservoir near Jasper, TX--Continued



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 NGVD of 1929. 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 nonoverflow 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, 90,490 acre-ft, Sept. 21, elevation, 82.71 ft; minimum contents, 26,100 acre-ft, Nov. 29, elevation, 75.67 ft.

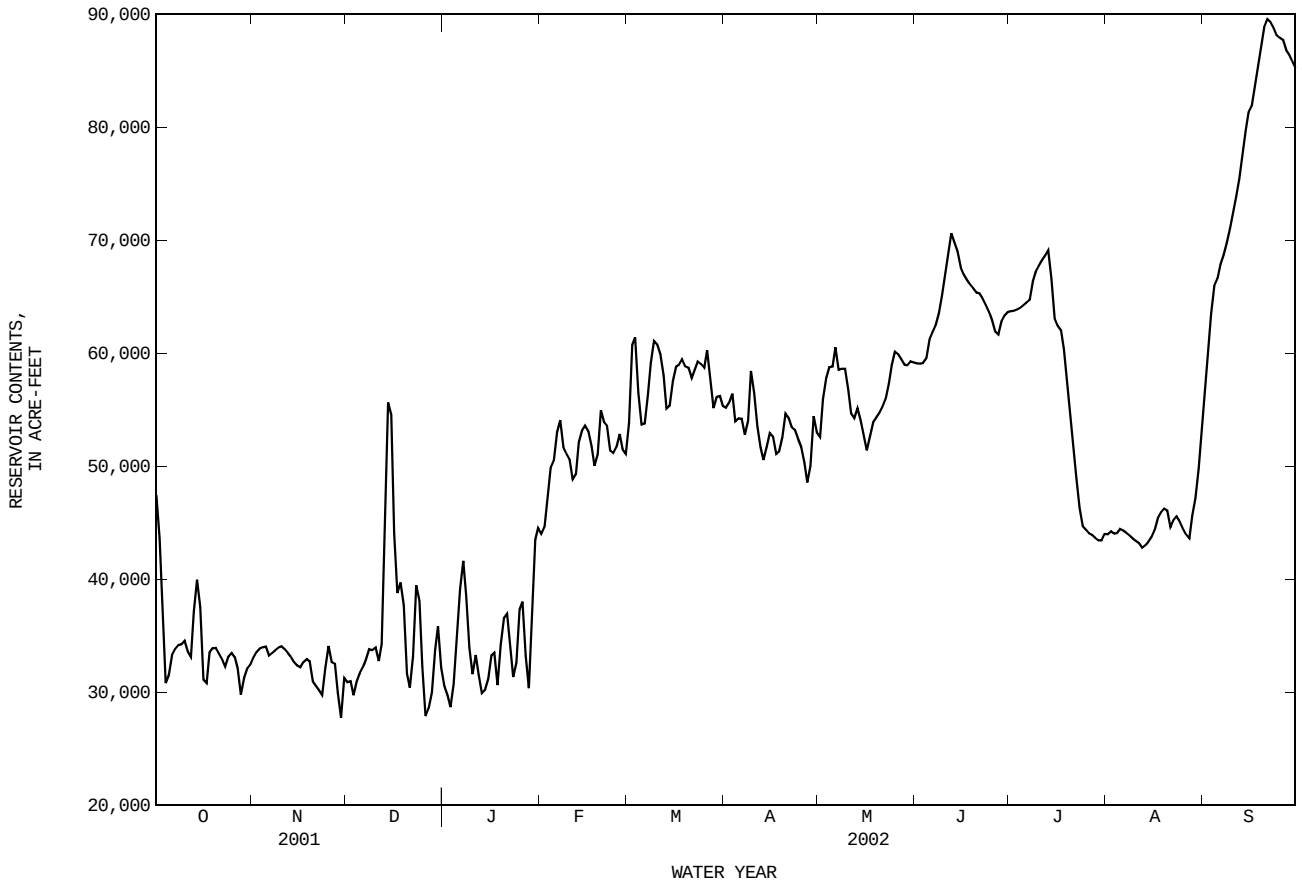
RESERVOIR STORAGE, in (ACRE-FEET), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47420	33010	30880	30500	43980	53810	55160	52560	59070	63720	43940	56470
2	43620	33530	30950	29680	44620	60690	55600	55930	59040	63740	44210	59980
3	35760	33830	29710	28660	47510	61390	56400	57750	59110	63850	44010	63470
4	30790	33970	30910	30720	49830	56510	53950	58760	59510	63980	44080	65930
5	31510	34030	31690	35310	50490	53680	54210	58810	61190	64210	44410	66610
6	33260	33220	32230	39120	52980	53750	54180	60510	61860	64470	44270	67810
7	33810	33450	32890	41610	54040	56300	52760	58520	62420	64700	44070	68660
8	34160	33710	33790	38560	51670	59100	53980	58590	63470	66330	43840	69730
9	34210	33940	33710	33930	51120	61080	58410	58610	65090	67180	43550	71010
10	34510	34050	33930	31570	50620	60750	56490	56760	67040	67710	43360	72340
11	33590	33800	32750	33280	48810	59870	53540	54680	68630	68210	43170	73790
12	33100	33460	34250	31550	49270	58050	51640	54250	70570	68630	42750	75410
13	37140	33080	46130	29920	52080	55080	50530	55080	69750	69090	42980	77630
14	39930	32670	55600	30200	53100	55330	51660	54020	68950	66580	43280	79690
15	37520	32330	54530	31150	53560	57490	52910	52720	67560	63080	43710	81290
16	31090	32180	44050	33260	53080	58760	52600	51390	66970	62390	44360	81870
17	30780	32670	38760	33460	51750	58930	51070	52570	66490	62010	45410	83640
18	33480	32910	39690	30610	50010	59450	51300	53840	66040	60330	45920	85410
19	33880	32720	37690	34200	51010	58800	52500	54270	65700	57840	46240	87020
20	33890	30930	31630	36510	54910	58700	54630	54660	65360	55040	46050	88830
21	33380	30520	30370	36890	53880	57780	54230	55230	65280	51970	44570	89530
22	32880	30120	33150	34060	53570	58470	53460	55930	64850	48910	45220	89290
23	32250	29750	39430	31320	51390	59260	53220	57290	64270	46290	45540	88740
24	33130	32140	38090	32580	51160	59020	52440	58910	63660	44660	45100	88120
25	33430	34070	32220	37300	51700	58690	51690	60150	62950	44360	44460	87890
26	33080	32630	27870	37970	52810	60240	50290	59900	61930	44010	43940	87690
27	32090	32480	28580	33210	51460	57560	48550	59460	61640	43900	43600	86790
28	29780	29910	29960	30340	51050	55110	50030	58970	62800	43650	45610	86360
29	31230	27710	33690	35930	---	56100	54400	58930	63340	43430	47150	85830
30	32090	31250	35840	43470	---	56190	52980	59260	63620	43420	49730	85220
31	32430	---	32140	44510	---	55310	---	59160	---	43990	53090	---
MEAN	34170	32470	35390	34240	51120	57780	53160	56690	64270	57470	44890	78400
MAX	47420	34070	55600	44510	54910	61390	58410	60510	70570	69090	53090	89530
MIN	29780	27710	27870	28660	43980	53680	48550	51390	59040	43420	42750	56470
(+)	76.69	76.51	76.64	78.32	79.10	79.57	79.31	79.98	80.41	78.26	79.33	80.30
(@)	-13000	-1180	+890	-12370	+6540	+4260	-2330	+6180	+4460	-19630	+9100	+32130

CAL YR 2001 MAX 97150 MIN 27710 (@) -47520
WTR YR 2002 MAX 89530 MIN 27710 (@) +39790

(+) 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, 1.0 mi upstream from Walnut Run, 1.8 mi downstream from Town Bluff Dam, 2.0 mi northeast of Town Bluff, 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 NGVD of 1929. Dec. 4, 1954, to Oct. 27, 1989, water-stage recorder at site 1.5 mi upstream at same datum. Prior to May 21, 1953, water-stage recorder, and May 21, 1953, to Dec. 3, 1954, nonrecording gage at former site at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1951, at least 10% of contributing drainage area has been regulated. There are some diversions upstream from station. No flow at times.

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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

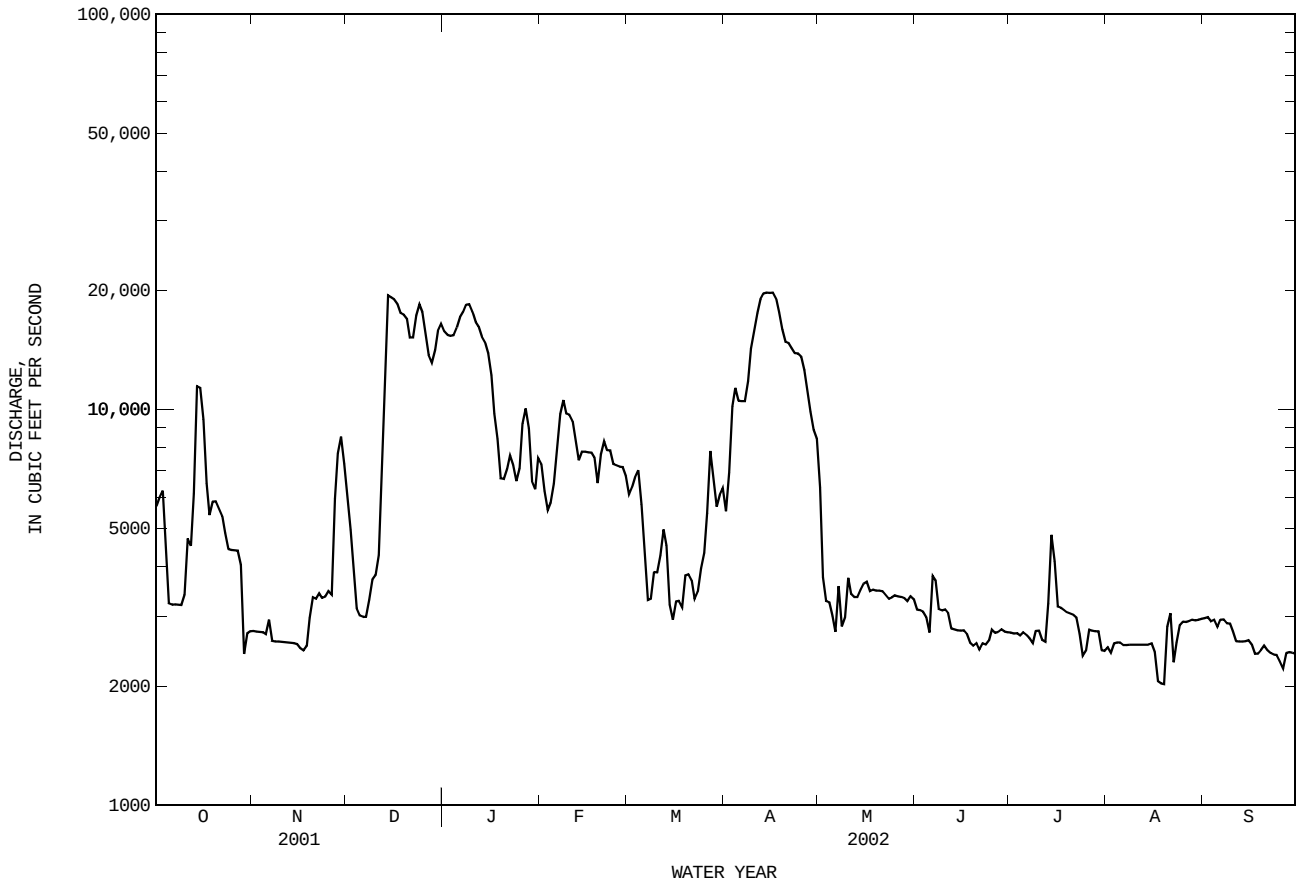
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5690	2750	5950	15800	7290	6090	5530	6350	3120	2730	2500	2970
2	6000	2750	4960	15400	6220	6380	6940	3770	3110	2710	2430	2990
3	6230	2740	4040	15400	5570	6740	10200	3270	3080	2720	2560	2910
4	4630	2730	3150	15400	5820	7020	11300	3250	2990	2680	2570	2940
5	3240	2710	3010	16100	6490	5750	10500	3000	2730	2730	2580	2820
6	3210	2940	2990	17100	8010	4390	10500	2740	3800	2690	2540	2940
7	3220	2600	2990	17700	9720	3290	10500	3580	3700	2640	2540	2950
8	3210	2590	3300	18400	10600	3320	11800	2830	3130	2570	2540	2880
9	3200	2590	3710	18500	9760	3880	14300	2980	3100	2760	2540	2870
10	3400	2580	3810	17700	9690	3870	15800	3750	3120	2760	2540	2750
11	4720	2580	4280	16600	9340	4270	17500	3420	3060	2610	2540	2600
12	4520	2580	7160	16200	8340	4980	19000	3360	2800	2590	2540	2590
13	6110	2570	13000	15300	7440	4530	19600	3360	2780	3230	2540	2590
14	11400	2560	19400	14800	7820	3210	19800	3510	2770	4810	2540	2600
15	11300	2550	19200	13900	7830	2940	19700	3620	2760	4140	2560	2610
16	9450	2490	19000	12200	7800	3270	19700	3660	2770	3170	2440	2550
17	6500	2460	18500	9770	7770	3280	19100	3470	2700	3150	2060	2410
18	5410	2520	17500	8430	7570	3160	17600	3500	2570	3120	2030	2410
19	5850	2970	17400	6700	6510	3800	15900	3480	2530	3070	2020	2460
20	5860	3350	17000	6670	7690	3830	14800	3480	2570	3040	2820	2530
21	5620	3320	15200	7070	8300	3700	14700	3470	2470	3020	3050	2470
22	5380	3420	15200	7650	7890	3320	14300	3400	2560	2980	2290	2420
23	4880	3330	17300	7240	7880	3460	13900	3320	2540	2710	2570	2400
24	4440	3360	18400	6590	7280	3960	13900	3340	2600	2380	2850	2390
25	4410	3470	17700	7110	7220	4340	13600	3390	2770	2450	2910	2310
26	4410	3400	15500	9190	7160	5470	12600	3370	2720	2770	2900	2210
27	4400	5950	13700	10100	7150	7850	11300	3360	2740	2760	2920	2420
28	4040	7750	13100	8960	6790	6660	9880	3330	2780	2750	2940	2430
29	2410	8540	14100	6590	---	5680	8870	3270	2750	2750	2930	2430
30	2710	7280	15800	6290	---	6090	8430	3370	2730	2460	2940	2410
31	2750	---	16500	7550	---	6320	---	3310	---	2460	2960	---
TOTAL	158600	103430	362850	372410	216950	144850	411550	107310	85850	89410	80690	78260
MEAN	5116	3448	11700	12010	7748	4673	13720	3462	2862	2884	2603	2609
MAX	11400	8540	19400	18500	10600	7850	19800	6350	3800	4810	3050	2990
MIN	2410	2460	2990	6290	5570	2940	5530	2740	2470	2380	2020	2210
AC-FT	314600	205200	719700	738700	430300	287300	816300	212800	170300	177300	160000	155200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2002, BY WATER YEAR (WY)

MEAN	2333	2853	4582	6562	7658	8661	8150	8804	5873	3871	2487	2310
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 2002	
ANNUAL TOTAL	3622540		2212160			
ANNUAL MEAN	9925		6061		5370	
HIGHEST ANNUAL MEAN					12010	1995
LOWEST ANNUAL MEAN					961	1971
HIGHEST DAILY MEAN	25700	Mar 16	19800	Apr 14	90100	May 21 1953
LOWEST DAILY MEAN	1800	Aug 28	2020	Aug 19	0.00	Oct 6 1956
ANNUAL SEVEN-DAY MINIMUM	1850	Aug 27	2310	Aug 13	0.00	Nov 17 1956
MAXIMUM PEAK FLOW			20300	Dec 14	90900	May 21 1953
MAXIMUM PEAK STAGE			66.61	Dec 14	82.85	May 21 1953
ANNUAL RUNOFF (AC-FT)	7185000		4388000		3890000	
10 PERCENT EXCEEDS	18500		15200		15100	
50 PERCENT EXCEEDS	8990		3420		3030	
90 PERCENT EXCEEDS	2740		2540		572	

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 NGVD of 1929. 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.--No estimated daily discharges. Records good. 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 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6000	3150	11900	17900	7760	7600	6670	9270	3960	3210	3160	3200
2	5850	3160	9710	19000	8090	7160	6410	7880	3780	3190	3230	3190
3	5910	3150	7210	19200	7650	6920	6390	5890	3680	3220	3170	3180
4	6170	3140	5800	18900	6780	6990	7660	4590	3620	3210	3260	3150
5	5690	3120	4580	18900	6470	7280	9530	4130	3530	3170	3320	3140
6	4500	3100	3920	19200	6890	6890	10700	3880	3350	3170	3310	3100
7	3740	3230	3700	19500	7680	5930	10900	3370	3860	3150	3290	3120
8	3510	3070	3630	20200	9140	4820	12600	3970	4060	3120	3260	3130
9	3450	2970	3740	21000	10700	4140	13600	3660	3920	3040	3270	3070
10	3420	2950	4060	21800	11400	4400	14700	3440	3760	3160	3270	3060
11	3660	2950	4190	22200	11300	4520	16600	3990	3710	3240	3260	3000
12	4520	2940	4620	22000	11000	4710	18200	4050	3650	3130	3290	2860
13	6250	2930	6400	21200	10400	5070	19700	3960	3430	3220	3330	2810
14	8010	2920	11900	20300	9210	5270	21100	3910	3290	3820	3320	2800
15	10600	2920	18900	19400	8570	4560	22100	3960	3240	4910	3490	2790
16	12800	2900	24900	18500	8470	3810	22700	4080	3250	5240	3590	2790
17	13800	2850	26800	17500	8440	3840	22900	4220	3250	4750	3460	2780
18	11500	2810	26100	15400	8410	3910	23000	4150	3200	4350	3080	2690
19	7790	2840	25000	13000	8400	3840	22600	4080	3080	4170	2890	2780
20	6470	3050	23700	10300	8130	4150	21500	4040	2990	4000	2850	3300
21	6160	3480	22600	8480	7780	4410	19800	4010	2990	3880	3050	3460
22	6000	3540	21800	7960	8600	4390	18100	4000	2940	3800	3460	3310
23	5790	3630	20900	8200	8840	4080	17200	3960	2940	3730	2950	3050
24	5490	3640	20500	8390	8850	3980	16600	3860	2980	3570	2860	2880
25	5030	3600	21200	8020	8470	4300	16100	3850	3010	3260	3050	2770
26	4790	3680	22200	7800	8060	4710	15700	3880	3190	3010	3150	2670
27	4710	4870	22200	8510	7820	5250	15300	3890	3220	3470	3260	2560
28	4680	6660	20800	9930	7710	6480	14200	3870	3240	3520	3280	2590
29	4520	9960	18600	10700	---	7140	12500	3860	3270	3520	3280	2640
30	3580	12000	17000	9640	---	6630	10600	3850	3250	3520	3250	2640
31	3120	---	16900	7830	---	6550	---	3970	---	3370	3210	---
TOTAL	187510	115210	455460	470860	241020	163730	465660	133520	101640	111120	99900	88510
MEAN	6049	3840	14690	15190	8608	5282	15520	4307	3388	3585	3223	2950
MAX	13800	12000	26800	22200	11400	7600	23000	9270	4060	5240	3590	3460
MIN	3120	2810	3630	7800	6470	3810	6390	3370	2940	3010	2850	2560
AC-FT	371900	228500	903400	934000	478100	324800	923600	264800	201600	220400	198200	175600

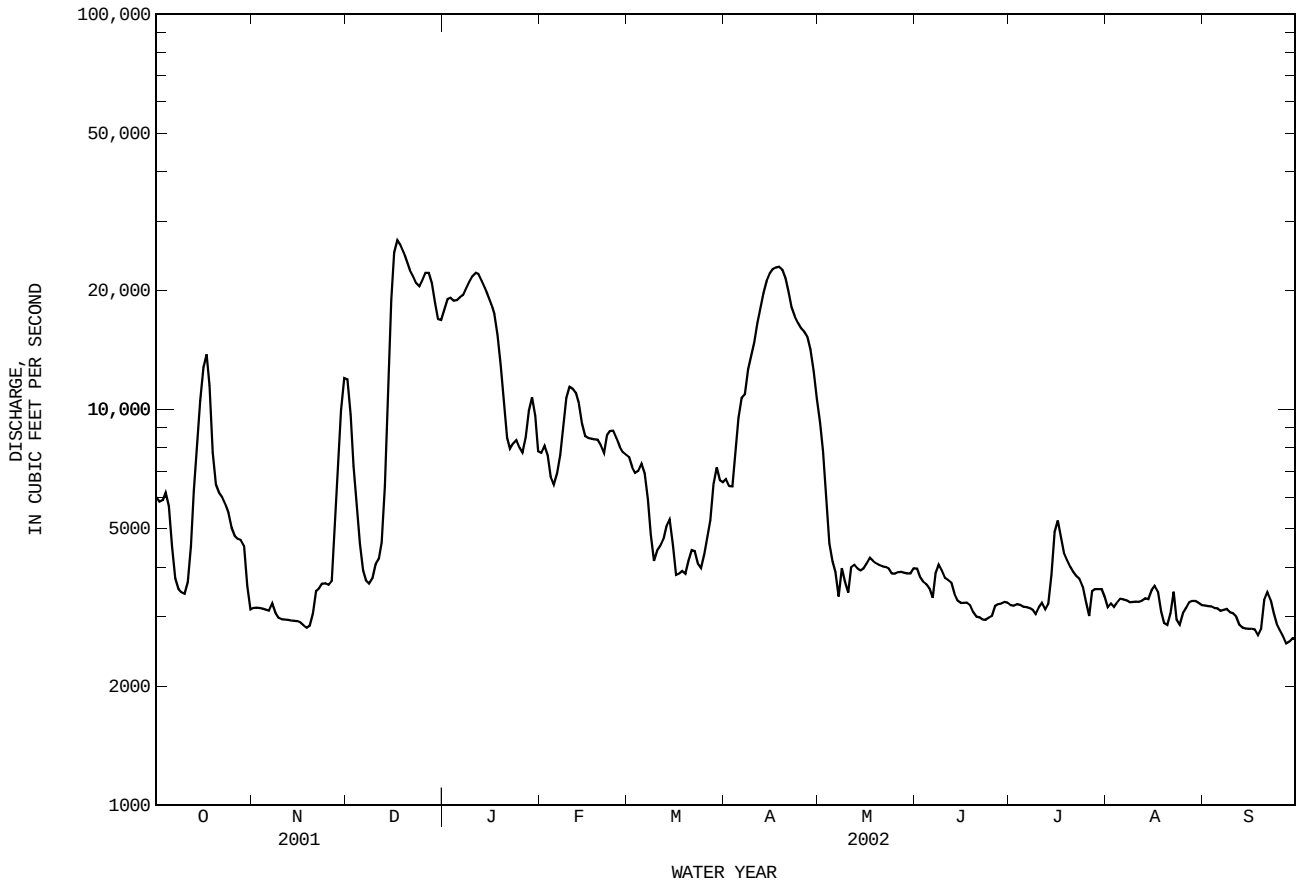
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2002z, BY WATER YEAR (WY)

MEAN	2545	3023	5040	7334	8393	9504	9097	9409	6620	4447	2734	2470
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1951 - 2002z	
ANNUAL TOTAL	4281680		2634140			
ANNUAL MEAN	11730		7217		5872	
HIGHEST ANNUAL MEAN					13480	1995
LOWEST ANNUAL MEAN					1128	1971
HIGHEST DAILY MEAN	31400	Mar 18	26800	Dec 17	80000	May 24 1953
LOWEST DAILY MEAN	1880	Aug 30	2560	Sep 27	63	Nov 26 1956
ANNUAL SEVEN-DAY MINIMUM	1980	Aug 25	2680	Sep 24	66	Nov 23 1956
MAXIMUM PEAK FLOW			27000	Dec 17	47900	Jul 6 1989
MAXIMUM PEAK STAGE			17.18	Dec 17	20.79	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	8493000		5225000		4254000	
10 PERCENT EXCEEDS	22900		18900		16600	
50 PERCENT EXCEEDS	10300		4080		3240	
90 PERCENT EXCEEDS	3120		3010		717	

z Period of regulated streamflow.



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 relation between each chemical constituent and specific conductance. The computation of the selected constituent loads might include estimated discharge or specific conductance data. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum 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 2001 TO SEPTEMBER 2002

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)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
FEB													
06...	1151	6890	160	6.8	9.0	765	10.4	90	34	15	8.08	3.27	15.1
MAY													
29...	0950	3850	143	6.8	24.0	765	7.2	85	29	2	6.78	2.96	12.9
AUG													
13...	1201	3520	133	7.3	29.5	764	8.9	117	28	6	6.59	2.83	12.4

Date	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									
06...	1	47	2.51	19	22.9	16.6	E.1	10.1	90
MAY									
29...	1	46	2.66	27	17.2	13.9	<.1	6.2	79
AUG									
13...	1	46	2.67	22	16.0	11.9	E.1n	6.8	72

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

Value qualifier codes used in this report:
n -- Below the NDV

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08041500 Village Creek near Kountze, TX

LOCATION.--Lat 30°23'52", long 94°15'48", Hardin County, Hydrologic Unit 12020006, on downstream side of bridge on Farm Road 418, 1.6 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.1 mi upstream from Cypress Creek, 3.4 mi northeast of Kountze and 4.3 mi downstream from Beech Creek.

DRAINAGE AREA.--860 mi^2.

PERIOD OF RECORD.--June 1924 to Oct. 1929 (discharge measurements only), 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 NGVD of 1929. 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.--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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	253	286	6180	937	588	475	445	207	109	156	103	194
2	228	283	5210	868	586	527	399	192	144	157	95	148
3	208	284	4260	811	604	714	357	180	168	153	87	119
4	194	280	3200	763	605	832	319	168	157	183	82	103
5	186	278	2030	750	554	875	289	158	127	171	76	93
6	201	271	1230	1050	686	834	266	159	107	158	70	88
7	239	260	1020	1450	1040	676	247	172	96	148	70	87
8	379	248	1020	1640	1300	558	543	151	93	129	74	87
9	458	241	1000	1550	1420	519	2070	141	87	113	85	89
10	392	236	1010	1220	1220	492	3210	131	87	124	79	94
11	322	232	1050	967	896	457	3410	121	95	131	68	105
12	369	249	1190	845	702	424	3090	113	97	117	66	112
13	2040	251	2420	766	609	402	2350	106	99	249	75	108
14	4530	242	12800	686	550	388	1460	100	97	860	76	95
15	4810	232	19400	627	510	382	867	96	105	904	104	84
16	4300	230	12000	586	484	375	686	92	103	742	189	78
17	4140	228	7180	559	459	368	584	94	96	855	224	73
18	3290	224	5580	e565	438	368	518	100	91	853	219	72
19	2030	220	4510	e636	426	370	467	106	104	690	174	95
20	946	220	4130	e687	535	365	426	110	135	469	144	741
21	663	219	4400	e668	1140	360	385	113	184	325	147	1430
22	572	207	3830	628	1650	374	350	119	144	242	128	1100
23	518	209	4120	591	1560	365	320	110	109	194	139	706
24	482	209	3900	586	1290	363	301	100	102	165	164	411
25	459	211	3420	669	929	335	276	93	102	139	173	272
26	428	205	3030	898	686	314	261	90	121	120	168	197
27	393	421	2470	1020	577	347	249	88	125	151	178	167
28	360	1440	1800	983	511	491	241	88	137	164	238	146
29	334	3010	1310	828	---	537	232	88	199	128	341	122
30	311	5520	1110	675	---	468	222	92	165	112	325	111
31	296	---	1010	613	---	440	---	100	---	107	255	---
TOTAL	34331	16646	126820	26122	22555	14795	24840	3778	3585	9209	4416	7327
MEAN	1107	554.9	4091	842.6	805.5	477.3	828.0	121.9	119.5	297.1	142.5	244.2
MAX	4810	5520	19400	1640	1650	875	3410	207	199	904	341	1430
MIN	186	205	1000	559	426	314	222	88	87	107	66	72
AC-FT	68100	33020	251500	51810	44740	29350	49270	7490	7110	18270	8760	14530
CFSM	1.29	0.65	4.76	0.98	0.94	0.55	0.96	0.14	0.14	0.35	0.17	0.28
IN.	1.49	0.72	5.49	1.13	0.98	0.64	1.07	0.16	0.16	0.40	0.19	0.32

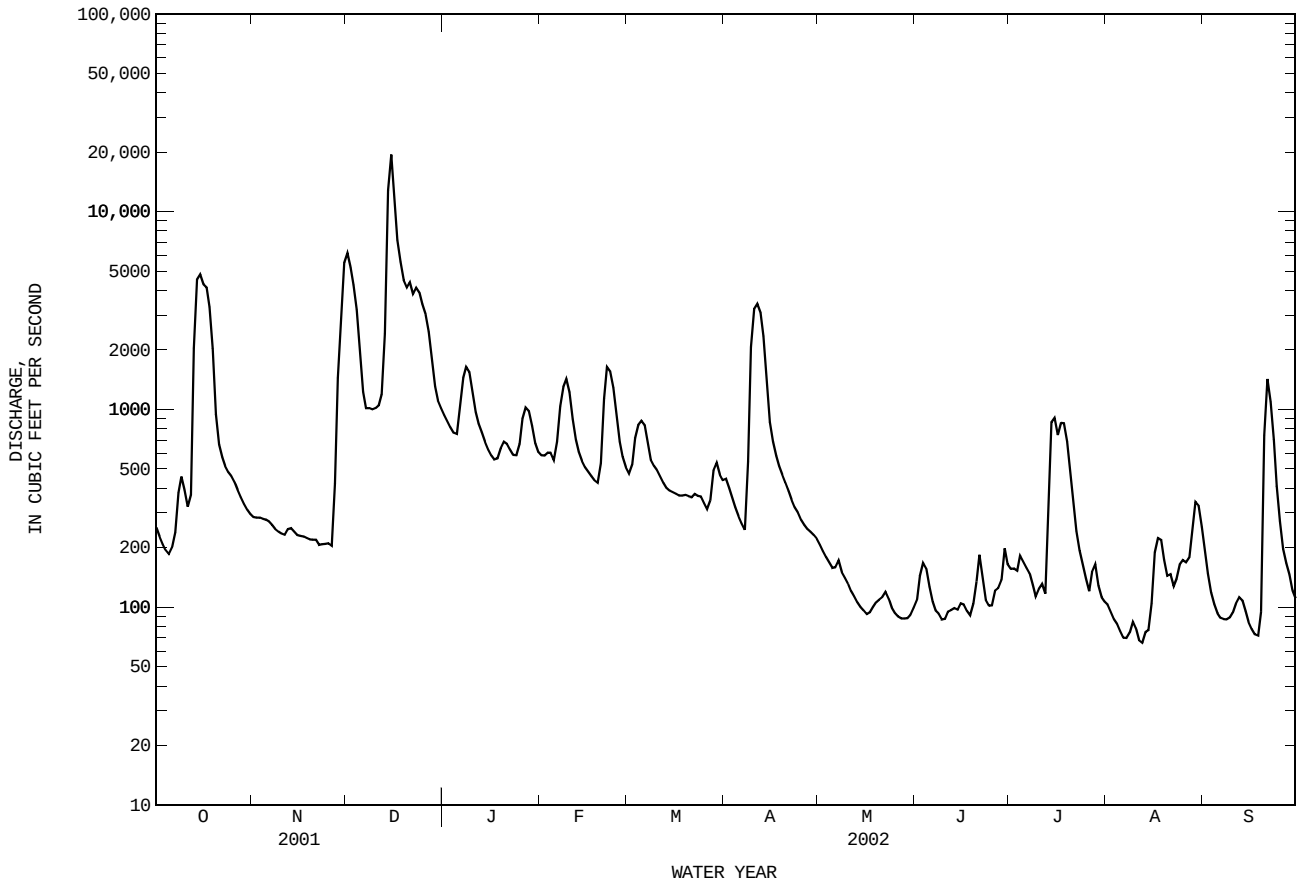
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2002, BY WATER YEAR (WY)

MEAN	404.5	703.3	1138	1471	1437	1210	1142	1139	860.8	486.8	252.9	330.2
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 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1939 - 2002	
ANNUAL TOTAL	402525		294424			
ANNUAL MEAN	1103		806.6		881.7	
HIGHEST ANNUAL MEAN					2248	1950
LOWEST ANNUAL MEAN					190	1971
HIGHEST DAILY MEAN	19400	Dec 15	19400	Dec 15	62200	Nov 26 1940
LOWEST DAILY MEAN	56	Aug 26	66	Aug 12	16	Oct 1 1956
ANNUAL SEVEN-DAY MINIMUM	59	Aug 21	73	Aug 6	18	Sep 28 1956
MAXIMUM PEAK FLOW			20700	Dec 15	67200	Nov 26 1940
MAXIMUM PEAK STAGE			21.64	Dec 15	27.60	Nov 26 1940
ANNUAL RUNOFF (AC-FT)	798400		584000		638800	
ANNUAL RUNOFF (CFSM)	1.28		0.94		1.03	
ANNUAL RUNOFF (INCHES)	17.41		12.74		13.93	
10 PERCENT EXCEEDS	3020		1640		2140	
50 PERCENT EXCEEDS	421		311		336	
90 PERCENT EXCEEDS	102		95		81	

e Estimated

08041500 Village Creek near 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 NGVD of 1929. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. 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 FROM DCP, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

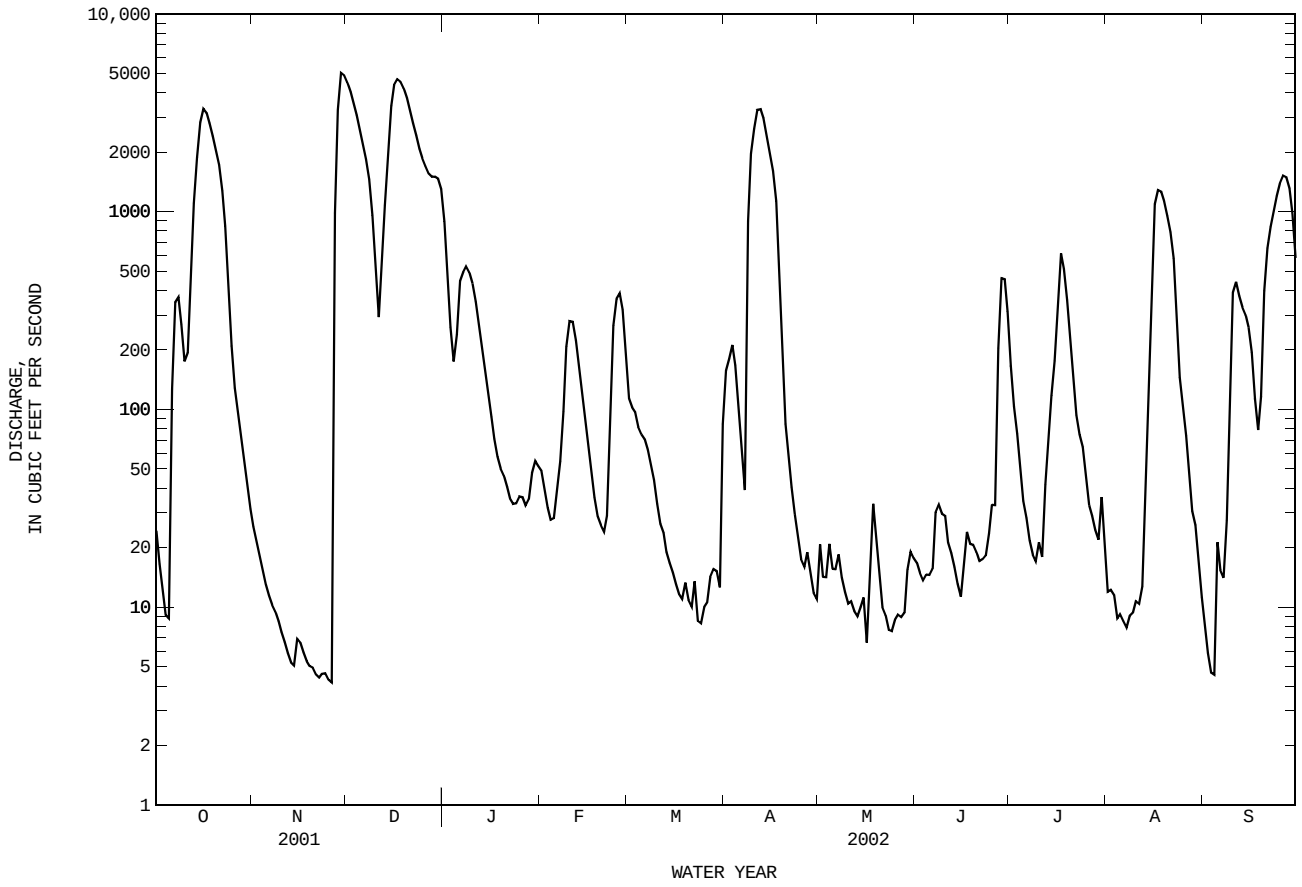
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	26	4500	891	49	113	157	21	17	167	12	8.1
2	17	21	4040	476	40	102	180	14	15	103	12	5.9
3	12	18	3560	261	32	97	212	14	14	75	12	4.7
4	9.1	15	3080	175	28	81	167	21	15	50	8.8	4.6
5	8.8	13	2600	240	28	75	103	16	15	34	9.2	21
6	127	11	2170	447	39	71	61	16	16	28	8.5	15
7	347	10	1840	496	55	62	39	19	30	22	7.9	14
8	369	9.5	1460	529	97	53	895	14	33	18	9.1	27
9	270	8.5	963	493	208	44	1970	12	30	17	9.4	136
10	175	7.5	516	433	280	33	2630	10	29	21	11	390
11	193	6.7	293	351	277	26	3280	11	21	18	10	442
12	541	5.8	502	261	224	24	3300	9.5	19	42	13	375
13	1100	5.2	1080	197	163	19	2970	9.0	16	68	59	328
14	1880	5.1	1830	152	118	17	2440	10	13	117	167	301
15	2830	6.9	3420	116	86	15	1970	11	11	176	421	261
16	3310	6.6	4390	92	65	13	1610	6.6	16	357	1090	195
17	3160	5.9	4690	71	48	12	1130	13	24	614	1290	114
18	2810	5.3	4550	58	36	11	565	33	21	514	1260	79
19	2410	5.0	4210	50	29	13	191	22	21	358	1130	116
20	2050	4.9	3760	46	26	11	85	16	19	220	955	397
21	1730	4.6	3270	41	24	10	56	10	17	138	789	656
22	1280	4.4	2800	36	29	13	40	9.1	17	93	581	840
23	849	4.6	2430	33	110	8.5	30	7.7	18	75	302	1010
24	447	4.6	2080	34	266	8.3	23	7.6	24	64	146	1200
25	210	4.3	1860	36	362	10	18	8.6	33	47	106	1390
26	128	4.2	1700	36	386	11	16	9.2	33	33	74	1520
27	96	983	1560	33	320	14	19	8.9	204	29	45	1490
28	71	3270	1500	35	192	16	15	9.4	461	25	31	1310
29	54	5040	1510	48	---	15	12	15	456	22	26	985
30	41	4900	1470	55	---	13	11	19	312	36	18	583
31	31	---	1300	52	---	84	---	18	---	21	11	---
TOTAL	26579.9	14416.6	74934	6274	3617	1094.8	24195	420.6	1970	3602	8623.9	14218.3
MEAN	857.4	480.6	2417	202.4	129.2	35.32	806.5	13.57	65.67	116.2	278.2	473.9
MAX	3310	5040	4690	891	386	113	3300	33	461	614	1290	1520
MIN	8.8	4.2	293	33	24	8.3	11	6.6	11	17	7.9	4.6
AC-FT	52720	28600	148600	12440	7170	2170	47990	834	3910	7140	17110	28200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2002, BY WATER YEAR (WY)

MEAN	474.8	390.1	606.5	705.4	576.7	567.0	566.2	480.9	668.2	350.6	168.7	254.4
MAX	8080	2095	2417	2245	1850	1838	4972	3589	3640	3291	1660	1715
(WY)	1995	1987	2002	1998	1992	1993	1979	1989	2001	1989	1983	1998
MIN	2.90	2.48	12.4	4.75	5.87	7.09	21.4	13.6	25.1	15.8	4.54	1.00
(WY)	1970	1989	1990	1971	2000	2000	1987	2002	1998	2000	2000	2000

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1968 - 2002	
ANNUAL TOTAL	325024.6		179946.1			
ANNUAL MEAN	890.5		493.0		483.6	
HIGHEST ANNUAL MEAN					1167	1979
LOWEST ANNUAL MEAN					69.2	2000
HIGHEST DAILY MEAN	14400	Jun 10	5040	Nov 29	47400	Oct 20 1994
LOWEST DAILY MEAN	4.0	Aug 27	4.2	Nov 26	0.00	Oct 21 1979
ANNUAL SEVEN-DAY MINIMUM	4.5	Nov 20	4.5	Nov 20	0.56	Sep 1 2000
MAXIMUM PEAK FLOW			5160	Nov 29	48800	Oct 20 1994
MAXIMUM PEAK STAGE			28.20	Nov 29	37.50	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	644700		356900		350300	
10 PERCENT EXCEEDS	2440		1770		1360	
50 PERCENT EXCEEDS	115		48		78	
90 PERCENT EXCEEDS	11		9.1		8.5	

08041700 Pine Island Bayou near Sour Lake, TX--Continued



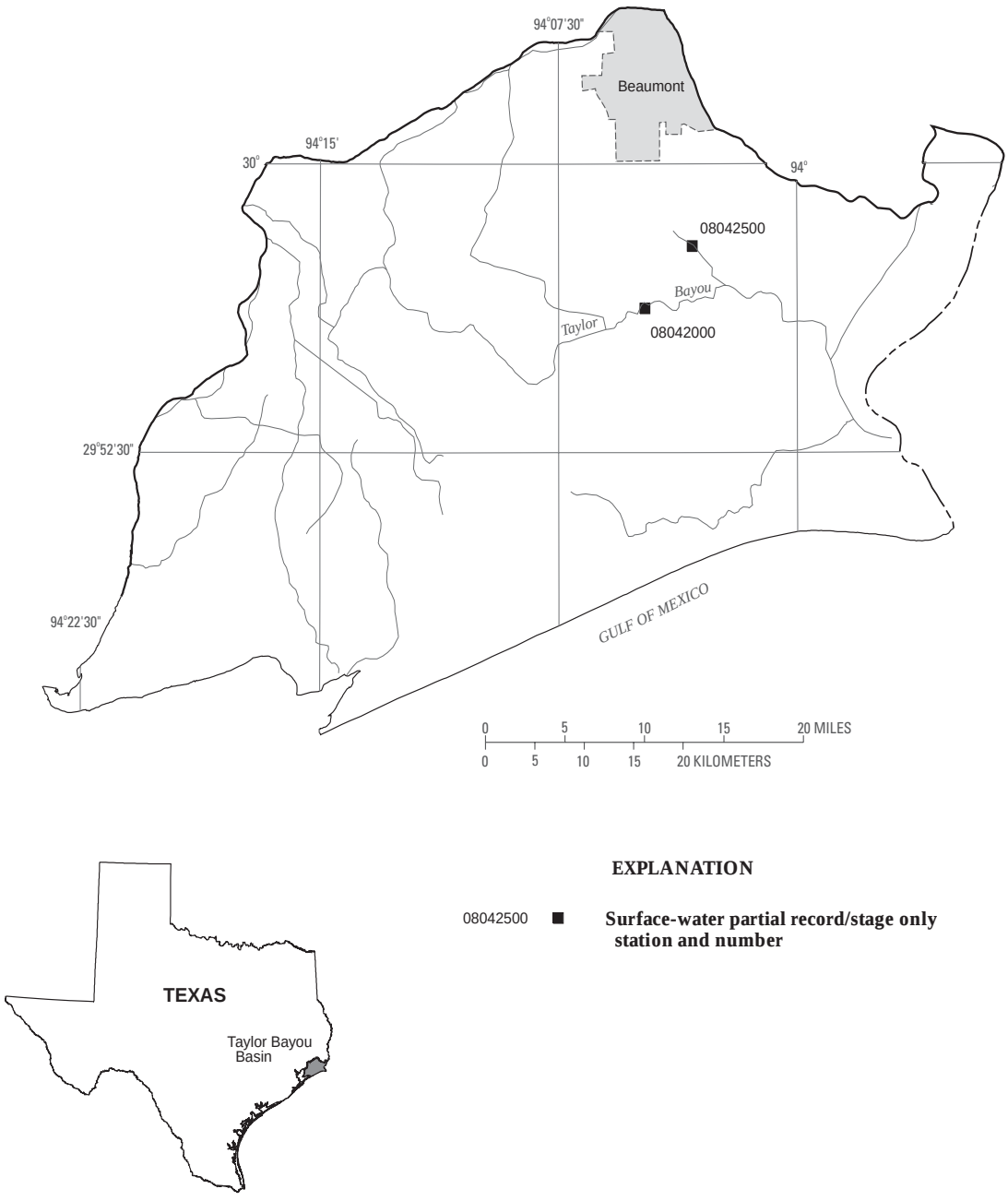


Figure 11.--Map showing location of gaging stations in the Taylor Bayou Basin

08042000 Taylor Bayou near LaBelle, TX

LOCATION.--Lat 29°52'30", long 94°09'34", Jefferson County, Hydrologic Unit 12040201, near center of stream on downstream side of bridge on county road, 0.7 mi south of LaBelle, 6.0 mi upstream from Hillebrandt Bayou, 7.2 mi upstream from State Highway 73 and 11.2 mi upstream from saltwater gates and barge locks. Distances are measured along rectified channel.

DRAINAGE AREA.--262 mi^2.

PERIOD OF RECORD.--Apr. 1954 to 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 only).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below NGVD of 1929, 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 poor. 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.

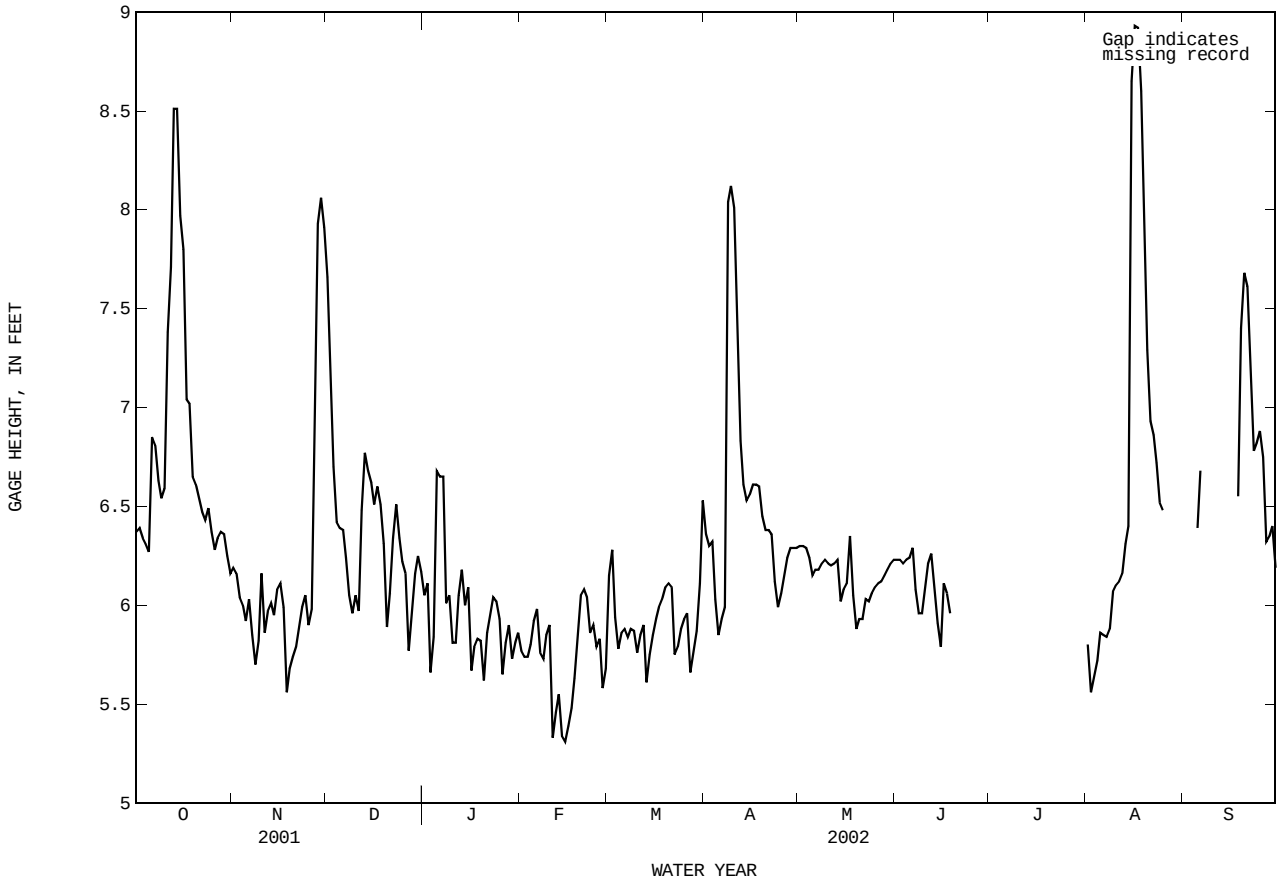
EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1941 reached a stage of 11.3 ft, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.93 ft, Aug. 16; minimum gage height, 5.01 ft, Feb. 14.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.37	6.19	7.66	6.05	5.77	6.15	6.36	6.30	6.23	---	5.80	---
2	6.39	6.16	7.08	6.11	5.74	6.28	6.30	6.30	6.23	---	5.56	---
3	6.34	6.04	6.70	5.66	5.74	5.94	6.32	6.29	6.21	---	5.64	---
4	6.31	6.00	6.42	5.84	5.80	5.78	6.03	6.24	6.23	---	5.72	---
5	6.27	5.92	6.39	6.68	5.92	5.86	5.85	6.15	6.24	---	5.86	6.39
6	6.85	6.03	6.38	6.65	5.98	5.88	5.93	6.18	6.29	---	5.85	6.68
7	6.81	5.85	6.24	6.65	5.76	5.84	5.99	6.18	6.08	---	5.84	---
8	6.63	5.70	6.05	6.01	5.73	5.88	8.04	6.21	5.96	---	5.88	---
9	6.54	5.82	5.96	6.05	5.85	5.87	8.12	6.23	5.96	---	6.07	---
10	6.59	6.16	6.05	5.81	5.90	5.76	8.01	6.21	6.09	---	6.10	---
11	7.38	5.86	5.97	5.81	5.33	5.85	7.40	6.20	6.21	---	6.12	---
12	7.71	5.97	6.48	6.05	5.46	5.90	6.83	6.21	6.26	---	6.16	---
13	8.51	6.01	6.77	6.18	5.55	5.61	6.61	6.23	6.09	---	6.31	---
14	8.51	5.95	6.68	6.00	5.34	5.75	6.53	6.02	5.91	---	6.40	---
15	7.97	6.08	6.62	6.09	5.31	5.85	6.56	6.08	5.79	---	8.65	---
16	7.80	6.11	6.51	5.67	5.39	5.93	6.61	6.11	6.11	---	8.93	---
17	7.04	5.99	6.60	5.79	5.48	5.99	6.61	6.35	6.06	---	8.92	---
18	7.02	5.56	6.51	5.83	5.63	6.03	6.60	6.05	5.96	---	8.60	6.55
19	6.65	5.68	6.31	5.82	5.84	6.09	6.45	5.88	---	---	7.88	7.40
20	6.61	5.74	5.89	5.62	6.05	6.11	6.38	5.93	---	---	7.29	7.68
21	6.54	5.79	6.06	5.86	6.08	6.09	6.38	5.93	---	---	6.93	7.61
22	6.47	5.90	6.34	5.95	6.04	5.75	6.36	6.03	---	---	6.86	7.17
23	6.43	5.99	6.51	6.04	5.86	5.79	6.12	6.02	---	---	6.72	6.78
24	6.49	6.05	6.34	6.02	5.90	5.88	5.99	6.06	---	---	6.52	6.82
25	6.37	5.90	6.22	5.93	5.79	5.93	6.06	6.09	---	---	6.48	6.88
26	6.28	5.98	6.16	5.65	5.83	5.96	6.15	6.11	---	---	---	6.75
27	6.34	7.01	5.77	5.81	5.58	5.66	6.24	6.12	---	---	---	6.32
28	6.37	7.93	5.95	5.90	5.68	5.76	6.29	6.15	---	---	---	6.35
29	6.36	8.06	6.16	5.73	---	5.87	6.29	6.18	---	---	---	6.40
30	6.25	7.91	6.25	5.81	---	6.11	6.29	6.21	---	---	---	6.19
31	6.16	---	6.17	5.86	---	6.53	---	6.23	---	---	---	---
MAX	8.51	8.06	7.66	6.68	6.08	6.53	8.12	6.35	---	---	---	---

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 Aug. 1991 and Mar. 1992 to current year (daily maximum gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below NGVD of 1929, 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.

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.

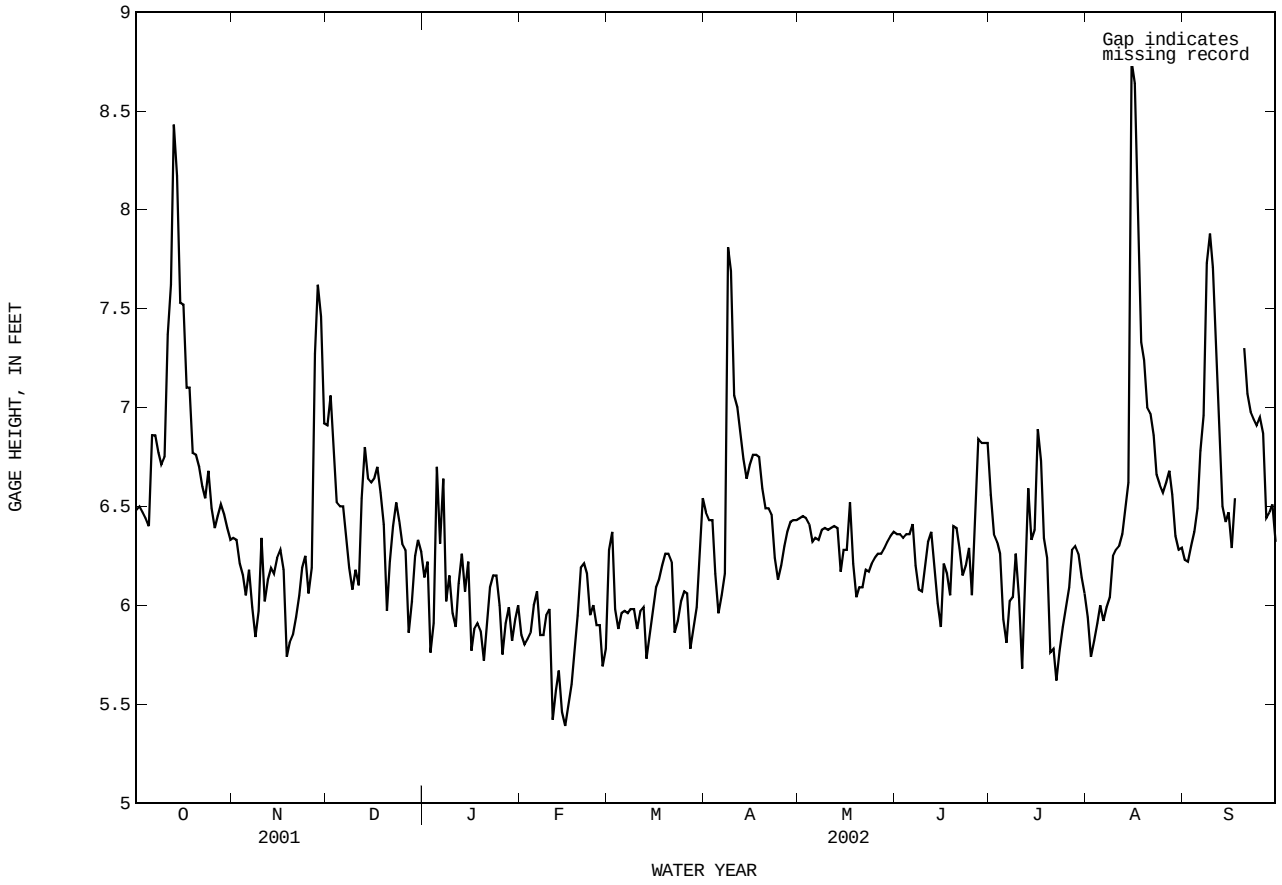
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft^3/s, Sept. 18, 1963; maximum gage height, 12.34 ft, Sept. 19, 1963; minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.33 ft, July 17, 1954. Maximum stage since at least 1941, 12.34 ft, Sept. 19, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 8.75 ft, Aug. 15; minimum gage height, 5.11 ft, Feb. 10.

GAGE HEIGHT FROM DCP, in FEET, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MAXIMUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.48	6.34	6.91	6.14	5.85	6.28	6.47	6.44	6.36	6.56	5.94	6.23
2	6.50	6.33	7.06	6.22	5.80	6.37	6.43	6.45	6.36	6.36	5.74	6.22
3	6.47	6.21	6.80	5.76	5.83	5.98	6.43	6.44	6.34	6.32	5.82	6.30
4	6.44	6.15	6.52	5.91	5.86	5.88	6.16	6.41	6.36	6.26	5.91	6.37
5	6.40	6.05	6.50	6.70	6.00	5.96	5.96	6.32	6.36	5.93	6.00	6.49
6	6.86	6.18	6.50	6.31	6.07	5.97	6.05	6.34	6.41	5.81	5.92	6.78
7	6.86	5.99	6.36	6.64	5.85	5.96	6.16	6.33	6.20	6.02	5.99	6.96
8	6.77	5.84	6.19	6.02	5.85	5.98	7.81	6.38	6.08	6.04	6.04	7.73
9	6.71	5.97	6.08	6.15	5.95	5.98	7.69	6.39	6.07	6.26	6.25	7.88
10	6.75	6.34	6.18	5.96	5.98	5.88	7.06	6.38	6.20	6.04	6.28	7.71
11	7.37	6.02	6.10	5.89	5.42	5.97	7.00	6.39	6.32	5.68	6.30	7.30
12	7.62	6.13	6.54	6.11	5.57	5.99	6.86	6.40	6.37	6.10	6.36	6.84
13	8.43	6.19	6.80	6.26	5.67	5.73	6.74	6.39	6.20	6.59	6.50	6.50
14	8.17	6.16	6.64	6.07	5.46	5.86	6.64	6.17	6.01	6.33	6.62	6.42
15	7.53	6.24	6.62	6.22	5.39	5.98	6.71	6.28	5.89	6.38	8.75	6.47
16	7.52	6.28	6.64	5.77	5.49	6.09	6.76	6.28	6.21	6.89	8.64	6.29
17	7.10	6.18	6.70	5.88	5.60	6.13	6.76	6.52	6.16	6.73	7.78	6.54
18	7.10	5.74	6.57	5.91	5.76	6.20	6.75	6.21	6.05	6.34	7.33	---
19	6.77	5.81	6.41	5.87	5.95	6.26	6.59	6.04	6.40	6.24	7.24	---
20	6.76	5.85	5.97	5.72	6.19	6.26	6.49	6.09	6.39	5.76	7.00	7.30
21	6.70	5.94	6.22	5.90	6.21	6.22	6.49	6.09	6.29	5.78	6.97	7.07
22	6.60	6.05	6.40	6.09	6.16	5.86	6.46	6.18	6.15	5.62	6.86	6.98
23	6.54	6.19	6.52	6.15	5.95	5.92	6.24	6.17	6.20	5.77	6.66	6.94
24	6.68	6.25	6.42	6.15	6.00	6.02	6.13	6.21	6.29	5.89	6.61	6.91
25	6.49	6.06	6.31	6.00	5.90	6.07	6.20	6.24	6.05	5.99	6.57	6.95
26	6.39	6.19	6.28	5.75	5.90	6.06	6.30	6.26	6.41	6.09	6.62	6.87
27	6.45	7.27	5.86	5.91	5.69	5.78	6.37	6.26	6.84	6.28	6.68	6.44
28	6.51	7.62	6.02	5.99	5.78	5.88	6.42	6.29	6.82	6.30	6.56	6.47
29	6.46	7.46	6.25	5.82	---	5.99	6.43	6.32	6.82	6.26	6.35	6.51
30	6.39	6.92	6.33	5.93	---	6.27	6.43	6.35	6.82	6.14	6.28	6.32
31	6.33	---	6.27	6.00	---	6.54	---	6.37	---	6.06	6.29	---
MAX	8.43	7.62	7.06	6.70	6.21	6.54	7.81	6.52	6.84	6.89	8.75	---

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 2002

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Neches River Basin				
08041550	Village Creek at State Highway. 327 near Silsbee, 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	1979-2002	05-16-02	95.2
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	1979-2002	10-05-01 05-16-02	9.57 8.66

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CALENDAR FOR WATER YEAR 2002

2001

OCTOBER

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

NOVEMBER

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

DECEMBER

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

2002

JANUARY

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

FEBRUARY

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

MARCH

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

APRIL

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

MAY

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

JUNE

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

JULY

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

AUGUST

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

SEPTEMBER

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

CONVERSION FACTORS

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$°F = (1.8 \times °C) + 32$$